

**AGREEMENT BETWEEN
SAN DIEGO UNIFIED PORT DISTRICT
and
ELECTRIC POWER RESEARCH INSTITUTE, INC.
for
MICROGRID INFRASTRUCTURE PROJECT AT TAMT
AGREEMENT NO. 272-2018KC**

The parties to this Agreement are the SAN DIEGO UNIFIED PORT DISTRICT, a public corporation (District) and ELECTRIC POWER RESEARCH INSTITUTE, INC., a California Corporation (Service Provider). The parties agree to the following:

1. **SCOPE OF SERVICES.** Service Provider shall furnish all technical and professional labor, and materials to satisfactorily comply with Attachment A, Scope of Services, attached hereto and incorporated herein, as requested by District. Service Provider shall keep the Executive Director of the District or their designated representative informed of the progress of said services at all times.
2. **STANDARD OF PERFORMANCE.** In performing work under this Agreement, all parties are responsible for exercising the degree of skill and care required by customarily accepted good professional practices and procedures for the type of work performed.
3. **GRANT TERMS.** In the event of conflicting applicable terms, the Grant Agreement No. EPC-17-049, attached herein as Exhibit B between the California Energy Commission (Energy Commission or Commission) and the District, shall prevail the terms and conditions of this Agreement. Service Provider is solely responsible for understanding and complying with all applicable flow down provisions in Grant Agreement No. EPC-17-049.
4. **TERM OF AGREEMENT.** This Agreement shall commence on May 14, 2019 and shall terminate on March 31, 2023, subject to earlier termination as provided below.

5. **COMPENSATION.** For performance of services rendered pursuant to this Agreement and as further described in Attachment B, Compensation and Invoicing, attached hereto and incorporated herein; District shall compensate Service Provider based on the following, subject to the limitation of the maximum expenditure provided herein:

- a. **Maximum Expenditure.** The maximum expenditure under this Agreement shall not exceed \$419,997.00. Said expenditure shall include without limitation all sums, charges, reimbursements, costs and expenses provided for herein. Service Provider shall not be required to perform further services after compensation has been expended. In the event that the Service Provider anticipates the need for services in excess of the maximum Agreement amount, the District shall be notified in writing immediately. District and the Commission must approve an amendment to this Agreement before additional fees and costs are incurred.
- b. **Payment Procedure.** Service Provider may request payment from the District at any time during the term of this Agreement but no more frequently than monthly. Each request for payment shall follow the format detailed in Attachment B. For work performed on an hourly basis, Service Provider agrees to assign the person with the lowest hourly rate who is fully competent to provide the services required. If Service Provider finds it necessary to have work, which would usually be performed by personnel with a lower rate, performed by personnel paid at the higher hourly rate, Service Provider shall nevertheless, bill at the lower rate. Invoicing and Payment shall follow instructions and process as detailed in Attachment B.

(1) **TRAVEL & PER DIEM (Grant Agreement Requirements)**

- (a) Travel not listed in the budget requires prior written authorization from the District and Commission.
- (b) No reimbursement for food or beverages will be made other than for allowable per diem charges.

- (c) The Service Provider will be reimbursed for authorized travel and per diem up to, but not to exceed, the rates allowed nonrepresented state employees. Current allowable travel reimbursement rates can be obtained from the Commission's web site at http://www.energy.ca.gov/contracts/TRAVEL_PER_DIEM.PDF.
 - (d) Travel expense claims must detail expenses using the allowable rates, and the District must sign and date each travel expense claim before submitting it to the District for payment. Expenses must be listed by trip, including dates and times of departure and return. Travel expense claims supporting receipts and expense documentation must be attached to the Service Provider's Payment Request. A vehicle license number is required when claiming mileage, parking, or toll charges. Questions regarding allowable travel expenses or per diem should be addressed to the COMMISSION.
- c. **Progress Documentation.** Service Provider shall provide District progress reports in a format and on a schedule as described in Attachment A, Scope of Work, and Exhibit E, Content & Format of Progress Report attached herein.

6. **RECORDS**

- a. Service Provider shall maintain full and complete records of the cost of services performed under this Agreement. Such records shall be open to inspection of District and the Commission at all reasonable times in the City of San Diego and such records shall be kept for at least three (3) years after payment of the final invoice under this Agreement.

- b. Such records shall be maintained by Service Provider for a period of three (3) years after completion of services to be performed under this Agreement or until all disputes, appeals, litigation or claims arising from this Agreement have been resolved, whichever is later.
- c. Service Provider understands and agrees that District and the Commission, at all times under this Agreement, have the right to review project documents and work in progress and to audit financial records, whether or not final, which Service Provider or anyone else associated with the work has prepared or which relate to the work which Service Provider is performing for District pursuant to this Agreement regardless of whether such records have previously been provided to District. Service Provider shall provide District at Service Provider's expense a copy of all such records within five (5) working days of a written request by District. District's right shall also include inspection at reasonable times during normal business hours of the Service Provider's office or facilities, which are engaged in the performance of services pursuant to this Agreement. Service Provider shall, at no cost to District furnish reasonable facilities and assistance for such review and audit. Service Provider's failure to provide the records within the time requested shall preclude Service Provider from receiving any compensation due under this Agreement until such documents are provided.

7. **RECORDKEEPING, COST ACCOUNTING, AND AUDITING**

a. **Cost Accounting**

The Service Provider will keep separate, complete, and correct accounting of the costs involved in completing the project and any match-funded portion of the project. The District, Commission or its agent will have the right to examine the Service Provider's books of accounts at all reasonable times, to the extent necessary to verify the accuracy of the Service Provider's reports.

b. Accounting Procedures

The Service Provider's costs will be determined on the basis of its accounting system procedures and practices employed as of the effective date of this Agreement, provided that the Service Provider uses generally accepted accounting principles and cost reimbursement practices. The Service Provider's cost accounting practices used in accumulating and reporting costs during the performance of this Agreement will be consistent with the practices used in estimating costs for any proposal to which this Agreement relates; provided that such practices are consistent with the other terms of this Agreement and that such costs may be accumulated and reported in greater detail during performance of this Agreement.

The Service Provider's accounting system will distinguish between direct and indirect costs. All costs incurred for the same purpose, in like circumstances, are either direct costs only or indirect costs only with respect to costs incurred under this Agreement.

c. Audit Rights

The Service Provider will maintain books, records, documents, and other evidence, based on the procedures set forth above, sufficient to reflect properly all costs claimed to have been incurred in the performance of this Agreement. The District, Commission, another state agency, and/or a public accounting firm designated by the Commission may audit the Service Provider's accounting records at all reasonable times, with prior notice by the District.

It is the intent of the parties that the audits will ordinarily be performed not more frequently than once every twelve (12) months during the performance of the work and once at any time within three (3) years after payment by the District of the Service Provider's final invoice. However, performance of any such interim audits by the District or Commission does not preclude further audit. In addition to the record retention requirements

set forth herein, Service Provider shall maintain records for such period of time to allow the District or Commission to audit books, records, documents, and other evidence relevant to the Service Provider's royalty payment obligations (see Section 13) for a period of ten (10) years after payment of the Service Provider's final invoice.

The Service Provider will allow the auditor(s) to access such records during normal business hours and will allow interviews of any employees who might reasonably have information related to such records. The Service Provider will include a similar right of the state to audit records and interview staff in any subcontract related to the performance of this Agreement.

d. Refund to the District

If the District or Commission determine that any invoiced and paid amounts exceed the actual allowable incurred costs, the Service Provider will repay the amounts to the District within thirty (30) days of request or as otherwise agreed by the District and the Service Provider. If the District does not receive such repayments, it will be entitled to take actions such as withholding further payments to the Service Provider and seeking repayment from the Service Provider.

e. Audit Cost

The Service Provider will bear its cost of participating in any audit (e.g., mailing or travel expenses). The District or Commission will bear the cost of conducting the audit unless the audit reveals an error detrimental to the District or Commission that exceeds more than ten percent (10%) or \$5,000 (whichever is greater) of: (1) the amount audited; or (2) if a royalty audit, the total royalties due in the period audited. The Service Provider will pay the refund as specified in subsection d and will reimburse the District for reasonable costs and expenses incurred by the District in conducting the audit.

f. Match or Cost Share

If the budget includes a match share requirement, the Service Provider's commitment of resources, as described in this Agreement, is a required expenditure for receipt of District funds. The funds will be released only if the required match percentages are expended. The Service Provider must maintain accounting records detailing the expenditure of the match (actual cash and in-kind, non-cash services), and report on match share expenditures on its request for payment.

8. **ACCESS TO SITES AND RECORDS.** District, Commission and California Public Utilities Commission staff and representatives will have reasonable access during normal business hours to all project sites and to all records related to this Agreement.

9. **PRODUCTS**

- a. **"Products"** are any tangible item specified for delivery to the District or Commission in the Scope of Work, such as reports and summaries.

- (1) The Service Provider will submit all products identified in the Scope of Work to the District in the manner and form specified in the Scope of Work.
- (2) The Service Provider will also submit all products prepared during the invoicing period to the District along with the invoice, as specified in Attachment B attached herein.

If the Commission or District determine that a product is substandard given its description and intended use as described in the Scope of Work, the Commission or District may refuse to authorize payment for the product and any subsequent products that rely on or are based upon the product under this Agreement.

b. Confidential Products

Please see Section 26 (Confidentiality) for instructions regarding confidential products.

c. Rights in Products

The Commission owns all products identified in the Scope of Work, with the exception of products that fall within the definition of “intellectual property.” The District owns all intellectual property developed under this Agreement (please see the “Intellectual Property” section).

The Service Provider has a non-exclusive, non-transferable, irrevocable, worldwide, perpetual license to use, publish, translate, modify, and reproduce products that do not fall within the definition of “intellectual property.”

d. Failure to Submit Products

Failure to submit a product required in the Scope of Work will be considered material noncompliance with the Agreement terms, unless the District or Commission waive the failure in writing. Noncompliance may result in actions such as the withholding of future payments or awards, or the suspension or termination of the Agreement.

e. Final Report and Payment

The Service Provider may only submit a request for the final payment (including any retention) after the final report is completed and the District and Commission have verified satisfactory completion of work.

f. Legal Statements on Products

(1) All documents that result from work funded by this Agreement and are released to the public must include the following statement to ensure no Commission endorsement of documents:

LEGAL NOTICE

This document was prepared as a result of work sponsored by the California Energy Commission. It does not necessarily represent the views of the Energy Commission, its employees, or the State of California. Neither the Commission, the State of California, nor the Commission's employees, contractors, or subcontractors makes any warranty, express or implied, or assumes any legal liability for the information in this document; nor does any party represent that the use of this information will not infringe upon privately owned rights. This document has not been approved or disapproved by the Commission, nor has the Commission passed upon the accuracy of the information in this document.

- (2) The Service Provider will apply copyright notices to all documents prepared for this Agreement that are released to the public (including reports, articles submitted for publication, and all reprints) using the following form or any other form that may be reasonably specified by the Commission.

“©[Year of first publication of product] [the Copyright Holder's name]. All Rights Reserved.”

10. EQUIPMENT

- a. Title to equipment acquired by the Service Provider with grant funds will vest in the Service Provider. The Service Provider may use the equipment in the project or program for which it was acquired as long as needed, regardless of whether the project or program continues to be supported by grant funds. However, the Service Provider may not sell, lease, or encumber the property (i.e., place a legal burden on the property such as a lien) during the Agreement term without the District's prior written approval.
- b. The Service Provider may refer to the applicable federal regulations incorporated by reference in this Agreement for guidance regarding additional equipment requirements.

11. **PRE-EXISTING AND INDEPENDENTLY FUNDED INTELLECTUAL PROPERTY**

a. Ownership

The District makes no ownership, license, or royalty claims to pre-existing intellectual property, independently funded intellectual property, or project-relevant pre-existing or independently funded intellectual property. “Ownership” means exclusive possession and control of all rights to property, including the right to use and transfer property. Intellectual property licenses and royalties are discussed in Sections 12 and 13.

- (1) “Pre-existing intellectual property” means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Service Provider or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Commission or match funds, such as patent and copyright.
- (2) “Independently funded intellectual property” means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice by the Service Provider or a third party during or after the Agreement term without Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Commission or match funds, such as patent and copyright.

“Works of authorship” does not include written products created for Agreement reporting and management purposes, such as reports,

summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.

- (3) “Project-relevant pre-existing intellectual property” and “project-relevant independently funded intellectual property” mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.

b. Project-Relevant Pre-Existing and Independently Funded Intellectual Property

- (1) Identification of Property

- (a) The Service Provider will identify all project-relevant pre-existing intellectual property in Attachment 1 to Exhibit C of the Grant Agreement No. EPC-17-049 prior to the effective date of the Agreement, or within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement. Attachment 1 may be amended by a Letter of Agreement.
- (b) The Service Provider will identify all project-relevant independently funded intellectual property and the source of funding for the property in Attachment 1 to Exhibit C of the Grant Agreement No. EPC-17-049 within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.
- (c) Failure to identify project-relevant pre-existing or independently funded intellectual property in Attachment 1 to Exhibit C of the Grant Agreement No. EPC-17-049 may

result in the property's designation as "intellectual property" that is subject to licenses and royalties, as described in Sections 12 and 13.

(2) Access to Property

The extent of District, Commission and California Public Utilities Commission access to project-relevant pre-existing and independently funded intellectual property is limited to that reasonably necessary to: (a) demonstrate the validity of any premise, postulate, or conclusion referred to or expressed in any product; or (b) establish a baseline for repayment purposes.

Upon the District's request, the Service Provider will provide the District and any reviewers designated by the District, Commission or the California Public Utilities Commission with access to review the Service Provider's project-relevant pre-existing and independently funded intellectual property. If the property has been designated as confidential as specified in Section 26, the District will only disclose it under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508.

(3) Preservation of Property

In addition to the record retention requirements set forth herein, the Service Provider will preserve any project-relevant pre-existing or independently funded intellectual property at its own expense for at least ten (10) years from the Agreement's end date, unless the Service Provider agrees to a longer retention period.

The District, Commission and the California Public Utilities Commission will have reasonable access to the project-relevant pre-existing or independently funded property throughout the retention period.

12. **INTELLECTUAL PROPERTY**

a. Ownership

- (1) The Service Provider owns all intellectual property, subject to the licenses described in subsection b of this section, below.

“Intellectual property” means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice with Agreement or match funds during or after the Agreement term; (b) any associated proprietary rights to these items, such as patent and copyright; and (c) any upgrades or revisions to these items.

“Works of authorship” does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices.

- (2) The District owns all products identified in the Scope of Work, with the exception of products that fall within the definition of “intellectual property.”

“Product” means any tangible item specified for delivery to the District in the Scope of Work.

b. Intellectual Property Licenses

- (1) The District, Commission and the California Public Utilities Commission have a no-cost, non-exclusive, transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, modify, and reproduce intellectual property for governmental purposes. The licenses are transferable only to load-serving entities for the purpose described below.

- (2) The District, Commission and the California Public Utilities Commission may grant load-serving entities a no-cost, non-exclusive, transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, modify, and reproduce intellectual property to enhance the entities' service to EPIC ratepayers. "Load-serving entity" means a company or other organization that provides electricity to EPIC ratepayers. The licenses are transferable to third parties only for the purpose of facilitating the load-serving entity's enhancement of service to EPIC ratepayers. Load-serving entities must obtain prior written approval from the District, Commission or California Public Utilities Commission (whichever agency granted the load-serving entity the license) in order to transfer the license to a third party.
- (3) The Service Provider has a non-exclusive, non-transferable, irrevocable, worldwide, perpetual license to use, publish, translate, modify, and reproduce written products created for Agreement reporting and management purposes, such as reports and summaries.
- (4) If any intellectual property that is subject to the licenses above has been designated as confidential as specified in Section 26, all license holders will only disclose the intellectual property under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508.

All license holders will ensure that their officers, employees, and subcontractors who have access to the intellectual property are informed of and abide by the disclosure limitations in Section 26.

c. District's Rights to Inventions

"Invention" means intellectual property that is patentable.

(1) March-In Rights

At the District's request, the Service Provider will forfeit and assign to the District all rights to any invention (with the exception of U.S. Department of Energy reserved rights) if the Service Provider or assignee has not taken or is not expected to take within a reasonable time, effective steps to achieve practical application of the invention. The District will have the unfettered right to use and/or dispose of the rights in whatever manner it deems most suitable to help transfer the invention into the marketplace, including but not limited to seeking patent protection or licensing the invention.

(2) Notice of Patent

If any patent is issued for an invention, the Service Provider will send the District written notice of the issuance within three (3) months of the issuance date. The notice must include the patent title, issuance number, and a general description of the invention.

(3) Legal Notice

The Service Provider and all persons and/or entities obtaining an ownership interest in patentable intellectual property must include the following statement within the specification of any United States patent application, and any subsequently issued patent for the invention:

“This invention was made with State of California support under California Energy Commission grant number EPC-17-020. The Energy Commission has certain rights to this invention.”

d. Access to and Preservation of Intellectual Property

(1) Access to Intellectual Property

Upon the District's request, the Service Provider will provide the District and any individuals designated by the District, Commission or the California Public Utilities Commission with access to the Service Provider's intellectual property in order to exercise the license and march-in rights described above, and to determine any royalty payments due under the Agreement.

(2) Preservation of Intellectual Property

The Service Provider will preserve intellectual property at its own expense for at least ten (10) years from the Agreement's end date, unless the Service Provider agrees to a longer retention period.

e. Intellectual Property Indemnity

The Service Provider may not, in supplying work under this Agreement, knowingly infringe or misappropriate any intellectual property right of a third party and will take reasonable actions to avoid infringement.

The Service Provider will defend and indemnify the District, Commission and the California Public Utilities Commission from and against any claim, lawsuit, or other proceeding, loss, cost, liability, or expense (including court costs and reasonable fees of attorneys and other professionals) to the extent arising out of: (i) any third party claim that a product infringes any patent, copyright, trade secret, or other intellectual property right of any third party; or (ii) any third party claim arising out of the negligent or other tortious acts or omissions by the Service Provider or its employees, subcontractors, or agents in connection with or related to the products or the Service Provider's performance under this Agreement.

13. **ROYALTY PAYMENTS TO THE COMMISSION**

"Sale," "sales," and "sold" mean the sale, license, lease, or other transfer of intellectual property. "Sales Price" means the price at which intellectual property is sold, excluding sales tax.

- a. The Service Provider will pay the Commission a royalty of one and one-half percent (1.5%) of the sales price of all sales for which the Service Provider receives a payment, beginning on the Agreement's effective date and extending for ten (10) years from the Agreement's end date.
- b. The Service Provider will make payments in annual installments due on the first day of March in the calendar year immediately following the year during which the Service Provider received any payment for sales.
- c. The Service Provider is not required to make a royalty payment for any calendar year in which payments for sales are less than \$1000. Total royalty payments will be limited to three (3) times the amount of funds paid by the Commission under the Agreement.
- d. If intellectual property was developed in part with match funds during the Agreement term, the royalty payment will be reduced in accordance with the percentage of intellectual property development activities that were funded with match funds. For example, if 10% of the development activities were funded with match funds during the Agreement and payments for sales totaled \$100,000 in one year, the Service Provider would owe the Commission \$1350 for the year (1.5% of \$100,000 = \$1500; 10% of \$1500 = \$150; \$1500 - \$150 = \$1350).

If the Commission is providing funds to the Service Provider under this Agreement as a project match partner and Commission funds are used in part to develop intellectual property, the royalty payments will be reduced in accordance with the percentage of intellectual property development activities that were funded with non-Commission funds during the Agreement term. For example, if 80% of the development activities were funded with Service Provider and/or third party funds during the Agreement and payments for sales totaled \$100,000 in one year, the Service Provider would owe the Commission \$300 for the year (1.5% of \$100,000 = \$1500; 80% of \$1500 = \$1200; \$1500 - \$1200 = \$300).

- e. The Service Provider may make an early buyout payment to the Commission without a pre-payment penalty, as an alternative to making annual royalty payments for ten (10) years following the Agreement's end date. The payment must be in a lump sum amount equal to one and a half (1.5) times the amount of funds paid by the Commission under the Agreement and made within five (5) years of the Agreement's end date. The payment amount due under the early buyout option will not be reduced by the percentage of match funds as described above.
- f. The Service Provider may not make any sale of intellectual property for consideration other than fair market value. Such activity constitutes breach of this Agreement and will obligate the Service Provider to repay within sixty (60) days the early buyout amount due. In the event of breach, the District may exercise all rights and remedies available to it under law and at equity.
- g. Royalty payments not made within fifteen (15) days of the due date will constitute breach of this Agreement. The payments will become debt obligations of the Service Provider to the Commission, due upon demand and bearing interest at the maximum interest rate allowed by law.
- h. The Service Provider will maintain separate accounts within its financial and other records for the purpose of tracking components of sales and royalties due to the Commission under this Agreement.
- i. Payments to the Commission are subject to audit as provided for under the Recordkeeping, Cost Accounting, and Auditing section.
- j. The Service Provider will include these royalty provisions in its agreements with all subcontractors who develop or assist with the development of intellectual property.

14. **SERVICE PROVIDER'S SUB-CONTRACTORS**

- a. It may be necessary for Service Provider to sub-contract for the performance of certain technical services or other services for Service Provider to perform and complete the required services; provided, however, all Service Provider's sub-contractors require advance written consent by District and the Commission. The Service Provider shall remain responsible to District for any and all services and obligations required under this Agreement, whether performed by Service Provider or Service Provider's sub-contractors. Service Provider shall compensate each Service Provider's sub-contractors in the time periods required by law. Any Service Provider's sub-contractors employed by Service Provider shall be independent Service Providers and not agents of District. Service Provider shall insure that Service Provider's sub-contractors satisfy all substantive requirements for the work set forth by this Agreement, including insurance and indemnification.
- b. Service Provider shall also include a clause in its Agreements with Service Provider's sub-contractors which reserves the right, during the performance of this Agreement and for a period of three (3) years following payment of the final invoice of this Agreement, for a District and/or Commission representative to audit any cost, compensation or settlement resulting from any items set forth in this Agreement. This clause shall also require Service Provider's sub-contractors to retain all necessary records for a period of three (3) years after payment of the final invoice under this Agreement or until all disputes, appeals, litigation or claims arising from this Agreement have been resolved, whichever is later.

15. **COMPLIANCE**

- a. In performance of this Agreement, the Service Provider and its sub-contractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Sections 12990 et seq.) and the applicable regulations promulgated thereunder (California Code of

Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part of it as if set forth in full. The Service Provider and its sub-contractors will give written notice of their obligations under this section to labor organizations with which they have a collective bargaining or other Agreement.

- b. Service Provider and its sub-contractors shall comply with the American with Disabilities Act and all other applicable federal, state, and local laws prohibiting discrimination, including without limitation, laws prohibiting discrimination because of age, ancestry, color, creed, denial of family and medical care leave, disability, marital status, medical condition, national origin, race, religion, sex, or sexual orientation. Service Provider and its sub-contractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, sexual orientation, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition, age, marital status, or denial of family care leave. The Service Provider and its subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.
- c. Service Provider shall comply with the prevailing wage provisions of the Labor Code, and the Political Reform Act provisions of the Government Code, as applicable.
- d. Service Provider shall comply with all Federal, State, regional and local laws, and District Ordinances and Regulations applicable to the performance of services under this Agreement as exist now or as may be added or amended.

16. **INDEPENDENT ANALYSIS.** Service Provider shall provide the services required by this Agreement and arrive at conclusions with respect to the rendition of information, advice or recommendations, independent of the control and direction of District, other than normal contract monitoring provided, however, Service Provider shall possess no authority with respect to any District decision.
17. **ASSIGNMENT.** This is a personal services Agreement between the parties and Service Provider shall not assign or transfer voluntarily or involuntarily any of its rights, duties, or obligations under this Agreement without the express written consent of Executive Director (President/CEO) of District in each instance.
18. **INDEMNIFY, DEFEND, HOLD HARMLESS**
- a. **Duty to Indemnify, duty to defend and hold harmless.** The Service Provider shall defend, indemnify and hold harmless the District, its officials, employees and agents, and the State of California, its officers, agents and employees from and against any and all liability, loss, expense (including reasonable attorneys' fees), or claims for injury or damages arising out of the performance of this Agreement but only in proportion to and to the extent such liability, loss, expense, attorneys' fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of the Service Provider, its officers, employees, agents, subcontractors or anyone under Service Provider's control.
 - b. The District, its officials, employees and agents, and the State of California, its officers, agents and employees shall defend, indemnify and hold harmless Service Provider, its officers, agents and employees from and against any and all liability, loss, expense (including reasonable attorneys' fees), or claims for injury or damages arising out of the performance of this Agreement but only in proportion to and to the extent such liability, loss, expense, attorneys' fees, or claims for injury or

damages are caused by or result from the negligent or intentional acts or omissions of the District, its officers, agents and employees.

- c. To the extent allowed under California law, the Service Provider will indemnify, defend, and hold harmless the state (including the Commission) and state officers, agents, and employees from any and all claims and losses in connection with the performance of this Agreement.

19. **INSURANCE REQUIREMENTS**

- a. Service Provider shall at all times during the term of this Agreement maintain, at its expense, the following minimum levels and types of insurance:
 - (1) Commercial General Liability (including, without limitation, Contractual Liability, Personal Injury, Advertising Injury, and Products/Completed Operations) coverages, with coverage at least as broad as Insurance Services Office Commercial General Liability Coverage (occurrence Form CG 0001) with limits no less than one million dollars (\$1,000,000) per Occurrence and two million dollars (\$2,000,000) Aggregate for bodily injury, personal injury and property damage.
 - (a) The deductible or self-insured retention on this Commercial General Liability shall not exceed \$5,000 unless District has approved of a higher deductible or self-insured retention in writing.
 - (b) The Commercial General Liability policy shall be endorsed to include the District; its agents, officers and employees as additional insureds in the form as required by the District. An exemplar endorsement is attached (Exhibit A, Certificate of Insurance, attached hereto and incorporated herein).

- (c) The coverage provided to the District, as an additional insured, shall be primary and any insurance or self-insurance maintained by the District shall be excess of the Service Provider's insurance and shall not contribute to it.
 - (d) The Commercial General Liability policy shall be endorsed to include a waiver of transfer of rights of recovery against the District ("Waiver of Subrogation").
- (2) Commercial Automobile Liability (Owned, Scheduled, Non-Owned, or Hired Automobiles) written at least as broad as Insurance Services Office Form Number CA 0001 with limits of no less than one million dollars (\$1,000,000) combined single limit per accident for bodily injury and property damage.
- (3) Workers' Compensation, statutory limits, is required of the Service Provider and all sub-consultants (or be a qualified self-insured) under the applicable laws and in accordance with "Workers' Compensation and Insurance Act", Division IV of the Labor Code of the State of California and any Acts amendatory thereof. Employer's Liability, in an amount of not less than one million dollars (\$1,000,000) each accident, \$1,000,000 disease policy limit and \$1,000,000 disease each employee. This policy shall be endorsed to include a waiver of subrogation endorsement, where permitted by law.
- (4) Professional Liability insurance in the amount of \$1,000,000 per claim and \$1,000,000 aggregate.
 - (a) At the end of the agreement period, Consultant shall maintain, at its own expense, continued Professional Liability insurance of not less than five (5) years, in an amount no less than the amount required pursuant to this Agreement.

- (b) Alternately, if the existing Professional Liability is terminated during the above referenced five-year period, Consultant shall maintain at its own expense, “tail” coverage in the same minimum amount as set forth in this paragraph.
 - (c) All coverages under this section shall be effective as of the effective date of this Agreement or provide for a retroactive date of placement that coincides with the effective date of this Agreement.
- (5) Umbrella or Excess Liability insurance with limits no less than one million dollars (\$1,000,000) per occurrence and aggregate. This policy must provide excess insurance over the same terms and conditions required above for the General Liability, Automobile Liability and Employer’s Liability policies.
- b. Service Provider shall furnish District with certificates of insurance coverage for all the policies described above upon execution of this Agreement and upon renewal of any of these policies. A Certificate of Insurance in a form acceptable to the District, an exemplar Certificate of Insurance is attached as Exhibit A and made a part hereof, evidencing the existence of the necessary insurance policies and endorsements required shall be kept on file with the District. Except in the event of cancellation for non-payment of premium, in which case notice shall be 10 days, all such policies must be endorsed so that the insurer(s) must notify the District in writing at least 30 days in advance of policy cancellation. Service Provider shall also provide notice to District prior to cancellation of, or any change in, the stated coverages of insurance.
- c. The Certificate of Insurance must delineate the name of the insurance company affording coverage and the policy number(s) specifically referenced to each type of insurance, either on the face of the certificate or on an attachment thereto. If an addendum setting forth multiple

insurance companies or underwriters is attached to the certificate of insurance, the addendum shall indicate the insurance carrier or underwriter who is the lead carrier and the applicable policy number for the CGL coverage.

- d. Furnishing insurance specified herein by the District will in no way relieve or limit any responsibility or obligation imposed by the Agreement or otherwise on Service Provider or Service Provider's sub-contractors or any tier of Service Provider's sub-contractors. District shall reserve the right to obtain complete copies of any of the insurance policies required herein.
20. **ACCURACY OF SERVICES.** Service Provider shall be responsible for the technical accuracy of its services and documents. Service Provider shall correct such deficiencies without additional compensation. Service Provider shall make decisions and carry out its responsibilities hereunder in a timely manner and shall bear all costs incident thereto so as not to delay the District, the project, or any other person related to the project, including the Service Provider or its agents, employees, or subcontractors.
 21. **INDEPENDENT CONTRACTOR.** Service Provider and any agent or employee of Service Provider shall act in an independent capacity and not as officers or employees of District. The District assumes no liability for the Service Provider's actions and performance, nor assumes responsibility for taxes, bonds, payments or other commitments, implied or explicit by or for the Service Provider. Service Provider shall not have authority to act as an agent on behalf of the District unless specifically authorized to do so in writing. Service Provider acknowledges that it is aware that because it is an independent contractor, District is making no deductions from its fee and is not contributing to any fund on its behalf. Service Provider disclaims the right to any fee or benefits except as expressly provided for in this Agreement.

22. **ADVICE OF COUNSEL.** The parties agree that they are aware that they have the right to be advised by counsel with respect to the negotiations, terms and conditions of this Agreement, and that the decision of whether or not to seek the advice of counsel with respect to this Agreement is a decision which is the sole responsibility of each of the parties hereto. This Agreement shall not be construed in favor of or against either party by reason of the extent to which each party participated in the drafting of the Agreement. The formation, interpretation and performance of this Agreement shall be governed by the laws of the State of California.
23. **INDEPENDENT REVIEW.** Each party hereto declares and represents that in entering into this Agreement it has relied and is relying solely upon its own judgment, belief and knowledge of the nature, extent, effect and consequence relating thereto. Each party further declares and represents that this Agreement is being made without reliance upon any statement or representation not contained herein of any other party, or any representative, agent or attorney of any other party.
24. **INTEGRATION AND MODIFICATION.** This Agreement contains the entire Agreement between the parties and supersedes all prior negotiations, discussion, obligations and rights of the parties in respect of each other regarding the subject matter of this Agreement. There is no other written or oral understanding between the parties. No modifications, amendment or alteration of this Agreement shall be valid unless it is approved by the District and the Commission and is in writing and signed by the parties hereto.
25. **OWNERSHIP OF RECORDS.** Any and all materials and documents, including without limitation drawings, specifications, computations, designs, plans, investigations and reports, prepared by Service Provider pursuant to this Agreement, shall be the property of District and the Commission from the moment of their preparation and the Service Provider shall deliver such materials and documents to District at the Don L. Nay Port Administration Building (located at 3165 Pacific Highway, San Diego, California 92101) whenever requested to do

so by District. However, Service Provider shall have the right to make duplicate copies of such materials and documents for its own file, or other purposes as may be expressly authorized in writing by District. Said materials and documents prepared or acquired by Service Provider pursuant to this Agreement (including any duplicate copies kept by the Service Provider) shall not be shown to any other public or private person or entity, except as authorized by District. Service Provider shall not disclose to any other public or private person or entity any information that has been identified as the activities of District, except as expressly authorized in writing by District and the Commission. Notwithstanding anything else in this provision, Service Provider shall not be required to obtain prior consent and shall be authorized to utilize any and all materials and documents, including without limitation drawings, specifications, computations, designs, plans, investigations and reports made for or in connection with the research project funded by the California Energy Commission to the extent that these have become a part of the public records of the state from their inception.

26. **CONFIDENTIALITY.**

a. Identification of Confidential Information

- (1) Prior to the effective date of this Agreement, the Service Provider will identify all products (or information contained within products) that it considers to be confidential, in addition to the legal basis for confidentiality, in Attachment 1 to Exhibit C of the Grant Agreement No. EPC-17-049. If the District and Commission agree that the information is confidential, it will not disclose it except as provided in subsection (b).
- (2) During the Agreement, if the Service Provider develops additional products (or information contained within products) not originally anticipated as confidential, it will follow the procedures for a request for designation of confidential information specified in Title 20 California Code of Regulations (CCR) Section 2505.

The Commission will make the confidentiality determination. Following this determination, the confidential information may be added to Attachment 1 to Exhibit C of the Grant Agreement No. EPC-17-049 through a Letter of Agreement. The District and Commission will not disclose information subject to an application for confidential designation except as provided in subsection (b).

- (3) When submitting products containing confidential information, the Service Provider will mark each page of any document containing confidential information as “confidential” and present it in a sealed package to the District.

The District may require the Service Provider to submit a non-confidential version of the product, if it is feasible to separate the confidential information from the non-confidential information. The Service Provider is not required to submit such products in a sealed package.

b. Disclosure of Confidential Information

The District and Commission will only disclose confidential information under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508. All confidential information that is legally disclosed by the Service Provider or any other entity will become a public record and will no longer be subject to the Commission’s confidentiality designation.

c. Waiver of Consequential Damages

In no event will the District, Commission, the California Public Utilities Commission, or the state of California be liable for any special, incidental, or consequential damages based on breach of warranty, breach of contract, negligence, strict tort, or any other legal theory for the disclosure of the Service Provider’s confidential information, even if the District has been advised of the possibility of such damages.

Damages that the District, Commission, the California Public Utilities Commission, and the state of California will not be responsible for include but are not limited to: lost profit; lost savings or revenue; lost goodwill; lost use of the product or any associated equipment; cost of capital; cost of any substitute equipment, facilities, or services; downtime; the claims of third parties including customers; and injury to property.

d. Limitations on the Service Provider's Disclosure of Products

- (1) During the Agreement, the Service Provider must receive approval from the District prior to disclosing the contents of any draft product to a third party. However, if the District or Commission make a public statement about the content of any product provided by the Service Provider and the Service Provider believes the statement is incorrect, the Service Provider may state publicly what it believes is correct.
- (2) After any document submitted has become a part of the public records of the District and/or state, the Service Provider may publish or use it at its own expense.
- (3) Except as provided in Title 20 CCR Sections 2506, 2507, and 2508, the Service Provider may not disclose any information provided to it by the District for the performance of this Agreement if the information has been designated as confidential or is the subject of a pending application for confidential designation. At the election of the District, the Service Provider, its employees, and its subcontractors must execute a confidentiality agreement provided by the District.
- (4) The Service Provider will ensure that each of its officers, employees, and subcontractors who are involved in the performance of this Agreement are informed about these disclosure limitations and will abide by them.

27. **STOP WORK.** The District may, at any time by written notice to the Service Provider, require the Service Provider to stop all or any part of the work tasks in this Agreement. Stop work orders may be issued for reasons such as a project exceeding budget, noncompliance with the standard of performance, out of scope work, project delays and misrepresentations.
- a. **Compliance.** Upon receipt of a stop work order, the Service Provider must immediately take all necessary steps to comply with the order and to minimize the incurrence of costs allocable to the work stopped.
 - b. **Canceling a Stop Work Order.** The Service Provider may resume the work only upon receipt of written instructions from the District.
28. **TERMINATION.** In addition to any other rights and remedies allowed by law, the Executive Director (President/CEO) of District may terminate this Agreement at any time with or without cause by giving thirty (30) days written notice to Service Provider of such termination and specifying the effective date thereof. In that event, all finished or unfinished documents and other materials shall at the option of District be delivered by Service Provider to the Don L. Nay Port Administration Building (located at 3165 Pacific Highway, San Diego, California 92101). Termination of this Agreement by Executive Director (President/CEO) as provided in this paragraph shall release District from any further fee or claim hereunder by Service Provider other than the fee earned for services which were performed prior to termination but not yet paid.
29. **DISPUTE RESOLUTION**
- a. If a dispute arises out of or relates to this Agreement, or the alleged breach thereof, and is not settled by direct negotiation or such other procedures as may be agreed, and if such dispute is not otherwise time barred, the parties agree to first try in good faith to settle the dispute amicably by mediation administered at San Diego, California, by the American Arbitration Association, or by such other provider as the parties

may mutually select, prior to initiating any litigation or arbitration. Notice of any such dispute must be filed in writing with the other party within a reasonable time after the dispute has arisen. Any resultant Agreements shall be documented and may be used as the basis for an amendment or directive as appropriate.

- b. If mediation is unsuccessful in settling all disputes that are not otherwise time barred, and if both parties agree, any still unresolved disputes may be resolved by arbitration administered at San Diego, California, by the American Arbitration Association, or by such other provider as the parties may mutually select, provided, however, that the Arbitration Award shall be non-binding and advisory only. Any resultant Agreements shall be documented and may be used as the basis for an amendment or directive as appropriate. On demand of the arbitrator or any party to this Agreement, sub-contractor and all parties bound by this arbitration provision agree to join in and become parties to the arbitration proceeding.
- c. The foregoing mediation and arbitration procedures notwithstanding, all claim filing requirements of the Agreement documents, the California Government Code, and otherwise, shall remain in full force and effect regardless of whether or not such dispute avoidance and resolution procedures have been implemented, and the time periods within which claims are to be filed or presented to the District Clerk as required by said Agreement, Government Code, and otherwise, shall not be waived, extended or tolled thereby. If a claim is not timely filed or presented, such claim shall be time barred and the above dispute avoidance and resolution procedures, whether or not implemented or then pending, shall likewise be time barred as to such claims.
- d. **Grant Requirements**
In the event of a dispute between the District and the Commission to the extent applicable, the terms of the Grant Agreement No. EPC-17-049,

Exhibit C, Section 15 – Disputes (attached herein as Exhibit B), would apply and are hereby incorporated by reference.

30. **PAYMENT BY DISTRICT.** Payment by the District pursuant to this Agreement does not represent that the District has made an exhaustive inspection to check the quality or quantity of the services performed by the Service Provider, made an examination to ascertain how or for what purpose the Service Provider has used money previously paid on account by the District, or constitute a waiver of claims against the Service Provider by the District. The District may in its sole discretion reject applications for payment not conforming to the requirements of the Grant Agreement No. EPC-17-049. Upon five (5) day written notice to the Service Provider, the District shall have the right to estimate the amount of expenses, miscellaneous charges, or other liabilities or increased costs and to cause the Service Provider to pay the same; and the amount due the Service Provider under this Agreement or the whole or so much of the money due or to become due to the Service Provider under this Agreement as may be considered reasonably necessary by the District shall be retained by the District until such expenses, miscellaneous charges, or other liabilities or increased costs shall have been corrected or otherwise disposed of by the Service Provider at no expense to the District. If such expenses, miscellaneous charges, or other liabilities or increased costs are not corrected or otherwise disposed of at no expense to the District prior to completion date of the Agreement, the District is authorized to pay for such expenses, miscellaneous charges, or other liabilities or increased costs from the amounts retained as outlined above or to seek reimbursement of same from the Service Provider. It is the express intent of the parties to this Agreement to protect the District from loss because of conduct by or on behalf of the Service Provider.

31. **COMPLIANCE WITH PREVAILING WAGE LAWS (IF APPLICABLE)**
 - a. Service Provider acknowledges and agrees that it is the sole and exclusive responsibility of Service Provider to: (a) ensure that all persons and/or entities (including, but not limited to, Service Provider or

Subcontractors) who provide any labor, services, equipment and/or materials (collectively, "Services") in connection with any work shall comply with the requirements of California's and any other prevailing wage laws ("PWL") to the extent such laws are applicable and (b) determine whether any Services are subject to the PWL by obtaining a determination by means that do not involve the District.

- b. Certified Payrolls. Service Provider acknowledges and agrees that it is the sole and exclusive responsibility of the Service Provider to ensure that all certified payrolls are provided to the District. Service Provider shall submit certified payrolls electronically via the software LCPtracker.
- (1) LCPtracker is a web-based system, accessed on the World Wide Web by a web browser. Service Provider will be given a Log-On identification and password to access the San Diego Unified Port District's reporting system upon Service Provider's request.
 - (2) The use of LCPtracker by the Service Provider is mandatory. Access to LCPtracker will be provided at no cost to the Service Provider.
 - (3) In order to utilize LCPtracker, the Service Provider needs a computer and internet access. A digital camera and a scanner may be useful. For more information, go to www.lcptracker.com. To Login, go to www.lcptracker.net and from the homepage, select LOGIN and enter the Username and Password that will be provided to you by the District upon Service Provider's request.
 - (4) Use of the system will entail data entry of weekly payroll information including; employee identification, labor classification, total hours worked and hours worked on this project, wage and benefit rates paid etc. The Service Provider's payroll and accounting software

might be capable of generating a 'comma delimited file' that will interface with the software.

- (5) Service Provider must require all lower-tier sub participants the mandatory requirement to use LCPtracker to provide any required labor compliance documentation. Lower-tier sub participants will be given a Log-On identification and password from the Service Provider.
- (6) Training options can be provided to the Service Provider upon request.

c. Grant Requirements.

(1) Requirement

Projects funded by the Energy Commission often involve construction, alteration, demolition, installation, repair, or maintenance work over \$1,000. Such projects might be considered "public works" under the California Labor Code (See California Labor Code Section 1720 et seq. and Title 8 California Code of Regulations, Section 16000 et seq.). Public works projects require the payment of prevailing wages. Prevailing wage rates can be significantly higher than non-prevailing wage rates.

(2) Determination of Project's Status

Only the California Department of Industrial Relations (DIR) and courts of competent jurisdiction may issue legally binding determinations that a particular project is or is not a public work. If the Service Provider is unsure whether the project funded by the Agreement is a "public work" as defined in the California Labor Code, it may wish to seek a timely determination from DIR or an appropriate court. As such processes can be time consuming, it

may not be possible to obtain a timely determination before the date for performance of the Agreement.

Service Provider is fully responsible for complying with all California public works requirements, including but not limited to payment of prevailing wage. As a material term of this grant, the Service Provider must either:

- (a) Timely obtain a legally binding determination from DIR or a court of competent jurisdiction before work begins on the project that the proposed project is not a public work; or
- (b) Assume that the project is a public work and ensure that:
 - 1) Prevailing wages are paid unless and until DIR or a court of competent jurisdiction determines that the project is not a public work;
 - 2) The project budget for labor reflects these prevailing wage requirements; and
 - 3) The project complies with all other requirements of prevailing wage law, including but not limited to keeping accurate payroll records and complying with all working hour requirements and apprenticeship obligations.

California Prevailing Wage law provides for substantial damages and financial penalties for failure to pay prevailing wages when such payment is required.

(3) Subcontractors and Flow-down Requirements

The Service Provider will ensure that its subcontractors also comply with the public works/prevailing wage requirements above. The Service Provider will ensure that all agreements with its

subcontractors to perform work related to this Project contain the above terms regarding payment of prevailing wages on public works projects. The Service Provider is responsible for any failure of its subcontractors to comply with California prevailing wage and public works laws.

(4) Indemnification and Breach

Any failure of the Service Provider or its subcontractors to comply with the above requirements will constitute breach of this Agreement which excuses the Commission's performance of this Agreement at the Commission's option, and will be at the Service Provider's sole risk. In such a case, the Commission will refuse payment to the Service Provider of any amount under this award and the Commission will be released, at its option, from any further performance of this Agreement or any portion thereof. The Service Provider will indemnify the District and the Energy Commission and hold it harmless for any and all financial consequences arising out of or resulting from the failure of the Service Provider and/or any of its subcontractors to pay prevailing wages or to otherwise comply with the requirements of prevailing wage law.

(5) Budget

The Service Provider's budget on public works projects must indicate which job classifications are subject to prevailing wage. For detailed information about prevailing wage and the process to determine if the proposed project is a public work, the Service Provider may wish to contact DIR or a qualified labor attorney for guidance.

(6) Covered Trades

For public works projects, the Service Provider may contact DIR for a list of covered trades and the applicable prevailing wage.

(7) Questions

If the Service Provider has any questions about this contractual requirement or the wage, record keeping, apprenticeship, or other significant requirements of California prevailing wage law, the Service Provider should consult DIR and/or a qualified labor attorney before entering into this Agreement.

(8) Certification

The Service Provider will certify to the District and Energy Commission on each payment request form either that: (a) prevailing wages were paid to eligible workers who provided labor for work covered by the payment request and the Service Provider and all contractors and subcontractors otherwise complied with all California prevailing wage laws; or (b) the project is not a public work requiring the payment of prevailing wages. In the latter case, the District will provide competent proof of a DIR or court determination that the project is not a public work requiring the payment of prevailing wages.

Prior to the release of any retained funds under this Agreement, the District will submit to the Energy Commission the above-described certificate signed by the District and all contractors and subcontractors performing public works activities on the project. Absent this certificate, the District will have no right to any funds under this Agreement, and Commission will be relieved of any obligation to pay any funds.

32. **SERVICE PROVIDER/CONTRACTOR REGISTRATION PROGRAM (IF APPLICABLE)**

- a. In accordance with the provisions of Labor Code section 1771.1. (a) A contractor or subcontractor shall not be qualified to bid on; be listed in a

bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

- b. No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].
 - c. No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.
 - d. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.
33. **CAPTIONS.** The captions by which the paragraphs of this Agreement are identified are for convenience only and shall have no effect upon its interpretation.

34. **EXECUTIVE DIRECTOR'S SIGNATURE.** It is an express condition of this Agreement that said Agreement shall not be complete nor effective until signed by either the Executive Director (President/CEO) or Authorized Designee on behalf of the District and by Authorized Representative of the Service Provider.

a. Submit all correspondence regarding this Agreement to:

Renée Yarmy
Planning & Green Port, Energy
San Diego Unified Port District
P.O. Box 120488
San Diego, CA 92112-0488
619-686-8162
ryarmy@portofsandiego.org

b. The Service Provider's Authorized Representative assigned below has the authority to authorize changes to the scope, terms and conditions of this Agreement:

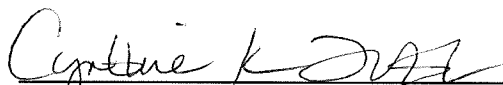
Rita Station
Electric Power Research Institute, Inc. (EPRI)
942 Corridor Park Blvd.
Knoxville, TN 37932
O: 865-218-8032
rstation@epri.com

- c. Written notification to the other party shall be provided, in advance, of changes in the name or address of the designated Authorized Representative.

SAN DIEGO UNIFIED PORT DISTRICT

**ELECTRIC POWER RESEARCH
INSTITUTE, INC.**

Jason H. Giffen
Assistant Vice President
Planning & Green Port



Cynthia K. Toth
Manager, Government Contracts

Approved as to form and legality:
GENERAL COUNSEL

By: Assistant/Deputy

A manually signed copy of this Agreement transmitted by email or any other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement.

ATTACHMENT A

SCOPE OF SERVICES

San Diego Unified Port District

1. Background

The District received a grant for Microgrid Infrastructure at Tenth Avenue Marine Terminal (TAMT) by the Commission through the Grant Funding Opportunity (GFO-17-302) to Demonstrate the Business Case for Advanced Microgrids in Support of California's Energy and Greenhouse Gas Policies grant. To support the implementation of the project, the Service Provider has been selected to execute the specialized tasks identified below, which includes assistance with the design review and modeling, testing and evaluation, and knowledge transfer activities required for the microgrid project.

2. Objectives

The objectives of the overall Commission project are to:

- a. Demonstrate the operational and financial viability of a solar + storage microgrid at TAMT, a marine omni terminal.
- b. Assess islanding capabilities under various battery storage system states of charge and solar generation scenarios to provide 12 hours of operation independent of the grid.
- c. Reduce greenhouse gas (GHG) emissions from on-site electric power use by 100% relative to baseline conditions.
- d. Implement energy efficiency measures to reduce electricity use by greater than 20%.
- e. Use solar + storage microgrid to reduce annual energy costs by more than \$250,000.
- f. Ratepayer cost savings, environmental benefits to the community, and benefits to the utility through demand response.
- g. Develop an approach, lessons learned, and business case to support replicability at other facilities.

3. Tasks

The scope of this agreement includes the following tasks.

a. TASK 1: General Project Tasks

In accordance with the technical tasks outlined below, Service Provider shall support the following as required in Grant Agreement EPC-17-049 (attached herein as Exhibit B) and coordinated with the District Project Manager:

- (1) Overall project management;
- (2) Project documentation, reporting, and outreach; and
- (3) Attendance at meetings, including the Technical Advisory Committee meetings, Critical Project Review (CPR) meetings, and regular project coordination.

Service Provider shall:**(1) Subtask 1.2 Kick-off Meeting**

Service Provider will participate in Kick-off meeting

(2) Subtask 1.3 Critical Project Review (CPR) Meetings

Service Provider shall contribute to:

- (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.
- (b) 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).
- (c) Attend the CPR meeting.
- (d) Present the relevant components of the CPR Report and any other required information at each CPR meeting.

(3) Subtask 1.4 Final Meeting

Service Provider will meet with Energy Commission staff and contribute to presentation of project findings, conclusions, and recommendations.

(4) Subtask 1.5 Progress Reports and Invoices

Service Provider will submit a monthly Progress Report that includes:

- (a) 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.
- (b) Submit a monthly or quarterly Invoice that follows the instructions in the "Payment of Funds" section of the terms and conditions.

(5) Subtask 1.6 Final Report

Service Provider will contribute to Final Report outline and Final Report

b. TASK 2: Microgrid Design – Cyber Security Architecture Assessment

The goal of this task is to design the microgrid. This includes preliminary assessment and design, as well as (1) system design modeling; (2) completion of final designs for lighting conversion, roof retrofits, electrical infrastructure upgrades, solar photovoltaic (PV) system, and battery storage system; (3) microgrid integration; (4) third party review of designs; and (5) obtain necessary permits from the City of San Diego and SDG&E for Rule 21 compliance.

Service Provider shall:**(1) Subtask 2.1 Review System Modeling and Optimization**

(a) Service Provider will review and provide feedback on the *System Modeling and Optimization Presentation* including the following topics:

- 1) Identification of system loads
- 2) Identification of different DER mixes and battery sizes to optimize interruption, investment, and utility costs
- 3) Identification of different battery operation strategies
- 4) Identification of reliability benefits during power outages
- 5) Modeling results

(b) Service Provider will review and provide feedback on the *Microgrid Design and Engineering Presentation* including the following topics:

- 1) Upgrades to the 12-kV distribution system required to support microgrid functionality, including:
 - a) The primary switchgear at the point of interconnection with SDG&E will be modified to provide the necessary protection schemes for SDG&E's Rule 21 interconnection requirements.
 - b) An existing, vault-mounted sectionalizing switch will be replaced to provide a connection point to the 12-kV distribution system.
 - c) A new, 480V switchboard will be provided to connect the solar PV and energy storage systems.
- 2) Microgrid component integration, including:
 - a) Rooftop solar PV system to meet lighting, security, warehouse, dry bulk, and fuel storage facility loads.
 - b) Battery storage system.
 - c) Centralized microgrid controller that will monitor the state of the 12-kV system.
 - d) Complete microgrid integration to meet needs for grid-tied and islanded modes of operation.

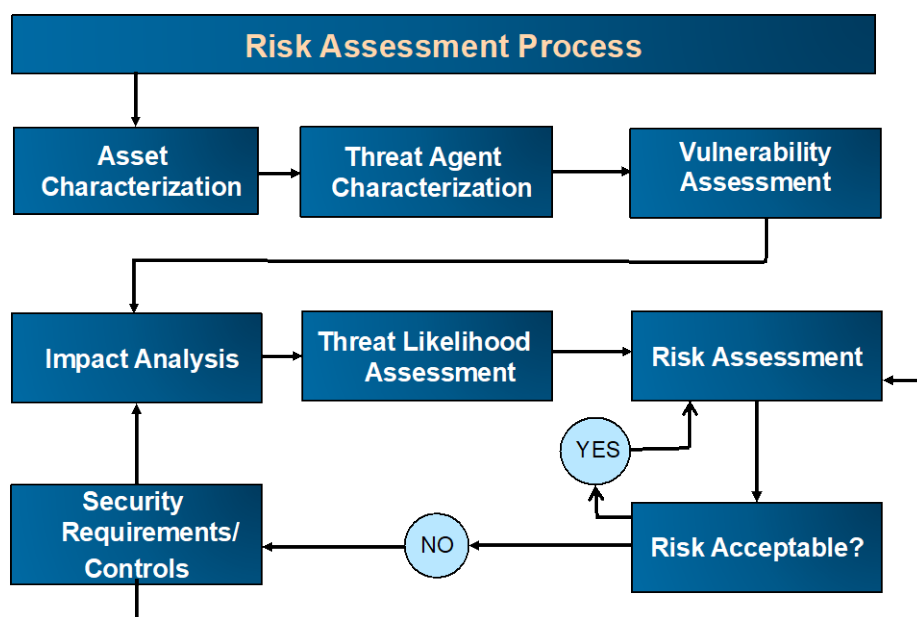
(c) Service Provider will review and provide feedback the *Microgrid Design Review Presentation*.

(2) Subtask 2.2 Cyber Security Architecture Assessment and Development Requirements

(a) Service Provider's task is limited to the development and design of a Cyber Security Architecture Assessment that identifies the

controls for the microgrid project. This assessment will address the possible connection points between the microgrid and the existing District's infrastructure. This assessment will not extend to existing District infrastructure beyond the scope of the microgrid project.

- (b) Service Provider will prepare and provide a Cyber Security Architecture Assessment to include:
 - 1) Identifying key assets; characterizing potential threats; assessing vulnerabilities and impacts; assessing threat likelihood; determining risk; and recommending security controls.
- (c) Service Provider will utilize various industry standards¹ to perform the high-level risk assessment to identify the security risks associated with the microgrid project. The diagram below demonstrates the workflow for this assessment:



- (d) Service Provider will identify the security requirements for the microgrid by working with the District and the microgrid vendor(s). Service Provider will leverage prior cyber security recommendations from the California Solar Initiative², the National

¹ Electric Power Research Institute, "Cyber Security Strategy Guidance for the Electric Sector," available online at: <https://www.epri.com/#/pages/product/000000000001025672/?lang=en-US>, May 30, 2012.

² J. Henry, et al., "Cyber Security Requirements and Recommendations for CSI RD&D Solicitation #4 Distributed Energy Resource Communications," California Solar Initiative Report, October 2015.

Electric Sector Cybersecurity Organization Resource (NESCOR)³, and the NISTIR 7628 to identify the appropriate security controls.

- (e) Service Provider will provide the District with a draft and final Cyber Security Architecture Assessment Report.
- (f) Service Provider will support the District's bidding process for the microgrid project, as needed, to ensure consistency with the cyber security requirements identified in section (d) above, including: technical advisory during procurement and solicitation processes; assisting in preparing addendums to the solicitation documents; review and provide input to the District on any received bids and provide feedback to the District based on the RFP requirements and vendor responses; and review submittals of the equipment to be used to ensure consistency with cyber security requirements.
- (g) **Assumptions:**
The following information and resources must be provided by the District to Service Provider's cyber security team to start the work on Subtask 2.2:
 - 1) Design of communication architecture for the microgrid
 - 2) Data (types and criticalities) transferred between devices, systems and/or sites
 - 3) Communication protocols used
 - 4) Regulatory requirements applied to the microgrid and its operations related to cyber security, physical security or privacy
 - 5) District's internal policy, guidelines, procedures applicable to the microgrid and its operations in relations to the cyber security, physical security or privacy
 - 6) A technical resource who are familiar with the District's existing infrastructure and their connections to the microgrid to provide further information necessary for security assessment.

The expected period of performance for subtask 2.2 is 3 months from the date that the information above is fully available to the Service Provider cyber security team, excluding the time for the review of draft report by the District.

³ "Cyber Security for DER Systems," National Electric Sector Cybersecurity Organization Resource, July 2013.

c. TASK 3: Microgrid Construction

The goal of this task is to construct the microgrid, inclusive of energy efficiency upgrades and improvements to supporting infrastructure, as well as to install and commission the microgrid.

Service Provider shall:

- (1) Contribute to the review and provide feedback on the *Commissioning Presentation*, to include a review of the optimization of load shifting/peak shaving, demand response, and islanded operations of the microgrid system.
- (2) Participate in the CPR Meeting #2.
- (3) Contribute to the CPR Report #2, as needed.

d. TASK 4: Operation and Maintenance

As a best-effort, Service Provider will support the District's effort to review the Operations and Maintenance Manual prepared by the microgrid vendor(s) in relation to the cyber security requirements identified in Task 2.2.

e. TASK 5: Field Testing and Evaluation

The goal of this task is to perform field testing and evaluation of the microgrid functionality with a focus on the project's four distributed energy resources elements. This task will be led by Service Provider and supported by UCSD and Burns & McDonnell. Service Provider will conduct the following tasks.

Service Provider shall:

(1) Subtask 5.1 Technical Support/Review of Measurement and Verification

- (a) Service Provider will develop the Measurement and Verification Plan. The plan will assess: (1) energy efficiency savings; (2) solar + storage operational and financial performance; (3) islanded operations performance; (4) demand response financial performance; and (5) installation issues, microgrid performance and operational constraints, and ability of the system to respond to grid emergencies. The plan will include, but is not limited to:
 - 1) Description of the systems to be monitored.
 - 2) Description of the data collection methodology, including:
 - i. Data collection protocols
 - ii. Data collection schedule
 - 3) Field demonstration of islanded operations, including:

- i. Duration of simulated islanded operation
 - ii. Environmental conditions
 - iii. Target operational loads
 - 4) Justification for the tests
 - 5) Expected performance
 - 6) Plans for documentation of technical, environmental and economic data, including, but not limited to:
 - i. Installation issues
 - ii. Operational constraints
 - iii. Operational performance, including duration of islanded mode capability
 - iv. Response to grid emergencies.
 - v. Parameters that will measure and document successes, lessons learned, and best practices for the above.
- (b) Service Provider will at no additional cost to the District install or cause the installation through an approved third-party contractor and otherwise provide a complete data monitor system allowing importation of metering, system parameters and other devices including the microgrid controller. The third-Party contractor must be acceptable to the District and in compliance with all applicable terms and conditions of this Agreement. The monitor will collect data and transport the data via modem to Service Provider's data server. Service provider will store the data during the course of the project and periodically inspect and provide the data for analysis.
- (c) **Assumptions:**
 In order to execute on the Measurement and Verification Plan Service Provider will require certain conditions to be met, particularly related to access to monitoring points/devices, as well as access to information from project partners and/or external sources. In particular:
- 1) Energy efficiency – measures implemented, load shape change, projected cost savings [Burns & McDonnell, District]
 - 2) Microgrid electric meter at point of common coupling (PCC) – power, energy, and frequency per phase [integrator, microgrid controller vendor]
 - 3) Utility meter readings at site – power, energy, and frequency per phase [san Diego Gas & Electric, District]
 - 4) Microgrid Controller – status and other inputs/outputs [microgrid controller vendor]

- 5) Battery meter or inverter – temps, frequency, power and energy per phase, DC power and current, status [integrator, battery vendor, inverter vendor]
 - 6) PV meter or inverter – power, energy, and frequency per phase [integrator, inverter vendor]
 - 7) Site requirements for Service Provider's data logging equipment – 120V power, access to communication cables (e.g. CAT5e, hard wired) and conduits, cellular accessible location.
- (d) Service Provider will provide the collection of data and technical support on the operational benefits of the microgrid monthly over the 12-month demonstration period, including:
- 1) **Annual electricity savings:** The primary driver of end user energy reductions at the terminal will be the conversion of lighting from HPS to LED fixtures. Baseline annual energy usage prior to lighting conversion will be compared to usage following conversion and optimization.
 - 2) **GHG emission reductions:** GHG emissions reductions will be calculated based on reductions in energy use from efficiency measures as well as the difference in the percentage of renewable energy powering the terminal from the solar PV and energy storage system as compared to that of SDG&E provided power.
 - 3) **Energy cost reductions:** Modeled projections of energy costs will be compared to the District's actual utility bills and Power Purchase Agreement (PPA) costs. The PPA provider will perform this assessment and provide a report to the District monthly to document energy cost reductions.
 - 4) **Peak load reduction and shifting:** Financial benefits of energy storage use optimization will be evaluated under peak shaving and load shifting scenarios.
 - 5) **Net load shape (duck curve mitigation):** Net load shape will be modeled for a solar PV only installation and for solar + storage installation to assess the potential for the project to mitigate the duck curve. This baseline analysis will be used to evaluate actual performance and usage of the system during the evaluation period.
 - 6) **Security and safety:** Although the primary purpose of the microgrid is energy security, it is critical that the microgrid not introduce new vulnerabilities to the terminal. The Cyber Security Architecture Assessment developed in collaboration with the District's Information Technology department (referenced in Task 2 above) will be conducted.

- (e) Service Provider will review the monthly *Microgrid Data Reports* on field data collected for the one-year testing and evaluation period, that includes, but is not limited to:
 - 1) Technical data
 - 2) Operational data
 - 3) Economic data
 - 4) Environmental data
- (f) Service Provider will prepare a draft and final *Measurement and Verification Report* at the conclusion of the one-year testing and evaluation period.

(2) **Subtask 5.2 Cyber Security Test Plan and Testing Assessment**

- (a) Develop a draft and final Cyber Security Test Plan, to be reviewed by the District and the microgrid vendor(s) (as applicable), which identifies system components to be tested and to develop relevant security test procedures. This task includes performing component and system security testing and the execution of test procedures. The testing of the microgrid will determine the respective vulnerabilities to the main types of attacks per the test procedure and Test Plan document, which will inform the Cyber Security Testing Results Report.
- (b) Develop a draft and final Cyber Security Testing Results Report based on the results from the test procedure for the District and the microgrid vendor(s) that documents security testing results, the microgrid's security posture, and includes recommendations to remediate vulnerabilities. The objective of the Testing Results Report is to document the in-depth analysis of the microgrid's security posture with a focus on system and network vulnerabilities. Results from the Testing Assessment will be used to determine and recommend mitigations for the microgrid.
- (c) **Assumptions:**
 - 1) An appropriate physical and/or logical access to the microgrid and related systems must be provided for Service provider cyber security team (or a contractor working on behalf of Service Provider cyber security team) to perform this task.
 - 2) There is some chance the test may disrupt the normal operation of the microgrid. Therefore, it is highly recommended that the security testing is conducted within one to three months before the full commissioning of the microgrid.
 - 3) The expected timeline is:

- a) Cyber Security Test Plan - One month from the date that the microgrid implementation is complete.
- b) Cyber Security Test Execution – Two weeks from the date that the system is available for security testing and necessary access is provided.
- c) Cyber Security Testing Results Report - Two months from the completion of the testing.
- 4) This task does not include penetration testing and Service Provider will not attempt to compromise the system during the testing. The testing will focus on identifying vulnerabilities that can potentially compromise the system by an adversary.

f. TASK 6: Evaluation of the Project Benefits

The goal of this task is to report the benefits resulting from this project. Service Provider will review the four Project Benefits Questionnaires developed by UCSD that correspond to the four main intervals of the Grant Agreement EPC-17-049. Service Provider will conduct the following tasks:

Service Provider shall:

- (1) Service Provider will contribute to the completion of the following Project Benefits Questionnaires: (1) Kick-off Meeting Benefits Questionnaire; (2) Mid-term Benefits Questionnaire; (3) Final Meeting Benefits Questionnaire; and (4) Three Years Beyond the Term End Date Benefits Questionnaire.
- (2) Provide all key assumptions used to estimate projected benefits, including a comparison of project expectations and performance, documentation of whether the goals and objectives of the project have been met and what improvements are needed. Refer to Grant Agreement EPC-17-049 – Exhibit A (attached herein as Exhibit B) for additional details regarding the core components of the Project Benefits Questionnaire.
- (3) Service Provider will contribute to responses to CAM questions regarding responses to the questionnaires.
- (4) Service Provider will contribute to the *Business Case Report*, as appropriate, which discusses the following:
 - (a) How the microgrid system meets the critical needs of the intended end user/operator.
 - (b) Define why the specific configuration has a high probability of being replicated in the future without EPIC funds.
 - (c) Other areas as determined by the CAM.

g. TASK 7: Technology / Knowledge Transfer Activities

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. Service Provider will contribute to the development of the

Technology / Knowledge transfer activities led by UCSD by contributing to the following tasks.

Service Provider shall:

- (1) Review and contribute to the draft and final Initial Fact Sheet
- (2) Review and contribute to the draft and final Final Project Fact Sheet
- (3) Review and contribute to draft and final Presentation Materials
- (4) Provide High Quality Digital Photographs/Graphics, as applicable to Service Provider's tasks as scoped
- (5) Review and contribute to the draft and final Technology/Knowledge Transfer Plan
- (6) Review and contribute to the draft and final Technology/Knowledge Transfer Report

4. Invoicing and Progress Reporting

The work under this Agreement will be performed in accordance with Commission provisions under Grant Agreement EPC-17-049 between the District and the Service Provider (attached herein as Exhibit B [refer to the Grant Agreement, Exhibit A – Scope of Work, Subtask 1.5 – Progress Reports and Invoices **and** also Exhibit A – Scope of Work, Attachment A-1 – Project Schedule, Subtask 1.5])

The Service Provider is required to prepare monthly Excel invoicing and progress reporting per the samples provided in in the attached Exhibits D & E.

Amounts per task have been approved per the Grant Agreement EPC-17-049. If these amounts need to be adjusted, Service Provider will obtain prior approval from the District Project Manager (via a written Amendment) and the Commission before incurring expenditures.

5. Grant Agreement

Service Provider shall comply with all applicable terms, conditions and requirements of the Grant Agreement No. EPC-17-049, attached herein as Exhibit B.

Grant Requirements

- a. This project has been approved for financial assistance under the California Energy Commission's solicitation GFO-17-302 Demonstrate Business Case for Advanced Microgrids in Support of California's Energy and GHG Policies to Demonstration of Standardized High-DER Penetration, Renewable-Based, Resilient and Commercially Viable Microgrids Located at California Military Bases, Ports, and Native American Tribes within IOU Service Territories. The Grant Agreement (No. EPC-17-049) is on file in the office of the District Clerk as Document No. 68672, dated July 12, 2018.
- b. Service provider agrees to comply with applicable provisions of Grant Agreement No. EPC-17-049 including, but not limited to Exhibit C Section 7 – Contracting

and Procurement Procedures; Exhibit C Section 10 Prevailing Wage; Exhibit C Section 26 Confidentiality; Exhibit C Section 24 Certifications and Compliance; the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards located at 2 C.F.R. Part 200.

6. Anticipated Schedule

Dates identified are subject to change based on project progress or at the discretion of the CAM or District Project Manager.

Task	Description	Fiscal Year	Agreement EPC-17-049 Due Date
1	General Project Tasks	FY18/19 – FY22/23	Concurrent with the Project Schedule and per the Grant Agreement EPC-17-049
2	Microgrid Design – System Modeling and Optimization Presentation	FY18/19 – FY20/21	<ul style="list-style-type: none"> Review and provide feedback on the System Modeling and Optimization Presentation Final, Microgrid Design and Engineering Presentation, and the Microgrid Design Review Presentation Prepare the Draft and Final Non-confidential Cyber Security Architecture Assessment Support District's budding process for microgrid
3	Microgrid Construction	FY 19/20 – FY20/21	<ul style="list-style-type: none"> Concurrent with the Construction Phase, contribute to the Commissioning Presentation and participate in CPR Meeting #2
4	Operations & Maintenance	FY 20/21 – FY 21/22	<ul style="list-style-type: none"> Service Provider to support to review Operation and Maintenance Manual and support the District's review of the cyber security requirements.
5	Field Testing & Evaluation	FY 18/19 – FY 22/23	<ul style="list-style-type: none"> Develop the following: <ul style="list-style-type: none"> Draft Measurement and Verification Plan: 2/7/2020 Final Measurement and Verification Plan: 3/6/2020 Draft Final Measurement and Verification Report: 6/30/2021 Final Final Measurement and Verification Report: 9/22/2021 Prepare a draft and final Cyber Security Test Plan and Testing Assessment Prepare a draft and final Cyber Security Testing Results Report Review monthly Microgrid Data Reports
6	Evaluation of Project Benefits	FY 18/19 – FY 22/23	<ul style="list-style-type: none"> Review and provide comment on the following deliverables: <ul style="list-style-type: none"> Kick-off Meeting Benefits Questionnaire: 10 days after the Kick-

			off Meeting (Completed) <ul style="list-style-type: none"> ○ Mid-term Benefits Questionnaire: 6/12/2020 ○ Final Meeting Benefits Questionnaire: 11/30/2022 ○ Draft Business Case Report: 6/30/2021 ○ Final Business Case Report: 9/22/2021
7	Technology/Knowledge Transfer	FY 18/19 – FY 22/23	Review and provide comment on the following deliverables: <ul style="list-style-type: none"> • Draft Technology/Knowledge Transfer Plan: 3/15/2019 • Final Technology/Knowledge Transfer Plan: 4/12/2019 • Draft Presentation Materials: 6/30/2021 • Final Presentation Materials: 9/22/2021 • Draft Technology/Knowledge Transfer Report: 7/1/2022 • Final Technology/Knowledge Transfer Report: 7/29/2022

**ATTACHMENT B
COMPENSATION & INVOICING
San Diego Unified Port District**

1. COMPENSATION

- a. For the satisfactory performance and completion of the services under this Agreement, District shall pay Service Provider compensation as set forth hereunder.
 - (1) Service Provider shall be compensated and reimbursed by District on the basis of invoices submitted each month for services performed during the preceding month. Invoice(s) shall follow the requirements of the Grant Agreement No. EPC-17-049, attached herein as Exhibit B.
 - (2) Services shall be invoiced in accordance with Rate Schedules below and according to the Invoice Instructions, attached herein as Exhibit C.

*****END OF PAGE*****

Category Budget
(see instructions)

Name of Organization	Electric Power Research Institute, Inc.
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☐ Small
 ☐ Micro Business
 ☐ Disabled Veteran Business Enterprise (DVBE)
☐ Contractor/Recipient
 ☒ Subcontractor

Cost Category	Energy Commission Reimbursable Share	EPRI Match Share	Total
Direct Labor	\$ 125,666	\$ -	\$ 125,666
Fringe Benefits	\$ 117,016	\$ -	\$ 117,016
Total Labor	\$ 242,682	\$ -	\$ 242,682
Travel	\$ 15,000	\$ -	\$ 15,000
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ -	\$ -	\$ -
Subcontractors	\$ -	\$ -	\$ -
Total Other Direct Costs	\$ 15,000	\$ -	\$ 15,000
Indirect Costs	\$ 162,315	\$ -	\$ 162,315
Profit (not allowed for grant recipients)	\$ -	\$ -	\$ -
Total Indirect and Profit	\$ 162,315	\$ -	\$ 162,315
Grand Totals	\$ 419,997	\$ -	\$ 419,997
Amount of funds to be Spent in California**	\$ 419,997		
Percentage of Funds to be spent in California	1.000		

Direct Labor (Unloaded)
(see instructions)

Electric Power Research Institute, Inc.

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
Galen Rasche	Technical Executive/ Program Manager	\$ 134.28	80	\$ 7,753.00		\$ 7,753
Dean Weng	Engineer/Scientist	\$ 64.74	263	\$12,231.00		\$ 12,231
Candace Suh-Lee	Technical Leader / Project Manager	\$ 107.68	172	\$ 16,041.00		\$ 16,041
Miles Evans	Engineer/Scientist	\$ 64.74	80	\$ 3,550.00		\$ 3,550
Ramakrishnan Ravikumar	Engineer/Scientist	\$ 64.74	200	\$ 9,183.00		\$ 9,183
Jouni Peppanen	Technical Leader / Project Manager	\$ 107.68	80	\$ 4,816.00		\$ 4,816
Evan Giarta	Engineer/Scientist	\$ 64.74	200	\$ 9,504.00		\$ 9,504
Gerardo Trevino	Technical Leader / Project Manager	\$ 107.68	172	\$ 12,873.00		\$ 12,873
Christine Lee	Engineer/Scientist	\$ 64.74	200	\$ 10,546.00		\$ 10,546
Nicholas Tumilowicz	Technical Leader / Project Manager	\$ 107.68	30	\$ 2,541.00		\$ 2,541
Bienvenido Clarin	Technical Leader / Project Manager	\$ 107.68	75	\$ 4,522.00		\$ 4,522
Giovanni Damato	Technical Leader / Project Manager	\$ 107.68	50	\$ 3,819.00		\$ 3,819
Ajit Renjit	Engineer/Scientist	\$ 64.74	240	\$ 12,720.00		\$ 12,720
Tanguy Hubert	Technical Leader / Project Manager	\$ 107.68	200	\$ 12,437.00		\$ 12,437
TBD	Engineer/Scientist	\$ 64.74	10	\$ 446.00		\$ 446
TBD	Engineer/Scientist	\$ 64.74	10	\$ 545.00		\$ 545
TBD	Engineer/Scientist	\$ 64.74	10	\$ 575.00		\$ 575
TBD	Technical Leader / Project Manager	\$ 107.68	10	\$ 718.00		\$ 718
TBD	Technical Leader / Project Manager	\$ 107.68	10	\$ 846.00		\$ 846
Hourly Direct Labor Totals				\$ 125,666	\$ -	\$ 125,666

Monthly Salary Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
		\$ -		\$ -	\$ -	\$ -
Monthly Direct Labor Totals				\$ -	\$ -	\$ -

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ 125,666	\$ -	\$ 125,666

Fringe Benefits
(see instructions)

Electric Power Research Institute, Inc.

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
DL - All Classifications	115.00%	\$ 125,666	\$ 117,016	\$ -	\$ 117,016
* 115% is the maximum rate. The budget was priced based on EPRI currently approved rates. EPRI's indirect billing rates fluctuate year-over-year and to allow for any increases, the indirect cost rates on this form are caps, or the maximum amount allowed to be billed. EPRI will only bill for actual indirect costs incurred, not to exceed the rates specified in these forms. Fringe rate is calculated based on all payroll expenses, employee benefit plans, variable compensation of each individual employee, and employee occupancy costs.		\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ 125,666	\$ 117,016	\$ -	\$ 117,016

Travel
(see instructions)

Electric Power Research Institute, Inc.

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
2,5,6,7	Dean Weng	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 4 trips)	Site Visit	\$ 5,000	\$ -	\$ 5,000
2,5	Candace Suh-Lee	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	\$ 2,500	\$ -	\$ 2,500
2,5	Gerardo Trevino	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	\$ 2,500	\$ -	\$ 2,500
2,5	Ajit Renjit	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	\$ 2,500	\$ -	\$ 2,500
2,5	Galen Rache	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	\$ 2,500	\$ -	\$ 2,500
					\$ -	\$ -
					\$ -	\$ -
Total:				\$ 15,000	\$ -	\$ 15,000

Equipment
(see instructions)

Electric Power Research Institute, Inc.

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

Materials & Miscellaneous

(see instructions)

Electric Power Research Institute, Inc.

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

Subcontracts

(see instructions)

Electric Power Research Institute, Inc.

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/ SB/MB/None	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

Indirect Costs and Profit

(see instructions)

Electric Power Research Institute, Inc.

Indirect Cost(s)

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
Overhead	65.00%	Direct Labor + Fringe Benefits	\$ 242,682	\$ 140,027	\$ -	\$ 140,027
Other Direct Costs Rate	8.00%	Travel + Equipment + Materials & Misc. + Subcontractors	\$ 15,000	\$ 900	\$ -	\$ 900
G&A	10.00%	Direct Labor + Fringe Benefits + Travel + Equipment + Materials & Misc. + Subcontractors	\$ 257,682	\$ 21,388	\$ -	\$ 21,388
	0.00%		\$ -	\$ -	\$ -	\$ -
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ 162,315	\$ -	\$ 162,315

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
0.00%		\$ -	\$ -	\$ -	\$ -
Total:			\$ -	\$ -	\$ -

2. **INVOICING**

- a. **Progress Reports and Invoices.** Service Provider shall: (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 Service Provider is required to prepare monthly Excel invoicing and progress reporting per the samples provided in Exhibit D (Invoice Template) & Exhibit E (Content & Format of Progress Report), attached herein.

Amounts per task have been approved per the Grant Agreement EPC-17-049. If these amounts need to be adjusted, Service Provider shall obtain prior approval from the District Project Manager (via a written Amendment) and the Commission before incurring expenditures.

(1) **The Service Provider shall:**

- (a) Submit a monthly *Progress Report* to the District. Each progress report must:
 - 1) 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 Exhibit E – Content & Format of Progress Report for the recommended specifications.
- (b) 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.

- b. **Payment Request Format.** Each request for payment shall consist of, but not limited to, the following:

- (1) An invoice that includes a list of Incurred and Paid Costs, per the Commission required Invoice Template (Excel template provided by the District's project manager), and as specified in Exhibit C (Invoice Instructions) and Exhibit D (Invoice Sample). This includes all backup documentation as required by the Commission, at the time of invoice submittal, such as time cards, vendor invoices, and proof of payment (e.g., cancelled checks, receipts).

- c. Service Provider shall include the following information with each invoice submitted for payment by District, in addition to the information required in Section 2.a and 2.b, above:
- (1) Agreement No. 272-2018KC
 - (2) The following certification phrase, with printed name, title and signature of Service Provider's project manager or designated representative:

"I certify under penalty of perjury that the above statement is just and correct according to the terms of Document No. _____, and that payment has not been received."
 - (3) Dates of service provided
 - (4) Date of invoice
 - (5) Invoice number per the District Project Manager's direction, to align with Commission invoicing requirements.
- d. District shall, at its discretion, return to Service Provider, without payment, any invoice, which has been submitted without all required information as listed above.
- e. Service Provider shall submit all drafted *electronic* invoices within twenty (20) calendar days of completion of work. Drafted electronic invoices shall be reviewed and approved by both the District and Commission. Drafted invoices shall be emailed to ryarmy@portofsandiego.org for review.
- f. Should District contest any portion of an invoice, District will notify the Service Provider and advise of corrections needed to be resubmitted within five (5) business days.
- g. Upon approval of the draft invoice, the District shall send an *approval notification email* authorizing the submittal of a final invoice due via two (2) hard copies within seven (7) business days from the date of the *approval notification email*. Hard copies must include wet signatures.
- h. Payment will be made to Service Provider within thirty (30) days after receipt by District of an approved invoice.

EXHIBIT A
CERTIFICATE OF INSURANCE
San Diego Unified Port District

By signing this form, the authorized agent or broker **certifies** the following:

- (1) The Policy or Policies described below have been issued by the noted Insurer(s) [Insurance Company(ies)] to the Insured and is (are) in force at this time.
- (2) As required in the Insured's agreement(s) with the District, the policies include, or have been endorsed to include, the coverages or conditions of coverage **noted on page 2 of this certificate**.
- (3) Signed copies of **all** endorsements issued to effect require coverages or conditions of coverage are attached to this certificate.

Return this form to:

San Diego Unified Port District
c/o Ebix BPO
P.O. Box 100085 – 185
Duluth, GA 30096 – OR –
Email: portofsandiego@ebix.com
Fax: 1-866-866-6516

Name and Address of Insured (Consultant)			SDUPD Agreement Number: _____ This certificate applies to all operations of named insureds on District property in connection with all agreements between the District and Insured.	
CO LTR	TYPE OF INSURANCE	POLICY NO.	DATES	LIMITS
	Commercial General Liability <input type="checkbox"/> Occurrence Form <input type="checkbox"/> Claims-made Form Retro Date _____ <input type="checkbox"/> Liquor Liability Deductible/SIR: \$ _____		Commencement Date: _____ Expiration Date: _____	Each Occurrence: _____ \$ _____ General Aggregate: _____ \$ _____
	Commercial Automobile Liability <input type="checkbox"/> All Autos <input type="checkbox"/> Owned Autos <input type="checkbox"/> Non-Owned & Hired Autos		Commencement Date: _____ Expiration Date: _____	Each Occurrence: _____ \$ _____
	Workers Compensation – Statutory Employer's Liability		Commencement Date: _____ Expiration Date: _____	E.L. Each Accident \$ _____ E.L. Disease Each Employee \$ _____ E.L. Disease Policy Limit \$ _____
	Professional Liability <input type="checkbox"/> Claims Made Retro-Active Date _____		Commencement Date: _____ Expiration Date: _____	Each Claim _____ \$ _____
	Excess/Umbrella Liability		Commencement Date: _____ Expiration Date: _____	Each Occurrence: \$ _____ General Aggregate: \$ _____
CO LTR	COMPANIES AFFORDING COVERAGE		A. M. BEST RATING	
A				
B				
C				
D				
A. M. Best Financial Ratings of Insurance Companies Affording Coverage Must be A-VII or better unless approved in writing by the District.				
Name and Address of Authorized Agent(s) or Broker(s)			E-mail Address: _____ Phone: _____ Fax Number: _____ Signature of Authorized Agent(s) or Broker(s) _____ <div style="text-align: right;">Date: _____</div>	

SAN DIEGO UNIFIED PORT DISTRICT
REQUIRED INSURANCE ENDORSEMENT

<u>ENDORSEMENT NO.</u>	<u>EFFECTIVE DATE</u>	<u>POLICY NO.</u>
NAMED INSURED:		
GENERAL DESCRIPTION OF AGREEMENT(S) AND/OR ACTIVITY(IES): All written agreements, contracts and leases with the San Diego Unified Port District and any and all activities or work performed on district premises		

Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or in any endorsement now or hereafter attached thereto, it is agreed as follows:

1. The San Diego Unified Port District, its officers, agents, and employees are additional insureds in relation to those operations, uses, occupations, acts, and activities described generally above, including activities of the named insured, its officers, agents, employees or invitees, or activities performed on behalf of the named insured.
2. Insurance under the policy(ies) listed on this endorsement is primary and no other insurance or self-insured retention carried by the San Diego Unified Port District will be called upon to contribute to a loss covered by insurance for the named insured.
3. This endorsement shall include a waiver of transfer of rights of recovery against the San Diego Unified Port District ("Waiver of Subrogation").
4. The policy(ies) listed on this endorsement will apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the insurer's liability.
5. As respects the policy(ies) listed on this endorsement, with the exception of cancellation due to nonpayment of premium, thirty (30) days written notice by certified mail, return receipt requested, will be given to the San Diego Unified Port District prior to the effective date of cancellation. In the event of cancellation due to nonpayment of premium, ten (10) days written notice shall be given.

Except as stated above, and not in conflict with this endorsement, nothing contained herein shall be held to waive, alter or extend any of the limits, agreements or exclusions of the policy(ies) to which this endorsement applies.

 (NAME OF INSURANCE COMPANY)

 (SIGNATURE OF INSURANCE COMPANY AUTHORIZED REPRESENTATIVE)

MAIL THIS ENDORSEMENT AND NOTICES OF CANCELLATION:

San Diego Unified Port District
 c/o Ebix BPO
 P.O. Box 100085 – 185
 Duluth, GA 30096 – OR –
 Email to: portofsandiego@ebix.com
 Fax: 1-866-866-6516

EXHIBIT B
GRANT AGREEMENT
San Diego Unified Port District

EXHIBIT B
GRANT AGREEMENT



RECIPIENT San Diego Unified Port District	AGREEMENT NUMBER EPC-17-049
ADDRESS 3165 Pacific Hwy. San Diego, CA 92101	AGREEMENT TERM 6/13/2018 to 3/31/2023 <small>The effective date of this Agreement is either the start date or the approval signature date by the California Energy Commission representative below, whichever is later. The California Energy Commission shall be the last party to sign. No work is authorized, nor shall any work begin, until on or after the effective date.</small>

PROJECT DESCRIPTION

The parties agree to comply with the terms and conditions of the following Exhibits which are by this reference made a part of the agreement.

Exhibit A – Scope of Work	Page(s): 22
Exhibit A – Attachments	Page(s): 5
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Exhibit C – EPIC Standard Terms and Conditions	Page(s): 33
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Exhibit D – Contacts	Page(s): 1

REIMBURSABLE AMOUNT
\$ 4,985,272
MATCH SHARE
\$ 4,629,936
TOTAL
\$ 9,615,208

The undersigned parties have read the attachments to this agreement and will comply with the standards and requirements contained therein.

CALIFORNIA ENERGY COMMISSION		RECIPIENT	
AUTHORIZED SIGNATURE 	DATE 6/26/18	AUTHORIZED SIGNATURE 	DATE 6/13/2018
NAME Rachel L. Grant Kiley		NAME Robert DeAngelis	
TITLE Contracts, Grants and Loans Office Manager		TITLE Chief Financial Officer/Treasurer	
CALIFORNIA ENERGY COMMISSION ADDRESS 1516 9th Street, MS 1, Sacramento, CA 95814		3165 Pacific Highway, San Diego, CA 92101	

San Diego Unified Port District
Document No. **68672**
Filed **JUL 12 2018**
Office of the District Clerk

Approved as to form and legality:
GENERAL COUNSEL

By: John N. Carter, Deputy

EXHIBIT A Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2	X	Microgrid Design
3	X	Microgrid Construction
4		Operation and Maintenance
5		Field Testing and Evaluation
6		Evaluation of Project Benefits
7		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
BMcD	Burns & McDonnell
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
District	San Diego Unified Port District
GHG	Greenhouse Gas
HPS	High Pressure Sodium
LED	Light Emitting Diode
PPA	Power Purchase Agreement
PV	Photovoltaic
Recipient	San Diego Unified Port District
SDG&E	San Diego Gas and Electric
TAC	Technical Advisory Committee
TAMT	Tenth Avenue Marine Terminal

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the development of a replicable model for renewable-based microgrids at California ports and other goods movement facilities.

The Energy Commission issued solicitation GFO-17-302 Demonstrate Business Case for Advanced Microgrids in Support of California's Energy and GHG Policies to Demonstration of Standardized High-DER Penetration, Renewable-Based, Resilient and Commercially Viable Microgrids Located at California Military Bases, Ports, and Native American Tribes within IOU Service Territories. In response to GFO-17-302, San Diego Unified Port District (Recipient) submitted application #04, which was proposed for funding in the Energy Commission's Notice of Proposed Awards dated March 14, 2018. The Recipient's

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

application and the Notice of Proposed Award issued are incorporated by reference to this Agreement in their entirety.

In the event of any conflict or inconsistency between the terms of the Solicitation and the terms of the Recipient's Application, the Solicitation shall control. In the event of any conflict or inconsistency between the Recipient's Application and the terms of the Energy Commission's Award, the Commission's Award shall control. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the Recipient's Application, the terms of this Agreement shall control.

B. Problem/Solution Statement

Problem

California ports are electrifying their operations to move toward zero emission operations, which dramatically increases their reliance and impact on the local electric grid. The migration to all-electric terminals will result in many terminals at least tripling their peak power consumption, while becoming more susceptible to operational disruptions due to losses of grid power². Renewable microgrids provide a potential path to a carbon-free, resilient, and sustainable energy solution while reducing the effects on San Diego Gas and Electric's (SDG&E's) distribution system; however, the costs and operational uncertainties of microgrids at seaports present a barrier to adoption. Demonstration projects are needed to identify and overcome implementation challenges, while validating the operational and financial viability of microgrids at goods movement facilities.

Solution

The recipient will develop a solar + battery storage microgrid at the Port of San Diego's Tenth Avenue Marine Terminal (TAMT) to demonstrate the viability of a renewable-powered microgrid to seaport and goods movement industrial facilities. This project is also designed to demonstrate and evaluate innovative funding approaches to pay for key elements of the construction, operation, and maintenance of the microgrid using a power purchase agreement (PPA). This addresses a key issue with many industrial facilities that want the benefits of a renewable microgrid but cannot fund the capital expenses and are concerned about the additional maintenance of the equipment. The TAMT is an ideal demonstration facility because (1) it is located adjacent to the disadvantaged community of Barrio Logan; (2) it is an omni terminal that moves a wide range of goods; and (3) it supports critical maritime, military, and airport operations, serving as a U.S. Department of Defense Strategic Port. The TAMT Renewable Microgrid Project will serve as a repeatable technical, operational, and financial model for microgrid deployment at California goods movement facilities and beyond.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to:

- Goal 1: Demonstrate a repeatable model for renewable-based microgrids at seaport terminals, goods movement centers, and industrial facilities
- Goal 2: Operate with renewable energy in island mode
- Goal 3: Reduce greenhouse gas emissions
- Goal 4: Increase penetration of renewable electricity
- Goal 5: Reduce electricity costs

² Port of Los Angeles Energy Management Action Plan, July 2014.

https://www.portoflosangeles.org/DOC/DRAFT%20POLA%20E-MAP_July%202014.pdf

EXHIBIT A Scope of Work

- Goal 6: Demonstrate a standardized commercial microgrid system

Ratepayer Benefits:³ This Agreement will result in the ratepayer benefits of greater electricity reliability, lower costs, and increased safety. The TAMT Renewable Microgrid Project will increase electric reliability by using solar + storage to provide local and reliable capacity and energy in one of San Diego Gas & Electric's highest density load centers, while mitigating the duck curve⁴. The project will lower ratepayer costs by reducing the need for electric utility infrastructure improvement through consistent management of peak demand, in conjunction with other microgrid and energy storage projects. The evaluation of multiple funding options, including Power Purchase Agreements (PPAs), to construct, maintain, and operate a microgrid will demonstrate the effectiveness of various financial model options for reducing upfront capital investments for infrastructure, while providing reduced ongoing energy costs to ratepayers implementing similar projects. Since the PPA provider is contracted for the operation and maintenance of the system, this approach also helps to ensure that the microgrid is properly maintained throughout its life without placing an additional burden on the recipient's personnel. The proposed project will increase knowledge of microgrid safety by performing cyber security assessments of vulnerabilities and developing mitigation strategies. On a regional scale, the increase in energy resiliency at TAMT will benefit San Diego ratepayers, and citizens of the region, including the adjacent disadvantaged community of Barrio Logan, who rely on the recipient for emergency relief, supplies, and fuel in the event of a natural or manmade disaster that caused a disruption to the electrical grid.

Technological Advancement and Breakthroughs:⁵ 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 demonstrating the operational and financial viability of a renewable + storage microgrid at a marine cargo omni terminal that delivers cargo that economically benefits the region, supports military operations, and supplies the San Diego International Airport with jet fuel. Following the appropriate public selection process, a PPA will be structured to install and maintain solar panels for the purpose of generating renewable energy, for solar and for the operation and maintenance of the microgrid at a rate that is anticipated to provide net monthly and annual savings for the District. It is the financial structure and the application of a microgrid at a marine terminal that are the main components of the proposed TAMT Renewable Microgrid Project, helping to advance the deployment and adoption of microgrids.

Agreement Objectives

The objectives of this Agreement are to:

- Demonstrate the operational and financial viability of a solar + storage microgrid at TAMT, a marine omni terminal.

³ 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).

⁴ https://www.caiso.com/documents/flexibleresourceshelprenewables_fastfacts.pdf

⁵ 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.

EXHIBIT A

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- Assess islanding capabilities under various battery storage system states of charge and solar generation scenarios to provide 12 hours of operation independent of the grid.
- Reduce greenhouse gas (GHG) emissions from electric power use by 100% relative to baseline conditions.
- Implement energy efficiency measures to reduce electricity use by greater than 20%.
- Use solar + storage microgrid to reduce annual energy costs by more than \$250,000.
- Ratepayer cost savings, environmental benefits to the community, and benefits to the utility through demand response.
- Develop an approach, lessons learned, and business case to support replicability at other facilities.

EXHIBIT A Scope of Work

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.

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.

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- 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:

- 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.

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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);
- Technology/Knowledge Transfer (Task 7); 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, 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.

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- 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
- 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.

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- 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

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

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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 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.

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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
- 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 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.
- 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

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.

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- If different from the solicitation application, provide a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

Products:

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

Subtask 1.8 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)

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- Copy of Each Approved Permit (if applicable)

Subtask 1.9 Subcontracts

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

The Recipient shall:

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

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- 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, phone numbers of potential members, a summary of relevant experience and potential value to the project. 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

EXHIBIT A Scope of Work

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 MICROGRID DESIGN

The goal of this task is to design the microgrid. This includes preliminary assessment and design, as well as (1) system design modeling; (2) completion of final designs for lighting conversion, roof retrofits, electrical infrastructure upgrades, solar photovoltaic (PV) system, and battery storage system; (3) microgrid integration; (4) third party review of designs; and (5) obtain necessary permits from the City of San Diego and SDG&E for Rule 21 compliance.

The Recipient shall:

- Prepare and provide a *System Modeling and Optimization Presentation* to include, but not be limited to:
 - Identification of system loads
 - Identification of different DER mixes and battery sizes to optimize interruption, investment, and utility costs
 - Identification of different battery operation strategies
 - Identification of reliability benefits during power outages
 - Modeling results
- Prepare and provide a *Cyber Security Architecture Assessment* to include:
 - Cyber security architecture for the microgrid based on a high-level risk assessment. The risk assessment process will involve: identifying key assets, characterizing potential threats, assessing vulnerabilities and their impact, assessing threat likelihood, determining risk, and recommending security controls. Key findings will be documented in a *Cyber Security Architecture Assessment*.
- Prepare and provide a *Microgrid Design and Engineering Presentation* to include a summary of the 100% design documents. Designs will include but not be limited to:
 - High mast lighting conversion from high pressure sodium (HPS) to light emitting diode (LED) fixtures.
 - Roof retrofits to support a solar PV system with a design life of 25 years.
 - Upgrades to the 12-kV distribution system required to support microgrid functionality, including:
 - The primary switchgear at the point of interconnection with SDG&E will be modified to provide the necessary protection schemes for SDG&E's Rule 21 interconnection requirements.
 - An existing, vault-mounted sectionalizing switch will be replaced to provide a connection point to the 12-kV distribution system.
 - A new, 480V switchboard will be provided to connect the solar PV and energy storage systems.
 - Microgrid component integration, including:
 - Rooftop solar PV system to meet lighting, security, warehouse, dry bulk, and fuel storage facility loads.
 - Battery storage system.
 - Centralized microgrid controller that will monitor the state of the 12-kV system.
 - Complete microgrid integration to meet needs for grid-tied and islanded modes of operation.

EXHIBIT A

Scope of Work

- Prepare and produce a *Microgrid Design Review Presentation* to summarize:
 - Independent third-party reviews of the microgrid design to confirm that the microgrid designs are optimized for use cases.
- Prepare a CPR Report #1 in accordance with subtask 1.3 (CPR Meetings)
- Participate in a CPR Meeting #1.

Products:

- System Modeling and Optimization Presentation
- Cyber Security Architecture Assessment (draft and final)
- Microgrid Design and Engineering Presentation
- Microgrid Design Review Presentation
- CPR Report #1

TASK 3 MICROGRID CONSTRUCTION

The goal of this task is to construct the microgrid, inclusive of energy efficiency upgrades and improvements to supporting infrastructure, as well as to install and commission the microgrid. Construction contracts may be entered following the appropriate public selection process(es).

The Recipient shall:

- Install the microgrid per the final engineering documentation completed in Task 2, including the *System Modeling and Optimization Presentation*, *Cyber Security Architecture Assessment*, *Microgrid Design and Engineering Presentation*, and *Microgrid Design Review Presentation*.
- The microgrid installation will include, but is not limited to:
 - Convert lights from HPS to LED.
 - Retrofit and reroof warehouse to provide a roof capable of supporting a PV system, with a minimum life of 25 years.
 - Upgrade the following electrical infrastructure serving the District's 12-kV system:
 - The primary switchgear at the point of interconnection with SDG&E will be modified to provide the necessary protection schemes for SDG&E's Rule 21 interconnection requirements.
 - An existing, vault-mounted sectionalizing switch will be replaced to provide a connection point to the 12-kV distribution system.
 - A new, 480 V switchboard will be provided to connect the solar PV and energy storage systems.
 - A new 1,000-kVA pad-mounted transformer will be installed.
 - New duct bank will be installed to provide connection point to the 12-kV distribution system.
 - Enter into a PPA to purchase energy generated by the solar PV system.
 - Install solar PV system on the warehouse.
 - Install battery storage system adjacent to the warehouse.
 - Install a centralized microgrid controller.
- Provide *CAM Pictures of Installed Microgrid Equipment* with name plate capacities in *Progress Report*.
- Prepare and provide a *Commissioning Presentation* to summarize the commissioning of the microgrid in both grid-tied and islanded modes of operation. The commissioning will include:

EXHIBIT A

Scope of Work

- Conduct a final walkthrough to ensure the installation is in accordance with a licensed engineer's final design, and any documentation to ensure that the installed system meets all federal, state, local, and any applicable code requirements.
- Work with the PPA provider to test the desired sequences of operation for the electrical monitoring and control system.
- Optimization of load shifting/peak shaving, demand response, and islanded operations. The results of the commissioning effort will be documented in the *Commissioning Presentation*.
- Obtain *Rule 21 Permit to Operate* from SDG&E to demonstrate interconnection approval and provide a copy to the CAM
- Prepare a CPR Report #2 in accordance with subtask 1.3 (CPR Meetings)
- Participate in a CPR Meeting #2.

Products:

- Commissioning Presentation
- Copy of Rule 21 Permit to Operate
- CPR Report #2

TASK 4 OPERATION AND MAINTENANCE

The goal of this task is to arrange for and coordinate the long-term operation and maintenance of the microgrid system to maximize the benefits the District receives from the microgrid.

The Recipient shall:

- Operate and maintain the microgrid system. This includes establishment of operational and performance metrics under grid-tied and islanded modes of operation.
- Develop an *Operations and Maintenance Manual* containing relevant information for each microgrid component.
- Train facilities staff and first responders on system operations and safety features.
- Maintain all other components of the terminal's electrical infrastructure to support terminal and microgrid operations.

Products:

- Operation and Maintenance Manual (draft and final)

TASK 5 FIELD TESTING AND EVALUATION

The goal of this task is to perform field testing and evaluation of the microgrid functionality with a focus on the project's four DER elements.

The Recipient shall:

- Develop a *Measurement and Verification Plan*. The plan will assess: (1) energy efficiency savings, (2) solar + storage operational and financial performance, (3) islanded operations performance, (4) demand response financial performance, and (5) installation issues, microgrid performance and operational constraints, and ability of the system to respond to grid emergencies. The plan will include, but is not limited to:
 - Description of the systems to be tested
 - Description of the data collection methodology, including:
 - Data collection protocols
 - Data collection schedule

EXHIBIT A

Scope of Work

- Field demonstration of islanded operations, including:
 - Duration of simulated islanded operation
 - Environmental conditions
 - Target operational loads
- Justification for the tests
- Information storage and retention plan
- Expected performance
- Plans for documentation of technical, environmental and economic data, including, but not limited to:
 - Installation issues
 - Operational constraints
 - Operational performance, including duration of islanded mode capability
 - Response to grid emergencies.
 - Parameters that will measure and document successes, lessons learned, and best practices for the above.
- Description of a measurement and verification plan that includes, but is not limited to:
 - Energy Efficiency (EE) to measure before and after EE for the quantification of actual kW/kWh saved.
 - Demand Response (DR) including, but is not limited to:
 - kW/kWh provided when DR is used
 - Definition of how the DR is used; the services provided by the microgrid; and the proposed value provided for these microgrid load services
 - The values of integrated services and how the services can be verified, measured and valued
 - DR event performance information from the IOU or CA ISO for any DR services provided
- Collect data on the operational benefits of the microgrid monthly over the 12-month demonstration period, or other term approved by CAM in writing, per the *Measurement and Verification Plan*, including:
 - **Annual electricity savings:** The primary driver of end user energy reductions at the terminal will be the conversion of lighting from HPS to LED fixtures. Baseline annual energy usage prior to lighting conversion will be compared to usage following conversion and optimization.
 - **GHG emission reductions:** GHG emissions reductions will be calculated based on reductions in energy use from efficiency measures as well as the difference in the percentage of renewable energy powering the terminal from the solar PV and energy storage system as compared to that of SDG&E provided power.
 - **Energy cost reductions:** Modeled projections of energy costs will be compared to the Port's actual utility bills and PPA costs. The PPA provider will perform this assessment and provide a report to the Port monthly to document energy cost reductions.
 - **Peak load reduction and shifting:** Financial benefits of energy storage use optimization will be evaluated under peak shaving and load shifting scenarios.
 - **Net load shape (duck curve mitigation):** Net load shape will be modeled for a solar PV only installation and for solar + storage installation to assess the potential for the project to mitigate the duck curve. This baseline analysis will be used to evaluate actual performance and usage of the system during the evaluation period.

EXHIBIT A

Scope of Work

- **Security and safety:** Although the primary purpose of the microgrid is energy security, it is critical that the microgrid not introduce new vulnerabilities to the terminal. A cyber security assessment in collaboration with the District's Information Technology team will be conducted.
- Provide monthly *Microgrid Data Reports* to the CAM on field data collected for the one-year testing and evaluation period, or the term approved by the CAM in writing, that includes, but is not limited to:
 - Technical data
 - Operational data
 - Economic data
 - Environmental data
 - Other areas as determined by the CAM
- Provide a *Final Measurement and Verification Report* at the conclusion of the one-year testing and evaluation period.
- Perform ongoing monitoring of system performance, including solar output, battery state of charge, and cost reductions, using an automated system to quantify expected microgrid benefits for the life of the PPA.
- For 3 years beyond the term end date of this Agreement, deliver the following to the Energy Commission annually:
 - A confirmation that the microgrid system is operating
 - Any available summary performance data, benefits, or other relevant summary data reports that can be easily provided based on the data collecting systems installed.

Products:

- Measurement and Verification Plan (draft and final)
- Microgrid Data Reports
- Final Measurement and Verification Report (draft and final)

TASK 6 EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

- Complete four Project Benefits Questionnaires that correspond to four main intervals in the Agreement: (1) Kick-off Meeting Benefits Questionnaire; (2) Mid-term Benefits Questionnaire; (3) Final Meeting Benefits Questionnaire; and (4) Three Years Beyond the Term End Date Benefits Questionnaire.
- Provide all key assumptions used to estimate projected benefits, including targeted market sector (e.g., population and geographic location), projected market penetration, baseline and projected energy use and cost, operating conditions, and emission reduction calculations. Examples of information that may be requested in the questionnaires include, but not limited to:
 - Reliability, resiliency and sustainability improvements as provided by the microgrid.
 - Net impacts on the larger grid's load and load shape as provided by the microgrid.
 - GHG reductions as provided by the microgrid, compared to using the utility grid for the electricity and also GHG reductions as provided by any new energy efficiency capabilities of the microgrid project.
 - The dollar value of energy savings as provided by the microgrid, each year.
 - The dollar value of any co-benefits that may accrue to the project, each year.

EXHIBIT A

Scope of Work

- Cost savings or increments compared to business as usual, as provided by the microgrid, including but not limited to technology and installation costs, operations and maintenance, and energy use.
 - Benefit metrics for each of the different DER separated by the specific DER element (e.g., the value energy storage provides to the microgrid owner/operator, the value renewables provide to the microgrid owner/operator, the value demand response services provide to the microgrid owner/operator).
 - Benefit of services as provided by the microgrid to the utility grid.
- 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.

EXHIBIT A

Scope of Work

- 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.
- 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.

- Prepare a *Business Case Report*. As appropriate, the report will discuss the following:
 - How the microgrid system meets the critical needs of the intended end user/operator.
 - Define why the specific configuration has a high probability of being replicated in the future without EPIC funds.
 - Other areas as determined by the CAM.

Products:

- Kick-off Meeting Benefits Questionnaire
- Mid-term Benefits Questionnaire
- Final Meeting Benefits Questionnaire
- Business Case Report (draft and final)

TASK 7 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

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.

EXHIBIT A

Scope of Work

- When directed by the CAM, develop *Presentation Materials* for an Energy Commission-sponsored conference/workshop(s) on the project. Presentation materials must be approved by the CAM in writing prior to the conference/workshop(s).
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California Energy Commission.
- Provide at least six (6) *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.
- 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)
- Presentation Materials (draft and final)
- High Quality Digital Photographs
- Technology/Knowledge Transfer Plan (draft and final)
- Technology/Knowledge Transfer Report (draft and final)

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet (Attachment Project Schedule).

ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION AGREEMENTS

Exhibit A - Scope of Work

San Diego Unified Port District

Attachment A-1 PROJECT SCHEDULE

Agreement Term: 6-13-2018 to 3-31-2023

Within this Scope of Work, "days" means working days. Changes to due dates must be approved in writing by the CAM, and may require approval by the Energy Commission's Executive Director or his/her designee.

Task/ Subtask #	Task/Subtask Name	Meeting Name	Product(s)	Due Date
1	General Project Tasks			
1.1	Products			
1.2	Kick-off Meeting	Kick-off Meeting		6/25/2018
			Updated Project Schedule (if applicable)	7 days after determination of the need to update the documents
			Updated List of Match Funds (if applicable)	
			Updated List of Permits (if applicable)	
			CAM Product	
			Kick-off Meeting Agenda	7 days prior to the kick-off meeting
1.3	CPR Meeting	CPR Meeting #1		5/31/2019
		CPR Meeting #2		6/30/2020
			CPR Report(s)	15 days prior to the CPR meeting
			Task Product(s)	
			CAM Products	
			CPR Agenda	5 days prior to the CPR meeting
			List of Expected CPR Participants	
			Schedule for Providing a Progress Determination	15 days after CPR meeting
			Progress Determination	As indicated in the Schedule for Providing a Progress Determination
1.4	Final Meeting	Final Meeting		11/30/2022
			Final Meeting Agreement Summary (if applicable)	7 days after the final meeting
			Schedule for Completing Agreement Closeout Activities	
			All Draft and Final Written Products	
1.5	Progress Reports and Invoices		Progress Reports	10 days after the first of each month
			Invoices	10 days after the first of each month or quarter
1.6	Final Report			
1.6.1	Final Report Outline		Draft Final Report Outline	5/31/2022
			Final Report Outline	As determined by the CAM
			CAM Product	
			Style Manual	At least 2 months prior to the final report outline due date
			Comments on Draft Final Report Outline	10 days after receipt of the Draft Final Report Outline
			Approval of Final Report Outline	10 days after receipt of the Final Report Outline
1.6.2	Final Report		Draft Final Report	7/29/2022
			Final Report	9/30/2022
			Written Responses to Comments on the Draft Final Report	8/31/2022
			CAM Products	
			Written Comments on Draft Final Report	15 days after receipt of the Draft Final Report
1.7	Match Funds		Match Funds Status Letter	2 days prior to the kick-off meeting
			Supplemental Match Funds Notification Letter (if applicable)	10 days after receipt of additional match funds
			Match Funds Reduction Notification Letter (if applicable)	10 days after any reduction of match funds

ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION AGREEMENTS

Exhibit A - Scope of Work
San Diego Unified Port District
Attachment A-1 PROJECT SCHEDULE

Task/ Subtask #	Task/Subtask Name	Meeting Name	Product(s)	Due Date
1.8	Permits		Permit Status Letter	2 days prior to the kick-off meeting
			Updated List of Permits <i>(if applicable)</i>	10 days after determination of the need for a new permit
			Updated Schedule for Acquiring Permits <i>(if applicable)</i>	
			Copy of Each Approved Permit <i>(if applicable)</i>	7 days after receipt of each permit
1.9	Subcontracts		Draft Subcontracts <i>(if required by the CAM)</i>	As determined by the CAM
			Final Subcontracts	
1.10	Technical Advisory Committee (TAC)		List of Potential TAC Members	2 days prior to the kick-off meeting
			List of TAC Members	7 days after finalization of the TAC
			Documentation of TAC Member Commitment	7 days after receipt of the documentation
1.11	TAC Meetings	TAC Meeting #1		8/31/2018
		TAC Meeting #2		5/15/2019
		TAC Meeting #3		6/17/2020
			Draft TAC Meeting Schedule	20 days after the kickoff meeting
			Final TAC Meeting Schedule	10 days after the first TAC meeting
			Draft TAC Meeting Agendas	20 days prior to each TAC meeting
			TAC Meeting Back-up Materials	
			Final TAC Meeting Agenda	7 days prior to each TAC meeting
			TAC Meeting Summaries	10 days after each TAC meeting
Technical Tasks				
2	Microgrid Design	CPR Meeting #1	System Modeling and Optimization Presentation	3/15/2019
			Draft Non-confidential Cyber Security Architecture Assessment	3/29/2019
			Final Non-confidential Cyber Security Architecture Assessment	4/30/2019
			Microgrid Design and Engineering Presentation	4/30/2019
			Microgrid Design Review Presentation	4/30/2019
3	Microgrid Construction	CPR Meeting #2	Commissioning Presentation	5/29/2020
			Copy of Rule 21 Permit to Operate	5/29/2020
4	Operation and Maintenance		Draft Operation and Maintenance Manual	5/21/2020
			Final Operation and Maintenance Manual	6/26/2020
5	Filed Testing and Evaluation		Draft Measurement and Verification Plan	2/7/2020
			Final Measurement and Verification Plan	3/6/2020
			Microgrid Data Reports	10 days after the first of each month during the 12 months of data collection or term approved by CAM
			Draft Final Measurement and Verification Report	6/30/2021
			Final Final Measurement and Verification Report	9/22/2021
6	Evaluation of Project Benefits		Kick-off Meeting Benefits Questionnaire	10 days after the kick-off meeting
			Mid-term Benefits Questionnaire	6/12/2020
			Final Meeting Benefits Questionnaire	11/30/2022
			Draft Business Case Report	6/30/2021
			Final Business Case Report	9/22/2021

ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION AGREEMENTS

Exhibit A - Scope of Work

San Diego Unified Port District

Attachment A-1 PROJECT SCHEDULE

Task/ Subtask #	Task/Subtask Name	Meeting Name	Product(s)	Due Date
7	Technology/Knowledge Transfer Activities		Draft Initial Fact Sheet	8/16/2018
			Final Initial Fact Sheet	9/20/2018
			Draft Final Project Fact Sheet	6/30/2021
			Final Project Fact Sheet	7/28/2021
			Draft Presentation Materials	6/30/2021
			Final Presentation Materials	9/22/2021
			High Quality Digital Photographs	5/29/2020
			Draft Technology/Knowledge Transfer Plan	3/15/2019
			Final Technology/Knowledge Transfer Plan	4/12/2019
			Draft Technology/Knowledge Transfer Report	7/1/2022
			Final Technology/Knowledge Transfer Report	7/29/2022

ATTACHMENT A-2
CONTENT AND FORMAT OF PROGRESS REPORTS

PROGRESS REPORT for San Diego Unified Port District,
EPC-17-049
Month, Year

Recipient Project Manager: Renee Yarmy
Commission Project Manager: Kenneth Schumann

What we planned to accomplish this period

[This is taken directly from the section on "What we expect to accomplish during the next period" from the last progress report]

What we actually accomplished this period

[Concise description of major activities and accomplishments.]

How we are doing compared to our plan

[Explain the differences, if any, between the planned and the actual accomplishments. Describe what needs to be done, if anything, to get back on track.]

Significant problems or changes

[Describe any significant technical or fiscal problems. Request approval for significant changes in work scope, revised milestone due dates, changes in key personnel assigned to the project, or reallocation of budget cost categories. If none, include the following statement: "Progress and expenditures will result in project being completed on time and within budget."]

What we expect to accomplish during the next period

[Concise description of major activities and accomplishments expected. This will be transferred to the next progress report]]

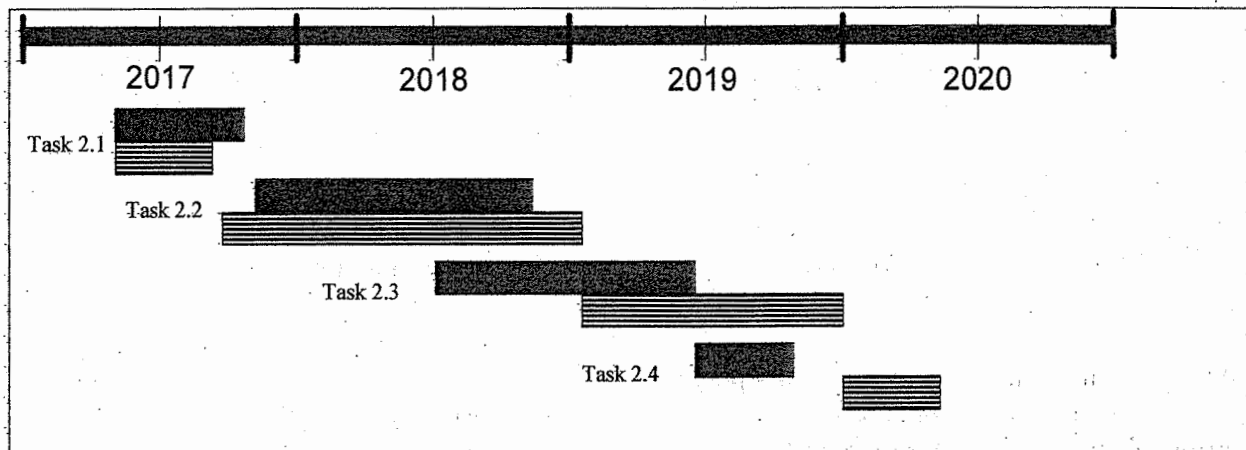
Status of Milestones and Products:

[This should be the complete list as contained in the revised scope of work and Exhibit B. Highlight differences between actual and planned.]

Description	Start Date		Due Date		Status (%)
	Planned	Actual	Planned	Actual	
Identify top 3 assessment candidates	4/15/12	4/15/12	5/1/12	5/1/12	Ontime 100%
Develop test plan	4/20/12	4/10/12	7/7/12	6/10/12	Ahead 100%
Analyze experimental data	5/1/12	6/1/12	1/1/13	2/1/13	Delayed 25%

ATTACHMENT A-2
CONTENT AND FORMAT OF PROGRESS REPORTS

Page 95 of 264 A



Overall schedule for the Port of San Diego Microgrid – Resiliency in Terminal Operations project.

[Planned is solid blue, actual is red striped. This work flow diagram needs to correlate with the schedule in Exhibit B. This example has been prepared as a Word Picture, but a comparable Excel diagram or Gantt chart is fine.]

Overview of Fiscal Status: (See invoices for detail.)

[It is useful to track the rate of expenditure of project funds. The most useful way to do this is to compare the actual expenditure rate with the planned expenditure rate. You get the planned rate at the beginning of the project, so it becomes a baseline. If you change course at a critical project review, you should show the original and the modified baseline, and then track against the new one.]

Photographs:

[Include photographs where appropriate to document progress.] The photos shall be shot with color print film or be very high quality digital photos (at least 300 dpi).

Evidence of Progress:

If there is a long time between interim products, then attach evidence of the progress being made (e.g., test data, product mock-ups, field site descriptions, preliminary analyses) to the progress reports to allow the Commission Project Manager to review progress and gauge the quality of research results.

The progress report on each project should be 1-2 pages long (plus photographs) and take about 1 hour to prepare for each reporting period.

EXHIBIT B**Category Budget**
(see instructions)

Name of Organization	San Diego Unified Port District
-----------------------------	---------------------------------

☐ Small ☐ Micro ☐ Disabled Veteran Business
☒ Contractor/Recipient ☐ Subcontractor

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor	\$ -	\$ 1,295,276	\$ 1,295,276
Fringe Benefits	\$ -	\$ 954,618	\$ 954,618
Total Labor	\$ -	\$ 2,249,894	\$ 2,249,894
Travel	\$ -	\$ 890	\$ 890
Equipment	\$ 2,533,032	\$ -	\$ 2,533,032
Materials/Miscellaneous	\$ -	\$ -	\$ -
Subcontractors	\$ 2,452,240	\$ 2,379,152	\$ 4,831,392
Total Other Direct Costs	\$ 4,985,272	\$ 2,380,042	\$ 7,365,314
Indirect Costs	\$ -	\$ -	\$ -
Profit (not allowed for grant recipients)	\$ -	\$ -	\$ -
Total Indirect and Profit	\$ -	\$ -	\$ -
Grand Totals	\$ 4,985,272	\$ 4,629,936	\$ 9,615,208
Amount of funds to be Spent in California**	\$ 4,890,552		
Percentage of Funds to be spent in California	98.1%		

EXHIBIT B

Direct Labor (Unloaded) (see instructions)

San Diego Unified Port District

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
Renée Yarmy	Program Manager, Energy	\$ 45.37	3,200	\$ -	\$ 145,184	\$ 145,184
Rachel Stern	Senior Environmental Specialist, Energy	\$ 45.37	2,600	\$ -	\$ 117,962	\$ 117,962
Pete Cruz	Department Business Manager, General Services	\$ 64.35	1,300	\$ -	\$ 83,655	\$ 83,655
Christopher Brooke	Manager, Engineering-Construction	\$ 64.35	900	\$ -	\$ 57,915	\$ 57,915
Mark McIntire	Construction Manager, Engineering-Construction	\$ 64.35	3,600	\$ -	\$ 231,660	\$ 231,660
Robert Alcala	Lead Electrician, General Services	\$ 40.02	2,000	\$ -	\$ 80,040	\$ 80,040
Aimee Heim	Program Manager, Grants Management, Government & Civic Relations	\$ 64.35	800	\$ -	\$ 51,480	\$ 51,480
Armando Mora	Project Manager, Engineering-Construction	\$ 64.35	2,800	\$ -	\$ 180,180	\$ 180,180
Devon Beach	Senior Engineer, Engineering-Construction	\$ 64.35	400	\$ -	\$ 25,740	\$ 25,740
Christopher McGrath	Program Manager, Engineering-Construction	\$ 64.35	400	\$ -	\$ 25,740	\$ 25,740
Kurt Brickley	Construction Inspector, Engineering-Construction	\$ 35.29	2,700	\$ -	\$ 95,283	\$ 95,283
Victor Travis	Design Engineer, Engineering-Construction	\$ 35.32	200	\$ -	\$ 7,064	\$ 7,064
Ernesto Medina	Director Engineer, Engineering-Construction	\$ 89.37	200	\$ -	\$ 17,874	\$ 17,874
Keith Coffey	Chief Technology Officer, Information & Technology	\$ 89.37	1,100	\$ -	\$ 98,307	\$ 98,307
Greg Dixon	Technology Security Analyst, Information & Technology	\$ 45.37	1,000	\$ -	\$ 45,370	\$ 45,370
Josefina Balistreri	Program Manager/Business Development, Maritime	\$ 45.37	600	\$ -	\$ 27,222	\$ 27,222
Maby Smith	Project Administrative Assistance, Engineering-Construction	\$ 25.56	180	\$ -	\$ 4,600	\$ 4,600
Hourly Direct Labor Totals				\$ -	\$ 1,295,276	\$ 1,295,276

Monthly Salary Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
Monthly Direct Labor Totals				\$ -	\$ -	\$ -

				Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals				\$ -	\$ 1,295,276	\$ 1,295,276

EXHIBIT B**Fringe Benefits**
(see instructions)**San Diego Unified Port District**

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
Program Manager, Energy	73.70%	\$ 145,184	\$ -	\$ 107,001	\$ 107,001
Senior Environmental Specialist, Energy	73.70%	\$ 117,962	\$ -	\$ 86,938	\$ 86,938
Department Business Manager, General Services	73.70%	\$ 83,655	\$ -	\$ 61,654	\$ 61,654
Manager, Engineering-Construction	73.70%	\$ 57,915	\$ -	\$ 42,683	\$ 42,683
Construction Manager, Engineering-Construction	73.70%	\$ 231,660	\$ -	\$ 170,733	\$ 170,733
Lead Electrician, General Services	73.70%	\$ 80,040	\$ -	\$ 58,989	\$ 58,989
Program Manager, Grants Management, Government & Civic Relations	73.70%	\$ 51,480	\$ -	\$ 37,941	\$ 37,941
Project Manager, Engineering-Construction	73.70%	\$ 180,180	\$ -	\$ 132,793	\$ 132,793
Senior Engineer, Engineering-Construction	73.70%	\$ 25,740	\$ -	\$ 18,970	\$ 18,970
Program Manager, Engineering-Construction	73.70%	\$ 25,740	\$ -	\$ 18,970	\$ 18,970
Construction Inspector, Engineering-Construction	73.70%	\$ 95,283	\$ -	\$ 70,224	\$ 70,224
Design Engineer, Engineering-Construction	73.70%	\$ 7,064	\$ -	\$ 5,206	\$ 5,206
Director Engineer, Engineering-Construction	73.70%	\$ 17,874	\$ -	\$ 13,173	\$ 13,173
Chief Technology Officer, Information & Technology	73.70%	\$ 98,307	\$ -	\$ 72,452	\$ 72,452
Technology Security Supervisor, Information & Technology	73.70%	\$ 45,370	\$ -	\$ 33,438	\$ 33,438
Program Manager/Business Development, Maritime	73.70%	\$ 27,222	\$ -	\$ 20,063	\$ 20,063
Project Administrative Assistance, Engineering- Construction	73.70%	\$ 4,600	\$ -	\$ 3,390	\$ 3,390
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ 1,295,276	\$ -	\$ 954,618.00	\$ 954,618

Travel
(see instructions)

San Diego Unified Port District

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
Not Pre-Approved Travel						
1, 2, 7	Renée Yarmy, Program Manager	San Diego to Sacramento	Presentations and business meetings to the CEC as needed	\$ -	\$ 445	\$ 445
1, 2, 7	Rachel Stern, Senior Environmental Specialist	San Diego to Sacramento	Presentations and business meetings to the CEC as needed	\$ -	\$ 445	\$ 445
				\$ -	\$ -	\$ -
Total:				\$ -	\$ 890	\$ 890

EXHIBIT B**Equipment**
(see instructions)**San Diego Unified Port District**

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
3	Lithium Ion Battery Energy Storage System	Provide energy storage component of the microgrid	1	\$ 1,500,000	\$ 1,500,000	\$ -	\$ 1,500,000
3	Centralized Microgrid Controller	Integrate solar PV and battery storage for grid-tied and islanded operations	1	\$ 300,000	\$ 300,000	\$ -	\$ 300,000
3	480 V 2,500 kVa Transformer	Electrical distribution system interconnection for microgrid components	1	\$ 200,000	\$ 200,000	\$ -	\$ 200,000
3	480 V Switchgear	Electrical distribution system interconnection for microgrid components	1	\$ 273,032	\$ 273,032	\$ -	\$ 273,032
3	Sectionizer Cabinet	Electrical distribution system interconnection for microgrid components	1	\$ 25,000	\$ 25,000	\$ -	\$ 25,000
3	Control Panel and Transformer	Electrical distribution system interconnection for microgrid components	1	\$ 235,000	\$ 235,000	\$ -	\$ 235,000
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ 2,533,032	\$ -	\$ 2,533,032

Materials & Miscellaneous

(see instructions)

San Diego Unified Port District

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Subcontracts

(see instructions)

San Diego Unified Port District

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/ SB/MB/None	Energy Commission Funds	Match Share	Total
2,3	TBD - Lighting	Conversion of high-mast site lighting from HPS to LED fixtures for energy efficiency		\$ -	\$ 80,000	\$ 80,000
2	TBD - Geotechnical	Perform geotechnical investigation in areas to support new electrical infrastructure		\$ 30,000	\$ -	\$ 30,000
3	TBD - Electrical Infrastructure Contractor	Installation of electrical infrastructure upgrades to support microgrid		\$ 1,277,312	\$ -	\$ 1,277,312
4	TBD - Solar PPA Provider	Power purchase agreement costs from 8/27/19 - 6/30/22		\$ -	\$ 197,189	\$ 197,189
3	TBD - Roofing Contractor	Retrofit and re-roof Warehouse to support solar PV system		\$ -	\$ 1,900,000	\$ 1,900,000
1,2,3,7	Burns & McDonnell	Develop microgrid design and provide owner's engineering and project management support	None	\$ 397,338	\$ -	\$ 397,338
2,5,6,7	Electric Power Research Institute	Perform design review and modeling, testing and evaluation, and knowledge transfer	None	\$ 419,997	\$ -	\$ 419,997
2,5,6,7	University of California, San Diego	Perform design review and modeling, testing and evaluation, and knowledge transfer	None	\$ 327,593	\$ 201,963	\$ 529,556
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ 2,452,240	\$ 2,379,152	\$ 4,831,392

Indirect Costs and Profit

(see instructions)

San Diego Unified Port District**Indirect Cost(s)**

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
None	0.00%		\$ -	\$ -	\$ -	\$ -
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
0.00%		\$ -	\$ -	\$ -	\$ -
Total:			\$ -	\$ -	\$ -

Category Budget
(see instructions)

Name of Organization	Burns & McDonnell Engineering Company, Inc.
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☐ Small ☐ Micro ☐ Disabled Veteran Business

☐ Contractor/Recipient ☒ Subcontractor

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor	\$ 113,362	\$ -	\$ 113,362
Fringe Benefits	\$ 82,618	\$ -	\$ 82,618
Total Labor	\$ 195,980	\$ -	\$ 195,980
Travel	\$ -	\$ -	\$ -
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ -	\$ -	\$ -
Subcontractors	\$ -	\$ -	\$ -
Total Other Direct Costs	\$ -	\$ -	\$ -
Indirect Costs	\$ 165,236	\$ -	\$ 165,236
Profit (not allowed for grant recipients)	\$ 36,122	\$ -	\$ 36,122
Total Indirect and Profit	\$ 201,358	\$ -	\$ 201,358
Grand Totals	\$ 397,338	\$ -	\$ 397,338
Amount of funds to be Spent in California**	\$ 341,082		
Percentage of Funds to be spent in California	86%		

Direct Labor (Unloaded)

(see instructions)

Burns & McDonnell Engineering Company, Inc.

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
Matt Wartian	Principal-In-Charge	\$ 83.00	300	\$ 24,900	\$ -	\$ 24,900
Gary Pare	Design Manager	\$ 59.00	400	\$ 23,600	\$ -	\$ 23,600
Sean Kenny	Construction Manager	\$ 70.00	207	\$ 14,490	\$ -	\$ 14,490
Shiv Gupta	Electrical Engineer	\$ 41.00	350	\$ 14,350	\$ -	\$ 14,350
Eric Putnam	Senior Electrical Engineer	\$ 75.00	150	\$ 11,250	\$ -	\$ 11,250
Mohammad Noorzay	Civil/Structural Engineer	\$ 45.00	250	\$ 11,250	\$ -	\$ 11,250
Adam Young	Modeling Project Manager	\$ 48.00	100	\$ 4,800	\$ -	\$ 4,800
Elijah Baumgartner	Commissioning	\$ 49.00	178	\$ 8,722	\$ -	\$ 8,722
Hourly Direct Labor Totals				\$ 113,362	\$ -	\$ 113,362

Monthly Salary Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
		\$ -		\$ -	\$ -	\$ -
Monthly Direct Labor Totals				\$ -	\$ -	\$ -

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ 113,362	\$ -	\$ 113,362

Fringe Benefits
(see instructions)

Burns & McDonnell Engineering Company, Inc.

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
All classifications	72.88%	\$ 113,362	\$ 82,618	\$ -	\$ 82,618
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ 113,362	\$ 82,618	\$ -	\$ 82,618

Travel
(see instructions)

Burns & McDonnell Engineering Company, Inc.

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

EXHIBIT B

Equipment (see instructions)

Burns & McDonnell Engineering Company, Inc.

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				Total:	\$ -	\$ -	\$ -

Materials & Miscellaneous
(see instructions)

Burns & McDonnell Engineering Company, Inc.

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Subcontracts

(see instructions)

Burns & McDonnell Engineering Company, Inc.

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/ SB/MB/None	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

Indirect Costs and Profit

(see instructions)

Burns & McDonnell Engineering Company, Inc.**Indirect Cost(s)**

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
Overhead	145.76%	Direct Labor Dollars	\$ 113,362	165,236	\$ -	\$ 165,236
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ 165,236	\$ -	\$ 165,236

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
10.00%	(Direct Labor + Fringe + Overhead)	\$ 361,216	\$ 36,122	\$ -	\$ 36,122
Total:			\$ 36,122	\$ -	\$ 36,122

Category Budget
(see instructions)

Name of Organization	Electric Power Research Institute, Inc.
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☐ Small ☐ Micro ☐ Disabled Veteran Business Enterprise (DVBE)
☐ Contractor/Recipient ☒ Subcontractor

Cost Category	Energy Commission Reimbursable Share	EPRI Match Share	Total
Direct Labor	\$ 125,666	\$ -	\$ 125,666
Fringe Benefits	\$ 117,016	\$ -	\$ 117,016
Total Labor	\$ 242,682	\$ -	\$ 242,682
Travel	\$ 15,000	\$ -	\$ 15,000
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ -	\$ -	\$ -
Subcontractors	\$ -	\$ -	\$ -
Total Other Direct Costs	\$ 15,000	\$ -	\$ 15,000
Indirect Costs	\$ 162,315	\$ -	\$ 162,315
Profit (not allowed for grant recipients)	\$ -	\$ -	\$ -
Total Indirect and Profit	\$ 162,315	\$ -	\$ 162,315
Grand Totals	\$ 419,997	\$ -	\$ 419,997
Amount of funds to be Spent in California**	\$ 419,997		
Percentage of Funds to be spent in California	1.000		

Direct Labor (Unloaded)
(see instructions)

Electric Power Research Institute, Inc.

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
Galen Rasche	Technical Executive/ Program Manager	\$ 134.28	80	\$ 7,753.00		\$ 7,753
Dean Weng	Engineer/Scientist	\$ 64.74	263	\$12,231.00		\$ 12,231
Candace Suh-Lee	Technical Leader / Project Manager	\$ 107.68	172	\$ 16,041.00		\$ 16,041
Miles Evans	Engineer/Scientist	\$ 64.74	80	\$ 3,550.00		\$ 3,550
Ramakrishnan Ravikumar	Engineer/Scientist	\$ 64.74	200	\$ 9,183.00		\$ 9,183
Jouni Peppanen	Technical Leader / Project Manager	\$ 107.68	80	\$ 4,816.00		\$ 4,816
Evan Giarta	Engineer/Scientist	\$ 64.74	200	\$ 9,504.00		\$ 9,504
Gerardo Trevino	Technical Leader / Project Manager	\$ 107.68	172	\$ 12,873.00		\$ 12,873
Christine Lee	Engineer/Scientist	\$ 64.74	200	\$ 10,546.00		\$ 10,546
Nicholas Tumilowicz	Technical Leader / Project Manager	\$ 107.68	30	\$ 2,541.00		\$ 2,541
Bienvenido Clarin	Technical Leader / Project Manager	\$ 107.68	75	\$ 4,522.00		\$ 4,522
Giovanni Damato	Technical Leader / Project Manager	\$ 107.68	50	\$ 3,819.00		\$ 3,819
Ajit Renjit	Engineer/Scientist	\$ 64.74	240	\$ 12,720.00		\$ 12,720
Tanguy Hubert	Technical Leader / Project Manager	\$ 107.68	200	\$ 12,437.00		\$ 12,437
TBD	Engineer/Scientist	\$ 64.74	10	\$ 446.00		\$ 446
TBD	Engineer/Scientist	\$ 64.74	10	\$ 545.00		\$ 545
TBD	Engineer/Scientist	\$ 64.74	10	\$ 575.00		\$ 575
TBD	Technical Leader / Project Manager	\$ 107.68	10	\$ 718.00		\$ 718
TBD	Technical Leader / Project Manager	\$ 107.68	10	\$ 846.00		\$ 846
Hourly Direct Labor Totals				\$ 125,666	\$ -	\$ 125,666

Monthly Salary Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
		\$ -		\$ -	\$ -	\$ -
Monthly Direct Labor Totals				\$ -	\$ -	\$ -

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ 125,666	\$ -	\$ 125,666

Fringe Benefits
(see instructions)

Electric Power Research Institute, Inc.

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
DL - All Classifications	115.00%	\$ 125,666	\$ 117,016	\$ -	\$ 117,016
* 115% is the maximum rate. The budget was priced based on EPRI currently approved rates. EPRI's indirect billing rates fluctuate year-over-year and to allow for any increases, the indirect cost rates on this form are caps, or the maximum amount allowed to be billed. EPRI will only bill for actual indirect costs incurred, not to exceed the rates specified in these forms. Fringe rate is calculated based on all payroll expenses, employee benefit plans, variable compensation of each individual employee, and employee occupancy costs.		\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ 125,666	\$ 117,016	\$ -	\$ 117,016

Travel
(see instructions)

Electric Power Research Institute, Inc.

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
2,5,6,7	Dean Weng	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 4 trips)	Site Visit	\$ 5,000	\$ -	\$ 5,000
2,5	Candace Suh-Lee	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	\$ 2,500	\$ -	\$ 2,500
2,5	Gerardo Trevino	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	\$ 2,500	\$ -	\$ 2,500
2,5	Ajit Renjit	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	\$ 2,500	\$ -	\$ 2,500
2,5	Galen Rache	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	\$ 2,500	\$ -	\$ 2,500
					\$ -	\$ -
					\$ -	\$ -
Total:				\$ 15,000	\$ -	\$ 15,000

Equipment
(see instructions)

Electric Power Research Institute, Inc.

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

Materials & Miscellaneous
(see instructions)

Electric Power Research Institute, Inc.

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				Total:	\$ -	\$ -	\$ -

Subcontracts

(see instructions)

Electric Power Research Institute, Inc.

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/ SB/MB/None	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

Indirect Costs and Profit

(see instructions)

Electric Power Research Institute, Inc.**Indirect Cost(s)**

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
Overhead	65.00%	Direct Labor + Fringe Benefits	\$ 242,682	\$ 140,027	\$ -	\$ 140,027
Other Direct Costs Rate	8.00%	Travel + Equipment + Materials & Misc. + Subcontractors	\$ 15,000	\$ 900	\$ -	\$ 900
G&A	10.00%	Direct Labor + Fringe Benefits + Travel + Equipment + Materials & Misc. + Subcontractors	\$ 257,682	\$ 21,388	\$ -	\$ 21,388
	0.00%		\$ -	\$ -	\$ -	\$ -
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ 162,315	\$ -	\$ 162,315

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
0.00%		\$ -	\$ -	\$ -	\$ -
Total:			\$ -	\$ -	\$ -

Category Budget
 (see instructions)

Name of Organization	The Regents of the University of California, on behalf of the San Diego Campus
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☐ Small ☐ Micro ☐ Disabled Veteran Business Enterprise (DVBE)

☐ Contractor/Recipient ☒ Subcontractor

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor	\$ 185,488	\$ 139,525	\$ 325,013
Fringe Benefits	\$ 45,230	\$ 15,193	\$ 60,423
Total Labor	\$ 230,718	\$ 154,718	\$ 385,436
Travel	\$ -	\$ -	\$ -
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ 38,505	\$ 8,424	\$ 46,929
Subcontractors	\$ -	\$ -	\$ -
Total Other Direct Costs	\$ 38,505	\$ 8,424	\$ 46,929
Indirect Costs	\$ 58,370	\$ 38,821	\$ 97,191
Profit (not allowed for grant recipients)	\$ -	\$ -	\$ -
Total Indirect and Profit	\$ 58,370	\$ 38,821	\$ 97,191
Grand Totals	\$ 327,593	\$ 201,963	\$ 529,556
Amount of funds to be Spent in California**	\$ 327,593		
Percentage of Funds to be spent in California	1.00		

Direct Labor (Unloaded)
(see instructions)

The Regents of the University of California, on behalf of the San Diego Campus

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
		\$ -		\$ -	\$ -	\$ -
Hourly Direct Labor Totals				\$ -	\$ -	\$ -

Monthly Salary Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
J. Kleissl	Professor	\$ 24,139.00	8.0922	\$ 44,285	\$ 129,929	\$ 174,214
W. Torre	Director	\$ 13,877.00	2.7029	\$ 37,508	\$ -	\$ 37,508
B. Washom	Director	\$ 18,058.00	1.0186	\$ 18,394	\$ -	\$ 18,394
S.Tong	Engineer	\$ 7,595.00	3.1464	\$ 23,897	\$ -	\$ 23,897
TBD	Post Doctoral Scholar	\$ 6,361.00	2.8761	\$ 18,295	\$ -	\$ 18,295
TBN	Graduate Student	\$ 6,513.00	8.0923	\$ 43,109	\$ 9,596	\$ 52,705
Monthly Direct Labor Totals				\$ 185,488	\$ 139,525	\$ 325,013

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ 185,488	\$ 139,525	\$ 325,013

Fringe Benefits
(see instructions)

The Regents of the University of California, on behalf of the San Diego Campus

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
J. Kleissl / Porfessor	11.60%	\$ 174,214	\$ 5,136	\$ 15,073	\$ 20,209
W. Torre / Director	46.71%	\$ 37,508	\$ 15,680	\$ -	\$ 15,680
B. Washom / director	46.18%	\$ 18,394	\$ 7,655	\$ -	\$ 7,655
S. Tong / Engineer	55.37%	\$ 23,897	\$ 12,501	\$ -	\$ 12,501
TBN / Post Doctoral Scholar	20.30%	\$ 18,295	\$ 3,714	\$ -	\$ 3,714
TBN / Graduate Student	2.40%	\$ 52,705	\$ 544	\$ 120	\$ 664
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ 325,013	\$ 45,230	\$ 15,193	\$ 60,423

Travel
(see instructions)

The Regents of the University of California, on behalf of the San Diego Campus

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

Equipment
(see instructions)

The Regents of the University of California, on behalf of the San Diego Campus

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

Materials & Miscellaneous
(see instructions)

The Regents of the University of California, on behalf of the San Diego Campus

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
	UCSD Communications	Communications (or Communications/Computing) costs have been included for telephone and associated voice and data communications charges which are directly related to the individuals working on the project	Various	\$ 1,841	\$ 1,271	\$ 570	\$ 1,841
	Tuition & Remission	To support Graduate Students working on the project	Various	\$ -	\$ 35,750	\$ 7,854	\$ 43,604
	General Liability	Risk Management Insurance in support of all employees working on the project	Various	\$ -	\$ 1,484	\$ -	\$ 1,484
Total:					\$ 38,505	\$ 8,424	\$ 46,929

Subcontracts

(see instructions)

The Regents of the University of California, on behalf of the San Diego Campus

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/SB/MB/None	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

Indirect Costs and Profit

(see instructions)

The Regents of the University of California, on behalf of the San Diego Campus

Indirect Cost(s)

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
UC-approved State of California Sponsors - On-Campus	25.00%	Modified Total Direct Cost Base which excludes Tuition & Remission is assessed the 25% IDC rate	\$ 388,761	\$ 58,370	\$ 38,821	\$ 97,191
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ 58,370	\$ 38,821	\$ 97,191

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
0.00%		\$ -	\$ -	\$ -	\$ -
Total:			\$ -	\$ -	\$ -

Category Budget
(see instructions)

Name of Organization	TBD - Electrical Infrastructure Contractor
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☐ Contractor/Recipient
 ☒ Subcontractor
☐ Small Business
 ☐ Micro Business
 ☐ Disabled Veteran Business Enterprise (DVBE)

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor		\$ -	\$ -
Fringe Benefits	\$ -	\$ -	\$ -
Total Labor	\$ -	\$ -	\$ -
Travel	\$ -	\$ -	\$ -
Equipment		\$ -	\$ -
Materials/Miscellaneous	\$ -	\$ -	\$ -
Subcontractors	\$ -	\$ -	\$ -
Total Other Direct Costs	\$ -	\$ -	\$ -
Indirect Costs	\$ -	\$ -	\$ -
Profit (not allowed for grant recipients)	\$ -	\$ -	\$ -
Total Indirect and Profit	\$ -	\$ -	\$ -
Grand Totals	\$ 1,277,312	\$ -	\$ -
Amount of funds to be Spent in California**	\$ 1,277,312		
Percentage of Funds to be spent in California	100.00%		

EXHIBIT C**ELECTRIC PROGRAM INVESTMENT CHARGE (EPIC) STANDARD
GRANT TERMS AND CONDITIONS****TABLE OF CONTENTS**

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**ATTACHMENT 1: CONFIDENTIAL PRODUCTS AND PROJECT-RELEVANT PRE-
EXISTING AND INDEPENDENTLY FUNDED INTELLECTUAL PROPERTY**

EXHIBIT C

TERMS AND CONDITIONS

1. **Introduction**

This grant agreement (Agreement) between the California Energy Commission (Energy Commission, or Commission) and the Recipient is funded by the Electric Program Investment Charge (EPIC), an electricity ratepayer surcharge authorized by the California Public Utilities Commission (CPUC).

This Agreement includes: (1) the Agreement signature page (**form CEC-146**); (2) the scope of work (**Exhibit A**); (3) the budget (**Exhibit B**); (4) these terms and conditions (**Exhibit C**); (5) any special terms and conditions that address the unique circumstances of the funded project (**Exhibit D**); (6) a contacts list (**Exhibit E**); (7) all attachments; and (8) all documents incorporated by reference.

All work and expenditure of funds (Commission-reimbursed and/or match share) must occur within the Agreement term specified on the CEC-146 form.

2. **Documents Incorporated by Reference**

The documents below are incorporated by reference into this Agreement. These terms and conditions will govern in the event of a conflict with the documents below, with the exception of the documents in subsection (f). Where this Agreement or California laws and regulations are silent or do not apply, the Energy Commission will use the federal cost principles and acquisition regulations listed below as guidance in determining whether reimbursement of claimed costs is allowable. Documents incorporated by reference include:

Solicitation Documents (if applicable)

- a. The funding solicitation for the project supported by this Agreement
- b. The Recipient's proposal submitted in response to the solicitation

CPUC Decision

- c. Decision 13-11-025 (Decision Addressing Applications of the California Energy Commission, Pacific Gas and Electric Company, San Diego Gas & Electric Company and Southern California Edison Company for Approval of their Triennial Investment Plans for the Electric Program Investment Charge Program for the Years 2012 through 2014) <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M081/K773/81773445.PDF>

Federal Cost Principles (applicable to state and local governments, Indian tribes, institutions of higher education, and nonprofit organizations)

- d. 2 Code of Federal Regulations (CFR) Part 200, Subpart E (Sections 200.400 et seq.)

Federal Acquisition Regulations (applicable to commercial organizations)

- e. 48 CFR, Ch.1, Subchapter E, Part 31, Subpart 31.2: Contracts with Commercial Organizations (supplemented by 48 CFR, Ch. 9, Subchapter E, Part 931, Subpart 931.2 for Department of Energy grants)

Nondiscrimination

- f. 2 California Code of Regulations, Section 8101 et seq.: Contractor Nondiscrimination and Compliance

General Laws

- g. Any federal, state, or local laws or regulations applicable to the project that are not expressly listed in this Agreement

3. *Standard of Performance*

In performing work under the Agreement, the Recipient, its subcontractors, and their employees are responsible for exercising the degree of skill and care required by customarily accepted good professional practices and procedures for the type of work performed.

4. *Due Diligence*

The Recipient must take timely actions that, taken collectively, move this project to completion. The Commission Agreement Manager will periodically evaluate the project schedule for completion of Scope of Work tasks. If the Commission Agreement Manager determines that: (1) the Recipient is not diligently completing the tasks in the Scope of Work; or (2) the time remaining in this Agreement is insufficient to complete all project tasks by the Agreement end date, the Commission Agreement Manager may recommend that this Agreement be terminated, and the Commission may terminate this Agreement without prejudice to any of its other remedies.

5. *Products*

- a. **"Products"** are any tangible item specified for delivery to the Energy Commission in the Scope of Work, such as reports and summaries.

- The Recipient will submit all products identified in the Scope of Work to the Commission Agreement Manager, in the manner and form specified in the Scope of Work.
- The Recipient will also submit all products prepared during the invoicing period to the Accounting Office along with the invoice, as specified in subsection (c) of Section 8 (Payment of Funds).

If the Commission Agreement Manager determines that a product is substandard given its description and intended use as described in the Scope of Work, the Commission Agreement Manager may refuse to authorize payment for the product and any subsequent products that rely on or are based upon the product under this Agreement.

- b. Confidential Products

Please see Section 19 (Confidentiality) for instructions regarding confidential products.

- c. Rights in Products

The Energy Commission owns all products identified in the Scope of Work, with the exception of products that fall within the definition of "intellectual property." The Recipient owns all intellectual property developed under this Agreement (please see the "Intellectual Property" section).

The Recipient has a non-exclusive, non-transferable, irrevocable, worldwide, perpetual license to use, publish, translate, modify, and reproduce products that do not fall within the definition of "intellectual property."

d. Failure to Submit Products

Failure to submit a product required in the Scope of Work will be considered material noncompliance with the Agreement terms, unless the Commission Agreement Manager waives the failure in writing. Noncompliance may result in actions such as the withholding of future payments or awards, or the suspension or termination of the Agreement.

e. Final Report and Payment

The Recipient may only submit a request for the final payment (including any retention) after the final report is completed and the Commission Agreement Manager has verified satisfactory completion of work.

f. Legal Statements on Products

- 1) All documents that result from work funded by this Agreement and are released to the public must include the following statement to ensure no Commission endorsement of documents:

LEGAL NOTICE

This document was prepared as a result of work sponsored by the California Energy Commission. It does not necessarily represent the views of the Energy Commission, its employees, or the State of California. Neither the Commission, the State of California, nor the Commission's employees, contractors, or subcontractors makes any warranty, express or implied, or assumes any legal liability for the information in this document; nor does any party represent that the use of this information will not infringe upon privately owned rights. This document has not been approved or disapproved by the Commission, nor has the Commission passed upon the accuracy of the information in this document.

- 2) The Recipient will apply copyright notices to all documents prepared for this Agreement that are released to the public (including reports, articles submitted for publication, and all reprints) using the following form or any other form that may be reasonably specified by the Energy Commission.

"©[Year of first publication of product] [the Copyright Holder's name]. All Rights Reserved."

6. Amendments

a. Procedure for Requesting Changes

The Recipient must submit a written request to the Commission Agreement Manager for any change to the Agreement. The request must include:

- A brief summary of the proposed change;
- A brief summary of the reason(s) for the change; and
- The revised section(s) of the Agreement, with changes made in underline/strikethrough format.

b. Approval of Changes

Certain changes to the Agreement (e.g., changes that increase the Agreement amount or substitute one Recipient for another) must be approved at a Commission business meeting or by the Executive Director (or his/her designee). Generally, changes that are not significant to the Agreement may be documented in a Letter of Agreement signed by both parties (electronic signatures are acceptable).

The Commission Agreement Manager or Commission Agreement Officer will provide the Recipient with guidance regarding the level of Commission approval required for a proposed change.

c. Personnel or Subcontractor Changes

All changes below require advance written approval by the Commission Agreement Manager, in addition to the appropriate level of Commission approval as described in subsection (b).

1) Replacement of Key Personnel, Subcontractors, and Vendors

The Commission Agreement Manager must provide advance written approval of the replacement of personnel, subcontractors, and vendors who are identified in the Agreement and are critical to the outcome of the project, such as the Project Manager.

2) Assignment of New Personnel to an Existing Job Classification

If the Recipient or a subcontractor seeks to assign new personnel to a job classification identified in Exhibit B, the Recipient or subcontractor must submit the individual's resume and proposed job classification and rate to the Commission Agreement Manager for approval. The proposed rate may not exceed the maximum rate identified for the job classification. Neither the Recipient nor any subcontractor may use the job classifications or rates of their subcontractors for personnel.

If the individual performs any work prior to the effective date of the amendment documenting the change, the Recipient will bear the expense of the work.

3) Promotion of Existing Personnel to an Existing Job Classification

Recipient or subcontractor personnel that are identified in Exhibit B may be assigned to a higher-paying job classification identified in Exhibit B. If the Recipient performs any work under the new rate prior to the effective date of the amendment documenting the change, the Recipient will bear the expense of the difference between the new and old rates.

4) Addition of Subcontractors

In order to add subcontractors to Exhibit B, the Commission Agreement Manager must submit a "Subcontractor Addition" form to the Commission Agreement Officer. The form identifies the new subcontractor, bidding method used (competitive or non-competitive), and the tasks the new subcontractor will perform.

5) Addition of Job Classifications and Changes in Hours

6) Increased Direct Operating Expenses and Rates that Exceed the Expenses and Rates Identified in Exhibit B

7. **Contracting and Procurement Procedures**

This section provides general requirements for agreements entered into between the Recipient and subcontractors for the performance of this Agreement.

a. **Contractor's Obligations to Subcontractors**

1) The Recipient is responsible for handling all contractual and administrative issues arising out of or related to any subcontracts it enters into for the performance of this Agreement.

2) Nothing contained in this Agreement or otherwise creates any contractual relation between the Commission and any subcontractors, and no subcontract may relieve the Recipient of its responsibilities under this Agreement. The Recipient agrees to be as fully responsible to the Commission for the acts and omissions of its subcontractors or persons directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the Recipient.

The Recipient's obligation to pay its subcontractors is an independent obligation from the Commission's obligation to make payments to the Recipient. As a result, the Commission has no obligation to pay or enforce the payment of any funds to any subcontractor.

3) The Recipient is responsible for establishing and maintaining contractual agreements with and reimbursing each subcontractor for work performed in accordance with the terms of this Agreement.

b. **Flow-Down Provisions**

Subcontracts funded in whole or in part by this Agreement must include language conforming to the provisions below, unless the subcontracts are entered into by the University of California (UC) or the U.S. Department of Energy (DOE) national laboratories. UC may use the terms and conditions negotiated by the Energy Commission with UC for its subcontracts. DOE national laboratories may use the terms and conditions negotiated with DOE (please contact the Commission Grants Officer for these terms).

- Standard of Performance (Section 3)
- Legal Statements on Products (included in Section 5, "Products")
- Travel and Per Diem (Section 9)
- Prevailing Wage (Section 10)
- Recordkeeping, Cost Accounting, and Auditing (Section 11)
- Equipment (Section 14)
- Disputes (Section 15)
- Indemnification (Section 18)
- Confidentiality (Section 19)
- Pre-Existing and Independently Funded Intellectual Property (Section 20)
- Intellectual Property (Section 21)
- Royalty Payments to the Commission (Section 22)
- Access to Sites and Records (included in Section 23, "General Provisions")
- Nondiscrimination (included in Section 24, "Certifications and Compliance")
- Survival of the following sections:
 - Equipment (Section 14)

- Recordkeeping, Cost Accounting, and Auditing (Section 11)
- Pre-Existing and Independently Funded Intellectual Property (Section 20)
- Intellectual Property (Section 21)
- Royalty Payments to the Commission (Section 22)
- Access to Sites and Records (included in Section 23, "General Provisions")

Subcontracts funded in whole or in part by this Agreement must also include the following:

- A clear and accurate description of the material, products, or services to be procured.
- A detailed budget and timeline.
- Provisions that allow for administrative, contractual, or legal remedies in instances where subcontractors breach contract terms, in addition to sanctions and penalties as may be appropriate.
- Provisions for termination by the Recipient, including termination procedures and the basis for settlement.
- A statement that further assignments will not be made to any third or subsequent tier subcontractor without additional advance written consent of the Commission.

c. Audits

All subcontracts entered into for the performance of this Agreement are subject to examination and audit by the Energy Commission and/or Bureau of State Audits for a period of three (3) years after payment of the Recipient's final invoice under this Agreement. The Energy Commission may audit subcontracts that are relevant to the Recipient's royalty payment obligations (see Section 22) for a period of ten (10) years after the Agreement's end date.

d. Copies of Subcontracts

The Recipient must provide a copy of its subcontracts upon request by the Energy Commission.

e. Conflicting Subcontract Terms

Prior to the execution of this Agreement, the Recipient will notify the Commission Agreement Manager of any known or reasonably foreseeable conflicts between this Agreement and its agreements with any subcontractors (e.g., conflicting intellectual property or payment terms). If the Recipient discovers any such conflicts after the execution of this Agreement, it will notify the Commission Agreement Manager of the conflict within fifteen (15) days of discovery. The Energy Commission may terminate this Agreement if any conflict impairs or diminishes its value.

f. Penalties for Noncompliance

Without limiting the Commission's other remedies, failure to comply with the above requirements may result in the termination of this Agreement.

8. **Payment of Funds**

a. Definitions

For purposes of this Section 8, the following terms have the following meaning:

- "Advance Payment" means the Energy Commission pays Recipient prior to the Recipient incurring or paying the expense.
- "Incurred Cost" means an expense for which the Recipient has become liable (legally obligated) to pay. Here are examples of incurred costs:

- The Recipient's staff has completed work during the month but has not been paid by the Recipient. These labor and associated costs (e.g., fringe benefits) are considered Incurred Costs.
- The Recipient has purchased a piece of equipment and received an invoice, bill, or receipt. The Recipient has not yet paid the invoice. The invoice shows the amount to be paid and confirmation of the sale. This is an Incurred Cost.

Incurred costs for equipment DO NOT include purchase orders unless accompanied by an invoice, bill, or receipt that shows the payment amount due to the seller for the equipment.

- "Paid Cost" means an expense for which the Recipient has already made payment.

b. Advance Payments

Recipients can receive Advance Payments only for subcontractors with the U.S. Department of Energy laboratories. Otherwise, Advance Payments are NOT allowed under this Agreement. The Energy Commission in its sole discretion, and not the Recipient, decides if the Commission will make an Advance Payment.

c. Reimbursable Cost Requirements

In addition to any other requirements in this Agreement, the Energy Commission is only obligated to reimburse the Recipient for Incurred and Paid Costs that are (1) incurred during the Agreement Term; (2) invoiced within the required timeframes of this Agreement; (3) made in accordance with the Agreement's Budget; and (4) actual and allowable expenses under this Agreement.

ALL of the items in the Budget, including without limitation labor rates, fringe and indirect and individually listed items are caps (i.e., maximums), and the Recipient can only bill its ACTUAL amount up to capped amounts listed in the Budget. For example, if the Budget includes an employee's hourly rate of \$50/hour but the employee is only paid \$40/hour, the Recipient can only bill for \$40/hour. Under the same example, if the employee earned \$70/hour but the Budget only lists \$50/hour, the Recipient can only bill for \$50. Another example is if the maximum fringe rate listed in the budget is 20% but the Recipient's actual fringe rate is only 15%, the Recipient can only bill at 15%.

d. Recipient's 14-Day Payment Requirement for Incurred Costs

The Recipient shall pay ALL Incurred Costs for which it has invoiced the Energy Commission within 14 calendar days of receiving payment under this Agreement for the Incurred Costs. For example, if the Recipient invoices and then receives payment from the Commission on September 15 for an Incurred Cost of \$10,000, the Recipient shall pay the entire \$10,000 by September 29. This requirement is needed to prevent Recipients from creating long lead times for Incurred Costs (e.g., invoicing and receiving payment from the Commission but not paying for the Incurred Costs for weeks or months).

The Recipient shall only invoice the Commission for Incurred Expenses the Recipient shall pay with 14 calendar days of receiving payment from the Commission. For example, assume the Recipient has an Incurred Cost for a piece of equipment that costs \$300,000 and will pay in three installments of \$100,000 each over three months. The Recipient shall only invoice the Commission for \$100,000 each month. The Recipient shall not invoice for the entire \$300,000 and retain the balance over the three months.

For any Incurred Costs for which the Recipient has received funds from the Energy Commission and does not pay within 14 calendar days, the Recipient shall on the very next business day after the 14 calendar days submit repayment of the unpaid amount back to the Energy Commission. Repaid funds will be placed back into the agreement and will be available to reimburse allowable costs in accordance with this agreement. When making a repayment under this provision, the Recipient shall specify "Repayment of Unspent Funds under Agreement [EPC-17-008]." Recipient shall remit the repayment to:

California Energy Commission
Accounting Office
1516 Ninth Street, MS-2
Sacramento, CA 95814

This repayment requirement of the Recipient is in addition to any other rights the Energy Commission can enforce relative to this Agreement. Recipient agrees and acknowledges that time is of the essence in paying Incurred Costs and submitting repayments and the Energy Commission can treat the Recipient's breach of either requirement as a material breach. Recipient can contact the Commission Agreement Manager for any questions about the logistics of making repayments.

e. Payment Requests

The Recipient may request payment from the Energy Commission at any time during the term of this Agreement but no more frequently than monthly. It is preferred that payment requests be submitted with the progress reports. The final payment request, including retention, MUST be received by the Energy Commission no later than the agreement end date.

Recipient agrees and acknowledges that time is of the essence in submitting the final payment request. The Commission has a limited period of time, set by law, in which it can reimburse funds under this Agreement. Without prejudice to the Commission's other rights, the Recipient risks not receiving any funds, and relieves the Commission of any duty and liability whatsoever to pay, for any payment requests received after the end of the Agreement.

No reimbursement for food or beverages shall be made other than allowable per diem charges.

All Recipient expenditures, reimbursable and match, must occur within the approved term of this Agreement.

f. Invoice Approval and Disputes:

Each request for payment is subject to the Commission Agreement Manager's approval. Payments will be made to the Recipient for undisputed invoices. An undisputed invoice is an invoice submitted by the Recipient for work performed, for which project expenditures and products meet all Agreement conditions, and for which additional evidence is not required to determine its validity.

The invoice will be disputed if all products due for the billing period have not been received and approved, if the invoice is inaccurate, or if it does not comply with the terms of this Agreement. If the invoice is disputed, the Recipient will be notified via a Dispute Notification Form within fifteen (15) working days of receipt of the Commission Agreement Manager's invoice.

g. Recipient's headquarters:

For purposes of payment, the Recipient's headquarters is the location of the Recipient's office where the majority of its employees assigned responsibilities for this Agreement are permanently assigned.

h. Multiple Non-Energy Commission Funding Sources:

No payment will be made for costs identified in recipient invoices that have been or will be reimbursed by another source, including but not limited to an agreement with another government entity.

"Government Entity" means: (1) a state governmental agency; (2) a state college or university; (3) a local government entity or agency, including those created as a Joint Powers Authority; (4) an auxiliary organization of the California State University or a California community college; (5) the federal government; (6) a foundation organized to support the Board of Governors of the California Community Colleges; and (7) an auxiliary organization of the Student Aid Commission established under California Education Code Section 69522.

i. Reduced funding:

If the Energy Commission does not receive sufficient funds under the Budget Act or from the investor-owned utility administrators of the EPIC program to fully fund the work identified in Exhibit A (Scope of Work), the following will occur:

- a) If the Energy Commission has received a reduced amount of funds for the work, it may: (1) offer an Agreement amendment to the Recipient to reflect the reduced amount; or (2) cancel this Agreement (with no liability occurring to the State).
- b) If the Energy Commission has received no funds for the work identified in Exhibit A: (1) this Agreement will be of no force and effect; (2) the State will have no obligation to pay any funds to the Recipient; and (3) the Recipient will have no obligation to perform any work under this Agreement.

j. Allowability of Costs

- a) Allowable Costs

The costs for which the Recipient will be reimbursed under this Agreement include all costs, direct and indirect, incurred in the performance of the work identified in the Scope of Work. Costs must be incurred within the Agreement term. Factors to be considered in determining whether an individual item of cost is allowable include: (i) reasonableness of the item, including necessity of the item for the work; (ii) applicable federal cost principles or acquisition regulations incorporated by reference in Section 2 of this Agreement; and (iii) the terms and conditions of this Agreement.

b) Unallowable Costs

Below are examples of unallowable costs. Details concerning the allowability of costs are available from the Energy Commission's Accounting Office.

- a) Profit of the Recipient or fees (this restriction does not apply to subcontractors);
- b) Contingency costs;
- c) Imputed costs (e.g., cost of money);
- d) Fines and penalties;
- e) Losses;
- f) Excess profit taxes; and
- g) Unapproved, increased rates and fees for this Agreement

- c) Except as provided for in this Agreement or applicable California law or regulations, the Recipient will use the federal cost principles and/or acquisition regulations incorporated by reference in Section 2 of this Agreement when determining allowable and unallowable costs. In the event of a conflict, this Agreement takes precedence over the federal cost principles and/or acquisition regulations.

k. Payment Request Format

Each request for payment will consist of, but not be limited to, the following:

- 1) An invoice that includes a list of Incurred and Paid Costs. Backup documentation is required at the time of invoice submittal, such as time cards, vendor invoices, and proof of payment (e.g., cancelled checks). Unless otherwise specified in Exhibit B or the invoice template, the invoice must include the following:
 - a) Agreement number;
 - b) Date prepared;
 - c) Recipient's Federal tax ID number;
 - d) Billing period;
 - e) Recipient's actual labor expenditures, including hourly unloaded labor rates by individual name and classification, hours worked, and benefits (fully loaded rates may only be used if they are included in the grant budget);
 - f) Non-labor expenses, including fringe benefits, indirect overhead, and general/administrative expenses;
 - g) Operating expenses, including travel, equipment, materials, and other;
 - h) By budget line item (cost component) category, the budgeted amount, amount billed to date, currently billed amount, and balance of funds;
 - i) Match fund expenditures (if applicable);

- j) Receipts for travel (including departure and return times), equipment, materials, and miscellaneous; and
 - k) Subcontractor invoices that include all items above, for correspondence with the budget (e.g., if the budget lists hourly labor rates, the subcontractor's invoice should include hourly labor rates).
- 2) A progress report that documents evidence of progress, as described in the Scope of Work.
 - 3) Products prepared by the Recipient during the invoicing period, as described in the Scope of Work.

The Commission will accept computer-generated or electronically transmitted invoices without backup documentation provided that the Recipient mails a hard copy the same day.

The Recipient must submit all invoices to the following address:

California Energy Commission
Accounting Office
1516 Ninth Street, MS-2
Sacramento, CA 95814

If the Recipient has not otherwise provided to the Commission documentation showing the Recipient's payment of Incurred Costs, the Recipient shall provide such documentation as soon as possible and not later than three working days from a request from Commission personnel.

I. Certification

The following certification will be included on each payment request form and signed by the Recipient's authorized officer:

The documents included in this request for payment are true and correct to the best of my knowledge and I, as an agent of [Company Name] have authority to submit this request. I certify that reimbursement for these costs has not and will not be received from any other sources, including but not limited to a government entity contract, subcontract, or other procurement method. For projects considered to be a public work, prevailing wages were paid to eligible workers who provided labor for the work covered by this invoice; the Recipient and all subcontractors have complied with prevailing wage laws.

m. Fringe Benefit, Indirect Overhead, General and Administrative (G&A), and Facilities and Administration (F&A) Rates

Indirect cost rates must be developed in accordance with generally accepted accounting principles and the applicable federal cost principles or acquisition regulations (see the provisions incorporated by reference in Section 2). If the Recipient has an approved fringe benefits or indirect cost rate (indirect overhead, G&A, or F&A) from its cognizant federal agency, the Recipient may bill at the federal rate up to the budget rate caps if the following conditions are met:

- The Recipient may bill at the federal provisional rate but must adjust annually to reflect its actual final rates for the year in accordance with the Labor, Fringe, and Indirect Invoicing Instructions contained in the budget (Exhibit B).

- The cost pools used to develop the federal rates must be allocable to the Agreement, and the rates must be representative of the portion of costs benefiting the Agreement. For example, if the federal rate is for manufacturing overhead at the Recipient's manufacturing facility and the Agreement is for research and development at the Recipient's research facility, the federal indirect overhead rate would not be applicable to the Agreement.
- The federal rate must be adjusted to exclude any costs that are specifically prohibited in the Agreement.
- The Recipient may only bill up to the Agreement budget rate caps, unless and until an amendment to the budget is approved.

n. Retention

The Energy Commission shall retain 10 percent of any payment request or 10 percent of the total Energy Commission award at the end of the project. The Energy Commission has the sole discretion to decide which of these methods of retention will be used in this Agreement. The Recipient must submit a completed payment request requesting release of the retention within the required timeframe (see part e "Payment Requests" above in this term). The CAM will review the project file and, when satisfied that the terms of the funding Agreement have been fulfilled, will authorize release of the retention.

Retention may be released upon completion of tasks that are considered separate and distinct (i.e., the task is a stand-alone piece of work and could be completed without the other tasks). Tasks for administration or management of the Agreement and/or subcontractors are not considered separate and distinct tasks. The tasks for which retention may be released prior to the end of the Agreement must be identified in Exhibit B (budget).

When the Commission withholds 10% retention from each invoice, the Recipient can choose to flow down the retention requirement to its subcontractors subject to the following restrictions and any other requirements in this Agreement:

- The Recipient shall not flow down retention requirements to U.S. Department of Energy national laboratory subcontractors.
- The retention flowed down to subcontractors can only be up to a total of 10% of the amount of Commission funds the subcontractor is to receive. The Recipient is responsible for carrying the retention for its funded portion of the entire Agreement and cannot pass its share of retention to subcontractors. Here are three examples:
 - i. A subcontractor submits an invoice for \$100,000 to the Recipient, and the Recipient in turn submits it to the Commission. The Commission will only pay \$90,000 of the invoice and the Recipient can elect to pay only \$90,000 to the subcontractor.
 - ii. The subcontractor is the U.S. Department of Energy national laboratory and it submits an advance request for \$100,000 to the Recipient, including any other documents required in the Energy Commission's U.S. Department of Energy Terms and Conditions. The Recipient in turn submits the advance requests to the Commission for payment. The Commission will pay the full amount of the advance requests to the Recipient and the Recipient must pay the full amount to the U.S. Department of Energy.

- iii. The Recipient's submits an invoice for its own staff in the amount of \$20,000. The Commission will only pay \$18,000 to the Recipient, and the Recipient cannot withhold the \$2,000 difference from subcontractor reimbursements.

These requirements apply to all levels of subcontractors (e.g., a subcontractor to a subcontractor).

9. Travel and Per Diem

- a. Travel not listed in the budget requires prior written authorization from the Commission Agreement Manager.
- b. No reimbursement for food or beverages will be made other than for allowable per diem charges.
- c. The Recipient will be reimbursed for authorized travel and per diem up to, but not to exceed, the rates allowed nonrepresented state employees. Current allowable travel reimbursement rates can be obtained from the Commission's web site at http://www.energy.ca.gov/contracts/TRAVEL_PER_DIEM.PDF.
- d. Travel expense claims must detail expenses using the allowable rates, and the Recipient must sign and date each travel expense claim before submitting it to the Commission for payment. Expenses must be listed by trip, including dates and times of departure and return. Travel expense claims supporting receipts and expense documentation must be attached to the Recipient's Payment Request. A vehicle license number is required when claiming mileage, parking, or toll charges. Questions regarding allowable travel expenses or per diem should be addressed to the Commission Agreement Manager.

10. Prevailing Wage

- a. Requirement

Projects funded by the Energy Commission often involve construction, alteration, demolition, installation, repair, or maintenance work over \$1,000. Such projects might be considered "public works" under the California Labor Code (See California Labor Code Section 1720 et seq. and Title 8 California Code of Regulations, Section 16000 et seq.). Public works projects require the payment of prevailing wages. Prevailing wage rates can be significantly higher than non-prevailing wage rates.

- b. Determination of Project's Status

Only the California Department of Industrial Relations (DIR) and courts of competent jurisdiction may issue legally binding determinations that a particular project is or is not a public work. If the Recipient is unsure whether the project funded by the Agreement is a "public work" as defined in the California Labor Code, it may wish to seek a timely determination from DIR or an appropriate court. As such processes can be time consuming, it may not be possible to obtain a timely determination before the date for performance of the Agreement.

By accepting this grant, the Recipient is fully responsible for complying with all California public works requirements, including but not limited to payment of prevailing wage. As a material term of this grant, the Recipient must either:

- 1) Timely obtain a legally binding determination from DIR or a court of competent jurisdiction before work begins on the project that the proposed project is not a public work; or
- 2) Assume that the project is a public work and ensure that:

- Prevailing wages are paid unless and until DIR or a court of competent jurisdiction determines that the project is not a public work;
- The project budget for labor reflects these prevailing wage requirements; and
- The project complies with all other requirements of prevailing wage law, including but not limited to keeping accurate payroll records and complying with all working hour requirements and apprenticeship obligations.

California Prevailing Wage law provides for substantial damages and financial penalties for failure to pay prevailing wages when such payment is required.

c. Subcontractors and Flow-down Requirements

The Recipient will ensure that its subcontractors also comply with the public works/prevailing wage requirements above. The Recipient will ensure that all agreements with its subcontractors to perform work related to this Project contain the above terms regarding payment of prevailing wages on public works projects. The Recipient is responsible for any failure of its subcontractors to comply with California prevailing wage and public works laws.

d. Indemnification and Breach

Any failure of the Recipient or its subcontractors to comply with the above requirements will constitute breach of this Agreement which excuses the Commission's performance of this Agreement at the Commission's option, and will be at the Recipient's sole risk. In such a case, the Commission will refuse payment to the Recipient of any amount under this award and the Commission will be released, at its option, from any further performance of this Agreement or any portion thereof. The Recipient will indemnify the Energy Commission and hold it harmless for any and all financial consequences arising out of or resulting from the failure of the Recipient and/or any of its subcontractors to pay prevailing wages or to otherwise comply with the requirements of prevailing wage law.

e. Budget

The Recipient's budget on public works projects must indicate which job classifications are subject to prevailing wage. For detailed information about prevailing wage and the process to determine if the proposed project is a public work, the Recipient may wish to contact DIR or a qualified labor attorney for guidance.

f. Covered Trades

For public works projects, the Recipient may contact DIR for a list of covered trades and the applicable prevailing wage.

g. Questions

If the Recipient has any questions about this contractual requirement or the wage, record keeping, apprenticeship, or other significant requirements of California prevailing wage law, the Recipient should consult DIR and/or a qualified labor attorney before entering into this Agreement.

h. Certification

The Recipient will certify to the Energy Commission on each payment request form either that: (a) prevailing wages were paid to eligible workers who provided labor for work covered by the payment request and the Recipient and all contractors and subcontractors otherwise complied with all California prevailing wage laws; or (b) the project is not a public work requiring the payment of prevailing wages. In the latter case, the Recipient will provide competent proof of a DIR or court determination that the project is not a public work requiring the payment of prevailing wages.

Prior to the release of any retained funds under this Agreement, the Recipient will submit to the Energy Commission the above-described certificate signed by the Recipient and all contractors and subcontractors performing public works activities on the project. Absent this certificate, the Recipient will have no right to any funds under this Agreement, and Commission will be relieved of any obligation to pay any funds.

11. Recordkeeping, Cost Accounting, and Auditing

a. Cost Accounting

The Recipient will keep separate, complete, and correct accounting of the costs involved in completing the project and any match-funded portion of the project. The Commission or its agent will have the right to examine the Recipient's books of accounts at all reasonable times, to the extent necessary to verify the accuracy of the Recipient's reports.

b. Accounting Procedures

The Recipient's costs will be determined on the basis of its accounting system procedures and practices employed as of the effective date of this Agreement, provided that the Recipient uses generally accepted accounting principles and cost reimbursement practices. The Recipient's cost accounting practices used in accumulating and reporting costs during the performance of this Agreement will be consistent with the practices used in estimating costs for any proposal to which this Agreement relates; provided that such practices are consistent with the other terms of this Agreement and that such costs may be accumulated and reported in greater detail during performance of this Agreement.

The Recipient's accounting system will distinguish between direct and indirect costs. All costs incurred for the same purpose, in like circumstances, are either direct costs only or indirect costs only with respect to costs incurred under this Agreement.

c. Audit Rights

The Recipient will maintain books, records, documents, and other evidence, based on the procedures set forth above, sufficient to reflect properly all costs claimed to have been incurred in the performance of this Agreement. The Energy Commission, another state agency, and/or a public accounting firm designated by the Energy Commission may audit the Recipient's accounting records at all reasonable times, with prior notice by the Energy Commission.

It is the intent of the parties that the audits will ordinarily be performed not more frequently than once every twelve (12) months during the performance of the work and once at any time within three (3) years after payment by the Energy Commission of the Recipient's final invoice. However, performance of any such interim audits by the Energy Commission does not preclude further audit. The Energy Commission may audit books, records, documents, and other evidence relevant to the Recipient's royalty payment obligations (see Section 22) for a period of ten (10) years after payment of the Recipient's final invoice.

The Recipient will allow the auditor(s) to access such records during normal business hours, and will allow interviews of any employees who might reasonably have information related to such records. The Recipient will include a similar right of the state to audit records and interview staff in any subcontract related to the performance of this Agreement.

d. Refund to the Energy Commission

If the Energy Commission determines that any invoiced and paid amounts exceed the actual allowable incurred costs, the Recipient will repay the amounts to the Energy Commission within thirty (30) days of request or as otherwise agreed by the Energy Commission and the Recipient. If the Energy Commission does not receive such repayments, it will be entitled to take actions such as withholding further payments to the Recipient and seeking repayment from the Recipient.

e. Audit Cost

The Recipient will bear its cost of participating in any audit (e.g., mailing or travel expenses). The Energy Commission will bear the cost of conducting the audit unless the audit reveals an error detrimental to the Energy Commission that exceeds more than ten percent (10%) or \$5,000 (whichever is greater) of: (1) the amount audited; or (2) if a royalty audit, the total royalties due in the period audited. The Recipient will pay the refund as specified in subsection (d), and will reimburse the Energy Commission for reasonable costs and expenses incurred by the Commission in conducting the audit.

f. Match or Cost Share

If the budget includes a match share requirement, the Recipient's commitment of resources, as described in this Agreement, is a required expenditure for receipt of Energy Commission funds. The funds will be released only if the required match percentages are expended. The Recipient must maintain accounting records detailing the expenditure of the match (actual cash and in-kind, non-cash services), and report on match share expenditures on its request for payment.

12. Workers' Compensation Insurance

- a. The Recipient warrants that it carries Worker's Compensation Insurance for all of its employees who will be engaged in the performance of this Agreement, and agrees to furnish to the Commission Agreement Manager satisfactory evidence of this insurance upon the Commission Agreement Manager's request.
- b. If the Recipient is self-insured for worker's compensation, it warrants that the self-insurance is permissible under the laws of the State of California and agrees to furnish to the Commission Agreement Manager satisfactory evidence of the insurance upon the Commission Agreement Manager's request.

13. Permits and Clearances

The Recipient is responsible for ensuring that all necessary permits and environmental documents are prepared and that clearances are obtained from the appropriate agencies.

14. Equipment

Title to equipment acquired by the Recipient with grant funds will vest in the Recipient. The Recipient may use the equipment in the project or program for which it was acquired as long as needed, regardless of whether the project or program continues to be supported by grant funds. However, the Recipient may not sell, lease, or encumber the property (i.e., place a legal burden on the property such as a lien) during the Agreement term without the Commission Agreement Manager's prior written approval.

The Recipient may refer to the applicable federal regulations incorporated by reference in this Agreement for guidance regarding additional equipment requirements.

15. Disputes

In the event of an Agreement dispute or grievance between the Recipient and the Energy Commission, both parties may follow the procedure detailed below. The Recipient will continue with its responsibilities under this Agreement during any dispute.

- a. Commission Agreement Manager/Commission Agreement Officer
 - The Recipient must first discuss the problem informally with the Commission Agreement Manager.
 - If the problem cannot be resolved at this stage, the Recipient must submit a Contractor Dispute Statement, along with any evidence, to the Commission Agreement Officer. The statement must include: (1) a summary of the issues in dispute; (2) the legal authority or other basis for the Recipient's position; and (3) the remedy sought.
- b. Commission Agreement Officer/ Program Office Manager
 - The Commission Agreement Officer and the Program Office Manager must make a determination on the problem within ten (10) working days of receipt of the Recipient's Dispute Statement.
 - The Commission Agreement Officer will submit a Dispute Finding to the Recipient that includes: (1) a decision; and (2) an explanation of the decision.
 - The Recipient may appeal to the Commission's Executive Director if it disagrees with the Commission Agreement Officer's decision.

c. **Executive Director**

- The Recipient must submit an Appeal to the Commission's Executive Director within ten (10) working days of receipt of the Commission Agreement Officer's Dispute Finding. The Appeal must explain why the Commission Agreement Officer's decision is unacceptable. The Recipient must include the following as attachments to the Appeal: (1) the Recipient Dispute Statement; (2) any supporting documents; and (3) the Dispute Finding.
- The Executive Director or his/her designee will meet with the Recipient to review the issues raised.
- A written decision signed by the Executive Director or his/her designee will be sent to the Recipient within twenty (20) working days of receipt of the Appeal. The Executive Director may exercise the option of presenting the decision to the Commission at a business meeting.
- If the Recipient disagrees with the Executive Director's decision, it may appeal to the Commission at a regularly scheduled business meeting. The Commission Agreement Officer will inform the Recipient of the procedure for placing the appeal on a Commission Business Meeting Agenda.

16. Stop Work

The Commission Agreement Officer may, at any time by written notice to the Recipient, require the Recipient to stop all or any part of the work tasks in this Agreement. Stop work orders may be issued for reasons such as a project exceeding budget, noncompliance with the standard of performance, out of scope work, project delays, and misrepresentations.

- a. **Compliance.** Upon receipt of a stop work order, the Recipient must immediately take all necessary steps to comply with the order and to minimize the incurrence of costs allocable to the work stopped.
- b. **Equitable Adjustment.** The Energy Commission will make an equitable adjustment based upon a written request from the Recipient. The Recipient must make the adjustment request within thirty (30) days from the date of the stop work order.
- c. **Canceling a Stop Work Order.** The Recipient may resume the work only upon receipt of written instructions from the Commission Agreement Officer.

17. Termination

a. **Purpose**

Because the Energy Commission is a state entity and provides funding on behalf of all California ratepayers, it must be able to terminate the Agreement upon the default of the Recipient and to proceed with the work required under the Agreement in any manner it deems proper. The Recipient agrees that upon any of the events triggering the termination of the Agreement by the Energy Commission, the Energy Commission has the right to terminate the Agreement, and it would constitute bad faith of the Recipient to interfere with the immediate termination of the Agreement by the Energy Commission.

b. Breach

The Energy Commission will provide the Recipient written notice of intent to terminate due to the Recipient's breach. The Recipient will have fifteen (15) calendar days to fully perform or cure the breach. If the Recipient does not cure the breach within fifteen (15) days, the Energy Commission may, without prejudice to any of its other remedies, terminate this Agreement upon five (5) calendar days written notice to the Recipient. In this event, the Energy Commission will pay the Recipient only the reasonable value of the services performed satisfactorily by the Recipient before the notice of termination, as may be agreed upon by the parties or determined by a court of law, but not to exceed the maximum payable Agreement amount.

c. For Cause

The Energy Commission may, for cause, terminate this Agreement upon giving thirty (30) calendar days advance written notice to the Recipient. In this event, the Recipient will use all reasonable efforts to mitigate its expenses and obligations. The Energy Commission will pay the Recipient for any services rendered and expenses incurred within thirty (30) days after notice of termination that the Recipient could not have avoided by reasonable efforts, in an amount not to exceed the maximum payable Agreement amount. The Recipient will relinquish possession of equipment purchased for this Agreement with Energy Commission funds to the Commission, or the Recipient may purchase the equipment as provided by the terms of this Agreement, with approval of the Energy Commission.

The term "for cause" includes but is not limited to the following:

- Partial or complete loss of match funds;
- Reorganization to a business entity unsatisfactory to the Energy Commission;
- Retention or hiring of subcontractors, or replacement or addition of personnel, that fail to perform to the standards and requirements of this Agreement;
- The Recipient's inability to pay its debts as they become due and/or the Recipient's default of an obligation that impacts its ability to perform under this Agreement; or
- Significant change in state or Energy Commission policy such that the work or product being funded would not be supported by the Commission.

d. Without Cause

The Energy Commission may terminate this Agreement without cause in whole or in part, upon giving thirty (30) days advance written notice to the Recipient. In this event, the Recipient will use all reasonable efforts to mitigate its expenses and obligations. Also, the Energy Commission will pay the Recipient for all satisfactory services rendered and expenses incurred within thirty (30) calendar days after notice of termination that the Recipient could not avoid by reasonable efforts, in an amount not to exceed the maximum payable under this Agreement.

18. Indemnification

To the extent allowed under California law, the Recipient will indemnify, defend, and hold harmless the state (including the Energy Commission) and state officers, agents, and employees from any and all claims and losses in connection with the performance of this Agreement.

19. Confidentiality**a. Identification of Confidential Information**

- 1) Prior to the effective date of this Agreement, the Recipient will identify all products (or information contained within products) that it considers to be confidential, in addition to the legal basis for confidentiality, in Attachment 1 to this Exhibit. If the Energy Commission agrees that the information is confidential, it will not disclose it except as provided in subsection (b).
- 2) During the Agreement, if the Recipient develops additional products (or information contained within products) not originally anticipated as confidential, it will follow the procedures for a request for designation of confidential information specified in Title 20 California Code of Regulations (CCR) Section 2505.

The Energy Commission's Executive Director will make the confidentiality determination. Following this determination, the confidential information may be added to Attachment 1 through a Letter of Agreement (see the "Amendments" section). The Energy Commission will not disclose information subject to an application for confidential designation except as provided in subsection (b).

- 3) When submitting products containing confidential information, the Recipient will mark each page of any document containing confidential information as "confidential", and present it in a sealed package to the Contracts, Grants, and Loans Office.

The Commission Agreement Manager may require the Recipient to submit a non-confidential version of the product, if it is feasible to separate the confidential information from the non-confidential information. The Recipient is not required to submit such products in a sealed package.

b. Disclosure of Confidential Information

The Energy Commission will only disclose confidential information under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508. All confidential information that is legally disclosed by the Recipient or any other entity will become a public record and will no longer be subject to the Energy Commission's confidentiality designation.

c. Waiver of Consequential Damages

In no event will the Energy Commission, the California Public Utilities Commission, or the state of California be liable for any special, incidental, or consequential damages based on breach of warranty, breach of contract, negligence, strict tort, or any other legal theory for the disclosure of the Recipient's confidential information, even if the Commission has been advised of the possibility of such damages.

Damages that the Energy Commission, the California Public Utilities Commission, and the state of California will not be responsible for include but are not limited to: lost profit; lost savings or revenue; lost goodwill; lost use of the product or any associated equipment; cost of capital; cost of any substitute equipment, facilities, or services; downtime; the claims of third parties including customers; and injury to property.

d. Limitations on the Recipient's Disclosure of Products

- 1) During the Agreement, the Recipient must receive approval from the Commission Agreement Manager prior to disclosing the contents of any draft product to a third party. However, if the Energy Commission makes a public statement about the content of any product provided by the Recipient and the Recipient believes the statement is incorrect, the Recipient may state publicly what it believes is correct.
- 2) After any document submitted has become a part of the public records of the state, the Recipient may publish or use it at its own expense.
- 3) Except as provided in Title 20 CCR Sections 2506, 2507, and 2508, the Recipient may not disclose any information provided to it by the Energy Commission for the performance of this Agreement if the information has been designated as confidential or is the subject of a pending application for confidential designation. At the election of the Commission Agreement Manager, the Recipient, its employees, and its subcontractors must execute a confidentiality agreement provided by the Commission Agreement Manager.
- 4) The Recipient will ensure that each of its officers, employees, and subcontractors who are involved in the performance of this Agreement are informed about these disclosure limitations and will abide by them.

20. Pre-Existing and Independently Funded Intellectual Property

a. Ownership

The Energy Commission makes no ownership, license, or royalty claims to pre-existing intellectual property, independently funded intellectual property, or project-relevant pre-existing or independently funded intellectual property. **"Ownership"** means exclusive possession and control of all rights to property, including the right to use and transfer property. Intellectual property licenses and royalties are discussed in Sections 21 and 22.

- 1) **"Pre-existing intellectual property"** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Recipient or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

- 2) **"Independently funded intellectual property"** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice by the Recipient or a third party during or after the Agreement term without Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.

- 3) **"Project-relevant pre-existing intellectual property" and "project-relevant independently funded intellectual property"** mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.

b. **Project-Relevant Pre-Existing and Independently Funded Intellectual Property**

1) **Identification of Property**

- a) The Recipient will identify all project-relevant pre-existing intellectual property in Attachment 1 to this Exhibit prior to the effective date of the Agreement, or within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement. Attachment 1 may be amended by a Letter of Agreement (see the "Amendments" section).
- b) The Recipient will identify all project-relevant independently funded intellectual property and the source of funding for the property in Attachment 1 to this Exhibit within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.
- c) Failure to identify project-relevant pre-existing or independently funded intellectual property in Attachment 1 to this Exhibit may result in the property's designation as "intellectual property" that is subject to licenses and royalties, as described in Sections 21 and 22.

2) Access to Property

The extent of Energy Commission and California Public Utilities Commission access to project-relevant pre-existing and independently funded intellectual property is limited to that reasonably necessary to: (a) demonstrate the validity of any premise, postulate, or conclusion referred to or expressed in any product; or (b) establish a baseline for repayment purposes.

Upon the Commission Agreement Manager's request, the Recipient will provide the Commission Agreement Manager and any reviewers designated by the Energy Commission or the California Public Utilities Commission with access to review the Recipient's project-relevant pre-existing and independently funded intellectual property. If the property has been designated as confidential as specified in Section 19, the Energy Commission will only disclose it under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508.

3) Preservation of Property

The Recipient will preserve any project-relevant pre-existing or independently funded intellectual property at its own expense for at least ten (10) years from the Agreement's end date, unless the Recipient agrees to a longer retention period.

The Energy Commission and the California Public Utilities Commission will have reasonable access to the project-relevant pre-existing or independently funded property throughout the retention period.

21. Intellectual Property

a. Ownership

- 1) The Recipient owns all intellectual property, subject to the licenses described in subsection b.

"Intellectual property" means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice with Agreement or match funds during or after the Agreement term; (b) any associated proprietary rights to these items, such as patent and copyright; and (c) any upgrades or revisions to these items.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices.

- 2) The Energy Commission owns all products identified in the Scope of Work, with the exception of products that fall within the definition of "intellectual property."

"Product" means any tangible item specified for delivery to the Energy Commission in the Scope of Work.

b. Intellectual Property Licenses

- 1) Both the Energy Commission and the California Public Utilities Commission have a no-cost, non-exclusive, transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, modify, and reproduce intellectual property for governmental purposes. The licenses are transferable only to load-serving entities for the purpose described below.
- 2) Both the Energy Commission and the California Public Utilities Commission may grant load-serving entities a no-cost, non-exclusive, transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, modify, and reproduce intellectual property to enhance the entities' service to EPIC ratepayers. **"Load-serving entity"** means a company or other organization that provides electricity to EPIC ratepayers. The licenses are transferable to third parties only for the purpose of facilitating the load-serving entity's enhancement of service to EPIC ratepayers. Load-serving entities must obtain prior written approval from the Energy Commission or California Public Utilities Commission (whichever agency granted the load-serving entity the license) in order to transfer the license to a third party.
- 3) The Recipient has a non-exclusive, non-transferable, irrevocable, worldwide, perpetual license to use, publish, translate, modify, and reproduce written products created for Agreement reporting and management purposes, such as reports and summaries.
- d) If any intellectual property that is subject to the licenses above has been designated as confidential as specified in Section 19, all license holders will only disclose the intellectual property under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508.

All license holders will ensure that their officers, employees, and subcontractors who have access to the intellectual property are informed of and abide by the disclosure limitations in Section 19.

c. Energy Commission's Rights to Inventions

"Invention" means intellectual property that is patentable.

- 1) **March-In Rights**
At the Energy Commission's request, the Recipient will forfeit and assign to the Energy Commission all rights to any invention (with the exception of U.S. Department of Energy reserved rights) if the Recipient or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the invention. The Energy Commission will have the unfettered right to use and/or dispose of the rights in whatever manner it deems most suitable to help transfer the invention into the marketplace, including but not limited to seeking patent protection or licensing the invention.
- 2) **Notice of Patent**
If any patent is issued for an invention, the Recipient will send the Commission Agreement Manager written notice of the issuance within three (3) months of the issuance date. The notice must include the patent title, issuance number, and a general description of the invention.
- 3) **Legal Notice**

The Recipient and all persons and/or entities obtaining an ownership interest in patentable intellectual property must include the following statement within the specification of any United States patent application, and any subsequently issued patent for the invention:

"This invention was made with State of California support under California Energy Commission grant number EPC-17-020. The Energy Commission has certain rights to this invention."

d. Access to and Preservation of Intellectual Property

1) Access to Intellectual Property

Upon the Commission Agreement Manager's request, the Recipient will provide the Commission Agreement Manager and any individuals designated by the Energy Commission or the California Public Utilities Commission with access to the Recipient's intellectual property in order to exercise the license and march-in rights described above, and to determine any royalty payments due under the Agreement.

2) Preservation of Intellectual Property

The Recipient will preserve intellectual property at its own expense for at least ten (10) years from the Agreement's end date, unless the Recipient agrees to a longer retention period.

e. Intellectual Property Indemnity

The Recipient may not, in supplying work under this Agreement, knowingly infringe or misappropriate any intellectual property right of a third party, and will take reasonable actions to avoid infringement.

The Recipient will defend and indemnify the Energy Commission and the California Public Utilities Commission from and against any claim, lawsuit, or other proceeding, loss, cost, liability, or expense (including court costs and reasonable fees of attorneys and other professionals) to the extent arising out of: (i) any third party claim that a product infringes any patent, copyright, trade secret, or other intellectual property right of any third party; or (ii) any third party claim arising out of the negligent or other tortious acts or omissions by the Recipient or its employees, subcontractors, or agents in connection with or related to the products or the Recipient's performance under this Agreement.

22. **Royalty Payments to the Commission**

"Sale," "sales," and **"sold"** mean the sale, license, lease, or other transfer of intellectual property. **"Sales Price"** means the price at which intellectual property is sold, excluding sales tax.

- a. The Recipient will pay the Energy Commission a royalty of one and one-half percent (1.5%) of the sales price of all sales for which the Recipient receives a payment, beginning on the Agreement's effective date and extending for ten (10) years from the Agreement's end date.
- b. The Recipient will make payments in annual installments due on the first day of March in the calendar year immediately following the year during which the Recipient received any payment for sales.

- c. The Recipient is not required to make a royalty payment for any calendar year in which payments for sales are less than \$1000. Total royalty payments will be limited to three (3) times the amount of funds paid by the Energy Commission under the Agreement.
- d. If intellectual property was developed in part with match funds during the Agreement term, the royalty payment will be reduced in accordance with the percentage of intellectual property development activities that were funded with match funds. For example, if 10% of the development activities were funded with match funds during the Agreement and payments for sales totaled \$100,000 in one year, the Recipient would owe the Energy Commission \$1350 for the year (1.5% of \$100,000 = \$1500; 10% of \$1500 = \$150; \$1500 - \$150 = \$1350).

If the Energy Commission is providing funds to the Recipient under this Agreement as a project match partner and Energy Commission funds are used in part to develop intellectual property, the royalty payments will be reduced in accordance with the percentage of intellectual property development activities that were funded with non-Energy Commission funds during the Agreement term. For example, if 80% of the development activities were funded with Recipient and/or third party funds during the Agreement and payments for sales totaled \$100,000 in one year, the Recipient would owe the Energy Commission \$300 for the year (1.5% of \$100,000 = \$1500; 80% of \$1500 = \$1200; \$1500 - \$1200 = \$300).

- e. The Recipient may make an early buyout payment to the Energy Commission without a pre-payment penalty, as an alternative to making annual royalty payments for ten (10) years following the Agreement's end date. The payment must be in a lump sum amount equal to one and a half (1.5) times the amount of funds paid by the Energy Commission under the Agreement and made within five (5) years of the Agreement's end date. The payment amount due under the early buyout option will not be reduced by the percentage of match funds as described above.
- f. The Recipient may not make any sale of intellectual property for consideration other than fair market value. Such activity constitutes breach of this Agreement, and will obligate the Recipient to repay within sixty (60) days the early buyout amount due. In the event of breach, the Energy Commission may exercise all rights and remedies available to it under law and at equity.
- g. Royalty payments not made within fifteen (15) days of the due date will constitute breach of this Agreement. The payments will become debt obligations of the Recipient to the Energy Commission, due upon demand and bearing interest at the maximum interest rate allowed by law.
- h. The Recipient will maintain separate accounts within its financial and other records for the purpose of tracking components of sales and royalties due to the Energy Commission under this Agreement.
- i. Payments to the Energy Commission are subject to audit as provided for under the Recordkeeping, Cost Accounting, and Auditing section.
- j. The Recipient will include these royalty provisions in its agreements with all subcontractors who develop or assist with the development of intellectual property.

23. **General Provisions**

a. Governing Law

This Agreement is governed by the laws of the State of California as to interpretation and performance.

b. Independent Capacity

In the performance of this Agreement, the Recipient and its agents, subcontractors, and employees will act in an independent capacity and not as officers, employees, or agents of the State of California.

c. Assignment

This Agreement is not assignable or transferable by the Recipient either in whole or in part without the consent of the Energy Commission in the form of an amendment.

d. Timeliness

Time is of the essence in this Agreement.

e. Severability

If any provision of this Agreement is unenforceable or held to be unenforceable, all other provisions of this Agreement will remain in full force and effect.

f. Waiver

No waiver of any breach of this Agreement constitutes waiver of any other breach. All remedies in this Agreement will be taken and construed as cumulative, meaning in addition to every other remedy provided in the Agreement or by law.

g. Assurances

The Commission reserves the right to seek further written assurances from the Recipient and its team that the work under this Agreement will be performed in accordance with the terms of the Agreement.

h. Change in Business

- 1) The Recipient will promptly notify the Energy Commission of the occurrence of any of the following:
 - a) A change of address.
 - b) A change in business name or ownership.
 - c) The existence of any litigation or other legal proceeding affecting the project or Agreement.
 - d) The occurrence of any casualty or other loss to project personnel, equipment, or third parties.
 - e) Receipt of notice of any claim or potential claim against the Recipient for patent, copyright, trademark, service mark, and/or trade secret infringement that could affect the Energy Commission's rights.
- 2) The Recipient must provide the Commission Agreement Manager with written notice of a planned change or reorganization of the type of business entity under which it does business. A change of business entity or name change requires an amendment assigning or novating the Agreement to the changed entity. If the Energy Commission does not seek to amend this Agreement or enter into a new agreement with the changed or new entity for any reason (including that the Commission is not satisfied that the new entity can perform in the same manner as the Recipient), it may terminate this Agreement as provided in the "Termination" section.

i. Access to Sites and Records

Energy Commission and California Public Utilities Commission staff and representatives will have reasonable access to all project sites and to all records related to this Agreement.

j. Prior Dealings, Custom, or Trade Usage

These terms and conditions may not be modified or supplemented by prior dealings, custom, or trade usage.

k. Survival of Terms

Certain provisions will survive the completion or termination date of this Agreement for any reason. The provisions include but are not limited to:

- Legal Statements on Products (included in Section 5, "Products")
- Payment of Funds (Section 8)
- Recordkeeping, Cost Accounting, and Auditing (Section 11)
- Equipment (Section 14)
- Disputes (Section 15)
- Termination (Section 17)
- Indemnification (Section 18)
- Pre-Existing and Independently Funded Intellectual Property (Section 20)
- Intellectual Property (Section 21)
- Royalty Payments to the Commission (Section 22)
- Change in Business (see this section)
- Access to Sites and Records (see this section)

24. Certifications and Compliance

a. Federal, State, and Local Laws

The Recipient will comply with all applicable federal, state and local laws, rules and regulations.

b. Nondiscrimination Statement of Compliance

During the performance of this Agreement, the Recipient and its subcontractors will not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, sexual orientation, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition, age, marital status, or denial of family care leave. The Recipient and its subcontractors will ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.

The Recipient and its subcontractors will comply with the provisions of the Fair Employment and Housing Act (Government Code Sections 12990 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part of it as if set forth in full. The Recipient and its subcontractors will give written notice of their obligations under this section to labor organizations with which they have a collective bargaining or other Agreement.

The Recipient will include the nondiscrimination and compliance provisions of this section in all subcontracts to perform work under this Agreement.

c. Drug-Free Workplace Certification

By signing this Agreement, the Recipient certifies under penalty of perjury under the laws of the State of California that it will comply with the requirements of the Drug-Free Workplace Act of 1990 (Government Code Section 8350 et seq.) and will provide a drug-free workplace by taking the following actions:

- 1) Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited, and specifying actions to be taken against employees for violations as required by Government Code Section 8355(a).
- 2) Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b) to inform employees about all of the following:
 - The dangers of drug abuse in the workplace;
 - The person's or organization's policy of maintaining a drug-free workplace;
 - Any available counseling, rehabilitation, and employee assistance programs; and
 - Penalties that may be imposed upon employees for drug abuse violations.
- 3) Provide, as required by Government Code Section 8355(c), that every employee who works on the proposed project:
 - Will receive a copy of the company's drug-free policy statement; and
 - Will agree to abide by the terms of the company's statement as a condition of employment on the project.

Failure to comply with these requirements may result in suspension of payments under the Agreement or termination of the Agreement or both, and the Recipient may be ineligible for any future state awards if the Commission determines that any of the following has occurred: (1) the Recipient has made false certification, or (2) violates the certification by failing to carry out the requirements as noted above.

d. National Labor Relations Board Certification (Not applicable to public entities)

The Recipient, by signing this Agreement, swears under penalty of perjury that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Recipient within the immediately preceding two year period because of the Recipient's failure to comply with an order of a federal court that orders the Recipient to comply with an order of the National Labor Relations Board.

e. Child Support Compliance Act (Applicable to California Employers)

For any agreement in excess of \$100,000, the Recipient acknowledges that:

- 1) It recognizes the importance of child and family support obligations and will fully comply with all applicable state and federal laws relating to child and family support enforcement, including but not limited to disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and
- 2) To the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.

f. Air or Water Pollution Violation

Under state laws, the Recipient will not be:

- 1) In violation of any order or resolution not subject to review promulgated by the State Air Resources Board or an air pollution control district;
- 2) Subject to a cease and desist order not subject to review issued pursuant to Section 13301 of the Water Code for violation of waste discharge requirements or discharge prohibitions; or
- 3) Finally determined to be in violation of provisions of federal law relating to air or water pollution.

g. Americans With Disabilities Act

By signing this Agreement, the Recipient assures the State that it complies with the Americans with Disabilities Act (ADA) of 1990 (42 U.S.C. Section 12101, et seq.), which prohibits discrimination on the basis of disability, as well as applicable regulations and guidelines issued pursuant to the ADA.

25. Definitions

- **Agreement Term** means the length of this Agreement, as specified on the Agreement signature page (form CEC-146).
- **Budget Reallocation** means the movement of funds between tasks identified in the budget (Exhibit B).
- **Confidential Information** means information that the Recipient has satisfactorily identified as confidential in Attachment 1 to this Exhibit and that the Energy Commission has agreed to designate as confidential under Title 20 California Code of Regulations Section 2505.
- **Data** means any recorded information that relates to the project funded by the Agreement, whether created or collected before or after the Agreement's effective date.

- **Effective Date** means the date on which this Agreement is signed by the last party required to sign, provided that signature occurs after the Agreement has been approved by the Energy Commission at a business meeting or by the Executive Director or his/her designee.
- **EPIC** means the Electric Program Investment Charge, an electricity ratepayer-funded surcharge authorized by the California Public Utilities Commission in December 2011.
- **Equipment** means products, objects, machinery, apparatus, implements, or tools that are purchased or constructed with Energy Commission funds for the project, and that have a useful life of at least one year and an acquisition unit cost of at least \$5,000. "Equipment" includes products, objects, machinery, apparatus, implements, or tools that are composed by over thirty percent (30%) of materials purchased for the project. For purposes of determining depreciated value of equipment used in the Agreement, the project will terminate at the end of the normal useful life of the equipment purchased and/or developed with Energy Commission funds. The Energy Commission may determine the normal useful life of the equipment.
- **Independently Funded Intellectual Property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice by the Recipient or a third party during or after the Agreement term without Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.
- **Intellectual Property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice with Agreement or match funds during or after the Agreement term; (b) any associated proprietary rights to these items, such as patent and copyright; and (c) any upgrades or revisions to these items.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices.
- **Invention** means intellectual property that is patentable.
- **Load-serving entity** means a company or other organization that provides electricity to EPIC ratepayers.
- **Match Funds** means cash or in-kind (i.e., non-cash) contributions provided by the Recipient or a third party for a project funded by the Energy Commission. If this Agreement resulted from a solicitation, refer to the solicitation's discussion of match funding for guidelines specific to the project.

- **Materials** means the substances used to construct a finished object, commodity, device, article, or product, such as equipment.
- **Ownership** means exclusive possession of all rights to property, including the right to use and transfer property.
- **Pre-existing intellectual property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Recipient or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.
- **Product** means any tangible item specified for delivery to the Energy Commission in the Scope of Work.
- **Project** means the entire effort undertaken and planned by the Recipient and consisting of the work funded by the Energy Commission. The project may coincide with or extend beyond the Agreement term.
- **Project-relevant pre-existing intellectual property and project-relevant independently funded intellectual property** mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.
- **Sale, Sales, and Sold** mean the sale, license, lease, or other transfer of intellectual property.
- **Sales Price** means the price at which intellectual property is sold, excluding normal returns and allowances such as sales tax.
- **State** means the state of California and all California state agencies within it, including but not limited to commissions, boards, offices, and departments.

EXHIBIT C - ATTACHMENT 1

Confidential Products and Project-Relevant Pre-Existing and Independently Funded Intellectual Property

1. Instructions

Identification of Confidential Information

- **Prior to the effective date of the Agreement**, the Recipient must identify in Section 2 of this attachment any products (or information contained within products) that it considers to be confidential. If the Energy Commission agrees that the information is confidential, it will not disclose it except as provided in Section 19 (Confidentiality) of these terms and conditions.
- **During the Agreement**, if the Recipient develops additional information not originally anticipated as confidential, it must follow the procedures for a request for designation of confidential information specified in Title 20 California Code of Regulations (CCR) Section 2505.

The Energy Commission's Executive Director will make the confidentiality determination. Following this determination, the confidential information may be added to this attachment through a Letter of Agreement (see Section 6 (Amendments) and Attachment 2 (Sample Letter of Agreement)). The Energy Commission will not disclose information subject to an application for confidential designation except as provided in Section 19.

- **When submitting products containing confidential information**, the Recipient must mark each page of any document containing confidential information as "confidential" and present it in a sealed package to the Contracts, Grants, and Loans Office.

The Commission Agreement Manager may require the Recipient to submit a non-confidential version of the product, if it is feasible to separate the confidential information from the non-confidential information.

Identification of Project-Relevant Independently Funded and Pre-Existing Intellectual Property

- The Recipient must identify all project-relevant pre-existing intellectual property and project-relevant independently funded intellectual property in Section 3 of this attachment prior to the effective date of the Agreement, or within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under the Agreement. This attachment may be amended by a Letter of Agreement (see Section 6 (Amendments) and Attachment 2 (Sample Letter of Agreement)).
 - **"Project-relevant pre-existing intellectual property" and "project-relevant independently funded intellectual property"** mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under the Agreement.
 - **"Pre-existing intellectual property"** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Recipient or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.
 - **"Independently funded intellectual property"** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are

EXHIBIT C - ATTACHMENT 1

Confidential Products and Project-Relevant Pre-Existing and Independently Funded Intellectual Property

created, conceived, discovered, made, developed, altered, or reduced to practice by the Recipient or a third party during or after the Agreement term without Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.

- **Failure to identify project-relevant pre-existing or independently funded intellectual property** in this attachment may result in the property's designation as "intellectual property" that is subject to licenses and royalties, as described in Sections 21 (Intellectual Property) and 22 (Royalty Payments to the Commission).

EXHIBIT C - ATTACHMENT 1

Confidential Products and Project-Relevant Pre-Existing and Independently Funded Intellectual Property

2. Confidential Products and/or Confidential Information Contained within Products

The Energy Commission designates the following products (or information contained within products) as confidential, in accordance with Title 20 California Code of Regulations Section 2505(c)(2)(B).

☒ There are no confidential Products or confidential information contained within Products.

3. Project-Relevant Pre-Existing Intellectual Property and Project-Relevant Independently Funded Intellectual Property

The Recipient has identified the following items as "project-relevant pre-existing intellectual property" and/or "project-relevant independently funded intellectual property," as defined in Sections 20 (Pre-Existing and Independently Funded Intellectual Property) and 25 (Definitions) of these terms and conditions. The Commission makes no ownership, license, or royalty claims to this property, and may only access it for the purposes described in Section 20.

Name/Title of Intellectual Property	Shared Power Generation to Improve System Reliability
Type of Intellectual Property	<input checked="" type="checkbox"/> Project-relevant pre-existing intellectual property <input type="checkbox"/> Project-relevant independently funded intellectual property <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Invention <input type="checkbox"/> Technology <input type="checkbox"/> Design <input type="checkbox"/> Drawing <input type="checkbox"/> Data <input type="checkbox"/> Software <input type="checkbox"/> Formula </div> <div> <input type="checkbox"/> Process <input type="checkbox"/> Technique <input type="checkbox"/> Work of Authorship <input type="checkbox"/> Trademark/ Service mark <input type="checkbox"/> Logo </div> </div>
Registered or Pending Intellectual Property (i.e., copyrights, patents, or trademarks that are registered or pending with the U.S. Copyright Office or the U.S. Patent and Trademark Office)	<input type="checkbox"/> Copyright <input checked="" type="checkbox"/> Patent <input type="checkbox"/> Trademark/ Service mark Name of owner: Number and date: <i>For pending applications</i> Name of applicant: Regents of the University of California, San Diego Application number and date: Case No. SD2017-033
Unregistered Intellectual Property	<input type="checkbox"/> Copyright <input type="checkbox"/> Trademark/ Service mark <input type="checkbox"/> Trade Secret Name of owner:
Description of how the property will be or has been used to support a premise, postulate, or conclusion referred to or expressed in any product under the Agreement	Power sharing may be implemented in the microgrid topology between The Port of San Diego and its tenants.

EXHIBIT D Contact List

California Energy Commission	Recipient
<p>Commission Agreement Manager:</p> <p>Kenneth Schumann California Energy Commission 1516 Ninth Street, MS-51 Sacramento, CA 95814 Phone: (916) 327-1556 Fax: (916) 327-1717 e-mail: Kenneth.schumann@energy.ca.gov</p>	<p>Project Manager:</p> <p>San Diego Unified Port District Renée Yarmy 3165 Pacific Highway, San Diego, CA 92101 Phone: (619) 686-8162 Fax: (619) 686-6467 e-mail: ryarmy@portofsandiego.org</p>
<p>Commission Agreement Officer:</p> <p>California Energy Commission 1516 Ninth Street, MS-18 Sacramento, CA 95814 Phone: 916- 654- 4381 Fax: 916 654-4423</p>	<p>Administrator:</p> <p>San Diego Unified Port District Aimee Heim 3165 Pacific Highway, San Diego, CA 92101 Phone: (619) 686-6390 Fax: (619) 686-6555 e-mail: aheim@portofsandiego.org</p>
<p>Invoices, Progress Reports and Non-Confidential Deliverables to:</p> <p>Accounting Office, MS-2 California Energy Commission 1516 Ninth Street Sacramento, CA 95814</p>	<p>Accounting Officer:</p> <p>San Diego Unified Port District Aimee Heim 3165 Pacific Highway, San Diego, CA 92101 Phone: (619) 686-6390 Fax: (619) 686-6555 e-mail: aheim@portofsandiego.org</p>
<p>Legal Notices:</p> <p>Tatyana Yakshina Grants Manager 1516 9th Street, MS-18 Sacramento, CA 95814 Phone: (916) 654-4204 Fax: (916) 654-4076 e-mail: tatyana.yakshina@energy.ca.gov</p>	<p>Legal Notices:</p> <p>San Diego Unified Port District Thomas A Russell, General Counsel 3165 Pacific Highway, San Diego, CA 92101 Phone: (619) 686-6219 Fax: (619) 686-6444 e-mail: trussell@portofsandiego.org</p>

(3)

RESOLUTION 2018-102

RESOLUTION AUTHORIZING ACCEPTANCE OF GRANT FUNDS IN THE AMOUNT OF \$4,985,272 FROM THE CALIFORNIA ENERGY COMMISSION (CEC) TO PARTIALLY FUND THE PORT OF SAN DIEGO – RESILIENCY IN TERMINAL OPERATIONS PROJECT LOCATED AT TENTH AVENUE MARINE TERMINAL (TAMT) TO DEMONSTRATE BUSINESS CASE FOR ADVANCED MICROGRIDS IN SUPPORT OF CALIFORNIA’S ENERGY AND GREENHOUSE GAS POLICIES PROGRAM; AUTHORIZING STAFF TO ENTER INTO A GRANT AGREEMENT WITH CEC WHICH INCLUDES INDEMNITY PROVISIONS; AND ALLOCATING MATCH IN THE AMOUNT OF \$4,427,973; DISTRICT MATCH FUNDS INCLUDE PLANNED MAJOR MAINTENANCE, EQUIPMENT OUTLAY AND STAFF COSTS; FUNDS REQUIRED FOR FUTURE YEARS WILL BE BUDGETED IN THE APPROPRIATE FISCAL YEAR, SUBJECT TO BOARD OF PORT COMMISSIONERS APPROVAL UPON ADOPTION OF EACH ANNUAL BUDGET

WHEREAS, the San Diego Unified Port District (District) is a public corporation created by the legislature in 1962 pursuant to Harbors and Navigation Code Appendix 1, (Port Act); and

WHEREAS, the Board of Port Commissioners (BPC) adopted BPC Policy No. 110 to establish a policy governing the processing and administration of public projects, consulting and service agreements, grant funded projects and supplies, materials, and equipment purchases; and

WHEREAS, in November 2017, the District submitted an application for the California Energy Commission’s (CEC) grant-funded Business Case Demonstration for Advanced Microgrids program which aims to advance California’s energy and greenhouse gas (GHG) policies in electrification, resiliency, technological advancement and replicability; and

WHEREAS, the District’s project will develop a new, permanent, renewable microgrid at the Tenth Avenue Marine Terminal (TAMT); and

WHEREAS, the project will incorporate renewable energy generation with solar photovoltaic (PV) panels, battery energy storage, efficiency improvements, and a centralized microgrid controller; and

2018-102

WHEREAS, the District was notified on February 20, 2018, that its application to the CEC was recommended for funding in the amount of \$4,985,272, to partially fund the installation of a microgrid at TAMT with a total anticipated cost of \$9,615,208; and

WHEREAS, the District's proposal included a match comprised of budgeted expenses, staff time, and a contribution from project partner University of California San Diego (UCSD); and

WHEREAS, if approved by the BPC, the District's portion of the match funding would come from expenses related to a warehouse roof replacement, staff labor, energy efficiency retrofits, equipment costs, and a power purchase agreement for solar PV energy over the duration of the grant agreement; and

WHEREAS, the power purchase agreement for solar PV energy combined with battery storage and energy efficiency improvements will reduce energy expenses that the District incurs as an operational expense and is expected to save approximately 60% annually over current utility expenses; and

WHEREAS, additional project benefits include additional cost savings through demand response and peak shaving of District energy loads resulting in reduced electric utility expenses, and increased energy security and resiliency; and

WHEREAS, the Renewable Microgrid implements a mitigation requirement identified in the TAMT Final EIR; and

WHEREAS, the installation of a Renewable Microgrid at TAMT is estimated to result in a reduction of 361 MTCO₂e annually, which would fulfill approximately 2% of the TAMT's Redevelopment Plan's Final EIR requirement for the 2035 buildout year; and

WHEREAS, prior to accepting the grant agreement, in April 2018 the BPC approved the second addendum to the Final Environmental Impact Report (EIR) for the TAMT Redevelopment Plan; and

WHEREAS, the CEC Commissioners adopted the CEC staff's funding recommendation at the Commission's May 9, 2018 business meeting; and

WHEREAS, District staff has been working closely with CEC staff to finalize the project scope of work and the terms and conditions of the proposed grant agreement; and

WHEREAS, the scope of work and proposed grant agreement are attached to the associated agenda sheet; and

2018-102

WHEREAS, District staff recommends the BPC authorize acceptance of the CEC grant funding; authorize staff to enter into an agreement with the CEC which includes indemnity provisions; and allocate matching funds in the amount of \$4,427,973.

NOW, THEREFORE, BE IT RESOLVED by the Board of Port Commissioners of the San Diego Unified Port District as follows:

That the Executive Director or her designated representative is hereby authorized to accept grant funds in the amount of \$4,985,272 from the California Energy Commission (CEC); to enter into a grant agreement with the CEC which includes indemnity provisions; and, for the District to allocate matching funds in the amount of \$4,427,973.

APPROVED AS TO FORM AND LEGALITY:
GENERAL COUNSEL


By: ~~Assistant Senior/Deputy~~

PASSED AND ADOPTED by the Board of Port Commissioners of the San Diego Unified Port District, this 12th day of June, 2018, by the following vote:

AYES: Bonelli, Castellanos, Merrifield, Moore, and Valderrama

NAYS: None.

EXCUSED: Malcolm, and Zucchet


ABSENT: None.

ABSTAIN: None.



Rafael Castellanos, Chairman
Board of Port Commissioners

ATTEST:



Donna Morales
District Clerk

(Seal)



San Diego Unified Port District

3165 Pacific Hwy.
San Diego, CA 92101

Item No. 9A

File #:2018-0185

DATE: June 12, 2018

SUBJECT:

ACTIONS RELATED TO THE RESILIENCY IN TERMINAL OPERATIONS PROJECT AT TENTH AVENUE MARINE TERMINAL

- A) RESOLUTION AUTHORIZING ACCEPTANCE OF GRANT FUNDS IN THE AMOUNT OF \$4,985,272 FROM THE CALIFORNIA ENERGY COMMISSION (CEC) TO PARTIALLY FUND THE PORT OF SAN DIEGO - RESILIENCY IN TERMINAL OPERATIONS PROJECT LOCATED AT TENTH AVENUE MARINE TERMINAL (TAMT) TO DEMONSTRATE BUSINESS CASE FOR ADVANCED MICROGRIDS IN SUPPORT OF CALIFORNIA'S ENERGY AND GREENHOUSE GAS POLICIES PROGRAM; AUTHORIZING STAFF TO ENTER INTO A GRANT AGREEMENT WITH CEC WHICH INCLUDES INDEMNITY PROVISIONS; AND ALLOCATING MATCH IN THE AMOUNT OF \$4,427,973. DISTRICT MATCH FUNDS INCLUDE PLANNED MAJOR MAINTENANCE, EQUIPMENT OUTLAY AND STAFF COSTS. FUNDS REQUIRED FOR FUTURE YEARS WILL BE BUDGETED IN THE APPROPRIATE FISCAL YEAR, SUBJECT TO BOARD APPROVAL UPON ADOPTION OF EACH ANNUAL BUDGET.**
- B) RESOLUTION APPROVING AN AMENDMENT TO THE FY 2019-2023 FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM (CIP) TO ADD THE MICROGRID INFRASTRUCTURE AT TAMT PROJECT AND INCREASE THE CIP APPROPRIATION BY \$5,400,000, WITH \$4,505,275 TO BE REIMBURSED BY THE CEC, AND THE REMAINING \$894,725 TO BE FUNDED FROM THE DISTRICT'S OPERATIONAL EXPENSES AS CAPITAL LABOR.**

EXECUTIVE SUMMARY:

This agenda item represents the third step in finalizing the California Energy Commission's (CEC) Microgrid grant-funded Resiliency in Terminal Operations Project at the Tenth Avenue Marine Terminal (TAMT).

The District was notified on February 20, 2018, that its application to the CEC was recommended for funding in the amount of \$4,985,272, to partially fund the installation of a microgrid at TAMT with a total anticipated cost of \$9,615,208. Since that time, the Board has adopted the Second Addendum to the TAMT Final EIR in accordance with the California Environmental Quality Act (CEQA), and directed staff to increase the FY 2019 Capital Improvement Program (CIP) by \$4.85M, of which \$4.5M is for the CIP project Microgrid Infrastructure at TAMT, and \$350,000 is for associated capital labor. This final action will authorize acceptance the CEC grant funding; authorize staff to enter into

File #:2018-0185

an agreement with the CEC which includes indemnity provisions; and allocate match funds.

This agenda item will add the Microgrid Infrastructure components to the FY 2019-2023 CIP with a total project budget of \$5,400,000. The budget will have two components, \$4,505,275 from the CEC grant for external costs and \$894,725 from the District's operational expenses for capital labor. The capital labor funds will be budgeted annually based on planned fiscal year expenditures. The FY 2019 planned capital labor expenditures of \$350,000 were included in the annual budget.

RECOMMENDATION:

Adopt a Resolution accepting grant funds in the amount of \$4,985,272 from the CEC; authorize staff to enter into a grant agreement with the CEC which includes indemnity provisions; and allocating match funds in the amount of \$4,427,973.

Adopt a resolution approving an amendment to the FY 2019-2023 five-year CIP to add the Microgrid Infrastructure at TAMT project and increase the CIP appropriation by \$5,400,000, with \$4,505,275 to be reimbursed by the CEC, and the remaining \$894,725 to be funded from the District's operational expenses as capital labor.

FISCAL IMPACT:

The District's budget team presented the preliminary budget to the Board on May 8, 2018 and requested direction from the Board to include changes to the FY 2019 budget in anticipation of final award. The Board directed staff to increase the FY 2019 CIP by \$4.85M, of which \$4.5M is for the CIP project Microgrid Infrastructure at TAMT, and \$350,000 is for associated capital labor. There is no additional fiscal impact.

COMPASS STRATEGIC GOALS:

This agenda item supports the following Strategic Goals:

- A Port that the public understands and trusts.
- A thriving and modern maritime seaport.
- A Port with a healthy and sustainable bay and its environment.
- A Port with an innovative and motivated workforce.
- A financially sustainable Port that drives job creation and regional economic vitality.

DISCUSSION:

Background

In November 2017, the District submitted an application for the California Energy Commission's (CEC) grant-funded Business Case Demonstration for Advanced Microgrids program. The program aims to advance California's energy and greenhouse gas (GHG) policies in four key areas:

- Electrification: Improve air quality and reduce GHG emissions.
- Resiliency: Demonstrate a reliable, resilient and safe system.
- Technological Advancement: Provide technological advancement and breakthroughs to

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achieve the state's statutory energy goals.

- Replicability: Develop a model that can be utilized in other locations.

The District's project will develop a new, permanent, renewable microgrid at the Tenth Avenue Marine Terminal (TAMT). The project will incorporate renewable energy generation with solar photovoltaic (PV) panels, battery energy storage, efficiency improvements, and a centralized microgrid controller. Together, this technology will allow portions of the terminal to remain operational when disconnected from the electrical grid for a period of time.

A minimum match of 20% of the total project cost was required. The District's application requested that the CEC fund through reimbursement \$4,985,272 of a total project cost of \$9,615,208. The District's proposal included a match of \$4,629,936 - 48% of the total project cost, and is comprised of budgeted expenses, staff time, and a contribution from project partner University of California San Diego (UCSD). The District's portion of the match funding will come from expenses related to a warehouse roof replacement, staff labor, energy efficiency retrofits, equipment costs, and a power purchase agreement for solar PV energy over the duration of the grant agreement. The elements of the District's match are expenses that were identified as planned in current and future budgets, and therefore no additional cash outlay would be required.

The power purchase agreement for solar PV energy combined with battery storage and energy efficiency improvements will reduce energy expenses that the District incurs as an operational expense and is expected to save approximately 60% annually over current utility expenses. Additional project benefits include additional cost savings through demand response and peak shaving of District energy loads resulting in reduced electric utility expenses, and increased energy security and resiliency. The microgrid will also provide back-up power to District operated facilities, including security infrastructure, site lighting, administrative facilities, and the existing jet fuel storage system.

The CEC issued an initial Notice of Proposed Award (NOPA) for this solicitation on January 19, and a subsequent NOPA on February 20. The District's project was included in the funding allowance in the CEC's second NOPA. Since the award announcement, District staff has been working closely with the CEC to finalize project's scope of work and the grant terms and conditions. The Final Grant Agreement reflects these efforts, included as Attachments A and C.

Recent Board Action

The Board recently undertook two actions that advanced this project prior to acceptance of the grant agreement: approval of the second addendum to the Final Environmental Impact Report (EIR) for the TAMT Redevelopment Plan and Initial Rail Component Project, and authorization of changes to the preliminary budget in the final budget to be adopted on June 12, 2018, that reflects the addition of \$4.85M to the CIP.

The Renewable Microgrid implements a mitigation requirement identified in the TAMT Final EIR. The TAMT Final EIR requires renewable energy projects to be incorporated within the TAMT or within areas adjacent to the District's jurisdiction, or the purchase of GHG offsets from California Air Resources Board (CARB) approved registry or a locally approved equivalent program to achieve an annual reduction, pursuant to Mitigation Measure GHG-6. The installation of a Renewable Microgrid

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at TAMT is estimated to result in a reduction of 361 MTCO₂e annually, which would fulfill approximately 2% of the TAMT's Redevelopment Plan's Final EIR requirement for the 2035 buildout year. Although implementing a renewable energy project at TAMT was contemplated at the time the Final EIR was certified, the specific design details of the proposed Renewable Microgrid were not known. Now that the construction and operational details are known, the District has confirmed that the Renewable Microgrid does not involve new or significant effects.

The CEC requested that the Renewable Microgrid's CEQA documentation be completed prior to finalizing the grant agreement. The Board adopted the Second Addendum to the TAMT Final EIR in accordance with the CEQA and its implementing guidelines (CEQA Guidelines) in April. The resolution adopting the Second Addendum to the TAMT Final EIR is attached as Attachment E.

The District's budget team presented the preliminary budget to the Board on May 8, 2018, one day prior to when the CEC Commissioners made the award final at their Business Meeting on May 9, 2018. Staff acknowledged the award as a part of the District's preliminary budget staff report at the May 8 Board of Port Commissioner's meeting, and requested direction from the Board to include changes to the FY 2019 budget in anticipation of final award. The Board directed staff to increase the CIP by \$4.85M, of which \$4.5M is for the CIP project Microgrid Infrastructure at TAMT, and \$350,000 is for associated capital labor.

California Energy Commission Action

The CEC Commissioners adopted the CEC staff's funding recommendation at the Commission's May 9, 2018 business meeting. Formalizing the CEC staff recommendation with an award was a necessary precursor to the Board of Port Commissioners accepting the grant funding and authorizing District staff to enter in to the grant agreement.

Next Steps

As set forth above, this agenda item represents the third step in finalizing the CEC Microgrid grant, and begins implementation of the Resiliency in Terminal Operations Project at TAMT.

District staff has been working closely with CEC staff to finalize the project scope of work and the terms and conditions of the proposed grant agreement. The agreement cover page, standard terms and conditions, and scope of work are attached (Attachments A, B and C). The Resolution (Attachment B) authorizes the acceptance of grant funds in the amount of \$4,985,272 from the CEC, allocates match funds in the amount of \$4,427,973, and authorizes staff to enter into a grant agreement with the CEC which includes indemnity provisions. A one-page estimated project budget allocation is attached for reference (Attachment D).

The portion of the CEC Microgrid grant to construct the battery storage system will be new infrastructure for the District and will therefore be considered a CIP project. The Board may consider this out-of-cycle request as an opportunity to receive grant funds pursuant to BPC Policy No. 120.

This agenda item would add the Microgrid Infrastructure at TAMT to the FY 2019-2023 CIP with a total project budget of \$5,400,000. The budget will have two components, \$4,505,275 from the CEC grant for external costs and \$894,725 from the District's operational expenses for capital labor. The

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capital labor funds will be budgeted annually based on planned fiscal year expenditures. The FY 2019 planned capital labor expenditures of \$350,000 were included in the annual budget. This will increase the overall CIP budget \$5,400,000.

Should the Board adopt the proposed resolutions, staff will add the project to the CIP and proceed with a joint District/ CEC project kick-off meeting scheduled for late June.

General Counsel's Comments:

The Office of the General Counsel reviewed this agenda and approved the proposed grant agreement as to form and legality.

Environmental Review:

The proposed Board action would authorize staff to enter into an agreement with the CEC to accept \$4,985,272 million of grant funds for the demonstration of business case for advanced microgrids in support of California's Energy and GHG policies program. The microgrid was adequately covered in the Second Addendum to the FEIR (SCH No. 2015-031046; ODC Document No. 68288) and resolution approving installation of a renewable microgrid at TAMT, contingent on grant funding, that was prepared and certified by the District on April 10, 2018 by the Board adopting Resolution Nos. 2018-061 and 2018-062, respectively. The FEIR for the TAMT Redevelopment Plan and Demolition and Initial Rail Component Project (SCH No. 2015-031046), incorporated herein by reference, prepared and certified by the District on December 13, 2016 by the Board adopting Resolution No. 2016-199.

The proposed project is not a separate "project" for CEQA purposes but is a subsequent discretionary approval related to a previously approved project. (CEQA Guidelines § 15378(c); *Van de Kamps Coalition v. Board of Trustees of Los Angeles Comm. College Dist.* (2012) 206 Cal.App.4th 1036.) Additionally, pursuant to CEQA Guidelines Sections 15162 and 15163, and based on the review of the entire record, including without limitation, the EIR, the District finds and recommends that the approval of accepting the CEC grant funds does not require further environmental review as: 1) no substantial changes are proposed to the project and no substantial changes have occurred that require major revisions to the FEIR due to the involvement of new significant environmental effects or an increase in severity of previously identified significant effects; and 2) no new information of substantial importance has come to light that (a) shows the Project will have one or more significant effects not discussed in the FEIR, (b) identifies significant impacts would not be more severe than those analyzed in the FEIR, (c) shows that mitigation measures or alternatives are now feasible that were identified as infeasible and those mitigation measures or alternatives would reduce significant impacts, and (d) no changes to mitigation measures or alternatives have been identified or are required. Because none of these factors have been triggered and the adoption of accepting the CEC grant funds, the District has the discretion to require no further analysis or environmental documentation (CEQA Guidelines §15162(b)). Pursuant to CEQA Guidelines §15162(b), the District finds and recommends that no further analysis or environmental documentation is necessary. Accordingly, the proposed Board action is merely a step in furtherance of the original project for which environmental review was performed and no supplemental or subsequent CEQA has been triggered, and no further environmental review is required.

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In addition, the proposed Board action complies with Section 87(a)(1) of the Port Act, which allows for the establishment, improvement, and conduct of a harbor, and for the construction, reconstruction, repair, maintenance, and operation of wharves, docks, piers, slips, quays, and all other works, buildings, facilities, utilities, structures, and appliances incidental, necessary, or convenient, for the promotion and accommodation of commerce and navigation. The Port Act was enacted by the California Legislature and is consistent with the Public Trust Doctrine. Consequently, the proposed Board action is consistent with the Public Trust Doctrine.

Finally, the proposed Board action is considered “excluded development” pursuant to Sections 8.a. (Existing Facilities), 8.b (Replacement or Reconstruction) and/or 8.c (New Construction or Conversion of Small Structures) of the District’s Coastal Development Permit (CDP) Regulations because it involves minor alterations involving negligible expansion of the existing use and will have substantially the same purpose and capacity as the existing facilities; therefore, issuance of a CDP is not required.

Equal Opportunity Program:

Not applicable.

PREPARED BY:

Aimee Heim
Manager, Policy and Grants, Government & Civic Relations

Attachment(s):

Attachment A:	CEC Grant Agreement Cover Page
Attachment B:	EPIC Standard Terms and Conditions
Attachment C:	CEC Microgrid Scope of Work
Attachment D:	Microgrid Budget Overview
Attachment E:	Resolution 2018-061, TAMT EIR Addendum

**GRANT AGREEMENT**

CEC-146 (Revised 1/2014)

CALIFORNIA ENERGY COMMISSION

RECIPIENT San Diego Unified Port District	AGREEMENT NUMBER EPC-17-049
ADDRESS 3165 Pacific Hwy. San Diego, CA 92101	AGREEMENT TERM 6/13/2018 to 3/31/2023 The effective date of this Agreement is either the start date or the approval signature date by the California Energy Commission representative below, whichever is later. The California Energy Commission shall be the last party to sign. No work is authorized, nor shall any work begin, until on or after the effective date.

PROJECT DESCRIPTION

The parties agree to comply with the terms and conditions of the following Exhibits which are by this reference made a part of the agreement.

Exhibit A – Scope of Work	Page(s):	22
Exhibit A – Attachments	Page(s):	5
Exhibit B – Budget Prime	Page(s):	8
Exhibit B – Budget Sub	Page(s):	25
Exhibit C – EPIC Standard Terms and Conditions	Page(s):	33
Exhibit C – Attachments	Page(s):	3
Exhibit D - Contacts	Page(s):	1

REIMBURSABLE AMOUNT
\$ 4,985,272
MATCH SHARE
\$ 4,629,936
TOTAL
\$ 9,615,208

The undersigned parties have read the attachments to this agreement and will comply with the standards and requirements contained therein.

CALIFORNIA ENERGY COMMISSION		RECIPIENT	
AUTHORIZED SIGNATURE	DATE	AUTHORIZED SIGNATURE	DATE
NAME Rachel L. Grant Kiley		NAME	
TITLE Contracts, Grants and Loans Office Manager		TITLE	
CALIFORNIA ENERGY COMMISSION ADDRESS 1516 9th Street, MS 1, Sacramento, CA 95814			

Attachment B to Agenda File No. 2018-0185

EXHIBIT C

ELECTRIC PROGRAM INVESTMENT CHARGE (EPIC) STANDARD GRANT TERMS AND CONDITIONS

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ATTACHMENT 1: CONFIDENTIAL PRODUCTS AND PROJECT-RELEVANT PRE- EXISTING AND INDEPENDENTLY FUNDED INTELLECTUAL PROPERTY

EXHIBIT C

TERMS AND CONDITIONS

1. ***Introduction***

This grant agreement (Agreement) between the California Energy Commission (Energy Commission, or Commission) and the Recipient is funded by the Electric Program Investment Charge (EPIC), an electricity ratepayer surcharge authorized by the California Public Utilities Commission (CPUC).

This Agreement includes: (1) the Agreement signature page (**form CEC-146**); (2) the scope of work (**Exhibit A**); (3) the budget (**Exhibit B**); (4) these terms and conditions (**Exhibit C**); (5) any special terms and conditions that address the unique circumstances of the funded project (**Exhibit D**); (6) a contacts list (**Exhibit E**); (7) all attachments; and (8) all documents incorporated by reference.

All work and expenditure of funds (Commission-reimbursed and/or match share) must occur within the Agreement term specified on the CEC-146 form.

2. ***Documents Incorporated by Reference***

The documents below are incorporated by reference into this Agreement. These terms and conditions will govern in the event of a conflict with the documents below, with the exception of the documents in subsection (f). Where this Agreement or California laws and regulations are silent or do not apply, the Energy Commission will use the federal cost principles and acquisition regulations listed below as guidance in determining whether reimbursement of claimed costs is allowable. Documents incorporated by reference include:

Solicitation Documents *(if applicable)*

- a. The funding solicitation for the project supported by this Agreement
- b. The Recipient's proposal submitted in response to the solicitation

CPUC Decision

- c. Decision 13-11-025 (Decision Addressing Applications of the California Energy Commission, Pacific Gas and Electric Company, San Diego Gas & Electric Company and Southern California Edison Company for Approval of their Triennial Investment Plans for the Electric Program Investment Charge Program for the Years 2012 through 2014) <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M081/K773/81773445.PDF>

Federal Cost Principles *(applicable to state and local governments, Indian tribes, institutions of higher education, and nonprofit organizations)*

- d. 2 Code of Federal Regulations (CFR) Part 200, Subpart E (Sections 200.400 et seq.)

Federal Acquisition Regulations *(applicable to commercial organizations)*

- e. 48 CFR, Ch.1, Subchapter E, Part 31, Subpart 31.2: Contracts with Commercial Organizations (supplemented by 48 CFR, Ch. 9, Subchapter E, Part 931, Subpart 931.2 for Department of Energy grants)

Nondiscrimination

- f. 2 California Code of Regulations, Section 8101 et seq.: Contractor Nondiscrimination and Compliance

General Laws

- g. Any federal, state, or local laws or regulations applicable to the project that are not expressly listed in this Agreement

3. Standard of Performance

In performing work under the Agreement, the Recipient, its subcontractors, and their employees are responsible for exercising the degree of skill and care required by customarily accepted good professional practices and procedures for the type of work performed.

4. Due Diligence

The Recipient must take timely actions that, taken collectively, move this project to completion. The Commission Agreement Manager will periodically evaluate the project schedule for completion of Scope of Work tasks. If the Commission Agreement Manager determines that: (1) the Recipient is not diligently completing the tasks in the Scope of Work; or (2) the time remaining in this Agreement is insufficient to complete all project tasks by the Agreement end date, the Commission Agreement Manager may recommend that this Agreement be terminated, and the Commission may terminate this Agreement without prejudice to any of its other remedies.

5. Products

- a. **“Products”** are any tangible item specified for delivery to the Energy Commission in the Scope of Work, such as reports and summaries.

- The Recipient will submit all products identified in the Scope of Work to the Commission Agreement Manager, in the manner and form specified in the Scope of Work.
- The Recipient will also submit all products prepared during the invoicing period to the Accounting Office along with the invoice, as specified in subsection (c) of Section 8 (Payment of Funds).

If the Commission Agreement Manager determines that a product is substandard given its description and intended use as described in the Scope of Work, the Commission Agreement Manager may refuse to authorize payment for the product and any subsequent products that rely on or are based upon the product under this Agreement.

- b. Confidential Products

Please see Section 19 (Confidentiality) for instructions regarding confidential products.

- c. Rights in Products

The Energy Commission owns all products identified in the Scope of Work, with the exception of products that fall within the definition of “intellectual property.” The Recipient owns all intellectual property developed under this Agreement (please see the “Intellectual Property” section).

The Recipient has a non-exclusive, non-transferable, irrevocable, worldwide, perpetual license to use, publish, translate, modify, and reproduce products that do not fall within the definition of “intellectual property.”

d. Failure to Submit Products

Failure to submit a product required in the Scope of Work will be considered material noncompliance with the Agreement terms, unless the Commission Agreement Manager waives the failure in writing. Noncompliance may result in actions such as the withholding of future payments or awards, or the suspension or termination of the Agreement.

e. Final Report and Payment

The Recipient may only submit a request for the final payment (including any retention) after the final report is completed and the Commission Agreement Manager has verified satisfactory completion of work.

f. Legal Statements on Products

- 1) All documents that result from work funded by this Agreement and are released to the public must include the following statement to ensure no Commission endorsement of documents:

LEGAL NOTICE

This document was prepared as a result of work sponsored by the California Energy Commission. It does not necessarily represent the views of the Energy Commission, its employees, or the State of California. Neither the Commission, the State of California, nor the Commission's employees, contractors, or subcontractors makes any warranty, express or implied, or assumes any legal liability for the information in this document; nor does any party represent that the use of this information will not infringe upon privately owned rights. This document has not been approved or disapproved by the Commission, nor has the Commission passed upon the accuracy of the information in this document.

- 2) The Recipient will apply copyright notices to all documents prepared for this Agreement that are released to the public (including reports, articles submitted for publication, and all reprints) using the following form or any other form that may be reasonably specified by the Energy Commission.

"©[Year of first publication of product] [the Copyright Holder's name]. All Rights Reserved."

6. Amendments

a. Procedure for Requesting Changes

The Recipient must submit a written request to the Commission Agreement Manager for any change to the Agreement. The request must include:

- A brief summary of the proposed change;
- A brief summary of the reason(s) for the change; and
- The revised section(s) of the Agreement, with changes made in underline/strikethrough format.

b. Approval of Changes

Certain changes to the Agreement (e.g., changes that increase the Agreement amount or substitute one Recipient for another) must be approved at a Commission business meeting or by the Executive Director (or his/her designee). Generally, changes that are not significant to the Agreement may be documented in a Letter of Agreement signed by both parties (electronic signatures are acceptable).

The Commission Agreement Manager or Commission Agreement Officer will provide the Recipient with guidance regarding the level of Commission approval required for a proposed change.

c. Personnel or Subcontractor Changes

All changes below require advance written approval by the Commission Agreement Manager, in addition to the appropriate level of Commission approval as described in subsection (b).

1) Replacement of Key Personnel, Subcontractors, and Vendors

The Commission Agreement Manager must provide advance written approval of the replacement of personnel, subcontractors, and vendors who are identified in the Agreement and are critical to the outcome of the project, such as the Project Manager.

2) Assignment of New Personnel to an Existing Job Classification

If the Recipient or a subcontractor seeks to assign new personnel to a job classification identified in Exhibit B, the Recipient or subcontractor must submit the individual's resume and proposed job classification and rate to the Commission Agreement Manager for approval. The proposed rate may not exceed the maximum rate identified for the job classification. Neither the Recipient nor any subcontractor may use the job classifications or rates of their subcontractors for personnel.

If the individual performs any work prior to the effective date of the amendment documenting the change, the Recipient will bear the expense of the work.

3) Promotion of Existing Personnel to an Existing Job Classification

Recipient or subcontractor personnel that are identified in Exhibit B may be assigned to a higher-paying job classification identified in Exhibit B. If the Recipient performs any work under the new rate prior to the effective date of the amendment documenting the change, the Recipient will bear the expense of the difference between the new and old rates.

4) Addition of Subcontractors

In order to add subcontractors to Exhibit B, the Commission Agreement Manager must submit a "Subcontractor Addition" form to the Commission Agreement Officer. The form identifies the new subcontractor, bidding method used (competitive or non-competitive), and the tasks the new subcontractor will perform.

5) Addition of Job Classifications and Changes in Hours

6) Increased Direct Operating Expenses and Rates that Exceed the Expenses and Rates Identified in Exhibit B

7. Contracting and Procurement Procedures

This section provides general requirements for agreements entered into between the Recipient and subcontractors for the performance of this Agreement.

a. Contractor's Obligations to Subcontractors

1) The Recipient is responsible for handling all contractual and administrative issues arising out of or related to any subcontracts it enters into for the performance of this Agreement.

2) Nothing contained in this Agreement or otherwise creates any contractual relation between the Commission and any subcontractors, and no subcontract may relieve the Recipient of its responsibilities under this Agreement. The Recipient agrees to be as fully responsible to the Commission for the acts and omissions of its subcontractors or persons directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the Recipient.

The Recipient's obligation to pay its subcontractors is an independent obligation from the Commission's obligation to make payments to the Recipient. As a result, the Commission has no obligation to pay or enforce the payment of any funds to any subcontractor.

3) The Recipient is responsible for establishing and maintaining contractual agreements with and reimbursing each subcontractor for work performed in accordance with the terms of this Agreement.

b. Flow-Down Provisions

Subcontracts funded in whole or in part by this Agreement must include language conforming to the provisions below, unless the subcontracts are entered into by the University of California (UC) or the U.S. Department of Energy (DOE) national laboratories. UC may use the terms and conditions negotiated by the Energy Commission with UC for its subcontracts. DOE national laboratories may use the terms and conditions negotiated with DOE (please contact the Commission Grants Officer for these terms).

- Standard of Performance (Section 3)
- Legal Statements on Products (included in Section 5, "Products")
- Travel and Per Diem (Section 9)
- Prevailing Wage (Section 10)
- Recordkeeping, Cost Accounting, and Auditing (Section 11)
- Equipment (Section 14)
- Disputes (Section 15)
- Indemnification (Section 18)
- Confidentiality (Section 19)
- Pre-Existing and Independently Funded Intellectual Property (Section 20)
- Intellectual Property (Section 21)
- Royalty Payments to the Commission (Section 22)
- Access to Sites and Records (included in Section 23, "General Provisions")
- Nondiscrimination (included in Section 24, "Certifications and Compliance")
- Survival of the following sections:
 - Equipment (Section 14)

- Recordkeeping, Cost Accounting, and Auditing (Section 11)
- Pre-Existing and Independently Funded Intellectual Property (Section 20)
- Intellectual Property (Section 21)
- Royalty Payments to the Commission (Section 22)
- Access to Sites and Records (included in Section 23, “General Provisions”)

Subcontracts funded in whole or in part by this Agreement must also include the following:

- A clear and accurate description of the material, products, or services to be procured.
- A detailed budget and timeline.
- Provisions that allow for administrative, contractual, or legal remedies in instances where subcontractors breach contract terms, in addition to sanctions and penalties as may be appropriate.
- Provisions for termination by the Recipient, including termination procedures and the basis for settlement.
- A statement that further assignments will not be made to any third or subsequent tier subcontractor without additional advance written consent of the Commission.

c. Audits

All subcontracts entered into for the performance of this Agreement are subject to examination and audit by the Energy Commission and/or Bureau of State Audits for a period of three (3) years after payment of the Recipient’s final invoice under this Agreement. The Energy Commission may audit subcontracts that are relevant to the Recipient’s royalty payment obligations (see Section 22) for a period of ten (10) years after the Agreement’s end date.

d. Copies of Subcontracts

The Recipient must provide a copy of its subcontracts upon request by the Energy Commission.

e. Conflicting Subcontract Terms

Prior to the execution of this Agreement, the Recipient will notify the Commission Agreement Manager of any known or reasonably foreseeable conflicts between this Agreement and its agreements with any subcontractors (e.g., conflicting intellectual property or payment terms). If the Recipient discovers any such conflicts after the execution of this Agreement, it will notify the Commission Agreement Manager of the conflict within fifteen (15) days of discovery. The Energy Commission may terminate this Agreement if any conflict impairs or diminishes its value.

f. Penalties for Noncompliance

Without limiting the Commission’s other remedies, failure to comply with the above requirements may result in the termination of this Agreement.

8. *Payment of Funds*

a. Definitions

For purposes of this Section 8, the following terms have the following meaning:

- “Advance Payment” means the Energy Commission pays Recipient prior to the Recipient Incurring or Paying the expense.
- “Incurred Cost” means an expense for which the Recipient has become liable (legally obligated) to pay. Here are examples of incurred costs:
 - The Recipient’s staff has completed work during the month but has not been paid by the Recipient. These labor and associated costs (e.g., fringe benefits) are considered Incurred Costs.
 - The Recipient has purchased a piece of equipment **and** received an invoice, bill, or receipt. The Recipient has not yet paid the invoice. The invoice shows the amount to be paid and confirmation of the sale. This is an Incurred Costs.

Incurred costs for equipment DO NOT include purchase orders unless accompanied by an invoice, bill, or receipt that shows the payment amount due to the seller for the equipment.
- “Paid Cost” means an expense for which the Recipient has already made payment.

b. Advance Payments

Recipients can receive Advance Payments only for subcontractors with the U.S. Department of Energy laboratories. Otherwise, Advance Payments are NOT allowed under this Agreement. The Energy Commission in its sole discretion, and not the Recipient, decides if the Commission will make an Advance Payment.

c. Reimbursable Cost Requirements

In addition to any other requirements in this Agreement, the Energy Commission is only obligated to reimburse the Recipient for Incurred and Paid Costs that are (1) incurred during the Agreement Term; (2) invoiced within the required timeframes of this Agreement; (3) made in accordance with the Agreement’s Budget; and (4) actual and allowable expenses under this Agreement.

ALL of the items in the Budget, including without limitation labor rates, fringe and indirect and individually listed items are caps (i.e., maximums), and the Recipient can only bill its ACTUAL amount up to capped amounts listed in the Budget. For example, if the Budget includes an employee’s hourly rate of \$50/hour but the employee is only paid \$40/hour, the Recipient can only bill for \$40/hour. Under the same example, if the employee earned \$70/hour but the Budget only lists \$50/hour, the Recipient can only bill for \$50. Another example is if the maximum fringe rate listed in the budget is 20% but the Recipient’s actual fringe rate is only 15%, the Recipient can only bill at 15%.

d. Recipient’s 14-Day Payment Requirement for Incurred Costs

The Recipient shall pay ALL Incurred Costs for which it has invoiced the Energy Commission within 14 calendar days of receiving payment under this Agreement for the Incurred Costs. For example, if the Recipient invoices and then receives payment from the Commission on September 15 for an Incurred Cost of \$10,000, the Recipient shall pay the entire \$10,000 by September 29. This requirement is needed to prevent Recipients from creating long lead times for Incurred Costs (e.g., invoicing and receiving payment from the Commission but not paying for the Incurred Costs for weeks or months).

The Recipient shall only invoice the Commission for Incurred Expenses the Recipient shall pay with 14 calendar days of receiving payment from the Commission. For example, assume the Recipient has an Incurred Cost for a piece of equipment that costs \$300,000 and will pay in three installments of \$100,000 each over three months. The Recipient shall only invoice the Commission for \$100,000 each month. The Recipient shall not invoice for the entire \$300,000 and retain the balance over the three months.

For any Incurred Costs for which the Recipient has received funds from the Energy Commission and does not pay within 14 calendar days, the Recipient shall on the very next business day after the 14 calendar days submit repayment of the unpaid amount back to the Energy Commission. Repaid funds will be placed back into the agreement and will be available to reimburse allowable costs in accordance with this agreement. When making a repayment under this provision, the Recipient shall specify "Repayment of Unspent Funds under Agreement [EPC-17-008]." Recipient shall remit the repayment to:

California Energy Commission
Accounting Office
1516 Ninth Street, MS-2
Sacramento, CA 95814

This repayment requirement of the Recipient is in addition to any other rights the Energy Commission can enforce relative to this Agreement. Recipient agrees and acknowledges that time is of the essence in paying Incurred Costs and submitting repayments and the Energy Commission can treat the Recipient's breach of either requirement as a material breach. Recipient can contact the Commission Agreement Manager for any questions about the logistics of making repayments.

e. Payment Requests

The Recipient may request payment from the Energy Commission at any time during the term of this Agreement but no more frequently than monthly. It is preferred that payment requests be submitted with the progress reports. The final payment request, including retention, MUST be received by the Energy Commission no later than the agreement end date.

Recipient agrees and acknowledges that time is of the essence in submitting the final payment request. The Commission has a limited period of time, set by law, in which it can reimburse funds under this Agreement. Without prejudice to the Commission's other rights, the Recipient risks not receiving any funds, and relieves the Commission of any duty and liability whatsoever to pay, for any payment requests received after the end of the Agreement.

No reimbursement for food or beverages shall be made other than allowable per diem charges.

All Recipient expenditures, reimbursable and match, must occur within the approved term of this Agreement.

f. Invoice Approval and Disputes:

Each request for payment is subject to the Commission Agreement Manager's approval. Payments will be made to the Recipient for undisputed invoices. An undisputed invoice is an invoice submitted by the Recipient for work performed, for which project expenditures and products meet all Agreement conditions, and for which additional evidence is not required to determine its validity.

The invoice will be disputed if all products due for the billing period have not been received and approved, if the invoice is inaccurate, or if it does not comply with the terms of this Agreement. If the invoice is disputed, the Recipient will be notified via a Dispute Notification Form within fifteen (15) working days of receipt of the Commission Agreement Manager's invoice.

g. Recipient's headquarters:

For purposes of payment, the Recipient's headquarters is the location of the Recipient's office where the majority of its employees assigned responsibilities for this Agreement are permanently assigned.

h. Multiple Non-Energy Commission Funding Sources:

No payment will be made for costs identified in recipient invoices that have been or will be reimbursed by another source, including but not limited to an agreement with another government entity.

"Government Entity" means: (1) a state governmental agency; (2) a state college or university; (3) a local government entity or agency, including those created as a Joint Powers Authority; (4) an auxiliary organization of the California State University or a California community college; (5) the federal government; (6) a foundation organized to support the Board of Governors of the California Community Colleges; and (7) an auxiliary organization of the Student Aid Commission established under California Education Code Section 69522.

i. Reduced funding:

If the Energy Commission does not receive sufficient funds under the Budget Act or from the investor-owned utility administrators of the EPIC program to fully fund the work identified in Exhibit A (Scope of Work), the following will occur:

- a) If the Energy Commission has received a reduced amount of funds for the work, it may: (1) offer an Agreement amendment to the Recipient to reflect the reduced amount; or (2) cancel this Agreement (with no liability occurring to the State).
- b) If the Energy Commission has received no funds for the work identified in Exhibit A: (1) this Agreement will be of no force and effect; (2) the State will have no obligation to pay any funds to the Recipient; and (3) the Recipient will have no obligation to perform any work under this Agreement.

j. Allowability of Costs

- a) Allowable Costs

The costs for which the Recipient will be reimbursed under this Agreement include all costs, direct and indirect, incurred in the performance of the work identified in the Scope of Work. Costs must be incurred within the Agreement term. Factors to be considered in determining whether an individual item of cost is allowable include: (i) reasonableness of the item, including necessity of the item for the work; (ii) applicable federal cost principles or acquisition regulations incorporated by reference in Section 2 of this Agreement; and (iii) the terms and conditions of this Agreement.

b) Unallowable Costs

Below are examples of unallowable costs. Details concerning the allowability of costs are available from the Energy Commission's Accounting Office.

- a) Profit of the Recipient or fees (this restriction does not apply to subcontractors);
 - b) Contingency costs;
 - c) Imputed costs (e.g., cost of money);
 - d) Fines and penalties;
 - e) Losses;
 - f) Excess profit taxes; and
 - g) Unapproved, increased rates and fees for this Agreement
- c) Except as provided for in this Agreement or applicable California law or regulations, the Recipient will use the federal cost principles and/or acquisition regulations incorporated by reference in Section 2 of this Agreement when determining allowable and unallowable costs. In the event of a conflict, this Agreement takes precedence over the federal cost principles and/or acquisition regulations.

k. Payment Request Format

Each request for payment will consist of, but not be limited to, the following:

- 1) An invoice that includes a list of Incurred and Paid Costs. Backup documentation is required at the time of invoice submittal, such as time cards, vendor invoices, and proof of payment (e.g., cancelled checks). Unless otherwise specified in Exhibit B or the invoice template, the invoice must include the following:
 - a) Agreement number;
 - b) Date prepared;
 - c) Recipient's Federal tax ID number;
 - d) Billing period;
 - e) Recipient's actual labor expenditures, including hourly unloaded labor rates by individual name and classification, hours worked, and benefits (fully loaded rates may only be used if they are included in the grant budget);
 - f) Non-labor expenses, including fringe benefits, indirect overhead, and general/administrative expenses;
 - g) Operating expenses, including travel, equipment, materials, and other;

- h) By budget line item (cost component) category, the budgeted amount, amount billed to date, currently billed amount, and balance of funds;
 - i) Match fund expenditures (if applicable);
 - j) Receipts for travel (including departure and return times), equipment, materials, and miscellaneous; and
 - k) Subcontractor invoices that include all items above, for correspondence with the budget (e.g., if the budget lists hourly labor rates, the subcontractor's invoice should include hourly labor rates).
- 2) A progress report that documents evidence of progress, as described in the Scope of Work.
 - 3) Products prepared by the Recipient during the invoicing period, as described in the Scope of Work.

The Commission will accept computer-generated or electronically transmitted invoices without backup documentation provided that the Recipient mails a hard copy the same day.

The Recipient must submit all invoices to the following address:

California Energy Commission
Accounting Office
1516 Ninth Street, MS-2
Sacramento, CA 95814

If the Recipient has not otherwise provided to the Commission documentation showing the Recipient's payment of Incurred Costs, the Recipient shall provide such documentation as soon as possible and not later than three working days from a request from Commission personnel.

I. Certification

The following certification will be included on each payment request form and signed by the Recipient's authorized officer:

The documents included in this request for payment are true and correct to the best of my knowledge and I, as an agent of [Company Name] have authority to submit this request. I certify that reimbursement for these costs has not and will not be received from any other sources, including but not limited to a government entity contract, subcontract, or other procurement method. For projects considered to be a public work, prevailing wages were paid to eligible workers who provided labor for the work covered by this invoice; the Recipient and all subcontractors have complied with prevailing wage laws.

m. Fringe Benefit, Indirect Overhead, General and Administrative (G&A), and Facilities and Administration (F&A) Rates

Indirect cost rates must be developed in accordance with generally accepted accounting principles and the applicable federal cost principles or acquisition regulations (see the provisions incorporated by reference in Section 2). If the Recipient has an approved fringe benefits or indirect cost rate (indirect overhead, G&A, or F&A) from its cognizant federal agency, the Recipient may bill at the federal rate up to the budget rate caps if the following conditions are met:

- The Recipient may bill at the federal provisional rate but must adjust annually to reflect its actual final rates for the year in accordance with the Labor, Fringe, and Indirect Invoicing Instructions contained in the budget (Exhibit B).
- The cost pools used to develop the federal rates must be allocable to the Agreement, and the rates must be representative of the portion of costs benefiting the Agreement. For example, if the federal rate is for manufacturing overhead at the Recipient's manufacturing facility and the Agreement is for research and development at the Recipient's research facility, the federal indirect overhead rate would not be applicable to the Agreement.
- The federal rate must be adjusted to exclude any costs that are specifically prohibited in the Agreement.
- The Recipient may only bill up to the Agreement budget rate caps, unless and until an amendment to the budget is approved.

n. Retention

The Energy Commission shall retain 10 percent of any payment request or 10 percent of the total Energy Commission award at the end of the project. The Energy Commission has the sole discretion to decide which of these methods of retention will be used in this Agreement. The Recipient must submit a completed payment request requesting release of the retention within the required timeframe (see part e "Payment Requests" above in this term). The CAM will review the project file and, when satisfied that the terms of the funding Agreement have been fulfilled, will authorize release of the retention.

Retention may be released upon completion of tasks that are considered separate and distinct (i.e., the task is a stand-alone piece of work and could be completed without the other tasks). Tasks for administration or management of the Agreement and/or subcontractors are not considered separate and distinct tasks. The tasks for which retention may be released prior to the end of the Agreement must be identified in Exhibit B (budget).

When the Commission withholds 10% retention from each invoice, the Recipient can choose to flow down the retention requirement to its subcontractors subject to the following restrictions and any other requirements in this Agreement:

- The Recipient shall not flow down retention requirements to U.S. Department of Energy national laboratory subcontractors.
- The retention flowed down to subcontractors can only be up to a total of 10% of the amount of Commission funds the subcontractor is to receive. The Recipient is responsible for carrying the retention for its funded portion of the entire Agreement and cannot pass its share of retention to subcontractors. Here are three examples:
 - i. A subcontractor submits an invoice for \$100,000 to the Recipient, and the Recipient in turn submits it to the Commission. The Commission will only pay \$90,000 of the invoice and the Recipient can elect to pay only \$90,000 to the subcontractor.

- ii. The subcontractor is the U.S. Department of Energy national laboratory and it submits an advance request for \$100,000 to the Recipient, including any other documents required in the Energy Commission's U.S. Department of Energy Terms and Conditions. The Recipient in turn submits the advance requests to the Commission for payment. The Commission will pay the full amount of the advance requests to the Recipient and the Recipient must pay the full amount to the U.S. Department of Energy.
- iii. The Recipient's submits an invoice for its own staff in the amount of \$20,000. The Commission will only pay \$18,000 to the Recipient, and the Recipient cannot withhold the \$2,000 difference from subcontractor reimbursements.

These requirements apply to all levels of subcontractors (e.g., a subcontractor to a subcontractor).

9. Travel and Per Diem

- a. Travel not listed in the budget requires prior written authorization from the Commission Agreement Manager.
- b. No reimbursement for food or beverages will be made other than for allowable per diem charges.
- c. The Recipient will be reimbursed for authorized travel and per diem up to, but not to exceed, the rates allowed nonrepresented state employees. Current allowable travel reimbursement rates can be obtained from the Commission's web site at http://www.energy.ca.gov/contracts/TRAVEL_PER_DIEM.PDF.
- d. Travel expense claims must detail expenses using the allowable rates, and the Recipient must sign and date each travel expense claim before submitting it to the Commission for payment. Expenses must be listed by trip, including dates and times of departure and return. Travel expense claims supporting receipts and expense documentation must be attached to the Recipient's Payment Request. A vehicle license number is required when claiming mileage, parking, or toll charges. Questions regarding allowable travel expenses or per diem should be addressed to the Commission Agreement Manager.

10. Prevailing Wage

- a. Requirement

Projects funded by the Energy Commission often involve construction, alteration, demolition, installation, repair, or maintenance work over \$1,000. Such projects might be considered "public works" under the California Labor Code (See California Labor Code Section 1720 et seq. and Title 8 California Code of Regulations, Section 16000 et seq.). Public works projects require the payment of prevailing wages. Prevailing wage rates can be significantly higher than non-prevailing wage rates.
- b. Determination of Project's Status

Only the California Department of Industrial Relations (DIR) and courts of competent jurisdiction may issue legally binding determinations that a particular project is or is not a public work. If the Recipient is unsure whether the project funded by the Agreement is a "public work" as defined in the California Labor Code, it may wish to seek a timely determination from DIR or an appropriate court. As such processes can be time consuming, it may not be possible to obtain a timely determination before the date for performance of the Agreement.

By accepting this grant, the Recipient is fully responsible for complying with all California public works requirements, including but not limited to payment of prevailing wage. As a material term of this grant, the Recipient must either:

- 1) Timely obtain a legally binding determination from DIR or a court of competent jurisdiction before work begins on the project that the proposed project is not a public work; or
- 2) Assume that the project is a public work and ensure that:
 - Prevailing wages are paid unless and until DIR or a court of competent jurisdiction determines that the project is not a public work;
 - The project budget for labor reflects these prevailing wage requirements; and
 - The project complies with all other requirements of prevailing wage law, including but not limited to keeping accurate payroll records and complying with all working hour requirements and apprenticeship obligations.

California Prevailing Wage law provides for substantial damages and financial penalties for failure to pay prevailing wages when such payment is required.

c. Subcontractors and Flow-down Requirements

The Recipient will ensure that its subcontractors also comply with the public works/prevailing wage requirements above. The Recipient will ensure that all agreements with its subcontractors to perform work related to this Project contain the above terms regarding payment of prevailing wages on public works projects. The Recipient is responsible for any failure of its subcontractors to comply with California prevailing wage and public works laws.

d. Indemnification and Breach

Any failure of the Recipient or its subcontractors to comply with the above requirements will constitute breach of this Agreement which excuses the Commission's performance of this Agreement at the Commission's option, and will be at the Recipient's sole risk. In such a case, the Commission will refuse payment to the Recipient of any amount under this award and the Commission will be released, at its option, from any further performance of this Agreement or any portion thereof. The Recipient will indemnify the Energy Commission and hold it harmless for any and all financial consequences arising out of or resulting from the failure of the Recipient and/or any of its subcontractors to pay prevailing wages or to otherwise comply with the requirements of prevailing wage law.

e. Budget

The Recipient's budget on public works projects must indicate which job classifications are subject to prevailing wage. For detailed information about prevailing wage and the process to determine if the proposed project is a public work, the Recipient may wish to contact DIR or a qualified labor attorney for guidance.

f. Covered Trades

For public works projects, the Recipient may contact DIR for a list of covered trades and the applicable prevailing wage.

g. Questions

If the Recipient has any questions about this contractual requirement or the wage, record keeping, apprenticeship, or other significant requirements of California prevailing wage law, the Recipient should consult DIR and/or a qualified labor attorney before entering into this Agreement.

h. Certification

The Recipient will certify to the Energy Commission on each payment request form either that: (a) prevailing wages were paid to eligible workers who provided labor for work covered by the payment request and the Recipient and all contractors and subcontractors otherwise complied with all California prevailing wage laws; or (b) the project is not a public work requiring the payment of prevailing wages. In the latter case, the Recipient will provide competent proof of a DIR or court determination that the project is not a public work requiring the payment of prevailing wages.

Prior to the release of any retained funds under this Agreement, the Recipient will submit to the Energy Commission the above-described certificate signed by the Recipient and all contractors and subcontractors performing public works activities on the project. Absent this certificate, the Recipient will have no right to any funds under this Agreement, and Commission will be relieved of any obligation to pay any funds.

11. Recordkeeping, Cost Accounting, and Auditing

a. Cost Accounting

The Recipient will keep separate, complete, and correct accounting of the costs involved in completing the project and any match-funded portion of the project. The Commission or its agent will have the right to examine the Recipient's books of accounts at all reasonable times, to the extent necessary to verify the accuracy of the Recipient's reports.

b. Accounting Procedures

The Recipient's costs will be determined on the basis of its accounting system procedures and practices employed as of the effective date of this Agreement, provided that the Recipient uses generally accepted accounting principles and cost reimbursement practices. The Recipient's cost accounting practices used in accumulating and reporting costs during the performance of this Agreement will be consistent with the practices used in estimating costs for any proposal to which this Agreement relates; provided that such practices are consistent with the other terms of this Agreement and that such costs may be accumulated and reported in greater detail during performance of this Agreement.

The Recipient's accounting system will distinguish between direct and indirect costs. All costs incurred for the same purpose, in like circumstances, are either direct costs only or indirect costs only with respect to costs incurred under this Agreement.

c. Audit Rights

The Recipient will maintain books, records, documents, and other evidence, based on the procedures set forth above, sufficient to reflect properly all costs claimed to have been incurred in the performance of this Agreement. The Energy Commission, another state agency, and/or a public accounting firm designated by the Energy Commission may audit the Recipient's accounting records at all reasonable times, with prior notice by the Energy Commission.

It is the intent of the parties that the audits will ordinarily be performed not more frequently than once every twelve (12) months during the performance of the work and once at any time within three (3) years after payment by the Energy Commission of the Recipient's final invoice. However, performance of any such interim audits by the Energy Commission does not preclude further audit. The Energy Commission may audit books, records, documents, and other evidence relevant to the Recipient's royalty payment obligations (see Section 22) for a period of ten (10) years after payment of the Recipient's final invoice.

The Recipient will allow the auditor(s) to access such records during normal business hours, and will allow interviews of any employees who might reasonably have information related to such records. The Recipient will include a similar right of the state to audit records and interview staff in any subcontract related to the performance of this Agreement.

d. Refund to the Energy Commission

If the Energy Commission determines that any invoiced and paid amounts exceed the actual allowable incurred costs, the Recipient will repay the amounts to the Energy Commission within thirty (30) days of request or as otherwise agreed by the Energy Commission and the Recipient. If the Energy Commission does not receive such repayments, it will be entitled to take actions such as withholding further payments to the Recipient and seeking repayment from the Recipient.

e. Audit Cost

The Recipient will bear its cost of participating in any audit (e.g., mailing or travel expenses). The Energy Commission will bear the cost of conducting the audit unless the audit reveals an error detrimental to the Energy Commission that exceeds more than ten percent (10%) or \$5,000 (whichever is greater) of: (1) the amount audited; or (2) if a royalty audit, the total royalties due in the period audited. The Recipient will pay the refund as specified in subsection (d), and will reimburse the Energy Commission for reasonable costs and expenses incurred by the Commission in conducting the audit.

f. Match or Cost Share

If the budget includes a match share requirement, the Recipient's commitment of resources, as described in this Agreement, is a required expenditure for receipt of Energy Commission funds. The funds will be released only if the required match percentages are expended. The Recipient must maintain accounting records detailing the expenditure of the match (actual cash and in-kind, non-cash services), and report on match share expenditures on its request for payment.

12. Workers' Compensation Insurance

- a. The Recipient warrants that it carries Worker's Compensation Insurance for all of its employees who will be engaged in the performance of this Agreement, and agrees to furnish to the Commission Agreement Manager satisfactory evidence of this insurance upon the Commission Agreement Manager's request.
- b. If the Recipient is self-insured for worker's compensation, it warrants that the self-insurance is permissible under the laws of the State of California and agrees to furnish to the Commission Agreement Manager satisfactory evidence of the insurance upon the Commission Agreement Manager's request.

13. Permits and Clearances

The Recipient is responsible for ensuring that all necessary permits and environmental documents are prepared and that clearances are obtained from the appropriate agencies.

14. Equipment

Title to equipment acquired by the Recipient with grant funds will vest in the Recipient. The Recipient may use the equipment in the project or program for which it was acquired as long as needed, regardless of whether the project or program continues to be supported by grant funds. However, the Recipient may not sell, lease, or encumber the property (i.e., place a legal burden on the property such as a lien) during the Agreement term without the Commission Agreement Manager's prior written approval.

The Recipient may refer to the applicable federal regulations incorporated by reference in this Agreement for guidance regarding additional equipment requirements.

15. Disputes

In the event of an Agreement dispute or grievance between the Recipient and the Energy Commission, both parties may follow the procedure detailed below. The Recipient will continue with its responsibilities under this Agreement during any dispute.

- a. Commission Agreement Manager/Commission Agreement Officer
 - The Recipient must first discuss the problem informally with the Commission Agreement Manager.
 - If the problem cannot be resolved at this stage, the Recipient must submit a Contractor Dispute Statement, along with any evidence, to the Commission Agreement Officer. The statement must include: (1) a summary of the issues in dispute; (2) the legal authority or other basis for the Recipient's position; and (3) the remedy sought.
- b. Commission Agreement Officer/ Program Office Manager
 - The Commission Agreement Officer and the Program Office Manager must make a determination on the problem within ten (10) working days of receipt of the Recipient's Dispute Statement.
 - The Commission Agreement Officer will submit a Dispute Finding to the Recipient that includes: (1) a decision; and (2) an explanation of the decision.
 - The Recipient may appeal to the Commission's Executive Director if it disagrees with the Commission Agreement Officer's decision.

c. Executive Director

- The Recipient must submit an Appeal to the Commission's Executive Director within ten (10) working days of receipt of the Commission Agreement Officer's Dispute Finding. The Appeal must explain why the Commission Agreement Officer's decision is unacceptable. The Recipient must include the following as attachments to the Appeal: (1) the Recipient Dispute Statement; (2) any supporting documents; and (3) the Dispute Finding.
- The Executive Director or his/her designee will meet with the Recipient to review the issues raised.
- A written decision signed by the Executive Director or his/her designee will be sent to the Recipient within twenty (20) working days of receipt of the Appeal. The Executive Director may exercise the option of presenting the decision to the Commission at a business meeting.
- If the Recipient disagrees with the Executive Director's decision, it may appeal to the Commission at a regularly scheduled business meeting. The Commission Agreement Officer will inform the Recipient of the procedure for placing the appeal on a Commission Business Meeting Agenda.

16. Stop Work

The Commission Agreement Officer may, at any time by written notice to the Recipient, require the Recipient to stop all or any part of the work tasks in this Agreement. Stop work orders may be issued for reasons such as a project exceeding budget, noncompliance with the standard of performance, out of scope work, project delays, and misrepresentations.

- a. Compliance. Upon receipt of a stop work order, the Recipient must immediately take all necessary steps to comply with the order and to minimize the incurrence of costs allocable to the work stopped.
- b. Equitable Adjustment. The Energy Commission will make an equitable adjustment based upon a written request from the Recipient. The Recipient must make the adjustment request within thirty (30) days from the date of the stop work order.
- c. Canceling a Stop Work Order. The Recipient may resume the work only upon receipt of written instructions from the Commission Agreement Officer.

17. Termination

a. Purpose

Because the Energy Commission is a state entity and provides funding on behalf of all California ratepayers, it must be able to terminate the Agreement upon the default of the Recipient and to proceed with the work required under the Agreement in any manner it deems proper. The Recipient agrees that upon any of the events triggering the termination of the Agreement by the Energy Commission, the Energy Commission has the right to terminate the Agreement, and it would constitute bad faith of the Recipient to interfere with the immediate termination of the Agreement by the Energy Commission.

b. Breach

The Energy Commission will provide the Recipient written notice of intent to terminate due to the Recipient's breach. The Recipient will have fifteen (15) calendar days to fully perform or cure the breach. If the Recipient does not cure the breach within fifteen (15) days, the Energy Commission may, without prejudice to any of its other remedies, terminate this Agreement upon five (5) calendar days written notice to the Recipient. In this event, the Energy Commission will pay the Recipient only the reasonable value of the services performed satisfactorily by the Recipient before the notice of termination, as may be agreed upon by the parties or determined by a court of law, but not to exceed the maximum payable Agreement amount.

c. For Cause

The Energy Commission may, for cause, terminate this Agreement upon giving thirty (30) calendar days advance written notice to the Recipient. In this event, the Recipient will use all reasonable efforts to mitigate its expenses and obligations. The Energy Commission will pay the Recipient for any services rendered and expenses incurred within thirty (30) days after notice of termination that the Recipient could not have avoided by reasonable efforts, in an amount not to exceed the maximum payable Agreement amount. The Recipient will relinquish possession of equipment purchased for this Agreement with Energy Commission funds to the Commission, or the Recipient may purchase the equipment as provided by the terms of this Agreement, with approval of the Energy Commission.

The term "for cause" includes but is not limited to the following:

- Partial or complete loss of match funds;
- Reorganization to a business entity unsatisfactory to the Energy Commission;
- Retention or hiring of subcontractors, or replacement or addition of personnel, that fail to perform to the standards and requirements of this Agreement;
- The Recipient's inability to pay its debts as they become due and/or the Recipient's default of an obligation that impacts its ability to perform under this Agreement; or
- Significant change in state or Energy Commission policy such that the work or product being funded would not be supported by the Commission.

d. Without Cause

The Energy Commission may terminate this Agreement without cause in whole or in part, upon giving thirty (30) days advance written notice to the Recipient. In this event, the Recipient will use all reasonable efforts to mitigate its expenses and obligations. Also, the Energy Commission will pay the Recipient for all satisfactory services rendered and expenses incurred within thirty (30) calendar days after notice of termination that the Recipient could not avoid by reasonable efforts, in an amount not to exceed the maximum payable under this Agreement.

18. Indemnification

To the extent allowed under California law, the Recipient will indemnify, defend, and hold harmless the state (including the Energy Commission) and state officers, agents, and employees from any and all claims and losses in connection with the performance of this Agreement.

19. Confidentiality

a. Identification of Confidential Information

- 1) Prior to the effective date of this Agreement, the Recipient will identify all products (or information contained within products) that it considers to be confidential, in addition to the legal basis for confidentiality, in Attachment 1 to this Exhibit. If the Energy Commission agrees that the information is confidential, it will not disclose it except as provided in subsection (b).
- 2) During the Agreement, if the Recipient develops additional products (or information contained within products) not originally anticipated as confidential, it will follow the procedures for a request for designation of confidential information specified in Title 20 California Code of Regulations (CCR) Section 2505.

The Energy Commission's Executive Director will make the confidentiality determination. Following this determination, the confidential information may be added to Attachment 1 through a Letter of Agreement (see the "Amendments" section). The Energy Commission will not disclose information subject to an application for confidential designation except as provided in subsection (b).

- 3) When submitting products containing confidential information, the Recipient will mark each page of any document containing confidential information as "confidential", and present it in a sealed package to the Contracts, Grants, and Loans Office.

The Commission Agreement Manager may require the Recipient to submit a non-confidential version of the product, if it is feasible to separate the confidential information from the non-confidential information. The Recipient is not required to submit such products in a sealed package.

b. Disclosure of Confidential Information

The Energy Commission will only disclose confidential information under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508. All confidential information that is legally disclosed by the Recipient or any other entity will become a public record and will no longer be subject to the Energy Commission's confidentiality designation.

c. Waiver of Consequential Damages

In no event will the Energy Commission, the California Public Utilities Commission, or the state of California be liable for any special, incidental, or consequential damages based on breach of warranty, breach of contract, negligence, strict tort, or any other legal theory for the disclosure of the Recipient's confidential information, even if the Commission has been advised of the possibility of such damages.

Damages that the Energy Commission, the California Public Utilities Commission, and the state of California will not be responsible for include but are not limited to: lost profit; lost savings or revenue; lost goodwill; lost use of the product or any associated equipment; cost of capital; cost of any substitute equipment, facilities, or services; downtime; the claims of third parties including customers; and injury to property.

d. Limitations on the Recipient's Disclosure of Products

- 1) During the Agreement, the Recipient must receive approval from the Commission Agreement Manager prior to disclosing the contents of any draft product to a third party. However, if the Energy Commission makes a public statement about the content of any product provided by the Recipient and the Recipient believes the statement is incorrect, the Recipient may state publicly what it believes is correct.
- 2) After any document submitted has become a part of the public records of the state, the Recipient may publish or use it at its own expense.
- 3) Except as provided in Title 20 CCR Sections 2506, 2507, and 2508, the Recipient may not disclose any information provided to it by the Energy Commission for the performance of this Agreement if the information has been designated as confidential or is the subject of a pending application for confidential designation. At the election of the Commission Agreement Manager, the Recipient, its employees, and its subcontractors must execute a confidentiality agreement provided by the Commission Agreement Manager.
- 4) The Recipient will ensure that each of its officers, employees, and subcontractors who are involved in the performance of this Agreement are informed about these disclosure limitations and will abide by them.

20. Pre-Existing and Independently Funded Intellectual Property

a. Ownership

The Energy Commission makes no ownership, license, or royalty claims to pre-existing intellectual property, independently funded intellectual property, or project-relevant pre-existing or independently funded intellectual property. **"Ownership"** means exclusive possession and control of all rights to property, including the right to use and transfer property. Intellectual property licenses and royalties are discussed in Sections 21 and 22.

- 1) **"Pre-existing intellectual property"** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Recipient or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

- 2) **“Independently funded intellectual property”** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice by the Recipient or a third party during or after the Agreement term without Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

“Works of authorship” does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.

- 3) **“Project-relevant pre-existing intellectual property”** and **“project-relevant independently funded intellectual property”** mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.

b. Project-Relevant Pre-Existing and Independently Funded Intellectual Property

1) Identification of Property

- a) The Recipient will identify all project-relevant pre-existing intellectual property in Attachment 1 to this Exhibit prior to the effective date of the Agreement, or within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement. Attachment 1 may be amended by a Letter of Agreement (see the “Amendments” section).
- b) The Recipient will identify all project-relevant independently funded intellectual property and the source of funding for the property in Attachment 1 to this Exhibit within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.
- c) Failure to identify project-relevant pre-existing or independently funded intellectual property in Attachment 1 to this Exhibit may result in the property’s designation as “intellectual property” that is subject to licenses and royalties, as described in Sections 21 and 22.

2) Access to Property

The extent of Energy Commission and California Public Utilities Commission access to project-relevant pre-existing and independently funded intellectual property is limited to that reasonably necessary to: (a) demonstrate the validity of any premise, postulate, or conclusion referred to or expressed in any product; or (b) establish a baseline for repayment purposes.

Upon the Commission Agreement Manager's request, the Recipient will provide the Commission Agreement Manager and any reviewers designated by the Energy Commission or the California Public Utilities Commission with access to review the Recipient's project-relevant pre-existing and independently funded intellectual property. If the property has been designated as confidential as specified in Section 19, the Energy Commission will only disclose it under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508.

3) Preservation of Property

The Recipient will preserve any project-relevant pre-existing or independently funded intellectual property at its own expense for at least ten (10) years from the Agreement's end date, unless the Recipient agrees to a longer retention period.

The Energy Commission and the California Public Utilities Commission will have reasonable access to the project-relevant pre-existing or independently funded property throughout the retention period.

21. **Intellectual Property**

a. Ownership

- 1) The Recipient owns all intellectual property, subject to the licenses described in subsection b.

"Intellectual property" means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice with Agreement or match funds during or after the Agreement term; (b) any associated proprietary rights to these items, such as patent and copyright; and (c) any upgrades or revisions to these items.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices.

- 2) The Energy Commission owns all products identified in the Scope of Work, with the exception of products that fall within the definition of "intellectual property."

"Product" means any tangible item specified for delivery to the Energy Commission in the Scope of Work.

b. Intellectual Property Licenses

- 1) Both the Energy Commission and the California Public Utilities Commission have a no-cost, non-exclusive, transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, modify, and reproduce intellectual property for governmental purposes. The licenses are transferable only to load-serving entities for the purpose described below.
- 2) Both the Energy Commission and the California Public Utilities Commission may grant load-serving entities a no-cost, non-exclusive, transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, modify, and reproduce intellectual property to enhance the entities' service to EPIC ratepayers. **"Load-serving entity"** means a company or other organization that provides electricity to EPIC ratepayers.

The licenses are transferable to third parties only for the purpose of facilitating the load-serving entity's enhancement of service to EPIC ratepayers. Load-serving entities must obtain prior written approval from the Energy Commission or California Public Utilities Commission (whichever agency granted the load-serving entity the license) in order to transfer the license to a third party.
- 3) The Recipient has a non-exclusive, non-transferable, irrevocable, worldwide, perpetual license to use, publish, translate, modify, and reproduce written products created for Agreement reporting and management purposes, such as reports and summaries.
- d) If any intellectual property that is subject to the licenses above has been designated as confidential as specified in Section 19, all license holders will only disclose the intellectual property under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508.

All license holders will ensure that their officers, employees, and subcontractors who have access to the intellectual property are informed of and abide by the disclosure limitations in Section 19.

c. Energy Commission's Rights to Inventions

"Invention" means intellectual property that is patentable.

1) March-In Rights

At the Energy Commission's request, the Recipient will forfeit and assign to the Energy Commission all rights to any invention (with the exception of U.S. Department of Energy reserved rights) if the Recipient or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the invention. The Energy Commission will have the unfettered right to use and/or dispose of the rights in whatever manner it deems most suitable to help transfer the invention into the marketplace, including but not limited to seeking patent protection or licensing the invention.

2) Notice of Patent

If any patent is issued for an invention, the Recipient will send the Commission Agreement Manager written notice of the issuance within three (3) months of the issuance date. The notice must include the patent title, issuance number, and a general description of the invention.

3) Legal Notice

The Recipient and all persons and/or entities obtaining an ownership interest in patentable intellectual property must include the following statement within the specification of any United States patent application, and any subsequently issued patent for the invention:

“This invention was made with State of California support under California Energy Commission grant number EPC-17-020. The Energy Commission has certain rights to this invention.”

d. Access to and Preservation of Intellectual Property

1) Access to Intellectual Property

Upon the Commission Agreement Manager’s request, the Recipient will provide the Commission Agreement Manager and any individuals designated by the Energy Commission or the California Public Utilities Commission with access to the Recipient’s intellectual property in order to exercise the license and march-in rights described above, and to determine any royalty payments due under the Agreement.

2) Preservation of Intellectual Property

The Recipient will preserve intellectual property at its own expense for at least ten (10) years from the Agreement’s end date, unless the Recipient agrees to a longer retention period.

e. Intellectual Property Indemnity

The Recipient may not, in supplying work under this Agreement, knowingly infringe or misappropriate any intellectual property right of a third party, and will take reasonable actions to avoid infringement.

The Recipient will defend and indemnify the Energy Commission and the California Public Utilities Commission from and against any claim, lawsuit, or other proceeding, loss, cost, liability, or expense (including court costs and reasonable fees of attorneys and other professionals) to the extent arising out of: (i) any third party claim that a product infringes any patent, copyright, trade secret, or other intellectual property right of any third party; or (ii) any third party claim arising out of the negligent or other tortious acts or omissions by the Recipient or its employees, subcontractors, or agents in connection with or related to the products or the Recipient’s performance under this Agreement.

22. Royalty Payments to the Commission

“Sale,” “sales,” and “sold” mean the sale, license, lease, or other transfer of intellectual property. **“Sales Price”** means the price at which intellectual property is sold, excluding sales tax.

- a. The Recipient will pay the Energy Commission a royalty of one and one-half percent (1.5%) of the sales price of all sales for which the Recipient receives a payment, beginning on the Agreement’s effective date and extending for ten (10) years from the Agreement’s end date.
- b. The Recipient will make payments in annual installments due on the first day of March in the calendar year immediately following the year during which the Recipient received any payment for sales.

- c. The Recipient is not required to make a royalty payment for any calendar year in which payments for sales are less than \$1000. Total royalty payments will be limited to three (3) times the amount of funds paid by the Energy Commission under the Agreement.
- d. If intellectual property was developed in part with match funds during the Agreement term, the royalty payment will be reduced in accordance with the percentage of intellectual property development activities that were funded with match funds. For example, if 10% of the development activities were funded with match funds during the Agreement and payments for sales totaled \$100,000 in one year, the Recipient would owe the Energy Commission \$1350 for the year (1.5% of \$100,000 = \$1500; 10% of \$1500 = \$150; \$1500 - \$150 = \$1350).

If the Energy Commission is providing funds to the Recipient under this Agreement as a project match partner and Energy Commission funds are used in part to develop intellectual property, the royalty payments will be reduced in accordance with the percentage of intellectual property development activities that were funded with non-Energy Commission funds during the Agreement term. For example, if 80% of the development activities were funded with Recipient and/or third party funds during the Agreement and payments for sales totaled \$100,000 in one year, the Recipient would owe the Energy Commission \$300 for the year (1.5% of \$100,000 = \$1500; 80% of \$1500 = \$1200; \$1500 - \$1200 = \$300).
- e. The Recipient may make an early buyout payment to the Energy Commission without a pre-payment penalty, as an alternative to making annual royalty payments for ten (10) years following the Agreement's end date. The payment must be in a lump sum amount equal to one and a half (1.5) times the amount of funds paid by the Energy Commission under the Agreement and made within five (5) years of the Agreement's end date. The payment amount due under the early buyout option will not be reduced by the percentage of match funds as described above.
- f. The Recipient may not make any sale of intellectual property for consideration other than fair market value. Such activity constitutes breach of this Agreement, and will obligate the Recipient to repay within sixty (60) days the early buyout amount due. In the event of breach, the Energy Commission may exercise all rights and remedies available to it under law and at equity.
- g. Royalty payments not made within fifteen (15) days of the due date will constitute breach of this Agreement. The payments will become debt obligations of the Recipient to the Energy Commission, due upon demand and bearing interest at the maximum interest rate allowed by law.
- h. The Recipient will maintain separate accounts within its financial and other records for the purpose of tracking components of sales and royalties due to the Energy Commission under this Agreement.
- i. Payments to the Energy Commission are subject to audit as provided for under the Recordkeeping, Cost Accounting, and Auditing section.
- j. The Recipient will include these royalty provisions in its agreements with all subcontractors who develop or assist with the development of intellectual property.

23. General Provisions

a. Governing Law

This Agreement is governed by the laws of the State of California as to interpretation and performance.

b. Independent Capacity

In the performance of this Agreement, the Recipient and its agents, subcontractors, and employees will act in an independent capacity and not as officers, employees, or agents of the State of California.

c. Assignment

This Agreement is not assignable or transferable by the Recipient either in whole or in part without the consent of the Energy Commission in the form of an amendment.

d. Timeliness

Time is of the essence in this Agreement.

e. Severability

If any provision of this Agreement is unenforceable or held to be unenforceable, all other provisions of this Agreement will remain in full force and effect.

f. Waiver

No waiver of any breach of this Agreement constitutes waiver of any other breach. All remedies in this Agreement will be taken and construed as cumulative, meaning in addition to every other remedy provided in the Agreement or by law.

g. Assurances

The Commission reserves the right to seek further written assurances from the Recipient and its team that the work under this Agreement will be performed in accordance with the terms of the Agreement.

h. Change in Business

- 1) The Recipient will promptly notify the Energy Commission of the occurrence of any of the following:
 - a) A change of address.
 - b) A change in business name or ownership.
 - c) The existence of any litigation or other legal proceeding affecting the project or Agreement.
 - d) The occurrence of any casualty or other loss to project personnel, equipment, or third parties.
 - e) Receipt of notice of any claim or potential claim against the Recipient for patent, copyright, trademark, service mark, and/or trade secret infringement that could affect the Energy Commission's rights.

- 2) The Recipient must provide the Commission Agreement Manager with written notice of a planned change or reorganization of the type of business entity under which it does business. A change of business entity or name change requires an amendment assigning or novating the Agreement to the changed entity. If the Energy Commission does not seek to amend this Agreement or enter into a new agreement with the changed or new entity for any reason (including that the Commission is not satisfied that the new entity can perform in the same manner as the Recipient), it may terminate this Agreement as provided in the "Termination" section.

i. Access to Sites and Records

Energy Commission and California Public Utilities Commission staff and representatives will have reasonable access to all project sites and to all records related to this Agreement.

j. Prior Dealings, Custom, or Trade Usage

These terms and conditions may not be modified or supplemented by prior dealings, custom, or trade usage.

k. Survival of Terms

Certain provisions will survive the completion or termination date of this Agreement for any reason. The provisions include but are not limited to:

- Legal Statements on Products (included in Section 5, "Products")
- Payment of Funds (Section 8)
- Recordkeeping, Cost Accounting, and Auditing (Section 11)
- Equipment (Section 14)
- Disputes (Section 15)
- Termination (Section 17)
- Indemnification (Section 18)
- Pre-Existing and Independently Funded Intellectual Property (Section 20)
- Intellectual Property (Section 21)
- Royalty Payments to the Commission (Section 22)
- Change in Business (see this section)
- Access to Sites and Records (see this section)

24. *Certifications and Compliance*

a. Federal, State, and Local Laws

The Recipient will comply with all applicable federal, state and local laws, rules and regulations.

b. Nondiscrimination Statement of Compliance

During the performance of this Agreement, the Recipient and its subcontractors will not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, sexual orientation, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition, age, marital status, or denial of family care leave. The Recipient and its subcontractors will ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.

The Recipient and its subcontractors will comply with the provisions of the Fair Employment and Housing Act (Government Code Sections 12990 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part of it as if set forth in full. The Recipient and its subcontractors will give written notice of their obligations under this section to labor organizations with which they have a collective bargaining or other Agreement.

The Recipient will include the nondiscrimination and compliance provisions of this section in all subcontracts to perform work under this Agreement.

c. Drug-Free Workplace Certification

By signing this Agreement, the Recipient certifies under penalty of perjury under the laws of the State of California that it will comply with the requirements of the Drug-Free Workplace Act of 1990 (Government Code Section 8350 et seq.) and will provide a drug-free workplace by taking the following actions:

- 1) Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited, and specifying actions to be taken against employees for violations as required by Government Code Section 8355(a).
- 2) Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b) to inform employees about all of the following:
 - The dangers of drug abuse in the workplace;
 - The person's or organization's policy of maintaining a drug-free workplace;
 - Any available counseling, rehabilitation, and employee assistance programs; and
 - Penalties that may be imposed upon employees for drug abuse violations.
- 3) Provide, as required by Government Code Section 8355(c), that every employee who works on the proposed project:
 - Will receive a copy of the company's drug-free policy statement; and
 - Will agree to abide by the terms of the company's statement as a condition of employment on the project.

Failure to comply with these requirements may result in suspension of payments under the Agreement or termination of the Agreement or both, and the Recipient may be ineligible for any future state awards if the Commission determines that any of the following has occurred: (1) the Recipient has made false certification, or (2) violates the certification by failing to carry out the requirements as noted above.

d. National Labor Relations Board Certification (Not applicable to public entities)

The Recipient, by signing this Agreement, swears under penalty of perjury that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Recipient within the immediately preceding two year period because of the Recipient's failure to comply with an order of a federal court that orders the Recipient to comply with an order of the National Labor Relations Board.

e. Child Support Compliance Act (Applicable to California Employers)

For any agreement in excess of \$100,000, the Recipient acknowledges that:

- 1) It recognizes the importance of child and family support obligations and will fully comply with all applicable state and federal laws relating to child and family support enforcement, including but not limited to disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and
- 2) To the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.

f. Air or Water Pollution Violation

Under state laws, the Recipient will not be:

- 1) In violation of any order or resolution not subject to review promulgated by the State Air Resources Board or an air pollution control district;
- 2) Subject to a cease and desist order not subject to review issued pursuant to Section 13301 of the Water Code for violation of waste discharge requirements or discharge prohibitions; or
- 3) Finally determined to be in violation of provisions of federal law relating to air or water pollution.

g. Americans With Disabilities Act

By signing this Agreement, the Recipient assures the State that it complies with the Americans with Disabilities Act (ADA) of 1990 (42 U.S.C. Section 12101, et seq.), which prohibits discrimination on the basis of disability, as well as applicable regulations and guidelines issued pursuant to the ADA.

25. Definitions

- **Agreement Term** means the length of this Agreement, as specified on the Agreement signature page (form CEC-146).
- **Budget Reallocation** means the movement of funds between tasks identified in the budget (Exhibit B).

- **Confidential Information** means information that the Recipient has satisfactorily identified as confidential in Attachment 1 to this Exhibit and that the Energy Commission has agreed to designate as confidential under Title 20 California Code of Regulations Section 2505.
- **Data** means any recorded information that relates to the project funded by the Agreement, whether created or collected before or after the Agreement's effective date.
- **Effective Date** means the date on which this Agreement is signed by the last party required to sign, provided that signature occurs after the Agreement has been approved by the Energy Commission at a business meeting or by the Executive Director or his/her designee.
- **EPIC** means the Electric Program Investment Charge, an electricity ratepayer-funded surcharge authorized by the California Public Utilities Commission in December 2011.
- **Equipment** means products, objects, machinery, apparatus, implements, or tools that are purchased or constructed with Energy Commission funds for the project, and that have a useful life of at least one year and an acquisition unit cost of at least \$5,000. "Equipment" includes products, objects, machinery, apparatus, implements, or tools that are composed by over thirty percent (30%) of materials purchased for the project. For purposes of determining depreciated value of equipment used in the Agreement, the project will terminate at the end of the normal useful life of the equipment purchased and/or developed with Energy Commission funds. The Energy Commission may determine the normal useful life of the equipment.
- **Independently Funded Intellectual Property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice by the Recipient or a third party during or after the Agreement term without Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.
- **Intellectual Property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice with Agreement or match funds during or after the Agreement term; (b) any associated proprietary rights to these items, such as patent and copyright; and (c) any upgrades or revisions to these items.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices.
- **Invention** means intellectual property that is patentable.

- **Load-serving entity** means a company or other organization that provides electricity to EPIC ratepayers.
- **Match Funds** means cash or in-kind (i.e., non-cash) contributions provided by the Recipient or a third party for a project funded by the Energy Commission. If this Agreement resulted from a solicitation, refer to the solicitation's discussion of match funding for guidelines specific to the project.
- **Materials** means the substances used to construct a finished object, commodity, device, article, or product, such as equipment.
- **Ownership** means exclusive possession of all rights to property, including the right to use and transfer property.
- **Pre-existing intellectual property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Recipient or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.
- **Product** means any tangible item specified for delivery to the Energy Commission in the Scope of Work.
- **Project** means the entire effort undertaken and planned by the Recipient and consisting of the work funded by the Energy Commission. The project may coincide with or extend beyond the Agreement term.
- **Project-relevant pre-existing intellectual property and project-relevant independently funded intellectual property** mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.
- **Sale, Sales, and Sold** mean the sale, license, lease, or other transfer of intellectual property.
- **Sales Price** means the price at which intellectual property is sold, excluding normal returns and allowances such as sales tax.
- **State** means the state of California and all California state agencies within it, including but not limited to commissions, boards, offices, and departments.

EXHIBIT A
Scope of Work**I. TASK ACRONYM/TERM LISTS**

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A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2	X	Microgrid Design
3	X	Microgrid Construction
4		Operation and Maintenance
5		Field Testing and Evaluation
6		Evaluation of Project Benefits
7		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
BMcD	Burns & McDonnell
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
District	San Diego Unified Port District
GHG	Greenhouse Gas
HPS	High Pressure Sodium
LED	Light Emitting Diode
PPA	Power Purchase Agreement
PV	Photovoltaic
Recipient	San Diego Unified Port District
SDG&E	San Diego Gas and Electric
TAC	Technical Advisory Committee
TAMT	Tenth Avenue Marine Terminal

II. PURPOSE OF AGREEMENT, PROBLEM/SOLUTION STATEMENT, AND GOALS AND OBJECTIVES**A. Purpose of Agreement**

The purpose of this Agreement is to fund the development of a replicable model for renewable-based microgrids at California ports and other goods movement facilities.

The Energy Commission issued solicitation GFO-17-302 Demonstrate Business Case for Advanced Microgrids in Support of California's Energy and GHG Policies to Demonstration of Standardized High-DER Penetration, Renewable-Based, Resilient and Commercially Viable Microgrids Located at California Military Bases, Ports, and Native American Tribes within IOU Service Territories. In response to GFO-17-302, San Diego Unified Port District (Recipient) submitted application #04, which was proposed for funding in the Energy Commission's Notice of Proposed Awards dated March 14, 2018. The Recipient's

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

application and the Notice of Proposed Award issued are incorporated by reference to this Agreement in their entirety.

In the event of any conflict or inconsistency between the terms of the Solicitation and the terms of the Recipient's Application, the Solicitation shall control. In the event of any conflict or inconsistency between the Recipient's Application and the terms of the Energy Commission's Award, the Commission's Award shall control. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the Recipient's Application, the terms of this Agreement shall control.

B. Problem/Solution Statement

Problem

California ports are electrifying their operations to move toward zero emission operations, which dramatically increases their reliance and impact on the local electric grid. The migration to all-electric terminals will result in many terminals at least tripling their peak power consumption, while becoming more susceptible to operational disruptions due to losses of grid power². Renewable microgrids provide a potential path to a carbon-free, resilient, and sustainable energy solution while reducing the effects on San Diego Gas and Electric's (SDG&E's) distribution system; however, the costs and operational uncertainties of microgrids at seaports present a barrier to adoption. Demonstration projects are needed to identify and overcome implementation challenges, while validating the operational and financial viability of microgrids at goods movement facilities.

Solution

The recipient will develop a solar + battery storage microgrid at the Port of San Diego's Tenth Avenue Marine Terminal (TAMT) to demonstrate the viability of a renewable-powered microgrid to seaport and goods movement industrial facilities. This project is also designed to demonstrate and evaluate innovative funding approaches to pay for key elements of the construction, operation, and maintenance of the microgrid using a power purchase agreement (PPA). This addresses a key issue with many industrial facilities that want the benefits of a renewable microgrid but cannot fund the capital expenses and are concerned about the additional maintenance of the equipment. The TAMT is an ideal demonstration facility because (1) it is located adjacent to the disadvantaged community of Barrio Logan; (2) it is an omni terminal that moves a wide range of goods; and (3) it supports critical maritime, military, and airport operations, serving as a U.S. Department of Defense Strategic Port. The TAMT Renewable Microgrid Project will serve as a repeatable technical, operational, and financial model for microgrid deployment at California goods movement facilities and beyond.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to:

- Goal 1: Demonstrate a repeatable model for renewable-based microgrids at seaport terminals, goods movement centers, and industrial facilities
- Goal 2: Operate with renewable energy in island mode
- Goal 3: Reduce greenhouse gas emissions
- Goal 4: Increase penetration of renewable electricity

² Port of Los Angeles Energy Management Action Plan, July 2014.
https://www.portoflosangeles.org/DOC/DRAFT%20POLA%20E-MAP_July%202014.pdf

EXHIBIT A Scope of Work

- Goal 5: Reduce electricity costs
- Goal 6: Demonstrate a standardized commercial microgrid system

Ratepayer Benefits:³ This Agreement will result in the ratepayer benefits of greater electricity reliability, lower costs, and increased safety. The TAMT Renewable Microgrid Project will increase electric reliability by using solar + storage to provide local and reliable capacity and energy in one of San Diego Gas & Electric's highest density load centers, while mitigating the duck curve⁴. The project will lower ratepayer costs by reducing the need for electric utility infrastructure improvement through consistent management of peak demand, in conjunction with other microgrid and energy storage projects. The evaluation of multiple funding options, including Power Purchase Agreements (PPAs), to construct, maintain, and operate a microgrid will demonstrate the effectiveness of various financial model options for reducing upfront capital investments for infrastructure, while providing reduced ongoing energy costs to ratepayers implementing similar projects. Since the PPA provider is contracted for the operation and maintenance of the system, this approach also helps to ensure that the microgrid is properly maintained throughout its life without placing an additional burden on the recipient's personnel. The proposed project will increase knowledge of microgrid safety by performing cyber security assessments of vulnerabilities and developing mitigation strategies. On a regional scale, the increase in energy resiliency at TAMT will benefit San Diego ratepayers, and citizens of the region, including the adjacent disadvantaged community of Barrio Logan, who rely on the recipient for emergency relief, supplies, and fuel in the event of a natural or manmade disaster that caused a disruption to the electrical grid.

Technological Advancement and Breakthroughs:⁵ 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 demonstrating the operational and financial viability of a renewable + storage microgrid at a marine cargo omni terminal that delivers cargo that economically benefits the region, supports military operations, and supplies the San Diego International Airport with jet fuel. Following the appropriate public selection process, a PPA will be structured to install and maintain solar panels for the purpose of generating renewable energy, for solar and for the operation and maintenance of the microgrid at a rate that is anticipated to provide net monthly and annual savings for the District. It is the financial structure and the application of a microgrid at a marine terminal that are the main components of the proposed TAMT Renewable Microgrid Project, helping to advance the deployment and adoption of microgrids.

Agreement Objectives

The objectives of this Agreement are to:

- Demonstrate the operational and financial viability of a solar + storage microgrid at TAMT, a marine omni terminal.

³ 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).

⁴ https://www.caiso.com/documents/flexibleresourceshelprenewables_fastfacts.pdf

⁵ 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.

EXHIBIT A

Scope of Work

- Assess islanding capabilities under various battery storage system states of charge and solar generation scenarios to provide 12 hours of operation independent of the grid.
- Reduce greenhouse gas (GHG) emissions from electric power use by 100% relative to baseline conditions.
- Implement energy efficiency measures to reduce electricity use by greater than 20%.
- Use solar + storage microgrid to reduce annual energy costs by more than \$250,000.
- Ratepayer cost savings, environmental benefits to the community, and benefits to the utility through demand response.
- Develop an approach, lessons learned, and business case to support replicability at other facilities.

EXHIBIT A Scope of Work

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:

o **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.

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.

EXHIBIT A Scope of Work

- 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:

- 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.

EXHIBIT A Scope of Work

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);
 - Technology/Knowledge Transfer (Task 7); 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, 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.

EXHIBIT A Scope of Work

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
- 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.

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EXHIBIT A Scope of Work

- “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

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)

EXHIBIT A Scope of Work

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 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 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.
- Submit one bound copy of the *Final Report* to the CAM along with *Written Responses to Comments on the Draft Final Report*.

EXHIBIT A Scope of Work

Products:

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

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

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

While the costs to obtain and document match funds are not reimbursable under this Agreement, the Recipient may spend match funds for this task. The Recipient may only spend match funds during the Agreement term, either concurrently or prior to the use of 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.
 - If different from the solicitation application, provide a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

EXHIBIT A Scope of Work

Products:

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

Subtask 1.8 Permits

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

The Recipient shall:

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

The list of permits and the schedule for obtaining them will be discussed at the Kick-off meeting (subtask 1.2), and a timetable for submitting the updated list, schedule, and copies of the permits will be developed. The impact on the project if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in progress reports and will be a topic at CPR meetings.

- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
- Send the CAM a *Copy of Each Approved Permit*.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

Products:

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

Subtask 1.9 Subcontracts

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

The Recipient shall:

- Manage and coordinate subcontractor activities in accordance with the requirements of this Agreement. Incorporate this Agreement by reference into each subcontract.
- Include any required Energy Commission flow-down provisions in each subcontract, in addition to a statement that the terms of this Agreement will prevail if they conflict with the subcontract terms.

EXHIBIT A Scope of Work

- 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
- 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, phone numbers of potential members, a summary of relevant experience and potential value to the project. 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.

EXHIBIT A Scope of Work

- 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

EXHIBIT A Scope of Work

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 MICROGRID DESIGN

The goal of this task is to design the microgrid. This includes preliminary assessment and design, as well as (1) system design modeling; (2) completion of final designs for lighting conversion, roof retrofits, electrical infrastructure upgrades, solar photovoltaic (PV) system, and battery storage system; (3) microgrid integration; (4) third party review of designs; and (5) obtain necessary permits from the City of San Diego and SDG&E for Rule 21 compliance.

The Recipient shall:

- Prepare and provide a *System Modeling and Optimization Presentation* to include, but not be limited to:
 - Identification of system loads
 - Identification of different DER mixes and battery sizes to optimize interruption, investment, and utility costs
 - Identification of different battery operation strategies
 - Identification of reliability benefits during power outages
 - Modeling results
- Prepare and provide a *Cyber Security Architecture Assessment* to include:
 - Cyber security architecture for the microgrid based on a high-level risk assessment. The risk assessment process will involve: identifying key assets, characterizing potential threats, assessing vulnerabilities and their impact, assessing threat likelihood, determining risk, and recommending security controls. Key findings will be documented in a *Cyber Security Architecture Assessment*.
- Prepare and provide a *Microgrid Design and Engineering Presentation* to include a summary of the 100% design documents. Designs will include but not be limited to:
 - High mast lighting conversion from high pressure sodium (HPS) to light emitting diode (LED) fixtures.
 - Roof retrofits to support a solar PV system with a design life of 25 years.
 - Upgrades to the 12-kV distribution system required to support microgrid functionality, including:
 - The primary switchgear at the point of interconnection with SDG&E will be modified to provide the necessary protection schemes for SDG&E’s Rule 21 interconnection requirements.
 - An existing, vault-mounted sectionalizing switch will be replaced to provide a connection point to the 12-kV distribution system.
 - A new, 480V switchboard will be provided to connect the solar PV and energy storage systems.
 - Microgrid component integration, including:
 - Rooftop solar PV system to meet lighting, security, warehouse, dry bulk, and fuel storage facility loads.
 - Battery storage system.
 - Centralized microgrid controller that will monitor the state of the 12-kV system.
 - Complete microgrid integration to meet needs for grid-tied and islanded modes of operation.

EXHIBIT A Scope of Work

- Prepare and produce a *Microgrid Design Review Presentation* to summarize:
 - Independent third-party reviews of the microgrid design to confirm that the microgrid designs are optimized for use cases.
- Prepare a CPR Report #1 in accordance with subtask 1.3 (CPR Meetings)
- Participate in a CPR Meeting #1.

Products:

- System Modeling and Optimization Presentation
- Cyber Security Architecture Assessment (draft and final)
- Microgrid Design and Engineering Presentation
- Microgrid Design Review Presentation
- CPR Report #1

TASK 3 MICROGRID CONSTRUCTION

The goal of this task is to construct the microgrid, inclusive of energy efficiency upgrades and improvements to supporting infrastructure, as well as to install and commission the microgrid. Construction contracts may be entered following the appropriate public selection process(es).

The Recipient shall:

- Install the microgrid per the final engineering documentation completed in Task 2, including the *System Modeling and Optimization Presentation*, *Cyber Security Architecture Assessment*, *Microgrid Design and Engineering Presentation*, and *Microgrid Design Review Presentation*.
- The microgrid installation will include, but is not limited to:
 - Convert lights from HPS to LED.
 - Retrofit and reroof warehouse to provide a roof capable of supporting a PV system, with a minimum life of 25 years.
 - Upgrade the following electrical infrastructure serving the District's 12-kV system:
 - The primary switchgear at the point of interconnection with SDG&E will be modified to provide the necessary protection schemes for SDG&E's Rule 21 interconnection requirements.
 - An existing, vault-mounted sectionalizing switch will be replaced to provide a connection point to the 12-kV distribution system.
 - A new, 480 V switchboard will be provided to connect the solar PV and energy storage systems.
 - A new 1,000-kVA pad-mounted transformer will be installed.
 - New duct bank will be installed to provide connection point to the 12-kV distribution system.
 - Enter into a PPA to purchase energy generated by the solar PV system.
 - Install solar PV system on the warehouse.
 - Install battery storage system adjacent to the warehouse.
 - Install a centralized microgrid controller.
- Provide *CAM Pictures of Installed Microgrid Equipment* with name plate capacities in *Progress Report*.
- Prepare and provide a *Commissioning Presentation* to summarize the commissioning of the microgrid in both grid-tied and islanded modes of operation. The commissioning will include:

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EXHIBIT A Scope of Work

- Conduct a final walkthrough to ensure the installation is in accordance with a licensed engineer's final design, and any documentation to ensure that the installed system meets all federal, state, local, and any applicable code requirements.
- Work with the PPA provider to test the desired sequences of operation for the electrical monitoring and control system.
- Optimization of load shifting/peak shaving, demand response, and islanded operations. The results of the commissioning effort will be documented in the *Commissioning Presentation*.
- Obtain *Rule 21 Permit to Operate* from SDG&E to demonstrate interconnection approval and provide a copy to the CAM
- Prepare a CPR Report #2 in accordance with subtask 1.3 (CPR Meetings)
- Participate in a CPR Meeting #2.

Products:

- Commissioning Presentation
- Copy of Rule 21 Permit to Operate
- CPR Report #2

TASK 4 OPERATION AND MAINTENANCE

The goal of this task is to arrange for and coordinate the long-term operation and maintenance of the microgrid system to maximize the benefits the District receives from the microgrid.

The Recipient shall:

- Operate and maintain the microgrid system. This includes establishment of operational and performance metrics under grid-tied and islanded modes of operation.
- Develop an *Operations and Maintenance Manual* containing relevant information for each microgrid component.
- Train facilities staff and first responders on system operations and safety features.
- Maintain all other components of the terminal's electrical infrastructure to support terminal and microgrid operations.

Products:

- Operation and Maintenance Manual (draft and final)

TASK 5 FIELD TESTING AND EVALUATION

The goal of this task is to perform field testing and evaluation of the microgrid functionality with a focus on the project's four DER elements.

The Recipient shall:

- Develop a *Measurement and Verification Plan*. The plan will assess: (1) energy efficiency savings, (2) solar + storage operational and financial performance, (3) islanded operations performance, (4) demand response financial performance, and (5) installation issues, microgrid performance and operational constraints, and ability of the system to respond to grid emergencies. The plan will include, but is not limited to:
 - Description of the systems to be tested
 - Description of the data collection methodology, including:
 - Data collection protocols

EXHIBIT A Scope of Work

- Data collection schedule
- Field demonstration of islanded operations, including:
 - Duration of simulated islanded operation
 - Environmental conditions
 - Target operational loads
- Justification for the tests
- Information storage and retention plan
- Expected performance
- Plans for documentation of technical, environmental and economic data, including, but not limited to:
 - Installation issues
 - Operational constraints
 - Operational performance, including duration of islanded mode capability
 - Response to grid emergencies.
 - Parameters that will measure and document successes, lessons learned, and best practices for the above.
- Description of a measurement and verification plan that includes, but is not limited to:
 - Energy Efficiency (EE) to measure before and after EE for the quantification of actual kW/kWh saved.
 - Demand Response (DR) including, but is not limited to:
 - kW/kWh provided when DR is used
 - Definition of how the DR is used; the services provided by the microgrid; and the proposed value provided for these microgrid load services
 - The values of integrated services and how the services can be verified, measured and valued
 - DR event performance information from the IOU or CA ISO for any DR services provided
- Collect data on the operational benefits of the microgrid monthly over the 12-month demonstration period, or other term approved by CAM in writing, per the *Measurement and Verification Plan*, including:
 - **Annual electricity savings:** The primary driver of end user energy reductions at the terminal will be the conversion of lighting from HPS to LED fixtures. Baseline annual energy usage prior to lighting conversion will be compared to usage following conversion and optimization.
 - **GHG emission reductions:** GHG emissions reductions will be calculated based on reductions in energy use from efficiency measures as well as the difference in the percentage of renewable energy powering the terminal from the solar PV and energy storage system as compared to that of SDG&E provided power.
 - **Energy cost reductions:** Modeled projections of energy costs will be compared to the Port's actual utility bills and PPA costs. The PPA provider will perform this assessment and provide a report to the Port monthly to document energy cost reductions.
 - **Peak load reduction and shifting:** Financial benefits of energy storage use optimization will be evaluated under peak shaving and load shifting scenarios.
 - **Net load shape (duck curve mitigation):** Net load shape will be modeled for a solar PV only installation and for solar + storage installation to assess the potential for the project to mitigate the duck curve. This baseline analysis will be

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EXHIBIT A Scope of Work

- used to evaluate actual performance and usage of the system during the evaluation period.
- **Security and safety:** Although the primary purpose of the microgrid is energy security, it is critical that the microgrid not introduce new vulnerabilities to the terminal. A cyber security assessment in collaboration with the District's Information Technology team will be conducted.
 - Provide monthly *Microgrid Data Reports* to the CAM on field data collected for the one-year testing and evaluation period, or the term approved by the CAM in writing, that includes, but is not limited to:
 - Technical data
 - Operational data
 - Economic data
 - Environmental data
 - Other areas as determined by the CAM
 - Provide a *Final Measurement and Verification Report* at the conclusion of the one-year testing and evaluation period.
 - Perform ongoing monitoring of system performance, including solar output, battery state of charge, and cost reductions, using an automated system to quantify expected microgrid benefits for the life of the PPA.
 - For 3 years beyond the term end date of this Agreement, deliver the following to the Energy Commission annually:
 - A confirmation that the microgrid system is operating
 - Any available summary performance data, benefits, or other relevant summary data reports that can be easily provided based on the data collecting systems installed.

Products:

- Measurement and Verification Plan (draft and final)
- Microgrid Data Reports
- Final Measurement and Verification Report (draft and final)

TASK 6 EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

- Complete four Project Benefits Questionnaires that correspond to four main intervals in the Agreement: (1) Kick-off Meeting Benefits Questionnaire; (2) Mid-term Benefits Questionnaire; (3) Final Meeting Benefits Questionnaire; and (4) Three Years Beyond the Term End Date Benefits Questionnaire.
- Provide all key assumptions used to estimate projected benefits, including targeted market sector (e.g., population and geographic location), projected market penetration, baseline and projected energy use and cost, operating conditions, and emission reduction calculations. Examples of information that may be requested in the questionnaires include, but not limited to:
 - Reliability, resiliency and sustainability improvements as provided by the microgrid.
 - Net impacts on the larger grid's load and load shape as provided by the microgrid.

EXHIBIT A

Scope of Work

- GHG reductions as provided by the microgrid, compared to using the utility grid for the electricity and also GHG reductions as provided by any new energy efficiency capabilities of the microgrid project.
 - The dollar value of energy savings as provided by the microgrid, each year.
 - The dollar value of any co-benefits that may accrue to the project, each year.
 - Cost savings or increments compared to business as usual, as provided by the microgrid, including but not limited to technology and installation costs, operations and maintenance, and energy use.
 - Benefit metrics for each of the different DER separated by the specific DER element (e.g., the value energy storage provides to the microgrid owner/operator, the value renewables provide to the microgrid owner/operator, the value demand response services provide to the microgrid owner/operator).
 - Benefit of services as provided by the microgrid to the utility grid.
- 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.

EXHIBIT A Scope of Work

- 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.
- 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.

- Prepare a *Business Case Report*. As appropriate, the report will discuss the following:
 - How the microgrid system meets the critical needs of the intended end user/operator.
 - Define why the specific configuration has a high probability of being replicated in the future without EPIC funds.
 - Other areas as determined by the CAM.

Products:

- Kick-off Meeting Benefits Questionnaire
- Mid-term Benefits Questionnaire
- Final Meeting Benefits Questionnaire
- Business Case Report (draft and final)

TASK 7 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

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.

EXHIBIT A Scope of Work

- 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(s) on the project. Presentation materials must be approved by the CAM in writing prior to the conference/workshop(s).
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California Energy Commission.
- Provide at least six (6) *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.
- 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)
- Presentation Materials (draft and final)
- High Quality Digital Photographs
- Technology/Knowledge Transfer Plan (draft and final)
- Technology/Knowledge Transfer Report (draft and final)

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet (Attachment Project Schedule).

Estimated Budget Allocations Over Project (4 years)

Attachment D to Agenda File No. 2018-0185

Page 1 of 1 D

Budget Category	Budget Allocations	CEC Funded	District Match	UCSD Match
Operational Funds	Non-Capitalized Labor – District Staff		\$1,091,358	
Personnel Expense	Travel		\$890	
Non-Personnel Expense	Contractor Support – UC San Diego	\$200,000		\$101,963
	Contractor Support – Electric Power Research Institute (EPRI)	\$279,997		
Environmental Fund	Special Project Port Staff Time (Capitalized Labor)		\$154,000	
	TAMT Site Lighting Retrofit		\$80,000	
Major Maintenance	MM Port Staff Time (Capitalized Labor)		\$110,000	
Warehouse Roof Replacement	Warehouse Roof Replacement (Funding in FY20 TBD)		\$1,900,000	
Capital Improvement Project	Capitalized Labor – District Staff		\$894,725	
Microgrid Infrastructure at TAMT	Contractor Support – Burns & McDonnell, UC San Diego, EPRI, and Geotechnical Analysis	\$694,931		\$100,000
	Battery Storage – Lithium Ion Battery	\$1,500,000		
	Centralized Microgrid Controller	\$300,000		
	Contractor Support – Electrical Infrastructure	\$1,277,312		
	Electrical Infrastructure Equipment	\$733,032		
Solar Lease	Power Purchase Agreement for Solar		\$197,000	
TOTAL		\$4,985,272	\$4,427,973	\$201,963



CEC Grant Funding Opportunity – Resiliency in Terminal Operations at TAMT

1

RESOLUTION 2018-061

**RESOLUTION ADOPTING THE SECOND
ADDENDUM TO THE FINAL ENVIRONMENTAL
IMPACT REPORT FOR THE TENTH AVENUE
MARINE TERMINAL REDEVELOPMENT PLAN AND
DEMOLITION AND INITIAL RAIL COMPONENT
PROJECT FOR IMPLEMENTATION OF A
RENEWABLE MICROGRID IN ACCORDANCE WITH
MITIGATION MEASURE – GREENHOUSE GAS NO.
6 AND TO DIRECT THE FILING OF A NOTICE OF
DETERMINATION**

WHEREAS, the San Diego Unified Port District (District) is a public corporation created by the Legislature in 1962 pursuant to Harbors and Navigation Code Appendix I (Port Act); and

WHEREAS, Section 30.5(e) of the Port Act states any property acquired by the District shall become an asset of the public trust and be subject to Section 87; and

WHEREAS, Section 87(a)(1) of the Port Act specifically provides that the tide and submerged lands of the District may be used for the construction, reconstruction, repair, maintenance and operation of wharves, docks, piers and all other works, buildings, facilities, utilities and structures necessary or convenient for the promotion and accommodation of commerce and navigation; and

WHEREAS, the District proposed the Tenth Avenue Marine Terminal Redevelopment Plan and Demolition and Initial Rail Component Project (TAMT Redevelopment Plan) located at 850 Water Street in San Diego, California, 92101, along San Diego Bay, south of downtown San Diego, east of the San Diego Convention Center and Hilton Bayfront Hotel, and west adjacent to the San Diego community of Barrio Logan; and

WHEREAS, the TAMT Redevelopment Plan consists of (a) a plan for landside only redevelopment of the existing Tenth Avenue Marine Terminal (TAMT), which would replace the existing 2008 Maritime Business Plan to provide greater flexibility to meet current and future market conditions at the project site by undertaking a variety of infrastructure improvements over the long term to accommodate an increase in the TAMT's capability and capacity for handling dry bulk, liquid bulk, refrigerated container, and multi-purpose general cargo, and (b) implementation of the Demolition and Initial Rail Component as the first phase of the plan, which would demolish obsolete transit sheds to create an open lay-down area to link cargo from vessels to a multi-modal regional transportation system, renovate and upgrade the aging rail infrastructure, install subsurface conduit and other electrical improvements, upgrade the project site's existing storm water

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system, and install a new building with an electrical gear room, additional restroom facilities, a technology support room and outdoor storage space, and a 3,600 square foot modular office with restroom facilities near the central gate facility; and

WHEREAS, on December 13, 2016, pursuant to the California Environmental Quality Act ("CEQA"), Public Resources Code Section 21000, et seq., and its implementing regulations, 14 California Code of Regulations Section 15000, et seq. ("CEQA Guidelines"), the District adopted Resolution 2016-199, which certified Final Environmental Impact Report (SCH #2015-031045/UPD #EIR-2015-39) (Final EIR) and adopted Findings of Fact, a Statement of Overriding Considerations and a Mitigation Monitoring and Reporting Program (MMRP) for the Sustainable Capacity Alternative of the TAMT Redevelopment Plan; and

WHEREAS, on December 13, 2016, the District also adopted Resolution 2016-200, which approved the Sustainable Capacity Scenario and the "Tenth Avenue Redevelopment Plan" prepared by Vickerman & Associates, LLC and as amended by staff; and

WHEREAS, on December 13, 2016, the District also adopted Resolution 2016-201, which authorized issuance of non-appealable Coastal Development Permit No. 2016-09 for the TAMT Redevelopment Plan, that included demolition of transit sheds 1 and 2, completion of initial rail improvements, and the completion of other site improvements; and

WHEREAS, on July 11, 2017, the District adopted Resolution 2017-100, which approved the First Addendum to the Final EIR concerning an increase in on-site, above-grade improvements for Phase I of the Demolition and Initial Rail Component Project; and

WHEREAS, on July 11, 2017, the District also adopted Resolution 2017-101, which authorized an amendment to the non-appealable Coastal Development Permit No. 2016-09 for the Demolition and Initial Rail Component Project; and

WHEREAS, the Final EIR and the MMRP for the TAMT Redevelopment Plan includes Mitigation Measure – Greenhouse Gas # 6 (MM-GHG-6), which requires the implementation of renewable energy projects or the purchase of greenhouse gas (GHG) offsets from a California Air Resources Board approved registry or a locally approved equivalent program for future operations associated with the TAMT Redevelopment Plan, that will achieve an annual reduction in GHG emissions of 18,206 MTCO₂e by 2035; and

WHEREAS, the District proposes to satisfy a portion of the requirements of MM-GHG-6 by installing a renewable microgrid on the TAMT that includes the

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installation and subsequent use of solar panels on the roof of Warehouse B or Warehouse C, an energy storage system, energy efficiency improvements, and electrical infrastructure upgrades (Renewable Microgrid), which at this time is expected to result in a reduction of 361 MTCO₂e annually and to fulfill a portion of the TAMT's Redevelopment Plan's Final EIR requirement for the 2035 buildout year; and

WHEREAS, pursuant to CEQA and its implementing regulations, the District has reviewed the Final EIR and determined that it has continuing informational value with respect to the implementation of MM-GHG-6 and the installation of the Renewable Microgrid; and

WHEREAS, pursuant to CEQA Guidelines Section 15168(c), the District examined the Renewable Microgrid in light of the Final EIR to determine whether an additional environmental document must be prepared and found that pursuant to CEQA Guidelines Section 15162, no new effects could occur and no new mitigation measures would be required, and the Renewable Microgrid is within the scope of the project covered by the Final EIR and no new environmental document is required; and

WHEREAS, pursuant to CEQA Guidelines Section 15164, the District has prepared a Second Addendum to the Final EIR because only minor changes or additions are necessary for the Final EIR to apply to the Renewable Microgrid, and none of the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR, or in CEQA Guidelines Section 15163 calling for preparation of a supplemental EIR, have occurred; and

WHEREAS, the District has filed the Second Addendum and the Final EIR with the Office of the District Clerk (District Clerk) and pursuant to CEQA, the District previously prepared a Mitigation Monitoring and Reporting Program also filed with the Clerk; and

WHEREAS, the Clerk has caused notice to be duly given of Board action in this matter in accordance with law, as evidenced by the affidavit of publication and affidavit of mailing on file with the Clerk; and

WHEREAS, all materials with regard to the Revised Project were made available to the Board of Port Commissioners (Board) for its review and consideration of the Revised Project including, but not limited to, the following:

1. The Second Addendum and appendices, if any, dated March 2018;
2. The Final EIR and appendices, dated November 2016;
3. The Agenda Sheet, dated April 10, 2018;

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4. The Findings of Fact and Statement of Overriding Considerations and the Mitigation Monitoring and Reporting Program, dated December 2016 and appended to Resolution 2016-199 as Exhibit "A" and Exhibit "B," respectively; and

5. All documents and records filed in this proceeding by interested parties.

WHEREAS, a duly noticed public meeting was held on April 10, 2018, before the Board, at which the Board reviewed and considered all information and materials made available to the Board regarding the Renewable Microgrid, and gave direction to District staff regarding the Renewable Microgrid; and

WHEREAS, having reviewed and considered all information and materials made available to the Board, including but not limited to the Second Addendum and the Final EIR, the staff reports and all the complete record of the proceedings with respect to the Renewable Microgrid, the Board took the actions hereinafter set forth:

NOW THEREFORE, BE IT RESOLVED by the Board of Port Commissioners (Board) of the San Diego Unified Port District, as follows:

1. The Board finds the facts recited above are true and further finds that this Board has jurisdiction to consider, approve and adopt the subject of this Resolution.

2. The Board finds and determines that the applicable provisions of CEQA, the CEQA Guidelines and the District Guidelines have been duly observed in the consideration of this matter and all of the previous proceedings related thereto.

3. The Board finds and determines, on the basis of the whole record before the Board, that:

- a. The Final EIR is complete and adequate in scope and is of continuing informational value with respect to the Renewable Microgrid;
- b. Some minor changes or additions to the Final EIR are necessary and the preparation of a Second Addendum to the Final EIR pursuant to CEQA Guidelines Section 15164 for the Revised Project is adequate and appropriate;
- c. None of the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR have occurred;

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- d. None of the conditions described in CEQA Guidelines Section 15163 calling for preparation of a supplemental EIR, have occurred;
- e. No additional environmental review is required because the Renewable Microgrid implements a portion of MM-GHG-6 and is within the scope of the Final EIR and will not result in any new or more severe significant impacts or require mitigation measures not previously identified in the Final EIR;
- f. The Board has fully reviewed and considered the information in the Second Addendum and the Final EIR prior to making a decision to approve the Renewable Microgrid;
- g. The Second Addendum is complete and adequate in scope and has been completed in compliance with CEQA and the CEQA Guidelines and the District Guidelines for implementation thereof;
- h. The Renewable Microgrid implements a portion of MM-GHG-6 identified in the Final EIR and the Mitigation Monitoring and Reporting Program (MMRP) and no additional mitigation measures or alternatives are required; and
- i. The Second Addendum and the Final EIR reflect the District's independent judgment and analysis.

4. The Second Addendum to the Final EIR is hereby adopted in relation to the subject of this Resolution.

5. The Renewable Microgrid is approved as mitigation for certain significant environmental effects identified in the Final EIR and, pursuant to Public Resources Code Section 21081 and CEQA Guidelines Section 15091, the Board hereby makes and adopts the findings with respect to each such significant environmental effect as set forth in the Findings of Fact, appended to Resolution 2016-199 as Exhibit "A" and made a part hereof by this reference, and declares that it considered the evidence described in connection with each such finding.

6. Pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091(d), the Board hereby adopts and approves the Mitigation Monitoring and Reporting Program, which is appended to Resolution 2016-199 as Exhibit "B" and is made a part hereof by this reference, with respect to the significant environmental effects of the TAMT Redevelopment Plan identified in the Final EIR, and hereby makes and adopts the provisions of the Mitigation Monitoring and Reporting Program applicable to the Renewable Microgrid as conditions of approval for the Renewable Microgrid.

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7. Pursuant to Public Resources Code Section 21152 and CEQA Guidelines Section 15094, the District Clerk shall cause a Notice of Determination to be filed with the Clerk of the County of San Diego and the State Office of Planning and Research.

8. Pursuant to Public Resources Code Section 21081.6(a)(2) and CEQA Guidelines Section 15091(e), the location and custodian of the documents and other materials which constitute the record of proceedings on which this Resolution is based is the Office of the District Clerk, San Diego Unified Port District, 3165 Pacific Highway, San Diego, California 92101.

APPROVED AS TO FORM AND LEGALITY:
GENERAL COUNSEL



By: ~~Assistant/Deputy~~

PASSED AND ADOPTED by the Board of Port Commissioners of the San Diego Unified Port District, this 10th day of April, 2018, by the following vote:

AYES: Bonelli, Castellanos, Malcolm, Merrifield, Moore, Valderrama, and Zucchet

NAYS: None.

EXCUSED: None.


ABSENT: None.

ABSTAIN: None.



Rafael Castellanos, Chairman
Board of Port Commissioners

ATTEST:



Donna Morales
District Clerk

(Seal)

DRAFT**RESOLUTION 20xx-xxx**

RESOLUTION AUTHORIZING ACCEPTANCE OF GRANT FUNDS IN THE AMOUNT OF \$4,985,272 FROM THE CALIFORNIA ENERGY COMMISSION (CEC) TO PARTIALLY FUND THE PORT OF SAN DIEGO – RESILIENCY IN TERMINAL OPERATIONS PROJECT LOCATED AT TENTH AVENUE MARINE TERMINAL (TAMT) TO DEMONSTRATE BUSINESS CASE FOR ADVANCED MICROGRIDS IN SUPPORT OF CALIFORNIA’S ENERGY AND GREENHOUSE GAS POLICIES PROGRAM; AUTHORIZING STAFF TO ENTER INTO A GRANT AGREEMENT WITH CEC WHICH INCLUDES INDEMNITY PROVISIONS; AND ALLOCATING MATCH IN THE AMOUNT OF \$4,427,973; DISTRICT MATCH FUNDS INCLUDE PLANNED MAJOR MAINTENANCE, EQUIPMENT OUTLAY AND STAFF COSTS; FUNDS REQUIRED FOR FUTURE YEARS WILL BE BUDGETED IN THE APPROPRIATE FISCAL YEAR, SUBJECT TO BOARD OF PORT COMMISSIONERS APPROVAL UPON ADOPTION OF EACH ANNUAL BUDGET

WHEREAS, the San Diego Unified Port District (District) is a public corporation created by the legislature in 1962 pursuant to Harbors and Navigation Code Appendix 1, (Port Act); and

WHEREAS, the Board of Port Commissioners (BPC) adopted BPC Policy No. 110 to establish a policy governing the processing and administration of public projects, consulting and service agreements, grant funded projects and supplies, materials, and equipment purchases; and

WHEREAS, in November 2017, the District submitted an application for the California Energy Commission’s (CEC) grant-funded Business Case Demonstration for Advanced Microgrids program which aims to advance California’s energy and greenhouse gas (GHG) policies in electrification, resiliency, technological advancement and replicability; and

WHEREAS, the District’s project will develop a new, permanent, renewable microgrid at the Tenth Avenue Marine Terminal (TAMT); and

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WHEREAS, the project will incorporate renewable energy generation with solar photovoltaic (PV) panels, battery energy storage, efficiency improvements, and a centralized microgrid controller; and

WHEREAS, the District was notified on February 20, 2018, that its application to the CEC was recommended for funding in the amount of \$4,985,272, to partially fund the installation of a microgrid at TAMT with a total anticipated cost of \$9,615,208; and

WHEREAS, the District's proposal included a match comprised of budgeted expenses, staff time, and a contribution from project partner University of California San Diego (UCSD); and

WHEREAS, if approved by the BPC, the District's portion of the match funding would come from expenses related to a warehouse roof replacement, staff labor, energy efficiency retrofits, equipment costs, and a power purchase agreement for solar PV energy over the duration of the grant agreement; and

WHEREAS, the power purchase agreement for solar PV energy combined with battery storage and energy efficiency improvements will reduce energy expenses that the District incurs as an operational expense and is expected to save approximately 60% annually over current utility expenses; and

WHEREAS, additional project benefits include additional cost savings through demand response and peak shaving of District energy loads resulting in reduced electric utility expenses, and increased energy security and resiliency; and

WHEREAS, the Renewable Microgrid implements a mitigation requirement identified in the TAMT Final EIR; and

WHEREAS, the installation of a Renewable Microgrid at TAMT is estimated to result in a reduction of 361 MTCO₂e annually, which would fulfill approximately 2% of the TAMT's Redevelopment Plan's Final EIR requirement for the 2035 buildout year; and

WHEREAS, prior to accepting the grant agreement, in April 2018 the BPC approved the second addendum to the Final Environmental Impact Report (EIR) for the TAMT Redevelopment Plan; and

WHEREAS, the CEC Commissioners adopted the CEC staff's funding recommendation at the Commission's May 9, 2018 business meeting; and

WHEREAS, District staff has been working closely with CEC staff to finalize the project scope of work and the terms and conditions of the proposed grant agreement; and

20xx-xxx

WHEREAS, the scope of work and proposed grant agreement are attached to the associated agenda sheet; and

WHEREAS, District staff recommends the BPC authorize acceptance of the CEC grant funding; authorize staff to enter into an agreement with the CEC which includes indemnity provisions; and allocate matching funds in the amount of \$4,427,973.

NOW, THEREFORE, BE IT RESOLVED by the Board of Port Commissioners of the San Diego Unified Port District as follows:

That the Executive Director or her designated representative is hereby authorized to accept grant funds in the amount of \$4,985,272 from the California Energy Commission (CEC); to enter into a grant agreement with the CEC which includes indemnity provisions; and, for the District to allocate matching funds in the amount of \$4,427,973.

APPROVED AS TO FORM AND LEGALITY:
GENERAL COUNSEL

By: Assistant/Senior/Deputy

PASSED AND ADOPTED by the Board of Port Commissioners of the San Diego Unified Port District, this 12th day of June, 2018, by the following vote:

DRAFT**RESOLUTION 20xx-xxx****RESOLUTION APPROVING AN AMENDMENT TO THE FY 2019-2023 FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM (CIP) TO ADD THE MICROGRID INFRASTRUCTURE AT TAMT PROJECT AND INCREASE THE CIP APPROPRIATION BY \$5,400,000, WITH \$4,505,275 TO BE REIMBURSED BY THE CEC, AND THE REMAINING \$894,725 TO BE FUNDED FROM THE DISTRICT'S OPERATIONAL EXPENSES AS CAPITAL LABOR**

WHEREAS, the San Diego Unified Port District (District) is a public corporation created by the legislature in 1962 pursuant to Harbors and Navigation Code Appendix 1, (Port Act); and

WHEREAS, the District was notified on February 20, 2018, that its application to the California Energy Commissioners (CEC) was recommended for funding in the amount of \$4,985,272, to partially fund the installation of a microgrid at TAMT with a total anticipated cost of \$9,615,208; and

WHEREAS, the District's budget team presented the preliminary budget to the BPC on May 8, 2018, one day prior to when the CEC made the award final at their Business Meeting on May 9, 2018; and

WHEREAS, staff acknowledged the award as a part of the District's preliminary budget staff report at the May 8, 2018 BPC meeting, and requested direction from the BPC to include changes to the Fiscal Year (FY) 2019 budget in anticipation of final award; and

WHEREAS, the BPC directed staff to increase the Capital Improvement Program (CIP) by \$4.85M, of which \$4.5M is for the CIP project Microgrid Infrastructure at TAMT, and \$350,000 is for associated capital labor; and

WHEREAS, the recommended BPC action will add the Microgrid Infrastructure components to the FY 2019-2023 CIP with a total project budget of \$5,400,000; and

WHEREAS, the budget will have two components, \$4,505,275 from the CEC grant for external costs and \$894,725 from the District's operational expenses for capital labor; and

20xx-xxx

WHEREAS, the capital labor funds will be budgeted annually based on planned fiscal year expenditures; and

WHEREAS, the FY 2019 planned capital labor expenditures of \$350,000 were included in the annual budget.

NOW, THEREFORE, BE IT RESOLVED by the Board of Port Commissioners of the San Diego Unified Port District that the Fiscal Year 2019-2023 five-year Capital Improvement Program (CIP) is hereby amended to add the Microgrid Infrastructure at TAMT project and increase the CIP appropriation by \$5,400,000, with \$4,505,275 to be reimbursed by the California Energy Commission, and the remaining \$894,725 to be funded from the District's operational expenses as capital labor.

APPROVED AS TO FORM AND LEGALITY:
GENERAL COUNSEL

By: Assistant/Senior/Deputy

PASSED AND ADOPTED by the Board of Port Commissioners of the San Diego Unified Port District, this 12th day of June, 2018, by the following vote:

EXHIBIT C
INVOICE INSTRUCTIONS
San Diego Unified Port District

Category Budget Instructions

1. Insert name of the organization (either Contractor/Recipient or Subcontractor). All subcontracts containing: a) \$100,000 or more of Energy Commission funds; or b) 25% or more of the total Energy Commission funds awarded must complete a full set of budget forms.
2. Check appropriate box to identify whether the budget forms are for the Contractor/Recipient or a Subcontractor.
3. Check appropriate box(es) to identify whether entity is a small business, micro business, and/or Disabled Veteran Business Enterprise.
4. No other input is necessary on this page as other cells self-populate.

"(**) ""Spent in California"" means that:

(1) Funds in the ""Direct Labor category and all categories calculated based on direct labor (e.g., fringe benefits, indirect costs and profit) are paid to individuals that pay California state income taxes on wages received for work performed under the agreement. Payments made to out-of-state workers do not count as "funds spent in California." However, funds spent by out-of-state workers in California (e.g., hotel and food) can count as "funds spent in California."; AND

(2) Business transactions (e.g., material and equipment purchases, leases, and rentals) are entered into with a business located in California.

(3) Total should include any applicable subcontractors. "

Direct Labor (Unloaded) Instructions

1. Insert employee name(s) that will be charged as direct labor as either a reimbursed cost or match share. (optional, but recommended)
2. Insert employee(s) job classification/title. (required)
3. Insert the maximum hourly monthly labor rate (unloaded) by employee job classification/title to be billed during the approved term of the agreement. This is the highest salary or wage rate that is actually paid to the employee before the application of fringe benefits, indirect costs or profit.
4. Complete the appropriate table based on your organization's standard accounting practices. If an employee is paid based on an hourly rate, use the hourly table. If an employee is paid based on a monthly salary, use the monthly table.
5. **The rates in these forms are rate caps, or the maximum amount allowed to be billed for the entire term of the agreement. The Energy Commission will only reimburse for actual direct labor expenses incurred, not to exceed the rates specified in these forms. Rates must include dollars and cents (two decimal places only).**
6. Insert the approximate number of hours or months to be worked by employee or job classification/title including for all "to be determined" (TBD) employees. The Energy Commission will only reimburse for actual time worked. The Contractor/Recipient or Subcontractor must maintain auditable documentation of actual time worked hourly, daily, weekly or monthly using standard accounting practices.
7. Insert the dollar amount by employee or job classification/title to be reimbursed with Energy Commission funds. **Whole dollars only.**
8. Insert the dollar amount by employee/classification to be charged as match share. **Whole dollars only.**
9. Confirm totals across and down are accurate.
10. Totals on each line must be less than or equal to Maximum Labor Rate multiplied by the Number of Hours.

Fringe Benefits Instructions

1. Insert the fringe benefit (FB) base description. The base is typically the direct labor costs that are multiplied by the fringe benefit rate to arrive at the fringe benefit cost (FB base multiplied by the FB rate = FB cost).
2. Organizations that charge the same fringe benefit rate for all classifications should insert "All Classifications" under the base description and complete the top line only. If more than one fringe benefit rate is utilized, use additional lines and adequately describe (by employee or classification) the base for each fringe benefit rate charged.
3. Insert the maximum fringe benefit rate to be charged during the approved term of the agreement. Round percentages **up** to the nearest hundredth (two decimal places). For example, manually enter 20.26% instead of 20.2511%
4. **The fringe benefit rates in these forms are rate caps, or the maximum amount allowed to be billed. The Energy Commission will only reimburse for actual fringe benefit expenses incurred, not to exceed the rates specified in these forms.**
5. Insert the direct labor costs allocable to each fringe benefit rate. These costs must be consistent with the costs identified on the Direct Labor worksheet. The total for the Direct Labor Costs column on this worksheet must match the Grand Total for all Direct Labor (Energy Commission Funds and Match Share) on the Direct Labor worksheet.
6. Insert the dollar amount of fringe benefit costs to be reimbursed with Energy Commission funds. **Whole dollars only.**
7. Insert the dollar amount of fringe benefit costs to be charged as match share. **Whole dollars only.**
8. Totals on each line must be less than or equal to Maximum Fringe Benefit Rate multiplied by Direct Labor Costs.
9. The Energy Commission expects to only reimburse fringe benefit costs which are allocable to the Fringe Benefit base costs reimbursed by the Energy Commission. For example, if the Energy Commission reimburses 45% of the direct labor, the Energy Commission expects to only reimburse up to 45% of the fringe benefit costs.
10. Confirm all totals across and down are accurate.

Travel Instructions

1. All travel costs are reimbursed at state rates except in agreements between the Energy Commission and a UC campus or the Federal Government. Current state travel rates can be found at http://www.energy.ca.gov/contracts/TRAVEL_PER_DIEM.PDF. Please see terms and conditions for more information.
2. Identify all travel costs to be incurred by the organization to which these budget forms pertain (e.g. subcontractor travel will be shown on the subcontractor travel sheet, not on the Contractor/Recipient travel sheet). All travel identified as "To Be Determined (TBD)" is not pre-approved and requires prior written approval from the Commission Agreement Manager and Commission Agreement Officer in accordance with the terms and conditions.
3. All travel listed on agreement budget forms must obtain pre-approval from the Commission Agreement Manager and Commission Agreement Officer in accordance with the terms and conditions. All subcontractors under \$100,000 or 25% of the Commission Funds, who do not have their own travel sheets, must get all travel pre-approved in writing as needed.
4. Insert the applicable Task No. from the Scope of Work that the trip supports.
5. Insert the traveler's name and/or classification.
6. Insert the departure and destination locations. For example, "From Sacramento to Los Angeles and Return." It is strongly recommended that all out of state or out of country travel be paid with match funding.
7. Insert a brief purpose of the trip.
8. Insert the dollar amount of each trip to be reimbursed with Energy Commission funds. Whole dollars only.
9. Insert the dollar amount of each trip to be charged as match share. Whole dollars only.
10. Confirm all totals across and down are accurate.

Equipment Instructions

1. Equipment is defined as items having a per unit cost of at least \$5,000 and a useful life of at least 1 year. Equipment means any products, objects, machinery, apparatus, implements or tools purchased, used or constructed within the Project, including those products, objects, machinery, apparatus, implements or tools from which over thirty percent (30%) of the equipment is composed of Materials purchased for the Project. Items not meeting this definition should be included on the Materials & Miscellaneous worksheet.
2. Insert the applicable Task No. from the Scope of Work that the equipment supports. Multiple tasks may be identified.
3. Insert a description of the equipment. The description should be sufficient to allow the Energy Commission to easily tie the equipment to backup documentation provided with the invoice and the Scope of Work.
4. Insert a concise purpose of the equipment (i.e., why is the equipment needed for the project?).
5. Insert the number of units to be purchased.
6. Insert the **per unit** cost of the equipment.
7. Insert the dollar amount to be reimbursed with Energy Commission funds. **Whole dollars only.**
8. Insert the dollar amount to be charged as match share. **Whole dollars only.**
9. Totals on each line **must equal** # of Units multiplied by the Per Unit Cost.
10. Confirm all totals across and down are accurate.

Materials & Miscellaneous Instructions

1. Materials are items under the agreement that do not meet the definition of Equipment. Miscellaneous are items of cost that do not fit in other cost categories contained in this workbook.
2. Insert the applicable Task No. from the Scope of Work that the material/miscellaneous expense supports.
3. Insert a description of the material/miscellaneous item. The description should be sufficient to allow the Energy Commission to easily tie the material/miscellaneous expense to backup documentation provided with the invoice and the Scope of Work.
4. Where appropriate and logical, materials and miscellaneous items can be grouped together. Grouped items must be clearly and thoroughly described. Grouped items can use "varies" for the # of units and unit cost. (Examples may include various pipes and pipe fittings or various nuts and bolts, etc...)
5. Insert a concise purpose of the material/miscellaneous expense (i.e., why is the material/miscellaneous expense needed for the project?).
6. Insert the number of units to be purchased.
7. Insert the **per unit** cost of the material/miscellaneous item.
8. Insert the dollar amount to be reimbursed with Energy Commission funds. **Whole dollars only.**
9. Insert the dollar amount to be charged as match share. **Whole dollars only.**
10. Totals on each line **must equal** # of Units multiplied by the Per Unit Cost.
11. Confirm all totals across and down are accurate.

Subcontracts Instructions

1. **Each subcontract containing: 1) \$100,000 or more of Energy Commission funds; or 2) 25% or more of the total Energy Commission funds requested requires completion of separate set of complete budget forms detailing the expected expenditures of the subcontractor.**
2. Include all subcontractors that have a direct contractual relationship with the organization to which these budget forms pertain including those that must also complete their own set of budget forms.
3. Insert the applicable Task No. from the Scope of Work that the subcontract supports. Insert multiple task numbers if applicable.
4. Insert the name of the subcontractor, if known. If not known, insert "TBD."
5. Insert a concise purpose of the subcontract (i.e., why is the subcontract needed for the project?).
6. Insert the dollar amount to be reimbursed with Energy Commission funds. **Whole dollars only.**
7. Insert the dollar amount to be charged as match share. **Whole dollars only.**
8. Totals on each line **must equal** total amount of subcontract.
9. Confirm all totals across and down are accurate.
10. Insert whether the subcontractor is a certified Disabled Veteran Business Enterprise (DVBE), Small Business (SB) or Micro Business (MB). Appropriate answers are "DVBE", "SB", "MB", "None", or "TBD". Certification status can be verified at the following website: <http://www.bidsync.com/DPXBisCASB>

Indirect Costs Instructions

1. All indirect costs charged must be reasonable, allocable to the project, and fully supported by backup documentation. The Energy Commission reserves the right to request supporting documentation of all indirect costs reimbursed or charged as match share.
2. Indirect costs must adhere to the Agreement Terms and Conditions, Generally Accepted Accounting Principles (GAAP) and the OMB Circular or Federal Acquisition Regulations applicable to your organization.
3. Insert the name of the indirect cost.
4. Insert the maximum indirect cost rate to be charged during the approved term of the agreement.
5. The indirect cost rates on this form are caps, or the maximum amount allowed to be billed. The Contractor/Recipient/Subcontractor can only bill for actual indirect costs incurred, not to exceed the rates specified in these forms.
6. Describe the indirect cost base (categories or items of costs within the budget) on which the indirect cost rate is applied.
7. Insert the dollar amount of the indirect cost base. This is the sum of the budgeted costs described in the indirect cost base description.
8. Insert the dollar amount to be reimbursed with Energy Commission funds. **Whole dollars only.**
9. Insert the dollar amount to be charged as match share. **Whole dollars only.**
10. The Energy Commission expects to only reimburse indirect costs which are allocable to the indirect base costs reimbursed by the Energy Commission. For example, if the Energy Commission reimburses 45% of the costs included in the indirect cost base, the Energy Commission expects to only reimburse up to 45% of the indirect costs. Match share expenditures are allowed to cover higher percentages of indirect costs.
11. Totals on each line must be less than or equal to Maximum Indirect Cost Rate multiplied by the Indirect Cost Base Amount.
12. Confirm all totals across and down are accurate.

Profit Instructions

1. **For Grant Agreements Only:** Recipients CANNOT be reimbursed for more than their actual allowable expenses (i.e., cannot include profit, fees, or markups) under the agreement. Subcontractors (all tiers) are allowed to include up to a maximum total of 10% profit, fees or mark-ups on their own actual allowable expenses less any expenses further subcontracted to other entities (i.e., profit, fees and markups are not allowed on subcontractor expenses). For example, if a subcontractor has \$100,000 in actual allowable costs but has further subcontracted \$20,000 to another entity, then the subcontractor can only include up to 10% profit on \$80,000 (\$100,000 minus \$20,000). See terms and conditions for more information on allowable costs.
2. **For Contract Agreements Only:** Contractors and subcontractors can include up to a maximum total of 10% profit, fees or markups on their own actual allowable expenses less any expenses further subcontracted to other entities (i.e., profit, fees and markups are not allowed on subcontractor expenses). For example, if a contractor has \$100,000 in actual allowable costs but has further subcontracted \$20,000 to another entity, then the contractor can only include up to 10% profit on \$80,000 (\$100,000 minus \$20,000). See terms and conditions for more information on allowable costs.
3. **For All Agreement Types:** Forgone profit, fees, or markups are NOT eligible match share expenditures. Forgone profit, fees and markups are defined as profit, fees or markups that are not claimed or actually paid to a contractor, recipient or subcontractor. For example, if a contractor pays its own funds to a subcontractor (funds the contractor will not seek reimbursement from the Energy Commission) and the payment includes profit, fees or markups, the amount paid to the subcontractor including the profit, fees or markups can count as a match share expenditure since it was actually paid. However, if a contractor or subcontractor would normally include profit, fees or markups in its invoices and indicates it will forgo charging these costs, the forgone profit, fees, or markups cannot count as a match fund expenditure since it was not paid. This restriction does not apply to equipment or material discounts appropriately documented and provided to the project.
4. Insert the maximum profit rate to be charged during the approved term of the agreement. The profit rate in these forms are caps, or the maximum amount allowed to be billed.
5. Describe the profit base (categories or items of costs within the budget) on which the profit rate is applied.
6. Insert the dollar amount of the profit base. This is the sum of the budgeted costs described in the Profit Base Description.
7. Insert the dollar amount to be reimbursed with Energy Commission funds. **Whole dollars only.**
8. Insert the dollar amount to be charged as match share. **Whole dollars only.**

9. The Energy Commission expects to only reimburse profit which is allocable to the profit base reimbursed by the Energy Commission. For example, if the Energy Commission reimburses 45% of the profit base costs, the Energy Commission expects to only reimburse up to 45% of the profit. Match share expenditures are allowed to cover higher percentages of profit.
10. Totals on each line must be less than or equal to: $\text{Max. Profit Rate} \times \text{Profit Base Amount}$.
11. Confirm all totals across and down are accurate.

EXHIBIT D
INVOICE SAMPLE
San Diego Unified Port District

Energy Commission Grant Invoice Sample

Recipient Name: Agreement Number: Invoice Number: Period covered by this reconciliation:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">EPRI</td></tr> <tr><td style="padding: 2px;">EPC-17-049</td></tr> <tr><td style="padding: 2px;">1</td></tr> <tr><td style="padding: 2px;">07/1/2018-07/31/2018</td></tr> </table>	EPRI	EPC-17-049	1	07/1/2018-07/31/2018
EPRI					
EPC-17-049					
1					
07/1/2018-07/31/2018					

Energy Commission Reimbursable

Category	Agreement Reimbursable Budget	Reimbursable Expenses This Period	Cumulative Expenses Billed to Date	% of Reimbursable Spent to Date	Reimbursable Balance
Direct Labor	\$ 125,666.00	\$ -	\$ -	0.0%	\$ 125,666.00
Fringe Benefits*	\$ 117,016.00	\$ -	\$ -	0.0%	\$ 117,016.00
Travel	\$ 15,000.00	\$ -	\$ -	0.0%	\$ 15,000.00
Indirect Costs*	\$ 162,315.00	\$ -	\$ -	0.0%	\$ 162,315.00
Total	\$ 419,997.00	\$ -	\$ -	0.0%	\$ 419,997.00

Grand Totals	\$ 419,997.00	\$ -	\$ -	0.0%	\$ -
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Total This Period	\$ -
Amount To Be Paid This Invoice:	\$ -

☐ Final Invoice

Certification

I certify under penalty of perjury that this invoice is accurate, correct, and proper for payment in all respects, and reimbursement for these costs has not and will not be received from any other sources, including but not limited to a government entity contract, subcontract or other procurement method. I further certify under penalty of perjury that I have carefully reviewed the terms and conditions for this Agreement and have determined that, for work covered by this invoice, the Contractor/Recipient and all subcontractors have complied with all Agreement terms, including the requirement of compliance with public works and prevailing wage laws, which when applicable require the payment of prevailing wages to eligible workers.

Wet Signature of Authorized Representative

Date

For Energy Commission Use Only

Commission Agreement Manager

Date

Contracts, Grants & Loans Office

Date

Energy Commission Grant Invoice Sample

Agreement Number:	EPC-17-049
Invoice Number:	1
Period covered by this reconciliation:	07/1/2018-07/31/2018

Hourly Expenses

Employee Name	Job Classification / Title	Maximum Capped Direct Labor Rate (\$ per hour)	Actual Billed Direct Labor Rate (\$ per hour)	# of Hours Billed	Reimbursable Direct Labor Expenses	Maximum Capped Fringe Rate	Actual Billed Fringe Rate Applied	Reimbursable Fringe Expenses	Total
Galen Rasche	Technical Executive/ Program Manager	\$ 134.28	\$ -	0.000	\$ -	72.88%	0.0000%	\$ -	\$ -
Dean Weng	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	72.88%	0.0000%	\$ -	\$ -
Candace Suh-Lee	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	72.88%	0.0000%	\$ -	\$ -
Miles Evans	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	72.88%	0.0000%	\$ -	\$ -
Kamranmehran Poudjmanesh	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	72.88%	0.0000%	\$ -	\$ -
Jouni Peppanen	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	72.88%	0.0000%	\$ -	\$ -
Evan Glantz	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
Gerardo Trevino	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
Christine Lee	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
Nicholas Tumlowicz	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
Bienvenido Clarin	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
Giovanni Damato	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
Ajit Renjit	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
Tanguy Hubert	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
TBD	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
TBD	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
TBD	Engineer/Scientist	\$ 64.74	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
TBD	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
TBD	Technical Leader / Project Manager	\$ 107.68	\$ -	0.000	\$ -	115.00%	0.0000%	\$ -	\$ -
Hourly Direct Labor Totals					\$ -			\$ -	\$ -

Energy Commission Grant Invoice Sample

Energy Commission Reimbursable					
	Maximum Capped Rate	Actual Rate	Base	CEC Funds	Base Description
Overhead	85.00%	0.00000000%	\$0.00	\$ -	Direct Labor + Fringe Benefits
Other Direct Costs Rate	8.00%	0.00000000%	\$0.00	\$ -	Travel + Equipment + Materials & Misc. + Subcontractors
G&A	10.00%	0.00000000%	\$ -	\$ -	Direct Labor + Fringe Benefits + Travel + Equipment + Materials & Misc. + Subcontractors

Energy Commission Grant Invoice Sample

Travel

EPRI						
Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Budgeted Energy Commission Funds	Actual Costs	Total billed this invoice
Not Pre-Approved Travel						
2,5,6,7	Dean Weng	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 4 trips)	Site Visit	5,000.00		-
2,5	Candace Suh-Lee	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	2,500.00		-
2,5	Gerardo Trevino	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	2,500.00		-
2,5	Ajit Renjit	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	2,500.00		-
2,5	Galen Rache	Palo Alto to site (SoCal) Covers flight, car mileage (if applicable), hotel, food, parking, and other travel expenses. (\$1250/trip x 2 trips)	Site Visit	2,500.00		-
Total:				15,000.00	-	-

Energy Commission Grant Invoice Sample

Recipients only need to fill in non-shaded cells within this template. Shaded cells will be automatically populated from other sections of the template. The following instructions only address the non-shaded cells to be completed by the Recipient.

Recipient Name: Insert the full legal company name. This must match the company name found on the Payee Data Record Std 204.

Agreement Number: This is the Energy Commission grant number. The number will be a three part number separated by dashes: XXX-XX-XXX.

Invoice Number: Invoices shall be numbered sequentially beginning with 1. Organizations may append their own unique number if desired.

Period Covered by this Request: This is the period of time that this invoice covers. The period for the first invoice must start on or after the effective date of the agreement. However, for ARFVTP agreements, Match may be claimed as early as the NOPA posting date. For subsequent invoices, the first day of the period should be the day after the last day covered by your previous invoice. The period for the final invoice must end on or prior to the end date of the agreement. The Energy Commission will not reimburse for expenses incurred outside the approved agreement term.

Energy Commission Reimbursable

Agreement Reimbursable Budget: Enter amounts, by category, from the currently approved reimbursable budget in the agreement. NOTE: Subcontractor budget will be automatically populated from subcontractor

Reimbursable Expenses this Period: Enter amounts, by category, of the amount of incurred expenses to be reimbursed by the Energy Commission. NOTE: Subcontractor expenses will be automatically populated from the subcontractor summary.

Cumulative Expenses Billed to Date: Enter, by category, the cumulative total of all expenses reimbursed from the beginning of the agreement through and including this current invoice. NOTE: Subcontractor expenses will be automatically populated from the subcontractor summary.

Match Share

Agreement Match Share Budget: Enter amounts, by category, from the currently approved match share budget in the agreement.

Match Share Expenses this Period: Enter amounts, by category, of incurred expenses to be charged to match share. NOTE: Subcontractor expenses will be automatically populated from the subcontractor summary. Actual expenses that exceed reimbursable amounts or rates may be counted as match. Forgone profit, fees, or mark-ups are not eligible match share expenses. Forgone profit, fees and markups are those that are not actually paid to a contractor or subcontractor.

Cumulative Match Share Spent to Date: Enter, by category, the cumulative total of all expenses charged to match share from the beginning of the agreement through and including this current invoice. NOTE: Subcontractor expenses will be automatically populated from the subcontractor summary.

Retention, Final Invoice, and Recipient Certification

Retention Amount: Enter amount of the reimbursement request that will be withheld as retention by the Energy Commission. Refer to the agreement for specific retention requirements.

Retention Release Invoice Checkbox: Check this box if you are requesting a release of retention. Please contact your Commission Agreement Manager before requesting a release of retention. When requesting a retention release, no other reimbursable expenses can be requested on the same invoice.

Energy Commission Grant Invoice Sample

Retention Release Amount: Enter the amount of retention to be released. Please contact your assigned Commission Agreement Manager to confirm retention amount prior to submission.

Final Invoice Checkbox: Check this box if this is your final invoice for your agreement.

Certification: Invoices must be signed and dated by an authorized representative of the prime recipient.

Subcontractor Summary – Energy Commission Reimbursable

Subcontractor Name: Enter the name of each subcontractor being reimbursed with Energy Commission funds.

Subcontractor Reimbursable Budget: Enter amounts, by subcontractor, from the currently approved reimbursable subcontractor budget in the agreement.

Subcontractor Reimbursable Expenses this Period: Enter amounts, by subcontractor, of incurred subcontractor expenses to be reimbursed by the Energy Commission under this invoice.

Cumulative Subcontractor Expenses Billed to Date: Enter, by subcontractor, the cumulative total of all subcontractor expenses reimbursed from the beginning of the agreement through and including this current

Subcontractor Business Certifications: Enter the appropriate code(s), by subcontractor, to identify if the subcontractor is a certified Micro Business (MB), Small Business (SB), or Disabled Veteran Business Enterprise (DVBE). You can check the California certification status of any entity here:

<https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx>

Subcontractor Summary – Match Share

Subcontractor Name: Enter the name of each subcontractor incurring match share expenditures or being paid with match share funds.

Subcontractor Match Share Budget: Enter amounts, by subcontractor, from the currently approved match share subcontractor budget in the agreement.

Subcontractor Match Share Expenses this Period: Enter amounts, by subcontractor, of subcontractor match share expenses incurred during the period covered by this invoice.

Cumulative Subcontractor Match Share Expenses to Date: Enter, by subcontractor, the cumulative total of all subcontractor match share expenses from the beginning of the agreement through and including this current

Subcontractor Business Certifications: Enter the appropriate code(s), by subcontractor, to identify if the subcontractor is a certified Micro Business (MB), Small Business (SB), or Disabled Veteran Business Enterprise (DVBE). You can check the California certification status of any entity here:

<https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx>

Expense Category Definitions

All expenses claimed must be allowable per the agreement's approved scope of work, budget, and terms and conditions.

1. Direct Labor – Direct Labor is the actual salaries and wages paid to employees of the prime recipient charged under the agreement. Direct Labor expenses do not include fringe benefits, indirect costs or profit. Labor rates and hours/months billed must be documented for each employee to justify the expense. This invoice template contains an optional Direct Labor Detail worksheet. Recipients are encouraged to utilize this worksheet to document Direct Labor expenses. For Energy Commission reimbursable expenses, billed Direct Labor rates must be the actual Direct Labor rates paid, not to exceed the Direct Labor rates in the approved agreement budget. Actual rates exceeding budgeted rates may be charged as a match share expense.

Energy Commission Grant Invoice Sample

2. Fringe Benefits – Fringe Benefits are allowable fringe benefit costs provided to employees. Reimbursable Fringe Benefits billed must be the actual Fringe Benefits paid, not to exceed the fringe benefit rate in the agreement budget. Upon request and at time of audit, Recipients must provide a fringe benefit rate calculation sheet and fringe benefit allocation methodology. The calculation sheet must list and detail the actual Fringe Benefit costs incurred to substantiate the Fringe Benefit rate charged under the agreement as either reimbursable or match share expenses. For Energy Commission reimbursable expenses, billed Fringe Benefit rates must be the actual Fringe Benefit rates paid, not to exceed the Fringe Benefit rates in the approved agreement budget. Actual rates exceeding budgeted rates may be charged as a match share expense.

3. Travel – Travel costs are allowable for travel that is directly related to the agreement. All reimbursable and match travel must be pre-approved prior to the trip being taken. Invoices must be accompanied by receipts and other back-up documentation as applicable for all travel expenditures. Reimbursement of travel expenditures is limited. The current reimbursable mileage and per diem can be found on the Energy Commission's website:

http://www.energy.ca.gov/contracts/TRAVEL_PER_DIEM.PDF

4. Equipment – Equipment is a tangible item purchased under the agreement that has a useful life of at least one year and a unit acquisition cost of at least \$5,000. Invoices must be accompanied by receipts and other applicable back-up documentation for all equipment expenditures. Purchase orders are not acceptable documentation for expenditures.

5. Materials/Miscellaneous – Materials are any tangible items purchased that do not conform to the definition of Equipment. Miscellaneous items are items of cost that do not fall under other budget categories. Services that involve labor are subcontracts, not miscellaneous. Invoices must be accompanied by receipts and other appropriate back-up documentation for all materials and miscellaneous expenditures. Purchase orders are not acceptable documentation for expenditures.

6. Subcontracts – A Subcontract is an agreement with a company that is providing a service to the Prime Recipient. If a company is providing only a tangible item to the Prime Recipient, these items of expense most likely should be categorized as either materials or equipment. Basic routine types of services that do not normally require a written contract (e.g., printing and binding) may be defined as miscellaneous. Invoices must be accompanied by subcontractor invoices, receipts, and other appropriate back-up documentation for all subcontractor expenditures. Purchase orders are not acceptable documentation for expenditures.

7. Indirect Costs – These are costs such as Overhead or General and Administrative costs as identified in the agreement budget. All indirect costs charged must be based on actual, incurred costs; reasonable; allocable to the project; and fully supported and documented. Upon request and at time of audit, Recipients must provide a rate calculation sheet(s) and allocation methodology(ies) for each indirect cost charged. The calculation sheet must list and detail the actual indirect costs incurred to substantiate the indirect rate(s) charged under the agreement as either reimbursable or match share expenses. Indirect costs must adhere to the Agreement Terms and Conditions, Generally Accepted Accounting Principles (GAAP) and the OMB Circular or Federal Acquisition Regulations applicable to your organization. The Energy Commission will only reimburse indirect costs allocable to the direct costs reimbursed by the Energy Commission. The Energy Commission will not reimburse indirect costs allocable to match share expenditures. For Energy Commission reimbursable expenses, billed Indirect Cost rate(s) must not exceed the Indirect Cost rate(s) in the approved agreement budget. Actual rates exceeding budgeted rates may be charged as a match share expense.

Energy Commission Grant Invoice Sample

Total Energy Commission Reimbursable Funds Spent in California and Total Energy Commission Reimbursable Funds to California-Based Entities

Section I - Agreement Information

Recipient/Contractor Name:	EPRI
Agreement Title:	Port of San Diego Microgrid - Resiliency in Terminal Operations
Agreement Number:	EPC-17-049
Work Authorization Number (If applicable)	
Agreement Term:	6/26/2018 to 3/31/2023
Invoice Number:	1
Billing Period:	07/1/2018-07/31/2018
Amount of Payment Request	\$0.00

Section II - Funds Spent in California

Invoice Number	TOTAL Energy Commission Reimbursable Funds Gross Invoice (Including retention)	TOTAL Energy Commission Reimbursable Funds Spent in CA Gross Invoice	TOTAL Energy Commission Reimbursable Funds Spent in CA Gross Invoice Cumulative
01	\$0.00	\$0.00	\$0.00
02	\$0.00	\$0.00	\$0.00
03	\$0.00	\$0.00	\$0.00
04	\$0.00	\$0.00	\$0.00
05	\$0.00	\$0.00	\$0.00
06	\$0.00	\$0.00	\$0.00
07	\$0.00	\$0.00	\$0.00
08	\$0.00	\$0.00	\$0.00
09	\$0.00	\$0.00	\$0.00
10	\$0.00	\$0.00	\$0.00
11	\$0.00	\$0.00	\$0.00
12	\$0.00	\$0.00	\$0.00
13	\$0.00	\$0.00	\$0.00
14	\$0.00	\$0.00	\$0.00
15	\$0.00	\$0.00	\$0.00
16	\$0.00	\$0.00	\$0.00
17	\$0.00	\$0.00	\$0.00
18	\$0.00	\$0.00	\$0.00
19	\$0.00	\$0.00	\$0.00
20	\$0.00	\$0.00	\$0.00
21	\$0.00	\$0.00	\$0.00
22	\$0.00	\$0.00	\$0.00
23	\$0.00	\$0.00	\$0.00
24	\$0.00	\$0.00	\$0.00
25	\$0.00	\$0.00	\$0.00
26	\$0.00	\$0.00	\$0.00
27	\$0.00	\$0.00	\$0.00
28	\$0.00	\$0.00	\$0.00
29	\$0.00	\$0.00	\$0.00
30	\$0.00	\$0.00	\$0.00
31	\$0.00	\$0.00	\$0.00
32	\$0.00	\$0.00	\$0.00
33	\$0.00	\$0.00	\$0.00
34	\$0.00	\$0.00	\$0.00
35	\$0.00	\$0.00	\$0.00
36	\$0.00	\$0.00	\$0.00
TOTAL	\$0.00	\$0.00	

Energy Commission Grant Invoice Sample

Budget Amounts from the Agreement:

Energy Commission Reimbursable Budget Amount (Category Budget)	\$419,987.00
Committed Amount of Energy Commission Reimbursable Funds Spent in California (Category Budget)	\$419,987.00
Committed Percentage of Energy Commission Reimbursable Funds Spent in California (Category Budget)	100.00%

Actual Invoice Expenditures:

Total Amount of Actual Energy Commission Reimbursable Funds spent in California to date (including this invoice)	\$0.00
Percentage of Actual Energy Commission Reimbursable Funds spent in California vs Cumulative Total Invoiced to Date	0.00%

Section IV - Certification

This document follows the request(s) for payment cited above, and certifies by invoice number the California Energy Commission funds spent in California and by California-Based Entities, if applicable. The information is true and correct to the best of my knowledge and based on Recipient's/Contractor's financial records. I understand that potential consequences for not meeting these committed percentages in the Agreement budget may include agreement termination and restitution of funds back to the Energy Commission.

Signature of Recipient's or Contractor's Project Manager or designee:

[Signature and Title Here]

[Date]

Signature of Authorized Agent:

[Signature and Title Here]

[Date]

Energy Commission Grant Invoice Sample

Total Energy Commission Reimbursable Funds Spent in California and Instructions

General:

Please note this workbook contains multiple sheets. This sheet is intended to serve as guidance for completing the "Certification Form" tab.

This form is required to be completed and submitted with each invoice request.

Recipient/Contractor shall complete all sections shaded in green.

Section II is required for all EPIC and PIER Natural Gas Agreements (grants and contracts).

Section III is required for only PIER Natural Gas Agreements (grants and contracts).

Responsibilities:

Recipient/Contractor shall complete the following:

1. Section I: Enter all the information requested in the green-shaded rows.

2. Section II: For each invoice, enter the Total Energy Commission Reimbursable Funds, and Total Energy Commission Reimbursable Funds Spent in California in the current billing period based on your actual invoices. All these amounts should include the retention amount. Add green-shaded rows as necessary. (Note: refer to your Agreement budget)

Under the Budget Amounts from the Agreement section, indicate the Energy Commission Reimbursable Budget Amount and the Committed Amount of Energy Commission Reimbursable Funds spent in California from your Agreement budget (see Category Budget).

3. Section III: For each invoice, enter the Total Energy Commission Reimbursable Funds, and Total Energy Commission Reimbursable Funds to California Based Entities (CBEs) for the current billing period based on your actual invoices. Add green-shaded rows as necessary. (Note: refer to your Agreement budget).

Under the Budget Amounts from the Agreement section, indicate the Energy Commission Reimbursable Budget Amount and the Committed Amount of Energy Commission Reimbursable Funds Spent with California Based Entities from your Agreement budget (see Category Budget).

4. Section IV: Please review the certification statement then sign and date.

Note: When the actual percentage drops below 98% of the committed percentage, the cell will turn red.

Definitions:

Funds spent in California

"Spent in California" means that: (1) Funds under the "Direct Labor" category and all categories calculated based on direct labor (Prime and Subcontractor Labor Rates) are paid to individuals who pay California state income taxes on wages received for work performed under the agreement; and/or (2) Business transactions (e.g., material and equipment purchases, leases, rentals, and contractual work) are entered into with a business located in California.

For funds not considered "spent in California," please refer to the definition stated in the associated solicitation under which this agreement was awarded.

California-Based Entity

A CBE is a corporation or other business form organized for the transaction of business that either:

- * Has its headquarters in California AND manufactures in California the product that is the subject of the award; OR
- * Has an office for the transaction of business in California AND substantially manufactures the product or substantially performs the research within California that is the subject of the award.

Gross Invoice

This is the California Energy Commission reimbursable invoice amount before retention is withheld (if applicable).

EXHIBIT E
CONTENT & FORMAT OF PROGRESS REPORT
San Diego Unified Port District

PROGRESS REPORT for
Project Name
EPC-XX-XXX
Month, Year

Recipient Project Manager: XXX
Commission Project Manager: XXX

What we planned to accomplish this period

[This is taken directly from the section on “What we expect to accomplish during the next period” from the last progress report]

What we actually accomplished this period

[Concise description of major activities and accomplishments. Be specific.]

How we are doing compared to our plan

[Explain the differences, if any, between the planned and the actual accomplishments. Describe what needs to be done, if anything, to get back on track.]

Significant problems or changes

[Describe any significant technical or fiscal problems. Request approval for significant changes in work scope, revised milestone due dates, changes in key personnel assigned to the project, or reallocation of budget cost categories. If none, include the following statement: “Progress and expenditures will result in project being completed on time and within budget.”]

What we expect to accomplish during the next period

[Concise description of major activities and accomplishments expected. This will be transferred to the next progress report]]

Status of Milestones and Products:

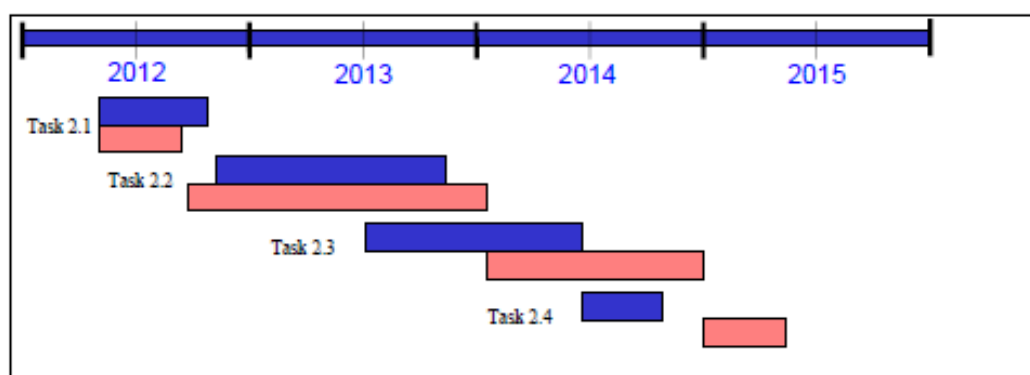
[This should be the complete list as contained in the revised scope of work and Exhibit B. Highlight deliverables that are due in the next billing period.]

Deliverable name	Start Date		Due Date		Status (%)
	Planned	Actual	Planned	Actual	
Identify top 3 assessment candidates	4/15/12	4/15/12	5/1/12	5/1/12	Ontime 100%
Develop test plan	4/20/12	4/10/12	7/7/12	6/10/12	Ahead 100%
Analyze experimental data	5/1/12	6/1/12	1/1/13	2/1/13	Delayed 25%

[Date of Progress Report]

Page 1 of 2
Exhibit A, Att A-2

EPC-XX-XXX
[Contractor Company Name]



Overall schedule for the _____ project.

[Planned is solid blue, actual is red striped. This work flow diagram needs to correlate with the schedule in Exhibit B. This example has been prepared as a Word Picture, but a comparable Excel diagram or Gantt chart is fine.]

Overview of Fiscal Status: (See invoices for detail.)

[It is useful to track the rate of expenditure of project funds. The most useful way to do this is to compare the actual expenditure rate with the planned expenditure rate. You get the planned rate at the beginning of the project, so it becomes a baseline. If you change course at a critical project review, you should show the original and the modified baseline, and then track against the new one.]

Photographs:

[Include photographs where appropriate to document progress.] The photos shall be shot with color print film or be very high quality digital photos (at least 300 dpi). Include at least one screenshot or photograph with each Progress Report.

Evidence of Progress:

If there is a long time between interim products, then attach evidence of the progress being made (e.g., test data, product mock-ups, field site descriptions, preliminary analyses) to the progress reports to allow the Commission Project Manager to review progress and gauge the quality of research results.

The progress report on each project should be 1-2 pages long (plus photographs) and take about 1 hour to prepare for each reporting period.