Exhibit A
WORK STATEMENT

TECHNICAL TASK LIST

Task #	CPR	Task Name
1	N/A	Administration
2		Research
3		Design Development
4	X	Design and Engineering
5		Procurement
6	X	Installation and Integration
7		System Validation Testing
8	X	Commissioning
9		Demonstration and Acceptance
10		Data Collection and Analysis
11		Technology Transfer Plan
12		Product Readiness Plan

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Mike Firenze - Harper Construction Company, Inc.		
2		Power Analytics	
3			
4			
5	Mike Firenze		
6			
7		Power Analytics	
8			
9	Mike Firenze		
10		Power Analytics	Camp Pendleton
11			
12			Space and Naval Warfare Systems Command

GLOSSARY

Specific terms and acronyms used throughout this scope of work are defined as follows:

Term/ Acronym	Definition
CPM	Commission Project Manager
CPR	Critical Project Review
DOD	Department of Defense

Exhibit A
WORK STATEMENT

Term/ Acronym	Definition
FDP	FractalGrid Demonstration Project
MEMMI	Microgrid Energy Management and Maintenance Interface

Problem Statement:
In the United States, the aging grid is becoming increasingly unstable and unreliable due to increases in loads and the lack of new large-scale generation facilities. This inherent instability is compounded by the need to integrate a growing number and variety of renewable energy generators and enabling technologies into the nation's electric system. Simultaneously, military installations, communities, and campuses across the nation are turning to microgrids to increase their independence from grid instabilities, use cleaner power, and have greater energy security and mission assurance.

The convergence of these factors has created the need for power supply optimization and energy management. In order to incorporate higher levels of renewable generation and enabling technologies into the grid, it is necessary to address the challenge of efficiently operating grids at the macro/micro scales while maximizing the use of clean energy to produce affordable, stable, predictable, and reliable power on a large scale.

Goals of the Agreement:
The goal of this Agreement is to demonstrate a set of intelligent, cyber-secure microgrids that use community-scale renewable energy resources within an existing utility grid at Camp Pendleton, a large marine base in California with dispersed loads and generation. The key value proposition is measuring and optimizing the individual capabilities and interactions between the microgrids.

The Fractal Grid demonstration project funded by this Agreement is based on fractal architecture. In this case, larger components of a grid system are comprised of multiple sub-systems (micro-grids) that have a similar design. This project will develop an enhanced, renewable microgrid that meets the demands of community energy security as well as high-risk clients such as large industrial institutions and army bases. The system will combine renewable energy resources with traditional generation assets and energy storage to shed loads based on criticality to support community functions and provide long-term energy security.

Objectives of the Agreement:
The objectives of this Agreement are to: (1) understand energy sharing within multi-microgrid settings that have integrated community-scale renewable systems and enabling technologies; and (2) demonstrate cyber security solutions with renewable system integration and distributed generation control systems. The energy generation and demand will be optimized by installation of the power controllers, distribution and

isolation switches, and local energy storage in addition to analysis of critical mission priorities.

Technical Objectives:
Technical objectives of this agreement are to:

- Reduce kilowatt hours per day by 10% during the demonstration period by optimizing generation and load resources.
- Reduce Peak Demand kilowatts by 10% during the demonstration period by using energy storage to optimize generation and load resources.
- Reduce the carbon footprint by at least 5% against the baseline by using solar forecasting.
- Demonstrate the grid-independent ability of multiple distributed microgrids (from the local utility grid as well as from other microgrids) with FractalGrid architecture.

TASK 1 ADMINISTRATION

Instructions for Submitting Electronic Files and Developing Software

Electronic File Format
The Recipient will deliver an electronic copy (CD ROM or memory stick or as otherwise specified by the Commission Project Manager (CPM) of the full text of any Agreement products in a compatible version of Microsoft Word (.doc).

The following describes the accepted formats of electronic data and documents provided to the Energy Commission as products and establishes the computer platforms, operating systems, and software versions that will be required to review and approve all software deliverables.

- Data sets will be in Microsoft (MS) Access or MS Excel file format.
- PC-based text documents will be in MS Word file format.
- Documents intended for public distribution will be in PDF file format, with the native file format provided as well.
- Project management documents will be in MS Project file format.

Software Application Development
If this Scope of Work includes any software application development, including but not limited to databases, websites, models, or modeling tools, the Recipient will use the following standard Application Architecture components in compatible versions:

- 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 Energy Commission's Information Technology Services Branch.

Task 1.1 Attend Kick-off Meeting

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

The Recipient shall:

- Attend a "Kick-Off" meeting with the CPM, the Grants Officer, and a representative of the Accounting Office. The Recipient shall bring its Project Manager, Agreement Administrator, Accounting Officer, and others designated by the CPM to this meeting. The administrative and technical aspects of this Agreement will be discussed at the meeting. Prior to the kick-off meeting, the CPM will provide an agenda to all potential meeting participants.

  The administrative portion of the meeting shall include, but not be limited to, the following:
  - Discussion of the terms and conditions of the Agreement
  - Discussion of Critical Project Review (Task 1.2)
  - Match fund documentation (Task 1.6) *No work may be performed until this documentation is in place.*
  - Permit documentation (Task 1.7)
  - Discussion of subcontracts needed to carry out project (Task 1.8)

  The technical portion of the meeting shall include, but not be limited to, the following:
  - The CPM's expectations for accomplishing tasks described in the Scope of Work
  - An updated Schedule of Products
  - Discussion of Progress Reports (Task 1.4)
  - Discussion of Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
  - Discussion of the Final Report (Task 1.5)

  The CPM shall designate the date and location of this meeting.

- Submit an updated Schedule of Products, List of Match Funds, and List of Permits to the CPM.

Recipient Products:

- Updated Schedule of Products
- Updated List of Match Funds
- Updated List of Permits

Commission Project Manager Product:

- Kick-Off Meeting Agenda

Task 1.2 Critical Project Review (CPR) Meetings

The goal of this task is to determine if the project should continue to receive Energy Commission funding to complete this Agreement and to identify any needed modifications to the tasks, products, schedule, or budget.

CPRs provide the opportunity for frank discussions between the CPM and the Recipient. The CPM may schedule CPRs as necessary, and CPR costs will be borne by the Recipient.

Participants include the CPM and the Recipient, and may include the Commission Grants Officer, the Energy Research and Development Division technical lead, other Energy Commission staff and Management, and any other individuals selected by the CPM to provide support to the Energy Commission.

The Commission Project Manager shall:

- Determine the location, date, and time of each CPR meeting with the Recipient. These 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 Commission Project Manager.
- Send the Recipient the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion of both match funding and permits.
- Conduct and make a record of each CPR meeting. One of the outcomes of this meeting will be a schedule for providing the written determination described below.
- Determine whether to continue the project, and if so whether modifications are needed to the tasks, schedule, products, and/or budget for the remainder of the Agreement. If the CPM 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 written determination in accordance with the schedule. The written response may include a requirement for the Recipient to revise one or more products that were included in the CPR.

The Recipient shall:

- Prepare a CPR Report for each CPR that discusses the progress of the Agreement toward achieving its goals and objectives. This report shall include recommendations and conclusions regarding continued work on the project. This report shall be submitted along with any other products identified in this Scope of Work. The Recipient shall submit these documents to the CPM and any other designated reviewers at least 15 working days in advance of each CPR meeting.
- Present the required information at each CPR meeting and participate in a discussion about the Agreement.

Commission Project Manager Products:

- Agenda and a list of expected participants
- Schedule for written determination
- Written determination

Recipient Product:

- CPR Report(s)

Task 1.3 Final Meeting

The goal of this task is to close out this Agreement.

The Recipient shall:

- Meet with Energy Commission staff to present the project findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.

  This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the CPM. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be divided into two separate meetings at the discretion of the CPM.

  The technical portion of the meeting shall involve the presentation of an assessment of the degree to which project and task goals and objectives were achieved, in addition to findings, conclusions, recommended next steps (if any) for the Agreement, and recommendations for improvements. The CPM will determine the appropriate meeting participants.

The administrative portion of the meeting shall involve a discussion with the CPM and the Grants Officer about the following Agreement closeout items:

- Disposition of any equipment purchased with Energy Commission funds
- Energy Commission's request for specific "generated" data (not already provided in Agreement products)
- Need to document Recipient's disclosure of "subject inventions" developed under the Agreement
- "Surviving" Agreement provisions
- Final invoicing and release of retention

- Prepare written documentation of any agreements made between the Recipient and Commission staff during the meeting.
- Prepare a schedule for completing the closeout activities for this Agreement.

Products:

- Written documentation of meeting agreements
- Schedule for completing closeout activities

Task 1.4 Monthly Progress Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the research objectives of this Agreement on time and within budget.

The objectives of this task are to summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, and to form the basis for determining whether invoices are consistent with work performed.

The Recipient shall:

- Prepare a Monthly Progress Report that summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the CPM within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in the Terms and Conditions of this Agreement.
- In each Monthly Progress Report and invoice, document and verify:
  - Energy Commission funds received by California-Based Entities (CBEs);
  - Energy Commission funds spent in California; and
  - Match fund expenditures

Also provide synopsis of project progress.

Product:

- Monthly Progress Reports

Task 1.5 Final Report

The goal of the Final Report is to assess the project's success in achieving its goals and objectives, advancing science and technology, and providing energy-related and other benefits to California.

The objectives of the Final Report are to clearly and completely describe the project's purpose, approach, activities performed, results, and advancements in science and technology; to present a public assessment of the success of the project as measured by the degree to which goals and objectives were achieved; to make insightful observations based on results obtained; to draw conclusions; and to make recommendations for further projects and improvements.

The Final Report shall be a public document. If the Recipient has obtained confidential status from the Energy Commission and will also prepare a confidential version of the Final Report, the Recipient shall perform the following activities for both the public and confidential versions of the Final Report.

The Recipient shall:

- Prepare an Outline of the Final Report.
- Prepare a Final Report following the approved outline and the latest version of the Final Report guidelines which will be provided by the CPM. The CPM shall provide written comments on the Draft Final Report within 15 working days of receipt. The Final Report must be completed at least 90 days before the end of the Agreement Term.
- Submit one bound copy of the Final Report with the final invoice.

Products:

- Draft Outline of the Final Report
- Final Outline of the Final Report
- Draft Final Report
- Final Report

Task 1.6 Identify and Obtain Match Funds

The goal of this task is to ensure that the match funds planned for this Agreement are obtained and applied to this Agreement during the term of this Agreement.

Exhibit A
WORK STATEMENT

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient may utilize match funds for this task. Match funds shall be spent concurrently or in advance of Energy Commission funds for each task during the term of this Agreement. Match funds must be identified in writing and the associated commitments obtained before the Recipient can incur any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the CPM at least 2 working days prior to the kick-off meeting. 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 such 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 each cash match fund, its source (including a contact name, address and telephone number), and the task(s) to which the match funds will be applied.
  - Amount of each in-kind contribution, a description, documented market or book value, its 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 shall identify its owner and provide a contact name, address, telephone number, and the address where the property is located.
- Provide a copy of the letter of commitment from an authorized representative of each source of cash match funding or in-kind contributions that these funds or contributions have been secured. For match funds provided by a grant a copy of the executed grant shall be submitted in place of a letter of commitment.
- Discuss match funds and the implications to the Agreement if they are reduced or not obtained as committed, at the kick-off meeting. 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 letter including the appropriate information to the CPM if during the course of the Agreement additional match funds are received.
- Provide a letter to the CPM within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR.

Products:

- A letter regarding match funds or stating that no match funds are provided

- Copy(ies) of each match fund commitment letter(s) (if applicable)
- Letter(s) for new match funds (if applicable)
- Letter that match funds were reduced (if applicable)

Task 1.7 Identify and Obtain Required Permits

The goal of this task 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. Although the Energy Commission budget for this task will be zero dollars, the Recipient shall budget match funds for any expected expenditures associated with obtaining permits. Permits must be identified in writing and obtained before the Recipient can make any expenditure for which a permit is required.

The Recipient shall:

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the CPM at least 2 working days prior to the kick-off meeting. If there are no permits required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that permits will be required during the course of the Agreement, provide in the letter:
  - A list of the permits that identifies the:
    - Type of permit
    - Name, address and telephone number of the permitting jurisdictions or lead agencies
  - The schedule the Recipient will follow in applying for and obtaining these permits.
- Discuss the list of permits and the schedule for obtaining them at the kick-off meeting and develop a timetable for submitting the updated list, schedule, and copies of the permits. The implications to the Agreement 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 the Progress Reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, provide an updated list of permits (including the appropriate information on each permit) and an updated schedule to the CPM.
- As permits are obtained, send a copy of each approved permit to the CPM.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CPM within 5 working days. Either of these events may trigger an additional CPR.

Products:

- Letter documenting the permits or stating that no permits are required
- Updated list of permits as they change during the term of the Agreement (if applicable)
- Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable)
- A copy of each approved permit (if applicable)

Task 1.8 Obtain and Execute Subcontracts

The goal of this task is to ensure quality products and to procure subcontracts required to carry out the tasks under this Agreement consistent with the terms and conditions of this Agreement and the Recipient's own procurement policies and procedures. This task will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement, and that the budgeted expenditures are reasonable and consistent with applicable cost principles.

The Recipient shall:

- Manage and coordinate subcontractor activities.
- Submit a draft of each subcontract required to conduct the work under this Agreement to the Commission Agreement Manager for review.
- Submit a final copy of the executed subcontract.
- If the Recipient decides to add new subcontractors, it shall notify the Commission Agreement Manager.

Products:

- Draft subcontracts
- Final subcontracts

TECHNICAL TASKS

*Products not requiring a draft version are indicated by marking **"(no draft)"** after the product name.*

TASK 2 RESEARCH

The goal of this task is to research fractal theories and their application to community-scale energy systems, including research to provide solutions such as utility-grade lithium-ion energy storage.

The Recipient shall:

- Identify the most innovative, efficient, and proven means of energy storage to reduce electricity consumption and peak demand by 10%

- Research power integration and the development and design of microgrid power distribution controllers
- Manage and coordinate research activities
- Organize research collaboration meetings
- Prepare a Research Report that discusses research on energy storage, power integration, and microgrid power distribution controllers.
- Update the Schedule of Products

Products:

- Research Report
- Updated Schedule of Products (no draft)

TASK 3 DESIGN

The goals of this task are to: (1) develop specific requirements at Camp Pendleton as required by the Department of Defense (DOD) with regard to energy security; and (2) finalize the design of the FractalGrid Demonstration Project (FDP).

The Recipient shall:

- Collect Camp Pendleton electricity consumption data for the microgrid circuits
- Coordinate and lead a design meeting with base personnel
  - Prepare a load prioritization schedule
  - Identify critical loads and circuits
  - Run microgrid operational simulations parallel to the local utility grid to identify project constraints and priorities to meet energy and peak energy reduction objectives while also meeting base priorities
  - Prepare meeting minutes
- Prepare a Design Report that includes final DOD Community Scale Energy Security Engineering Requirements documents such as:
  - Use cases
  - A list of constraints
  - A load shedding and critical asset table
  - Systems architecture diagrams
  - Test plans and test cases
  - Revised system architecture documents

Products:

- Minutes from coordination meetings with base personnel
- Design Report (no draft)

Exhibit A
WORK STATEMENT

TASK 4 ENGINEERING

The goal of this task is to produce a final set of working design documents that will be used to procure the project equipment and field installation, such as power distribution and isolation switches, local storage devices, and power controllers. The specific objective is to produce an approved set of detailed design and construction documents.

The Recipient shall:

- Coordinate and lead internal engineering meetings
- Manage the development of working engineering documents
- Schedule design review with end users
    - Lead review meetings
    - Document revisions discussed in review meetings and lessons learned
    - Coordinate revisions to the working engineering documents
    - Prepare meeting minutes
- Manage the production of the final engineering documents
- Prepare an Engineering Report that includes final design documents such as:
    - Energy models
    - Basis of engineering design
    - Plans and drawings
    - Specifications
    - Testing and commissioning plan
- Participate in a CPR meeting and prepare a CPR Report as described in Task 1 (Administration).

Products:

- Minutes from design review meetings
- Engineering Report (no draft)
- CPR Report

TASK 5 PROCUREMENT

The goal of this task is to procure the equipment, materials, and services required for the installation and integration tasks.

The Recipient shall:

- Place final purchase orders for equipment, materials, and services
- Execute final subcontracts
- Coordinate logistics and field mobilization

- Produce a final delivery and installation schedule
- Prepare a Procurement Report that includes:
    - Final purchase orders
    - Final subcontracts
    - A final delivery and installation schedule

Products:

- Procurement Report

TASK 6 INSTALLATION AND INTEGRATION

The goal of this task is to install and integrate all equipment, materials, components, software, and hardware to achieve the project-specific objective of a fully functioning secure microgrid that integrates Community Scale Renewable Energy Generation sources and has the ability to maintain functionality of critical assets for up to 30 days.

TASK 6.1 FIELD INSTALLATION

The goal of this task is to install new systems/equipment and modify existing infrastructure to meet project needs.

The Recipient shall:

- Coordinate the mobilization of field management for the field installation work
- Lead a preparatory meeting and preparatory activities with base personnel
- Document daily installation/integration activities
- Manage safety and quality control programs
- Update drawings with as-built conditions
- Prepare a Field Installation and System Integration Report that includes:
    - Revised installation schedules
    - Installation coordination documents
    - Preparatory meeting minutes
    - Installation administration documents
        - Daily production reports
        - Quality Control and Safety reports

Products:

- Field Installation and System Integration Report

TASK 6.2 SYSTEMS INTEGRATION

The goal of this task is to integrate legacy systems with new systems/equipment.

The Recipient shall:

- Integrate renewable energy systems and controls
- Integrate real-time and forecast data
- Integrate the Microgrid Energy Management and Maintenance Interface (MEMMI) with controls
- Integrate MEMMI with Paladin Software
- Calibrate an optimization model
- Prepare a Field Installation and System Integration Report that includes:
  - A functioning MEMMI with near real-time data
  - An updated Real-time energy model
- Participate in a CPR meeting and prepare a CPR Report as described in Task 1 (Administration).

Products:

- Field Installation and System Integration Report
- CPR Report

TASK 7 SYSTEM VALIDATION TESTING

The goal of this task is to perform system validation testing activities to confirm readiness for commissioning and demonstration activities. This task will provide final test reports that validate system performance per the test plan and specific use cases, and will include validation testing of all software-based systems including physical control functionality.

The Recipient shall:

- Develop a testing plan and requirements
- Lead a testing plan review meeting
- Perform initial baseline testing of all systems
- Troubleshoot any deficiencies or system errors
- Prepare a System Validation Testing Report that includes:
  - Final use cases
  - A testing plan
  - Systems readiness reports

Products:

- System Validation Testing Report

Exhibit A
WORK STATEMENT

TASK 8 COMMISSIONING

The goal of this task is the final commissioning of the entire microgrid system including all physical assets and software systems. This will ensure operation per the design intent.

The Recipient shall:

- Coordinate a Pre-commissioning meeting and prepare minutes
- Perform commissioning activities with Camp Pendleton personnel
- Prepare a Notice of System readiness
- Prepare a Commissioning Report that includes:
  - System functionality per design requirements
  - Verification that the renewables have been integrated and that the microgrid is ready for demonstration
- Participate in a CPR meeting and prepare a CPR Report as described in Task 1 (Administration).

Products:

- Pre-commissioning meeting minutes
- Notice of System Readiness
- Commissioning Report
- CPR Report

TASK 9 DEMONSTRATION AND ACCEPTANCE

The goal of this task is to demonstrate the capabilities of the microgrid to interested parties.

The Recipient shall:

- Coordinate demonstration activities with project stakeholders
- Perform a live demonstration that includes:
  - Energy management interface operations
    - Live optimization demonstration
    - Future renewable energy system integration simulation
  - Simulated grid outage
  - Simulated ‘black start’
- Prepare a Demonstration and Acceptance Report that includes:
  - Data sets from testing and demonstrations
  - Test results
  - Demonstration results
  - A final testing and demonstration report
  - A system acceptance letter from the end users, Camp Pendleton Public Works officials

Products:

- Demonstration and Acceptance Report

TASK 10 DATA COLLECTION AND ANALYSIS

The goals of this task are to collect operational data from the microgrid and to provide analysis for energy optimization and economic/ environmental impacts.

The Recipient shall:

- Develop a data collection test plan
- Troubleshoot any issues identified
- Collect 6 months of project throughput, usage, and operations data
- Identify any planned use of renewable energy at the facility
- Describe any energy efficiency measures used in the facility that may exceed Title 24 standards in Part 6 of the California Code of Regulations.
- Provide data on potential job creation, economic development, and increased state revenue as a result of expected future expansion
- Provide a quantified estimate of the project's carbon intensity values for life-cycle greenhouse gas emissions
- Compare any project performance and expectations provided in the proposal to the Energy Commission with actual project performance and accomplishments
- Prepare a Data Collection and Analysis Report that includes the information above

Products:

- Data Collection and Analysis Report

TASK 11 TECHNOLOGY TRANSFER ACTIVITIES

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

The Recipient shall:

- Prepare a Technology Transfer Plan that explains how the knowledge gained in this project will be made available to the public. The level of detail expected is high for this demonstration project. Key elements from this report shall be included in the Final Report for this project
- Conduct technology transfer activities in accordance with the Technology Transfer Plan. These activities will be reported in the Monthly Progress Reports
- Indicate the intended use(s) and users of the project results

- Hold a renewable energy system integration and microgrid workshop
- Hold a community outreach workshop to discuss project challenges and lessons learned

Products:

- Technology Transfer Plan

TASK 12 PRODUCTION READINESS PLAN

The goal of the plan is to determine the steps that will lead to the manufacturing of the technologies developed in this project or to the commercialization of the project's results.

The Recipient shall:

- Prepare a Production Readiness Plan. The degree of detail in the plan should be proportional to the complexity of producing or commercializing the proposed product and its state of development. As appropriate, the plan will include but not be limited to a discussion of the following:
  - Critical production processes, equipment, facilities, personnel resources, and support systems needed to produce a commercially viable product
  - Internal manufacturing facilities, supplier technologies, capacity constraints imposed by the design under consideration, design-critical elements, and the use of hazardous or non-recyclable materials. The product manufacturing effort may include "proof of production processes"
  - A projected "should cost" for the product when in production
  - The expected investment threshold to launch the commercial product
  - An implementation plan to ramp up to full production

Products:

- Production Readiness Plan

STATE OF CALIFORNIA

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) COMPLIANCE

CEC-280 (Revised 02/10) CALIFORNIA ENERGY COMMISSION

Award Number: PIR-12-033 Date: 05 / 10 / 2013

Note: The Energy Commission Project Managers Manual includes detailed instructions on how to complete this section, with examples of grants that are "Projects" and are not "Projects". When the Project Manager is completing this section, if questions arise as to the appropriate answers to the questions below, please consult with the Energy Commission attorney assigned to review grants or loans for your division.

1. Is grant/loan considered a "Project" under CEQA? ☒ Yes *(skip to question #2)* ☐ No *(continue with question #1)*

   Please complete the following: *[Public Resources Code (PRC) 21065 and 14 California Code of Regulations (CCR) 15378]:*

   Explain why the grant/loan is ***not*** considered a "Project"? The grant/loan will not cause a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because grant/loan involves:

   .

2. If grant/loan is considered a "Project" under CEQA: *(choose either **IS** or **IS NOT**)*

   ☐ Grant/loan **IS** exempt:

   ☐ Statutory Exemption: *(List PRC and/or CCR section numbers)* _____

   ☒ Categorical Exemption: *(List CCR section number)* 14 CCR sections 15301, 15303

   ☐ Common Sense Exemption. *(14 CCR 15061(b)(3))*

   Explain reason why the grant/loan is exempt under the above section:

   The project involves microgrid demonstration activities within the existing utility grid of a military base. The renewable energy generation assets for the project have already been installed on land controlled by the base.

Please attach draft Notice of Exemption (NOE). Consult with the Energy Commission attorney assigned to your division for instructions on how to complete the NOE.

☐ Grant/loan **IS NOT** exempt. The Project Manager needs to consult with the Energy Commission attorney assigned to your division and the Siting Office regarding a possible initial study.

STATE OF CALIFORNIA

GRANTS/CONTINGENT AWARD REQUEST

CEC-270 (Revised 02/10) CALIFORNIA ENERGY COMMISSION

To: Grants and Loans Office Date: 5/10/2013

Project Manager: Prab Sethi Phone Number: 916-327-1302

Office: Energy Generation Research Office Division: Energy Research and Development MS- 43

Project Title: Camp Pendelton Area 52 FractalGrid Demonstration Project

Type of Request: *(check one)*

☒ **New Agreement:** *(include items A-F from below)* Agreement Number: PIR-12-033

Program: PIER E / Renewables

Solicitation Name and/or Number: PON-12-502-20 (Community Scale Renewable Energy Development,

Legal Name of Recipient: Harper Construction Company, Inc

Recipient's Full Mailing Address: 2241 Kettner Blvd Suite 300

San Diego, CA 92101

Recipient's Project Officer: Phone Number:

Agreement Start Date: 6/30/2013 Agreement End Date: 3/31/2015

☐ **Amendment :** *(Check all that apply)* Agreement Number:

- ☐ Term Extension – New End Date:
- ☐ Work Statement Revision *(include Item A from below)*
- ☐ Budget Revision *(include Item B from below)*
- ☐ Change of Scope *(include Items A – F as applicable from below)*
- ☐ Other:

ITEMS TO ATTACH WITH REQUEST:

A. Work Statement
B. Budget
C. Recipient Resolution, if applicable. (Resolution may be requested in Special Conditions if not currently available.)
D. Special Conditions, if applicable.
E. CEQA Compliance Form
F. Other Documents as applicable
- Copy of Score Sheets
- Copy of Pre-Award Correspondence
- Copy of All Other Relevant Documents

California Environmental Quality Act (CEQA)

☒ CEC finds, based on recipient's documentation in compliance with CEQA:

- ☒ Project exempt: 14 CCR sections 15301, 15303 NOE filed:
- ☐ Environmental Document prepared: NOD filed:
- ☐ Other:

☐ CEC has made CEQA finding described in CEC-280, attached

Funding Information:

*Source #1:	PIER-E	Amount:	$ 240.00	Statute:	11-	FY:	12-13	Budget List #:	500.008L
*Source #2:	PIER-E	Amount:	$ 1,722,650.00	Statute:	11-	FY:	12-13	Budget List #:	501.027J
*Source #3:		Amount:	$	Statute:		FY:		Budget List #:	

If federally funded, specify federal agreement number:

*** Source Examples include ERPA, PIER-E, PIER-NG, FED, GRDA, ARFVT, OTHER.**

Business Meeting Approval: *(refer to Business Meeting Schedule)*

Proposed Business Meeting Date: 6/12/2013 ☐ Consent ☒ Discussion

Business Meeting Participant: Prab Sethi Time Needed: 5 minutes

Agenda Notice Statement: *(state purpose in layperson terms)*

Possible approval of a ☒ Grant / ☐ Contingent Award to…

Possible approval of Agreement PIR-12-033 with Harper Construction Company, Inc. for $1,722,890 to demonstrate a set of intelligent microgrids that use community-scale renewable resources within an existing utility grid at Camp pendleton. Match funding for this agreement is $1,172,428. (PIER Electricity Funding)
Contact: Prab Sethi

Project Manager	Date	Office Manager	Date	Deputy Director	Date