

GRANTS/CONTINGENT AWARD REQUEST



To: Grants and Loans Office

Date: 2/22/2013

Project Manager: Kiel Pratt

Phone Number: 916-327-1412

Office: Energy Systems Research Office

Division: Energy Research and Development

MS- 43

Project Title: Peak Shaving with Flywheel Energy Storage Device

Type of Request: (check one)

New Agreement: (include items A-F from below) Agreement Number: _____

Program: PIER E / Industrial/ Ag/ Water

Solicitation Name and/or Number: _____

Legal Name of Recipient: Amber Kinetics, Inc. (replacing former recipient Berkeley Energy Sciences Corp.)

Recipient's Full Mailing Address: 47338 Fremont Blvd.
Fremont, CA 94538

Recipient's Project Officer: Edward Chiao Phone Number: (408) 206-0834

Agreement Start Date: 6/15/2012 Agreement End Date: 6/30/2015

Amendment: (Check all that apply) Agreement Number: PIR-11-010-01

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: Update contact information and terms and conditions

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: _____ NOE filed: _____

Environmental Document prepared: _____ NOD filed: _____

Other: _____

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

Funding Information:

*Source #1: _____ Amount: \$ _____ Statute: _____ FY: _____ Budget List #: _____

*Source #2: _____ Amount: \$ _____ Statute: _____ FY: _____ Budget List #: _____

*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: 5/8/2013 Consent Discussion

Business Meeting Participant: Kiel Pratt Time Needed: minutes

Agenda Notice Statement: (state purpose in layperson terms)

Possible approval of a Grant / Contingent Award to...

Possible approval of this amendment to replace Berkeley Energy Sciences Corporation with Amber Kinetics, Inc., remove references to Berkeley Energy Sciences Corporation in the Scope of Work and Budget, and update contact information and the terms and conditions.

GRANTS/CONTINGENT AWARD REQUEST



Project Manager	Date	Office Manager	Date	Deputy Director	Date
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WORK STATEMENT

TECHNICAL TASK LIST

Task #	CPR	Task Name
1	N/A	Administration
2		Site Plan
3	X	System Manufacture
4		Third Party Validation
5	X	Site Installation
6		Training
7	X	Measurement and Verification
8	N/A	Technology Transfer Activities
9	N/A	Production Readiness Plan

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1-8	None	None	None

GLOSSARY

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

Term/ Acronym	Definition
BESG	Berkeley Energy Sciences Corporation
CPR	Critical Project Review
Energy Commission	California Energy Commission
Energy density (kWh/kg)	Energy density: kilowatt-hours per kilogram
kw	Kilowatt
kwh	Kilowatt Hour
M&V	Measurement and Verification
PAC	Project Advisory Committee
PIER	Public Interest Energy Research
RD&D	Research, Development and Demonstration
UPS	Uninterrupted Power Supply

Problem Statement:

Cost-effective energy storage is a critical requirement for a stable, reliable, and improved future electricity grid. With the increased adoption of variable or intermittent renewable generation, energy storage will continue to become a more critical part of the energy infrastructure. Storage is used to shift electric load from peak hours to off-peak

hours to produce a more constant demand curve. This load shift yields significant cost savings because the power plants used for peak generation are substantially more expensive to operate than the power plants used for baseload generation.

Flywheels are excellent storage devices because they are efficient, can be cycled near limitlessly, and can be flexibly deployed without the need for any specific geological features. Historically, flywheels have been considered power devices (i.e., devices with small energy storage capacity but very high power ratings). These characteristics are in line with Uninterrupted Power Supply (UPS) functionality, where companies such as Active Power sell products. Beacon Power developed flywheels capable of a 15-minute discharge. Both of these companies have had some success, but the technology is far too expensive for widespread adoption.

Much recent flywheel development is based on hybrid electric vehicle applications where energy density, kilowatt-hours per kilogram (kWh/kg), is of critical importance. The Recipient (~~Berkeley Energy Sciences Corporation~~) has instead approached the flywheel design process by focusing on minimizing dollars spent per kilowatt hour (kWh) because it is targeting stationary applications. Research at UC Berkeley has led to breakthroughs in materials processing, shaping, motor design, and other proprietary improvements that allow flywheel technology to provide extremely high capacity while maintaining costs low enough for widespread adoption.

The inability of companies to create flywheels at sufficiently low cost has been the greatest barrier to their widespread adoption for high-capacity demand-side energy storage applications. Another barrier has been a lack of distribution channels to reach demand-side customers. Facing economic and regulatory pressures to integrate significantly more energy storage into the grid, utilities have set up incentive programs to encourage customers to use on-site storage. These programs provide an immediate sales channel for the Recipient's product.

Goals of the Agreement:

The goal of this Agreement is to demonstrate the Recipient's novel energy storage technology at a full-scale customer-side site, such as the San Diego Food Bank. The Recipient's system will be used to reduce demand and usage charges, and will double as a UPS.

Objectives of the Agreement:

The objectives of this Agreement are to install and demonstrate two 40 kWh flywheels for a total storage capacity of 80 kWh. The system will have a maximum power rating of 20 kW. The flywheels will be installed within a reinforced enclosure to ensure safe operation. The objectives of the project include:

- Measuring and confirming product performance specifications;

- Experimenting with various charge/discharge profiles for maximum cost reduction;
- Collecting and sharing quantitative cost saving data; and
- Developing best practices for future storage installations.

TASK 1 ADMINISTRATION

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 Commission Project Manager, 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 Commission Project Manager to this meeting. The administrative and technical aspects of this Agreement will be discussed at the meeting. Prior to the kick-off meeting, the Commission Project Manager 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)
- Permit documentation (Task 1.7)
- Confirming the participation of the demonstration site in the project
- Confirming the participation of the Measurement and Verification (M&V) provider in the project

The technical portion of the meeting shall include, but not be limited to, the following:

- The Commission Project Manager’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 Commission Project Manager shall:

- Designate the date and location of this meeting.

Recipient Products:

- Updated Schedule of Products (no draft)
- Updated List of Match Funds (no draft)
- Updated List of Permits (no draft)

Commission Project Manager Product:

- Kick-Off Meeting Agenda (no draft)

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 Energy Commission and the Recipient. CPRs generally take place at key, predetermined points in the Agreement, as determined by the Commission Project Manager and as shown in the Technical Task List above. However, the Commission Project Manager may schedule additional CPRs as necessary, and any additional costs will be borne by the Recipient.

Participants include the Commission Project Manager and the Recipient and may include the Commission Grants Officer, the Public Interest Energy Research (PIER) Program Team Lead, other Energy Commission staff and Management as well as other individuals selected by the Commission Project Manager 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.
- Send the Recipient the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion on 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 continuing, whether or not modifications are needed to the tasks, schedule, products, and/or budget for the remainder of the Agreement. Modifications to the Agreement may require a formal amendment (please see the Terms and Conditions). If the Commission Project Manager concludes that satisfactory progress is not being made, this conclusion will be referred to

the Energy Commission's Research, Development and Demonstration (RD&D) Policy Committee for its concurrence.

- 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 product(s) 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 of the projects. This report shall be submitted along with any other products identified in this scope of work. The Recipient shall submit these documents to the Commission Project Manager 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 (no draft)
- Schedule for written determination (no draft)
- Written determination (no draft)

Recipient Product:

- CPR Report(s) (no draft)

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 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 Commission Project Manager. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be two separate meetings at the discretion of the Commission Project Manager.

The technical portion of the meeting shall present an assessment of the degree to which project and task goals and objectives were achieved, findings, conclusions, recommended next steps (if any) for the Agreement, and recommendations for improvements. The Commission Project

Manager will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the Commission Project Manager and the Grants Officer about the following Agreement closeout items:

- What to do with any equipment purchased with Energy Commission funds (Options)
- 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, such as repayment provisions and confidential Products
- Final invoicing and release of retention
- Prepare a schedule for completing the closeout activities for this Agreement

Products:

- Written documentation of meeting agreements (no draft)
- Schedule for completing closeout activities (no draft)

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 which 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 Commission Project Manager within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in Exhibit A, Attachment A-2.

Product:

- Monthly Progress Reports (no draft)

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 RD&D projects and improvements to the PIER project management processes.

The Final Report shall be a public document. If the Recipient has obtained confidential status from the Energy Commission and will be preparing a confidential version of the Final Report as well, 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 PIER Final Report guidelines published on the Energy Commission's website at <http://www.energy.ca.gov/contracts/pier/contractors/index.html> at the time the Recipient begins performing this task, unless otherwise instructed in writing by the Commission Project Manager. Instead of the timeframe listed in the Product Guidelines located in Section 5 of the Terms and Conditions, the Commission Project Manager shall provide written comments on the Draft Final Report within fifteen (15) working days of receipt. The Final Report must be completed before the Final Meeting, which will occur 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 Matching Funds

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

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the PIER 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 PIER 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 Commission Project Manager 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, and 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 and 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.
- 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 the appropriate information to the Commission Project Manager if during the course of the Agreement additional match funds are received.
- Notify the Commission Project Manager 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

- (no draft)
- Copy(ies) of each match fund commitment letter(s) (if applicable) (no draft)
- Letter(s) for new match funds (if applicable) (no draft)
- Letter that match funds were reduced (if applicable) (no draft)

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 PIER 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 expenditures 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 Commission Project Manager 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 the 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 the appropriate information on each permit and an updated schedule to the Commission Project Manager.
- As permits are obtained, send a copy of each approved permit to the Commission Project Manager.
- If during the course of the Agreement permits are not obtained on time or

are denied, notify the Commission Project Manager within 10 days. Either of these events may trigger an additional CPR.

Products:

- Letter documenting the permits or stating that no permits are required (no draft)
- A copy of each approved permit (if applicable) (no draft)

- Updated list of permits as they change during the term of the Agreement (if applicable) (no draft)
- Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable) (no draft)

Project Advisory Committee (PAC)

Task 1.8 Establish the PAC

The goal of this task is to create an advisory committee for this Agreement.

The PAC shall be composed of diverse professionals. The number can vary depending on potential interest and time availability. The Recipient's Project Manager and the Commission Project Manager shall act as co-chairs of the PAC. The exact composition of the PAC may change as the need warrants. PAC members serve at the discretion of the Commission Project Manager.

The PAC may be composed of, but is not limited to, qualified professionals spanning the following types of disciplines:

- Researchers knowledgeable about the project subject matter.
- Members of the trades who will apply the results of the project (for example, designers, engineers, architects, contractors, and trade representatives).
- Public Interest Market Transformation Implementers.
- Product Developers relevant to project subject matter.
- U.S. Department of Energy Research Manager.
- Public Interest Environmental Groups.
- Utility Representatives.
- Members of the relevant technical society committees.

The purpose of the PAC is to:

- Provide guidance in research direction. The guidance may include scope of research; research methodologies; timing; coordination with other research. The guidance may be based on:
 - Technical area expertise
 - Knowledge of market applications

- Links between the agreement work and other past, present or future research (both public and private sectors) they are aware of in a particular area
- Review products. Provide specific suggestions and recommendations for needed adjustments, refinements, or enhancement of the products.
- Evaluate tangible benefits to California of this research and provide recommendations, as needed, to enhance tangible benefits.
- Provide recommendations regarding information dissemination, market pathways or commercialization strategies relevant to the research products.

The Recipient shall:

- Prepare a draft list of potential PAC members that includes name, company, physical and electronic address, and phone number and submit it to the Commission Project Manager at least 2 working days prior to the kick-off meeting. This list will be discussed at the kick-off meeting and a schedule for recruiting members and holding the first PAC meeting will be developed.
- Recruit PAC members and ensure that each individual understands the member obligations described above, as well as the meeting schedule outlined in Task 1.9.
- Prepare the final list of PAC members.
- Submit letters of acceptance or other comparable documentation of commitment for each PAC member.

Products:

- Draft List of PAC Members
- Final List of PAC Members
- Letters of acceptance, or other comparable documentation of commitment for each PAC Member (no draft)

Task 1.9 Conduct PAC Meetings

The goal of this task is for the PAC to provide strategic guidance to this project by participating in regular meetings or teleconferences.

The Recipient shall:

- Discuss the PAC meeting schedule at the kick-off meeting. The number of face-to-face meetings and teleconferences and the location of PAC meetings shall be determined in consultation with the Commission Project Manager. This draft schedule shall be presented to the PAC members during recruiting and finalized at the first PAC meeting.
- Organize and lead PAC meetings in accordance with the schedule. Changes to the schedule must be pre-approved in writing by the

- Commission Project Manager.
- Prepare PAC meeting agenda(s) with back-up materials for agenda items.
- Prepare PAC meeting summaries, including recommended resolution of major PAC issues.

Products:

- Draft PAC Meeting Schedule
- Final PAC Meeting Schedule
- PAC Meeting Agenda(s) with Back-up Materials for Agenda Items (no draft)
- Written PAC meeting summaries, including recommended resolution of major PAC issues (no draft)

TECHNICAL TASKS

Products not requiring a draft version are indicated by marking “no draft” after the product name.

TASK 2 SITE PLAN

The goal of this task is to determine the site-specific information required for successful installation of the two-flywheel system at the demonstration site.

The Recipient shall:

- Determine interfacing requirements between the flywheel system and the demonstration site. This determination shall examine, but will not be limited to: interface voltage, pre-existing backup power sources, and specific circuit(s) to be backed up.
- Gather historic load profile data and tariff structures to be used for optimizing system performance and cost savings.
- Determine the installation location for the system and any site-specific containment requirements. Selection of the installation location must take into account serviceability requirements such as fork lift and crane access, personnel access, site security, and traffic flow.
- Prepare a Site Installation Requirement Plan that will include but not be limited to descriptions of: the interfacing requirements, tariff structure, and installation location.

Products:

- Site Installation Requirement Plan (no draft)

TASK 3 SYSTEM MANUFACTURE

The goal of this task is to manufacture and test the specified two-flywheel energy storage system that meets all Task 2 site-specific requirements.

The Recipient shall:

- Finalize the site-specific design for the two-flywheel system.
- Release drawings to flywheel component manufacturing vendors.
- Receive, inspect, and assemble components into the functional system.
- Successfully test the system to desired specifications.
- Prepare and provide a Test Report that describes all parameters tested and the performance of the system to the extent possible without disclosing confidential information.
- Package the system for shipping to PG&E for third party validation.
- Ship the system to PG&E.
- Create system assembly and installation instructions.
- Submit system assembly and installation instructions to the Commission Project Manager.

Products:

- Test Report (no draft)
- System assembly and installation instructions (no draft)

TASK 4 THIRD PARTY VALIDATION

The goal of this task is to confirm the safety and performance of the system by a qualified third party. This validation is planned to be performed by PG&E at its testing facility located in San Ramon, CA.

The Recipient shall:

- Deliver the two-flywheel system to the third party test facility
- Assist in on-site installation.
- Provide a suggested test list.
- Validate the system.
- Assist in packing and shipping after completion of validation.
- Prepare a Test Report with signed approval from the third party performing the tests. The Test Report will describe all parameters tested and the performance of the system to the extent possible without disclosing confidential information.

Products:

- Test Report (no draft)

TASK 5 SITE INSTALLATION

The goal of this task is to successfully install the two-flywheel system as a safe and functional energy storage device at the demonstration site.

The Recipient shall:

- Construct the safety enclosure in accordance with Task 2.
- Physically install the flywheel system.
- Interface the flywheel system to the demonstration site as specified in Task 2.
- Validate system functionality and correct installation.
- Prepare an Installation Report that includes system layout and wiring diagrams.

Products:

- Installation Report (no draft)

TASK 6 TRAINING

The goal of this task is to train facilities staff at the demonstration site on how to safely and effectively operate the installed system.

The Recipient shall:

- Conduct a system training session with relevant demonstration site staff.
- Create and provide a User Manual to staff. The manual will include system documentation such as wiring diagrams and a system layout.
- Provide a means for required access to the flywheel enclosure.

Products:

- User Manual (no draft)

TASK 7 MEASUREMENT & VERIFICATION (M&V)

The goal of this task is to acquire data to quantitatively confirm the performance of the installed energy storage system. Collected data will be used to calculate and optimize cost savings and will be provided to California utilities as a means of evaluating the technology.

The Recipient shall:

- Install and commission the data acquisition system.
- Collect data for 6 months.
- Allow the third party M&V provider to quantitatively confirm the performance of the installed energy storage system.
- Analyze and summarize data into an M&V Report that will describe all parameters tested and the performance of the system to the extent possible without disclosing confidential information.

Products:

- M&V Report (no draft)

TASK 8 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. The plan shall explain how the knowledge gained in this project will be made available to the public. The level of detail expected is least for research-related projects and highest for demonstration projects. 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 shall be reported in the Monthly Progress Reports.

Products:

- Technology Transfer Plan (no draft)

TASK 9 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 discussion should be proportional to the complexity of producing or commercializing the proposed product and its state of development. The plan shall include but not be limited to:
 - Identification of critical production processes, equipment, facilities, personnel resources, and support systems that will be needed to produce a commercially viable product
 - Discussion of internal manufacturing facilities, supplier technologies, capacity constraints imposed by the design under consideration, elements identified as design-critical, 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
- Projected market potential in California

Products:

- Production Readiness Plan (no draft)