



California Solar Initiative

Research, Development,
Demonstration and Deployment
Program

*Grant Proposal
Solicitation Package*

Solicitation#3

Primary area: Grid Integration

Secondary areas: Production Technologies and
Business Development and Deployment

Submission deadline:

Sept 1, 2011
(4 pm PDT)



Grant Proposal Solicitation Package Synopsis

On behalf of the California Public Utilities Commission (CPUC), Itron, Inc., is seeking qualified proposals for grant projects that will directly support the achievement of the overall California Solar Initiative (CSI) goal of 1,940 MW of installed capacity by the end of 2016 and a self-sustaining solar market in the years beyond.¹

Specifically, this solicitation will focus on:

- Primary area: Grid Integration
- Secondary areas: Production Technologies and Business Development and Deployment

Award Information

- Type of Award: Grants
- Total Funding Available Through This Solicitation: Up to \$12 million
- Maximum Individual Award Amount: \$2 million
- Minimum Individual Award Amount: \$200,000
- Award Length: Up to two years

Eligibility

Any individual, business, public entity, non-profit organization, university, or national laboratory is eligible to apply to this solicitation. Itron and its subcontractors are not eligible to apply for funding from any solicitation under the CSI RD&D Program.

Deadline for Proposals

Proposals must be submitted electronically and must be received by **4:00 P.M. (PDT) on Thursday, September 1, 2011**. Late proposals will be disqualified from further evaluation.

Questions

Questions about this grant solicitation will be accepted through August 2, 2011. Questions must be submitted to the CSI RD&D website: <http://www.calsolarresearch.ca.gov/Current-Solicitations/submit-your-questions.html>

Responses will be posted to the website on or before August 12, 2011.

For more information on the solar programs offered by the CPUC and the California Energy Commission, please visit the Go Solar California website at <http://www.qosolarcalifornia.ca.gov/>

¹ The California Solar Initiative (CSI) goal of 3,000 MW of new solar electricity by 2016 includes 1,940 MW from the CSI Program, 360 MW from the New Solar Homes Partnership, and 700 MW from the Publically Owned Utility Programs.

Table of Contents

1 Introduction	1-1
1.1 Overview of this Solicitation	1-1
1.2 Overview of the California Solar Initiative (CSI) Research, Development, Demonstration, and Deployment (RD&D) Program	1-2
1.3 Funding Available	1-2
1.4 Due Date.....	1-2
1.5 Pre-Bid Webinar	1-3
1.6 Eligible Proposers	1-3
1.7 Eligible Technologies	1-3
1.8 Match Funding Requirements.....	1-4
1.9 Helpful Documents.....	1-4
1.10 Key Dates.....	1-5
2 Priority Areas and Targets for this Solicitation	2-1
2.1 Background	2-1
2.2 Overview	2-3
3 Proposal and Submittal Requirements	3-1
3.1 Submittal Requirements	3-1
3.2 Application Package Requirements	3-1
4 Proposal Screening, Review, and Selection	4-1
4.1 Initial Screening.....	4-1
4.2 Technical Review.....	4-1
4.3 Proposal Scoring.....	4-3
4.4 Recommendation to CPUC.....	4-4
4.5 Grant Agreements.....	4-4

ATTACHMENTS:

Exhibit A: Grant Application Cover Page

Exhibit A Instructions

Exhibit B: Proposed Budget Summary

Exhibit B Instructions

Exhibit C: Sample Grant Agreement

1

Introduction

1.1 Overview of this Solicitation

The California Public Utilities Commission (CPUC), through its Program Manager, Itron, Inc., (Itron) is offering grant funding for research, demonstration, and deployment projects that will help to build a sustainable and self-supporting industry for customer-sited solar in California. Specific overall program objectives include:

- Improving the economics of solar technologies and increasing system performance.
- Addressing key market barriers thereby increasing market penetration of solar installations in California to meet and exceed the CSI generation capacity goals.

The primary objectives for this solicitation include:

- Overcoming existing barriers to integrating high penetration PV into the electricity grid; and,
- Accelerating the integration and interconnection of high penetration PV into the grid.

The secondary objectives for this solicitation include:

- Improving the economics of solar technologies and increasing system performance; and,
- Addressing key market barriers thereby increasing market penetration of solar installations in California to meet and exceed the CSI generation capacity goals.

This document provides the information needed to complete the application package and contains the following sections:

- Introduction
- Priority Areas and Targets for this Solicitation
- Proposal and Submittal Requirements
- Proposal Screening, Review, and Selection Process

1.2 Overview of the California Solar Initiative (CSI) Research, Development, Demonstration, and Deployment (RD&D) Program

Senate Bill (SB) 1, signed by Governor Schwarzenegger in August 2006,² authorizes the CPUC to allocate up to \$50 million of the California Solar Initiative (CSI) funds for research, development, demonstration, and deployment of solar technologies. The CPUC adopted a CSI Research, Development, and Demonstration Plan,³ which lays out seven key principles for the CSI RD&D Program:

- Improve the economics of solar technologies by reducing technology costs and increasing system performance;
- Focus on issues that directly benefit California, and that may not be funded by others;
- Fill knowledge gaps to enable successful, wide-scale deployment of solar distributed generation technologies;
- Overcome significant barriers to technology adoption;
- Take advantage of California's wealth of data from past, current, and future installations to fulfill the above;
- Provide bridge funding to help promising solar technologies transition from a pre-commercial state to full commercial viability; and,
- Support efforts to address the integration of distributed solar power into the grid in order to maximize its value to California ratepayers.

1.3 Funding Available

Up to \$12 million in funding is available through this grant solicitation. The maximum amount of funding available for a single project is \$2 million. The minimum project size for this solicitation is \$200,000. There is no guarantee that the entire \$12 million will be allocated to proposals through this solicitation. The CPUC may choose to award none, some, or all of the allocated funds for this solicitation. In addition, the CPUC may use any unallocated funds from this solicitation for future solicitations under the CSI RD&D Program, or return unused funds to the overall CSI program.

1.4 Due Date

Proposals must be submitted electronically. All proposals must be received no later than **4:00 P.M. (PDT) on Thursday, September 1, 2011.**

² Chapter 132, Statutes of 2006

³ Decision 07-09-042

Submit the electronic version of the proposal to:

<http://www.calsolarresearch.ca.gov/Current-Solicitations/submit-proposal.html>

1.5 Pre-bid Webinar

A pre-bid webinar will be held on Tuesday, August 2, 2011 10 am (PDT) to answer questions about this grant solicitation.

To participate in the pre-bid webinar, please register at:

<https://www3.gotomeeting.com/register/615749846>

Please provide your name and affiliation along with your e-mail address to register. After registering, you will receive a confirmation email containing information about joining the Webinar.

1.6 Eligible Proposers

Participation in the CSI RD&D Program is open to all types of businesses and organizations. Any individual, business, organization, academic institution, non-profit, national laboratory, or other entity may apply to this grant solicitation.⁴

Individuals may submit only one proposal in response to this solicitation. Multiple proposals from an individual applicant will not be accepted. The CSI RD&D Program Manager will accept only the first proposal received and return the remaining proposal(s) to the applicant. Companies, academic institutions, national laboratories, and other entities may submit multiple proposals; however, each proposal must have a different principal researcher.

There is no specific requirement that applicants reside in California or that work be performed in California. However, priority will be given to projects and/or companies that are based in California to the extent that they provide greater direct benefits to the State. To be eligible for funding, all proposed research, demonstration, and deployment activities must have a focus on California-specific issues, be clearly relevant, and provide benefits to California's energy ratepayers.

1.7 Eligible Technologies

As described by SB1, eligible technologies in the CSI RD&D Program include "solar technologies and other distributed generation technologies that employ or could employ solar energy for generation or storage of electricity or to offset natural gas usage." In general, all solar technologies and balance-of-system components used for distributed

⁴ Itron and its subcontractors cannot be part of any CSI RD&D Program proposal. Proposals that contain any participation by Itron or its subcontractors will be disqualified from evaluation.

generation may be eligible for CSI RD&D grants. Examples of balance-of-system components are advanced meters, inverters, and storage.

1.8 Match Funding Requirements

Match funding is required to participate in this solicitation. The minimum match funding required for projects in this solicitation is **50 percent**. Match funding can originate from a variety of sources including the applicant or other team members, the federal or state government (including the American Recovery and Reinvestment Act of 2009), non-governmental organizations, industry stakeholders, private companies, or utilities. Match funding may include, but is not limited to, the contribution of cash or in-kind services. Cost-share funding for activities not directly related to the project will not count toward match funding. If the submitted proposal includes a scope that goes beyond the eligible topic areas for this solicitation, the proposal will not be rejected but CSI RD&D match funding will only be counted for the relevant portion of the project as it relates to the topic areas of this solicitation. Scoring will reflect the magnitude and value of the match. In general, the greater and more secure the match contribution, the higher the match funding score. **Applicants are strongly encouraged to include a utility as a partner in the project and secure some match funding from the utility partner.**

For the purpose of this solicitation, a project is the entire scope of work and budget (CSI request and match) described in the applicant's proposal. The CSI funded portion and match funded portion must be directly related to the scope described. For example, if the budget for the entire project (CSI funding and match funding) is \$1,000,000, then the minimum match funding required is \$500,000. The CSI RD&D funding request for this project can be no more than \$500,000.

1.9 Helpful Documents

Applicants are encouraged to review CSI RD&D program information and descriptions of past awards on the CPUC's website:

<http://www.cpuc.ca.gov/PUC/energy/Solar/rdd.htm>

<http://www.calsolarresearch.ca.gov>

The following websites and specific documents also will be helpful in preparing a proposal for this solicitation:

- California Solar Initiative website
<http://www.gosolarcalifornia.org/csi/index.html>
- Opinion Establishing a Research, Development, Demonstration, and Deployment Plan for the California Solar Initiative
http://publicserver.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/73187.htm
- Appendix A: The Adopted California Solar Initiative Research, Development and Demonstration Plan
<http://publicserver.cpuc.ca.gov/PUBLISHED/GRAPHICS/73189.PDF>

1.10 Key Dates

ACTION	DATE
Grant Solicitation Released	July 14, 2011
Pre-bid Webinar	August 2, 2011
Deadline for Questions	August 2, 2011
Question and Answers posted	by August 12, 2011
Due Date for Grant Proposals	September 1, 2011 by 4:00 P.M. (PDT)
Grants Approved by CPUC (estimate)	Early December, 2011
Grant Start Date (estimate)	January – February 2012

2

Priority Areas and Targets for this Solicitation

2.1 Background

California leads the nation in adopting solar energy. Since its inception in 2007, the California Solar Initiative has provided financial support to nearly 80,000 projects in the state accounting for nearly 820 MW of installed capacity. This market growth is expected to continue with the implementation of state and federal policies around climate change, aggressive renewable portfolio standard goals, and financial incentives for installation of distributed renewable technologies. The goal of the California Solar Initiative (CSI) Research, Development, Demonstration, and Deployment (RD&D) Program is to foster a sustainable and self-supporting customer-sited solar market.

The CSI RD&D Adopted Plan outlines budget allocations for three target areas: 1) grid integration, storage, and metering, 2) energy generation technologies, and 3) business development and deployment. The CSI RD&D Program has conducted two solicitations for projects since it began. The first program solicitation focused on integrating PV into the electricity grid. The second program solicitation had two focus areas: energy generation technologies and business development and deployment. These two solicitations resulted in grant funding for 17 projects⁵ totaling approximately \$22 million. With the additional \$10 million grant to Helios Solar Energy Research Center at U.C. Berkeley, the total allocation of CSI RD&D funds to-date is approximately \$33 million. Table 2-1: Budget Allocations, provides the suggested allocation and maximum budget amounts per the CSI RD&D Adopted Plan, along with the total project funding to-date for each of these target areas. The total funded to-date for both Energy Generation Technologies and Business Development and Deployment falls within the budget range outlined in the CSI RD&D Plan. As the table illustrates, funded projects in the area of grid integration, storage and metering total \$8.7 million, well below the budgeted allocation outlined in the CSI RD&D Adopted Plan.

⁵ Details of these projects can be found at: <http://www.calsolarresearch.ca.gov/Funded-Projects/>

Table 2-1: Budget Allocations

Target Areas	Budget Range (percent)	Budget (max. in millions)	Funded To-date (in millions)
Grid Integration, Storage and Metering	50-65%	\$27.6	\$8.7
Energy Generation Technologies	10-25%	\$10.6	\$6.7
Business Development	10-20%	\$8.5	\$7.6
Total	100%	\$42.5*	

Note: *Total not to exceed \$42.52 million - not all target activities will be fully subscribed. The balance of funds is devoted to program administration and evaluation over the multi-year RD&D program.

Recent passage of California’s Renewable Portfolio Standard requiring utilities to procure 33% of their electricity from renewable resources by 2020, will likely lead to an increased growth rate of solar technologies. However, California’s growth rate for solar electricity generation can be sustained only if some of the barriers to integrating high penetration PV into the electricity grid are removed or reduced. Utilities are especially concerned about potential grid impacts associated with high penetration levels of PV. These impacts can include voltage fluctuations and current flows on distribution circuits as well as impacts on voltage regulation, reactive power, and system safety and reliability. As more and more PV systems connect to the grid, real and perceived grid operations issues can create further barriers to the growth of the solar market.

On March 1-2, 2011, The U.S. Department of Energy (DOE) and the California Public Utilities Commission (CPUC) co-hosted the High Penetration Solar Forum at Scripps Institution of Oceanography, UC San Diego. This forum brought together industry experts and stakeholders to present interim findings from high penetration projects being funded by DOE and the CPUC. The Solar Forum participants discussed issues critical to distributed energy integration including voltage control and management, circuit protection and coordination, systems operations and interoperability with smart inverter functionality, power quality issues, monitoring and control.

The Renewable Distributed Energy Collaborative (Re-DEC) was initiated by the CPUC to address the challenges that affect both project developers and grid operators as increasing volumes of renewable distributed generation (DG) attempt to interconnect to the grid. The findings so far from Re-DEC forums are that interconnection procedures for distributed generation (including solar) are not designed for a large number of small projects attempting to interconnect in a short time frame. This has resulted in backlogs and delays for the California Independent System Operators (CAISO) and Investor Owned Utilities (IOUs) in processing interconnection applications and significant delays with conducting interconnection studies.

To date, the CSI RD&D Program has funded roughly \$9 million in research on projects that address integration of solar into the electricity grid. The Department of Energy (DOE) and the California Energy Commission (CEC) also fund research to overcome barriers to high penetration PV and the CSI program works collaboratively in its funding allocations.

2.2 Overview

Table 2-2: Budget by Target Area, provides a summary of the proposed funding levels for the primary and secondary target areas of this solicitation. The table also includes the proposed funding ranges for individual projects within each target. The maximum proposed funding for this solicitation is \$12 million. \$9 million is allocated for projects that support and demonstrate the integration of solar into the electricity grid. Up to \$3 million is allocated for smaller projects that demonstrate and support improved production technologies and innovative business models.

Table 2-2: Budget by Target Area

Target Area	Grid Integration	Production Technologies and Business Models	Total
Estimated Funding for Area	\$9 million	\$3 million	\$12 million
Estimated Per-Project Funding	\$500,000 - \$2 million	\$200k - \$500k	N/A

Primary Focus Area

The primary focus of this solicitation is on addressing cost-effective strategies and solutions for integrating large amounts of PV into distribution systems.⁶ Grid integration of solar is essential if California is to sustain high PV market growth and to achieve the goals of the CSI Program. The CPUC is especially interested in funding **demonstration projects that provide solutions to integration of PV into the electricity grid.** The applicants are also ***strongly encouraged to engage with a utility and include them as a project partner*** in the proposed project.

The following list provides some examples of the types of grid integration of high penetration PV projects discussed in various forums. This list is not exhaustive and applicants are free to propose other possible solutions for overcoming the barriers to integrating high levels of PV into the electricity grid.

⁶ Integration of large amounts of PV has implications for California’s transmission system. However, this solicitation focuses on integration at the distribution system level as the integration of central station facilities lies outside the scope of the CSI RD&D Adopted Plan.

Utility Interconnection:

- Demonstrations of methods and approaches to screen PV and other distributed generation attempting to interconnect to the grid. For example, such screening may group generation into those systems or conditions that have little or no impact on the grid and those that are more likely to have an impact on the grid.
- Demonstrations that investigate the impact of multiple inverters to inform interconnection studies and upgrade requirements.
- Demonstration projects that lead to better understanding of the anti-islanding nature of invert- based technologies which can lead to relaxation of anti-islanding requirements, resulting in streamlining the interconnection process and reducing associated required system upgrade costs.
- Demonstrations of how DG interconnection procedures from other parts of the US or other countries can be integrated into California interconnection practices to accelerate timelines of interconnection to reduce costs, enhance reliability, or any/all of the above.
- Investigations that address issues such as time delays and cost barriers for interconnection of small generators which can benefit the efforts of the Renewable Energy Collaborative (Re-DEC) and the Rule 21 Working Group.

Grid Operations:

- Demonstrations of methods and approaches for utilities to identify the best places to site distributed PV. Optimal locations could include such items as low interconnection costs, improved system reliability, reduced energy losses, ease of interconnecting the system into the distribution feeder, land availability and cost, and quality of the solar resource. Results should allow utilities to compare costs of distribution expansion or upgrades against the costs associated with integrating high penetration levels of PV.
- Quantify the risk of unintentional islanding, which is a utility safety concern and a main driver for the 15% of peak load limit.
- Demonstrations of advanced inverters that can communicate with Smart Meters, and that show that the Smart Meter can collect and transmit PV performance data from the inverter to a common data collection point such as a utility.
- Demonstrations of PV system installations with existing distribution feeder automated protection features and systems. These include ride-through voltage capabilities, inverter control on VARs (volt-ampere reactive power), and response capabilities to controlling reverse power flows.
- Dynamic system modeling that takes into account the following: 1) voltage sags leading to inverter trips with associated instabilities on load; 2) conditions leading to possible islanding; and, 3) reverse power flows on the distribution system.
- Modeling results and demonstrations that identify impacts of locating high penetration levels of PV on distribution line loading and congestion.

- Demonstrations that test the ability of PV systems to respond to utility controls. These include the capability for incremental and dynamic inverter dispatch and system control within narrow time steps.
- Demonstrations that assess the impacts of high penetration PV on distribution circuit loads. These impacts include peak demand and dynamic loading.
- Demonstrations that model, validate, and field-test high penetration levels of PV on distribution circuits.
- Demonstrations of PV with energy storage as a means to provide increased responsiveness to dynamic changes in load at the distribution feeder that cannot be addressed by PV systems; and, increased capability to provide VAR support.
- Research and demonstration on combined impacts of multiple solar projects across individual circuits and into the transmission system related to Volt/VAR optimization, harmonic impacts and dynamic response.

Solar Modeling:

- Solar resource models with higher spatial and temporal resolution to enable better forecasting and planning by grid operators and the CAISO.
- Validation of estimated PV production at high temporal resolution (less than one-minute intervals) using metered PV data. Of particular interest are demonstrations where PV performance data is collected from Smart Meter/inverter applications that can be used to validate high temporal resolution PV output estimates for anticipated high PV penetration situations.

Secondary Focus Area

The secondary focus area for this solicitation is on improving solar production technologies and innovative business development and deployment. The CPUC is especially interested in funding **demonstration projects that provide solutions to building a self-sustaining market for solar energy in the state and supporting the goals of the CSI Program.**

The following list provides some examples of the types of Solar Production Technologies that are of interest. This list is not exhaustive and applicants are free to propose other possible solutions to filling a gap or need to achieve a sustainable solar industry in the state.

- Testing and demonstrations of building integral PV products (BIPV) that are competitive with rooftop PV.
- Testing and demonstrations of inverter technologies that improve reliability/performance of solar systems and help lower costs.
- Projects that demonstrate the economic viability of distributed concentrating PV systems.
- Testing and demonstrations of better integration of PV inverters with Smart Meters.

- Testing and demonstrations of existing energy storage technologies capable of working with smaller solar systems and that allow the end user or utility to capture higher value from the energy produced (e.g., provide energy during peak).
- Testing and demonstrations of innovative hybrid-solar (solar thermal/solar electric) technologies

The adopted CSI RD&D Plan notes Business Development and Deployment projects are those “supporting the market and end-users.” The following list provides some examples of the types of innovative business model projects that are of interest. This list is not exhaustive and applicants are free to propose other possible solutions to filling a gap or need to achieve a sustainable solar industry in California.

- Projects that demonstrate improved solar economics using advanced metering, price responsive tariffs (e.g., Time of Use (TOU), Feed in Tariff) and storage.
- Studies on how utilities can benefit from distributed PV, storage, advanced inverters, or Smart Meter systems and the types of ancillary services that could be provided by distributed PV, storage, advanced inverters, or smart metering systems.
- Demonstrations of innovative ways to lower PV installation, operations, or maintenance costs.

The CPUC, at its discretion, may choose to award none, some, or all of the allocated funds for this solicitation. In addition, the CPUC may use any unallocated funds from this solicitation for future solicitations under the RD&D Program, or return unused funds to the overall CSI program. The total maximum proposed amount of funding for this solicitation is \$12 million.

3

Proposal and Submittal Requirements

3.1 Submittal Requirements

Electronic submission is required for this solicitation. Applicants must submit the electronic version of the proposal to

<http://www.calsolarresearch.ca.gov/Current-Solicitations/submit-proposal.html>

Proposals must be submitted as a single PDF file.

Proposals must be received no later than 4:00 p.m. (PDT) on Thursday, September 1, 2011.

Proposals not received by the CSI RD&D Program Manager by the specified date and time will not be evaluated or scored.

Following submission, the CSI RD&D Program Manager will e-mail a confirmation receipt to each applicant. It is the applicant's ultimate responsibility to ensure that the proposal was received on time. Proposals sent to the CPUC or any address other than the one specified in these instructions will not be accepted. Fax copies will also not be accepted.

Please do not submit proprietary or confidential information as proposals containing proprietary or confidential information will not be evaluated or scored.

3.2 Application Package Requirements

Please note the page limits for each of the following sections. Please use 12-point type with 1-inch margins all around. The grant proposal application package must include all of the following information and be assembled in the order presented below.

Grant Application Cover Page

The grant application cover page (Exhibit A) should be completed and include signatures of the Principal Investigator/Project Manager and the person authorized to sign on behalf of the company, institution, or organization.

Section 1: Project Summary

The project summary should include an overall description of the project. This summary should be concise but informative and provide a stand-alone description of your proposed project. The project summaries may be made public and used during the evaluation and selection process. *(Limit to one (1) page.)*

Section 2: Project Goals

The project goals should identify the overall purpose of the project and what will be achieved. Please define the goals and objectives for the proposed project in terms of the (applicable) seven principles of the CSI RD&D Adopted Plan. *(Limit to two (2) pages.)*

Section 3: Project Performance/Cost Objectives

As outlined in the Adopted CSI RD&D Plan, the CSI RD&D Program has established specific cost and performance objectives for the program, it is important that the projects that receive funding from the program also develop specific performance and cost objectives for the resulting outcomes. To be considered for funding, all grant proposals must include performance and/or cost objectives for their projects.

Performance and cost objectives serve as metrics to benchmark the progress and help determine if a project is successful. Performance objectives must have a numeric or quantitative performance target. Projects with goals that relate to the CSI objectives of improving the economics of solar technologies, increasing system performance, or in addressing the market barriers to increase market penetration of solar will be viewed more favorably. *(Limit to one (1) page.)*

Section 4: Approach and Scope of Work

List all the tasks and describe the approach that will be used for each task to meet the goals, objectives, and performance factors of the project. Provide a complete and detailed list of all tasks (and subtasks) that will be completed through this project. Include specific methods, techniques, equipment, facilities, data collection, statistical or engineering analysis, and quality assurance procedures, as appropriate. The statement of work should include discrete tasks (and subtasks, as appropriate) in a manner, that will permit the scoring and selection committees to remove specific activities or portions of work should they decide to fund only a portion of a proposal. Provide additional detail about the Budget (Section 7), and the Schedule and Deliverables (Section 9) as described below. *(Limit to eight (8) pages.)*

All Proposals should include the following as Task 1:

Task 1: Project Management, Reporting, Technology Transfer, and Outreach

Purpose of task: The purpose of this task is to ensure that all products and deliverables in this statement of work are complete and of high quality. Additionally, this task includes the

dissemination of information to interested stakeholders along with presentations and outreach to the Project Advisory Committee (as appropriate) and the Final Project Report.

The following tasks are required for Task 1 of your project:

- Develop a one-page Project Summary at the start of the project
- Develop a one-page Project Summary upon completion of the project
- Prepare presentation(s) and participate in Project/Technical Advisory Committee workshops or other stakeholder meetings (as requested)
- Prepare and submit invoices and monthly status reports
- Prepare and submit twice yearly project reports
- Prepare and submit a Final Project Report

Section 5: Project Personnel

Provide a brief biography for each of the Principal Researchers, Project Managers, and key staff along with any subcontractors who will be working on the project. Describe the work that each person will perform on the project as well as the project-relevant experience of each person. Specify individual roles and responsibilities for technical, administrative, and management personnel. Describe the organizational structure for the staff and subcontractors and provide an overall organizational chart. *(Limit to one (1) page per individual.)*

Section 6: Utility Participation

Provide a brief description of the role and level of participation by the investor-owned utility partner with the project. This description should specify the barriers to overcome or the specific utility needs related to high penetration PV, production technologies, or business development and deployment. Substantiate the partnership, engagement, and match funding with letters of support from relevant utility representatives. *(Limit to one (1) page plus any supporting documentation.)*

Contacts:

PG&E	Matt Heling (MGH9@PGE.com)
SCE	Mike Montoya (Michael.R.Montoya@sce.com)
SDG&E	Cherif Youssef (cyoussef@semprautilities.com) Frank Goodman (FGoodman@semprautilities.com) Bill Torre (WTorre@semprautilities.com)
CAISO	James Blatchford (JBlatchford@caiso.com)

Section 7: Budget Summary

Provide a budget for completing all tasks (and subtasks) as outlined in Section 4. The budget must be done by task (and subtask if appropriate). Provide a short budget narrative along with Exhibit B (Proposed Budget Summary). The narrative should include an

explanation of expenses (travel, equipment rental, major equipment purchases, materials, and supplies).

Applicants are cautioned that any major equipment purchased with CSI RD&D funds will be considered allowable, **only if** the equipment is necessary for completing the primary objectives of the proposed project, and renting or leasing the equipment at a lower cost is not an option. All equipment with a cost of \$5,000 or more will be subject to the terms and conditions as described in the Grant Agreement (attached as Exhibit C, Section 5.3). At the end of the grant term, the CPUC reserves the right to sell, donate or waive ownership rights to the equipment. *(Limit to three (3) pages.)*

Section 8: Match Funding

Discuss the match funding that will be brought to this project and identify the source and level of match funds using Exhibit B. Provide a short narrative regarding the match contribution (cash and in-kind). All match contributions must be quantified, substantiated, documented, and directly related to the specific project for the grant funding sought. Attach a letter of commitment or other documentation from each individual, company, or organization that is providing match funds. Applicants are strongly encouraged to include a utility as a partner in the project and secure some of the match funding from the utility partner. *(Limit to two (2) pages plus documentation of match.)*

Section 9: Schedule of Deliverables

List all key deliverables from the grant project and the timeline for completion (from start date of the project). *(Limit to two (2) pages.)*

All proposals should include the following deliverables for Task 1:

- One-page Project Summary at the start of the project
- One-page Project Summary upon completion of the project
- Project Presentations at Program Advisory Committee or other stakeholder or outreach meetings
- Monthly status reports
- Twice yearly project reports (May 15th and November 15th)
- Final Project Report

Section 10: Barrier Removal and Project Feasibility

Explain how your proposed project addresses a known barrier or gap in the market. Show how the project is both feasible and appropriate to reduce the barrier or gap. Demonstrate how the work outlined in the proposal can be completed within two years and address any contingencies, requirements, or dependencies that could affect the schedule or ability to complete the project. *(Limit to one (1) page.)*

Section 11: Market Connection

Identify the target audience for your research and the specific entities that will adopt, benefit from, or use the results of your project. Discuss how this research responds to known market needs. Identify any market partners that are included on the research team and discuss their role in the project. Describe the path to market for the results from this research and discuss how you intend to implement the commercialization of the products within California markets. *(Limit to one (1) page.)*

Section 12: Technology Transfer and Outreach

All CSI RD&D projects are funded with investor-owned utility ratepayer dollars. As a result, all products, outcomes and deliverables need to benefit the public and be made widely available. Please describe efforts and tasks that will enable effective and wide spread dissemination of research results. The efforts cannot be limited to making the final report publically available on a website. The applicant must describe specific plans to enable potential stakeholders to be aware of the project results. This could include, but is not limited to, webinars and conference presentations and well identified stakeholder groups. Proposals that include more specific technology transfer and outreach plans will receive a higher score. *(Limit to one (1) page.)*

Table 3-1: Summary of Page Limits

Section Title	Page Limit
Section 1: Project Summary	One (1) page
Section 2: Project Goals	Two (2) pages
Section 3: Project Performance/Cost Objectives	One (1) page
Section 4: Approach and Scope of Work	Eight (8) pages
Section 5: Project Personnel	One (1) page per individual
Section 6: Utility Participation	One (1) page plus supporting documentation
Section 7: Budget Summary	Three (3) pages
Section 8: Match Funding	Two (2) pages plus supporting documentation
Section 9: Schedule of Deliverables	Two (2) pages
Section 10: Feasibility	One (1) page
Section 11: Market Connection	One (1) page
Section 12: Technology Transfer and Outreach	One (1) page

4

Proposal Screening, Review, and Selection

Grant proposals received by the deadline will enter the screening, review, and evaluation process. The following section outlines that process.

4.1 Initial Screening

The CSI RD&D Program Manager will conduct an initial screening of each proposal to ensure completeness and conformity with the requirements of the grant solicitation. The CSI RD&D Program Manager will assign either “pass” or “fail” based on whether initial screening criteria are met. Table 4-1 provides more information about the initial screening criteria. **Proposals that fail one or more of the six criteria in Table 4-1 below will be eliminated.**

Table 4-1: Initial Screening Criteria

CRITERIA	SCORE
■ Proposal was submitted by the deadline and signed by an authorized representative of the applicant.	Pass / Fail
■ Proposal is complete and includes required sections and forms including detailed scope of work and budget.	Pass / Fail
■ Funding requested falls within the project size range for this solicitation.	Pass / Fail
■ Proposal meets the match funding requirements for this solicitation and includes documentation of match funding.	Pass / Fail
■ Proposal addresses one or more of the focus areas for this solicitation.	Pass / Fail
■ Proposal includes adequate information to assess the technical merits of the proposed project.	Pass / Fail

4.2 Technical Review

Proposals that pass initial screening will move forward for technical review. In this phase, the CSI RD&D Program Manager may use one or more independent technical experts to

review and provide comments and input on each proposal. Technical reviewers will be from academia, industry, or government and will assess proposals for technical feasibility, likelihood of success, connections to the market, capabilities of the proposed team, and overall strengths and weaknesses of the proposed approach. Technical reviewers will be required to sign a ‘conflict of interest’ statement to ensure that they do not have a stake in the proposal and that their review will be free from bias. The technical reviewers’ input will then be passed along to the Scoring Committee for consideration. The technical review process will use the criteria shown below in Table 4-2.

Table 4-2: Technical Review Criteria

TECHNICAL CRITERIA	POSSIBLE POINTS
1. How well does the proposed research address the seven key principles in the CSI RD&D Plan (see pg 1-2 for the seven key principles)?	20
2. What is the likelihood that the proposed research will lead to a return on investment/payback, a reduction in the installed price of a solar electric system, an increase in system performance, or in the overall growth of solar capacity in California?	10
3. Does the proposed research provide solutions to significant barriers with integrating high levels of PV in the grid or building a market for solar in the state?	10
4. Is the proposed project sound from a technical, economic, policy, and market perspective?	10
5. Is the proposed team qualified to conduct this work and do they have past experience performing similar work?	10
6. Are the research products valuable to the utilities with high penetration of PV or to other stakeholders working to build a sustainable solar market in California?	10
7. Is there a plan for effective dissemination of information gained from the project?	10
8. Is the amount and use of CSI RD&D funding requested appropriate for the work to be performed?	10
9. Overall merit (taking all factors into account)	10
Total Technical Points	100

4.3 Proposal Scoring

Proposals will be independently reviewed and scored by a committee with membership drawn from representatives of the CSI RD&D Program Manager, the CPUC, and other state or federal agencies, as well as possible representatives from the solar industry, universities, utilities, non-profit organizations, and/or others. In addition to their own independent analysis and assessment of the proposals, the Scoring Committee will take into consideration the review and input from the technical reviewers. The Scoring Committee members shall not have any financial or other stake in the applicants that are being scored (or their potential competitors), to allow for a fair and merit based selection.

The Scoring Committee will use the criteria shown in Table 4-3 below when scoring each proposal.

Table 4-3: Proposal Scoring Criteria

SCORING CRITERIA	MAX. POINTS POSSIBLE
1. How well does the proposed research address the seven key principles in the CSI RD&D Plan? (See pg 1-2 of this solicitation). (Section 2)	30
2. Are the performance and cost objectives well defined and appropriate? (Section 3)	10
3. Is the approach outlined in Section 4 appropriate to meeting the project goals and objectives? Is there enough detail to understand the specifics of what work will be done?	20
4. Is the proposed team for the project highly qualified to conduct the working being proposed? Do they have prior experience conducting similar work? (Section 5)	20
5. Does the proposed project include utility participation? Are participation and match funding from the utility partner substantiated and appropriate for the proposed project? (Section 6)	10
6. Are the amounts and uses of the funding requested appropriate for the work to be performed? Is the funding request reasonable? Is the funding request in-line with the potential benefits that can be realized? (Section 7)	10
7. How well does the proposed project leverage funds from other organizations? How well has the proposal demonstrated the match-funding component of the proposed project? Does the proposed project provide added value by collaborating and coordinating with other RD&D organizations? (Section 8)	20

SCORING CRITERIA	MAX. POINTS POSSIBLE
8. Are the proposed deliverables of value to the California market? Will they support the goals of the CSI program? (Section 9)	20
9. Does the proposed project address an important barrier to achieving the goals of the CSI RD&D Program? Is the proposed project sound from a technical, economic, policy, and market perspective? (Section 10)	30
10. How close is the proposed project to commercialization? Are the project results expected in the 1-3 year horizon? Is the proposed path to market for the results of this research practical and achievable? (Section 11)	20
11. Does the proposed project have an educational, technical transfer, or informational component? Are the research products valuable? Is there a plan for effective dissemination of information gained from the project? (Section 12)	10
Total Points Possible	200
Points Needed to Pass (75% of total)	150

The Scoring Committee’s final individual scores will be averaged to produce the final score. With a total possible score of 200, proposals must receive a total averaged score of 150 points (75%) to pass and be included in the final ranking. The passing scores will be used to create the final rank order list of proposals. Based on the availability of funding and the quality of the top ranking proposals, the Scoring Committee will provide a cutoff line and final funding recommendations to the CPUC for consideration. Ranking will be done within each of the three priority target areas for this solicitation.

4.4 Recommendation to CPUC

The CSI RD&D Program Manager will prepare a summary report for the CPUC’s Energy Division staff with a recommended list of projects for funding by Advice Letter process. The CPUC Energy Division will review the recommendations and prepare a resolution for consideration and possible approval by the CPUC.

4.5 Grant Agreements

Once the CPUC provides approval on the recommended grants, the CSI RD&D Program Manager will begin the process of developing grant agreements. During this phase, the CSI RD&D Program Manager will work closely with each grantee to refine the scope of work and budget to conform to the direction provided in the CPUC’s Final Resolution. As appropriate, the Program Manager will contact organizations providing match funding to ensure that there is no overlap in funding between the CSI RD&D funding portions and the match

funded portions of the project. Depending on the complexity of the project, it may take from one to three months to develop and finalize the grant agreements for successful proposals. Grantees are not allowed to begin any tasks or bill for any work until the grant agreement is fully executed. The grant agreement can be found in Exhibit C of this document.

PLEASE NOTE THAT ALL GRANTEES MUST ACCEPT THE GRANT TERMS AND CONDITIONS AS STATED IN EXHIBIT C. THERE WILL BE NO CHANGES TO THIS AGREEMENT. THE CPUC RESERVES THE RIGHT TO CANCEL THE AWARD AND REALLOCATE THE FUNDS IF AN ENTITY DOES NOT ACCEPT THE TERMS AND CONDITIONS AS STATED.

**California Solar Initiative Research, Demonstration, and
Deployment Program Grant Solicitation #3
GRANT APPLICATION COVER PAGE**

Exhibit A

a. Project Title:

b. Solicitation Target Area:

Primary Area: Grid Integration
 Secondary Area: Production Technologies and Business Development and Deployment

c. Applicant Category:

Individual Academic Institution National Laboratory
 Business Non-Profit Other

d. Grant Funding Requested: \$ _____

e. Match Funding Provided: \$ _____

f. Proposed Project Duration: _____

g. Principal Investigator/Project Manager:

(Serves as single point of contact for all communications)

Name: _____	Address: _____
Phone: _____	_____
Fax: _____	_____
E-mail: _____	_____
Organization: _____	_____
Position/Title: _____	_____

Principal Investigator/Project Manager Signature: _____

Date: _____

Official Representative Signature: _____

Date: _____

<i>Reserved for CSI RD&D Program Manager Use</i>		
Solicitation	Date Received	Proposal Number Assigned

EXHIBIT A INSTRUCTIONS
Grant Application Cover Page

Item a: Project Title

Provide a title for the project that is descriptive of the proposed work. The title must communicate the type of work being proposed.

Item b: Solicitation Target Area

Check the one box that corresponds to the target area that is most representative of the proposed work.

Item c: Applicant Category

Check the one box that represents the category under which you are applying for a grant.

Item d: Grant Funds Requested

Specify the amount of grant funds requested for use by the Applicant. This amount must match the amount shown on Exhibit B, line 4.

Item e: Match Funding Provided

Specify the amount of match funds provided by the Applicant. This amount must match the amount shown on Exhibit B, line 4.

Item f: Proposed Project Duration

Specify how many months you need to complete the project. The project's duration cannot exceed 24 months.

Item g: Principal Investigator/Project Manager

List the Principal Investigator (PI)/Project Manager (PM) for this project. This person will serve as the main contact for the project. In most cases the PI also serves as the PM.

PI/PM Signature:

Signature and date of PI/PM.

Official Representative Signature:

Signature and date of person authorized to sign on behalf of company or institution.

**California Solar Initiative Research, Demonstration, and
Deployment Program Grant Solicitation #3
PROPOSED BUDGET SUMMARY**

Exhibit B

Project Title:			
Project Tasks	<i>CSI RD&D Funds Requested</i>	<i>Match Funding</i>	<i>Total (CSI RD&D Funds + Match)</i>
Task 1 Project Management			
1.1 Project Management			
1.2 Reports			
1.3 Outreach			
Task Sub Total	\$ -	\$ -	\$ -
Task 2 <i>Proposed project task</i>			
<i>Insert sub tasks and related budgets as appropriate</i>			
Task Sub Total	\$ -	\$ -	\$ -
Task 3 <i>Next task</i>			
<i>Insert sub tasks and related budgets as appropriate</i>			
Task Sub Total	\$ -	\$ -	\$ -
<i>Expand table to include as many tasks as applicable to the proposed project</i>			
Task Sub Total	\$ -	\$ -	\$ -
OTHER DIRECT EXPENSES			
Travel <i>(combine all travel expenses on this line)</i>			
Equipment Rental/Use Fees			
Major Equipment Purchases <i>(for items costing over \$5,000)</i>			
Materials/Supplies/Equipment/Misc.			
Sub Total other expenses	\$ -	\$ -	\$ -
Total Project Budget	\$	\$	\$

EXHIBIT B INSTRUCTIONS

Proposed Budget Summary Form

Project Title

Please provide the full title of your project.

Project Tasks

Provide a listing of Tasks and subtasks for your project. Please note that Task 1 is for Project Management (see Description under Approach and Scope of Work).

Budget Amounts

The Proposed Budget Summary form includes columns for project funds from the following (by task):

- CSI RD&D funds requested—Provide the total amount of funding being requested for each task and subtask (if applicable). This amount should include all CSI RD&D funds for all salaries and wages for staff and subcontractor firms. Provide details for individual staff and subcontractors in the Project Personnel section of your proposal.
- Match funding—Provide the total amount of match for each task and subtask (if applicable) including applicants match along with any other sources of match funding for the project.
- Total (CSI RD&D + Match)

Other Direct Expenses

- List the total amount for each of the direct expenses (travel, equipment rental/use, major equipment purchases, and supplies), if applicable.
- Provide an itemized breakdown for each of these in the Budget section of your proposal.
- List any direct expenses that are either the applicant's match funding or other match funding.

Any major equipment purchases will be considered allowable as direct costs, only if the equipment is necessary for completing the primary objectives of the project and renting or leasing the equipment at a lower cost is not an option. All equipment purchased with CSI RD&D grant funds, with a unit cost of \$5,000 or more, will be subject to the terms and conditions as described in the Sample Grant Agreement (attached as Exhibit C, Section 5.3).

Total Project Budget

- The amounts in the bold blocks should show total grant funds requested, the total match funding provided, and the total budget for the project.

EXHIBIT C GRANT AGREEMENT

This Grant Agreement ("**Agreement**") is entered into as of this ____ day of _____, 2011 (the "**Effective Date**") by and between Itron, Inc., a Washington corporation having its principal place of business 2111 N. Molter Rd., Liberty Lake, WA 99019 ("**Itron**" or "**Program Manager**") and _____, having its offices at _____ ("**Grantee**"). Itron and Grantee may each be referred to as a "**Party**" and together as the "**Parties**."

WHEREAS, Grantee submitted a grant application to Itron for _____, (the "**Project**"), as more fully described in the scope of work, schedules and personnel, and deliverables included hereto as Exhibit A (the "**Scope of Work**"); and

WHEREAS, as program administrator for the California Solar Initiative (CSI) Research, Development, Demonstration, and Deployment Program ("**CSI RD&D**"), Itron is responsible for soliciting applications and entering into grant agreements with eligible applicants upon receiving funding approval from the California Public Utilities Commission ("**CPUC**"); and

WHEREAS, Grantee's Application has been selected to receive a grant award for the Project in the amount of \$_____, which the Grantee wishes to accept (the "**Grant**"), that shall be paid out of funds allocated and disbursed directly by Pacific Gas and Electric ("**PG&E**").

NOW, THEREFORE, in consideration of the mutual promises and covenants herein contained, the Parties agree as follows:

1. GRANT PURPOSE

1.1 Scope of Work and Purpose. Grantee will have overall responsibility for the timely completion of the Project in accordance with the Scope of Work set forth in Exhibit A and agrees to operate within the financial constraints of the approved Grant budget contained in Exhibit B.

1.2 Status of Parties The Grantee understands that this Agreement is between Itron as Program Manager and Grantee with funding being provided directly to Grantee by PG&E. Itron has contracted with PG&E to administer the CSI RD&D on behalf of the CPUC. Itron will recommend grant projects for funding to the CPUC and all final Grant funding decisions will be made by the CPUC.

1.3 Approval. The Grantee shall not commence work under this Agreement until all Parties have signed the Agreement. Any work performed prior to execution of this Agreement is performed at the Grantee's sole risk and expense, with no expectation of reimbursement.

2. TERM

The term of this Agreement shall commence on the Effective Date and continue for two (2) years unless otherwise terminated in accordance with the terms of this Agreement. The Agreement may be extended for an additional one (1) year term upon approval by Itron and the CPUC.

3. KEY PERSONNEL

Grantee's key personnel under this Agreement include the Principal Investigator and team members identified in Exhibit A. Those individuals identified as being key personnel shall be engaged with the Project for the duration of the Grant. The Grantee shall not replace or substitute key personnel, including the designated technical point of contact, without the prior, written consent of the Program Manager

4. PERFORMANCE OBLIGATIONS

4.1 Standard of Performance. The Grantee shall exercise the degree of skill and care required by customarily accepted industry standards and professional practices and procedures in the performance of work under this Agreement.

4.2 Financial Management Systems. The Grantee shall maintain financial management systems during the term of this Agreement that provide for (a) accurate, current and complete disclosure of the financial activity under this Agreement, (b) effective control over and accounting for all funds, (c) segregation of project funds from other projects or programs, and (d) accounting records supported by source documentation.

5. AMOUNT AND AUTHORIZED USE OF GRANT FUNDS

5.1 Use. In consideration of the various obligations undertaken by Grantee pursuant to this Agreement, Grant funds shall be used exclusively for the Project in accordance with the Scope of Work described in Exhibit A of this Agreement and for the amount set forth in Exhibit B, as such Exhibits may be amended from time to time. The Grantee may shift funds between the tasks, provided that no task increases more than 10% from the original approved budget. All other budget changes shall be approved by the Itron Grant Manager.

5.2 Travel. If set forth in Exhibit B, reimbursement for necessary travel and per diem shall be at the rates specified by the California Department of Personnel Administration for similar employees (<http://www.dpa.ca.gov/personnel-policies/travel/hr-staff.htm>) or the University of California for university faculty or employees (<http://www.ucop.edu/ucophome/policies/bfb/g28summary.pdf>).

5.3 Equipment. All equipment that Grantee intends to purchase under this Agreement with Grant funds must be included in the Application budget and approved in Exhibit B. Major

equipment purchases will be considered allowable as direct costs, only if the equipment is necessary for completing the primary objectives of the Grant and renting or leasing the equipment at a lower cost is not an option. All equipment purchased with CSI RD&D Grant funds, with a unit cost of \$5,000 or more will be subject to the following terms and conditions:⁷

- (a) title to all non-expendable equipment purchased with Grant funds shall remain with the CPUC; and
- (b) Grantee shall assume all responsibility for maintenance, repair, destruction and damage to equipment while in the possession of or subject to the control of the Grantee (costs for maintenance and insurance may be applied against the Grant).

Upon termination of the Grant Agreement, Itron, on behalf of the CPUC, may exercise any one or more of the following options for the equipment:

- (a) request that the equipment be returned to the CPUC or transferred to another state-owned or approved institution;
- (b) allow the Grantee to retain ownership of the equipment if there is evidence that the equipment is used for continued energy related research and the CPUC continues to receive data from the project for a negotiated term; and
- (c) allow the Grantee to purchase the equipment if there is no evidence that the equipment will continue to be used for energy related research. The purchase price of the equipment will be determined by the CPUC in light of the value of the research to the State of California.

6. DISBURSEMENT OF GRANT

6.1 Payment. Payment shall be made to the Grantee after receipt of a complete, accurate invoice and progress report ("**Payment Request**"). The format for the progress report that is to accompany each invoice can be found in Exhibit C. All Payment Requests must be approved by the Itron Grant Manager, and shall comply with the following requirements before payment is approved and funding is disbursed by PG&E:

- Provide an original copy of an itemized invoice signed by Grantee or designee of the organization or business.
- The invoice shall cover a period no shorter than one month and no greater than three months.
- Invoice(s) should be submitted within 30 days of the end of the invoice period except for the final invoice, which may be submitted up to 60 days following termination of the Grant Agreement. The final invoice must be clearly labeled "Final Invoice".
- Approved travel expenses listed on the invoice will only be reimbursed if a copy of the Grant Travel Expense Record or equivalent travel voucher is attached to the invoice.
- Invoices can only include expenses incurred within the term of the Agreement.

⁷ Equipment with a unit cost of less than \$5,000 will not be subject to the listed terms and conditions.

- All payments made under the Grant award shall be subject to audit, as described in Section 8.

Failure to use the address above may result in non-payment and return of the invoice to the Grantee. Failure to submit a timely Payment Request (more than 120 days following the end of the invoice period, including the Final Invoice) will result in non-payment and return of the invoice to the Grantee.

6.2 Retainage. The Grantee agrees that 10% of each Payment Request will be retained until completion of the Project. Retained amounts will be promptly disbursed to the Grantee, without interest, upon completion of the Project and receipt of the final report and invoice.

7. REPORTS

7.1 Biannual Progress Reports. The Grantee will be required to submit biannual progress reports during the term of this Agreement. These reports will contain information on progress to date on performance measures established in the Grant and serve as Project monitoring tools to determine the success of the Project relative to its objectives. These reports will be due May 15th and November 15th each year for the term of the Agreement. Information from the reports submitted in May could be included in the CSI Annual Report to the California Legislature. At a minimum, the progress reports will include a narrative on the status of the Project, work performed to-date, findings, and any deliverables produced. Financial information will include expenditures to date (both Project expenditures and Grant expenditures), percent completion, and any outstanding issues. The Biannual Progress Report will follow the same format contained in Exhibit C as the monthly progress reports. The Grantee may also be asked to provide informal periodic updates to the CPUC CSI RD&D Program Manager or the PG&E Contract Manager.

7.2 Final Report. With completion of the Project, the Grantee will submit a final report describing the Grant goals, activities conducted under the Project in pursuit of these goals, and a summary of Grant accomplishments. The final report must include copies of any deliverables, publications or reports produced. The Final Report instructions can be found in Exhibit D. The Final Report will be due no later than 90 days after termination of this Agreement.

8. INSPECTION AND REVIEW OF RECORDS

The CPUC, Itron, PG&E, or each of its duly authorized representatives, respectively, shall have the right to examine and audit pertinent books, documents, papers and records of the Grantee including financial transactions and supporting documents, general accounting systems, internal controls, management practices, policies and procedures pertaining to the performance of this Agreement. The Grantee will maintain financial records in such a fashion that it can provide substantiation to all expenditures related to the Grant for at least four years after the end date of the Grant.

9. STOP WORK

The Program Manager, with CPUC's authorization and direction may, at any time, by written notice to Grantee, require Grantee to stop all or part of the work set forth in Exhibit A ("**Stop Work Order**"). Stop Work Orders may be issued for any reason, including but not limited to, the Project exceeding budget, performance issues, out of scope work, delays in the Project schedule, and misrepresentations. Upon receipt of a Stop Work Order, the Grantee shall immediately take all necessary steps to comply with the Stop Order and minimize the incurrence of costs allocable to the work stopped. An equitable adjustment may be made by Itron based upon a written request by the Grantee for an equitable adjustment. The Grantee shall resume the stopped work only upon receipt of written instructions from the CPUC or the Program Manager, with CPUC's authorization and direction. In the event of a Stop Work Order, the Grantee shall be entitled to payment for acceptable and allowable work performed, and for all obligations not able to be terminated or cancelled made in connection with such work up to the date of termination, provided that in no event shall payment exceed the maximum amount set forth in Exhibit B.

10. TERMINATION

Either the grantee or Itron, as authorized and directed by the CPUC, shall have the option to terminate this Agreement at any time and for any reason upon giving the other party thirty (30) calendar days prior written notice. In the event of termination, the Grantee shall be entitled to payment for acceptable and allowable work performed, and for all uncancellable obligations made in connection with such work up to the date of termination, provided that in no event shall payment exceed the maximum amount set forth in Exhibit B.

11. EQUAL OPPORTUNITY/NON-DISCRIMINATION

Grantee shall comply with the provisions of Title VII of the Civil Rights Act of 1964 (42 USC 2000 as amended by the Equal Opportunity Act of March 24, 1972, Public Law No. 92-261) in that it shall not discriminate against any individual with respect to his or her compensation, terms, conditions, or privileges of employment; or discriminate in any way which would deprive or intend to deprive any individual of employment opportunities or otherwise adversely affect his or her status as an employee because of such individual's race, color, religion, sex, national origin, age, handicap, medical condition, or marital status.

The Grantee shall ensure that services and benefits are provided without regard to race, color, religion, sex, age, or national origin in accordance with Title VII of the Civil Rights Act of 1964. The Grantee shall comply with Section 503 of the Rehabilitation Act of 1973, as amended (29 USC 794), pertaining to the prohibition of discrimination against qualified handicapped.

12. RIGHTS OF PARTIES REGARDING DELIVERABLES, DATA, AND INTELLECTUAL PROPERTY

12.1 CPUC Rights in Deliverables. Deliverables and reports specified for delivery to Itron on behalf of the CPUC under this Agreement shall become the property of the CPUC. The CPUC may use, publish, and reproduce the deliverables and reports developed using CSI RD&D funds.

12.2 Rights of Technical, Generated and Deliverable Data.

- (a) *Grantee's Rights*. All data produced under this Agreement shall be the property of the Grantee, limited by the license retained by the CPUC in (b) below, and the rights the CPUC has in deliverables specified above in Section 12.1. The Grantee may mask or otherwise protect customer-specific or confidential data from disclosure to Itron, the CPUC or other third parties.
- (b) *CPUC's Rights*. The Grantee shall provide Itron and any designated reviewer(s) with a copy of all data produced under the Agreement, when requested. The Grantee is not required to copy and submit data that Itron has identified as being unusable to the CPUC and the CSI RD&D program, such as raw data that is too disaggregated or voluminous for practical application. Such data shall be retained at the Grantee's facility for inspection, review and possible copying by Itron or the CPUC for a minimum of three (3) years after final payment unless a longer period of records retention is stipulated. Upon request by the CPUC or Itron, the Grantee shall provide any designated reviewer(s) access to review data produced in the course of this Agreement that is not requested to be delivered to the CPUC or Itron. For all data produced under this Agreement, the CPUC and the Program Manager retain a no-cost, non-exclusive, non-transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, and produce and to authorize others to produce, translate, publish and use the data, subject to the provisions of the Reports clause "Limitation on the CPUC Disclosure of Information."

12.3 Proprietary Data. Proprietary data owned by the Grantee shall remain with the Grantee throughout the term of this Agreement and thereafter. The extent of Itron's access to the same and the testimony available regarding the same shall be limited to that reasonably necessary to demonstrate, in a scientific manner to the satisfaction of scientific persons, the validity of any premise, postulate or conclusion referred to or expressed in any deliverable or to establish a baseline for repayment purposes. Upon request by Itron or the CPUC, the Grantee shall provide access to review Grantee's proprietary data produced in the course of this Agreement that is not requested to be delivered to Itron or the CPUC. Itron shall not disclose any of the Grantee's proprietary data accessed or reviewed to any third party.

12.4 Preservation of Data. Any data that is reserved to the Grantee by the express terms hereof, and proprietary data and trade secrets that have been utilized to support any premise, postulate or conclusion referred to or expressed in any deliverable hereunder, shall be preserved by the Grantee at the Grantee's own expense for a minimum of three (3) years after final payment, unless a longer period of records retention is stipulated.

12.5 Destruction of Data. Before the expiration of three (3) years or the stipulated records retention period and before changing the form of or destroying any data (including proprietary data) or trade secrets, the Grantee shall notify Itron and the CPUC of any such contemplated action and the CPUC may, within thirty (30) days after said notification, determine whether it desires said data to be further preserved. If the CPUC so elects, the expense of further preserving said data shall be paid for by the CPUC. The Grantee agrees that the CPUC may at its own expense, have reasonable access to the data throughout the time during which the data is preserved. The Grantee agrees to use its best efforts to identify competent witnesses to testify in any court of law regarding said data or, at the expense of the CPUC, to furnish such competent witnesses.

12.6 Patent Rights. Patent rights for inventions will be the property of the Grantee, subject to the CPUC and Itron retaining a no-cost, nonexclusive, nontransferable, irrevocable, royalty-free, worldwide perpetual license to use or have practiced for or on behalf of the State of California the invention(s) for governmental purposes. The Grantee must obtain agreements to effectuate this clause with all persons or entities obtaining ownership interest in the patented invention(s). Previously documented inventions (whether patented or unpatented under the patent laws of the United States of America or any foreign country) are exempt from this sub clause.

12.7 March-In Rights. The Grantee shall forfeit and assign to the CPUC, at the CPUC's request, all rights to an invention if either: 1) the Grantee fails to apply for a patent on the subject inventions(s) developed under this Agreement within six (6) months of conceiving or first actually reducing the technology to practice, or, 2) the Grantee or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the invention. In this event, the Grantee agrees to relinquish all rights, subject to DOE reserved rights, to the subject invention to the CPUC. The CPUC will have the unfettered right to use and/or dispose of the rights in whatever manner it deems most suitable to help transfer the technology into the market place, including but not limited to, seeking patent protection, or licensing the invention.

12.8 CPUC's Rights to Invention. The Grantee and all persons and/or entities obtaining an ownership interest in an invention(s) shall include within the specification of any United States patent application, and any patent issuing thereon covering an invention, the following statement:

"This invention was made with State of California support under «Project Title». The CPUC has certain rights to this invention."

12.9 CPUC's Interest in Inventions. If the Grantee or any named subcontractor perfects a patent application on any invention, the Grantee shall notify the Itron Grant Manager and the CPUC's Contracts Manager. The CPUC's Contracts Manager will complete and file a Uniform Commercial Code (UCC.1) Financing Statement with the Secretary of State's Office.

12.10 Copyrights. Copyrightable work first produced under this Agreement shall be owned by the Grantee, limited by following license granted to the CPUC and Itron. The Grantee agrees to grant the CPUC and Itron a royalty-free, no-cost, nonexclusive, irrevocable, nontransferable, worldwide, perpetual license to produce, translate, publish, use and dispose of, and to authorize others to produce, translate, publish, use and dispose of all copyrightable work first produced or composed in the performance of this Agreement. The Grantee will apply copyright notices to all documents prepared for this Agreement that will be released to the public including reports, deliverables, articles submitted for publication, and all reprints, using the following form or such other form as may be reasonably specified by the CPUC. In the event software is developed that is not a deliverable under the Agreement, the Grantee shall have the right to copyright and/or patent such software and grants the CPUC and Itron with a royalty-free, no-cost, non-exclusive, irrevocable, non-transferable, worldwide, perpetual license to produce and use the software, its derivatives, and upgrades for governmental purposes.

12.11 Infringement Indemnity. The Grantee warrants that they will not, in supplying work under this Agreement's scope of work, knowingly infringe or misappropriate any intellectual property right of a third party, and that it will conduct a reasonable investigation of the intellectual property rights of third parties to avoid such infringement. The Grantee will defend and indemnify Itron and the CPUC 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 deliverable 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 tortuous act(s) or omission(s) by the Grantee, its employees, subcontractors or agents, in connection with or related to the deliverables or the Grantee's performance thereof under this Agreement.

This section will be removed **only** for a grantee that is a state entity.

12.12 Confidentiality. Unless special provisions have been made, the Grantee shall not provide to Itron or the CPUC information that has been designated as confidential. However, it is the intent of Itron and the CPUC to use and release Project results such as deliverables and data in a manner calculated to further the CPUC's CSI RD&D Program while protecting proprietary or patentable interests of the Parties. Therefore, if it has been deemed necessary for the Grantee to provide confidential information to Itron, it is agreed that Itron will not disclose information that the Grantee has identified as confidential without the prior written consent of Grantee. Itron and the CPUC shall have no obligation under this Section with respect to information that is: (i) publicly known; (ii) already known to Itron and the CPUC; (iii) lawfully disclosed by a third party; (iv) independently developed; or (v) disclosed pursuant to a legal requirement or order. In the event Itron and the CPUC intend to publish or have disclosed information the Grantee considers confidential, the Grantee's exclusive remedy is a civil court action for injunctive relief.

13. INDEMNITY

The Grantee shall hold harmless Itron, the CPUC, and PG&E and each of its affiliates, officers, directors, employees, or other representatives from and against any and all liability, loss, expense, attorneys fees or claims of injury or damages arising out of the performance of this Agreement.

This section will be removed **only** for a grantee that is a state entity

14. LIMITATION OF LIABILITY

IN NO EVENT WILL EITHER PARTY BE LIABLE TO THE OTHER UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR INCIDENTAL, SPECIAL, CONSEQUENTIAL (INCLUDING LOSS OR CORRUPTION OF DATA OR LOSS OF REVENUE, SAVINGS OR PROFITS) OR EXEMPLARY DAMAGES, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

EXCEPT FOR LIABILITY ARISING FROM BREACHES OF CONFIDENTIALITY OR FROM INDEMNIFICATION OBLIGATIONS, THE AGGREGATE LIABILITY OF GRANTEE AND ITS AFFILIATES AND ITS AND THEIR OFFICERS, DIRECTORS, EMPLOYEES OR OTHER REPRESENTATIVES, ARISING IN ANY WAY IN CONNECTION WITH THIS AGREEMENT—WHETHER UNDER CONTRACT LAW, TORT LAW, WARRANTY OR OTHERWISE—SHALL NOT EXCEED THE GRANT AMOUNT RECEIVED UNDER THIS AGREEMENT..

EXCEPT FOR LIABILITY ARISING FROM BREACHES OF CONFIDENTIALITY, THE AGGREGATE LIABILITY OF ITRON AND ITS AFFILIATES AND ITS AND THEIR OFFICERS, DIRECTORS, EMPLOYEES OR OTHER REPRESENTATIVES, ARISING IN ANY WAY IN CONNECTION WITH THIS AGREEMENT—WHETHER UNDER CONTRACT LAW, TORT LAW, WARRANTY OR OTHERWISE—SHALL NOT EXCEED THE AMOUNTS PAID BY PG&E TO ITRON AS PROGRAM MANAGER.

15. DISPUTES

In the event of a dispute between the Grantee and Itron, the Grantee may appeal the action to the CPUC. The Grantee will provide any relevant information, documentation, and/or extenuating circumstances that may support an alternative action. The CPUC shall have the sole authority to resolve the dispute. Any decision rendered shall be final and binding on all Parties.

16. PUBLICATIONS/ACKNOWLEDGEMENT OF SUPPORT/DISCLAIMER

The Grantee is responsible for assuring that an acknowledgement of support from the CPUC's CSI RD&D Program is made for any materials based on or developed under the Grant. Acknowledgement shall also be made orally during any news media interviews, including radio, television or news magazines. The Grantee is also responsible for assuring that every publication of material based on or developed under the Grant, except scientific articles or

papers appearing in scientific, technical or professional journals, contains the following disclaimer:

“Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the CPUC, Itron, Inc., or the CSI RD&D Program.”

17. MISCELLANEOUS

17.1 Non Assignment. Grantee may not assign or transfer its interests, rights or obligations under this Agreement by written agreement, merger, consolidation, operation of law or otherwise without the prior written authorization of the Program Manager or the CPUC. Any attempt to otherwise assign this Agreement by Grantee shall be null and void.

17.2 Severability. If any provision in this Agreement is held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions will in no way be affected or impaired thereby and such provision shall be interpreted so as to best accomplish the intent of the Parties within the limits of applicable law.

17.3 Survival. Any provision of this Agreement that contemplates performance or observance subsequent to termination or expiration of this Agreement shall survive termination or expiration and continue in full force and effect for the period so contemplated including, but not limited to, provisions relating to intellectual property ownership, payment terms, confidentiality, waiver of consequential damages, and cap on liability.

17.4 Non-Waiver. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively), only by a writing signed by an authorized representative of each Party and declared to be an amendment hereto. No delay or failure to require performance of any provision of this Agreement shall constitute a waiver of that provision.

17.5 Applicable Law. This Agreement and performance hereunder will be governed by and construed in accordance with the laws of the State of California.

17.6 Notices. Any notice required or permitted under this Agreement or required by law must be in writing and must be delivered in person, by facsimile, by certified mail (return receipt requested), or by a nationally recognized overnight service with all freight charges prepaid, to the address set forth below. Notices will be deemed to have been given at the time of actual delivery, if in person, or upon receipt (as evidenced by facsimile confirmation, return receipt or overnight delivery verification). Either Party may change its address for notices by written notice to the other Party in accordance with this section.

Itron:

Attn: General Counsel
Itron, Inc.
2111 North Molter Road
Liberty Lake, WA 99019
FAX (509) 891-3331

Grantee:**CPUC:**

Attn:
CPUC
505 Van Ness Avenue
San Francisco, CA 94102

17.7 Entire Agreement. This Agreement and any attachments hereto constitute the entire agreement between the Parties with respect to the subject matter hereof and supersede all previous agreements pertaining to such subject matter. All prior agreements, representations, warranties, statements, negotiations, understandings, and undertakings are superseded hereby and Customer represents and acknowledges that it has not relied on any representation or warranty other than those explicitly set forth in this Agreement in connection with its execution of this Agreement. In the event of any inconsistency between the provisions of this Agreement and anything contained in the Application, the provisions of this Agreement will prevail.

17.8 Third Party Beneficiary. The California Public Utilities Commission is hereby made a third party beneficiary under the terms of this Agreement.

17.9 Miscellaneous. Headings used in this Agreement are intended for convenience or reference only and will not control or affect the meaning or construction of any provision of this Agreement. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered will be deemed an original, and all of which together shall constitute one and the same agreement. This Agreement or any part hereof, may be amended from time to time hereafter only in writing executed by the Parties. Any principle of construction or rule of law that provides that an agreement shall be construed against the drafter of the agreement shall not apply to the terms and conditions of this Agreement. This Agreement will bind, and the rights, benefits and advantages will inure to, the Grantee's successors.

[Signature Page Follows]

[Signature Page to Grant Agreement]

AGREED TO AND ACCEPTED:

ITRON, INC.

GRANTEE

Signature: _____

Signature: _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____