

CONTRACT REQUEST FORM (CRF)



A) New Agreement 800-16-002 (To be completed by CGL Office)

800 Energy Assessments Division	Asish Gautam	22	916-654-3900
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Alliance for Sustainable Energy	26-1939242
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Modeling DG Adoption in California

4 / 1 / 2017	4 / 1 / 2019	\$ 500,000
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- Operational agreement (see CAM Manual for list) to be approved by Executive Director
- ARFVTP agreements \$75K and under delegated to Executive Director.

Proposed Business Meeting Date	2 / 15 / 2017	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Asish Gautam	Time Needed:	5 minutes

Please select one list serve. DistGen (Distributed Generation)

Agenda Item Subject and Description
 DOE-NATIONAL RENEWABLE ENERGY LABORATORY. Proposed resolution approving Agreement 800-16-002 with Department of Energy's National Renewable Energy Laboratory (NREL) for a \$500,000 contract to provide technical support to build a California specific version of its distributed energy resources adoption model (dGen). (ERPA funding) Contact: Asish Gautam. (Staff presentation: 5 minutes)

1. Is Agreement considered a "Project" under CEQA?
 - Yes (skip to question 2)
 - No (complete the following (PRC 21065 and 14 CCR 15378)):
 Explain why Agreement is not considered a "Project":
 Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because the contract is for technical assistance where tasks are collection and analysis of data, assessment of forecasting methodologies, writing reports, and developing computer models. None of the tasks in this contract involve physical construction, installation of equipment, or other activities that have potential for resulting in either a direct or indirect physical change in the environment. Rather, the work consists solely of computer-based and document-based activities.
2. If Agreement is considered a "Project" under CEQA:
 - a) Agreement **IS** exempt. (Attach draft NOE)
 - Statutory Exemption. List PRC and/or CCR section number: _____
 - Categorical Exemption. List CCR section number: _____
 - Common Sense Exemption. 14 CCR 15061 (b) (3)
 Explain reason why Agreement is exempt under the above section: _____
 - b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)
 Check all that apply

<input type="checkbox"/> Initial Study	<input type="checkbox"/> Environmental Impact Report
<input type="checkbox"/> Negative Declaration	<input type="checkbox"/> Statement of Overriding Considerations
<input type="checkbox"/> Mitigated Negative Declaration	

Legal Company Name:	Budget	SB	MB	DVBE
	\$ 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	\$ 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	\$ 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legal Company Name:

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J) Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
State - ERPA	2016-17	800.011	\$250,000
State - ERPA	2017-18	TBD	\$250,000
Funding Source			\$
Funding Source			\$
Funding Source			\$
R&D Program Area:	N/A		\$500,000
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Name:	Jennifer Schofield	Name:	Benjamin Sigrin
Address:	National Renewable Energy Laboratory 15013 Denver West Parkway	Address:	National Renewable Energy Laboratory 15013 Denver West Parkway
City, State, Zip:	Golden, CO 80401	City, State, Zip:	Golden, CO 80401
Phone:	303-384-7424	Fax:	- -
E-Mail:	jennifer.schofield@nrel.gov	E-Mail:	benjamin.sigrin@nrel.gov

Solicitation Select Type Solicitation #: _____ # of Bids: _____ Low Bid? No Yes
 Non Competitive Bid (Attach CEC 96)
 Exempt Select Exemption (see instructions)

Private Company (including non-profits)
 CA State Agency (including UC and CSU)
 Government Entity (i.e. city, county, federal government, air/water/school district, joint power authorities, university from another state)

If yes, check appropriate box: No Yes
 SB MB DVBE

Not Applicable (Agreement is with a CA State Entity or a membership/co-sponsorship)
 Public Resources Code 25620, et seq., authorizes the Commission to contract for the subject work. (PIER)
 The Services Contracted:
 are not available within civil service
 cannot be performed satisfactorily by civil service employees
 are of such a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system.
 The Services are of such an:
 urgent
 temporary, or
 occasional nature
 that the delay to implement under civil service would frustrate their very purpose.

Justification:
 NREL is the sole developer of its dGen forecasting model and is thus best suited for modifying this model to meet staff's needs. Based on existing research products, NREL has proven itself to be capable in producing high quality forecasting models including leveraging granular geospatial data such as solar irradiance. Once NREL has modified its model, NREL will train staff to use the model to a point where staff can independently run and modify the model themselves.

A. Reimbursement in arrears based on:
 Itemized Monthly Itemized Quarterly Flat Rate One-time
 B. Advanced Payment
 C. Other, explain:

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Q) Retention		
1. Is Agreement subject to retention?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
If Yes, Will retention be released prior to Agreement termination?	<input type="checkbox"/> No	<input type="checkbox"/> Yes

N/A per Contracts Manual (Section 4, p. 8), rates for other governmental entities do not require justification.

1. <input checked="" type="checkbox"/> Exempt (Interagency/Other Government Entity)		
2. <input type="checkbox"/> Meets DVBE Requirements	DVBE Amount:\$ 0	DVBE %: _____
<input type="checkbox"/> Contractor is Certified DVBE		
<input type="checkbox"/> Contractor is Subcontracting with a DVBE: <u> Name of DVBE Company </u>		
3. <input type="checkbox"/> Contractor selected through CMAS or MSA with no DVBE participation.		
4. <input type="checkbox"/> Requesting DVBE Exemption (attach CEC 95)		

1. Will there be Work Authorizations?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
2. Is the Contractor providing confidential information?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
3. Is the contractor going to purchase equipment?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
4. Check frequency of progress reports		
<input type="checkbox"/> Monthly <input checked="" type="checkbox"/> Quarterly <input type="checkbox"/> Other...		
5. Will a final report be required?	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
6. Is the Agreement, with amendments, longer than a year? If yes, why?	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes
The total funding of this contract was split equally over two fiscal years.		

1. Exhibit A, Scope of Work	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Attached
2. Exhibit B, Budget Detail	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Attached
3. CEC 96, NCB Request	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Attached
4. CEC 95, DVBE Exemption Request	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Attached
5. CEQA Documentation	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Attached
6. Resumes	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Attached
7. CEC 105, Questionnaire for Identifying Conflicts	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Attached

Agreement Manager	Date	Office Manager	Date	Deputy Director	Date
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Exhibit A
SCOPE OF WORK

TASK LIST

Task #	Task Name
1	Agreement Management
2	Literature Review
3	Data Gathering and Organization
4	Model Development
5	Model Runs
6	Project Documentation
7	Training
8	Identification of Future Model Enhancements

ACRONYMS/GLOSSARY

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

Acronym	Definition
CCM	Commission Contract Manager
NREL	National Renewable Energy Laboratory
BTM	Behind the meter
DER	Distributed Energy Resources
PV	Photovoltaics

BACKGROUND/PROBLEM STATEMENT

Forecasting the adoption of distributed energy resources (DER) is becoming an increasingly important component of long term electric demand forecasting. DER adoption has increased tremendously in the last several years driven by continued decrease in system costs, innovative ownership models, an increased awareness of environmental issues by homeowners, and federal and state policies promoting DER resources mainly photovoltaics (PV). Further, California's evolving energy policy landscape may bring fundamental changes potentially impacting future DER adoption such as:

- Regulating how DER system owners may interconnect to the distribution system
- Changes to electric utility rates which may impact future adoption
- Compensation of DER system owners for their surplus generation
- Policies requiring DER in residential new construction
- Aggregation of DER systems to bid into wholesale markets

High levels of DER adoption can impact the broader electric transmission and distribution system. For example, high levels of PV adoption can lower the electric load seen by utilities and the grid operator and make this load more variable over time with rapid swings in load. These rapid swings in load will require investments in flexible generation resources to meet the increased variability of load as observed by utilities and the grid operator. Additionally, greater generation from PV systems can push the traditional utility summer afternoon peak periods, driven typically by temperature related demand for air conditioning, to a peak period occurring later in the evening. To better address these issues in the biannual integrated energy policy report (IEPR), the Energy Commission requests the assistance of the U.S. Department of Energy's (DOE's) National Renewable Energy Laboratory (NREL) in developing a custom "California" version of its dGen model¹. The dGen model is a geospatially rich, bottoms up, agent-based market penetration model that simulates the potential adoption of DERs for residential, commercial, and industrial entities.

GOALS OF THE AGREEMENT

The goal of this project is to develop a forecasting model of solar and storage adoption for use by staff to support long term energy demand forecasting. The key outputs of the model are historical and a 10-year forecast of adoption levels and hourly forecast of gross load, generation, energy storage operation, and resulting net load by forecast climate zone and customer sector and subsector for each year. The design of the model will be inspired by the NREL's market penetration model – dGen. The dGen model provides significant advances and replaces NREL's deprecated Solar Deployment System (SolarDS) model².

FORMAT/REPORTING REQUIREMENTS

Deliverables/Reports

When creating reports, the Contractor shall use and follow, unless otherwise instructed in writing by the Commission Contract Manager (CCM), the latest version of the Consultant Reports Style Manual published on the Energy Commission's web site:

http://www.energy.ca.gov/contracts/consultant_reports/index.html

Each final deliverable shall be delivered as one original, reproducible, 8 ½" by 11", camera-ready master in black ink. Illustrations and graphs shall be sized to fit an 8 ½" by 11" page and readable if printed in black and white.

Electronic File Format

The Contractor shall deliver an electronic copy (CD ROM or memory stick or as otherwise specified by the CCM) of the full text in a compatible version of Microsoft Word (.doc).

¹ <http://www.nrel.gov/analysis/dgen/>

² Denholm, Paul, Easan Drury, and Robert Margolis. 2009. [The Solar Deployment System \(SolarDS\) Model: Documentation and Sample Results](#). Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-45832.

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

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

Software Application Development

If this scope of work includes any software application development, including but not limited to databases, websites, models, or modeling tools, contractor shall utilize the following standard Application Architecture components in compatible versions:

- Microsoft ASP.NET framework (version 3.5 and up) Recommend 4.0
- Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5
- Visual Studio.NET (version 2008 and up) Recommend 2010
- C# Programming Language with Presentation (UI), Business Object and Data Layers
- SQL (Structured Query Language)
- Microsoft SQL Server 2008, Stored Procedures Recommend 2008 R2
- Microsoft SQL Reporting Services Recommend 2008 R2
- XML (external interfaces)

Any exceptions to the Software Application Development requirements above must be approved in writing by the Energy Commission Information Technology Services Branch.

TASK 1- AGREEMENT MANAGEMENT

Task 1.1 Kick-off Meeting

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

The Contractor shall:

- Attend a “kick-off” meeting with the CCM, the Contracts Officer, and a representative of the Accounting Office. The meeting will be held via Web-Ex or teleconference. The Contractor shall include their Project Manager, Contracts Administrator, Accounting Officer, and others designated by the CCM in this meeting. The administrative and technical aspects of this Agreement will be discussed at the meeting.
- If necessary, prepare an updated Schedule of Deliverables based on the decisions made in the kick-off meeting.

The CCM shall:

- Arrange the meeting including scheduling the date and time.
- Provide an agenda to all potential meeting participants prior to the kick-off meeting.

Deliverables:

- An Updated Schedule of Deliverables (if applicable)

Task 1.2 Invoices

The Contractor shall:

- Prepare invoices for all reimbursable expenses incurred performing work under this Agreement in compliance with the Exhibit B of the Terms and Conditions of the Agreement. Invoices shall be submitted with the same frequency as progress reports (task 1.4). Invoices must be submitted to the Energy Commission's Accounting Office.

Deliverables:

- Invoices

Task 1.3 Manage Subcontractors

The goal of this task is to ensure quality products, to enforce subcontractor Agreement provisions, and in the event of failure of the subcontractor to satisfactorily perform services, recommend solution to resolve the problem.

The Contractor shall:

- Manage and coordinate subcontractor activities. The Contractor is responsible for the quality of all subcontractor work and the Energy Commission will assign all work to the Contractor. If the Contractor decides to add new subcontractors, they shall 1) comply with the Terms and Conditions of the Agreement, and 2) notify the CCM who will follow the Energy Commission's process for adding or replacing subcontractors.

Task 1.4 Progress Reports

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

The Contractor shall:

- Prepare progress reports which summarize all Agreement activities conducted by the Contractor 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 within 15 calendar days after the end of the reporting period. The CCM will provide the format for the progress reports.

Deliverables:

- Quarterly Progress Reports

Task 1.5 Final Report

The goal of this task is to prepare a comprehensive written Final Report that describes the original purpose, approach, results and conclusions of the work completed under this Agreement. The Final Report shall be prepared in language easily understood by the public or layperson with a limited technical background.

The Final Report must be completed before the termination date of the Agreement in accordance with the Schedule of Deliverables.

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

The Contractor shall:

- Prepare the draft Final Report for this Agreement in accordance with the approved outline.
- Submit the draft Final Report for review and comment. The CCM will provide written comments to the Contractor. The Contractor shall review the comments and discuss any issues with the recommended changes with the CCM.
- Prepare and submit the Final Report, incorporating CCM comments.

Deliverables:

- Draft Final Report
- Final Report

Task 1.6 Final Meeting

The goal of this task is to discuss closeout of this Agreement and review the project.

The Contractor shall:

- Meet with Energy Commission staff prior to the term end date of this Agreement. The meeting will be held via Web-Ex or teleconference. This meeting will be attended by the Contractor Project Manager and the CCM. The CCM will determine any additional appropriate meeting participants. The administrative and technical aspects of Agreement closeout will be discussed at the meeting.
- Present findings, conclusions, and recommended next steps (if any) for the Agreement, based on the information included in the Final Report.
- Prepare a written document of meeting agreements and unresolved activities.
- Prepare a schedule for completing the closeout activities for this Agreement, based on determinations made within the meeting.

Deliverables:

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

TECHNICAL TASKS

Task 2 Literature Review

The goal of this task is to conduct literature review of adoption forecast modeling methodologies, estimating electricity generation from PV systems, and technical and economic analysis of energy storage systems to support tasks 3 and 4.

The Contractor shall:

- Conduct literature review of methods for forecasting adoption of DERs such as PV. At a minimum, the contractor will:
 - Research the various forms of technology adoption forecasting models
 - Model estimation and calibration methods
 - Discuss trade-offs among the various adoption models such as but not limited to model flexibility and extensibility, data requirements, and forecast performance
- Conduct literature review of methods for segmenting PV system owners into representative fleets based on PV system characteristics such as but not limited to geography, tilt, azimuth, mounting type, tracking ability, module type and electrical efficiency, and system degradation
- Conduct literature review for methods and data requirements for estimating PV generation for PV fleets:
 - At a minimum, the literature review will discuss the use of actual weather data to estimate PV generation for historical years and typical weather data for the forecast period including development of the typical weather data for the forecast period for each PV fleet. The literature review will also review methodologies for adapting PV generation estimates from tools such as PVWatts to reflect historical weather data for PV fleets. Further, the literature review will also examine data requirements and methodological issues for estimating PV generation for extreme weather scenarios.
- Conduct literature review of energy storage technologies including but not limited to:
 - Technical and economic representation of battery storage technologies including costs and performance over time including but not limited to energy storage charging and discharging cycles, depth of discharge, and lifecycle performance degradation
 - The operation of energy storage systems, both standalone or paired with a PV system, under various electric rate structures.
- Based on the results of literature survey, submit a Literature Review report that discusses and makes recommendations on the following:
 - On an adoption methodology to use in forecasting the future adoption of PV systems.
 - On a methodology to segment individual PV systems into PV fleets.
 - On a methodology to use to estimate PV generation for PV fleets based on actual historical weather data
 - On a methodology to use to adapt outputs of PV generation from tools such as PVWatts to reflect actual weather variables
 - On a methodology to use to characterize the technical and economic characteristics of energy storage systems

Deliverables:

- A draft Literature Review report.
- A revised Literature Review report incorporating staff comments.

Task 3 Data Gathering and Organization

The goal of this task is to outline and collect the specific data requirements which the Contractor will use to create a California specific version of its dGen model. Data used to train and operate the model will come from a variety of public sources as well as non-public data which staff may have available to improve the model specification.

The Contractor shall:

- Take inventory of data available to staff and determine if the data can be used in the development of the model.
- Participate in discussions with staff from electric utilities and other government agencies, as directed by staff, to identify any other data sources or analytic needs that may be relevant for the development of the model.
- Collaborate with staff to use additional data obtained from the ongoing survey efforts currently undertaken by staff.
- Create a Data Plan that identifies data requirements relevant to tasks 4 and 5.
- Prepare relevant data collected by identifying and remedying data quality issues.
- Organize and finalize data.
- Develop a database to organize and store data
- Create programs in the Python programming language to interface with the database to support tasks 4 and 5.
- Work with staff to determine structure of data for model handoff including ensuring that staff has sufficient technical capacity to operate and maintain the data after the contract terminates.

Deliverables:

- A draft Data Plan report of data to be used to support tasks 4 and 5 including documentation of the proposed database and computer code developed under this task.
- A revised Data Plan report incorporating staff comments.

Task 4 Model Development

The goal of this task is to develop a forecasting model of solar and energy storage adoption for use by staff to support long term energy demand forecasting. The key outputs of the model are historical and a 10-year forecast of adoption levels (capacity and customer count) and a hourly forecast of gross load, generation, energy storage operation, and resulting net load by forecast climate zone and customer major sector and subsector for each year.

The Contractor shall:

- Develop and document the core methods and algorithms for the adoption model, drawing on recommendations of the model architecture and database developed in Tasks 2 through 3 to estimate technical and economic potential in each forecast climate zone and customer major sector and subsector for each historical and forecast year.
- Develop the model using the Python programming language and use Microsoft structured query language (SQL) to interact with the database developed in Task 3. Operation of the model will be via a command line interface capable of running in Microsoft Server 2012.
- Develop and document methods and algorithms to forecast adoption based on methodology and data collected in Tasks 2 through 3.
- Include all the above in a Methodology and Model Algorithms report.

Deliverables:

- A draft Methodology and Model Algorithms report documenting the methodology of core methods and algorithms of the model developed in this task.

- A revised Methodology and Model Algorithms report incorporating staff comments.

Task 5 Model Runs to Support Assessment of DER Growth Scenarios

The goal of this task is to work with staff to apply the model to a utility or region in California to begin handover of the model and to develop staff technical knowledge to independently modify and run the model. The model runs could have an explicit purpose, for example, use in an annual Commission IEPR energy demand forecast. The model runs will include a number of scenario assumptions developed jointly with staff and the Contractor.

The Contractor shall:

- Develop a timeline and plan for including model runs
- Jointly work with staff to identify and design scenario inputs relevant for analysis.
- Conduct scenario analysis to understand the potential range of adoption under a range of cost and policy assumptions and include results in an Assessment of DER Growth Scenarios report
- Present results to staff and other stakeholders identified by staff

Deliverables:

- Draft Assessment of DER Growth Scenarios report documenting scenario assumptions and results.
- A revised Assessment of DER Growth Scenarios report incorporating staff comments.

Task 6 Project Documentation

The goal of this task is to prepare technical documentation of the methodology, data sources, model inputs and assumptions used in the completion of tasks 2 through 5. Documentation may leverage the model framework developed in task 4, but should be provided in sufficient detail as to allow a third party to independently replicate the analysis developed in task 5, given similar resources.

The Contractor shall:

- Create a Project Documentation report describing in detail the technical elements of all tasks completed under this contract.
- Transfer, via CD, to the Commission fully developed model used in the completion of tasks 2 through 5 such as spreadsheets, databases, models, computer code, and other software applications, as well as all processed data used as input to these tools.

Deliverables:

- Draft Project Documentation report documenting the project.
- A revised Project Documentation report incorporating staff comments.

Task 7 Training

The goal of this task is to provide technical support to staff necessary for staff to independently design scenarios, make model enhancements and changes, and run the model after the contract ends. This task also includes technical support and short-term data restoration.

The Contractor shall:

- Conduct a 2-day in-person training session at a location and time chosen by staff. The training shall be complimentary to the documentation developed in Task 6. As a result of the training, it is expected that staff will be able design scenarios, make minor model enhancements/changes, operate the model, and perform analysis on model results.
- Provide up to 60 hours of technical support and advice via phone or Webex after delivery of the model. The technical support shall relate to operation of the model, updates to model inputs, interpretation of results, and interpretation of errors. The contractor shall not be liable for features added by staff after model hand-off. The contractor shall not be liable for long-term IT support including server maintenance, data backup and transfers, and software upgrades or patching.
- Maintain capability to restore databases and software to the state they existed at model hand-off for one year following hand-off, in case of irreversible or catastrophic data loss or corruption. If a model restoration is required it shall be accounted for in the technical support hours.

Deliverables:

- Provide a written summary of technical support and training provided to staff.

Task 8 Identification of Future Model Enhancements

The goal of this task is to work with staff to identify future model enhancements.

The Contractor shall:

- Create a Recommendations for Future Model Enhancement report that summarizes insights gained under this project and identify future model enhancements and to expand model capabilities to better support long term electric transmission and distribution planning such as but not limited to:
 - Extension of the model to better support transmission and distribution planning such as greater geographic disaggregation
 - Ability to model electric system benefits from increased adoption of DERs based on locational and other system benefits

Deliverables:

- Draft Recommendations for Future Model Enhancement report.
- A revised Recommendations for Future Model Enhancement report incorporating staff comments.

SCHEDULE OF DELIVERABLES AND DUE DATES

Task Number	Deliverable	Due Date
1		
1.1	An Updated Schedule of Deliverables	If applicable
1.2	Invoices	With progress report
1.4	Quarterly Progress Reports	Quarterly
1.5	<ul style="list-style-type: none"> • Draft Final Report • Final Report 	1/1/19 3/1/19
1.6	<ul style="list-style-type: none"> • Written documentation of meeting agreements 	2/1/19 1/1/19

	<ul style="list-style-type: none"> • Schedule for completing closeout activities 	
2	<ul style="list-style-type: none"> • Draft Literature Review Report • Revised Literature Review Report 	10/1/17 12/1/17
3	<ul style="list-style-type: none"> • Draft Data Plan report • Revised Data Plan report 	3/1/18 4/1/18
4	<ul style="list-style-type: none"> • Draft Methodology and Model Algorithms report • Revised Methodology and Model Algorithms report 	7/1/18 8/1/18
5	<ul style="list-style-type: none"> • Draft Assessment of DER Growth Scenarios report • A revised Assessment of DER Growth Scenarios report 	10/1/18 11/1/18
6	<ul style="list-style-type: none"> • Draft Project Documentation report • Revised Project Documentation report 	12/1/18 1/1/19
7	<ul style="list-style-type: none"> • Provide a written summary of technical support and training provided to staff 	1/1/19
8	<ul style="list-style-type: none"> • Draft Recommendations for Future Model Enhancement report • Revised Recommendations for Future Model Enhancement report 	1/1/19 2/1/19

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: DOE – NATIONAL RENEWABLE ENERGY LABORATORY

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

RESOLVED, that the Energy Commission approves Agreement 800-16-002 with NREL for a \$500,000 contract to provide technical support to build a California specific version of its distributed energy resources adoption model (dGen); and

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

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on February 15, 2017.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat