



**CALIFORNIA
ENERGY COMMISSION**



**California Energy Commission
March 12, 2026 Business Meeting
Backup Materials for Qualus, LLC (Qualus)**

The following backup materials for the above-referenced agenda item are available in this PDF packet as listed below:

1. Proposed Resolution
2. Contract Request Form
3. Scope of Work

CALIFORNIA ENERGY COMMISSION
PROPOSED RESOLUTION: Qualus, LLC (Qualus)
RESOLUTION NO: 26-0312-XX

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

RESOLVED, that the CEC approves Agreement 800-25-005 with Qualus for a \$28,801 contract to provide CEC with technical support to update the Commercial Forecast Model. Qualus will migrate forecast model code to modern software, revise key inputs (e.g., energy use intensities, saturations), improve forecasting capabilities, create a user manual, and provide training to CEC staff; and

FURTHER BE IT RESOLVED, that the Executive Director or their designee shall execute the same on behalf of the CEC.

APPROVED AND ADOPTED this 12th day of March 2026, by the following vote:

AYE:

NAY:

ABSENT:

ABSTAIN:

CERTIFICATION

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly approved and adopted by affirmative vote of the CEC at a meeting held on March 12, 2026.

Kim Todd
Secretariat



CONTRACT REQUEST FORM (CRF)

A. New Agreement Number

IMPORTANT: New Agreement # to be completed by Contracts, Grants, and Loans Office.

New Agreement Number: 800-25-005

B. Division Information

1. Division Name: Energy Assessments
2. Agreement Manager: Sabaratnam Thamilsaran
3. MS-22
4. Phone Number: 916-237-2528

C. Contractor's Information

1. Contractor's Legal Name: Qualus, LLC

D. Title of Project

Title of project: Commercial Forecast Model Update

E. Term and Amount

1. Start Date: March 30, 2026
2. End Date: October 31, 2026
3. Amount: \$ 28,801

F. Business Meeting Information

1. Operational agreement to be approved by Executive Director? No
2. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
3. The Proposed Business Meeting Date: February 11, 2026
4. Consent or Discussion? Consent
5. Business Meeting Presenter Name: N/A
6. Time Needed for Business Meeting: N/A
7. The email subscription topic is: Energy Policy (Integrated Energy Policy Report)

Project Description:

Qualus, LLC (Qualus). Proposed resolution approving Agreement 800-25-005 with Qualus for a \$28,801 contract to provide CEC with technical support to update the Commercial Forecast Model, and adopting staff's recommendation that this action is exempt from CEQA. Qualus will migrate forecast model code to modern software, revise key inputs (e.g., energy use intensities, saturations), improve forecasting capabilities, create a user manual, and provide training to CEC staff. (General Fund). Contact: Mohsen Abrishami

G. California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?

No

If yes, skip to question 2.

If no, complete the following (PRC 21065 and 14 CCR 15378) and 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 work in this contact is



providing technical expertise to the Energy Assessments Division, which involves forecasting and analysis.

2. If Agreement is considered a "Project" under CEQA answer the following questions.

a) Agreement **IS** exempt?

No

Statutory Exemption?

No

If yes, list PRC and/or CCR section number(s) and separate each with a comma. If no, enter "None" and go to the next question.

PRC section number: None

CCR section number: None

Categorical Exemption?

No

If yes, list CCR section number(s) and separate each with a comma. If no, enter "None" and go to the next question.

CCR section number: None

Common Sense Exemption? 14 CCR 15061 (b) (3)

No

If yes, explain reason why Agreement is exempt under the above section. If no, enter "Not applicable" and go to the next section.

b) Agreement **IS NOT** exempt.

IMPORTANT: consult with the legal office to determine next steps.

Yes

If yes, answer yes or no to all that applies. If no, list all as "no" and "None" as "yes".

| Additional Documents | Applies |
|--|----------------|
| Initial Study | No |
| Negative Declaration | No |
| Mitigated Negative Declaration | No |
| Environmental Impact Report | No |
| Statement of Overriding Considerations | No |
| None | Yes |

H. Is this project considered "Infrastructure"?

No

I. Subcontractors

List all Subcontractors listed in the Budget (s). Insert additional rows if needed. If no subcontractors to report, enter "No subcontractors to report" and "0" to funds. **Delete** any unused rows from the table.



| Subcontractor Legal Company Name | Budget |
|----------------------------------|--------|
| No subcontractors to report | \$ 0 |

J. Key Partners

List all key partner(s). Insert additional rows if needed. If no key partners to report, enter “No key partners to report.” **Delete** any unused rows from the table.

| Key Partner Legal Company Name |
|--------------------------------|
| No Key Partners |

K. Budget Information

Include all budget information. Insert additional rows if needed. If no budget information to report, enter “N/A” for “Not Applicable” and “0” to Amount. **Delete** any unused rows from the table.

| Funding Source | Funding Year of Appropriation | Budget List Number | Amount |
|----------------|-------------------------------|--------------------|-------------|
| General Fund | 25/26 | 800.100 | \$28,801.95 |

TOTAL Amount: \$28,801.95

R&D Program Area:

Explanation for “Other” selection

Reimbursement Contract #:

Federal Agreement #:

L. Contractor’s Contact Information

1. Contractor’s Administrator/Officer

Name: Sasha Baroiant

Address: 100 Colonial Parkway, Suite 400

Lake Mary, FL 32746

Phone: 916-216-7939

E-Mail: sasha.baroiant@qualuscorp.com

2. Contractor’s Project Manager

Name: Sasha Baroiant

Address: 100 Colonial Parkway, Suite 400

Lake Mary, FL 32746

Phone: 916-216-7939

E-Mail: sasha.baroiant@qualuscorp.com



M. Selection Process Used

There are three types of selection process. List the one used for this CRF.

| Selection Process | Additional Information |
|--|--|
| Competitive Solicitation # | Solicitation No.: RFP-22-802 Number of Bids: 4 Low Bid: Not Applicable |
| Non Competitive Bid (<i>Attach DGS-GSPD-09-007</i> https://www.dgs.ca.gov/PD/Forms) | DGS approved extension |
| Exempt | Not Applicable |

N. Contractor Entity Type

| Contractor Entity Type | Yes or No? |
|---|------------|
| Private Company (<i>including non-profits</i>) | Yes |
| CA State Agency (<i>including UC and CSU</i>) | No |
| Government Entity (<i>i.e. city, county, federal government, air/water/school district, joint power authorities, university from another state</i>) | No |

O. Is Contractor a certified Small Business (SB), Micro Business (MB) or Disabled Veterans Business Enterprise (DVBE)?

The contractor is a certified: No.

P. Civil Service Considerations

- a. Not Applicable (Agreement is with a CA State Entity or a membership/co-sponsorship)? No
- b. Public Resources Code 25620, et seq., authorizes the Commission to contract for the subject work. (PIER) No
- c. The Services Contracted: No

If no, go to the next question. If yes, which of the following applies to the contract? More than one can apply, list each answer choice, and separate them with a comma:

- are not available within civil service
- cannot be performed satisfactorily by civil service employee
- 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 following applies to the contract: are of such a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system”.



- d. The Services are of such an urgent, temporary, or occasional nature that the delay to implement under civil service would frustrate their very purpose?

“Urgent”.

Justification:

This type of expertise is not available through civil service. This technical support contract provides the necessary specialized expertise and technical support to complement staff’s current analytic capabilities. It also fills in highly technical and specialized knowledge gaps that will be needed to quickly and accurately assess California’s ever-changing and highly integrated energy systems. The CFM update contract has already used over 1,850 hours of technical support porting the vintage calculation routines from FORTRAN to R, updated input files, and enhanced functionality. The work has been performed by two staff (currently Qualus, LLC. and formerly ADM Associates, Inc.) with the necessary experience and familiarity with the complex model to maintain and update it in a timely and cost-effective manner during 2026, the first year that the new model is to be utilized in the Energy Commission’s forecast..

Q. Payment Method

1. Is the payment method Reimbursement, Advanced Payment, or Other?
Reimbursement.
If Other, explain:.
2. If Reimbursement, is it in arrears based on Itemized Monthly, Itemized Quarterly, Flat Rate, or One-time?
Itemized Monthly

R. Retention

Is Agreement subject to retention? Yes
If Yes, Will retention be released prior to Agreement termination? No.

S. Justification of Rates

The rates are similar to the rates for this company in a previous contract 800-23-002

T. Disabled Veteran Business Enterprise Program (DVBE)

Provide requested additional information.

1. Exempt (Interagency/Other Government Entity) No
2. Meets DVBE Requirements DVBE No
Amount: \$ 0 DVBE %:
3. Is the Contractor Certified DVBE or Subcontracting with a DVBE? If subcontracting with a DVBE, provide the name of the DVBE company. If none applies, enter “Not Applicable”.
No
4. Contractor selected through CMAS or MSA with no DVBE participation No
5. Requesting DVBE Exemption (attach CEC 95) Yes



U. Miscellaneous Agreement Information

1. Will there be Work Authorizations? No.
2. Is the contractor providing confidential information? No.
3. Is the contractor going to purchase equipment? No.
4. What is the check frequency of the progress reports? Monthly, Quarterly, or Other? If Other, please provide explanation.
Monthly
5. Will a final report be required? No.
6. Is the Agreement, with amendments, longer than three years? If yes, why? No

V. The following items should be attached to this CRF (as applicable)

List all items that should be attached to this CRF by entering "Yes" or "No".

| Item Number | Item Name | Attached |
|-------------|--|----------|
| 1 | Exhibit A, Scope of Work/Schedule | Yes |
| 2 | Exhibit B, Budget Detail | Yes |
| 3 | DGS-GSPD-09-007, NCB Request | Yes |
| 4 | CEC 95, DVBE Exemption Request | Yes |
| 5 | Awardee CEQA Documentation | No |
| 6 | Resumes | Yes |
| 7 | CEC 105, Questionnaire for Identifying Conflicts | Yes |

Approved By

Individuals who approve this form must enter their full name and approval date in the MS Word version.

Agreement Manager: Seran Thamilseran

Approval Date: 1/14/2026

Office Manager: Heidi Javanbakht

Approval Date: 1/15/2026

Deputy Director: Aleecia Gutierrez

Approval Date: 1/15/2026

EXHIBIT A SCOPE OF WORK

TASK LIST

| Task # | Task Name |
|--------|--|
| 1 | Agreement Management |
| 2 | Update Inputs with the Most Recent Available Data |
| 3 | Improve Model Design and Energy Demand Equations |
| 4 | Provide Documentation and Training to EAD Staff |
| 5 | Provide Business Support through End of October 2026 |

ACRONYMS/GLOSSARY

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

| Acronym | Definition |
|------------|--|
| CAM | Commission Agreement Manager |
| CAO | Commission Agreement Officer |
| CEUS | Commercial End-Use Survey |
| CFM | Commercial Forecast Model |
| Contractor | Qualus, LLC |
| FSSAT | Fuel Substitution Scenario Analysis Tool |
| HELM | Hourly Electric Load Model |

BACKGROUND/PROBLEM STATEMENT

The Commercial Sector Forecast is an essential work product for the California Energy Commission. The model used to generate the forecast is called the Commercial Forecast Model (CFM). It is an end-use annual electricity and natural gas demand forecasting model. The first version of the model was developed in the late 1970's; and since then, it has been revised and updated by Energy Commission staff within the Energy Assessments Division that work on the California Energy Demand Forecast. The current model is in FORTRAN and spans seven utilities. There is a set of inputs and assumptions for each of the utilities that describe the attributes and characteristics of commercial buildings within the service area of each utility that are needed to quantify the sector's electricity and gas consumption. In addition, the model generates several different results summarizing electricity and gas demand for the commercial sector. The Energy Commission forecast process requires significant improvements to the model to improve its capabilities and flexibility for modeling changes to energy demand from new building codes and standards and the anticipated replacement of natural gas appliances with electric appliances.

The CFM accounts for commercial sector growth, commercial building and equipment characteristics collected in the Commercial End Use Survey (CEUS), codes and standards, and committed energy efficiency. Additional achievable energy efficiency, fuel substitution (building electrification), transportation electrification, and distributed generation are accounted for in other models (outside of the CFM), and these models necessarily have consistent inputs and approaches. Hourly load shapes are currently applied in a separate model.

Results are incorporated into the California Energy Demand Forecast used by utilities, the California Public Utilities Commission, and the California Independent System Operator for grid planning and procurement. The commercial forecast model also serves as the baseline for the long-term demand scenarios which assess the impacts of decarbonization strategies on energy demand through 2050.

GOALS/OBJECTIVES OF THE AGREEMENT

The Contractor will provide assistance to the Energy Assessment Division by timely executing deliverables and updates needed, for CEC review, for the existing Commercial Forecast Model (CFM). This workload may include but is not limited to modernizing and updating the model and incorporating more recent data, codes, and standards, and presenting those products to the CAM for input and review.

FORMAT/REPORTING REQUIREMENTS

Deliverables/Reports

When creating reports, the Contractor shall use and follow, unless otherwise instructed in writing by the Commission Agreement Manager (CAM), 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 CAM) of the full text in a compatible version of Microsoft Word (.doc).

The following describes the accepted formats of electronic data and documents provided to the Energy Commission as 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 (10% of Contract Budget)

Task 1.1 Kick-off Meeting

The goal of this task is to establish the lines of communication, review the scope of work, and decide on file transfer processes. At the kick-off meeting, the CEC team will provide an overview of the Energy Commission's current CFM, how the CFM fits within the CEC's larger forecast modeling efforts, challenges with the current CFM, and goals of the tasks within this Contract.

The Contractor shall:

- Attend a "kick-off" meeting with the CAM and CEC team. The meeting will be held via teleconference. The Contractor shall include their Project Manager key team members 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 CAM 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 solutions to resolve the problem.

The Contractor shall:

- Manage and coordinate subcontractor activities. The Contractor is responsible for the quality of all subcontractor's 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 CAM 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 CAM will provide the format for the progress reports.

Deliverables:

- Monthly Progress Reports

TECHNICAL TASKS

TASK 2 - UPDATE INPUTS WITH THE MOST RECENT AVAILABLE DATA (20% of Contract Budget)

Task 2.1 Iterative Data Update

In 2025 the project team made several updates to CFM input files. These updates included:

- Addition of a new building type to represent data centers (NAICS 518210)
 - A coordinated update for floorspace, EUI, and saturation input files to disaggregate data centers from the Miscellaneous building type.
- Addition of 2022 and 2025 building vintages
- An update of equipment and fuel saturations derived from the most recent CEUS survey.
- An update of equipment efficiencies based on recent code, market, and technology changes

The Contractor Shall:

- Observe the impacts of these updates, and then to iteratively refine input file values to improve model performance.

Deliverables:

- Email confirmation of update

Task 2.2 Input File Update Contingencies

This task will provide for further input file updates, based on Energy Commission staff guidance. These updates may include:

- Adding new forecast zones.
- Adding new building types
- Adjusting equipment efficiencies in coordination with other Energy Commission staff that model the impacts of codes and standards and energy efficiency programs
- Adjust fuel saturations based on electrification projections

The Contractor shall:

- Meet with CEC staff to review and prioritize input file update tasks.

- Meet with the Efficiency Analysis Unit staff to understand the Fuel Substitutions Scenario Analysis Tool (FSSAT) inputs, outputs, and analyses and come to agreement on which energy efficiency and fuel substitution measures will be included in the CFM and what will be modeled in FSSAT. Ensure analyses of codes, standards, efficiency, and electrification measures are consistent.
- Update input data and assumptions with the latest building characteristics, energy efficiency programs, and codes and standards data.
- Document the sources of all inputs.

Deliverables:

- Updated input data for each of the seven utilities (by forecast zone, building-type, and end-use) that uses the updated approach for mapping data collected under the older forecast zones to the new forecast zones.
- Documentation on the sources for all inputs, along with documentation of any data cleaning and preparation steps required.

TASK 3 - IMPROVE MODEL DESIGN PERFORMANCE (26% of contract budget)

The goal of this task is to recommend and implement improvements to the model and to accompanying tools such as spreadsheets or scripts that read and process model outputs. The improvements may address model performance, reliability, and usability. It is important to develop and validate these improvements prior to when the model will be used for the next forecast.

The Contractor shall:

- Meet with CEC staff to discuss current model limitations and inefficiencies, and the improvements that CEC staff have been thinking about.
- Develop solutions to address model limitations and inefficiencies.

Deliverables:

- Email confirmation of model updates

Task 4 – PROVIDE DOCUMENTATION AND TRAINING TO CEC STAFF (8% of contract budget)

The goal of this task is to document how the model works, the steps for running the model, define the inputs and outputs, and provide training to CEC staff on how to use the model.

The Contractor shall:

- Update the user manual based on feedback from CEC staff, and to reflect any model updates that resulted from tasks 2,3, or 5.
- Provide up to 8 hours of training for CEC staff to learn the model

Deliverables:

- Updated User Manual
- Contractor will provide a list of training sessions working with EAD staff

TASK 5 - PROVIDE BUSINESS SUPPORT THROUGH THE END OF October 2026 (36% of contract budget)

The goal of this task is to provide business support on an as-needed basis, as CEC staff run the model on their own and have questions or find bugs that need to be resolved.

The Contractor shall:

- Document responses to questions via e-mail
- Enhanced or revised documentation for areas that may need correction or further clarification, as directed by the CAM.
- Fix bugs in the model, as directed by the CAM.

Deliverables:

- E-mail response to questions for documentation (as needed)
- Updated documentation (as needed)
- Updated model (as needed)

SCHEDULE OF DELIVERABLES AND DUE DATES

| Task Number | Deliverable | Due Date |
|--------------------|---|------------------------------|
| 1 | | |
| 1.1 | An Updated Schedule of Deliverables | If applicable |
| 1.2 | Monthly Invoices | Monthly with progress report |
| 1.4 | Monthly Progress Reports | Monthly |
| 2 | | |
| 2.1 | Email Confirmation of Updates | September 30, 2026 |
| 2.2 | Documentation on Input Sources | September 30, 2026 |
| 3 | | |
| 3.1 | Email Confirmation of Model Updates | September 30, 2026 |
| 4 | | |
| 4.1 | Updated User Manual | September 30, 2026 |
| 4.2 | Training to be determine | TBD |
| 5 | | |
| 5.1 | Email Response to Questions for Documentation | As needed |
| 5.2 | Updated Documentation (as needed) | As needed |
| 5.3 | Updated Model (as needed) | As needed |