

DOCKETED

Docket Number:	19-TRAN-02
Project Title:	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure
TN #:	232892
Document Title:	Draft Concept Document ViGIL
Description:	N/A
Filer:	Christina Cordero
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	5/1/2020 11:38:04 AM
Docketed Date:	5/1/2020

DO NOT DESIGN OR SUBMIT PROPOSALS ACCORDING TO THIS DRAFT
Comments are due Wednesday, May 27, 2020 at 5:00 p.m.

DRAFT SOLICITATION CONCEPT

Clean Transportation Program

Subject Area: Vehicle-Grid Innovation Lab (ViGIL)

No proposals are being accepted at this time. This is a draft compilation of solicitation concepts. Do not design or submit proposals according to this DRAFT. The actual solicitation is subject to change.

Staff will take comments and questions submitted to the docket, by phone or by email prior to the workshops. Comments on this DRAFT will be discussed at the Scoping Workshop on May 13, 2020. Comments are due by Wednesday, May 27, 2020 at 5:00 p.m. to the California Energy Commission (CEC) Dockets Unit. (See Section 13 of this document, and the Notice of Staff Workshop, for additional details on how to comment.)



<http://www.energy.ca.gov/contracts/index.html>

State of California
California Energy Commission
May 2020

Table of Contents

INTRODUCTION..... 3

1. Available Funding 3

2. Maximum Award..... 3

3. Number of Applications 3

4. Eligible Applicants 3

5. Eligible Projects 4

6. Match Funding Requirements 6

7. Eligible Project Costs..... 7

8. Project Prompt 7

9. How Award Is Determined 8

10. Application Administrative Screening Criteria 8

11. Application Technical Screening 8

12. Application Evaluation Process..... 8

13. Evaluation Criteria..... 9

14. Written and Oral Comments..... 12

INTRODUCTION

This “draft solicitation concept” document details the concept under consideration for a competitive grant solicitation to be issued by the CEC’s Clean Transportation Program. The purpose of this solicitation is to fund the Vehicle-Grid Innovation Lab (ViGIL). ViGIL will address testing, certification, data, and technology gaps for electric vehicle (EV) charging equipment, by offering funding to support the expansion of an existing EV charging testing facility within California.

The draft solicitation concept follows:

1. AVAILABLE FUNDING

\$3 million is available to fund ViGIL, which will be an EV charging lab facility that will conduct testing of near-commercial charging equipment. At least \$1 million of this funding must be used to test a minimum of 10 eligible product models, as described below in Section 5. The remaining funding may be used for capacity expansion in accordance with the project requirements listed in Section 5 and the eligible costs listed in Section 7.

2. MAXIMUM AWARD

The maximum award will be up to \$3 million for **one** award. The CEC reserves the right to modify this funding amount.

3. NUMBER OF APPLICATIONS

Applicants may only submit one application.

4. ELIGIBLE APPLICANTS

This solicitation is open to California private entities for capacity expansion and accelerated throughput of electric vehicle charging infrastructure testing at an existing facility located within California.

All corporations, limited liability companies (LLCs), limited partnerships (LPs) and limited liability partnerships (LLPs) that conduct intrastate business in California are required to be registered and in good standing with the California Secretary of State prior to its project being recommended for approval at a CEC Business Meeting. If not currently registered with the California Secretary of State, applicants are encouraged to contact the Secretary of State’s Office as soon as possible to avoid potential delays in beginning the proposed project(s) (should the application be successful). For more information, contact the Secretary of State’s Office via its website at www.sos.ca.gov. Sole proprietors using a fictitious business name must be registered with the appropriate county and provide evidence of registration to CEC prior to their project being recommended for approval at a CEC Business Meeting.

5. ELIGIBLE PROJECTS

The purpose of ViGIL is to provide additional testing capacity and accelerated throughput for near-commercial charging technologies in order to help build a competitive market for charging equipment and their testing. The limited laboratory resources currently available have made the testing, certification, and validation of products challenging and lengthy. One existing testing facility will be funded in this category, and the project must demonstrate expansion of its current testing capacity and throughput. Expansion is to be defined by the applicant in their application. Metrics could include, but are not limited to:

- Added engineering staff
- Number of test devices
- Number of devices tested per quarter
- Number of new types of form factors tested
- Number and type of tests offered
- Reduction in cost of testing

At a minimum, through the acquisition of necessary equipment, engineering staff, and other resources, the project must be capable of performing the necessary testing to facilitate compliance with standards 1) to 3) listed below, or their available latest version, so that they perform their associated use cases listed below. Additionally, the project may optionally elect to offer testing for standards 4) to 5) listed below and their associated use cases, but this is not a requirement:

1) ISO 15118¹

- Smart charging
- Plug & Charge
- AC and DC Charging
- Bidirectional Charging
- Wireless charging

2) Open Charge Point Protocol (OCPP)² Version 1.6JSON and 2.0.1

- Core Functionality
- Security Profile 2
- ISO 15118 translation

3) Section 3.40 of the NIST 2020 Handbook 44 (Electric Vehicle Fueling Systems)³

¹ International Organization for Standardization Homepage: <https://www.iso.org/home.html>

² Open Charge Alliance Homepage: <https://www.openchargealliance.org/>

³ National Institute of Standards and Technology Handbook 44 - 2020 Edition Homepage: <https://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/other-nist-handbooks/other-nist-handbooks-2-3>

DO NOT DESIGN OR SUBMIT PROPOSALS ACCORDING TO THIS DRAFT
Comments are due Wednesday, May 27, 2020 at 5:00 p.m.

- Selection of variable unit prices using equipment communicating with the EVSE system
- Protection of metrological components
- Directional controls to support the reversal of energy flow

4) IEC 62746-10-1 (2019) (Open Automated Demand Response 2.0b)⁴

- Load control
- Distributed energy resources control

5) ENERGY STAR® for Electric Vehicle Supply Equipment⁵

- Version 1.0 for alternating current (AC) and Version 1.1 for both AC and DC charging

***Note:** ViGIL will not act as an entity responsible for providing manufacturers certificates of test results (certification body) needed to prove product performance for labeling or marketing purposes. The intent is for ViGIL to be capable of performing all the necessary equipment testing and providing the required results to a certification body. ViGIL will be responsible for transmitting these test results to a certification body that has the ability to recognize the validity and accuracy of the test results for the product to receive official certification marks of compliance with the specification.*

The project must result in the testing of at least 10 eligible product models, which are defined as follows:

- 1. Level 2 Alternating Current:** Conductive and Wireless Charging
- 2. Direct Current:** Conductive Charging
- 3. High-Powered:** Conductive, Wireless, and Pantograph Charging

Within these three product categories, the eligible interfaces are defined as follows:

- 1. SAE J1772⁶** – Electric Vehicle and Plug-In Hybrid Electric Vehicle Conductive Charge Coupler
- 2. Combined Charging System (CCS/Combo 1)⁷** – Combines AC and DC charging into one interface
- 3. SAE J2954⁸** – Wireless Power Transfer for Light-Duty Plug-In/Electric Vehicles

⁴ OpenADR Alliance Homepage: <https://www.openadr.org/>

⁵ ENERGY STAR® EVSE Homepage: <https://www.energystar.gov/products/other/evse>

⁶ SAE J1772 Standard: https://www.sae.org/standards/content/j1772_201710/

⁷ CharIN CCS: <https://www.charinev.org/ccs-at-a-glance/ccs-specification/>

⁸ SAE J2954 Standard: https://www.sae.org/standards/content/j2954_201904/

DO NOT DESIGN OR SUBMIT PROPOSALS ACCORDING TO THIS DRAFT
Comments are due Wednesday, May 27, 2020 at 5:00 p.m.

4. **CharIN High Power Charging for Commercial Vehicles (HPCCV)**⁹ – Charging for class 6, 7, and 8 commercial vehicles, buses, aircraft and other battery electric vehicles
5. **SAE J3105**¹⁰ – Electric Vehicle Power Transfer System Using Conductive Automated Connection Devices
6. **SAE J3072**¹¹ – Interconnection Requirements for Onboard, Utility-Interactive Inverter Systems

Products must publish their specification sheets after successful testing, as well as demonstrate their ability to meet the following policy objectives:

1. **Interoperability** – Standardized devices that are capable of functioning as intended with each other, without special effort from the user.
2. **Competition and Customer Choice** – Standardized, open charging systems that ensure easy access by all in a competitive and highly integrated market.
3. **Cost Control** – Should assist grid and renewables management and reduce fuel costs for drivers who charge in a manner consistent with grid conditions.
4. **Convenience** – Ensure that the employed technologies work in a harmonious manner and across service territories.

The following project types are not eligible:

- New construction of a test facility
- A university lab testing facility

6. **MATCH FUNDING REQUIREMENTS**

Applications must include at least 50 percent of total project costs as match share. Of this match share, at least 50 percent should be cash match.

Total project cost is defined as the CEC reimbursable amount plus match share amount. Cash match is defined as the net of any funds actually expended by the Applicant for the project after any sort of discount or rebate is applied. Expenditures for Applicant's compensated labor hours, including allowable fringe benefit and overhead rates, travel, materials, supplies, equipment, subcontractor costs, and other miscellaneous expenditures may be claimed as cash match if the expenditures are included in the approved agreement budget, paid in full with funding sources other than grant funds, and supported with appropriate documentation, including proof of payment. For indirect overhead, backup documentation, such as a cost allocation plan based on actual expenditures incurred and paid, is required. Cost allocations must be reasonable and allocable to the proposed project.

⁹ CharIN HPCCV: <https://www.charinev.org/hpccv/>

¹⁰ SAE J3105 Standard: https://www.sae.org/standards/content/j3105_202001/

¹¹ SAE J3072 Standard: https://www.sae.org/standards/content/j3072_201505/

7. ELIGIBLE PROJECT COSTS

Costs incurred for the following are eligible for CEC's reimbursement or as the applicant's match share.

Examples of eligible costs include but are not limited to:

- Facility design, engineering plans, and specifications
- Building and facilities installations and/or modifications
- Assets, materials and supplies, and equipment acquisition
- Staff training

The following **are not** eligible for CEC's reimbursement or as the applicant's match share:

- New construction
- EVSE
- Vehicles
- Utility service upgrade costs covered by the utility

8. PROJECT PROMPT

Applicants must include a response to the following prompt as an attachment in their applications. All questions must be answered fully, and include specific examples where appropriate. In addition, the response must be consistent with the rest of the application (e.g., if the applicant states in their application that they will not offer ENERGY STAR® testing, then they do not reference or use ENERGY STAR® as an example in their response to the prompt. The response to this prompt will be considered when evaluating applications.

You have reached the stage where you are ready to begin testing products. What are your strategies to:

- 1) Attract original automotive and charging equipment manufacturers developing new products across all vehicle sectors (light-duty, medium-duty, heavy-duty) to your facility?*
- 2) Select products to test in accordance with your proposed portfolio as well as the CEC eligibility requirements?*
- 3) Ensure the protection and confidentiality of intellectual and technological property?*
- 4) Provide pro-forma testing in terms of pricing, time required, and results delivered?*
- 5) Balance the timelines of testing and products so that a steady stream of diverse technologies and products enter the market?*
- 6) Coordinate with the conformance testing procedures developed by third-party certification bodies to facilitate the compliance of products with standards (e.g. ENERGY STAR®) in a timely manner?*

- 7) *Track and summarize the performance and impacts of the facility's activities on the improvement in electric vehicle charging innovations in California and the market more broadly?*
- 8) *Maintain pace with anticipated technological advancements and associated updates with standards development organizations?*

9. HOW AWARD IS DETERMINED

Applicants passing administrative and technical screening will compete based on evaluation criteria, and will be scored and ranked based on those criteria. Unless the CEC exercises any of its other rights regarding this solicitation (e.g., to cancel the solicitation or reduce funding), applications obtaining at least the minimum passing score will be recommended for funding in ranked order until all funds available under this solicitation are exhausted.

If the funds available under this solicitation are insufficient to fully fund a grant proposal, the CEC reserves the right to recommend partially funding that proposal. In this event, the applicant / proposed awardee and Commission Agreement Manager (CAM) shall meet and attempt to reach an agreement on a reduced scope of work commensurate with the level of available funding.

10. APPLICATION ADMINISTRATIVE SCREENING CRITERIA

Applications will be screened according to the following administrative criteria. Applications not meeting all of the following requirements will be disqualified and not eligible for funding:

- The application is received by the CEC's Contracts, Grants, and Loans Office by the due date and time specified.
- The applicant provides the required authorizations and certifications.
- The applicant has not included a statement that is contrary to the required authorizations and certifications.

11. APPLICATION TECHNICAL SCREENING

Applications will be screened according to the following technical criteria. Applications not meeting all of the following requirements will be disqualified and not eligible for funding:

- The applicant is eligible to apply.
- The project is an eligible project.
- The project meets the minimum match share requirement.

12. APPLICATION EVALUATION PROCESS

- Applications will be screened according to the administrative and technical screening criteria. Applications passing all screening criteria will proceed to scoring.

DO NOT DESIGN OR SUBMIT PROPOSALS ACCORDING TO THIS DRAFT
Comments are due Wednesday, May 27, 2020 at 5:00 p.m.

- Applications passing administrative and technical screening will be scored in accordance with the Application Evaluation Criteria.
- Applications will be ranked according to final overall score.
 - Final overall score for each application will be the average of the combined scores of all Evaluation Committee members.
- A minimum of 70% is required to be eligible for funding.
- Ties, if any, will be broken in the following order:
 - Proposal with highest Capacity and Throughput score will be ranked higher.
 - If still tied, proposal with highest Project Readiness and Implementation score will be ranked higher.
 - If still tied, an objective tie-breaker will be utilized.
- The CEC will recommend one award to the highest ranked project.

13. EVALUATION CRITERIA

Note: The following Evaluation Criteria are deliberative and subject to change. Do not design or submit proposals according to this draft evaluation criteria.

Application Evaluation Criteria

Scoring Criteria	Points
(1) Capacity and Throughput	65
(2) Project Readiness and Implementation	45
(3) Economic, Social, and Environmental Benefits	30
(4) Team Experience and Qualifications	30
(5) Budget	30
TOTAL POSSIBLE POINTS:	200

(1) Capacity and Throughput: Applications will be evaluated based on the degree to which:

- The proposed project expands testing capacity (as explained in Section 5) and accelerates the facility’s throughput of evaluated charging products.
- The proposed project maximizes the number of tests and associated use cases that will be offered, and the proposed dates by which the project would be capable of performing each are aggressive, but achievable.
- The proposed project contains a feasible and sufficient plan for developing a diverse portfolio of products tested (using the product listings provided in Section 5).

DO NOT DESIGN OR SUBMIT PROPOSALS ACCORDING TO THIS DRAFT
Comments are due Wednesday, May 27, 2020 at 5:00 p.m.

- The proposed project will streamline and create pro-forma testing procedures, processes, and language to minimize the time to establish agreements with manufacturers, accelerate throughput, and standardize pricing.
- The proposed project includes a feasible and effective process plan for how products will be selected to test in accordance with their proposed portfolio as well as eligibility requirements provided by the CEC.

(2) Project Readiness and Implementation: Applications will be evaluated based on the degree to which:

- The proposed project will utilize existing facilities and capacity.
- The proposed project has sufficient and feasible plans for expansions as necessary.
- The proposed project has an aggressive but achievable schedule for completing all tasks necessary.
- The required permitting for the proposed project has been completed or the permitting schedule ensures successful project completion within the timeframes specified in this solicitation.
- Thorough security, safety, operations, maintenance, and training procedures are implemented.
- The proposed project contains realistic and sufficient plans to work with equipment providers, charger manufacturers, automotive original equipment manufacturers, charging network providers, certification bodies, standards organizations, industry associations, electrical components suppliers, utilities, or other stakeholders across all vehicle sectors to ensure the project progresses in a smooth and timely manner.
- The proposed project will take sufficient measures to protect intellectual and technological property.
- The proposed project will respond to advancements in technology and associated conformance and interoperability testing procedures.
- A complete and feasible Scope of Work, Budget, and Project Schedule are included.
- The proposed project will continue to operate beyond the term of the CEC's funding agreement and support ongoing conformance testing and standards implementation needs and the market for charging infrastructure broadly.

(3) Economic, Social, and Environmental Benefits: Applications will be evaluated based on the degree to which:

- The proposed project expands business opportunities in California, including quantitative analysis and underlying assumptions.
- The proposed project contributes to a competitive market.
- The proposed project accelerates the adoption of electric vehicles needed to achieve the State's electric transportation and decarbonization goals.

DO NOT DESIGN OR SUBMIT PROPOSALS ACCORDING TO THIS DRAFT
Comments are due Wednesday, May 27, 2020 at 5:00 p.m.

- The proposed project has a robust, detailed, and feasible plan for community engagement, workshops, webinars, conferences, workforce training and development, or other outreach activities that disseminate knowledge of testing, certification, and validation.
- The proposed project will track and summarize the performance and impacts of the facility's activities on the improvement in electric vehicle charging innovations in California and the market more broadly.
- The proposed project results in high quality jobs in terms of compensation and duration and related project payroll.
- The proposed project provides cost savings to a variety of stakeholders, including electric vehicle and charging equipment manufacturers, drivers, and utilities.
- The proposed project increases state and local tax revenues.
- The proposed project benefits accrue to disadvantaged communities within California (as described by CalEnviroScreen 3.0).

(4) Team Experience and Qualifications: Applications will be evaluated based on the degree to which:

- The qualifications, experience, capabilities, skill sets, and credentials of the key team members (including additional team members that would need to be hired using CEC funding) are suitable to the goals of the proposed work and the tasks described in the proposed Scope of Work.
- The project team has verifiable experience in the electric vehicle charging industry, specifically relating to the testing of charging equipment and standards (e.g. ISO 15118).
- The proposed project identifies any collaborations with equipment providers, charger manufacturers, automotive original equipment manufacturers, charging network providers, certification bodies, industry associations, utilities, public entities, non-profits, or other stakeholders, and explains the nature of the collaboration and what each collaborator will contribute.
- The applicant has performed satisfactorily under other Energy Commission funded agreements and describes how the applicant has fulfilled/is fulfilling the agreement requirements.

(5) Budget: Applications will be evaluated based on the degree to which:

- The proposed project budget is justifiable and reasonable relative to the project goals, objectives, and tasks.
- The proposed project balances the costs between capacity expansion and product testing.
- The proposed project maximizes the number of products tested under the agreement.

DO NOT DESIGN OR SUBMIT PROPOSALS ACCORDING TO THIS DRAFT
Comments are due Wednesday, May 27, 2020 at 5:00 p.m.

- The proposed match share is documented, and the amount or dollar value of which is reasonable, available, and verifiable.
- The proposed project uses existing facilities, infrastructure, and equipment.
- The proposed project minimizes administrative and overhead costs for reimbursement.

14. WRITTEN AND ORAL COMMENTS

Comments on this “draft solicitation concept” document are due by Wednesday, May 27, 2020 at 5:00 p.m.

Please submit comments to the CEC using the e-commenting feature by accessing the comment page for this docket at

<https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-TRAN-02>.

A full name, e-mail address, comment title, and either a comment or an attached document (.doc, .docx, or .pdf format) is mandatory. Please include “Vehicle-Grid Innovation Lab (ViGIL)” in the comment title. After a challenge-response test is used by the system to ensure that responses are generated by a human user and not a computer, click on the “Agree & Submit Your Comment” button to submit the comment to the CEC’s Docket Unit.

Please note that written comments, attachments, and associated contact information included within the documents and attachments (e.g., your address, phone, email, etc.) become part of the viewable public record. This information may become available via Google, Yahoo and any other search engines.

Interested stakeholders are encouraged to use the electronic filing system described above to submit comments. If you are unable to submit electronically, you may email your comments to: DOCKET@energy.ca.gov and include “Vehicle-Grid Innovation Lab (ViGIL)” in the subject line.