

| <b>DOCKETED</b>         |  |
|-------------------------|--|
| <b>Docket Number:</b>   | 18-HYD-04  |
| <b>Project Title:</b>   | Draft Solicitation Concepts for Light-Duty Hydrogen Refueling Infrastructure |
| <b>TN #:</b>            | 226516   |
| <b>Document Title:</b>  | Hydrogen Draft Solicitation Concepts Workshop Presentation                   |
| <b>Description:</b>     | N/A  |
| <b>Filer:</b>           | Jessica Martinez   |
| <b>Organization:</b>    | California Energy Commission   |
| <b>Submitter Role:</b>  | Commission Staff   |
| <b>Submission Date:</b> | 2/13/2019 12:44:16 PM  |
| <b>Docketed Date:</b>   | 2/13/2019  |

# Hydrogen Draft Solicitation Concepts Workshop

Alternative and Renewable Fuel and Vehicle  
Technology Program

## Light-Duty Hydrogen Refueling Infrastructure



February 12, 2019

Fuels and Transportation Division Staff  
California Energy Commission



# Housekeeping

- Facilities and Logistics
- Emergency Exit
- Sign-in Sheet / Business Card Sheet
- Diversity Survey
  - <https://www.surveymonkey.com/r/PB53ZX6>



# Public Comments

Comments will be limited to three minutes per speaker.

Any comments will become part of the public record in this proceeding.



# Meeting Agenda

- |          |  |
|----------|--|
| 10:00 am | Introductions and Opening Remarks  |
| 10:10 am | Presentation of Draft Concepts<br>Funding, Tranches and Batches, Reimbursement,<br>Critical Milestones, Area and Station Classifications,<br>Eligibility, Minimum Technical Requirements |
| 12:00 pm | Lunch Break  |
| 1:00 pm  | Presentation of Draft Concepts (continued)<br>Required Plans, Screening, Evaluation  |
| 4:00 pm  | Questions and Public Comment   |
| 4:15 pm  | Adjourn  |



# Commitment to Diversity

The Energy Commission adopted a resolution on April 8, 2015, to firmly commit to:

- Increase participation of women, minority, disabled veteran and LGBT business enterprises in program funding opportunities.
- Increase outreach and participation by disadvantaged communities.
- Increase diversity in participation at Energy Commission proceedings.
- Increase diversity in employment and promotional opportunities



# Commitment to Diversity

- **Fairness** – Increase funding accessibility to all Californians.
- **Inclusion** – Small businesses make up a significant portion of the U.S. economy.
- **Job Creation** – Projects can create jobs for residents of the under-served communities.
- **Diversity of Ideas** – Great ideas occur in a variety of areas.
- **Diversity in Communities' Needs** – Needs vary widely from one area to the next (air quality, socioeconomic, etc.).



# Available Funding (p. 5)

- Up to \$110 million available under this solicitation, subject to future appropriations and ARFVTP Investment Plan funding allocations.
- Up to \$22.6 million is expected to be available for the initial batch of stations.





# Tranches and Batches of Stations (p. 5)

- **Tranche** - the entire number of stations proposed for construction over time.
- **Batch** - a subset of stations within the tranche that is approved and in progress at any given time.
  - The “Initial Batch” of stations is the first set of stations undertaken. The address for each station in the initial batch shall be submitted at the time of application.



# Funding Awards (p. 5)

An Applicant's proposed tranche of stations will be approved at an Energy Commission Business Meeting.

- Only funds for the Initial Batch of stations will be encumbered in the agreement.
- Subsequent batches of stations may be authorized in accordance with the requirements within the solicitation.



# Subsequent Batches (p. 5-6)

Subsequent batches of stations may be authorized (one batch at a time), on a first-come, first-served basis if:

- Build approval is received for prior batches within 18 months of Energy Commission authorizing the stations under the agreement.
- Stations in prior batches are open retail, or are expected within 30 months of Energy Commission authorizing the stations under the agreement.
- Funding is available.
- Critical Milestones 1 and 2 are met for the new batch.
- Station locations in the new batch are in eligible areas.



# Grant Award Amount (p. 6)

- Energy Commission dollar-per-kilogram for the tranche will determine the award amount for each batch.
- The minimum 24-hour total station throughput, in kilograms, for one batch of stations will determine the amount of funding to be awarded to the batch.



# Grant Award Example (p. 6)

| Number of stations in batch | 24-hour HySCapE Capacity per station | Dollars per station proposed | Award amount for batch |
|-----------------------------|--------------------------------------|------------------------------|------------------------|
| 10                          | 500 kg                               | \$1,000,000                  | \$10,000,000           |



# Eligible Costs (p. 6-7)

Reimbursable and Match share are limited to allowable **equipment expenditures only**.

***Labor, fringe, travel, subcontractors, materials/supplies, and overhead are NOT eligible as Reimbursable or Match share.***



# Match Funding (p. 7)

Applicant shall provide at least 50% of the total eligible equipment cost as match funding.

- 50% Grant Funding + 50% Match Funding

***Labor, fringe, travel, subcontractor labor, materials/supplies, and overhead are NOT eligible as reimbursable or match share.***



# Single Applicant Cap (p. 7-8)

A single applicant is eligible for no more than 33.3% of all available funding at any given time.

***Up to \$22.6 million is expected to be available for the initial batch of stations in 2019, so the Single Applicant Cap will be \$7.53 million for the initial batch NOPA.***





# Reimbursement Stages for Grant Funds

(p. 8-9)

| Stage   | Progress Completed   | Eligible Reimbursement                                 |
|---------|--|--|
| Stage 1 | All Critical Milestones; preliminary design plans; equipment ordered | Up to 25 percent                                       |
| Stage 2 | Entitlement or initial permit application submitted                  | Up to 50 percent                                       |
| Stage 3 | Equipment assembled and ready to ship; permit to build received      | Up to 75 percent                                       |
| Stage 4 | Open retail status achieved  | Up to 90 percent                                       |
| Stage 5 | Five years of NREL data collection; Final Report submitted           | Up to 100 percent<br>Includes release of 10% retention |



# Reimbursement Stages for Grant Funds (p. 23)

Recipients shall:

Provide photographs and serial numbers of system components and equipment under assembly at each stage of equipment reimbursement.

- Submit as evidence of payment of invoices
- Not required for Stage 1 reimbursement



# Operation and Maintenance Funding (p. 9)

- No O&M from Energy Commission funds.
- Beginning in January 2019, stations can generate hydrogen refueling infrastructure (HRI) credits under the CARB's Low Carbon Fuel Standard (LCFS) program.

<https://ww2.arb.ca.gov/rulemaking/2018/low-carbon-fuel-standard-and-alternative-diesel-fuels-regulation-2018>



# Critical Milestones and Monthly Progress Reports (p. 9-10)

## **Prior to application:**

Milestone 1: Meet with the Authority Having Jurisdiction (AHJ).

Milestone 2: Establish site control.

## **Prior to reimbursement:**

Milestone 3: Meet with the Fire Marshal in the AHJ.

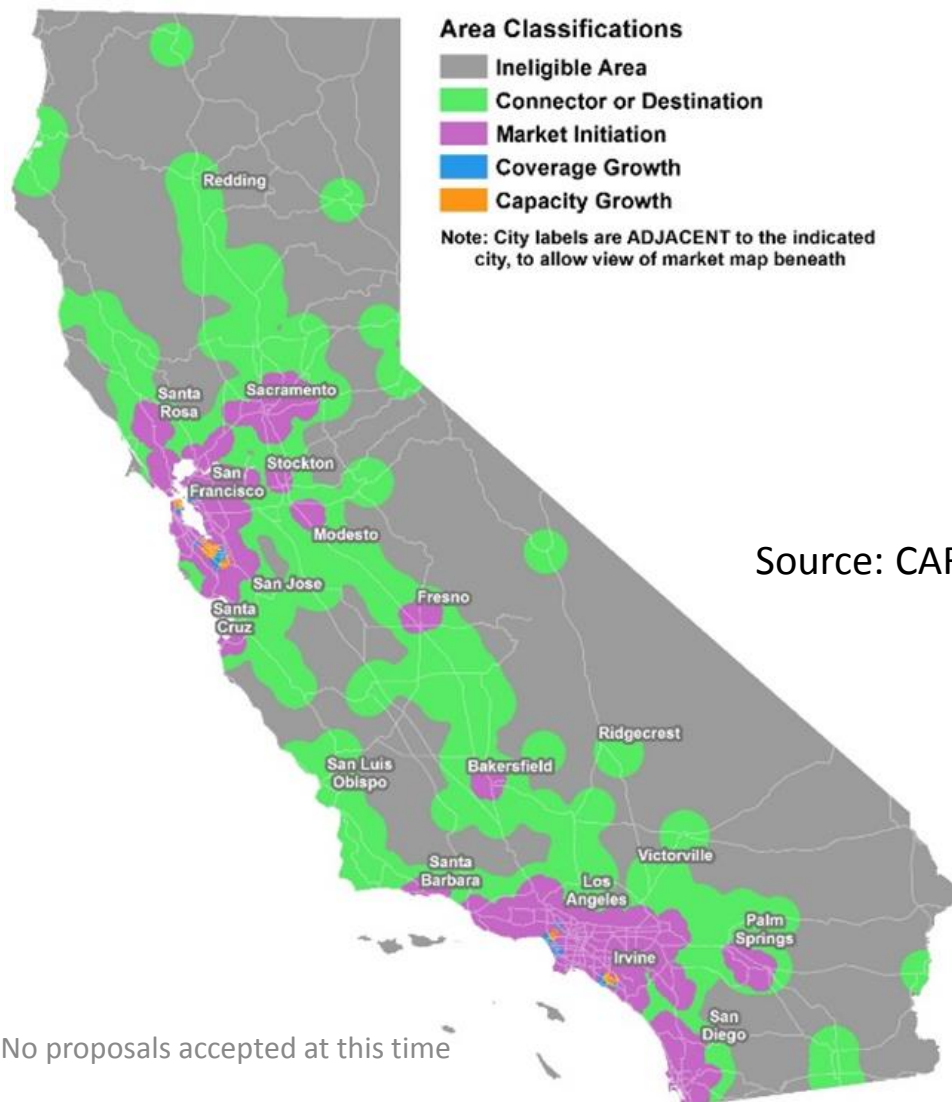
Milestone 4: Meet to arrange utility connection.

Milestone 5: Meet with hydrogen supplier.



# Area Classifications (p. 10-11)

- Obtain verification of Area Classification(s) from CARB
- Eligible areas are indicated by a color
- <http://californiaarb.maps.arcgis.com/apps/webappviewer/index.html?id=99be905d3127405e81851fd60b19cda2>





# Area Classifications (p. 10-11)

CARB will update the Area Classification map as station locations are approved.

For further information on Figure 1. and the California Hydrogen Infrastructure Tool (CHIT) contact:

Andrew Martinez, Ph.D.  
(916) 322-8449

ECARS/Advanced Clean Cars Branch, ZEV Infrastructure  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814  
[Andrew.Martinez@arb.ca.gov](mailto:Andrew.Martinez@arb.ca.gov)



# Hydrogen Station Capacity Evaluation (HySCapE) (p. 12-13)

- The Energy Commission will use the same HySCapE model as the CARB LCFS program.
- HySCapE information submitted will be treated confidentially.
- Each proposed station's HySCapE estimated fueling capacity shall meet the requirements of a Station Classification shown in Table 1. on page 13.



# Station Classifications (p. 12-13)

| Station Classification   | HySCapE Time Between Fills (s) | HySCapE 24-Hour Fueling Position Demand (kg) | Minimum Number of Fueling Positions | Minimum 24-Hour Total Station Throughput (kg) |
|--------------------------|--------------------------------|--|-------------------------------------|---|
| Connector or Destination | 427                            | 300  | 1                                   | 300   |
| Market Initiation        | 427                            | 300  | 2                                   | 600   |
| Coverage Growth          | 427                            | 300  | 2                                   | 600   |
| Capacity Growth          | 427                            | 300  | 3                                   | 900   |





# Hydrogen Station Capacity Evaluation (HySCapE) (p. 12-13)

Applicants may elect to propose a different Station Classification than reflected on the Area Classification map with a reasonable justification.



# Hydrogen Station Capacity Evaluation (HySCapE) (p. 12-13)

Draft application instructions for HRI program:

[https://www.arb.ca.gov/fuels/lcfs/guidance/hri\\_userguide.pdf](https://www.arb.ca.gov/fuels/lcfs/guidance/hri_userguide.pdf)



# Hydrogen Station Capacity Evaluation (HySCapE) (p. 12-13)

For information about LCFS, please contact:

James Duffy, Ph.D. (Manager)  
(916) 323-0015

Transportation Fuels Branch, Alternative Fuels Section  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814  
[jduffy@arb.ca.gov](mailto:jduffy@arb.ca.gov)



# Project Requirements and Eligibility (p. 14)

- A. New construction at an existing gas station, other facility, or a greenfield site.
  - Upgrades that increase dispensing capacity of a public, open retail hydrogen station are eligible.
    - ***Coalinga, Santa Nella, Truckee, and Santa Barbara are not eligible***
- B. Location is in an eligible area on the Area Classification map.
- C. HySCapE 24-hour estimated fueling capacity meets minimum throughput for a Station Classification.



# Project Requirements and Eligibility (p. 14)

- D. One station in each batch must be in or within a 15-minute drive of a disadvantaged community.
- E. Each proposed station must meet the Minimum Technical Requirements for Open Retail.



# Eligible Applicants (p. 15)

Applicants shall have:

- A. Key personnel with at least three years experience with hydrogen or pressurized gas refueling.
- B. Proven experience with grants or contracts.
  - Energy Commission or another organization
- C. No money owed to the Energy Commission or other public agency.



# Eligible Applicants (p. 15)

Applicants shall have:

- D. Good standing with the California Secretary of State.
- E. No delinquent taxes.
- F. No active litigation with the Energy Commission or other public agency.



# Required Application Information (p. 16)

A. Tranche and batch description should include:

- The number of batches.
- The number of stations per batch.
- The schedule for the tranche and each batch.
- Throughput capacity for the tranche and each batch.





# Required Application Information (p. 16)

B. Station selection approach should describe:

- The approach and criteria used to select the initial batch of stations.
- How the applicant will apply the same approach to subsequent batches of stations.



# Required Application Information (p. 16)

## C. Adherence to current codes and standards

Applications should include a description of the approach to keep up with new protocols, standards, and codes over time.

- For hydrogen safety
- To avoid technological obsolescence
- To maintain optimal station performance

Note: Solicitation requirements may be updated to reflect changes in standards or technology.



# Required Application Information (p. 16-17)

D. Initial batch of stations should include:

- An eligible address for each station.
- A station classification for each station.
- A schedule for completing the batch in 30 months.



# Required Application Information (p. 16-17)

## D. Initial batch of stations (cont.)

If two or more Applicants propose stations that are within 1 linear mile of one another:

- The higher ranked Applicant will be awarded the station.

If a station is disqualified based on proximity, Applicants can:

- Submit a list of replacement stations within 60 days after the NOPA.
- Proceed with fewer station(s) in the Initial Batch.



# Required Application Information (p. 5 &17)

- E. Second and subsequent batches of stations may be authorized (one batch at a time), on a first-come, first-served basis if:
- Build approval is received for prior batches within 18 months of Energy Commission authorizing the stations under the agreement.
  - Stations in prior batches are open retail, or are expected within 30 months of Energy Commission authorizing the stations under the agreement.
  - Funding is available.
  - Critical Milestones 1 and 2 are met for the new batch.
  - Station locations in the new batch are in eligible areas.



# Required Application Information (p. 17)

## E. Subsequent batch(es) of stations (cont.)

If two or more Applicants propose stations that are within 1 linear mile of one another:

- The first application received or the higher ranked Applicant will be awarded the station.

If a station is disqualified based on proximity, Applicants can:

- Submit a list of replacement stations within 60 days after the NOPA.
- Proceed with fewer station(s) in the Initial Batch.



# Minimum Technical Requirements

(p. 18-21)

- Must meet these requirements to be considered Open Retail by the Energy Commission.
- Requirements must be met at the exact station address after all of the hydrogen refueling equipment is installed.



# Minimum Technical Requirements

(p. 18-21)

- Quality
- Type Evaluation
- Fueling Protocols
- Station Communications
- Fueling Connection Devices
- Point of Sale Terminal
- Station Operational Status System (SOSS)
- Signage
- Design Requirements





# Minimum Technical Requirements

(p. 21)

## ***Differences from GFO-15-605:***

- ✓ *Compliance with CSA HGV 4.9 is required.*
- ✓ *Hydrogen quality readings are required every six months instead of every three months.*
- ✓ *Open retail includes the presence of a station emergency shutdown system switch cover, station lighting, and signage.*



# Minimum Technical Requirements

(p. 18)

- A. Dispensed hydrogen meets CCR Title 4 Business Regulations, Division 9, Chapter 6 Automotive Products Specifications, Article 8, Hydrogen Fuel Sections 4180 and 4181 which adopts SAE International J2719 Hydrogen Fuel Quality for Fuel Cell Vehicles.
- Test frequency is every six months.



# Minimum Technical Requirements

(p. 18-19)

B. Dispensers shall meet CCR, Title 4, Division 9, Chapter 1, Article 1, Section 4002.9 Hydrogen Gas-Measuring Devices (3.39).

Recipients shall:

1. Receive DMS approval for dispensers.
2. Notify local agencies and pass initial verification if installing type-approved dispensers.
3. Include a plan for obtaining DMS or Registered Service Agency testing.
4. Design stations to fuel all light duty storage system capacity categories.



# Minimum Technical Requirements

(p. 19)

C. Dispensers must comply with the most recent version of SAE International J2601 at H70-T40 including:

- Table-Based Protocol
- MC Formula-Based Protocol
- H70-T40 Mandatory
- H35 Optional

Stations shall be verified using the most recent version of ANSI/CSA Group HGV 4.3 and HyStEP, or a functionally equivalent apparatus, or OEM best practices.



# Minimum Technical Requirements

(p. 20)

Stations shall:

- D. Comply with the most recent version of ANSI/CSA HGV 4.9 (hydrogen refueling stations).
- E. Conform to the most recent version of SAE International J2799 (station communications), verified through CSA HGV 4.3.
- F. Conform to the most recent version of SAE International J2600 or ISO 17268 (fueling connectors, nozzles, and receptacles).



# Minimum Technical Requirements

(p. 20)

Stations shall have:

- G. A Point of Sale terminal that accepts commercially available credit, debit, and gift cards with magnetic stripes and EMV™ chips.
- H. A hydrogen fuel supply and delivery agreement with a second supply arrangement as backup.
- I. An energized utility connection and source of system power.



# Minimum Technical Requirements

(p. 20-21)

Stations shall:

- J. Have lighting for the dispenser(s) and the station area to provide a well-lit area that is safe, convenient, and accessible for station users.
- K. Be identified by signage according to Energy Commission, local, and Caltrans policies that includes:
  - Public funding received
  - Method of sale requirements
  - Trailblazer signs on local roads
  - Highway signs



# Minimum Technical Requirements

(p. 21)

Stations shall:

L. Connect to the Station Operational Status System (SOSS).

[https://m.caecp.org/?\\_ga=2.148890551.1624593596.1549390071-873309536.1513718037](https://m.caecp.org/?_ga=2.148890551.1624593596.1549390071-873309536.1513718037)

M. Have all required permits to build and operate the station.

N. Have a cover over the emergency stop.

O. Be accessible to the public.





# Minimum Technical Requirements

## Appendix D: Open Retail Station Checklist

### Appendix D: Open Retail Station Checklist

| Check | Open Retail Station Requirements   |
|-------|--|
|       | Dispenses hydrogen that meets California Code of Regulations (CCR) Title 4 Business Regulations, Division 9 Chapter 6 Automotive Products Specifications, Article 8, Hydrogen Fuel Sections 4180 and 4181 which adopts SAE International J2719 (fuel quality). |
|       | Passed a hydrogen quality test and complies with CCR, Title 4, Division 9, Chapter 1, Article 1, Section 4002.9 Hydrogen Gas Measurement which adopts the most recent version of SAE J2719.  |
|       | Obtained all required state, local, county, and city permits to build and operate, and has submitted the permits to the Energy Commission.   |
|       | Has a cover installed over the station emergency shutdown system switch.   |
|       | No obstructions or obstacles exist to preclude the public from fueling.  |

\*Self-Certification



# Letters of Support, Commitment, and Referrals (p. 21)

Mandatory letters should include:

- Site owner/operator letters of support
- Match share commitment
- Key project partners letters of support
- Referrals from subcontractors

Optional letters include:

- Third-party letters of support



# Data Collection and Reporting Requirements (p. 22-23)

The recipient shall:

- Collect data for five years after open retail.
- Use the NREL Data Collection Tool for data collection.



# Required Written Plans (p. 23-26)

- Preliminary Hydrogen Safety Plan
- Operation and Maintenance Plan
- Plan for Dispensing Renewable Hydrogen



# Preliminary Hydrogen Safety Plan

(p. 23-24)

- Applicants shall develop and submit a confidential plan following the Pacific Northwest National Laboratory (PNNL) Hydrogen Safety Panel (HSP) guidelines.
- The Hydrogen Safety Panel will assess the preliminary plan(s) using *Safety Planning for Hydrogen and Fuel Cell Projects*.

[https://h2tools.org/sites/default/files/Safety Planning for Hydrogen and Fuel Cell Projects-November2017 0.pdf](https://h2tools.org/sites/default/files/Safety%20Planning%20for%20Hydrogen%20and%20Fuel%20Cell%20Projects-November2017%200.pdf)



# Preliminary Hydrogen Safety Plan

(p. 23-24)

Preliminary hydrogen safety plans should include:

- An outline that follows the HSP guidelines.
- A description of hydrogen safety best practices for the entire tranche of stations.
- An explanation of how stations will continuously adhere to NFPA 2 and local safety codes.
- A description of ongoing safety training.



# Hydrogen Safety Panel Reviews

(p. 26)

Application shall include:

A statement of commitment to participate in early station design reviews before building plans are submitted for AHJ plan check, as well as annual safety evaluations with the PNNL HSP, at the cost of the Applicant, for three years after each station becomes open retail.



# Operation and Maintenance Plan

(p. 24)

Operation and Maintenance Plans should describe:

- Maintenance costs
- Participation in LCFS HRI credits
- How up-time will be optimized
- Response time for planned and unplanned maintenance
- Response process to station shut down or loss of hydrogen supply

***Operation and maintenance funding is not available under this solicitation.***





# Plan for Dispensing Renewable Hydrogen (p. 25-26)

Plans for dispensing renewable hydrogen should include:

- How each station or collection of awarded stations (including applicant's previously awarded stations) will dispense at least 33 percent renewable hydrogen.
- A calculation of the project's benefit-cost in terms of "well to wheel" GHG emissions reduction.
- The name of the LCFS pathway.
- Assumptions including kg/year, biogas/renewable feedstock used, renewable electricity used.



# Participation in R&D Projects

(p. 26)

Application shall include:

Applicants shall include a statement of commitment to participate in U.S. DOE, national, state, and local research and development projects.



# Screening Criteria (p. 26-27)

Applications will be screened according to the following criteria:

- Project Requirements and Eligibility, Section 16., p. 14.
- Eligible Applicants, Section 17., p. 15.
- Participation in Hydrogen Safety Panel Reviews, Section 28., p. 26.
- Participation in Government Research and Development Projects, Section 29., p. 26.

Additional screening criteria may be included in the solicitation.



# Evaluation Process, Evaluation Criteria, and Points (p. 27)

## Evaluation guidelines:

- A. Proposals will be scored using the evaluation criteria.
- B. Projects must score at least 70% to be eligible for funding.
- C. Proposals will be ranked according to score.
- D. If partial funding is offered for a tranche or batch, applicant can choose which stations to eliminate.
- E. Ties will be broken by the highest score on tranche budget, project readiness, and station performance.
- F. Proposals will be recommended for funding in rank order.



# Evaluation Criteria (p. 27-31)

## Possible Points

| Evaluation Criteria                                  | Possible Points |
|--|-----------------|
| Tranche Budget                                       | 20              |
| Project Readiness                                    | 15              |
| Hydrogen Refueling Station Performance               | 15              |
| Approach to Station Selection                        | 10              |
| Qualifications of the Applicant/Project Team         | 10              |
| Safety Protocols and Procedures                      | 10              |
| Hydrogen Refueling Station Operation and Maintenance | 10              |
| Social and Environmental Benefits                    | 10              |
| <b>TOTAL POSSIBLE POINTS:</b>                        | <b>100</b>      |



# Tranche Budget (20 points)

(p. 28)

Tranche budget will be evaluated on the degree to which:

- The cost-effectiveness of the proposed station(s) is realistic and highly cost effective on an Energy Commission dollar-per-station basis and an Energy Commission dollar-per-kilogram basis, over the proposed funding allocation tranche.
- The benefit-cost score, defined as the project's expected greenhouse gas emissions reduction per Energy Commission dollar awarded to the project, is realistic and highly cost effective (based on the entire tranche).



# Tranche Budget (cont.)

(p. 28)

Tranche budget will be evaluated on the degree to which:

- The declared match funding is corroborated with evidence of the source and amount of match funding.
- The budget includes estimates of and accounts for payment of the California Use Tax for equipment.
- For applications that propose hydrogen refueling station upgrades, the bullet points in this criterion shall address the difference between the existing hydrogen refueling station and the proposed hydrogen refueling station upgrade.



# Project Readiness (15 points)

(p. 28-29)

Project readiness will be evaluated on the degree to which:

- The application contains information and documentation about each station location's zoning requirements (i.e., steps and timeline to achieve AHJ planning approval, including land use entitlements and CEQA determination, or evidence of approval if already given by the AHJ) for the Initial Batch of stations.
- The application will be evaluated in terms of how much progress has been made towards AHJ planning approval, and the strength of supporting documentation. This information will be required for subsequent batches of stations when they are submitted for approval.





# Project Readiness (cont.)

(p. 28-29)

Project readiness will be evaluated on the degree to which:

- The application describes the hydrogen refueling station design for the Initial Batch of stations and the design includes traffic entrance to and exit from the proposed stations, and the circulation within the stations for FCEVs, hydrogen delivery trailers, and foot traffic.
- This description will be required for subsequent batches of stations when they are submitted for approval.



# Project Readiness (cont.)

(p. 28-29)

Project readiness will be evaluated on the degree to which:

- The application includes a reasonable and realistic plan for connecting utilities for the entire tranche of stations.
- The application includes information about the anticipated primary and secondary (backup) supply of hydrogen for the entire tranche of stations.
- The proposed schedule for completing the batch(es) of stations and the entire tranche of stations is justified and reasonable.



# Hydrogen Refueling Station Performance (15 points)

(p. 29)

Performance will be evaluated on the degree to which the station:

- Exceeds the fueling capacity requirements of the Station Classification(s) (Section 12) (demonstrated through HySCapE).
- Exceeds the Minimum Technical Requirements for Open Retail in this solicitation (Section 20) without the need for additional funding from the State of California.



# Hydrogen Refueling Station Performance (cont.)

(p. 29)

Performance will be evaluated on the degree to which the station:

- Provides scalable fueling capacity to meet increased local fueling demand without additional State of California funding.
- Maximizes the hours of station operation and exceeds the lighting and signage standards.
- Optimizes the customer refueling experience.



# Approach to Station Selection (10 points)

(p. 29)

Proposals will be evaluated on the degree to which the approach to station selection:

- Demonstrates a high probability of financial self-sufficiency.
- Provides fuel to FCEV customers so they can conveniently drive and fuel in and between the various Area Classifications in Figure 1 (map also online).
- Complements the network of hydrogen refueling stations in California.



# Approach to Station Selection (cont.)

(p. 29)

Proposals will be evaluated on the degree to which the approach to station selection:

- Aligns with the most current version of the OEM Priority Hydrogen Station Location Recommendations and provides the fuel to the areas and the locations in the Recommendations. The current version is available at:

<https://cafcg.org/sites/default/files/2017-Priority-Station-Location-Letter.pdf>.

- Provides hydrogen refueling for FCEV fleets or any other specific customer base.



# Qualifications of the Applicant/ Project Team (10 points)

(p. 30)

Proposals will be evaluated on the degree to which the team:

- Has experience with high pressure gaseous hydrogen and/or liquid hydrogen that will be used in the proposed stations. Experience in other high pressure gases will be considered if the team adequately articulates and explains the relevance.
- Has experience with cost accounting and financial controls.
- Has experience with commercial real estate transactions.



# Qualifications of the Applicant/ Project Team (cont.)

(p. 30)

Proposals will be evaluated on the degree to which the team:

- Has experience with hydrogen (or other alternative fuel) refueling station permitting, hydrogen station equipment procurement, hydrogen station supply chain logistics and management, and hydrogen station commissioning.
- Demonstrates strong project management experience in hydrogen purchasing, receipt, and dispensing, including truck delivery logistics.
- Has experience in planning for and managing station down time and maintenance.





# Qualifications of the Applicant/ Project Team (cont.)

(p. 30)

Proposals will be evaluated on the degree to which the team:

- Has experience communicating status information to customers, and in responding to customer questions and complaints.
- Receives positive referrals from subcontractors, including from construction agreements in the past or for projects under development.



# Safety Protocols and Procedures

## (10 points)

(p. 30)

Applications will be evaluated on the degree to which:

- The Preliminary Hydrogen Safety Plan is robust and sets the stage for fine tuning during station design, equipment specification and procurement and station opening.
- The Applicant demonstrates experience working with First Responders with hydrogen, or other pressurized gases, in a wide range of emergency situations.



# Safety Protocols and Procedures (cont.)

(p. 30)

Applications will be evaluated on the degree to which:

- The Applicant describes plans and methods to continually improve safety protocol and procedure implementation to meet and exceed the PNNL HSP Guidelines.
- The Applicant describes plans and methods to enhance and improve or make more effective and efficient existing safety norms to maintain technological relevance.



# Hydrogen Refueling Station Operation and Maintenance (10 points)

(p. 30)

Applications will be evaluated on the degree to which the O&M plan:

- Reasonably addresses the operation and maintenance costs and explains, with details, the costs for labor, equipment, rent or other site costs.
- Reasonably describes how the Applicant will rely on the potential receipt of LCFS throughput and Hydrogen Refueling Infrastructure (HRI) credits to fund operation and maintenance, as applicable.
- Applicants shall discuss budgetary contingencies with and without the HRI credits, should the LCFS program's quarterly cap exclude one or more of the Applicant's stations from HRI eligibility.



# Hydrogen Refueling Station Operation and Maintenance (10 points)

(p. 30)

Applications will be evaluated on the degree to which the O&M plan:

- Reasonably addresses and explains how the Applicant will optimize station “up-time.”
- Reasonably explains its response process and time needed for planned and unplanned maintenance, and how it will be coordinated with stations in proximity.
- Reasonably explains its response process and time needed when the station fails, including due to the loss of the hydrogen supply.



# Social and Environmental Benefits (10 points)

(p. 31)

Applications will be evaluated on the degree to which the project:

- Provides realistic social and environmental benefits to California-based businesses.
- Provides new full-time and part-time jobs generated to design, build, operate, and maintain hydrogen refueling stations as a result of receiving funding under this solicitation.
- Provides air quality and employment benefits to California's disadvantaged communities.



# Social and Environmental Benefits (cont.)

(p. 31)

Applications will be evaluated on the degree to which the project:

- Has a detailed Plan for Dispensing Renewable Hydrogen (Section 27) and exceeds the required 33% renewable hydrogen content.
- Uses renewable electricity for system power, low- or zero-emission technology for hydrogen delivery to the stations, or includes other emissions savings features.
- Incorporates practices to optimize the use of natural resources and reduce greenhouse gas emissions and criteria air pollutant emissions during station construction and operation.



# Social and Environmental Benefits (cont.)

(p. 31)

Applications will be evaluated on the degree to which the project:

- Implements reuse and recycle programs.
- Integrates energy storage for the electricity grid and/or uses curtailed renewable energy as a source for renewable hydrogen.





# Regulations and Standards (p. 31)

The proposed stations shall comply with the most recent versions of the regulations and standards listed in Section 33 on pages 31 and 32 of the Hydrogen Draft Solicitation Concepts document.



# Regulations and Standards (p. 32)

Applicants shall:

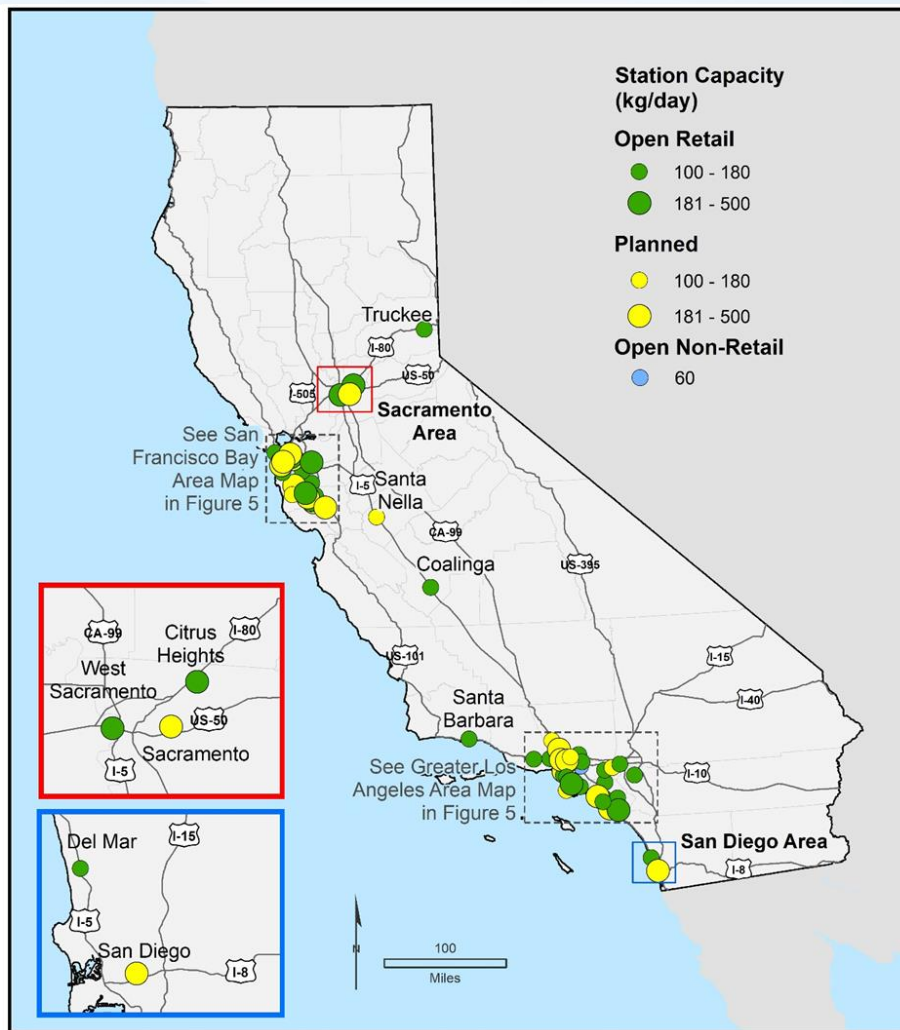
- Submit report(s) of any unintended hydrogen releases to the Certified Unified Program Agency (CUPA).

<http://cersapps.calepa.ca.gov/Public/Directory>

- Complete the required Federal reporting related to hydrogen transportation available at [www.nts.gov](http://www.nts.gov).

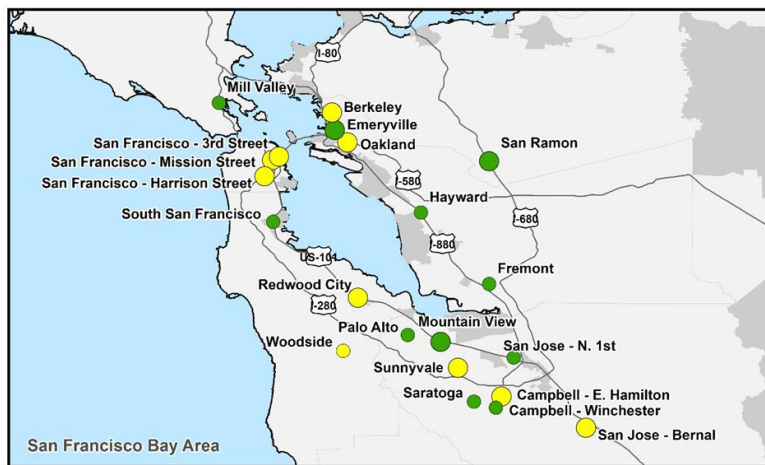


# Appendix A (p. 36)





# Appendix A (p. 37)





# Appendix B (p. 38-39)

|    | Station Addresses                                      |
|----|--|
| 1  | 3731 E. La Palma Ave., Anaheim, 92806                  |
| 2  | 1250 University Ave., Berkeley, 94702                  |
| 3  | 9988 Wilshire Blvd., Beverly Hills, 90210              |
| 4  | 145 W. Verdugo Ave., Burbank, 91502                    |
| 5  | 2855 Winchester Blvd., Campbell, 95008                 |
| 6  | 337 E. Hamilton Ave., Campbell, 95008                  |
| 7  | 12600 East End Ave., Chino, 91710                      |
| 8  | 6141 Greenback Lane, Citrus Heights, 95621             |
| 9  | 24505 W. Dorris Ave., Coalinga, 93210                  |
| 10 | 2050 Harbor Blvd., Costa Mesa, 92627                   |
| 11 | 11284 Venice Boulevard, Culver City, 90230             |
| 12 | 21865 E. Copley Drive, Diamond Bar, 91765              |
| 13 | 1172 45th Street, Emeryville, 94608                    |
| 14 | 18480 Brookhurst St., Fountain Valley, 92708           |
| 15 | 41700 Grimmer Blvd., Fremont, 94538                    |
| 16 | 391 W. A Street, Hayward, 94541                        |
| 17 | 19172 Jamboree Road, Irvine, 92612                     |
| 18 | 550 Foothill Blvd., La Cañada Flintridge, 91011        |
| 19 | 104 North Coast Highway, Laguna Beach, 92651           |
| 20 | 20731 Lake Forest Drive, Lake Forest, 92630            |
| 21 | 15606 Inglewood Ave., Lawndale, 90260                  |
| 22 | 3401 Long Beach Blvd., Long Beach, 90807               |
| 23 | 11261 Santa Monica Blvd., Los Angeles, 90025           |
| 24 | 7751 Beverly Blvd., Los Angeles, 90036                 |
| 25 | 5700 Hollywood Blvd., Los Angeles, 90028               |
| 26 | 8126 Lincoln Blvd., Los Angeles, 90045                 |
| 27 | 10400 Aviation Blvd., Los Angeles, 90045               |
| 28 | 570 Redwood Highway, Mill Valley, 94941                |
| 29 | 15544 San Fernando Mission Blvd., Mission Hills, 91345 |
| 30 | 830 Leong Drive, Mountain View, 94043                  |
| 31 | 350 Grand Ave., Oakland, 94610                         |
| 32 | 1850 E. Holt Blvd., Ontario, 91761                     |
| 33 | 3601 El Camino Real, Palo Alto, 94306                  |
| 34 | 28103 Hawthorne Blvd., Rancho Palos Verdes, 90275      |
| 35 | 503 Whipple Ave., Redwood City, 94063                  |
| 36 | 8095 Lincoln Ave., Riverside, 92504                    |
| 37 | 3510 Fair Oaks Blvd., Sacramento, 95864                |
| 38 | 3060 Carmel Valley Road, San Diego, 92130              |
| 39 | 5494 Mission Center Road, San Diego, 92108             |
| 40 | 551 Third Street, San Francisco, 94107                 |

|    |   |
|----|---|
| 41 | 3550 Mission Street, San Francisco, 94110             |
| 42 | 1201 Harrison Street, San Francisco, 94103            |
| 43 | 2101 N. 1st Street, San Jose, 95131                   |
| 44 | 101 Bernal Road, San Jose, 95119                      |
| 45 | 26572 Junipero Serra Road, San Juan Capistrano, 92675 |
| 46 | 2451 Bishop Drive, San Ramon, 94583                   |
| 47 | 150 S. La Cumbre Road, Santa Barbara, 93105           |
| 48 | 24551 Lyons Ave., Santa Clarita, 91321                |
| 49 | 1819 Cloverfield Blvd., Santa Monica, 90404           |
| 50 | 12754 State Highway 33, Santa Nella, 95322            |
| 51 | 12600 Saratoga Ave., Saratoga, 95070                  |
| 52 | 14478 Ventura Blvd., Sherman Oaks, 91423              |
| 53 | 1200 Fair Oaks Ave., South Pasadena, 91030            |
| 54 | 248 S. Airport Blvd., South San Francisco, 94080      |
| 55 | 3780 Cahuenga Blvd., Studio City, 91604               |
| 56 | 1296 Sunnyvale Saratoga Road, Sunnyvale, 94087        |
| 57 | 3102 Thousand Oaks Blvd., Thousand Oaks, 91362        |
| 58 | 2051 W. 190th Street, Torrance, 90501                 |
| 59 | 12105 Donner Pass Road, Truckee, 96161                |
| 60 | 1515 S. River Road, West Sacramento, 95691            |
| 61 | 5314 Topanga Canyon Road, Woodland Hills, 91364       |
| 62 | 17287 Skyline Blvd., Woodside, 94062                  |
| 63 | 5151 State University Dr., Los Angeles, 90032         |
| 64 | 1600 Jamboree Road, Newport Beach, 92660              |
| 65 | Mobile Refueler                                       |



# Appendix C (p. 40)

Attachment 11  
Data Collection Tool

This workbook contains templates for reporting data from hydrogen infrastructure.

- Please fill out the sheets with data that pertain to the specific application.
- Data submission is expected each quarter
- If an item or sheet is not applicable to the specific operation, leave blank, or insert N/A.
- For multiple compressors, reformers, etc, make an additional copy of the sheet and label it Compressor2, etc.
- The sheets that have an orange tab are only needed if the station has that equipment.
- You may delete or ignore orange tab sheets if they don't apply to your station.
- This workbook contains optional fields under GFO-15-605. These fields are designated with a purple color.

Templates were developed at the National Renewable Energy Laboratory.

Templates last updated May 4, 2016 (NREL)

|                         |  |
|-------------------------|--|
| Original 12/2/2011      |  |
| Revision thru 5/4/2016  | <p><b>Fields designated with a purple color are OPTIONAL under GFO-15-605.</b></p> <p><b>"Fuel Log Tab"</b><br/>5/4/2016 Added Start Pressure column</p> <p><b>"Fill Performance Tab"</b><br/>5/4/2016 Added new sheet for fill data<br/>5/4/2016 Added Note to report all fills including incomplete fills and failed attempts</p> <p><b>"Maintenance Tab"</b><br/>5/4/2016 Added new columns with picklists for consistency to replace the previous columns<br/>5/4/2016 Added columns for Subsystem, Component, Action, Cause and Effect<br/>5/4/2016 Added columns for duration of unavailability of station components and affected performance</p> |
| Revisions thru 4/5/2012 | <p><b>Site Summary</b><br/>Changed example diagram<br/>Changed diagrams wording in row 4 slightly<br/>Added Electrolyzer output pressure</p> <p><b>Site Log</b><br/>Added this sheet</p> <p><b>Fuel Log</b><br/>Changed heading slightly on Fill Communications<br/>Added Amb Temp, Pre-cool Temp, Fill Description<br/>Added column for #</p> <p><b>Maintenance</b><br/>Added column for #</p> <p><b>Safety</b><br/>Added Non-Event and definition<br/>Added column for #</p> <p><b>Electrolyzer</b><br/>Added output pressure</p>  |





# Appendix D (p. 41)

## Appendix D: Open Retail Station Checklist

| Check | Open Retail Station Requirements  |
|-------|---|
|       | Dispenses hydrogen that meets California Code of Regulations (CCR) Title 4 Business Regulations, Division 9 Chapter 6 Automotive Products Specifications, Article 8, Hydrogen Fuel Sections 4180 and 4181 which adopts SAE International J2719 (fuel quality).  |
|       | Passed a hydrogen quality test and complies with CCR, Title 4, Division 9, Chapter 1, Article 1, Section 4002.9 Hydrogen Gas Measuring Devices which adopts the most recent version of SAE J2719 (fuel quality).  |
|       | Underwent DMS type evaluation for hydrogen refueling station dispensers which includes compliance with SAE J2719 (fuel quality).  |
|       | Conforms with the most recent version of SAE J2601 (fueling protocols) using the HyStEP device or another functionally equivalent device, or if no device is available, by using automobile OEM best practices, to test in accordance with the most recent version of HGV 4.3.  |
|       | Complies with the most recent version of ANSI/CSA HGV 4.9 (hydrogen refueling stations).  |
|       | Conforms to the most recent version of SAE International J2799 (station communications).  |
|       | Conforms to the most recent version of SAE J2600 (nozzles) or ISO 17268 (nozzles).  |
|       | Sells fuel to the public through a dedicated point of sale (POS) terminal or a centralized POS terminal. The POS terminal shall accept, read, and process all commercially available credit and debit cards and gift cards with magnetic stripes, and read EMV™ chips that are embedded in commercially available credit cards and debit cards, and perform financial payment transactions. |
|       | Includes a dedicated hydrogen fuel supply and delivery agreement, and a backup agreement.   |
|       | Includes installed and energized utility connection and source of system power.   |
|       | Includes installed lighting for the consumer to use the dispenser and the station area.   |
|       | Installed signage to advise and educate the public on hydrogen refueling, the station location, and to acknowledge the receipt of public funding for the station, and submitted evidence of communication and progress for obtaining trailblazer signage and state highway system signage.  |
|       | Includes a connection with the California Fuel Cell Partnership Station Operational Status System (SOSS).   |
|       | Obtained all required state, local, county, and city permits to build and operate, and has submitted the permits to the Energy Commission.  |
|       | Has a cover installed over the station emergency shutdown system switch.  |
|       | No obstructions or obstacles exist to preclude the public from fueling.   |

\*Self-Certification

### Certifications:

I hereby authorize the California Energy Commission to make any inquiries necessary to verify the information presented in this checklist.

I hereby certify to the best of my knowledge that the station has been constructed and equipment has been installed consistent with the California Energy Commission agreement and the information contained in this checklist is correct and complete.

Signature of Authorized Representative

Date:



# Appendix E (p. 42-43)

**Appendix E: HyStEP Checklist**  
(may change for technical reasons)

| Station Name and Address             |  |                       |  |
|--------------------------------------|--|-----------------------|--|
| Station Name                         |  | City                  |  |
| Street Address                       |  | Zip                   |  |
| Station Hours                        |  |                       |  |
| Station Engineer/Technician          |  | Back up Contact Name  |  |
| Cell Phone                           |  | Cell Phone            |  |
| Technician Email                     |  | Back up Contact Email |  |
| Station Developer Information        |  |                       |  |
| Developer Name                       |  | Engineer/Technician   |  |
| Developer Address                    |  | Cell Phone            |  |
| Station Type                         |  | Email                 |  |
| Dispenser Supplier Information       |  |                       |  |
| Dispenser Supplier                   |  |                       |  |
| Dispenser Name                       |  | Software Version or   |  |
| Dispenser Serial #                   |  | Latest Update         |  |
| Dispenser Engineer/Technician        |  | Cell Phone            |  |
| Email                                |  |                       |  |
| Major Equipment Supplier Information |  |                       |  |
| Equipment Supplier                   |  | Email                 |  |
| Equipment Description & Info         |  |                       |  |
| Equipment Engineer/Technician        |  | Cell Phone            |  |
| Contacts during HyStEP Testing       |  |                       |  |
| Main Contact                         |  | Back up Contact       |  |
| Main Contact Cell Phone              |  | Back up Cell Phone    |  |
| Main Contact Email                   |  | Back up Contact       |  |

|                    |   | Yes | No | NA | Notes   |
|--------------------|---|-----|----|----|---|
| Quantity           | Number of H70 dispensers:   |     |    |    | H70 nozzles per dispenser:  |
|                    | Station Rated Performance   |     |    |    | kg/hr: kg/day:  |
|                    | H35 Dispensing?   |     |    |    | Number of nozzles:  |
|                    | Fuel Delivery Temperature Category (e.g. T40)   |     |    |    | H70: H35:   |
| POS                | County Weights and Measures or Division of Measurement Standards approval to sell fuel?   |     |    |    | What is the Type Certification?   |
|                    | Point of sale working?  |     |    |    |   |
| H2 Quality         | Ability to override payment during testing?   |     |    |    |   |
|                    | Station passed SAE J2719, including Particulates Concentration?   |     |    |    | Please provide latest hydrogen quality analysis test results prior to HyStEP testing. |
|                    | Dispenser Filter?   |     |    |    | Circle filter size. 5u 10u Other  |
| Equipment          | H2 Source (e.g. Liquid/Gaseous Delivered, On-site)  |     |    |    |   |
|                    | Is hydrogen quality continuously monitored within station?  |     |    |    | How?  |
|                    | Pressure sensors & relief valves at each pressure rate?   |     |    |    | Show locations on Site Plan # P sensors ____ # Relief Valves ____                     |
|                    | Provided gas pressure, gas temperature, and ambient temperature accuracies & tolerances?  |     |    |    |   |
|                    | Indicate which method is used for Temperature Tolerance.  |     |    |    |   |
|                    | Mass Average Fuel Delivery Temperature Tolerance?   |     |    |    | If yes, provide equation.   |
|                    | Instantaneous Fuel Delivery Temperature Tolerance?  |     |    |    |   |
|                    | Is IrDA receiver compatible to SAE J2799?   |     |    |    |   |
|                    | Nozzle Type Identified?   |     |    |    |   |
|                    | Is nozzle attachment compliant with SAE J2600?  |     |    |    |   |
| Protocol           | Ambient Temperature Sensor? Redundant? Accuracy?  |     |    |    |   |
|                    | Process Flow Diagram or PI&D provided?  |     |    |    |   |
|                    | What version of SAE J2601 station fueling protocol is   |     |    |    |   |
|                    | Table-Based or MC Formula-Based fueling protocol?   |     |    |    |   |
|                    | Please provide test fills, including tank specifications, hose pressure, fuel supply temperature, tank pressure, and tank temperature vs. time  |     |    |    |   |
|                    | Parameters  |     |    |    |   |
|                    | Max Flow Rate: Startup Mass Transferred: Target SOC:  |     |    |    |   |
|                    | Any SAE J2601, J2799 and/or HGV 4.3 features not programmed in the dispenser? (e.g., Restricted Non-Comm. Fill, Fullback, Cold Dispensing, Top-Off?)                                    |     |    |    |   |
|                    | Terminate fueling when fuel delivery temperature under -40C?  |     |    |    |   |
|                    | Terminate fueling when pressure out of APRR tolerance bounds?   |     |    |    |   |
| Safety & Logistics | Any dispenser/fueling programming limitations or changes that we should know about? (e.g., loss of communication fill reverts to the most conservative non-comm fill table)             |     |    |    |   |
|                    | Are you able to provide dispenser break-away data each testing day in excel format in 1.0 second increments per the attached required data sheet? If not, data analysis may be delayed. |     |    |    | Explanation:  |
|                    | Map provided showing Emergency stop locations and location of nearest 120 VAC with distance from dispenser?   |     |    |    |   |
|                    | Can HyStEP vent through station vent stack?   |     |    |    |   |
|                    | Can HyStEP be stored onsite overnight?  |     |    |    |   |





# Written and Oral Comments (p. 34)

Written comments are due by  
February 22, 2019, 5:00 p.m.

Electronic comments:

<https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=18-HYD-04>



# Public Comments

Comments will be limited to three minutes per speaker.

Any comments will become part of the public record in this proceeding.

# Adjourned

Thank You

Docket Comments due by  
February 22, 2019 at 5 p.m.





# Regulations and Standards (p. 31)

Applicants shall comply with:

- CCR Title 4: Business Regulations, Division 9 Measurement Standards, Chapter 1 Tolerances and Specifications for Commercial Weighing and Measuring Devices, Article 1 National Uniformity, Exceptions and Additions, Sections – 4001. Exceptions and 4002. Additional Requirements, Subsection 4002.9, Hydrogen Gas-Measuring Devices (3.39): 2018.
- CCR Title 4: Business Regulations, Division 9 Measurement Standards, Chapter 6 Automotive Products Specifications, Article 8 Specifications for Hydrogen Used in Internal Combustion Engines and Fuel Cells, Sections 4180 and 4181: 2018.
- CCR Title 24: 2016, California Building Code, Part 2, Volume I, Chapter 11B, Accessibility to Public Buildings, Public Accommodations, Commercial Buildings and Public Housing.

Proposed stations shall comply with:

- California Health and Safety Code Section 25510(a).



# Regulations and Standards (p. 32)

Stations shall comply with:

- CSA Group (formerly the Canadian Standards Association, CSA), Toronto, Canada. CSA Hydrogen Gas Vehicle (HGV) 4.3 Test Methods for Hydrogen Fueling Parameter Evaluation: 2016.
- CSA Hydrogen Gas Vehicle (HGV) 4.9, Hydrogen Fueling Stations: 2016.
- Compressed Gas Association, CGA G-5.3-2017, Commodity Specification for Hydrogen, 7th Edition, November, 2017.  
[https://www.cganet.com/customer/publication\\_detail.aspx?id=G-5.3](https://www.cganet.com/customer/publication_detail.aspx?id=G-5.3)
- National Fire Protection Association (NFPA) 2, Hydrogen Technologies Code: 2016. Quincy, MA.
- SAE International, Detroit, MI. SAE J2600 Compressed Hydrogen Surface Vehicle Fueling Connection Devices: 2015.



# Regulations and Standards (p. 32)

Stations shall comply with:

- SAE International, Detroit, MI. SAE J2601 Fueling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles: 2016.
- SAE International, Detroit, MI. SAE J2719 Hydrogen Fuel Quality for Fuel Cell Vehicles: 2015.
- SAE International, Detroit MI. SAE J2799 Hydrogen Surface Vehicle to Station Communications Hardware and Software: 2014.
- U.S. Department of Commerce/National Institute of Standards and Technology (NIST), Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices as adopted by the 102nd National Conference on Weights and Measures 2017, NIST Handbook 44: 2018.



# Regulations and Standards (p. 32-33)

Applicants are encouraged to use the following tools.

- California Environmental Protection Agency (EPA), Office of Environmental Health Hazard Assessment, Sacramento, CA. Cumulative Impacts: Building a Scientific Foundation, Cal EnviroScreen.  
<https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>
- California Type Evaluation Program (CTEP).  
<https://www.cdfa.ca.gov/dms/programs/ctep/CTEPInfoGuide.pdf>
- California Type Evaluation Program (CTEP) Certificates of Approval Database Search.  
<https://www.CDFA.CA.GOV/dms/ctep.html>



# Regulations and Standards (p. 32-33)

Applicants are encouraged to use the following tools.

- Division of the State Architect (DSA) 2016 Code Access Compliance Advisory Manual – Intervening Code Adoption Cycle Supplement. 2018.  
<http://www.dgs.ca.gov/dsa/Programs/progAccess/accessmanual.aspx>
- Hydrogen Station Capacity Evaluation (HySCapE) Model. 2018.  
<https://www.arb.ca.gov/fuels/lcfs/rulemakingdocs.htm>
- U.S. Department of Commerce/National Institute of Standards and Technology (NIST), Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality as adopted by the 102nd National Conference on Weights and Measures 2017, NIST Handbook 130: 2018.  
<https://nvlpubs.nist.gov/nistpubs/hb/2018/NIST.HB.130-2018.pdf>





# Regulations and Standards (p. 33-34)

Applicants should familiarize themselves with:

- Code of Federal Regulations (CFR) 225, Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87). <https://www.gpo.gov/fdsys/granule/CFR-2012-title2-vol1/CFR-2012-title2-vol1-part225>
- California Air Resources Board (CARB), Sacramento, CA. 2018 Annual Evaluation of Fuel Cell Electric Vehicle Deployment and Hydrogen Fuel Station Network Development.  
[https://www.arb.ca.gov/msprog/zevprog/ab8/ab8\\_report\\_2018\\_print.pdf](https://www.arb.ca.gov/msprog/zevprog/ab8/ab8_report_2018_print.pdf)
- CARB, Sacramento, CA. Low Carbon Fuel Standard Program.  
<http://www.arb.ca.gov/fuels/lcfs/lcfs.htm>



# Regulations and Standards (p. 33-34)

Applicants should familiarize themselves with:

- California Department of Transportation, Sacramento, CA. Plug-in Electric Vehicle Charging Station and Hydrogen Fuel Cell Electric Vehicle Fueling Station Signage Fact Sheet, August 2018.  
<http://www.dot.ca.gov/hq/tpp/offices/orip/pev/EV%20Hydrogen%20factsheet.pdf>
- California Energy Commission, Sacramento, CA. Alternative and Renewable Fuel and Vehicle Technology Program Investment Plans.  
<https://www.energy.ca.gov/transportation/arfvtp/investmentplans.html>
- California Energy Commission, Sacramento, CA. Joint Agency Staff Report on Assembly Bill 8: 2018 Annual Assessment of Time and Cost Needed to Attain 100 Hydrogen Refueling Stations in California (CEC-600-2018-008).  
<https://www.energy.ca.gov/2018publications/CEC-600-2018-008/CEC-600-2018-008.pdf>



# Regulations and Standards (p. 33-34)

Applicants should familiarize themselves with:

- Governor's Office of Business and Economic Development, Sacramento, CA. Hydrogen Station Permitting Guidebook, Best Practices for Planning, Permitting and Opening a Hydrogen Fueling Station: 2015.  
<https://gobiz.app.box.com/HydrogenPermittingGuidebook>
- Pacific Northwest National Laboratory (PNNL), Richland, WA. Safety Planning for Hydrogen and Fuel Cell Projects. November 2017. PNNL-25279-1.  
[https://h2tools.org/sites/default/files/Safety\\_Planing\\_for\\_Hydrogen\\_and\\_Fuel\\_Cell\\_Projects-November2017\\_0.pdf](https://h2tools.org/sites/default/files/Safety_Planing_for_Hydrogen_and_Fuel_Cell_Projects-November2017_0.pdf)