

**CALIFORNIA ALTERNATIVE ENERGY AND  
ADVANCED TRANSPORTATION FINANCING AUTHORITY**

*Request to Approve Project for Sales and Use Tax Exclusion (STE)<sup>1</sup>*

**FirstElement Fuel Inc.  
Application No. 19-SM014**

**Tuesday, June 18, 2019**

Prepared By: *Xee Moua, Program Analyst*

**SUMMARY**

**Applicant** – FirstElement Fuel Inc.

**Location** – Campbell, Santa Clara

**Industry** – Fuel Grade Hydrogen Production

**Project** – New Hydrogen Fueling Station (Advanced Manufacturing)

**Value of Qualified Property** – \$2,202,766

**Estimated Sales and Use Tax Exclusion Amount<sup>2</sup>** – \$184,151

**Application Score –**

Fiscal Benefits Points:	2,191
<u>Environmental Benefits Points:</u>	<u>50</u>
<b>Net Benefits Score:</b>	<b>2,241</b>
<u>Additional Benefits Points:</u>	<u>85</u>
<b>Total Score:</b>	<b>2,326</b>

**Staff Recommendation** – Approval

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<sup>1</sup> All capitalized terms not defined in this document are defined in the Program’s statute and regulations.  
<sup>2</sup> This amount is calculated based on the average statewide sales tax rate of 8.36%.

**THE APPLICANT**

FirstElement Fuel Inc. (“FEF” or the “Applicant”), a California corporation headquartered in Irvine, was founded in August 2013. FEF provides retail hydrogen fuel for customers driving fuel cell electric vehicles (“FCEVs”) and states it is currently working with automotive company policymakers and government agencies to build the first network of hydrogen fueling stations.

FEF has 19 operating hydrogen facilities in California with plans to build 12 additional locations (see attachment A) in the state through July 2020. On December 18, 2018, FEF was granted an STE award for the purchase of up to \$2,050,000 in Qualified Property for an estimated STE of \$171,380 to build a new hydrogen fueling station in Oakland, which is one of the 12 additional facilities. The remaining 11 locations (including this application) are projects to be considered by the CAEATFA Board at this meeting under Agenda Items – 4.A.1-4.A.11.

FEF was also awarded 12 grants totaling \$21,070,635, including \$1,972,785 for the Campbell facility that is the subject of this application, under the California Energy Commission’s Alternative and Renewable Fuel and Vehicle Technology Program for light duty vehicle hydrogen refueling infrastructure on November 8, 2017.

The major shareholders (10.0% or greater) of FEF are:

- Dr. Tim Brown (36%)
- Dr. Shane Stephens (33%)
- Joel Ewanick (31%)

The corporate officers of FEF are:

- Dr. Tim Brown, Chief Operations Officer and Principal
- Dr. Shane Stephens, Chief Development Officer and Principal
- Joel Ewanick, Chief Executive Officer and Chairman
- Isaac Kim, Chief Financial Officer

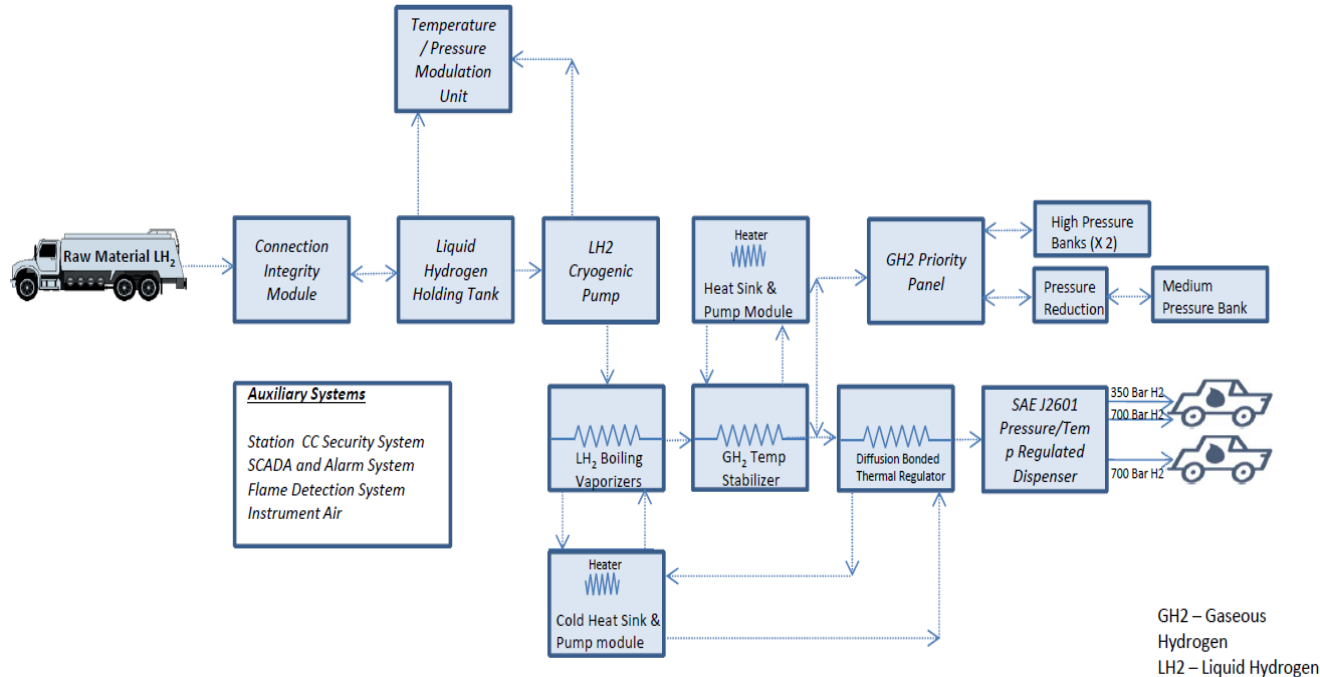
**THE PROJECT**

FEF is requesting a sales and use tax exclusion to build a new hydrogen fueling station located in Campbell that will produce fuel grade hydrogen for FCEVs using second-generation technology that stores, produces, and delivers hydrogen fuel more efficiently compared to currently operating hydrogen stations (the “Project”). The Applicant represents that standard hydrogen stations employ first-generation technology that begins with raw hydrogen in a gaseous form that is pressurized using traditional compressors and cooled using refrigeration, whereas the Project will use liquid hydrogen that cannot simply be pumped and utilized in its natural state, and therefore must be processed to comply with fueling protocols SAE J2601 and SAE J2719 before it can safely be dispensed into FCEVs. In comparison to traditional hydrogen fuel manufacturing, FEF states its process is more advanced and requires high precision tools such as pressurized storage, hydraulic compressors, cooling systems, check valves, advanced filtration equipment, fuel converters, and fuel dispensers. FEF states the Project will start with 33% renewable liquid hydrogen that must be pressurized from 40 psi up to 13,500 psi using a cryogenic pump. After the liquid hydrogen exits the pump, heat exchangers are used to convert it into gas. The hydrogen’s temperature is then regulated before being filtered to remove

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contaminants and particles that could cause damage to the FCEVs valves and fuel cell materials. As the fuel is being distributed, the Applicant represents that the gaseous hydrogen is cooled to -40°F, enabling the fuel to safely enter the vehicle tank.

FEF states the Project will use a liquid cryopump that is more energy efficient, consuming only 1-kilowatt hour of electricity to transform raw material compared to the industry standard of 4-kilowatt hour of electricity. The Applicant also represents that because the Project will use liquid hydrogen rather than gaseous hydrogen, the Project will require approximately 80% fewer deliveries of hydrogen as one truck can carry 750 kg of raw liquid hydrogen compared to 150 kg of gaseous hydrogen.



*Figure 1: FEF’s Hydrogen Fuel Production Process*

**ANTICIPATED COSTS OF QUALIFIED PROPERTY**

The anticipated Qualified Property purchases are listed below:

Liquid Pump Transformation Package	\$1,383,000
High Pressure Storage Package	246,066
Heat Exchange, Pressure Regulating & Dispensing Package	573,700
<b>Total</b>	<b><u>\$2,202,766</u></b>

*Note: The Qualified Property purchases reported in the Application and shown here in staff's report are estimated costs. At the termination of the master regulatory agreement a finalized project equipment list will be prepared detailing the value of the Project equipment acquired and detailing the actual tax benefit realized pursuant to Revenue and Tax Code Section 6010.8. Variance from the costs shown in the Application and in this report may occur prior to the closing due to increased costs of certain components (of the Project) over original estimates, and other reasons. In addition, such costs may vary after closing due also to increased costs, as well as common design and equipment modifications during construction, differences in equipment due to future changes in law or regulation, or for other reasons*

**TIMELINE**

According to FEF, the Project is currently in the permitting phase and will be completed by mid-December 2019.

**PROJECT EVALUATION**

**NET BENEFITS**

The Project received a Total Score of 2,326 points, which exceeds the required 1,000-point threshold, and a total Environmental Benefits Score of 50 points, which exceeds the 20-point threshold.

- A. **Fiscal Benefits (2,191 points)**. The net present value of the total fiscal benefits over the lifetime of the Qualified Property is derived from the Applicant's sales taxes, personal income taxes paid by the firm's employees, firm taxes on profits, property taxes, and other indirect fiscal benefits of the Applicant which amounts to \$403,466, resulting in a Fiscal Benefits score of 2,191 points for the Project.
  
- B. **Environmental Benefits (50 points)**. The Project will result in an Environmental Benefits Score of 50. The Applicant received points in the following categories:
  - 1. **Environmental Sustainability Plan (20 of 20 points)**. The Applicant will implement an environmental sustainability plan for its Project that it represents will take lessons learned from prior experience to implement the Project in a sustainable way and minimize environmental impacts, such as a reduction in energy use through the adoption of second-generation technology.

2. **Energy Consumption (30 of 30 points)**. The Applicant represents that the Project will result in a 75 percent reduction in energy consumption compared to industry standard.

C. **Additional Benefits (85 points)**. Applicants may earn additional points for their Total Score. The Applicant submitted information and received 85 additional points.

1. **Production Jobs (0 of 75 points)**. The Applicant represents that the Project will support one production-related job at its Facility. Zero points were awarded because the marginal increase in jobs does not meet the required threshold.
2. **Construction Jobs (60 of 75 points)**. The Applicant represents that the Project will support a total of 23 construction jobs at its Facility. CAEATFA estimates that approximately two of these jobs will be attributable to a marginal increase in jobs created due to the approved STE, resulting in a Construction Jobs Score of 60 points for the Project.
3. **Research and Development Facilities (25 points)**. The Applicant has verified that it has a facility located in California that performs research and development functions related to the manufacturing of fuel grade hydrogen, which is the subject of this application.

## **STATUS OF PERMITS/OTHER REQUIRED APPROVALS**

FEF represents all permits from local entities for its zoning, building, electrical, mechanical, and pressure vessel permits will be obtained before operation begins December 2019.

## **LEGAL QUESTIONNAIRE**

Staff reviewed the Applicant's responses to the questions contained in the Legal Status portion of the Application. The responses did not disclose any information that raises questions concerning the financial viability or legal integrity of this Applicant.

## **CAEATFA FEES**

In accordance with CAEATFA Regulations,<sup>3</sup> the Applicant has paid CAEATFA an Application Fee of \$1,101.38 and will pay CAEATFA an Administrative Fee of \$15,000.

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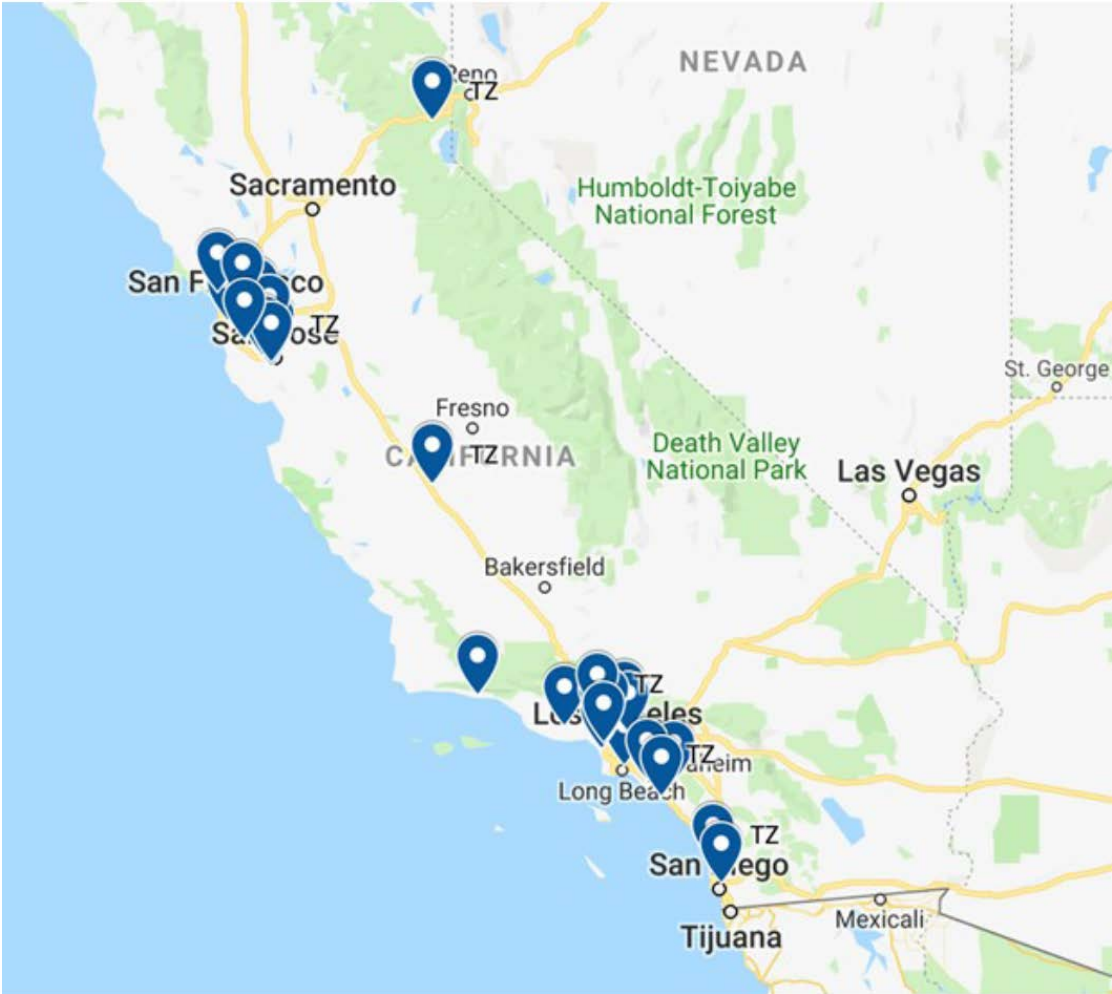
<sup>3</sup> California Code of Regulations Title 4, Division 13, Section 10036

**RECOMMENDATION**

Staff recommends approval of Resolution No. 19-SM014 for FirstElement Fuel Inc.'s purchase of Qualified Property in an amount not to exceed \$2,202,766, anticipated to result in an approximate sales and use tax exclusion value of \$184,151.

Attachment A

# FE FUEL



**RESOLUTION APPROVING AND AUTHORIZING EXECUTION OF A MASTER  
REGULATORY AGREEMENT WITH FIRSTELEMENT FUEL INC.**

June 18, 2019

WHEREAS, the California Alternative Energy and Advanced Transportation Financing Authority (the “Authority” or “CAEATFA”) has received the Application of **FirstElement Fuel Inc.** (the “Applicant”), for financial assistance in the form of a master regulatory agreement (the “Agreement”) regarding tangible personal property utilized in an Advanced Manufacturing process or for the design, manufacture, production or assembly of Advanced Transportation Technologies or Alternative Source products, components, or systems (“Qualified Property”) as more particularly described in the staff summary and in the Applicant’s Application to the Authority (collectively, the “Project”); and

WHEREAS, the Applicant has requested the Authority to enter into the Agreement to acquire Project equipment with an estimated cost not to exceed \$2,202,766 over a period of three years; and

WHEREAS, the Applicant believes that this form of financial assistance will enable it to avail itself of the benefits of an exclusion from sales and use taxes relative to the Qualified Property pursuant to California Revenue and Taxation Code Section 6010.8; and

WHEREAS, approval of the terms of the Agreement and authority for the Executive Director, Deputy Executive Director, or Chair of the Authority to execute the necessary documents to effectuate the Agreement is now sought;

NOW, THEREFORE, BE IT RESOLVED by the California Alternative Energy and Advanced Transportation Financing Authority, as follows:

Section 1. The Project constitutes a “project” within the meaning of Public Resources Code Section 26003(a)(8)(B).

Section 2. The requested master regulatory agreement constitutes “financial assistance” within the meaning of Public Resources Code Section 26003(a)(6).

Section 3. The Applicant is a “participating party” within the meaning of Public Resources Code Section 26003(a)(7).

Section 4. The Executive Director, Deputy Executive Director, or Chair of the Authority (the “Authorized Signatories”) are hereby authorized for and on behalf of the Authority to approve any changes to the Project as the Executive Director shall deem appropriate, provided that the amount of the Qualified Property to be purchased may not be increased above the amount approved by the Authority.



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Section 5. The proposed form of the Agreement between the Applicant and the Authority, as filed with the Authority prior to this meeting, is hereby approved. The Authorized Signatories are hereby authorized and directed, for and on behalf and in the name of the Authority, to execute, acknowledge and deliver to the Applicant the Agreement in substantially the form filed with or approved by the Authority, with such insertions, deletions or changes therein as the Authorized Signatory executing the same may require or approve, and with particular information inserted therein in substantial conformance with the staff summary and in the Applicant's Application to the Authority, such approval to be conclusively evidenced by the execution and delivery thereof. The Authority understands and agrees that pursuant to the terms of the Agreement, the obligations of the Applicant may, under some circumstances, be carried out or assumed by a successor or assignee entity, or by an affiliate of the Applicant.

Section 6. Each of the Authorized Signatories, acting alone, is hereby authorized and directed to do any and all ministerial acts, including (without limitation) the execution and delivery of any and all documents and certificates they may deem necessary or advisable in order to consummate the Agreement and otherwise effectuate the purposes of this Resolution.

Section 7. The Applicant shall assure CAEATFA that all Qualified Property listed in the semi-annual reports pursuant to the Agreement shall be installed, maintained and operated in compliance with all applicable local, state and federal laws.

Section 8. The Agreement shall only apply to Qualified Property that the Applicant certifies will be installed, maintained and operated at facilities within the State of California.

Section 9. The adoption by the Authority of this Resolution for the Applicant shall not be referred to in any application before any governmental agency as evidence of the feasibility, practicality or suitability of the Project or in any application for any required permission or authority to acquire, construct or operate the Project.

Section 10. This Resolution is effective immediately and will remain in full force and effect unless the Regulatory Agreement, as defined in CAEATFA Regulations Section 10035(a), is not executed within thirty (30) days of the date of this Resolution. The Executive Director may extend the thirty days if necessary.