FIRST ELEMENT FUEL

California Energy Commission
Dockets Office MS-4
Re: Docket No. 15-HYD-01
1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.ca.gov

To whom it may concern,

Thank you for your consistent leadership in hydrogen fuel. It is clear from infrastructure efforts in Europe, Asia, and the rest of the United States that building a hydrogen refueling network is difficult, complex, and costly. But, it is equally clear from both academic research and bold initiatives by automakers that hydrogen is not only a viable alternative fuel, but actually a necessary replacement for gasoline. Due to the efforts of California, and specifically the Energy Commission and Air Resources Board, California leads the world in hydrogen infrastructure and is poised for a major paradigm shift in transportation.

We are enthusiastic to apply to your next hydrogen infrastructure solicitation in any form that you deem appropriate. But, please consider the following comments and suggestions that we feel could make the solicitation even more compelling:

1. Please consider augmenting the available funding with monies from next year's pool if possible.
   - Based on the CARB's 2015 *Annual Evaluation of FCEV Deployment and Hydrogen Fuel Station Network Development* and our own internal discussions with automakers, we expect a large increase in FCV sales in the 2017-2018 timeframe. Given the time needed to permit, construct, and commission stations, this will be the last round of CEC funding that will be able to support this step change in vehicle deployment.
   - Because of the duration and magnitude of hydrogen station projects, a biennial funding cycle well-matches our needs. A two year cycle allows us to be nearly complete with one set of projects before undertaking the next. If funding occurred every year we would have to balance several sets of projects in more diverse stages of permitting and construction.
   - The supply chain for many hydrogen station components is very weak. We believe that suppliers are carefully watching California and are prepared to invest in manufacturing capacity if demand continues to grow. A larger solicitation now will help drive these investments by both direct orders and continued momentum.

- We have garnered substantial efficiencies in both cost and process due to our opportunity to develop 19 stations in parallel. As a result, we would prefer to build as many stations at once as possible.

2. A maximum award of $1.875 million with $300,000 O&M funding support seems reasonable for the station performance and specifications outlined by the Commission.
3. We ask the Commission to carefully evaluate the network value of stations in the "Establish Core Market Competition" and the "Expand Core Market Competition". Adding labels to different areas can be problematic. For example, are there clear, quantifiable, peer-reviewed definitions for each area? Optimization of the entire network should be emphasized over prioritizing funding based on somewhat arbitrary region definitions.

   We ask the Commission also consider additional station locations that are outside of those specified in the list provided in the PON. While the locations in the draft solicitation reflect many excellent market locations, we believe there are additional strong market opportunities that were not captured in the list.
4. The Commission's proposal of up to $62,500 per month in increased capital funding is a fair incentive for driving faster Operational status. We also feel that augmenting the funding level month-by-month is a more appealing method than the more drastic cut-off dates promulgated in the last round of funding.
5. The potential of up to $100,000 per year (for 3 years), per station for Operations and Maintenance support is a valuable component to this draft solicitation. The ability to spread these costs over 4 years is also a welcome change over the previous solicitation. We anticipate heavier operating losses in the first years and lower losses in the later years due to increasing vehicle sales, and ability to balance O&M costs will help manage cash flow.

   We also think it is fair to tie continued data collection to O&M funding. If the Commission is supporting ongoing operations, the Commission should have access to data from those stations.

6. For hydrogen purity, we feel that a label or sticker on a delivery truck will not meaningfully improve assurance that hydrogen meets SAE J2719 standards. For delivered gas stations, impurities can be introduced directly through delivered gas, or could be introduced by the station hardware. Certifying or labeling the delivery truck will add cost to the upstream supply without adding significant assurance to customers.

   Additionally, the specification of an "in-line" analyzer is problematic. SAE J2719 prescribes specifications for 13 different contaminant species. An in-line analyzer for all species concurrently does not exist. An in-line analyzer for certain "canary" species may be appropriate for stations utilizing onsite generation (as opposed to delivered gas). But, as with any specification, increasing performance and control also increases cost.

7. Three years of data collection is a fair request for the amount of funding that the Commission is proposing. But, it is important that the Commission not tie the data collection to funding retention. The Commission is proposing O&M funding precisely because cash flow management will be difficult in the early years of operation due to the lack of customers. The Commission should not then simultaneously withhold cash as a means to guarantee data collection.

We look forward to developing a compelling proposal to this upcoming solicitation and are pleased to have the opportunity for input.

Sincerely,

Dr. Tim Brown
Chief Operating Officer and Co-founder
FirstElementFuel, Inc.