California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

November 21, 2014

Ref: Docket Number 13-ALT-02 (2014-15 Draft ARFVTP Investment Plan)

Dear Commissioner Scott and CEC Staff,

Energy Independence Now would like to commend you on an excellent job in drafting the recent Draft Investment Plan for the 2015-2016 Alternative and Renewable Fuels and Vehicle Technology Program (ARFVTP), as well as its sister document, the draft IEPR. We would like to offer the following comments on the draft, and will be submitting comments separately on the IEPR, though the issues we raise are related.

1. **We support the proposed funding structure and allocations, and the investment continuity it represents.** The current document clearly provides continuity and clarity as it relates to the fuel portfolio approach CEC is taking, as well as the support throughout the supply chain s. We find the tables in the current plan informative and clear on the funding allocations and links to policy objectives. We also recognize that the general continuity on funding allocations help build industry confidence around the State's sustained commitment.

2. **Add Renewable Hydrogen as a Fuel Type in Chapter 3, for future allocations.**
We suggest that centralized renewable hydrogen is a fuel type that fits within the definition of the *Alternative Fuel Production and Supply category*. Currently, all hydrogen activities are supported within the infrastructure category. Although this makes sense for *onsite* electrolysis and SMR, there may be significant investment opportunities for centralized renewable hydrogen made through both electrolysis and SMR of biomethane.

   This centralized renewable hydrogen production also relates directly to one of the themes highlighted in the IEPR, which is the increasing connections between the transportation sector and electric power and natural gas grids. Electrolyzers and fuel cells are key enabling technologies for that integration, and their deployment will help reach the goals of the ARFVTP. If a landfill gas project were to propose a biomethane-based hydrogen SMR facility, the Fuel Production and Supply category would be the logical place for funding. Likewise, a large scale electrolysis project, linked to a solar or wind development could produce renewable hydrogen fuel for vehicles, forklifts, pipeline injection, energy storage or refinery use, to name but a few. Neither of these types of project would fit comfortably with the station-oriented PONs of the infrastructure category.

   We therefore suggest that CEC add a paragraph on page 27 (following biomethane) flagging centralized renewable hydrogen as another type of fuel, with significant GHG reduction

potential and sector-bridging value. We further believe that funding for such fuel would be outside the earmarked $20m per year funding for the network development, though it would serve to support it, much as biomethane investments support the GHG value of the CEC's natural gas vehicle investments.

Recognizing it is late in the process to allocate funding for such fuels, we suggest instead that CEC add the mention of this fuel and its potential, setting the stage for future allocations and sending an important signal to developers that proposals of this type may be considered in the future.

3. **Add a section on Alternative Financing, for development in future Investment Plans**

The draft IEPR discusses CEC's interest in developing alternative financing mechanisms, as directed in the AB8 bill. However that discussion is absent from the Investment Plan. We encourage CEC to add a preliminary discussion of alternative financing as a separate chapter in the ARFVTP investment plan so that it can be developed over subsequent year even while the IEPR focus moves on to other energy sectors.

Alternative Financing needs to be approached systemically for several important reasons:

a. **Get more for CEC's money**

CEC needs to identify mechanisms that provide maximum leverage of its limited funding on the large transportation technology markets. This goal, which was flagged by Commissioner Scott the at the recent Advisory Committee meeting, makes mechanism such as loan loss reserve funds and loan guarantees attractive, as State funds are preserved in the case of successful projects, and private lending leveraged.

b. **Match the type of financing with the stage of development**

The second goal of using more alternative financing mechanisms is to match the type of funding offered based on the current stage of commercial development of the given category. For example, technologies that are in pre-commercial, pilot-project phase are appropriate recipients of grant funding, in order to build new systems and demonstrate feasibility. A grant to buy down the capital costs of early technology makes sense.

At the other end of the spectrum are technologies that are ready for a commercial market and will be profitable to operate, but do not yet have an established track record needed to obtain traditional financing. In those cases, grants are not necessary: what is needed are credit enhancements such as loan loss reserves and guarantees, given that profits are available to pay debt. However those same guarantees would serve no purpose if offered to the early stage technologies, given the limited revenue potential.

There are also a range of possible financial tools that fit between grants at one end, and loan guarantees at the other, that each serve a different purpose. CEC should begin to outline those tools, the conditions for which they are suited, and the types of

investment within ARFVTP that they would therefore apply to. This can build off the list started in the IEPR's Chapter 3, but includes several more.

One example of such tools are producer rebates or deployment incentives. For a category where the main goal is no longer to iron out technology wrinkles, but rather to promote large scale adoption and help drive down component costs, a rebate is far more effective than a cost-based grant program. The rebate lowers the cost to consumers, as does a grant, but – more importantly and unlike a reimbursement grant – it provides an incentive for the developer to push down the costs of suppliers and keep the profits for themselves. Over time the rebates levels comes down until it can be phased out.

In our Hydrogen Network Investment Plan (H2NIP), Energy Independence Now described how this might work for hydrogen stations as the network matures. Fixed price rebates, on a performance/capacity basis would function more like home solar rebates, and avoid the risk of the grant program keeping component costs artificially high. There are a wide range of similar programs that CEC could look to identify which specific categories of the ARFVTP program would be well suited for this type of financing, rather than cost-based grants.

Another set of financing alternatives that fit between grants and loan guarantees would be direct loans disbursed with more flexible repayment schedules. These would make sense for categories where the technology is ready for commercial scale, and capital costs have been brought down, but a low market demand is the main problem. Such projects cannot secure commercial loans, given low initial revenues, but if CEC could have a revolving loan fund that gives out loans whose repayment are linked to the building market demand, such projects could get off the ground.

The Department of Transport recognizes this type of market need in the TIFIA program (The Transportation Infrastructure Finance and Innovation Act)[1], which not only provide traditional loan guarantees and lines of credit, but also direct loans which are specifically tailored to adapt to slow demand growth. TIFIA offers debt repayment that is backloaded to reflect that slow growth. Other options would be to have 3 or 5 year deferred payments, to allow time for revenues to build.

c. **Create a systematic weaning**

The third goal of using alternative financing more systematically is to lay out the path by which a technology is weaned of government support. This answers one of the most frequently asked questions in the CEC program, which is: "When will the State be able to get out of this subsidizing business?"

At the moment, the ARFVTP investment plan does not offer a framework for answering that questions. However by outlining the range and staging of alternative financing

[1] http://www.fhwa.dot.gov/ipd/tifia/

tools, the program would clearly define as a technology launching program, that uses many tools (including grants) to accomplish its goal.

As each technology transitioned through a spectrum of support, starting with cost-based grants for the early stage to loan guarantees for those that are market-ready, the CEC would be laying out a path towards being subsidy free. This weaning would help avoid a situation where a technology supported by grants must suddenly face a cliff to a commercial market, without a steady transition from that support.

With such a framework, discussions at the Advisory Committee meetings could focus on asking the experts to clearly outline the underlying economic problem facing each technology at its current stage of development to determine the most suitable financing tool to use. It could also help ask hard questions of technologies for which a business model is not in place for the user to pay for the service, a problem for which subsidies alone cannot fix.

The example of rebates and revolving loan funds are just two of many mechanisms available. We raise them to highlight:

1) There is a spectrum of possible tools, from grants to credit enhancement that CEC should consider for technologies at different stages of commercializing..
2) Each of those tools are suited to fixing a specific problem that prevents commercial financing.
3) The ARFVTP program would benefit from identifying, for each investment category, what the underlying economic problem the ARFVTP is addressing, and therefore what the appropriate financing mechanism .

We strongly believe that the CEC program would be more effective, more defensible, and more highly leveraged if a systematic approach to a portfolio of alternative financing tools were developed, and overlaid with the categories and technologies CEC is promoting.

At this stage, we suggest CEC establish the alternative financing chapter and lay out the framework for future evolution, building on the content that is in the IEPR, ideally adding a preliminary framework that links financing to the portfolio as indicated above. The exact financing mechanisms can be developed over time.

EIN hopes the above comments are helpful in supporting the ongoing work of the CEC, and would be happy to discuss any other points in further detail.

Sincerely,

Remy Garderet

Policy Director
Energy Independence Now