

June 9th, 2011

California Energy Commission
 Dockets Office, MS-4
 Re: Docket No. 10-ALT-1
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DOCKET**10-ALT-01**DATE June 09 2011RECD. June 09 2011

**RE: Comments on 2011-2012 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program, May 23rd, 2011
 Transportation Committee Draft Report**

CEERT again thanks the CEC for the opportunity to provide comments on the “2011-2012 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program, Draft Committee Report.” We further commend the staff for its excellent work and diligence in working to review technical considerations and address stakeholder concerns as staff drafts the Investment Plan on behalf of the Commission.

Plug-in Electric Vehicles

EV Readiness

We continue to applaud the CEC’s inclusion of funding to encourage and support the establishment of regional coordination amongst regional government entities and other active stakeholders in order for them to develop regional PEV strategic plans and best practices and guidelines for EVSE deployment. We further agree – as noted in the Committee Draft of the Investment Plan – that development of public charging stations should proceed under the guidance of a regional plan with regional partners developing network plans that are data driven. We support the Energy Commission allowing the funding level for this part of the program to be extended if the \$1 million budget were to become oversubscribed.

Alternative Fuels Automaker Survey

CEERT appreciates the inclusion of Tables 7 & 8 showing automakers’ deployment plans for BEVs and PHEVs by year and region but asks that there be some elaboration in order to explain why the number of vehicles varies from one year to the next and why they do not show a continuous increase from 2011 through 2015. Is this an artifact of the voluntary nature of the survey? Or does this reflect something about the automakers’ deployment strategies? If it does reflect strategic considerations then what is the explanation?

Battery Technology

CEERT asks that references be included for the studies referred to in the section discussing battery technology on page 48.

Battery Reuse

Citations for the study/studies included in this discussion on page 49 should be referenced. Is this referring to the 2010 PIER report, *“Strategies for Transportation Electric Fuel Implementation in California: Overcoming Battery First-Cost Hurdles.”*?¹

CEERT has been and remains a supporter of exploring opportunities to defray battery costs by monetizing products and services associated with battery second use. However, CEERT anticipates that the repurposing, repackaging and recertifying of batteries for secondary use will prove technically challenging and expensive at least in the early years. CEERT trusts that part of the work being conducted on the home energy storage appliance through the PHEV & BEV Research Center and CCSE involves not only exploring applications of lithium-ion batteries in second use, but also the relative costs involved in repurposing the batteries for any secondary use application.

Hydrogen Infrastructure

CEERT had earlier expressed concerns about the differences in perspective between the Energy Commission staff, auto manufacturers and the California Fuel Cell Partnership (CaFCP) over the level of funding needed to support the market launch of fuel cell vehicles (FCVs) in 2014 (and subsequent years) as discussed in the February 18th Staff Draft of the 2011-2012 Investment Plan. At that time the auto manufacturers, the California Fuel Cell Partnership and hydrogen fuel providers were recommending that there be additional infrastructure funding beyond the \$3million that had been allotted in the February 18th Draft 2011-2012 Investment Plan. We understand that CEC staff have revisited their hydrogen infrastructure analysis after spending considerable time meeting with stakeholders to further explore the technical underpinnings that inform hydrogen fueling infrastructure deployment plans needed to ensure market success of FCVs when automakers indicate they will begin early commercial sales of FCVs during 2015-2017. As a result the CEC has increased the allotment for hydrogen fueling infrastructure by \$5million above the allotment recommended in the February Draft of the Investment Plan. CEERT very much appreciates the CEC increasing the funding for hydrogen fueling infrastructure in the Investment Plan.

¹ CEC PIER Transportation Program, February 2010. Strategies for Transportation Electric Fuel Implementation in California: Overcoming Battery First-Cost Hurdles., CEC-500-2009-091

As the California Air Resources Board explores other approaches to incentivize the deployment of hydrogen fueling infrastructure – as an adjunct to its Zero Emissions Vehicle program – CEC funds from the AB 118 program can play a critical role in establishing the critical mass of fueling infrastructure that can catalyze further rapid fueling infrastructure deployment for 2015-2017. CEERT looks forward to working together with the CEC, the CaFCP, CARB, automanufacturers, other stakeholders, and researchers at UC-Irvine to develop a robust ground-up approach for future fueling infrastructure deployment planning. CEERT supports these efforts working towards the ultimate goal of creating a self-sustaining market for hydrogen as a fuel that leads to further infrastructure deployment without requiring further government support.

CEERT believes that FCVs are an important technology that will be critically important in enabling California to meet its long-term air quality and climate goals. CEERT advocates for policies and investments needed to support the deployment of FCVs and looks forward to working with all of the stakeholders in order to help develop a consensus on the needed levels of future funding for hydrogen fueling infrastructure – in conjunction with other complimentary policies – sufficient to ensure the successful market launch of FCVs in California during 2015-2017 and beyond. While this work is important for light duty FCVs, enabling the realization of a self-sustaining market for these vehicles will also help with the development of applications of fuel cell technology in the heavier medium and heavy duty vehicle classes which can be expected to gain limited benefits from the use of battery technology in dedicated and hybrid configurations. Fuel Cells hold the promise of allowing broad categories of medium and heavy duty vehicles (beyond just transit buses) to eventually become zero emissions vehicles.

Biofuels

California's Resource Potential

Any discussion of resource potential should not only include the gross and technical potential but should also acknowledge the economic potential as revealed through a strategic value analysis such as was conducted on the biomass potential for RPS purposes in support of the 2005 IEPR.²

Forest Residue

A citation needs to be provided for the California Department of Forestry and Fire Protection study referred to on page 80. Is this the 2005 PIER report, *"Biomass potentials from California forest and shrublands including fuel reduction potentials to lessen wildfire threat."*?³

² CEC Staff Draft Paper, June 2005. Biomass Strategic Value Analysis., CEC-500-2005-109-SD

³ California Department of Forestry and Fire Protection, February 2005. Biomass potentials from California forest and shrublands including fuel reduction potentials to lessen wildfire threat, Draft PIER Consultant Report, Contract 500-04-004

Ethanol

CEERT understands that under the Federal RFS & RFS2 ethanol necessarily plays a role in California's fuel mix. Moreover, as a practical matter under the Low Carbon Fuel Standard (LCFS) program ethanol produced with a lower carbon-intensity score than reformulated gasoline is a convenient drop-in fuel that can play a role in achieving the LCFS compliance targets; at least in the early years of the program. CEERT also understands that under the state Alternative Fuels Plan and the Low Carbon Fuel Standard there has been a consideration for a number of biofuels production plants to be built in California and this is also consistent (if not coincident) to goals as set forth in the Bioenergy Action Plan. For some time CEERT has advised a cautious and systematic approach to biofuels policy in California, especially as it relates to meeting the arbitrary goals as set out in the Bioenergy Action Plan. CEERT has long recommended that the state should undertake a robust resource and econometric analysis of its bioenergy potential (both biopower and biofuels) and CEERT is pleased to see that the CEC is beginning to undertake a re-evaluation of its approach to the funding for ethanol production in California. CEERT more generally supports re-evaluating the state's approach to its bioenergy potential (both biopower and biofuels).

CEERT looks forward to participating in this summer's planned joint CEC-CDFA forum on biofuels, agriculture markets, and food commodities and hopes that a more extensive and systematic exploration of the challenges facing the bioenergy industry in California will continue through the future work of the Bioenergy Interagency Working Group in coordination and collaboration with the University of California Energy Institute and the California Biomass Collaborative⁴ and other relevant stakeholders.

FFVs and E85

While the US-EPA has granted a partial waiver for E15 use in Model Year 2000 and later MY vehicles, the use of E15 in off-road engines has serious implications not only for the durability of the off-road engines but also for California's air quality. As a practical matter the logistics involved in dispensing such a fuel in a manner that avoids its use in off-road engines is impractical. Moreover, for California to allow for the use of E15 as the standard for California Reformulated Gasoline would undercut the air quality improvements the state has realized from the use of reformulated gasoline to date. An alternative approach would be for California to support and potentially develop a strategy for monitoring if not coordinating the deployment of E85 fueling structure with future FFV deployments; should those deployments prove not to be ubiquitous enough to ensure that statewide consumption levels of ethanol comply with RFS2 requirements and can also assist in LCFS compliance. There are now roughly 500,000 FFVs in California and while it is likely that many automakers that traditionally have not produced FFVs in the past will undertake to do

⁴ CEERT is a member of the Executive Board of the California Biomass Collaborative

so in the next few years (GHG credits for FFVS expire in 2018 and CAFÉ credits for FFVs expire in 2020). It is important that California ensures that ethanol use in California is consistent with how FFVs are deployed and that those FFVs are also actually being fueled predominantly with E85 using low carbon ethanol consistent with LCFS goals.

The potential success or failure of E85 use will also be dependent on consumer acceptance of this fuel, and will likely be a function of consumers' perceptions of the relative cost and performance of the E85 fuel given its lower energy density relative to California Reformulated Gasoline. It is quite clear that the economics of corn-derived ethanol is subject to the vagaries of commodities markets, despite the large federal subsidies for this fuel. Further exploration of this issue area seems appropriate to consider as part of this summer's joint CEC-CDFA forum on biofuels.

Biodiesel

CEERT supports the adjustments made to the funding for biodiesel and related infrastructure. As we have often noted at various Staff and IEPR workshops and AB 118 Advisory Committee meetings we see a limited role for fatty acid mono-alkyl esters (FAME) when considering the continued reluctance (except in limited instances) of automanufacturers to allow the use of blends beyond B5 in their vehicles without the risk of violating their warranty requirements. Given the sophisticated engineering that is now employed in today's clean diesel cars, and the even more stringent SULEV+ requirements that will be required under California's forthcoming LEVIII regulations, California should focus its efforts on supporting non-esterified renewable (NERD) diesel which is a biomass-derived hydrocarbon fuel compatible with the engine, powertrain and emissions control equipment in today's and future clean diesel cars and trucks.

CEERT does feel that biodiesel has a role to play in fleet applications, especially where fleet managers can exercise strict control over their biodiesel supply chain and can ensure that the fuel is kept fresh and the use of any additives is consistent with maintaining good fuel quality and is optimized for use in their vehicles (including minimizing emissions).

CEERT also believes issues relating to FAME and NERD deserve further exploration as part of this summer's joint CEC-CDFA forum on biofuels.

Table 22 might be confusing to some readers. This might be because the footnote indicated for NOx¹ was absent from the draft and might have been meant to explain that -15% indicates a 15% increase in emissions rather than an emissions reduction. Table 22 should be clarified.

Biomethane

The statement on page 8, *“Anaerobic digestion of waste-based feedstocks is proving to be a robust and cost-effective technology for creating very-low-carbon transportation fuels...”*, needs to be clarified. This is true in a limited number of circumstances where synergies exist for the use of digesters at waste-water treatment plants and at food-processing facilities. Anaerobic digestion of dairy manure still remains a technical and economic challenge.

Gap Analysis

During the development of the first Investment Plan the CEC had TIAx conduct a gap analysis in order to assist staff to, *“... estimate investment committed to developing advanced vehicle technologies and to identify funding gaps in the investment landscape.”*⁵ TIAx’s gap analysis was limited to the US context. At that time I and fellow Advisory Committee member Michael Walsh recommended that any future Gap analysis should be extended to an international level in order to allow the CEC to better evaluate global efforts to develop alternative fuels and vehicle technologies and to ensure the most effective use of AB118 program funds. I continue to support this recommendation and recognize that this is not a simple task. I am hopeful that this can be included as part of the scope of work to be included under the contract that is still being negotiated with NREL. In the meantime I would like to draw CEC Staff’s attention to the work of the Global Subsidies Initiative (<http://www.globalsubsidies.org/>) and EAGAR (the European Assessment of Global Publicly Funded Automotive Research – <http://www.eagar.eu/objectives.html>) which I trust should prove useful in informing the development of future investment plans.

CEERT looks forward to continuing to work with the CEC as it continues to develop this program in order to transform California’s transportation and alternative fuels landscape and help to meet the state’s air pollution, global warming and energy security goals.

Sincerely,



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⁵ TIAx, September 9, 2008. Gap Analysis for AB 118, p.1.

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