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Xenia Amashukeli Comments: On the Revised Draft 2016 - 2017 Investment Plan Update: Emerging Opportunities

Additional submitted attachment is included below.

February 25, 2016

Commissioner Jenea A. Scott
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Comment on the Revised Draft 2016/2017 ARFVTP Investment Plan, Docket # 15-ALT-01

Dear Commissioner Scott:

We would like to thank you again for the opportunity to provide our feedback and comments on the revised draft of the 2016/2017 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program. We would also like to express Caltech's continued interested in partnership with CEC through Emerging Opportunities program.

Joint Center for Artificial Photosynthesis (JCAP) is the Nation's Energy Innovation Hub based in California (led by Caltech in partnership with LBNL, SLAC, UCSD and UCI). Our objective is to build the scientific and technological foundation for a solar-driven and efficient energy/fuel generation technology that can provide long-term sustainable alternatives to fossil fuels. We have recently demonstrated operation of high-efficiency solar-driven water-splitting devices – a technology that does not yet have an analogous commercial product. Our technology has advantageous sustainability metrics and with further development can be made to operate as part of the existing infrastructure or in remote areas where access to the energy grid is limited.

The revised draft of the 2016/2017 ARFVTP includes expanded section on Emerging Opportunities category, specifically 100% renewable hydrogen generation. Our recommendation is to continue support of the Emerging Opportunities (pp. 70-72) with emphasis on using the funds to make a 100% renewable technology a viable option for the State in the mid- and long-term.

The rationale for our recommendation is as follows. At this time, there are many technological gaps that must be bridged in order to establish a successful renewable energy sector that can initially augment the petroleum-based economy and in the long-term begin to replace the fossil fuels. There is a specific need for research and

development that will take "proof-of-concept" laboratory demonstrations to higher Technology Readiness Levels (TRL), with focus on integrating this technology into the existing infrastructure. By leveraging Federal investments in science and early technology, the State can significantly advance solar-to-fuels technologies, e.g., solar hydrogen, that have the potential to be highly efficient and 100% renewable.

The revised draft of the 2016/2017 Investment Plan provides a unique opportunity for progress in reducing GHG emissions, and we look forward to continuing our work with CEC on building a new solar-driven fuel technology.

Sincerely
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