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Comments of the California Fuel Cell Partnership on Draft 2015 Integrated Energy Policy Scoping Order

Additional submitted attachment is included below.

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February 20, 2015

California Energy Commission
1516 Ninth Street, MS-31
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Re: Comments of the California Fuel Cell Partnership per request for public comments on 2015 Integrated Energy Policy Scoping Order, docket #15-IEPR-01

Dear Commissioner McAlister and CEC staff:

Thank you for the opportunity to review and provide comments on the draft 2015 IEPR Scoping Order. We appreciate the broad overview of California's energy issues, including the tremendous progress we are making and the challenges that lay ahead.

We offer these comments on the IEPR Scoping Order for your consideration:

1. Hydrogen as Solution for Renewable Energy Storage

The issues facing California as we increase the penetration of renewable energy necessitate the need for effective energy storage. Hydrogen Energy Storage (HES, also called Power-to-Gas in Europe), via electrolysis provides one of the only routes to storing long-term seasonal energy in storage systems that are already in existence; namely the natural gas pipeline network and underground salt caverns – already a significant focus in Europe for bulk energy storage. HES via electrolysis can achieve the ramping speeds required to store renewable energy and provide long term storage of TWhs of energy which may otherwise be wasted (curtailed) as the penetration of renewable generation increases in California to a tipping point above 30% towards the 50% renewable generation target[i].

2. Hydrogen Energy Storage as Low-Carbon Transportation Fuel Source

HES via electrolysis is unique in its ability to transform electrical energy into a fuel source for transportation. HES can be used to store excess renewable electricity as hydrogen gas which can be used to fuel thousands of zero emission fuel cell vehicles without the need to control the refueling schedule of the vehicles. Electrolysis modules are always available to receive load by turning on (or release load by turning off) and so are an excellent candidate for demand side management of a highly renewable electricity grid. The technology also exists to combine HES via electrolysis with waste CO2 sources and produce renewable methane that can be used for energy generation, renewable heat and transportation using the existing pipeline infrastructure.

In summary, Hydrogen Energy Storage provides an opportunity to link utility and transportation sectors by increasing utilization of renewable electricity resources and maximizing opportunities for low carbon gaseous fuels, including both hydrogen and

natural gas. Such a linkage will be instrumental in achieving California's longer term greenhouse gas and petroleum reduction goals.

Thank you for considering these comments. Please contact me if you have any questions or need further information.

Sincerely,

Bill Elrick
Acting Executive Director
California Fuel Cell Partnership

[i] E3 study "*Decarbonizing Pipeline Gas to Help Meet California's 2050 Greenhouse Gas Reduction Goal" (Jan 2015)* - https://ethree.com/documents/E3_Decarbonizing_Pipeline_01-27-2015.pdf