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Project Title:	Development of the California Energy Commission Electric Program Investment Charge 2018 â€“ 2020 Triennial Investment Plan
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Comment Received From: Jim Zoellick

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**Comments on the EPIC 2018 – 2020 Triennial Investment Plan from Schatz
Energy Research Center at Humboldt State University**

Additional submitted attachment is included below.



March 20, 2017

California Energy Commission
Research and Development Division
1516 9th Street
Sacramento, CA 95814

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Project Title: Development of the California Energy Commission Electric Program Investment Charge 2018 – 2020 Triennial Investment Plan

Re: Comments on the EPIC 2018 – 2020 Triennial Investment Plan from Schatz Energy Research Center at Humboldt State University

We would like to commend the Energy Commission on their work to advance needed research, development and demonstration of clean and sustainable electricity generation technologies for the State of California. This work is critically important to a healthy economy, a healthy environment, and to the health of our communities. A significant portion of our work at the Schatz Energy Research Center focuses on community-scale energy projects in rural communities, and bioenergy is one especially important topic area.

Bioenergy is one important component in meeting renewable energy goals in our forested rural communities. But more important than that, successful community-scale bioenergy projects are a key component in addressing climate change, restoring forest health, dealing with massive tree die off issues, addressing catastrophic wildfire threats, and restoring economic vitality to our rural communities. In this regard we would like to make the following suggestions regarding Initiative S4.4 – Improve the Value Proposition of Bioenergy.

Initiative 4.4.1 focuses on gas clean up issues for gasification technologies, and initiative 4.4.2 again includes the demonstration of modular gasification systems. While we agree that the advancement of gasification technology is an important bioenergy topic area, we don't think the Energy Commission should pick technology winners. We recommend that Initiative 4.4.2 be expanded to include other community-scale biomass fueled electricity generation technologies. This should include direct combustion, combined heat and power systems (i.e., advanced stoker boiler technology with steam power cycle). Rather than singling out particular technologies for inclusion or exclusion, all technologies should be required to meet common performance criteria, such as air emissions rates and overall energy conversion efficiencies.

In addition, Initiative 4.4.2 should be open to modular biochar production systems or other biomass conversion systems. As written, the initiative specifically mentions gasification, torrefaction, and densification. Again, we suggest that the solicitation be technologically neutral and open to accepting proposals of various biomass conversion systems as long as they meet

certain environmental, economic, and performance targets. What are needed are technologies that can increase the value of biomass feedstocks so they can “pay their way out of the woods.” We realize that EPIC funds must be spent on projects that result in the generation of electricity. That said, we think that challenges in the bioenergy sector require a holistic view, where the production of high value co-products in addition to electricity generation can allow an integrated system to be economically viable.

Finally, for Initiative 4.4.2 we suggest that you provide a definition of what it means to be a 'modular' system. This could include criteria relating to size/capacity, mobility, throughput rate, ability to easily scale up or down the production rate, etc. Defining these criteria will help applicants to prepare well targeted proposals and will help stream line the question and answer period during the solicitation process.

Thank you for the opportunity to comment on the EPIC 2018 – 2020 Triennial Investment Plan. Keep up the good work.

Respectfully,

A handwritten signature in black ink, appearing to be 'Arne Jacobson', written in a cursive style.

Arne Jacobson
Director, Schatz Energy Research Center