

# DOCKET

11-IEP-1G

DATE May 23 2011

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Chairman Robert Weisenmiller  
Commissioner Carla Peterman  
California Energy Commission Docket Office, MS-4  
1516 Ninth Street  
Sacramento, CA 95814-5512  
docket@energy.state.ca.us

Re: California Energy Commission Docket No. 11-IEP-1G: Comments Related to May 9, 2011 Committee Workshop on Renewable, Localized Generation

Honorable Chair Weisenmiller and Commissioner Peterman:

Thank you for holding the May 9, 2011 workshop to seek public input related to meeting the Governor's renewable energy goals. FuelCell Energy (FCE) supports these goals, and encourages the California Energy Commission (CEC) to consider all types of clean distributed generation (DG) technologies in setting interim targets and actions required to achieve the Governor's 12,000 megawatt (MW) goal.

## Portfolio of Solutions

FCE believes the 12,000MW of DG by 2020 goal can only be realized with a portfolio of clean DG technologies. Each DG solution provides different values and not every DG technology is right for every application. The application should determine the DG solution, and the basic considerations should include:

- Energy Needs – What is the client's load profile? How much and when? Peak? Baseload?
- Site – How much area is available for the DG?
- Fuel – What "fuel" (solar, wind, biogas, natural gas) is available at the DG site?

## Ultra-Clean, Efficient, Reliable Fuel Cells

Ultra-clean, efficient, reliable fuel cells should be a part of the portfolio of solutions. Fuel cells can operate on biogas or natural gas and offer other unique attributes and benefits:

- Ultra-clean
  - Low greenhouse gas (GHG) emissions
  - California Air Resources Board (CARB) certified
  - Annual NOx reduction of 10 tons per 1,400kW fuel cell
- Efficient
  - 47-70% electrical efficiency
  - Combined heat and power (CHP)
- Reliable
  - 24/7 baseload power
- Easy to site
  - Small footprint – FCE 1,400kW fuel cell can be installed in 42ft by 58ft area (575W/ft<sup>2</sup>)
  - Minimal sound impact

### Addressable Market

Multi megawatt CHP fuel cells offer efficient baseload solutions, and can be a significant part of the 12,000MW based on the addressable market data presented in Table 1.

Table 1: Total Addressable Multi Megawatt CHP Market

	Total Addressable Market, (MW)
<b>Clean Power</b>	
Education / Healthcare	1,975
Industrial	2,419
Commercial/Hospitality	291
Government (Corrections, Laboratories, etc.)	50
Oil Production and Refining	1,073
Utility/IPP Export to Grid	4,362
<b>Total Clean Power</b>	<b>10,170</b>
<b>Renewable Power</b>	
Wastewater	130
Agriculture	452
Food and Beverage Processing	346
Landfill Gas	776
<b>Total Renewable Power</b>	<b>1,704</b>
<b>Total Clean and Renewable Power</b>	<b>11,874</b>

The sources for Table 1 are:

- Combined Heat and Power market potential based on “Combined Heat and Power Market Assessment”; ICF International, Inc. Prepared for California Energy Commission (CEC) Public Interest Energy Research Program; October 2009; CEC-500-2009-094-D”
- Agricultural, Food Processing, and Landfill market estimate based on “An Assessment of Biomass Resources in California”, California Biomass Collaborative, 2007; CEC Pier Report March 2008 Contract 500-01-016
- Wastewater treatment market potential based on EPA database of wastewater treatment plants in California

### Barriers to Market

California programs such as the Self-Generation Incentive Program (SGIP) have been critical to establishing a fuel cell market, proving the technology and establishing reference sites. We appreciate the ongoing regulatory support for this program. However, the market has not yet developed to the point where the true value of energy produced by ultra-clean, efficient fuel cells is recognized, so additional support during this transition period is required. We encourage the extension of the SGIP program, the swift implementation of feed in tariffs, and the adoption of DG projects at state facilities as the market transitions and values ultra-clean, efficient DG.

The addressable market is significant, and multi megawatt CHP fuel cells should be a part of California's clean DG portfolio. With the support of the CEC and the State of California, this market can be developed and realized. A sustainable clean DG market where the benefits of the technologies are properly valued will create clean energy jobs in California while reducing greenhouse gas emissions in the State of California.

Thank you for your consideration of these comments.

Sincerely,

/s/

Tracy A. Reid  
Vice President Western Region  
FuelCell Energy