

DOCKETED

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Introduction of Renewable HECA

Additional submitted attachment is included below.

Date: February 22, 2016

To: California Energy Commission (CEC)
From: Michael Hsu, Ztek Corporation

Subject: Submit for Public Hearing on the 7th of February
On 08-AFC-08A Hydrogen Energy California

DEAR CEC STAFF AND COMMISSIONERS,

INTRODUCTION - SUGGESTION OF RENEWABLE HECA

Ztek is prepared to suggest the incorporation of ZERCAL, an emerging economically viable Renewable Clean Energy solution, to transform the HECA Program into **RENEWABLE HECA**. Jointly supported by all members of an international renewable clean energy consortium, ZERCAL is mainly based on Ztek's breakthrough technology in renewable electricity storage and regeneration. Ztek has been an original member in the DOE FutureGen effort as well as the original fuel team member in the California Fuel Cell Partnership (CaFCP). Thus, we have the clearest appreciation of the objectives of these Federal and State programs and is ready to participate now for action led by the Honorable California Governor Brown. The implementation plan for RENEWABLE HECA is summarized below at the HECA site:

BACKGROUND

Ztek has followed the HECA activities before the SCS Energy took over the project in 2008 with US DOE Sponsorship. My academic attention has been the application of SOFC (Solid Oxide Fuel Cell Technology) in SECA project and our direct participation in the original DOE FutureGen (with Ztek's patent of SOFC/GT for 70% generating efficiency) in support of Clean Coal applications. Due to the high project cost associated with technology challenges in clean coal, many sites and participants have come and gone, as of now only two projects have remained pending for actions, HECA in California and NowGen in Texas. During the long delay since **2003** of its inception, the world energy trend has greatly changed toward renewable energy and clean power.

Through the years of evolvement of DOE's FutureGen, Ztek has carried out its fuel flexible ForwardGen program under the sponsorship of the utility industry internationally, we have progressed through SOFC/HVAC demonstration, SOFC combined cycle Project aiming for 70% efficiency, SOFC/H₂ for zero emission power production and arrived at the current RES (Renewable Electricity Storage) viable for utility scale applications. Ztek's ForwardGen, with technologies all featuring Hybrid integration, has been proceeding actively under a global licensing program.

ZTEK RENEWABLE ELECTRICITY STORAGE (RES) INITIATIVE

In anticipation of the upcoming huge demand for storage capabilities for renewable electricity, ZERCAL was initially developed to provide economically viable solution with unlimited storage capabilities and generation for electricity. Adding Ztek newly developed Renewable Electricity Storage solution alongside with ForwardGen SOFC Hybrid solution, ZERCAL has reached matured status following 10 plus years intense development effort under an international team. Its formal commercial readiness with technical, economic and financial preparation has only been announced in February of the current year. The ZERCAL solution is most suitable for front-of-meter installations.

At this juncture, we are encouraged by DOE, from its HQ and the Field Office, to resume the activities related to DOE FutureGen through HECA, particularly with the enhancement of Ztek's Hybrid technologies accomplished in the past 10 plus years in California, with frequent updates submitted to CEC and SCAQMD in various proposal opportunities.

RECOMMENDATIONS FROM THE CONSORTIUM OF ZERCAL (Ztek Energy Renewable of California)

HECA's status and future is currently under the CEC Commissioners review. In this letter, we are suggesting the incorporation of the highly integrated project serving multiple functions that conform to the keen interest of California State in addressing the production of Renewable H2 > 33% as transportation fuel and zero emission utility power (re)generation with 70% potential SOFC Hybrid technology, concurrently offering intermittent wind power storage benefits for the Tehachapi Wind Farms and other Solar Farms in or near Kern County. These CleanTech components can be implemented as an advanced subsystem in the clean coal project, or as an independent package at the developing HECA site with favored construction time/budget and economic value. If receiving continued encouragement from the HECA Community, I will proceed to discuss with Mr. James Croyle, the Chairman of SCS Energy and Mr. Andrew Hlasgo, the Program Manager of HQ DOE for ZERCAL's technical and financial participations.

We are missing the closing on January 15 of the HECA public Response for its AFC (Application for Certification), none the less, it is hoped that a dialogue within the HECA community can be initiated, with the hope leading to a Win-Win-Win resolution among CEC, DOE and Kern County to arrive at an ultimate **RENEWABLE HECA** success in California.

Respectfully,

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