

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 11-ALT-1
1516 Ninth Street
Sacramento, CA 95814-5512

DOCKET	
11-ALT-01	
DATE	_____
RECD.	<u>DEC 21 2011</u>

Re: Comments regarding the 2012-2013 Investment Plan for The Alternative and Renewable Fuel and Vehicle Technology Program

To whom it may concern,

JFE Engineering Corporation (JFE) suggests the California Energy Commission (CEC) consider creating a solicitation for Research and Development regarding Level 4 rapid charging electric vehicle infrastructure.

JFE Engineering is a division of JFE Holdings, Inc. JFE Holdings was established in 1912. The company works in energy transportation, energy storage, power generation, recycling, waste treatment power generation, air emission controls, waste water treatment, CO2 reduction as well as pipeline construction, bridge construction, and port construction. The company has three divisions: JFE Engineering, Universal Shipbuilding, and JFE Steel. JFE has built steel mills in the United States. It is the largest steel company in the world.

JFE Engineering manufactures and installs conversion technologies (they have more than 20 full scale proven CTs in operation); Solar Towers; and rapid EV chargers.

JFE manufactures both level 3 and level 4 rapid EV chargers with built in batteries as an integral part of the technologies. The level 3 charger is available with 20kW low-voltage accessibility. It provides: a 80% charge in 30 minutes; input 3-phase AC200V (can be customized to client's requirements); rated input 20kW; rated output 50kW; efficiency 90% or higher; battery capacity 20-30 kWh; charging unit outdoor stand alone. Level 3 is in commercial use in Japan and is "immediately" available for commercialization in the United States.

Level 4, like level 3, is hybrid technology. Input power is under 20kW, can provide an 80% charge in 8 minutes, and a 50% charge in 3 minutes. Level 4 is operational in Japan as a demonstration, but needs Research and Development to ensure it does not damage batteries.

Level 4 applied research relates specifically to the goals of the Alternative and Renewable Fuel and Vehicle Technology Program in that development of this kind of rapid charge EV infrastructure would: enhance EV use by putting charging on par with fueling a conventional gasoline engine (3 minutes for a 50% charge), integrate energy efficient hybrid charging technology into electric vehicle use, reduce loads to the electric grid, reduce greenhouse gas emissions, and lower the price of manufacturing and selling level 4 rapid charger infrastructure.

Specifically JFE recommends that CEC create a solicitation which would fund research to ensure:

- Level 4 chargers do not damage batteries receiving the charge.
- Level 4 chargers deliver a safe, reliable, consistent charge.
- the development of Level 4 fast chargers is compatible with the needs of California's utilities.
- Charger Stands can deliver both level 3 and level 4 fast charges.
- Level 4 chargers are compatible with both CHAdeMo and SAE charging protocols.
- the cost of manufacturing and selling level 4 chargers is reduced.

In addition to supporting the goals of Assembly Bill 118, funding this kind of research and development will enhance investment activity and create new green jobs in California.

JFE is the only provider of Level 4 rapid chargers in the world today. JFE urges the CEC to consider funding this kind of necessary electric vehicle infrastructure Research and Development. High quality reliable fast chargers capable of delivering a 50% charge in 3 minutes are essential to the wide spread use and acceptance of electric vehicles.