Item #10
December 1, 2010
Energy Commission Business Meeting

WRIGHTSPEED, INC.

Grant Agreement ARV-10-025
for

Wrightspeed Digital DriveSystem Retrofit Kit

Summary

Wrightspeed, Inc. will verify and validate electric drive retrofit kits for use in Class 3 (10,000 lb GVW) through Class 6 (26,000 lb GVW) trucks, to ensure that the system meets the specified performance and efficiency levels. Wrightspeed's Digital Drive System (DDS) DDS electric drive retrofit kit replaces the entire drive system with a minimal increase in weight, and includes sophisticated integrated electronics and a software management system that provide industry-leading efficiencies.

The DDS includes a range extending micro-turbine powered generator that will broaden potential end-use applications. The Wrightspeed DDS uses electric-drive power for up to the first 40 miles per day after being recharged from the electrical grid. The system then switches over to a range-extending micro-turbine generator which will supply the necessary electrical energy to charge the batteries for extended driving range.

Wrightspeed identifies commercial medium-duty trucks as the niche market for the DDS because most are used in relatively local operations. The variable speed nature of the local drive cycle offers good opportunities for fuel savings with the DDS.

Wrightspeed Inc. is focused on electric-drive system technology and plans to manufacture digital drive systems and retrofit kits in California for use by vehicle manufactures and fleet operators. Wrightspeed plans to locate operations related to this project in the City of San Jose in Santa Clara County.

The Energy Commission will provide $1,197,064in Alternative and Renewable Fuel and Vehicle Transportation program funds and the project participants are providing $1,500,000 in match funds.

Benefits

Wrightspeed, Inc. anticipates that the project will verify and validate a 100 percent fuel savings under mixed driving conditions, when compared with the same truck using a diesel engine. For instance, if the diesel truck gets 10 mpg the DDS equipped truck will

demonstrate 20 mpg. The DDS is also estimated to have a 64 percent carbon intensity reduction when compared to a diesel engine truck.

The project will generate 10 jobs, primarily all permanent engineering jobs. The business plan estimates 120 direct jobs by year five, and projects with market penetration approximately 6,000 jobs will be created across the spectrum of jobs from assembly workers, technical and service staff, to sales and administration.

Participants

Wrightspeed, Inc., a California-based company known for building the world's fastest street legal electric car, is now focused on building cleaner and more efficient drive train systems for use in high fuel-consumption medium and heavy-duty trucks. Mr. Ian Wright, owner of Wrightspeed and co-founder of Tesla Motors, has 20 years of experience working on drive system technology.

Capstone Turbine Corporation, based in Chatsworth, California, will supply the micro-turbine generator engines which serve as the secondary power source after the electric-drive battery in the DDS is depleted. Capstone pioneered the use of micro-turbines as generator engines. Their generators have accumulated 21 million fleet operating hours, with a demonstrated mean time between failures (MTBF) of greater than 14,000 hours. These generators were originally designed with hybrid applications in mind, and are currently in use in buses.

Implementation Schedule

Wrightspeed, Inc. anticipates they will build, install, and conduct testing of the manufacturer installed DDS beginning in the summer of 2011. Manufacturing of the retrofit kit for the third-party installation portion of the project is planned for late summer 2011 with installation observation, testing and validation beginning in the fall of 2011. Wrightspeed anticipates that all aspects of this project and the resulting reports will be completed by mid-2012.