

Item #12
October 5, 2011
Energy Commission Business Meeting

Linde, LLC
Amendment to Resolution #110323-9 approving
Grant Agreement ARV-10-038
for
Linde West Sacramento and Laguna Niguel
Hydrogen Refueling Stations

Summary

On March 23, 2011, the Energy Commission approved Grant Award # ARV-10-038 with Linde, LLC to construct new hydrogen fueling stations at existing gasoline retail stations in Laguna Niguel and West Sacramento. That approval was for a total grant award of \$3,396,209.00, based on the original Notice of Proposed Awards posted on October 21, 2010. Subsequent to this Notice, however, staff determined that Linde, LLC was originally eligible for a higher level of award for meeting an additional performance-based incentive. The Revised Notice of Proposed Awards posted November 17, 2010, proposed to award Linde, LLC \$3,920,198.00. This amendment corrects this discrepancy by adding \$523,989.00 to bring the total award to the amount proposed in the November 17, 2010, Revised Notice of Proposed Award. Linde, LLC is matching that award with \$1,306,728.00. The scope of the project has not changed.

Background

This background section provides information on the project, which has the same scope, benefits, and participants as the project originally approved on March 23, 2011.

Based on surveys of automakers, more than 1,200 fuel cell vehicles are expected to be deployed in the greater Los Angeles area and 200 in Northern California by 2014. The lack of available hydrogen fueling infrastructure is a major hurdle in promoting the deployment of fuel cell vehicles. This is due, in part, to the high station cost and the large footprint of hydrogen fueling stations. The hydrogen fueling concept developed by Linde offers an opportunity to resolve these issues by their modular approach. The Linde concept uses a centralized hydrogen production system that places equipment at the central filling facility instead of at each fueling station, reducing the footprint and cost of individual stations. The fuel is then liquefied, delivered to the stations and vaporized on demand.

This project, along with other hydrogen fueling stations in the greater Los Angeles area and Northern California, will create a network of hydrogen fueling stations that will enable

automakers to accelerate their deployment of fuel cell vehicles in the both regions. Fuel cell vehicles produce zero tailpipe emissions and will reduce lifecycle greenhouse gas emissions by 44 percent¹ compared to conventional gasoline vehicles. Based on estimated vehicle throughput through 2020, these Linde hydrogen fueling stations will reduce greenhouse gas emissions by 1,933 metric tons and displace 357,375 gallons of gasoline.

Additionally, more than one-third of the hydrogen fuel that Linde will deliver to this station will be produced from renewable feedstocks.

It is estimated that the project will create approximately 57 Jobs in California.

¹ Based on central steam methane reforming production of 33.3% renewable hydrogen, liquefaction and use in a light duty fuel cell vehicle. (LCFS/GREET)