

DETRICH B. ALLEN
GENERAL MANAGER

BETH JINES
Asst. GENERAL MANAGER

200 N. SPRING ST.
ROOM 2005 MS 177
LOS ANGELES, CA 90012
(213) 978-0840



ANTONIO R. VILLARAIGOSA
MAYOR

VACANT
PRESIDENT

ALINA BOKDE
VICE- PRESIDENT

MARIA ARMOUDIAN

JOYCE M. PERKINS

M. TERESA VILLEGAS

September 16, 2008

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 08-ALT-1
1516 Ninth Street
Sacramento, CA 95814-5512

DOCKET	
08-ALT-1	
DATE	SEP 16 2008
RECD.	SEP 19 2008

Subject: City of Los Angeles AB118 Wish List, Docket Number "08-ALT-1" - AB118 Program

Please find attached the City of Los Angeles AB118 Wish List for consideration in developing future AB118 Investment Plans. It is the City's hope that this list will help identify feasible project categories for the Investment Plan. Our City department fleet managers and other key City representatives were surveyed to help develop the attached list. These projects are considered feasible within the next few years. Most projects, as listed, are ready for planning and implementation. A few projects, namely the hydrogen-related projects, are dependent upon regional infrastructure development and fuel affordability.

If you have any questions, please do not hesitate to contact me at (213) 978 0852.

Sincerely,

Gretchen Hardison
Air Quality Director
Climate & Air Programs

GH:hf

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AB118 WISH LIST
City of Los Angeles Government Fleets
Inter-Departmental Alternative Fuel Taskforce
Los Angeles Clean Cities Coalition

Source Department Key:

BOS = Bureau of Sanitation, Department of Public Works, City of LA

BOSS = Bureau of Street Services, Department of Public Works, City of LA

EAD = Environmental Affairs Department, City of LA

GSD = Department of General Services, City of LA

LADOT = Los Angeles Department of Transportation

LADWP = Los Angeles Department of Water and Power

LAFD = Los Angeles Fire Department

LAPD = Los Angeles Police Department

LAWA = Los Angeles World Airports

MO = Mayor's Office, City of LA

RAP = Recreation and Parks Department, City of LA

1. *Establish Local LNG Production Facilities:* Many clean fuel fleet operators in Southern California, including the City of Los Angeles, currently receive their supplied liquefied natural gas (LNG) from out-of-state LNG liquefaction plants. There have been several LNG supply shortage problems that threatened the deployment of LNG/CNG powered vehicles that provide essential services including solid waste collection and street sweeping, etc. In addition, catastrophic events such as earthquakes may disrupt the scheduled delivery of LNG from distant sources. Funding from AB118, therefore, could be provided for the development and implementation of in-state LNG production facilities. More importantly, LNG produced from biomass or other organic waste would also provide other co-benefits including reduction of greenhouse gases and other air pollutants. *(BOS)*

Currently, the City's General Services Department (GSD) is considering conducting a feasibility study for development of a local natural gas liquefier project in partnership with the Southern California Gas Company. The proposal is coming before the Budget and Finance Committee later this year. With AB118 support or interest, this project is more likely to be approved by the Committee. *(GSD)*

2. *Research, Develop and Deploy a Quick Charge Nano Battery Technology for Prototype LADOT Propane Hybrid DASH Bus:* LADOT is currently having one of its earlier version propane hybrid-electric DASH buses (bus 20005) re-converted to a cutting-edge nano battery technology through a local hybrid-electric bus manufacturer. The project is very promising with the right kind of developmental support and demonstration platform. The Downtown DASH operation is the ideal demonstration platform, because of the LADOT DASH route profile and setup (nine to ten mile loops, frequent stops, low average speed and a recovery time at the end of the route). The vehicle and technology manufacturer has evaluated the Downtown DASH routes and anticipates that a DASH bus with their proprietary drive-train would consume an amount of electricity equal to what they could "fast charge" into the batteries in a "five-minute fast charge cycle" during the layover at the

end of the route. This fast charging capability is currently being tested on the batteries in demo-mode, and the results have been successful. To facilitate the charging rate a fast charger would be required. The vehicle manufacturer has considered developing the charger, but LADWP is being sought as a potential partner due to their expertise in the area. Electrical infrastructure must be developed as well. This project may be suited for a partnership between LADOT, LADWP, and the manufacturer/integrator. (LADOT)

3. *Demonstration of OEM Plug-In Hybrid and Electric Vehicles:* The General Services Department and the Los Angeles Department of Water & Power are very interested in demonstrating and deploying OEM plug-in hybrid vehicles. The LADWP is conducting plug-in hybrid conversion demonstration testing and would like to expand that to include OEM plug-in hybrid demonstrations and deployment projects. (GSD, LADWP)

LADWP is also interested in expanding their zero emission electric vehicle inventory with all electric vehicle demonstration and deployment projects. (LADWP)

The Los Angeles Fire Department (LAFD) would like to explore the possibility of converting some or all of LAFD's 400 gasoline staff vehicles to hybrid or other alternative fuels. This would preferably be done over several years (to spread-out the workload of placing them in service) and the full purchase cost would be in the range of \$50,000 per vehicle for a total of \$20 million, (i.e., estimate includes upgrades for emergency lights and radios). The conversion would be dependent upon approval from LAFD administration, ability of technology to meet required specifications and performance standards, and receipt of a grant covering the full incremental cost of the vehicle (i.e., enough grant funding to make the purchase cost-effective). (LAFD)

4. *Demonstration of Zero-Emission Vehicles in Niche Categories:* The Los Angeles Police Department has been testing three-wheeled, all electric, stand-up vehicles, as patrol vehicles. They would like to expand this program with funding for more purchases and possibly infrastructure expansion for recharging. The Department of Transportation has also expressed interest in testing and possibly deploying this type of three-wheeled vehicle or an alternate all-electric vehicle for parking enforcement activities. In addition, both niche category departments are looking for funding to significantly expand their very successful bicycle patrols demonstration program. (LAPD, LADOT) Other City Department patrols would also like to expand their bicycle programs (i.e., City inspectors, lake lifeguards, park rangers, security, and medics). Five hundred City bikes are now in active patrol. (LAPD, BOSS, RAP, GSD, POLA, LAFD)

5. *Construction of Low-Carbon fuel LNG/CNG Fueling Stations:* The City of Los Angeles is operating the largest municipal fleet of clean fuel solid resources collection vehicles in America with over 300 low-carbon fuel liquefied natural gas (LNG) powered vehicles in service. The use of LNG provides multiple co-benefits, including reduction of greenhouse gases, criteria, and toxic air pollutants. The City of Los Angeles has established four state-of-the-art LNG fueling stations at its solid resources collection district yards at East Valley, West Valley, South Los Angeles, and in the Harbor area. The City needs to establish LNG/CNG fueling stations at its North Central and West Los Angeles District yards and to upgrade the existing LNG fueling station at the Harbor District yard to accommodate the

expansion of its clean fuel fleet. The cost for construction of new LNG/CNG fueling stations at the North Central and West Los Angeles is over \$8 million each and at least \$2 million for the upgrade of the existing LNG fueling facility at the Harbor District yard. Funding for these projects is needed in order to proceed with the implementation plan. (BOS).

The Los Angeles World Airports would like to construct a CNG fueling station at the Van Nuys Airport to service the airport alternative fuel fleet. LAWA's estimated cost has not been confirmed, but a new BOS CNG station in the same community at 1,800 DGE/month has been quoted at \$1.3 million. (LAWA)

The Los Angeles Department of Transportation would like to construct a CNG fueling station in Downtown Los Angeles at 515 E. Commercial Street on LADOT owned land. This will aid in the conversion of their diesel powered Commuter Express fleet of 101 buses to CNG. (LADOT)

6. *Implementation of Alternative Technologies to Process Waste for Bioenergy/Biofuels Production:* There is a growing need for the implementation of alternative technologies to process post-source separated municipal solid waste for bioenergy/biofuels production. These technologies include advanced thermal recycling, gasification, pyrolysis, anaerobic digestion, etc. that will provide substantial savings/reductions with respect to landfill gas emissions, energy consumption, air emissions of criteria pollutants, and carbon footprint. Most of these technologies do not have facilities that are operational in California. Operational information, including air emissions data, is needed by State and other regulatory agencies to assess their performance and environmental benefits, and for permitting purposes. However, the costs to process municipal solid waste by these technologies significantly exceed the tip fee for landfill disposal of the material. The increased costs are mainly due to the acquisition of land, as well as processing equipment and air emission control systems. Grants to offset the capital cost for the development, design, and construction of alternative technology facilities would help to reduce the service fee and make it more economically feasible for their implementation. (BOS)
7. *Research, Development, Design and Construction of Pre-Processing Systems for Organic Wastes as a Fuel Feedstock:* Research, development, design, and construction of a pre-processing system for various organic wastes generated within the City of Los Angeles (i.e., including, but not limited to, green waste, food waste, horse manure, and fats/oils/grease), as feedstock for anaerobic digestion or biomass-to-ethanol conversion technologies for the production of biogas or bio-ethanol, respectively. The pre-processing system is intended to remove contaminants and inert materials, reduce material size, and liquefy organic wastes prior to entering the anaerobic digester or biomass-to-ethanol plant. Conversion of organic wastes to biogas or bio-ethanol diverts such material from landfills and produces a renewable energy source. (BOS)
8. *Purchase of Leak-Proof Liquefied Natural Gas (LNG) or Compressed Natural Gas (CNG) Fueled Collection Vehicles.* These vehicles would be equipped with specially designed arms for automated collection and transportation of organic wastes containing high amounts of moisture (i.e., food waste) to be used as feedstock for anaerobic digestion

technology. Collection of food waste and subsequent conversion to biogas diverts such material from landfills and produces a renewable energy source. (BOS)

9. *Development of Optimum Organic Waste Mixture for Biogas Production:* Research and development of the proper mixture of organic wastes, generated within the City of Los Angeles (including but not limited to, green waste, food waste, horse manure, and fats/oils/grease), for optimal biogas production (a renewable energy source) through anaerobic digestion technology. This will widen the opportunities for low carbon fuel production from biomass and other organic waste and lessen our dependence on petroleum-based fuels. (BOS)
10. *Capture Vented Methane Transportation Gas for Beneficial Reuse:* The use of LNG as a transportation fuel necessitates occasional venting of the pressurized gas. This measure is required to keep the LNG as cold as possible as a result of “evaporative cooling” effect. However, this practice also leads to increased fuel cost as well as inadvertent release of methane, a potent greenhouse gas as mentioned above. Grants are needed to help fund the purchase and installation of selected methane capturing system at the LNG fueling stations for beneficial reuse, such as offsetting the pipelined natural gas that is used for building heating, hot water generation, etc. (BOS)

Currently, the City’s General Services Department is considering placement of a microturbine at the North Central District Yard to capture venting LNG. Funding for this or similar demonstration projects would be desirable. (GSD)

11. *Purchase of LNG/CNG Transfer Vehicles to Transport Green Material Feedstock to Ethanol Facility:* There is no biofuel production plant in the City of Los Angeles. The City is to transport its curbside green material to the Blue Fire Ethanol facility in Lancaster, CA, which is about a 100-mile distance, for biofuel production. To reduce emissions of criteria air pollutants, funding should be provided for the purchase of new LNG/CNG-powered transfer vehicles that will be used to transport the green materials. (BOS)
12. *GIS Routing Software:* Purchase of GIS routing software, computer systems, and related training to optimize the efficiencies of residential solid resources collection operation. The City of Los Angeles will continue to grow. This likely will worsen the traffic congestion, especially during the normal business hours. The special routing software will provide an important tool for redesigning the route as needed in response to traffic patterns and could lead to significant reduction of transportation fuel consumptions as well as emissions of toxic air contaminants. (BOS)
13. *Grant Program Funding Assistance:* Available funding opportunities for local governments in the Carl Moyer Program are limited and, often, funding opportunities in the local MSRC Program are oversubscribed. This situation allows worthy and cost-effective projects to be unsupported. Additional monies should be made available to local governments in the following areas to allow more government fleet projects to be supported. (BOS, EAD)
 - a. Purchase of alternative fuel vehicles that exceed current emissions standards.
 - b. Construction of alternative fuel infrastructure projects, such as LNG, CNG, hydrogen, ethanol, etc., to support the alternative-fueled vehicles in the fleet.

- c. Purchase of CARB-verified diesel exhaust retrofits to allow for fleets to be in early compliance of state regulations.
 - d. Purchase of retrofits targeting other criteria pollutants such as NOx.
 - e. Additional retrofit demonstration projects to increase vendors of CARB-verified retrofits to minimize the skyrocketing procurement cost and increasing market competition. (BOS) Both project coordination/maintenance manpower funding and retrofit equipment funding are needed. (EAD)
14. *Replacement of 12 Diesel-Fueled Airfield Buses with 60' CNG Articulated Buses:* The estimated total cost is \$9,420,000 at \$785,000 per vehicle. Vehicle receipt is planned for January 2010. (LAWA)
 15. *Replacement of 10 35' LNG High-Floor Airfield Buses with 35' CNG Buses:* The estimated total cost is \$5,000,000 at \$500,000 per vehicle. Bid release is planned for July 2009. (LAWA)
 16. *Terminal Electrical Service Capacity Expansion Project:* This project adds a new LADWP substation and associated switchgear outside LAX Terminals 2, 3, 4, 5, 6, 7 and 8 on the apron to accommodate all ground support equipment (i.e., electrical); increases electrical capacity in Terminal 4 by a total of 3000A including upgrading the LADWP transformers from two 2500 KVA to two 3750 KVA transformers; and provides an accessible hatch to bring equipment from the apron to the basement LADWP vault or main electrical room. The estimated project cost is \$34,893,000. The estimated design start date is April 2009; with a bid release date of November 2010 and construction start estimated at April 2011. (LAWA)
 17. *Ground Service Equipment Quick Charging Stations Implementation:* Purchase and installation of rapid chargers for LAX Ground Support Equipment (GSE) to permit the operation of battery-powered GSE. This project may be implemented in conjunction with or immediately following the Terminal Electrical Service Capacity Expansion Project. Estimated project costs are as follows: 1) Central Terminal Area at \$6,000,000, 2) Cargo and Ramp Areas at \$50,600,000, and 3) Central Terminal Area Pre-condition Air Component at \$18,700,000. The estimated schedule is rapid charger installation by 2010 and ground service equipment conversion by 2011. (LAWA)
 18. *Central Utility Plant (CUP) Renovation:* Renovate current cogeneration (CoGEN) facility at LAX to a 100% electrical system for water to cool air for all LAX terminals. Estimated project cost is \$269,000,000 and the estimated schedule is under development and is the pre-design for scoping and project definition. (LAWA)
 19. *Electric Lawn and Garden Equipment:* Recreation and Parks Department would like to purchase electric lawn and garden equipment and develop supporting infrastructure (RAP)
 20. *Hydrogen and Hydrogen/Natural Gas Blend Fueling Infrastructure and Vehicle Retrofits/Purchase:* As the City and State develop capacity with regard to hydrogen-based

energy sources, a number of potential needs have been identified. These potentially include: portable hydrogen fueling stations, hydrogen/natural gas blend fueling station equipment, transmission pipelines, and retrofit and purchase of vehicles, as approved by involved City departments. (MO)

21. *Los Angeles Clean Cities Coalition*: Public education and outreach funding assistance to support alternative fuel education and outreach events in the City of Los Angeles and neighboring communities. (EAD)

Contact for Further Project Information:

Gretchen Hardison

LA Clean Cities Coalition, Co-Chair

Air Quality Director

Climate & Air Programs

Environmental Affairs Department

City of Los Angeles

200 North Spring Street, Room 2005, MS 177

Los Angeles, California 90012

gretchen.hardison@lacity.org

213 978 0852