

**M e m o r a n d u m**

**Date:** March 30, 2007

**To:** The Commission  
(Meeting of April 12, 2007 )

**From:** Delaney Hunter, Director  
Office of Governmental Affairs (OGA) — Sacramento

**Subject:** **AB 1077 (Lieber) State Air Resources Board: plug-in hybrid electric vehicles.** As Introduced: February 23, 2007

**LEGISLATIVE SUBCOMMITTEE RECOMMENDATION:** Support with Technical Amendments

**SUMMARY OF BILL:** This bill would enact the California Plug-In Hybrid Electric Vehicle Leadership Act of 2007. This bill would establish a 19-member California Plug-In Hybrid Electric Vehicle Coordinating Council (one of the council members will be a Commissioner) to meet and be an ongoing focal point for coordination and collaboration between entities and organizations working on plug-in hybrid electric vehicle-related activities, identify existing and potential barriers to the successful development and commercialization of plug-in hybrid vehicles, assess current and proposed activities related to plug-in hybrid vehicles, and describe the extent to which these will address identified barriers, recommend and prioritize additional work, activities, research, development and demonstration, and programs that will contribute to the resolution of identified barriers with the goal of the council to have at a minimum 1,000,000 plug-in hybrid vehicles on California roads by 2015.

This bill would require the Commission, on or before January 1, 2009, in conjunction with electrical and gas corporations, to develop and establish optional off-peak electrical rates for plug-in hybrid electric vehicles, or discounts in the cost of electric service for plug-in hybrid electric vehicles. The bill would also require the Commission to consider certain other utility activities to help develop this market.

**SUMMARY OF SUPPORTING ARGUMENTS FOR RECOMMENDATION:**

This bill will support the Governor's Executive Order S-01-07 issued January 18, 2007 that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 ("2020 Target"). The Governor's Executive Order states: *"The Public Utilities Commission, in the implementation of the GHG emissions cap adopted by Decision 06-02-032, is requested to examine and*

*address how the investor-owned utilities can contribute to reductions in GHGs in the transportation sector.”* This bill will also support AB 32, the California Global Warming Solutions Act of 2006, requiring the California Air Resources Board (CARB) to develop regulations and market mechanisms that will ultimately reduce California’s greenhouse gas emissions by 25 percent by 2020. Mandatory caps will begin in 2012 for significant sources and ratchet down to meet the 2020 goals.

Mobile sources of air pollutants are likely the largest contributor, by far, to harmful emissions in California. For example, in a recent Commission proceeding, evidence was produced that showed that 90% of NOx emissions in the South Coast Air Basin were produced by all mobile sources, compared to only 10% from stationary sources.

### **SUMMARY OF SUGGESTED AMENDMENTS (if any):**

The Commission believes the bill’s scope should be expanded. The plug-in electric hybrid vehicle is just one of the transportation alternatives which could help meet the goals expressed in Executive Order S-01-07. The Commission recommends modifying this bill to make the 19-member council an ongoing focal point for overall coordination and collaboration between entities and organizations working on a statewide goal to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020 (“2020 Target”) and developing a “low carbon fuel standard” for transportation fuels.

The council should focus on all current desirable technological solutions for low emissions or near zero emissions fuels and vehicles such as electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs), and biodiesel vehicles. Alternative fuels for vehicles that could be investigated include natural gas, ethanol, hydrogen and propane.

The bill should retain the goal of a minimum of 1,000,000 low emission or near-zero emission vehicles on California roads by 2015, but this target would include other types of vehicles as well, not just plug-in electric hybrids

### **DIVISION ANALYSIS (Energy Division):**

- This bill requires the Commission to develop off-peak electric rates for plug-in hybrids. The Commission would need to develop such rates either in a special proceeding or in the traditional electric rate design proceedings.
- This bill requires the Commission to consider linkages of the plug-in hybrid program to nighttime renewable energy sources. The Commission would likely need to make this consideration in approvals of renewable energy contracts.
- This bill requires the Commission to consider the establishment of utility testing and demonstration programs, and to consider establishment of utility programs to provide information and assistance to utility customers in relation to low emission vehicles (LEVs). Commission Decision (D.) 05-05-010 orders that the IOUs shall not

use ratepayer funds for discretionary LEV programs unless they are found to be consistent with PU Code Section 740.8 and PU Code Section 451. The Commission expects to review utility LEV programs in the near future so the bill's testing and educational requirements could be considered in that context.

- Commission Decision 06-02-032 requires the Commission to establish a load-based cap on greenhouse gas (GHG) emissions for Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE) (“the utilities”) and non-utility load serving entities (LSEs) that provide electric power to customers within the utilities’ service territories. This bill with D.06-02-032 ensures that low emissions or near zero emissions vehicles using electricity in California will use electricity regulated by the Commission under a GHG emissions cap.
- This bill is in accord with existing PU Code Section 740.3 requirements for the Commission to evaluate and implement policies to promote the development of equipment and infrastructure needed to facilitate the use of electric power and natural gas to fuel low-emission vehicles.
- This bill is also in accord with PU Code Section 740.8 which clarifies Section 740.3 “interests” of ratepayers, short- or long-term, to mean direct benefits that are specific to ratepayers in the form of safer, more reliable, or less costly gas or electrical service, consistent with Section 451, and activities that benefit ratepayers and that promote energy efficiency, reduction of health and environmental impacts from air pollution, and greenhouse gas emissions related to electricity and natural gas production and use, and increased use of alternative fuels. (PU Code Section 451 requires all charges demanded or received by any public utility for any product or commodity furnished or to be furnished or any service rendered or to be rendered shall be just and reasonable.)
- While the Commission should support the bill, especially if the scope of the technologies and fuels considered by the Council is expanded, natural gas and electric utilities and their ratepayers should not be required to be a significant direct developer of the LEV market, and should not subsidize the development of that market. The development of the LEV market should be accomplished primarily by the vehicle and fuel industries and associated businesses. For example, natural gas utilities should not be required to build additional natural gas refueling or electric charging stations, should not provide subsidies to lower the cost of alternative fuels or LEVs, and utilities certainly should not be involved in the direct development or manufacture of new types of LEVs or alternative fuels. Utilities can provide educational and promotional material, can develop appropriate rate schedules, and can fund certain public interest R&D related to LEV development. With this in mind, the Commission should oppose the utilities getting significantly involved in “testing and demonstration” programs, but would not be opposed to the utilities providing information and certain forms of assistance in relation to LEVs.

## **PROGRAM BACKGROUND:**

- California's regulated natural gas and electric utilities have had LEV programs in place for over ten years. The Commission re-examined those programs in recent years. The Commission's most recent policies on utility LEV programs were expressed in D.05-05-010 and D.03-10-086.
- D.03-10-086 expressed continuing support for the environmental benefits of utility LEV programs, and approved continued funding of utility LEV programs through the end of 2005.
- D.05-05-010 orders that the IOUs shall not use "discretionary" LEV program funds (i.e. funds not required for programs mandated by law) for education and training that does not primarily serve to ensure safety, reliability and cost reductions for utility electricity and gas systems. Program elements may incidentally educate the public generally about the societal benefits of clean air or LEVs, in fulfillment of the utility's obligations under PU Code Section 451 to provide services promoting the health and comfort of their patrons and the public.
- D.05-05-010 states in its order that the Commission will evaluate future requests for discretionary LEV on a multi-year basis in each of the utilities' next General Rate Cases (GRCs) or other cost of service (COS) proceedings according to the schedules for these proceedings otherwise set by the Commission.
- D.05-05-010 orders that in order to prevent any lapse in current levels of discretionary LEV program funding, if the Commission is not able to issue a final decision in each utility's upcoming GRC or COS proceeding, the Commission will automatically postpone the sunset date of December 31, 2005 adopted in D.03-10-086 so that current discretionary LEV program funding levels continue until a final Commission decision is issued on each utility's next LEV funding request in its respective GRC or COS proceeding.
- Some utility rate schedules have already been established for LEV consumers. For example, PG&E provides a residential time-of-use tariff for electric vehicle (EV) owners (E-9) with an inclined block structure, whereby prices rise with consumption. The EV tariff has one rate schedule for summer peak hours, another for summer part-peak hours, and another for summer off-peak hours. Available at: <http://www.pge.com/tariffs/pdf/E-9.pdf>. In addition, natural gas utilities provide special tariffs for consumption of natural gas by natural gas vehicle users.

**LEGISLATIVE HISTORY:**

None

**FISCAL IMPACT:**

A Public Utilities Regulatory Analyst IV would be required for this work as staff would need to coordinate and consult with many different state and local government agencies along with private corporations including the IOUs to develop these policies and programs.

The majority of the work would be in the first two fiscal years as the deadline in the legislation for a majority of the Commission's work is January 1, 2009.

Total fiscal impact is \$102,589 per year.

**STATUS:**

AB 1077 has been referred to the Assembly Utilities & Commerce Committee and the Assembly Transportation Committee. No hearings have been set.

**SUPPORT/OPPOSITION:**

None on file

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**Date:** March 30, 2007

## **BILL LANGUAGE:**

BILL NUMBER: AB 1077    INTRODUCED  
BILL TEXT

INTRODUCED BY    Assembly Members Lieber and DeSaulnier  
                  (Principal coauthor: Assembly Member Huffman)  
                  (Coauthor: Assembly Member Lieu)

FEBRUARY 23, 2007

An act to add Article 5.5 (commencing with Section 43850) to Chapter 4 of Part 5 of Division 26 of the Health and Safety Code, relating to air pollution.

### LEGISLATIVE COUNSEL'S DIGEST

AB 1077, as introduced, Lieber. State Air Resources Board: plug-in hybrid electric vehicles.

(1) Existing law grants to the State Air Resources Board primary authority for the control of air pollution from vehicular sources. Existing law authorizes the state board to adopt and implement motor vehicle emissions standards and motor vehicle specifications.

This bill would enact the California Plug-In Hybrid Electric Vehicle Leadership Act of 2007. The bill would establish a 19-member California Plug-In Hybrid Electric Vehicle Coordinating Council to meet and be an ongoing focal point for coordination and collaboration between entities and organizations working on plug-in hybrid electric vehicle-related activities, identify existing and potential barriers to the successful development and commercialization of plug-in hybrid vehicles, assess current and proposed activities related to plug-in hybrid vehicles, and describe the extent to which these will address identified barriers, recommend and prioritize additional work, activities, research, development and demonstration, and programs that will contribute to the resolution of identified barriers. The bill would make it the goal of the council to have at a minimum 1,000,000 plug-in hybrid vehicles on California roads by 2015. The bill would require the council to consider, and recommend, certain financial and regulatory incentives to promote the manufacture and sale of plug-in hybrid vehicles. The bill would require the council to consider, and recommend, a multifuel approach. The bill would require the council to develop, and make recommendations on the implementation of, a public information and education program.

The bill would require the state board, on or before January 1, 2009, in conjunction with specified other entities, to develop certification testing protocols for emissions and fuel consumption for the different types of plug-in hybrid vehicles.

The bill would require the Department of General Services, on or before October 1, 2008, to identify the percentage or number of plug-in hybrid vehicles that could be reasonably added to the state vehicle fleet in the future, to streamline its procurement procedures

for plug-in hybrid vehicles for state and local agencies, and to develop mechanisms and incentives to encourage local governments to identify the number and percentage of plug-in hybrid vehicles that could reasonably be added to local fleets, and to procure those vehicles.

The bill would require the Public Utilities Commission, on or before January 1, 2009, in conjunction with electrical and gas corporations, to develop and establish optional off-peak electrical rates for plug-in hybrid vehicles, or discounts in the cost of electric service for plug-in hybrid vehicles. The bill would require the commission to consider the establishment of utility testing and demonstration programs as it determines to be necessary to achieve specified objectives. The commission would also be required to consider the establishment of utility programs to provide certain hybrid-related information and assistance to utility customers.

The bill would authorize local publicly owned electric utilities to develop and establish specified utility programs involving plug-in hybrid vehicles.

(2) The Warren-Alquist State Energy Resources Conservation and Development Act establishes the State Energy Resources Conservation and Development Commission (Energy Commission) and requires it to develop, implement, and administer the Public Interest Research, Development, and Demonstration Program.

The bill would require the Energy Commission to award program funds to the council in accordance with that act to reimburse the council for costs the council incurs under the bill.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. The Legislature finds and declares all of the following:

(a) Plug-in hybrid electric vehicles (PHEVs or plug-in hybrids) are a type of advanced gasoline/biofuel-electric hybrid vehicle that are being developed, demonstrated, and tested in California and elsewhere. Plug-in hybrids can achieve even greater environmental and fuel-saving benefits than conventional hybrids. Plug-in hybrid electric vehicle technology is rapidly developing and can be applied not only in light-duty vehicles, but in medium-duty and heavy-duty vehicles, and in nonroad applications.

(b) Plug-in hybrid light-duty vehicles have been demonstrated that achieve in excess of 100 miles per gallon of gasoline and can reduce gasoline use by 60 to 75 percent in comparison to today's typical new cars or sport-utility vehicles, and by 45 to 65 percent in comparison to today's best conventional hybrid vehicles.

(c) The transportation sector is more than 95 percent dependent upon a single fuel source, petroleum, and over 60 percent of our national petroleum consumption comes from foreign sources, making this nation extremely vulnerable to petroleum price and supply disruptions.

(d) California has adopted goals for increasing the use of nonpetroleum fuels, including electricity, biofuels, and hydrogen, to 20 percent of on-road fuel consumption by 2020, and 30 percent by 2030.

(e) Plug-in hybrids may save state consumers money by providing

more fuel-efficient vehicles and reduced fuel cost by using electricity for vehicle propulsion, at an equivalent of less than one dollar (\$1) per gallon of gasoline, given current off-peak electricity prices.

(f) Plug-in hybrids may reduce emissions of greenhouse gases by 50 to 60 percent in comparison to today's typical new cars or sport-utility vehicles, and by 30 to 45 percent in comparison to today's most efficient conventional hybrid vehicles, and therefore can provide significant help in achieving California's reduction targets for emissions of greenhouse gases.

(g) Plug-in hybrids may reduce criteria air pollutants by as much as 45 to 60 percent in comparison to today's new midsize cars or sport-utility vehicles, and as much as 35 to 50 percent in comparison to today's most efficient conventional hybrid vehicles.

(h) California has a significant potential for excess electricity generation capacity during overnight and off-peak periods, including renewable electricity such as wind power that is predominately generated at night, allowing millions of plug-in hybrids to charge during these periods when electricity prices are low, and with minimal adverse environmental impacts. Moreover, even under a worst-case peak-charging scenario, researchers at the University of California, Berkeley, estimate that one million compact plug-in hybrids on California roads would not significantly impact peak loads. Many more times this number of vehicles could be charged during off-peak periods without the need for new generation.

(i) California's electricity generation mix is already one of the cleanest in the nation, and the state has taken additional steps to make it even cleaner, including new requirements that 20 percent of all electricity generation come from renewable sources by 2010, and has enacted legislation requiring that all new generation sources have greenhouse gas emissions no greater than the level of a combined-cycle natural gas-fired power plant.

(j) Infrastructure is already in place for plug-in hybrids, which can be recharged using standard household electrical circuits and current, requiring no deployment of new refueling or recharging infrastructure.

(k) Plug-in hybrid vehicles could also use biofuels such as ethanol or biodiesel, helping achieve even greater fuel economy and diversity.

(l) The California Hydrogen Highway Blueprint Plan identified plug-in hybrid vehicles as a "bridging technology" to fuel cell vehicles, which can provide near-term environmental benefits to Californians, while at the same time reducing the cost of similar electric-drive components used in future fuel cell vehicles.

(m) The Governor, in Executive Order S-01-07, established a low-carbon fuel standard for transportation fuels with the goal of reducing the carbon intensity of California's transportation fuels by at least 10 percent by 2020. Plug-in hybrid vehicles can play a key role in meeting or exceeding this goal.

(n) In January 2007, President George W. Bush issued an executive order that, among other things, requires federal agencies to procure plug-in hybrid vehicles when they are commercially available.

(o) California needs new advanced vehicle technologies, including plug-in hybrid vehicles, in the near term, that produce even fewer emissions than today's cleanest gasoline vehicles, and that use cleaner fuels, if we are to meet the state's goals for reducing air pollution, greenhouse gases, and petroleum dependence.

(p) Plug-in hybrids also open the door for useful supply diversification between the liquid fuel and power generation sectors.

(q) This state can and should assist in the successful development and commercialization of plug-in hybrids in several important ways, in order to accelerate the benefits that these vehicles can provide to all our citizens, including emissions reduction, fuel security, and job creation in this state.

(r) It is the intent of the state to undertake a multifaceted effort to support the development and commercial introduction of plug-in hybrid electric vehicles.

SEC. 2. Article 5.5 (commencing with Section 43850) is added to Chapter 4 of Part 5 of Division 26 of the Health and Safety Code, to read:

#### Article 5.5. Plug-in Hybrid Electric Vehicles

43850. This article shall be known and may be cited as the California Plug-In Hybrid Electric Vehicle Leadership Act of 2007.

43851. As used in this article, the following terms have the following meanings:

(a) "Council" means the California Plug-In Hybrid Electric Vehicle Coordinating Council established in Section 43852.

(b) "Energy Commission" means the State Energy Resources Conservation and Development Commission.

(c) "Plug-in hybrid electric vehicle" or "plug-in hybrid vehicle" means a light-duty, medium-duty, or heavy-duty on-road or nonroad vehicle that is propelled by an internal combustion engine or heat engine and an electric motor and energy storage system, using all of the following:

(1) Any combustible fuel.

(2) An onboard, rechargeable storage device used primarily to power transportation, not vehicle peripherals.

(3) A means of using an off-board source of electricity to operate the vehicle in intermittent or continuous all-electric mode.

43852. (a) The 19-member California Plug-In Hybrid Electric Vehicle Coordinating Council is hereby established, with membership as follows:

(1) A member of the Energy Commission, appointed by that commission, who shall act as a co-chair.

(2) A member of the state board, appointed by that state board, who shall act as a co-chair.

(3) A member of the Public Utilities Commission, appointed by that commission.

(4) A representative appointed by each of the following agencies:

(A) The California Environmental Protection Agency.

(B) The Business, Transportation and Housing Agency.

(C) The Department of General Services.

(5) A representative appointed by each of the following entities:

(A) The University of California.

(B) The Senate.

(C) The Assembly.

(D) The California Independent System Operator.

(6) A representative, appointed by the co-chairs of the council through a selection or nomination process to be developed jointly by the Energy Commission and the state board, from each of the following

categories:

- (A) Appropriate federal agencies and laboratories.
- (B) Public and private research organizations.
- (C) Automobile manufacturers.
- (D) Component manufacturers.
- (E) Air quality management districts.
- (F) Local governments.
- (G) Municipal and investor-owned utilities.
- (H) Environmental and other nonprofit groups.
- (I) Other stakeholders as determined by the co-chairs.

43853. The council shall do all of the following:

(a) Meet at least twice annually and be an ongoing focal point for coordination and collaboration between the many entities and organizations working on plug-in hybrid electric vehicle-related activities, both within California and outside of the state. The meetings of the council shall be subject to the Bagley-Keene Open Meeting Act (Article 9 (commencing with Section 11120) of Chapter 1 of Part 1 of Division 3 of the Government Code).

(b) Identify existing and potential barriers to the successful development and commercialization of plug-in hybrid vehicles. The council shall assess current and proposed activities, research, programs, and other activities related to plug-in hybrid vehicles, and describe the extent to which these will address identified barriers.

(c) Recommend and prioritize additional work, activities, research, development and demonstration, and programs that, in the determination of the council, will contribute to the resolution of identified barriers, with particular attention paid to those initiatives which are best suited to state and local agencies. For planning purposes, it shall be the goal of the council to have at a minimum one million plug-in hybrid vehicles on California roads by 2015.

(d) Consider, and recommend as appropriate, financial and regulatory incentives for automobile manufacturers and other companies, to encourage them to accelerate the introduction of plug-in hybrid vehicles. The council shall also consider, and recommend as appropriate, financial and nonfinancial incentives to encourage individual consumers and fleet owners to purchase plug-in hybrid vehicles.

(e) Consider financial and regulatory incentives to encourage the in-state manufacture of plug-in hybrid vehicles and components. The council shall also consider, and recommend as appropriate, a multifuel approach, including, but not limited to, the integration of E85, hydrogen, natural gas, or other fuels into plug-in hybrid configurations.

(f) Develop a public information and education program about plug-in hybrid characteristics, benefits to consumers and society, safety, costs, and operating and charging procedures. The council shall make recommendations on the most effective ways to implement the information and education program.

43854. On or before January 1, 2009, the state board, in conjunction with other applicable state and federal agencies, automobile manufacturers and nonprofit research institutions, shall develop certification testing protocols for emissions, including both criteria pollutants and greenhouse gases, and fuel consumption for the different types of plug-in hybrid vehicles.

43855. The Department of General Services shall do all of the

following:

(a) On or before October 1, 2008, identify the percentage or number of plug-in hybrid vehicles that, in the determination of that department, could be reasonably added to the state vehicle fleet in the future when such vehicles become available, taking into consideration the benefits of reducing greenhouse gas and other vehicle emissions.

(b) Streamline its procurement procedures for plug-in hybrid vehicles for state and local agencies, including pooled purchasing opportunities.

(c) Develop mechanisms and incentives to encourage local governments to identify the number and percentage of plug-in hybrid vehicles that could reasonably be added to local fleets, and to procure those vehicles.

43856. (a) On or before January 1, 2009, the Public Utilities Commission, in conjunction with electrical and gas corporations, shall develop and establish optional off-peak electrical rates for plug-in hybrid vehicles, or discounts in the cost of electric service for plug-in hybrid vehicles, taking into consideration the reduction in greenhouse gas emissions and other benefits to California ratepayers and citizens as specified in Sections 740.8 and 451 of the Public Utilities Code.

(b) The Public Utilities Commission shall also do all of the following:

(1) Give additional consideration to possible linkage of plug-in hybrid vehicles to nighttime peaking renewable energy sources, including, but not limited to, wind power.

(2) Consider the establishment of utility testing and demonstration programs as it determines to be necessary to do any of the following:

(A) Evaluate the impacts of plug-in hybrid vehicles on utility systems.

(B) Encourage load management and energy efficiency.

(C) Conduct information and education activities.

(D) Maximize economic and environmental benefits to ratepayers.

(3) The Public Utilities Commission shall also consider the establishment of utility programs to provide information and assistance to utility customers that may be considering the choice of electric transportation and goods-movement technologies.

43857. Local publicly owned electric utilities, as defined in Section 9604 of the Public Utilities Code, may develop and establish any of the following:

(a) Optional off-peak electrical rates for plug-in hybrid vehicles.

(b) Discounts in the cost of electric service for plug-in hybrid vehicles, taking into consideration the reduction in greenhouse gas emissions and other benefits to California ratepayers and citizens.

(c) Other utility programs involving plug-in hybrid vehicles.

43858. The Energy Commission shall award funds in accordance with Chapter 7.1 (commencing with Section 25620) of Division 15 of the Public Resources Code to reimburse the council for those costs the council incurs under this article.