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November 3, 2006

Ms. Susan Brown
California Energy Commission
1516 Ninth Street, MS-41
Sacramento, CA 95814

Re: **Comments from Pacific Gas and Electric Company Concerning the October 9th, 2006 joint workshop with CEC & ARB of AB 1007 Titled "Alternative Transportation Fuels Plan"**

ATTN: JAMES D. BOYD
Vice Chair
Transportation Committee

Jeffrey Byron
Commissioner
Transportation Committee

Robert F. Sawyer Phd
Chair
Air Resources

Pacific Gas and Electric Company commends the California Energy Commission and California Air Resources Board's considerable collaborative effort in producing the Alternative Transportation Fuels Plan. We recognize both the complexity of this undertaking and importance of the guidance it will provide for future California Energy Policy. Pacific Gas and Electric Company has decades of successful energy conservation and alternative fuel program management experience in California and feel uniquely qualified to provide valuable insight and feedback into this process.

Four areas of comment:

1. Vet and peer review price forecasts of natural gas vs. gasoline and diesel
2. Consider additional input on well to wheel emissions analysis:
 - a. Tailpipe
 - b. Upstream
3. Streamline certification process and incentives needed for aftermarket
4. Need for increased transparency and collaboration with stakeholders

Price of natural gas vs. gasoline and diesel

In the case of PG&E's customer base, over 75% of the natural gas sold as a transportation fuel is purchased by transit, school bus, refuse, shuttle and package delivery fleets, all displacing diesel fuel. The only large and growing segment displacing gasoline is the CNG taxi fleet. This market continues to grow in spite of Ford discontinuing its CNG Crown Victoria. However, an active aftermarket conversion business has emerged to fulfill the demand for natural gas taxis with hundreds of additional CNG taxis planned in the coming year. Specific details on our annual fuel sales to market segments that enable differentiation between the displacement of diesel or gasoline and wholesale to retail prices paid are available to staff analysts at the CEC & CARB and the Boards as well. We would welcome the opportunity to work more closely with staff to ensure accurate, up to date and regionally representative data is used to inform the outcome of this process. Here is a sample of our latest fuel price analysis for the last 12 months:

CA Retail	GNGV-2 (retail) CNG tariff savings over diesel/gasoline 9-8-05 to 9-1-06
Diesel	\$ 0.71 dge (@ CEC heating values)
Gasoline	\$ 0.76 gge (@ CEC heating values)

This is a comparison of retail rates, while the majority of natural gas (75%+) is sold at wholesale rates to centralized fleets operating their own stations. See CA NGVC detailed report on this topic.

It is our understanding that the current CEC formula uses a 16 cent per gge/dge CNG price advantage over gasoline as a linear relationship going forward. If this is adhered to, it would significantly discount the price advantage of natural gas over diesel and gasoline and is not consistent with pricing forecasts from DOE EIA among others. Greater collaboration with the marketplace in determining this key variable in the cost analysis is needed. PG&E encourages this process to use an open, peer reviewed and widely accepted fuel price forecast resource to prevent shortchanging the economic advantages natural gas and other alternatives to gasoline and diesel bring to the transportation fuels marketplace. We welcome the opportunity to openly collaborate with staff to this end.

Well to wheel emissions analysis (tailpipe)

The majority of petroleum displaced by natural gas, both CNG and LNG is diesel. The emissions benefit table shown on page 29 of the TIAX well to wheel analysis, compares alt fuels to rfgasoline. In subsequent discussions with Stephan Unnasch, I'm told there is also a diesel table available yet due to time restrictions not all data was posted, this more complete analysis has not been posted on the website either, leaving stakeholders with no way of knowing all that is being considered by staff in their analysis. This speaks to the request for greater transparency in the overall process brought up in the October 9th workshop. As it stands, the public information available on page 29 of Mr. Unnasch's presentation indicates little if any emission benefits associated with use of natural gas as a transportation fuel. Missing are NOx, NO2, PM and to a lesser extent ROG and CO2 reductions beyond conventional fuels.

With the intent to harmonize tailpipe standards by 2010, we would ask if this analysis assumes equal tailpipe emissions from all fuels in forward projections of the emissions inventory? Over the last decade, there is a trend of diminishing returns for tailpipe emission reductions as low natural gas certifications have pulled diesel to cleaner thresholds. Further discussion on emissions benefits to ensure that natural gas emissions are primarily weighted against diesel emissions is requested. It would not be appropriate to dismiss emissions benefits after tailpipe standards are harmonized in 2010 as natural gas has consistently demonstrated that it can exceed emissions standards and effectively pull diesel along. The past shows this reality has forced diesel stakeholders to lobby for less stringent tailpipe emission standards, threaten not to produce compliant engines, negotiate for an exemption for an allowable 20% to 30% NO2 slip from aftertreatments, etc. In order for diesel engines to comply there will be an impact on efficiency hence economics and initial cost in lieu of aftertreatments, reactants etc. Natural gas engines will not need the same degree of aftertreatment in order to comply or would be cleaner if the same degree of aftertreatment and technology transfer were applied. To summarize, by 2010, if diesel engines are to be considered as clean as natural gas, the economics change in favor of natural gas, if the technologies cost the same the emissions advantage will favor natural gas. Past TIAX modeling has supported this claim. Natural gas engine emission performance holds promise of further improvements when operated on blended methane and hydrogen, trademarked as Hythane. Sunline Transit and Unitrans in Davis are demonstrating its use in transit buses and PG&E will be building its first co-fueled CNG, H2 and blended methane/H2 alternative fuel station at our San Carlos CNG station location as part of the Hydrogen Highway next year. This site will feature a solar PV array to generate a portion of the process electricity needed and represents an exciting advancement in the role PG&E will continue to play providing publicly accessible alternative fuel infrastructure.

PG&E supports AB1007 combined goals of reducing dependency on oil and

protecting the public health. To that end we ask your consideration to include future certification buckets beyond the harmonized standards that accommodate cleaner alternative and blended fuels ability to exceed minimum certification standards, recognizing and rewarding both the health benefits and petroleum displacement contributions these alternatives to gasoline and diesel can make.

Well to wheel emissions analysis (upstream)

With regards to upstream emissions, we want to acknowledge and support Paul Webbens' points regarding the emissions associated with petroleum feedstocks, they are worthy of further consideration. While blending gasoline and diesel with renewable fuels such as ethanol and biodiesel may prove beneficial from an emissions standpoint in some areas and not in others, the upstream emission impacts of heavier and more distant feedstocks will clearly not benefit the well to wheel emissions inventory. Natural gas may be increasingly sourced from more distant sources as well, however, these sources will provide economic benefits through greater competition stabilizing and or driving prices down and be used directly as LNG in heavy duty vehicles.

This fall, PG&E was pleased to announce that it has signed its first renewable gas contract for up to 8,000 mcf of biogas sourced from dairy methane digesters in its service territory. This begins a supply of renewable gas to the pipeline supply that, though not yet significant, demonstrates the feasibility of bringing renewable natural gas supplies onto the pipeline. Here is a clip from our press release:

From October 12th press release:

PG&E is realizing its renewable energy goals with the signing of an agreement with Microgy, Inc. ("Microgy"), a subsidiary of Environmental Power Corporation (AMEX: EPG), to deliver renewable natural gas. The agreement involves the purchase of up to 8,000 mcf of pipeline quality renewable natural gas daily.

Methane reproduces itself quite rapidly compared to crude oil. Characterizing the reduced upstream emission impacts of a growing renewable gas supply is appropriate within the timeframe of this study.

PG&E recognizes that its natural gas and electric transmission and distribution systems plays a significant and growing role in the well to tank emissions analysis relative to how tailpipe emissions are being cleaned up. We want to emphasize that our grid and pipeline systems are cleaning up as well. We have clarified the renewable portfolio standard milestone dates with Mr. Unnasch (20% by 2010 and 33% by 2017) to correct the number misstated at the workshop on October 9th. We are aware that the emission impacts of coal generation are of concern with regards to upstream impacts when charging BEV and PHEVs. Our 2005 power content label identifies coal as 1% of the overall mix that year. Please consider the attached label and our offer to provide additional insight into

the makeup of our owned and procured electricity capacity for the purpose of accurately representing the upstream emissions portion of this analysis. PG&E is proud to operate a grid with one of the lowest carbon intensities in the nation. Our concern with the present methodology is, if lumped in with a national or even regional average, the emissions benefits may be understated. This is not a certainty however a potential misrepresentation we want to avoid by working closely with consultants and staff.

2005 Power Mix

POWER CONTENT LABEL

Annual report of actual electricity purchases for Pacific Gas and Electric Company in 2005

Energy Resources	PG&E Actual Power Mix
Eligible Renewable	12%
Biomass and waste	5%
Geothermal	2%
Small hydroelectric	4%
Solar	0%
Wind	1%
Coal	1%
Large Hydroelectric	20%
Natural Gas	42%
Nuclear	24%
Other	1%
TOTAL	100%

For each category, the percentage PG&E projected for 2005 was within 5 percentage points of the actual percentage.

For specific information about this electricity product, contact Pacific Gas and Electric Company. For General Information about the Power Content Label, contact the California Energy Commission at **1.800.555.7794** or www.energy.ca.gov/consumer.

In addition to upstream emission impacts of our electric grid, the fugitive methane emissions and associated power plant emissions from operating natural gas transmission main compressors also play a part in the aggregate upstream emissions impacts. To address these emissions and in the interest of reducing these impacts, PG&E has been a member of DOE's Natural Gas Star program

for over 10 years. Through this program, best practices are shared, implemented and recognized. Annually, PG&E replaces older cast iron transmission main with steel main reducing permeation rates of the pipeline at an ever increasing rate. We are committed to a more costly cross compression procedure that reduces venting of gas main contents to atmosphere during the largest replacement projects. This general overview is intended to summarize ongoing, environmentally sound practices. We would welcome the opportunity to better quantify the benefits of these practices with staff in order to best represent the upstream emissions associated with our natural gas pipeline operations.

Streamline certification process and incentives needed for aftermarket

Though availability of light duty NGVs will diminish to only one vehicle after this year, there remains viable after market product from a small yet struggling CNG/LPG conversion kit industry. While the market for this technology is far more robust internationally, the cost of doing business in California is prohibitive. We would also like this team to consider as part of its recommended solutions, incentives for these manufacturers potentially based on certifications achieved below certification tiers, volume sales or other innovative market incentives to return this industry to active participation in the alternative fuel market in California. Streamlining the certification process or other means of lessening the economic barriers to market entry of these enabling alternative fuel technologies would help to broaden their applicability while stimulating the economy.

Similar market stimulus on the heavy duty engine side is also needed. Though heavy duty natural gas fleets have the widest selection of certified heavy duty engines of any alternative fuel, broader certification enabled by a lower cost process would open up the market to broader applications and participation.

The following is a clip from a past CALSTART/WestStart newsletter addressing this topic from a manufacturer's perspective:

The problem with CNG vehicles is over-regulation, including over-strict engine certification programs, says Bruce Eichelberger, owner of Alternative Fuel Technologies, a Huntington Beach company that installs conversion equipment by BayTech, the only California company certified by the California Air Resources Board and the federal Environmental Protection Agency to sell CNG and propane conversion kits in the state. "It can cost \$500,000 for each engine family -- that's too much for a niche market," Mr. Eichelberger says. CARB also requires vehicles to get recertified every 100,000 miles to ensure they are still burning cleanly.

In closing, I repeat comments made in a June 6, 2003 PG&Es' letter regarding AB 2076:

Alternative fuel vehicles, like natural gas and electric vehicles, stand ready, with

excess fuel capacity, viable near term clean reliable technology, and a growing infrastructure base to take on this role. Do not underestimate both our near term readiness to rise to the occasion nor our long term potential to bridge from methane to hythane to the ultimate transportation fuel, hydrogen.

We cannot afford to ignore the present in favor of an uncertain future. NGVs, EVs and PHEVs provide a viable option now and in the future.

Thank you for your consideration of these comments,

Sincerely,

J. Henderson
Manager, Clean Air Transportation Program
Pacific Gas and Electric Company