

Initial Comments on the February 2007
Draft Consultant Report
Well to Wheels Full Fuel Cycle
Assessment

ARB and Energy Commission Joint Workshop
on the AB 1007 Full Fuel Cycle Analysis

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Key Requirements of AB 1007

- **Develop an “Alternative Fuels Plan” to increase the use of non-petroleum alternative fuels**
- **Involve Energy Commission, ARB, CDFR, WRCB**
- **Based on full fuel cycle analysis**
- **Defined goals for 2012, 2017, 2022 (2030)**
- **No increase in air or water pollution**
- **Specific policy recommendations**

Key Elements of Contractor Report

- **30% GGE growth in fuel demand by 2030**
- **Evaluate impacts on greenhouse gases, criteria pollutants, toxics and “multi-media”**
- **Basis includes DOE/Argonne GREET model, GM Well-to-Wheels analysis**
- **Marginal analysis as opposed to an average analysis**
- **Existing and new propulsion technologies applied to mid-size car and urban bus**

Selected Concerns Based on Preliminary Review

- **“Marginal” analysis**
 - **Highly dependent on supply contribution of each alternative fuel to overall supply growth**
 - **May distort advantages/disadvantages of technologies such as PHEVs**
- **Inconsistent application of analysis boundaries to petroleum, fossil and non-fossil fuels**
- **Assumptions that may significantly affect conclusions**
 - **New petroleum fuel supply assumed to produce no additional refinery emissions**
 - **Blended fuels applied to existing fleet while new fuels applied only to newer technologies**
 - **Not clear whether all new (marginal) corn and cellulose derived ethanol is assumed to be produced in CA, or some imported.**
 - **Electricity generation assumptions are critical to GHG emissions for CNG**
- **The source of emission, fuel economy and engine mapping data for various propulsion technologies is not clear, and the use of multiple sources may not support direct comparison of technologies.**
- **HEVs are credited with lower criteria pollutant emissions in proportion to FE improvement, but this is likely not the case since HEVs are certified to the same emission standards as non-HEVs, and engine restart emissions may offset gains.**

Summary and Recommendations

- **Complements to the Energy Commission, TIAX, UC Berkeley, UC Davis and other contributors for extensive research and analysis and use of the full fuel cycle approach to evaluate alternatives.**
- **A full fuel cycle Well-to-Wheels analysis is complex and highly dependent upon detail level assumptions in boundary conditions, vehicle fuel economy and emissions and fuel production for which there may be little or no available data.**
- **This analysis is critical to the development of regulations to implement increased alternative fuel use.**
- **Adequate time should be allowed to develop and consider comments from stakeholders before finalizing the report.**

Backup Material

uranium. Also, we are aware that the steam generated in plant designs, it is not used

Energy accounting systems energy use results from discussion of total fossil meaningful when comparing

4.1.2 Fossil Energy Use

Figure 4-3 presents WTW petroleum use here includes petroleum energy use can help understand issues.



Well-to-Wheels Analysis of Advanced Fuel/Vehicle Systems — A North American Study of Energy Use, Greenhouse Gas Emissions, and Criteria Pollutant Emissions

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