

ARB Staff Comments on FFCA of Alternative Fuels

The Full Fuel Cycle Assessment was intended to help in developing an effective alternative transportation fuel plan by providing three key components; first the analysis was to provide the tool (model) that will be used to evaluate alternative fuel options; second the FFCA was to identify the key determining factors and values that effect emissions, energy consumption and impacts. Specifically, the FFCA was to identify the assumptions, factors and values that are unique to California; and finally the analysis was to provide the FFCA results of the base case transportation fuels.

1. At times default values from the unmodified Greet model are used for the sample result calculations. Other times values from sources other than the Greet model are used with no specific indication of the reasoning that went into the selection. All values and assumptions, as well as the reasoning that went into these decisions, must be transparent and supportable. Discussions of the reasons for these changes as well as a sensitivity analysis of the impacts of these decisions should be included in the final reports.

2. In general, the reports present the sample results, relevant factors, values, and assumptions adequately. However, the reports don't present clearly how and where these factors, values and assumptions were used in the modeling tools developed. The reports are weakest in discussing how and why the specific modeling tools were developed. For example, although several post processors were used to calculate the Well to Tank and the Well to Wheel sample results, the reports do not provide details of how these tools were developed or used in the full cycle assessment.

The reports could be improved by adding discussions of how the sample results from the modified Greet (WTT) and the TTW emissions are compiled. Perhaps this discussion can be added to Section 2.3 (Well to Wheel Emissions Estimation) of the WTW report. This additional discussion would make it clear that several steps and analytical tools (excel sheets) are needed to compile the results of the full fuel cycle assessment. A flow chart might help illustrate the different steps one must take as part of this process. In addition, descriptions of WTT and TTW post processors should be added into the respective reports.

3. We recommend that the listings ranking fuels be removed from the reports. These lists are currently located in the Executive Summary (page 5), the WTW report (pages 5-2 and 5-3), and WTT (pages 8-1 and 8-2). These fuel rankings can be misinterpreted without an understanding of the factors, assumptions and boundary conditions that went into developing the values for the fuels being ranked.

4. Although we agree that some alternative fuel options will have impacts on land use, any discussion on land use impacts should acknowledge that these impacts were not considered in the current analysis. Neither the study nor the analytical tools developed to perform the full fuel cycle assessment currently address issues associated with land use impacts of alternative transportation fuels. Please add a discussion indicating that the significance of the potential land use impacts of alternative transportation fuels is recognized and that this important factor will be considered in future analyses as data becomes available.

5. The issue of displacement effects is discussed in the conclusion and recommendations sections of the Executive Summary, WTT report, and WTW report. Neither the study nor the analytical tools developed to perform the full fuel cycle assessment currently address the issue of the displacement effects associated with alternative transportation fuels. Please add discussions to the Executive Summary, WTT and WTW reports indicating that the issue of displacement effects will be considered in future analyses as data becomes available.

6. Several tables in the WTT report need to be updated. Table 3-4 on page 3-5 needs to be updated with the current list of refineries. Table 3-6 on page 3-7 needs to be updated with the latest ARB emissions inventory values. Table 3-7 (page 3-8) needs to be updated to reflect the changes made to Table 3-6. Table 3-8 (page 3-9) also needs to be updated with the latest ARB emissions inventory values.

7. Modified Greet Model – We were unable to determine if the California Specific BACT emissions limit of .0246 g/gal identified in the WTT report for NMOG Emissions from Bulk Fuel Storage (page 5-27, Table 5-22) or the default value from the unmodified Greet model were used in the sample results calculations. Please clarify which value was used in the modified Greet model.

8. Modified Greet Model - The T-S worksheet contains the statement that the average electricity mix is used for fuel production facilities. However, the Inputs worksheet includes a statement indicating that marginal electricity will be used. Please clarify which electricity mix was used for fuel production facilities.

9. We agree with Ms. Catherine Dunwoody's comments provided at the March 2, 2007 workshop. These comments should be addressed in the final FFCA reports.