JDMT, Inc

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Richard Corey, Advisory Panel Chair
Chief, Stationary Source Division
California Air Resources Board

Submitted via web:
http://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=lcfsadvisorypanel-ws&comm_period=1

SUBJECT: California Low Carbon Fuel Standard Program Review
Comments to Advisory Panel Workplan Version 2

Dear Mr. Corey:

We are pleased to provide comments as requested during the July 25, 2011 Advisory Panel public meeting on the Low Carbon Fuel Standard (LCFS) Advisory Panel's Workplan Version 2 (Workplan) and overall Program Review.

The Panel is charged with the on-going review of the program's process toward targets defined in the LCFS regulation to allow scheduling and assess effectiveness of information gathering. The first of two formal program reviews of the results across a wide range of implementation topics is to be presented to the California Air Resources Board (ARB) in its first report by January 1, 2012.

The Workplan outlines the progress toward each of the 13 regulation-mandated topics, adding two assessments recommended by the Panel for (a) high carbon intensity crude oil (HCICO) and (b) the development and transparency of the LCFS credit market. The Workplan also provides a discussion of the Panel's approach to answering the questions posed by panel members and is intended to provide primary sources of data utilized to date.

Our comments are presented in consideration of the Panel's understanding and scope of the questions being asked, and of the approach being taken in answering those questions for each of the Topics. General Comments on the overall Program Review are followed by Specific Comments to the Workplan.

General Comments

- A brief restatement of each Topic is needed as a preamble in the Workplan, giving the Panel's consensus interpretation of the intent of each regulation section. This will improve readability of the Workplan and allow comparison of the posed questions and proposed approaches to that agreed-upon interpretation. The program is too complex to assume all parties assessing and using the Workplan start from the same understanding.

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- Although *Section II. Overview of Workplan* states otherwise, very few data sources have been referenced. Greater interactivity using the ARB's internet capabilities is requested. The Workplan process would be improved by providing in-text hyper-linking to data source references and mentioned external LCFS program elements.

- The relationship between the Panel and the many Workgroups needs to be more direct and transparent. Although the Panel must wait for the workgroups to *formally* submit information, an informal dialogue beyond contact with lead ARB staff would appear warranted and mutually beneficial. Improving upon this cross-Workgroup dialogue would be an appropriate task for the Advisory Panel; outlining specific questions and approaches per Workgroup would be an appropriate element of subsequent iterations of the Panel's Workplan.

Specific Comments

A. *Topic 1: Progress Against Targets*

a. Subsection 2: Questions in the fourth bullet reflect concern regarding challenges potentially being experienced by stakeholders in meeting LCFS targets for carbon intensity (CI), greenhouse gas (GHG) emissions reductions and supply. In this context an additional question needs to be raised: "Are there inequities inherent in the LCFS development that place burdens on low carbon fuel pathway commercialization not applicable to competing fuels and fuel development methodologies in the California marketplace?" In the attempt to set such a stringent quality standard, too little emphasis has been placed upon "leveling the playing field" among competing entrenched industrial transport fuel production and supply.

b. Subsection 2: The sixth bullet asks if additional time is needed to better determine progress. An additional question might be asked, "Is more focused effort in data collection needed for certain aspects of progress and if so, in what areas?" A more aggressive global outreach toward alternative fuel developers would dramatically improve the perspective of progress toward LCFS targets, as both the diversity and the availability appear greatly underestimated as a result of the current level of data collection.

c. Subsection 3, Approach: The Panel is passively reacting to applications and submissions. Depending upon these arbitrary data sources does not, however, provide the scope and scale of the industry being impacted. Full registration and application for pathway assessment is not necessary at this stage, but recognition and documentation of the ever-growing alternative fuels industry is seriously needed.

B. *Topic 2: Compliance Schedule*

a. Subsection 2: Modify the first bullet to add, "What areas of data acquisition and analysis will remain critically insufficient in terms of the targets to be accomplished?"

b. Subsection 2: Modify the second bullet to add, "Is sufficient information available regarding impacted suppliers to understand what those ramifications might be if an adjustment is made to the schedule?"

c. Subsection 2: Modify the fourth bullet to add, "…and of those factors, what areas if any need significant additional data?"

d. Subsection 3, Approach*:* As in Topic 1, the breadth and scope of advanced biofuels remains critically under-represented in the overall LCFS, and "we don't know what we don't know" is an appropriate status assessment. Further, this limited perspective resulting from a generally passive data acquisition mode has limited the audience of stakeholders who might otherwise be able to review and comment upon the standards as they are formulated.

In such a young industrial sector it is understandable that only the very few and most entrenched transport biofuels developers would be able to comprehend and respond to such a complex in-progress mechanism as the LCFS, yet this results in a slanted perspective at best. Direct outreach for advanced biofuels company data acquisition is needed.

C. Topic 3: Lifecycle Assessment

a. Subsection 2: Modify the first bullet to add, "What aspects of Lifecycle Assessment (LCA) pertinent to biofuels remain most problematic, contentious and debatable, and how might incorporation of these aspects jeopardize efficacy of the programmatic analysis?

b. Subsection 3, Approach*:* Given that assessment of "indirect land use changes" (iLUC) constitutes one of the most contentious LCA aspects and yet is clearly a critical factor in determining CI values, what steps may be taken to ensure a level-market weighting? Be aware that current statements being made public by ARB staff as members of the iLUC Workgroup are being interpreted across the biofuels industry as highly suspect, in that biofuels are being judged as far more likely to impact land than current petroleum resource extraction. Many would say that this is patently absurd. At a minimum, the debate remains polarized.

D. Topic 4: Advances in Production

a. Subsection 2: Modify the first bullet to add, "By what means have staff assessed recent or expected advances or innovations in fuels and/or production technologies, and how might this aspect of critical data acquisition be improved?"

b. Subsection 3, Approach: The Workplan indicates that, "… staff will work with fuel providers, environmental impact report data, information from our Method 2A/2B applications, and funding information from both the Department of Energy (DOE) and the California Energy Commission (CEC) (AB118)." This is where an aggressive outreach program is needed, using on-line research leading to direct contact, and strategic release of clearly worded Requests for Information (RFI) targeting advanced biofuels developers.

E. Topic 5: Ultralow Carbon Fuels

a. Comments for Topic 4 apply to Topic 5.

F. Topic 6: Supply and Commercialization

a. Subsection 3, Approach: The LCFS impacts the entire supply chain by law, source to end-product supply. Critical metrics for determining numerical weighting values are based as well on the entire LCA. Yet only an end-of-pipe perspective is applied to much of the LCFS determinations of standards development and of the impact of such standards. Indeed,

impacts will be identified along that entire supply chain. Understanding this holistic aspect should be reflected in the Panel's Workplan.

Critical shortage or unavailability of any element along the value chain will negatively impact fuel availability, regardless of the promise of the final product. As an example, as algal bioreactors are scaled toward high-volume commercial production, availability of phosphorus becomes a critical concern.

Overabundance to the degree of causing an environmental hazard similarly impacts the perspective of what should be a priority low carbon fuel for California. An example of overabundant potential feedstock is seen in municipal solid waste (MSW), where *not* converting the material to a low carbon fuel creates far more LCA problems than might be garnered from production of the fuel itself. In both examples these issues are under-represented when only an end-product perspective is assumed.

For our recent discussion of the importance of supply chain modeling to all forms of California's energy planning, see Blueprint for California's Clean Energy Future, July 2011.

G. Topic 7: Impact on State Fuel Supplies

a. Subsection 2: Modify the second bullet to read, "Is there sufficient fuel supply chain *infrastructure* (from source to final product) to maintain the levels of delivery and use mandated in the LCFS?"

b. Subsection 2: Modify the fifth bullet to read, "Are the provisions of the LCFS designed now and will they be in the future, such that producers in disparate pathways that contribute to the fuel pool diversity will experience the same relative constraints and incentives, given the same CI and GHG metrics?" (*This issue hinges upon an equally weighted assessment and assignment of metrics ancillary to CI and GHG, such as iLUC factors.)*

c. Subsection 3, Approach*:* Staff should identify data sources that monitor and analyze each element of the fuel supply chain, and not rely on end-product measurements.

H. Topic 8. Revenue and Consumers

a. Subsection 3, Approach: One aspect not identified regarding economics of the LCFS is ancillary costs and benefits accrued as a result of factors that incentivize or challenge development in various pathways. An LCA must include *economic* impacts as well as environmental for source to end-product. The Workplan should develop methods to assess relative costs and benefits along that supply chain, perhaps initially seeking to identify examples that can incur especially high ancillary costs and examples of disproportionate economic returns. The iLUC assessment is partially aimed at the former; conversion of MSW is an example of the latter.

I. Topic 9: Public Health Impacts
J. Topic 10: Air Quality Impacts

a. Subsection 3, Approach: The California Environmental Quality Act (CEQA) and in-place "CEQA-Equivalent" impact assessment mechanisms offer the gold standard globally in environmental assessment and impact management, and should be relied upon as the

environmental control baseline approval process for LCFS projects. Market-based incentive programs may then be designed to incrementally incentivize project-specific sustainability activities beyond the project's basic approval structure. This assures that environmental assessment is equally weighted and "court-ready" for any per-case challenges, while encouraging exemplary efforts.

K. Topic 11: Hurdles or Barriers

a. Subsection 2: Modify the first bullet to add, "… or permitting any aspect of the low carbon fuel supply chain infrastructure …"

b. Subsection 2: Expand the second bullet to add, " Do we know what the critical elements of the supply chain infrastructure *are*, and if unclear, where data are available to ascertain supply chain infrastructure barriers?"

c. Subsection 2: Modify the fifth bullet to add, " … distribution ***and supply chain*** infrastructure…"

d. Subsection 3, Approach: Again, an aggressive outreach both vertically through the supply chains and horizontally across the breadth of the alternative fuels industry is clearly warranted.

L. Topic 12: Economic and Environmental Impacts

a. Subsection 3, Approach: Same comment as for Topics 9 and 10 above: Rely on CEQA, and work out individual problems that might extend beyond the usual assessments, problems specific and unique to the LCFS, within the existing CEQA court-brief based mechanism.

M. Topic 13. Harmonization

a. Subsection 2: Excellent set of questions for this Topic.

b. Subsection 3, Approach: We are greatly aided by current international efforts to assess, compare and contrast global initiatives similar to the LCFS. This includes the recently released United Nations matrix directly comparing 23 mandatory, voluntary and "score-card" sustainable fuels initiatives (see the news item on Biofuels Sustainability Initiatives), a catalogue that includes the LCFS among contrasted programs.

N. Topic 14: High Carbon Intensity Crude Oil

The Panel's High Carbon Intensity Crude Oil (HCICO) effort sets California apart from most other global "sustainable fuels" initiatives by producing an industry-standard baseline for crude oil, which remains the majority source of our current transport fuels. This allows the LCFS, theoretically, to answer the question, "Clean, compared to what?" Many now wait to see whether the political and economic pressures of the day will over-ride the realities of our dependency on petroleum sourced transport fuels. The HCICO assessment may well be the primary lesson remembered from the LCFS efforts, for better or for worse.

O. Topic 15: Credit Trading Market

Subsection 2: Add the question, "What concepts for market-based incentives are under consideration, utilizing carbon credit trading and/or other mechanisms?

Concluding Comments and Recommendations

Three themes emerge dominant from our review of the Advisory Panel's Workplan:

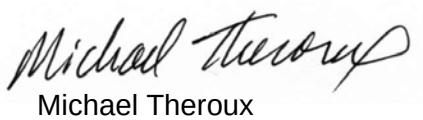
- An aggressive information gathering process needs to be quickly developed and implemented to reach beyond the current passive accumulation of transport fuel data,
- The characteristics of environmental and economic impact should be considered for the entire fuel supply chain throughout the Workplan, not simply the end product fuel, and
- *Any* low-carbon fuels-development project that can pass the environmental assessment and permitting process in California should be considered sufficiently vetted to be acceptable, while incentives and market-adjusting measures may be considered advanced beyond this acceptable LCFS baseline.

The on-going process of the LCFS is convoluted and multi-leveled with too little care given to ensuring an understanding both internally and externally. This may be greatly mitigated by direct and aggressive stakeholder outreach as suggested. Over-arching summary information would also help, written at a level useful to LCFS initiates who none the less recognize that they will in some way be significantly impacted by the regulations. To aid clarity, we have developed and published an Interim Guide to the LCFS.

Please contact me at mtheroux@jdmt.net or (530) 613-1712 if you have any questions.

Sincerely,

JDMT, Inc



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