



Western States Petroleum Association
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Vice President

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Mr. Sam Wade
Branch Chief
California Air Resources Board
1001 I Street
Sacramento, California 95814

sent via email: LCFSworkshop@arb.ca.gov

Re: WSPA Comments on ARB December 13, 2016 LCFS Refinery Co-Processing Working Session

Dear Sam,

The Western States Petroleum Association (WSPA) is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas, and other energy supplies in California and four other western states. WSPA appreciates this initial opportunity to provide feedback on the California Air Resources Board (ARB) staff presentation at Low Carbon Fuel Standard (LCFS) Refinery Co-Processing Working Session, held on December 13, 2016 in Sacramento, CA. WSPA is providing these comments as part of a continuous effort to provide feedback on the LCFS-related items presented by ARB.

Overall Working Session Approach

The Refinery Co-Processing Working Session Notice indicated that the discussions would include: (1) changes to the pathway carbon intensity application and evaluation process, (2) improvements to reporting and credit generation processes, and (3) integration of third-party verification requirements. During the Working Session, ARB staff outlined several issues and questions that were, at times difficult to follow. It would have been more straightforward if there were a clear, stepwise approach to individual topics and associated discussions. For example, ARB has already approved a pathway for refinery co-processing. Therefore, it can be assumed that the application process and tools needed are, in general, already in place. Once issues with the pathway application are identified, then it would be easier to discuss challenges and issues in data collection (e.g., monitoring) and the calculation methodology for the verification.

In addition, WSPA suggests adding an element to the Refinery Co-Processing discussion related to co-processed fuel distribution and the challenges related to tracking fuel beyond the process units where the co-processing takes place. Because there is limited ability for verification in a fungible system (for imports and exports), this element deserves discussion. WSPA would not want to see a reporting and verification system that impedes co-processing opportunities.

Section 95488 - Liquid Fuel Co-Processing Pathways

WSPA supports the advancement of co-processing pathways within the LCFS. Enabling refiners to utilize existing facilities and infrastructure to process biomass can be a more cost-effective means to bring lower carbon fuels to market without having to build duplicate, parallel fueling infrastructure systems. The ability to co-process also helps level the playing field between conventional and alternative fuel suppliers within the

context of LCFS compliance.

WSPA also supports the recommendations made at the Refinery Co-Processing Working Session from both UOP and NREL that mass balance is the more appropriate quantification approach to determining renewable content compared to carbon dating (^{14}C) measurement, particularly at lower bio-oil concentrations. The NREL presentation (as posted on ARB's website) summarized these conclusions on slide 22 as follows:

- *Mass balance procedures are accurate, reliable and appropriate to determine renewable gasoline and diesel yields attributable to the addition of bio-oil in FCC co-processing operations, particularly for bio-oil addition under 10%.*
- *^{14}C is not an accurate or reliable method to determine renewable finished gasoline and diesel yields attributable to the addition of <10 wt.% of bio-oil in FCC co-processing.*

Also, it is our understanding that the ^{14}C measurement is not widely available in refinery laboratories and it may be costly to install instrumentation (in addition to training and QA/QC procedure development). WSPA has expressed a preference for a mass balance measurement approach not just for FCC, but for any refinery unit that is applied to co-processing. However, it is our position that ^{14}C testing should not be precluded if an entity opts to use the test method and can satisfy ARB that it is accurate enough under the particular measurement circumstances.

With regard to mass balances performed as part of on-going credit verification for co-processing pathways, WSPA believes that frequency and parameter options need to be further discussed in subsequent Refinery Co-Processing Working Sessions. Specifically, there needs to be a reasonable frequency for completing the mass balance associated with credit verification and this may be different than what is done in the initial test runs for determining renewable content yield in products. While the NREL presented a test project that ran composition and quality analysis continuously or 2 times per day, such mass balance frequency are completely unreasonable for a commercial operating unit in a refinery for on-going credit verification. WSPA believes that a frequency of no more than monthly with a further extension of the interval after the provisional period is appropriate, and that these mass balances related to credit verification would not involve revisiting the renewable content yield determination made during the initial test runs.

Finally, it is WSPA's position that the boundary for mass balancing should be limited to units affected by the co-processing operation. Unrelated processing units at the facility where the co-processing is taking place should not be included in this calculation.

WSPA appreciates this opportunity to provide our initial input regarding the LCFS Refinery Co-Processing Working Session presentations. If you have any questions, please contact me at (805) 701-9142 or via e-mail at tom@wspa.org.

Sincerely,



cc: Catherine Reheis-Boyd - WSPA