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State of California's Low Carbon Fuel Standards' (LCFS) Rulemaking Proposal

**GOVERNMENT OF ALBERTA TECHNICAL SUBMISSION**

- Current activities for the Oil Production Greenhouse Gas Emissions Estimator (OPGEE) model have been stated to include:
  - i. calibration; and
  - ii. an uncertainty analysis and examination of models such as PRELIM.
- Could the California Air Resource Board (CARB) please provide further modelling details and elaborate on the timelines for such activities (i.e. planned, underway, or finalized) for these respective area/modules?
- Planned Phase II activities for the OPGEE model have been stated in various CARB workshops to include:
  - i. oil sands modelling;
  - ii. tight oil; and
  - iii. hydraulic fracturing , CO<sub>2</sub> enhanced oil recovery and finally solar-thermal technology.
- Could CARB please provide further details on potential changes to the OPGEE and elaborate on the timelines for such activities (i.e. planned, underway, or finalized) for these respective area/modules listed, including potential dates?
- Is it foreseen that select Marketable Crude Oils (MCOs) listed in the *Carbon Intensity Values for the Crude Lookup Table* would be subject to regular (i.e. bi-annual or annual) amendments based on future developments for the respective areas/modules? If so, will an impact assessment be conducted annually, or every three years, for the California baseline default value?
- Given the OPGEE 1.1 model uses a separate module based on GHGenius, will cited<sup>1</sup> differences be accounted for in overall crude production carbon intensities under the re-adopted LCFS? Could the CARB comment on carbon intensity differences for mining based MCOs? Specifically, are values higher or lower when MCOs are input into the OPGEE, compared to GHGenius?
- Some uncertainty exists as to whether OPGEE updates will occur every three years, as outlined in the LCFS rulemaking proposal, or every one to two years, as outlined in the OPGEE 1.1 user's manual.
- The preferred compliance curves presented on III-13 (Option 3's 'gradual compliance curve') call for a 50 per cent reduction in fuel carbon intensity in two years. The possibility exists that credit supplies will be exhausted in these more intensive years (or perhaps even beforehand), thereby negating their envisioned use in the 2020-2025 period.

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<sup>1</sup> O'Connor, D. (2013) OPGEE analysis and comparison to GHGenius. Prepared for Natural Resources Canada, August 19, 2013.

- The LCFS rulemaking proposal outlines that credit prices are not expected to exceed \$100/credit. What then is the need for placing a cap on the credit price and can such a control de-incentivize program participants?
- Though only presented as being under staff consideration, the rationale behind limiting LCFS eligibility to on-site carbon capture and storage production facilities is not made entirely clear and this proposal's relation to California's Cap and Trade program needs to be more fully clarified.
- Proper Tier 2 carbon-pathway validation (third party engineering reports, submissions for Environmental Protection Agency approval, etc.) may require more than 30 days to fulfill. Likewise, submission of evidence for out of state fuel transport modes (or related updates) may also require more than 30 days.