

## Commentary on LFX, CERI Studies of proposed Clean Fuel Standard — July 12, 2021

**Primary focus of commentary** — LFX Associates, [Assessment of the Proposed Canada-Wide Clean Fuel Standard](#), September 2020

**Secondary focus of commentary** — Canadian Energy Research Institute: [Economic and Emissions Impacts of Fuel Decarbonization](#), May 2019

The LFX study objective was to estimate the costs of the proposed Clean Fuel Standard (CFS) as developed by Environment and Climate Change Canada (ECCC). The LFX study modelled the CFS using their LFXCM general equilibrium model, with considerable reliance for inputs on the 2019 CERI study. Errors and CFS misinterpretations in the CERI study were amplified and compounded by errors unique to the LFX study.

***In total, the materiality of these errors renders the LFX study conclusions meaningless and misleading.***

**HIGHLIGHTS:** The studies (singly or jointly) significantly inflate CFS compliance costs. They:

- model a fictional 20% CI reduction; ECCC's actual CFS design is 12-14% (i.e. 12g/MJ by 2030)
- use outdated, non-market biofuel cost inputs
- fail to include the impact of other regulations to calculate the starting 2022 fossil baselines
- assume no innovation in carbon intensity of either crude/refined products or biofuels all the way to 2030
- assume that obligated parties can substantially meet obligations by paying ECCC for 'permits' that are not associated with physical GHG reductions (and that do not exist in the CFS)
- model the cost of all tonnes reduced based on marginal credit market prices (conflating this with compliance costs, and misrepresenting 'marginal' compliance credit values as representative of 'average' compliance costs)

### DETAILS

- **The studies mistakenly assert (and model) a CFS that must result in 2030 GHG absolute emissions tonnes that are 30Mt below 2016 tonnes** CERI misread the CFS objective, and so developed its 20% scenario to keep Canada's liquid, solid, and gaseous GHG emissions ~30Mt below 2016 emissions tonnes. It also asserted (incorrectly) that a 10% CFS would fail to meet its objectives (with the same claim made about California, Europe, and BC standards) because absolute emissions increased during the regulation timespan.
- **The studies failed to remove from their baselines the reduction impact of other regulations (that ECCC does account for in its 12gCO<sub>2</sub>e/MJ requirement)**
  - The CERI study excluded approximately 2 MT of actions that should properly have been attributed to other regulations, such as provincial renewable fuel, low carbon fuel, and ZEV mandates, carbon pricing, and CleanBC reductions.



- Including the impact of these regulations in CERI's 10% reduction scenario would result in ~12% CI reduction under their modelling, and the 20% reduction would be revised to ~22% reduction.
- **LFX incorporates CERI's incorrect data inputs and assumptions, which materially inflates CFS costs:**
  - Fuel cost increases which are used as key inputs to the model are incorrect; they are based on CERI's 20% CI reduction scenario, not the announced 12 gCO<sub>2</sub>e/MJ reduction in the CFS (approx. 12-14% reduction in CI, depending on the fuel).
  - Fuel costs are additionally overstated by CERI use of: outdated 2015 data, inaccurate biofuel market prices, and the incorrect assumption that biofuel carbon intensities will cease their historical downward trend and remain flat to 2030.
  - Significant non-biofuel credit generation opportunities (EV's, fuel switching, upstream reductions) and compliance flexibilities (cross-stream trading) of the CFS were not modelled – obligated parties were assumed to only purchase credits at the maximum compliance credit price or blend biofuels.
- **The LFX study fails to understand credit generation, and illogically creates credits out of thin air, asserting that no reduction activities are associated with those credits, with consequentially small predicted CI reductions.**

*“most of the industry people we spoke to seemed to assume that compliance will mainly be achieved through credit purchases rather than changes to the fuel blends themselves, though we were not able to ascertain who would be on the sell side. On the assumption that permits will be available we expect the actual CI reduction to be relatively small for both gaseous and liquid fuels.”*

- The study's explanation for CFS achieving compliance is impossible; LFX did not articulate any other means of credit generation other than biofuel blending, leaving to be the only credit generation pathway (excepting the limited compliance fund). The study does not understand that 'changes to fuel blends' is what generates credits absent other pathways. From there, untroubled by 'unable to ascertain who would be on the sell side' of these credits, the study simply assumes – a huge logic jump - that no 'sell side' means no real reductions but that 'permits will be available' from some CFS actor (ECCC?). On the assumption that 'permits' aren't associated with real reduction activities, the study jumps to concluding that 'we expect the actual CI reductions to be relatively small...'
  - The assertion that 'compliance will mainly be achieved through credit purchases' is contradicted by BC LCFS data which show that only 23% of obligated parties' credits were acquired in the credit market in the latest reported compliance period (2018). The bulk of credits came from biofuel blending in the 2010-2018 period.
  - Under CEPA, credits are only generated for substantiated, documented emission reductions; thus, every credit purchased from the market is explicitly tied to a

one tonne of emission reduction (except those credits acquired by payment into the limited compliance fund).

- By minimizing the reductions achieved, the cost per tonne of reductions is exaggerated.
- This foregoing mis-logic then allows the study to find its way to the scenario where, of the 30.5 Mt of reductions modeled, half are attributed to massive price hikes leading to decreased fuel demand (and GHGs), while the remainder are assumed to come from a 5.5% CI reduction in gasoline. Costing 30Mt of reductions on a 5.5% CI reduction basis will yield at least double the \$/tonne costs versus properly using the 12gCO<sub>2</sub>e/MJ that is the actual requirement of the proposed regulation. Similarly, only a 1% CI reduction of gaseous fuels was derived from this misinformed credit assumption.
- **The studies incorrectly compare compliance credit market prices with compliance cost** and fails to accurately reflect how current clean fuel markets function as seen in BC and California. For example, the study misrepresents ‘marginal’ compliance credit values as representative of ‘average’ compliance costs, failing to evaluate the impact of direct compliance by fuel suppliers for the majority of their obligations at lower cost than the assumed \$200/tonne credit market price.
  - In the BC LCFS, ~20% of the credits generated have historically traded on the credit market; the other ~80% we from direct obligated party action (e.g., biofuels blending). The costs of the latter are broadly understood to be well below the reported prices in the credit market.
  - As a result of the LFX assumption, the high fuel cost increases which are directly related to the erroneously assumed compliance costs, are assumed to create an economic recession to which half of the emission reductions are attributed.
- **The LFX study projects that most GHG reductions will occur as a result of fuel demand destruction** This is inaccurate (and not substantiated) because it is tied to highly overestimated fuel cost impacts, but is also implausible when contrasted with gasoline’s [widely understood price inelasticity of demand](#) with likely imperceptible loss of demand (and GHGs). Attributing GHG reductions to price-induced demand destruction is not accepted practice in any other clean or low carbon fuel standards, nor is not CEPA-compliant.
- **The study claims BC compliance costs are double the national average** The claim that compliance costs in BC will be \$0.30/L, double the claimed national average, is based on false information and arbitrary, uncalculated guesses.
  - Compliance costs in BC are [projected by BC’s largest refiner](#) to be lower in the future; BC’s other refiner is also [planning to adopt](#) a similar lower-cost compliance pathway. Use of these fungible fuels invalidates LFX claims regarding infrastructure.
  - The [BC Utility Commission’s comprehensive 2019 review of fuel prices](#) in BC assessed the LCFS to add a maximum of 4 cents per litre to gasoline prices in 2018 (the BC LCFS in 2018 required an average 5.9 gCO<sub>2</sub>e/MJ reduction in CI). The Commission’s report also unambiguously invalidates LFX claims of ‘persistent shortages of fuel’ and attendant fuel



price increases.

- **The study asserts ‘only’ 7Mt of reductions, but models 30Mt of costs** This statement is disingenuous: *“Despite its cost, the CFS will accomplish relatively little, especially in the context of a growing economy,”*
  - LFX asserts, based on the projections from another study, that the CFS ‘will accomplish little’ (specifically 7Mt), but then proceeds to model impacts of a full 30Mt reduction. The study cannot assert both of these claims as they contradict each other.
  - In fact, the CFS reductions keep pace with a growing economy. A 12-14% reduction in carbon intensity results in a greater quantity of avoided emissions when applied to greater outputs.