

An alternative to the existing LCFS and to concepts in the LCFS Re-Adoption Concept Paper

In response to ARB staff's request for "alternatives to the existing regulation and concepts in the LCFS Re-Adoption Concept Paper", I respectfully suggest a technology-neutral, pure performance standard regulating lifecycle fuel carbon intensity ("CI"). Relative to the existing regulation and proposal described in the re-adoption concept paper ("existing proposal"), a pure performance standard would simplify and streamline implementation, provide consistent treatment of all transportation fuels, clarify and simplify certification of new fuel pathways, and increase the policy's economic efficiency. As a result, a pure performance standard would ensure a level playing field and fair business environment, accelerate private sector investments to supply low carbon fuels, reduce costs for California's fuel consumers, and save California's taxpayer dollars.

The LCFS was intended to be a technology-neutral performance standard to motivate a cost-effective transition to low carbon fuels (see, for example, [Sperling and Yeh, 2009](#) and page 1 of the Concept Paper). Unfortunately, the existing proposal falls short of this target by, for example:

- A. Differentiating the policy treatment of CI reductions according to fuel types, feedstock types, and CI reduction strategies; and
- B. Requiring ARB staff to make complex, value-laden, subjective, and potentially arbitrary determinations regarding, for example, the degree of innovation, feedstock types, and the potential to deliver "ultra-low carbon fuels".

Relevant examples of these shortcomings in the existing proposal are outlined below. These examples, among others, represent costly deviations from the intended policy structure as a technology-neutral performance standard. Specifically, by making the policy treatment of CI reductions depend on the CI reduction strategy and on value-laden, subjective determinations, the existing proposal creates an uneven playing field, stymies private sector innovation, picks winners and losers, and hampers the transition to an economically efficient mix of low carbon fuels. Moreover, obligating ARB staff to make such value-laden determinations regarding the appropriate policy treatment of alternate CI reduction strategies imposes unnecessary burdens on businesses and ARB staff alike. Ultimately, these features reduce economic efficiency and (by definition) increase policy costs, decrease policy benefits, or both.

In contrast, a technology-neutral, pure performance standard would deliver equally strong incentives to reduce fuel CI while overcoming these key shortcomings to improve the policy's economic efficiency. Economic efficiency would be advanced by, among other things, providing equal treatment for all fuels and CI reduction strategies, which would provide a level playing field for fuel suppliers and investors and avoid picking winners and losers. A pure performance standard would unify the policy treatment of CI reductions and limit reliance on subjective determinations, which would provide greater certainty to regulated parties and accelerate private sector investments and innovation to deliver low CI fuels. This policy alternative would also remove ARB staff's obligations to adjudicate complex, value-laden, inherently subjective, and potentially arbitrary determinations, which would reduce the workload for ARB staff and save taxpayer dollars. Fundamentally, by increasing economic efficiency, a pure performance standard would increase policy benefits (e.g., by accelerating investments and associated economic activity, and by enabling deeper CI reductions), reduce policy costs, or both.

A pure performance standard may not result in a substantially different fuel mix than the existing proposal; however, the increased economic efficiency, technology neutrality, and regulatory certainty that this alternative provides would substantially reduce the costs of achieving CI reductions similar to

or greater than those in the existing proposal, and / or substantially accelerate the rate of transition to low carbon fuels. For these principled reasons, a pure performance standard would provide fuel CI reductions with similar or greater policy benefits and reduced costs for all stakeholders—regulated parties, low carbon fuel developers, California fuel consumers, California taxpayers, and ARB staff.

Adopting a pure performance standard would require making significant changes to the current regulation; however, more incremental policy alternatives also exist that could move the existing proposal closer to a pure performance standard. These might also be considered “alternatives to the existing regulation and concepts in the LCFS Re-Adoption Concept Paper”. Generally speaking, these incremental alternatives would: (i) systematically shift the policy toward unified treatment of transportation fuels, removing uncertainty and costs associated with the many “special cases” for policy treatment of CI reductions in the existing proposal; (ii) remove obligations for ARB staff to adjudicate complex, value-laden determinations that implicitly (or explicitly) pick winners and losers; and (iii) focus staff resources on policy enforcement and on validating the scientific rigor of fuel pathway LCAs according to established best practices and scientifically based methodological principles. Such incremental alternatives may fall short of achieving the full benefits of a pure performance standard, but may still provide significant advantages relative to the existing proposal in terms of reducing costs, increasing benefits (environmental and economic), or both.

Examples in the existing proposal of deviations from a technology-neutral performance standard:

1. “Innovative methods” provisions, under which: (i) CI reductions in crude oil production are only eligible to generate LCFS credits if they result from the use of “innovative methods of crude oil production” (requiring subjective determinations by ARB staff); and (ii) the quantity of credits issued depends on the policy’s compliance schedule and the “comparison baseline” production method, not the actual CI of resulting transportation fuels (requiring subjective determinations by staff, reducing incentives for such CI reductions, and picking winners and losers);
2. “Refinery investment credit” provisions, under which some (but not all) efforts to reduce refinery emissions are eligible to generate LCFS credits (requiring subjective determinations by ARB staff, differentiating the policy treatment of CI reductions, and picking winners and losers);
3. The two tier system for biofuel pathways, under which: (i) the policy treatment depends on the “tier” into which the pathway is classified (requiring subjective determinations by ARB staff and differentiating the treatment of fuels); (ii) the CI reduction strategies available to “Tier 1” fuels are limited (differentiating the treatment of fuels); (iii) “Tier 2” pathways are subject to additional barriers to pathway certification and higher data requirements (differentiating the treatment of fuels, and ironically casting innovative fuel pathways as “losers” under the policy, contrary to the policy’s stated intent);
4. Lifecycle assessments and related elements of the existing proposal that specify different emission accounting methodologies for different fuels (e.g., with respect to comparison baselines, system boundaries, co-product accounting, etc.), and which contradict (i) relevant international standards and best practices embodied in ISO:14044, (ii) recommendations of the Expert Workgroup convened by ARB, and (iii) the program’s scientific-basis; the combined effect is to require value-based (not science-based) determinations by ARB staff, differentiate the treatment of fuel pathways, pick winners and losers, and compromise the policy’s scientific credibility.