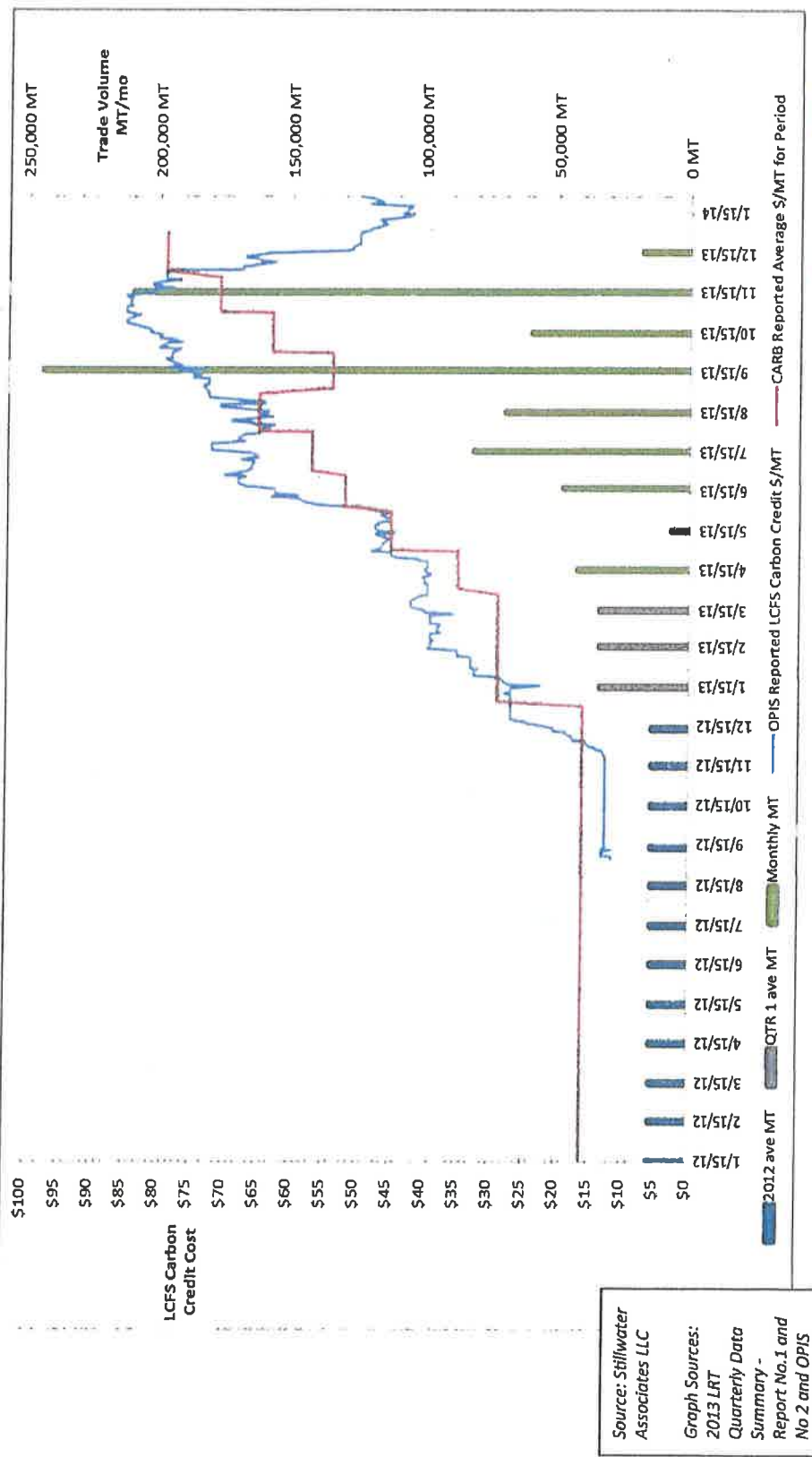




WESTERN STATES PETROLEUM ASSOCIATION

CA LCFS credit prices and volume have been volatile



Source: Stillwater Associates LLC
 Graph Sources: 2013 LRT Quarterly Data Summary - Report No. 1 and No 2 and OPIS

Credit costs rose from about \$12 to \$85/MT before declining



OREGON CLEAN FUEL STANDARD (LCFS) plus proposed CA ILUC
OREGON GASOLINE BLEND - 10% ETHANOL

Pathway	Proposed CA ILUC (CI + ILUC)	2016* (0.25%) 84.93	2017* (0.5%) 81.85	2018* (1.0%) 75.57	2019 (1.5%) 69.42	2020* (2.5%) 56.98	2021* (3.5%) 44.4	2022* (5%) 25.61	2023* (6.5%) 6.95	2024* (8%) -11.77	2025 (10%) -36.93
ETHC001	69.4 + 19.8 = 89.2										
ETHC002	65.66 + 19.8 = 85.46										
ETHC003	50.7 + 19.8 = 70.5										
ETHC004	68.4 + 19.8 = 88.2										
ETHC005	75.1 + 19.8 = 94.9										
ETHC006	64.52 + 19.8 = 84.32										
ETHC007	90.99 + 19.8 = 110.79										
ETHC008	60.1 + 19.8 = 79.9										
ETHC009	58.9 + 19.8 = 78.7										
ETHC010	63.6 + 19.8 = 83.4										
ETHC011	56.8 + 19.8 = 76.6										
ETHC012	54.2 + 19.8 = 74										
ETHC013	47.44 + 19.8 = 67.24										
ETHC014	60.99 + 19.8 = 80.79										
ETHC015	59.08 + 19.8 = 78.88										
ETHC016	57.16 + 19.8 = 76.96										
ETHC017	55.24 + 19.8 = 75.04										
ETHC018	59.8 + 19.8 = 79.6										
ETHC019	57.86 + 19.8 = 77.66										
ETHC020	55.91 + 19.8 = 75.71										
ETHC021	53.96 + 19.8 = 73.76										
ETHC022	57.16 + 19.8 = 76.96										
ETHC023	54.29 + 19.8 = 74.09										
ETHC024	61.6 + 19.8 = 81.4										
ETHC025	62.44 + 19.8 = 82.24										
ETHC026	58.49 + 19.8 = 78.29										
ETHC027	58.5 + 19.8 = 78.3										
ETHC028	61.66 + 19.8 = 81.46										
ETHC029	60.52 + 19.8 = 80.32										
ETHC030	44.7 + 19.8 = 64.5										
ETHC031	53.69 + 19.8 = 73.49										
ETHC032	50.01 + 19.8 = 69.81										
ETHC033	50.26 + 19.8 = 70.06										
ETHC034	50.47 + 19.8 = 70.27										
ETHC035	43.21 + 19.8 = 63.01										
ETHS001	27.4 + 11.8 = 39.2										
ETHS002	12.4 + 11.8 = 24.2										
ETHS003	20.4 + 11.8 = 32.2										
ETHS004	32.94 + 11.8 = 44.74										
ETHS005	17.94 + 11.8 = 29.74										
ETHS006	25.94 + 11.8 = 37.74										

* - Year
- % Reduction

Non Compliant
Compliant

OREGON CLEAN FU. ANDARD (LCFS)
OREGON GASOLINE BLEND - 10% ETHANOL

Pathway	C.I.	2016* (0.25%) 84.93	2017* (0.5%) 81.85	2018* (1.0%) 75.57	2019* (1.5%) 69.42	2020* (2.5%) 56.98	2021* (3.5%) 44.4	2022* (5%) 25.61	2023* (6.5%) 6.95	2024* (8%) -11.77	2025* (10%) -36.93
ETHC001	69.40										
ETHC002	65.66										
ETHC003	50.70										
ETHC004	68.40										
ETHC005	75.10										
ETHC006	64.52										
ETHC007	90.99										
ETHC008	60.10										
ETHC009	58.90										
ETHC010	63.60										
ETHC011	56.80										
ETHC012	54.20										
ETHC013	47.44										
ETHC014	60.99										
ETHC015	59.08										
ETHC016	57.16										
ETHC017	55.24										
ETHC018	59.80										
ETHC019	57.86										
ETHC020	55.91										
ETHC021	53.96										
ETHC022	57.16										
ETHC023	54.29										
ETHC024	61.60										
ETHC025	62.44										
ETHC026	58.49										
ETHC027	58.50										
ETHC028	61.66										
ETHC029	60.52										
ETHC030	44.70										
ETHC031	53.69										
ETHC032	50.01										
ETHC033	50.26										
ETHC034	50.47										
ETHC035	43.21										
ETHS001	27.40										
ETHS002	12.40										
ETHS003	20.40										
ETHS004	32.94										
ETHS005	17.94										
ETHS006	25.94										

* - Year
- % Reduction

Non Compliant
Compliant

Transportation Sector GHG Emission Reduction Measures

Measure	Timing	Potential GHG Reductions in Oregon from 2016 to 2025 (MMTCO ₂ e)
Oregon LCFS	Implementation in 2016	3.24 in 2025 Cumulative 12.69 through 2025
Existing Federal Programs		
National Program for GHG Emission and Fuel Economy Standards	Regulations are already in place	6.85 in 2025 Cumulative 57.66 through 2026
Heavy-Duty National Program of GHG Emissions and Fuel Efficiency Standards	Phase 1 regulations are already in place. Phase 2 regulations to be adopted in early 2016	2.04 MMTCO ₂ e in 2025 Cumulative 11.29 through 2025
Renewable Fuel Standard	Regulation is already in place	0.51 in 2025 Cumulative 4.96 through 2025
Other Potential Programs		
Feebates on New Vehicles	Could be Implemented by 2017	0.56 in 2025 Cumulative 2.81 through 2025
Improve Efficiency of Pre-2014 Heavy-Duty Vehicles	Could be Implemented by 2017	0.23 in 2025 Cumulative 2.14 through 2025
Tire Inflation and Low Rolling Resistance Tire Programs	Could be Implemented by 2017	0.11 in 2025 Cumulative 0.97 through 2025
Restrictions on Automotive Refrigerant Use	Could be Implemented by 2017	0.03 in 2025 Cumulative 0.27 through 2025
Other Potential Programs – Continued		

WSPA has seven key issues to highlight.

Alternative GHG Reductions Measures Not Fully Analyzed

We respect the state's desire to be a leader in environmental policy but in this instance the potential unintended consequences of experimental policies like those embodied in the LCFS are simply too great. There are better, less risky and less costly ways to address the state's contribution to global climate change than a Low Carbon Fuel Standard type of program with all of its attendant problems.

Infeasible as Proposed

Normally, in the transportation arena, a state deals with fuel reformulations and vehicle emission standards to the extent it has the jurisdiction to do so. The LCFS is attempting to lower generic carbon intensity for the entire pool of transportation fuels and relies on a range of alternative fuels and vehicles, some of which have not been commercialized or even invented yet. Further, in the latter years of the program fuels at a low enough CI will not be available to fulfill the deficit obligation of the regulated parties. In addition, even if the low carbon intensity fuels become available, there are many other hurdles that need to be solved (such as the ethanol blend wall, lack of infrastructure, matching vehicles, consumer acceptance, etc.) before the fuels become useable.

A LCFS program relies on an intricate combination of fuels, vehicles and consumers to make it work, but it will NOT work if only lower carbon intensity fuels arrive in the market, since the appropriate new technology vehicles and consumer acceptance are also critical. An evolution of this proportion would need a significant amount of time, let alone resources, even if it was workable.

As stated above, there is general agreement a LCFS program relies heavily on fuels and vehicles that have either not been produced yet, or are not currently commercially viable. The ICF report commissioned by ODEQ confirms there are not enough low CI fuels and/or vehicles in the latter part of the proposed program to generate sufficient credits for compliance and have a sustainable LCFS program. This is similar to various other programs such as the federal RFS program and several vehicle programs that have seen a multitude of changes. These programs have followed a similar curve of early optimism for innovative technology advancements that did not materialize in the marketplace as anticipated, or have taken far longer than projected to get activated.

Far Too Complex and Intrusive to the Market

WSPA does not oppose efforts to reduce carbon emissions from the transportation sector. We caution, however, that it is easy to end up with difficult and costly unintended consequences when you experiment with policies that impact dynamic markets like the transportation fuels market. The proposed Oregon LCFS is modeled closely after California's LCFS and is designed to

Transportation Sector GHG Emission Reduction Measures

Measure	Timing	Potential GHG Reductions in Oregon from 2016 to 2025 (MMTCO ₂ e)
Financial Incentives for Alternative Fuel Vehicle Purchase	Could be Implemented by 2016	Depends on available funding, structure of incentives and availability of alternative fuel vehicles
Financial Incentives for Production of Low CI Fuels and Refueling Infrastructure	Could be Implemented by 2016	Depends on available funding, structure of incentives, and time required to establish low CI fuel production and distribution capabilities
Incentives for the Operation of High Efficiency and Alternative Fuel Vehicles	Could be Implemented by 2016	Depends on available funding and structure of incentives
Intelligent Vehicle and Highway Programs	Depends on the nature of the programs enacted	Depends on the nature of programs enacted
Biofuel Commercialization Research at Oregon Universities	Depends on the nature of the programs enacted	Depends on the nature of programs enacted

being very little incremental benefit from the LCFS. Muted environmental benefits from a complex and disruptive regulation, is not a good formula for Oregon.

State Change in Characterization of LCFS – 2010 to 2014

The original LCFS program in the 2010-12 time period was promoted as a blending program with a focus on cellulosic biofuels as being a key contributor to the carbon reduction path. Now there is a general recognition, based on what has occurred in the federal RFS2 program and the California LCFS program that adequate volumes of cellulosic biofuels have not materialized and they are not yet commercial. Although producers of corn-based ethanol have invested heavily in reducing the carbon intensity of their fuel, they have been marginalized by a LCFS program and are being told their fuel will not achieve enough reductions in carbon intensity for compliance purposes after a few years. These are big changes, which has led to a program overwhelmingly relying on the purchase of credits from other fuel producers. The current ODEQ program relies heavily on EV purchases, the availability of renewable diesel, and reliance on the oil industry to generate credits early on - all without any historical or empirical data that says Oregon's market will react this way.

Since these initial premises have not borne out, and since there have been so many changes to the program in just a couple of years to try to portray it as feasible, we feel the EQC needs to approach the claims of optimism with a healthy degree of skepticism.

Additionally, the new report from ICCT has garnered some attention related to west coast LCFS. We offer the following observations:

- ICCT's scenarios demonstrate a wide variety of potential fuels that can be used for compliance, however they does not appear to deal with the reality of whether the large volumes of low CI fuels will actually be available, whether the vehicles to use them in will be available, whether the infrastructure to distribute and dispense them will be available, whether the cost of them will be economic, and whether the public is interested in purchasing them.
- In terms of economic impact, ICCT clearly states, "The study does not include any direct economic analysis and does not explicitly predict or assume any particular carbon prices..." One would question how realistic the economics are when, for example, the costs associated with the production of bio-methane remain high -30-50% more than conventional natural gas.
- There is no measurement of business as usual (BAU) changes to isolate the impact of regulatory signals. The report acknowledges that scenarios go beyond BAU activity, "and would likely be dependent upon some mix of direct regulatory and fiscal policy support"
- The scenarios seem to assume various combinations of E15 and B10 or B20. These higher levels of biofuels have a number of problems

reduce the carbon intensity of transportation fuels. It sounds simple but is anything but simple. Reducing carbon emissions from fuels that are carbon based is not like managing criteria pollutants that have direct health impacts.

For Oregon, the fact the state is almost entirely dependent on out-of-state fuel producers, make these consequences more difficult to foresee and manage. Imposing costly fuel carbon intensity requirements on producers who may sell only a small percentage of their production in the state could potentially result in some producers opting to exit the market entirely.

Costs are Unknown due to Lack of Robust Cost Analysis

The ICF analysis of compliance schedules does not assess feasibility, fuel or infrastructure costs and provides no information of value to the fiscal analysis. An evaluation of potential costs based merely on a credit cost range does not tell the decision-makers all that they need to know to make an informed decision about whether to adopt the regulation. Our criticisms of the Jack Faucett Associates, Inc. work done in 2010 and 2012 still stand.

Cost Containment Proposals Do Not Work

We also would note the Oregon plan to defer implementation and suspend enforcement if the regulation results in price spikes and/or disruptions in fuel supplies is, in our view, not going to provide the protection Oregon consumers and businesses expect and deserve.

First, the production, distribution and marketing of petroleum products is a complex business that requires long-term investments and dependable sources of supply. Companies that provide fuel for Oregon's businesses and consumers must make decisions today to reliably meet the demand for their products in the months and years to come. Doubts over what fuels will and won't be acceptable create costly delays and inefficiencies in the marketplace.

Second, so-called triggers designed to protect against price spikes and supply disruptions are typically backward-looking and are implemented after the economic harm has already occurred.

And third, markets that have been distorted by ill-advised regulations may not correct themselves in a timely manner, leaving the state feeling the burden of those policies long after the regulations have been suspended or deferral actions taken.

Minimal Incremental GHG Reduction Benefits Over BAU

It is also important to note that Oregon's carbon footprint already is very low, both on a total basis and a per capita basis. Oregon contributes less than 2 tenths of one percent of the world's greenhouse gas emissions, and is 35% below the U.S. average per capita.

In fact, the state's progressive renewable fuel standard and electric vehicle programs, coupled with federal initiatives, already provide substantive GHG reduction benefits resulting in there

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- The baseline carbon intensity is California 2010 baseline - 98.5 gCO₂e/MJ for blended gasoline, 102.7 gCO₂e/MJ for diesel fuel. This would seem to overstate progress in areas like Oregon where there is a B5 baseline.
 - The scenarios focus on a 2030 attainment and do not show much progress earlier – especially in the 2020 period. All ICCT scenarios are generating at or below the number of credits needed to comply with CA LCFS regulations in 2020.

