What LCFS doesn't do

A low carbon fuel standard reduces emissions from the use of transportation fuel, but it does not directly address issues such as:

- Total fuel use
- Vehicle efficiency
- Market acceptance and consumer choice
- Preference for a particular fuel or technology
- Preference for the domestic production of fuels
- Social justice

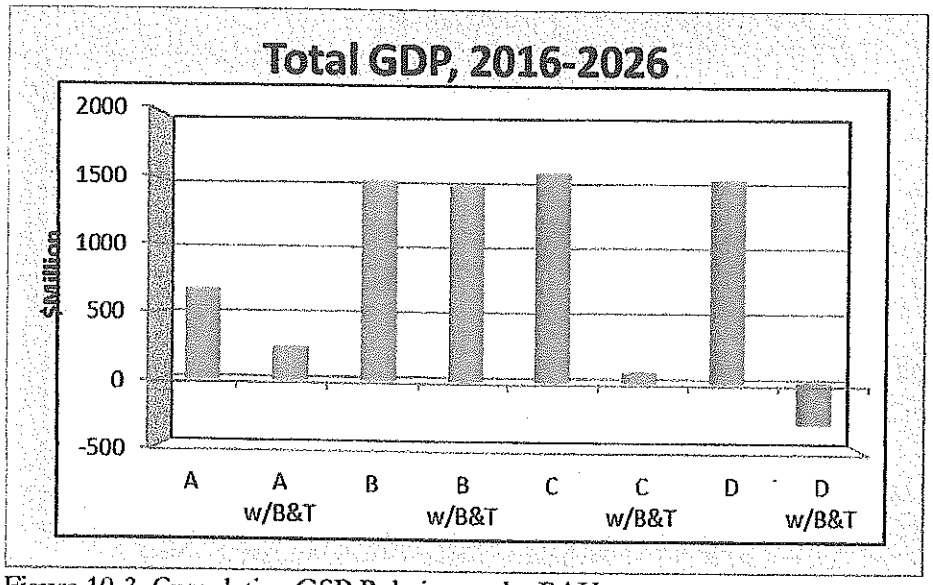


Figure 10-3. Cumulative GSP Relative to the BAU.

Two other metrics used to evaluate macroeconomic impacts are employment and overall income levels. Figure 10-4 and Figure 10-5 provide annual employment impacts (measured in jobs) for the scenarios with and without banking and trading. As with GSP, employment impacts are less positive in the banking and trading scenarios than they are in the scenarios where no such trading mechanism is present.

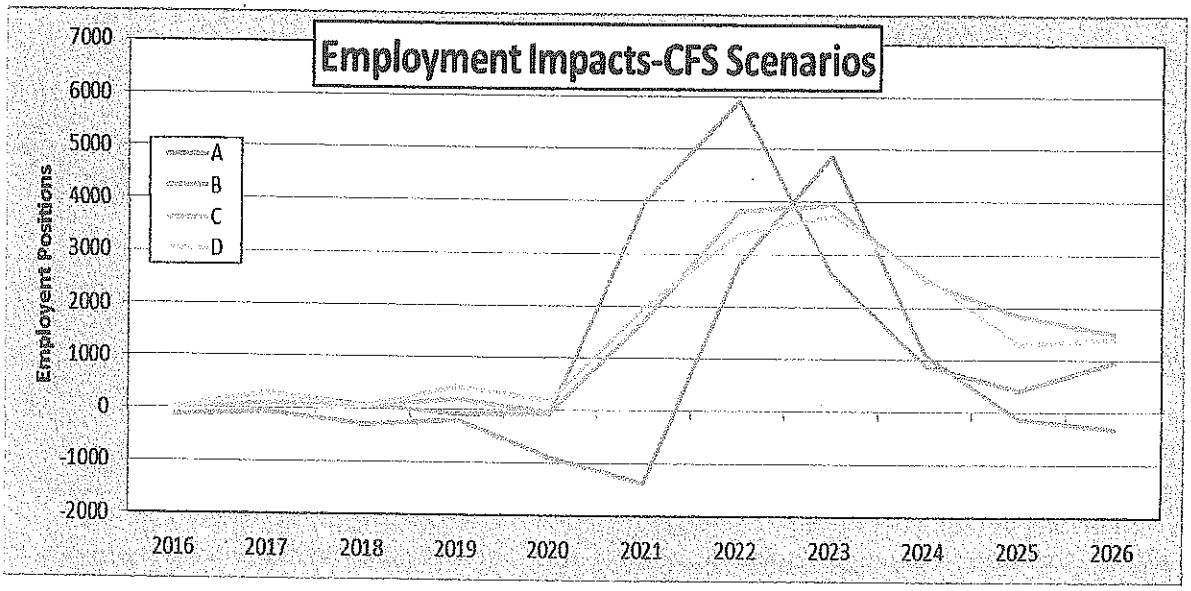


Figure 10-4. Change in Employment Relative to BAU for Scenarios without B&T.

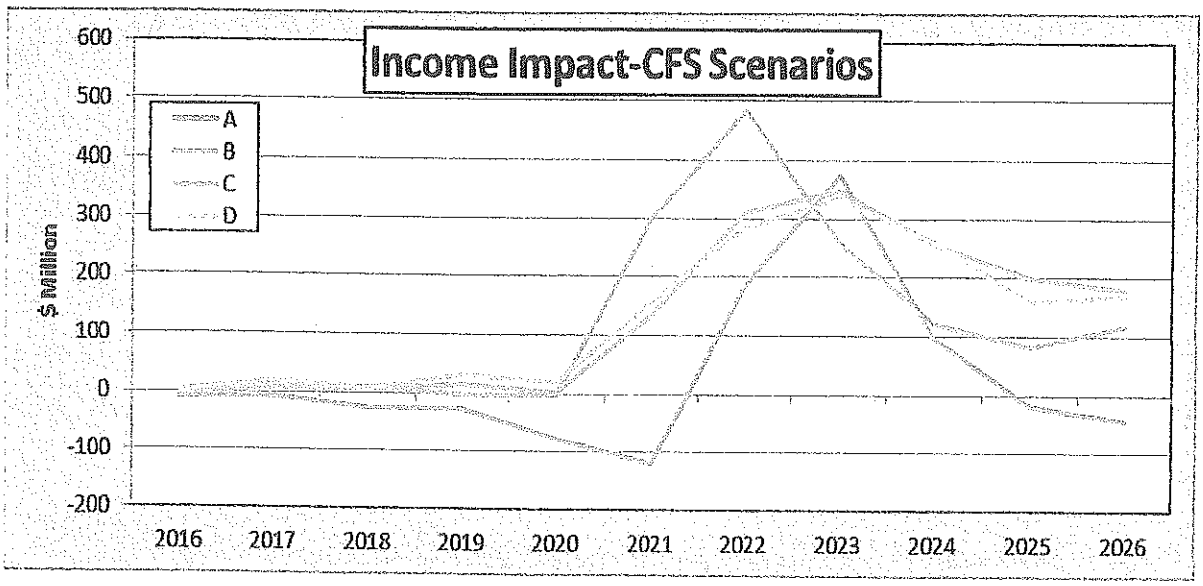


Figure 10-6. Change in Personal Income Relative to BAU for Scenarios without B&T.

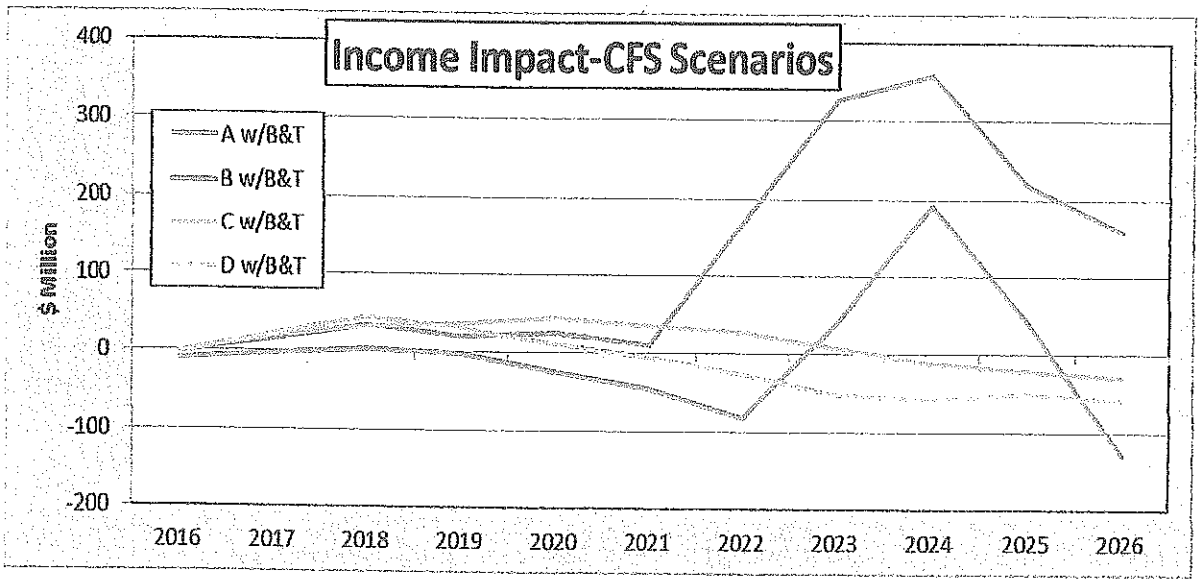


Figure 10-7. Change in Personal Income Relative to BAU for Scenarios with B&T.

Certain sectors fared especially well, while others fared less well. Identifying the most prominent changes – both positive and negative – in incomes, types of employment (by job classification) and output within sectors allows us to better understand the overall results. The following discussion provides sector-level results for Scenario C (the scenario that results in the most positive impacts overall) and Scenario D with banking and trading (the scenario with the least desirable impacts). Results for the other scenarios may be found in Appendix D.

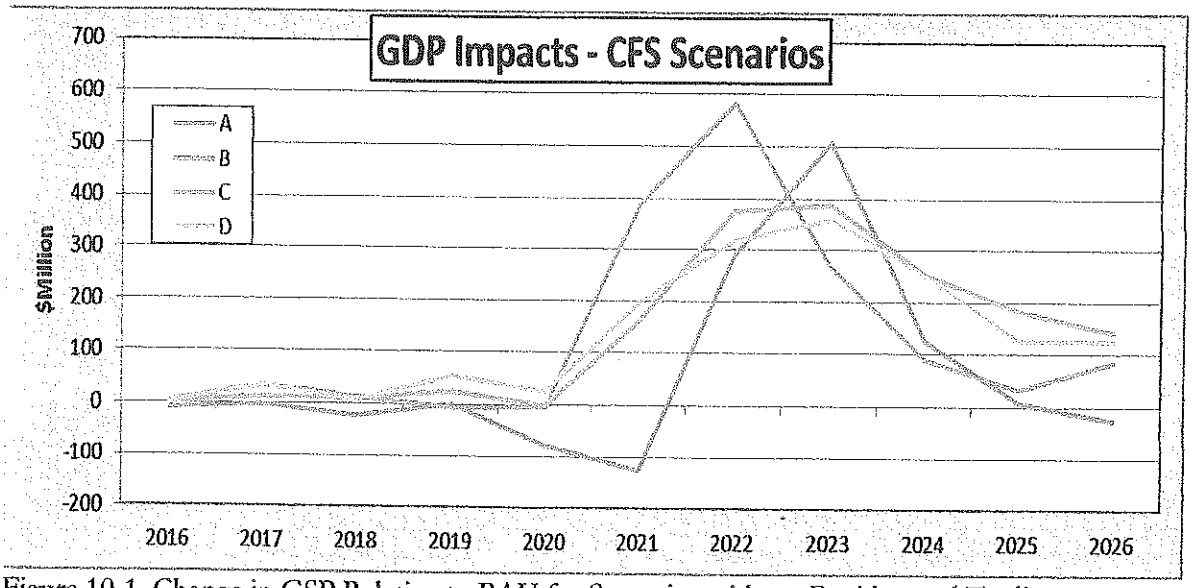


Figure 10-1. Change in GSP Relative to BAU for Scenarios without Banking and Trading.

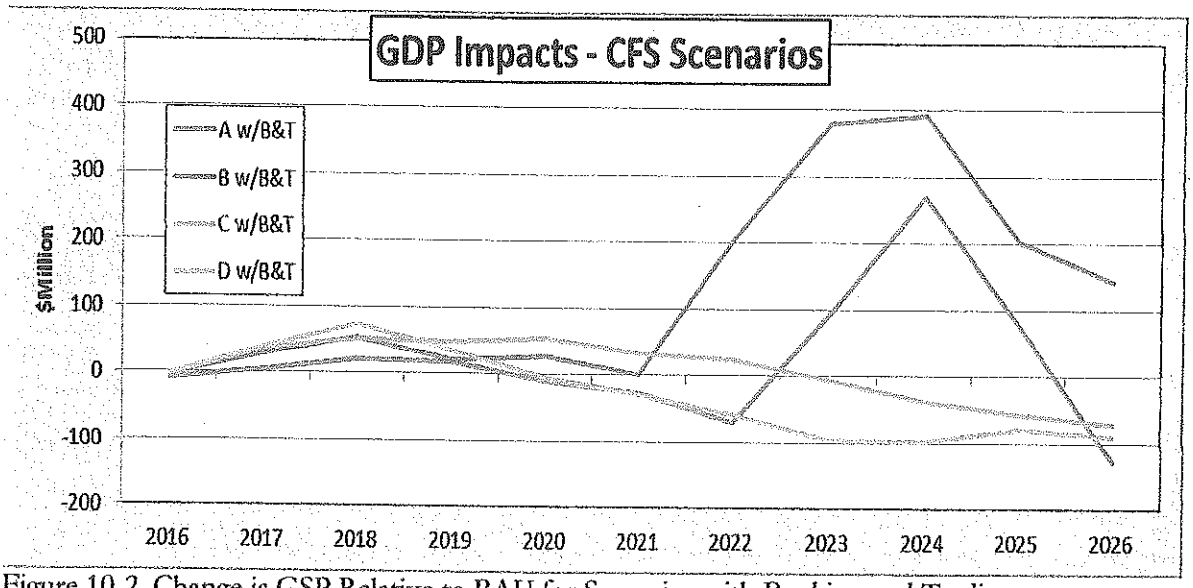
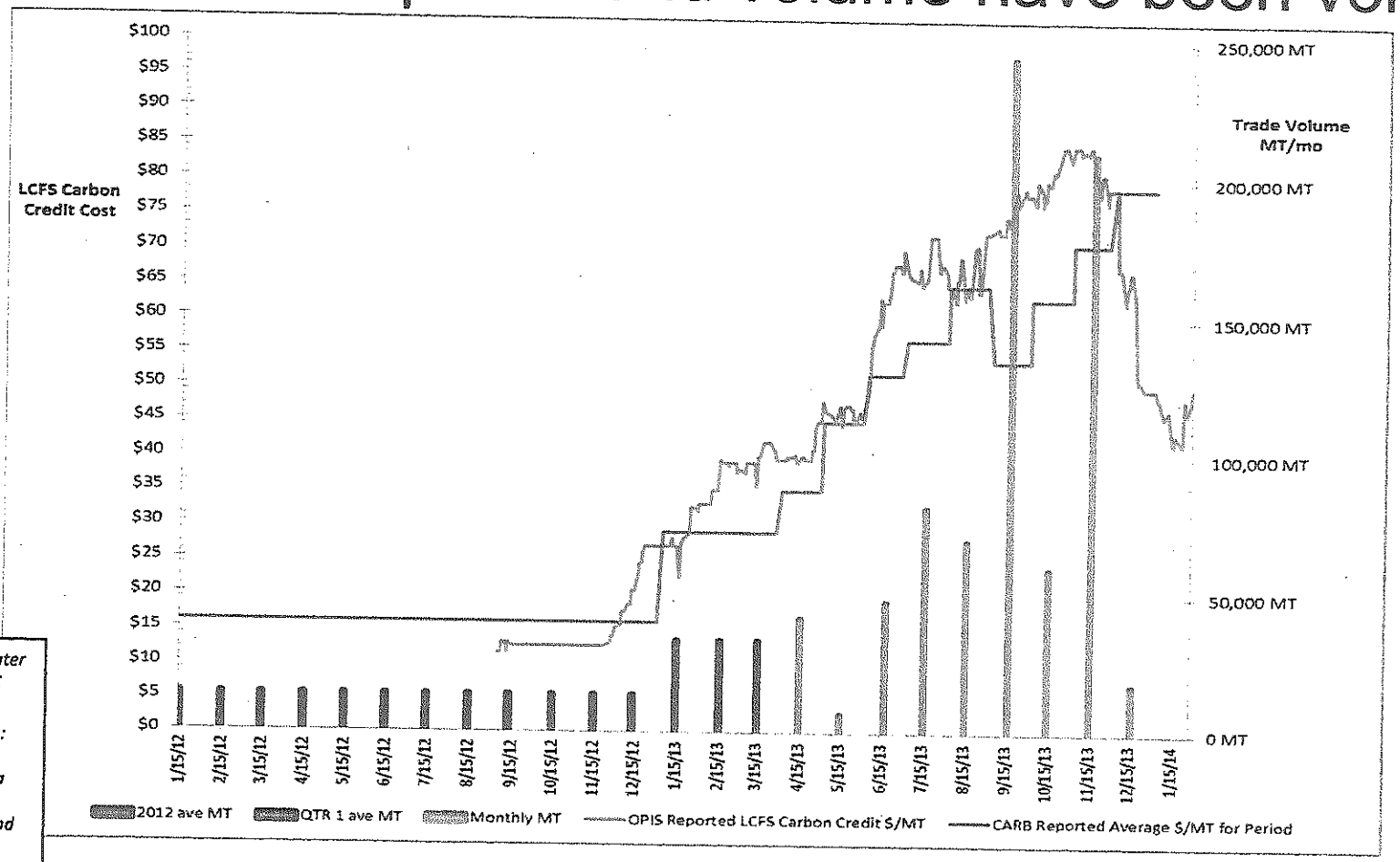


Figure 10-2. Change is GSP Relative to BAU for Scenarios with Banking and Trading.

The eight different scenarios represent four different possible market responses to the CFS, and a variation on each of those four which assumes that credit banking and trading are in place. Their overall impact in GSP over the entire 2016-2026 period is visualized below in Figure 10-3. The banking and trading scenarios consistently produce results showing less favorable macroeconomic outcomes, though the scale of the differences are not consistent. In Scenario B, it appears to make little difference, while in Scenarios C and D it makes a dramatic difference. This is because in Scenarios C and D with banking and trading, no cellulosic fuel is required, so there is no economic activity associated with constructing and operating new cellulosic fuel production plants.

WESTERN STATES PETROLEUM ASSOCIATION

CA LCFS credit prices and volume have been volatile

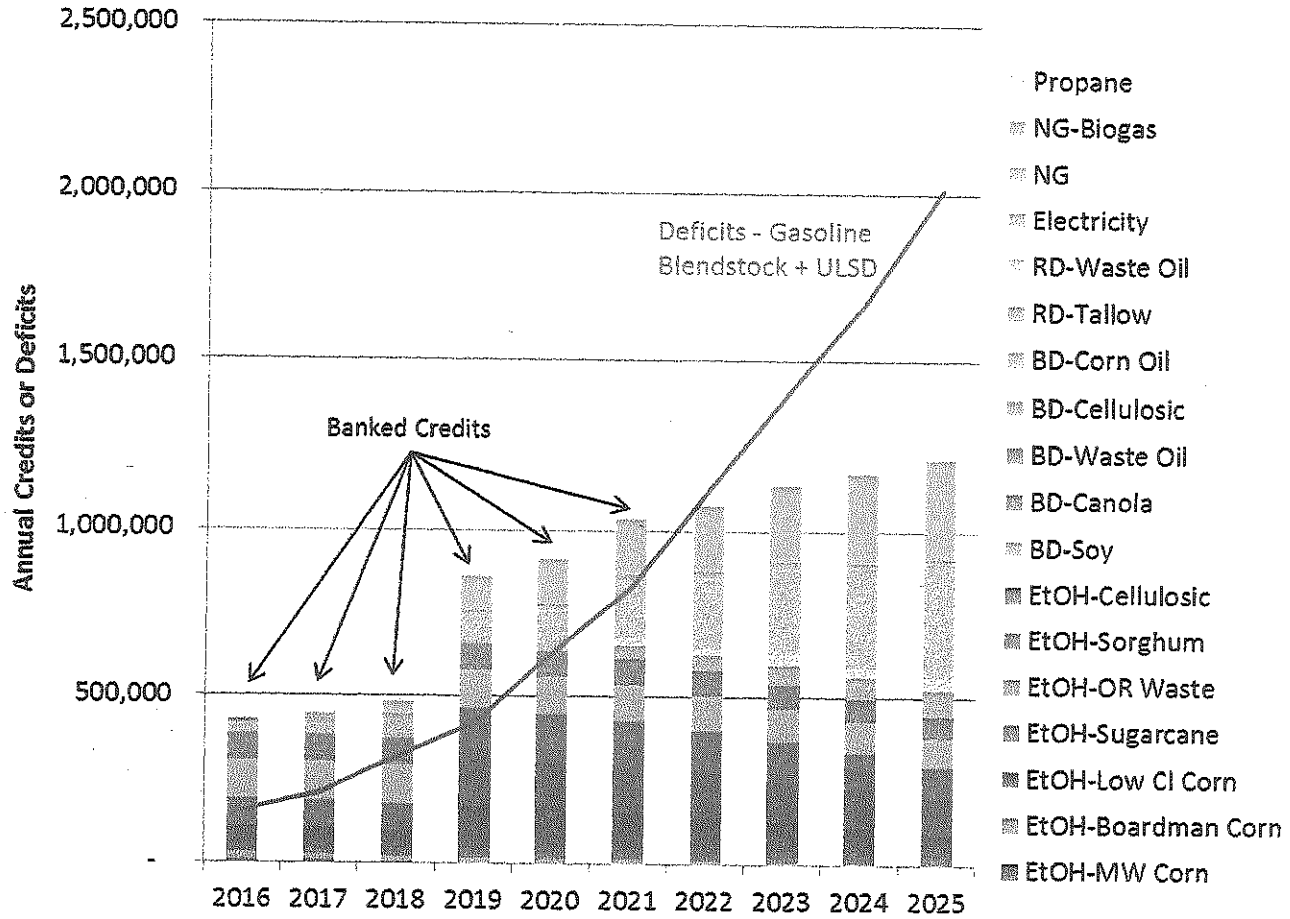


Source: Stillwater Associates LLC

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

WESTERN STATES PETROLEUM ASSOCIATION



FROM THE DESK OF Senator Olsen

OREGON CLEAN FUEL STANDARD (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
ETHC001	99.40					
ETHC002	95.66					
ETHC003	80.70					
ETHC004	98.40					
ETHC005	105.10					
ETHC006	94.52					
ETHC007	120.99					
ETHC008	90.10					
ETHC009	88.90					
ETHC010	93.60					
ETHC011	86.80					
ETHC012	84.20					
ETHC013	77.44					
ETHC014	90.99					
ETHC015	89.08					
ETHC016	87.16					
ETHC017	85.24					
ETHC018	89.80					
ETHC019	87.86					
ETHC020	85.91					
ETHC021	83.96					
ETHC022	87.16					
ETHC023	84.29					
ETHC024	91.60					
ETHC025	92.44					
ETHC026	88.49					
ETHC027	88.50					
ETHC028	91.66					
ETHC029	90.52					
ETHC030	74.70					
ETHC031	83.69					
ETHC032	80.01					
ETHC033	80.26					
ETHC034	80.47					
ETHC035	73.21					
ETHS001	73.40					
ETHS002	58.40					
ETHS003	66.40					
ETHS004	78.94					
ETHS005	63.94					
ETHS006	71.94					

Non Compliant
Compliant
California Compliant

* - Year
- % Reduction
- Needed C.I.

From the Desk of
Senator OLSEN

WITH CAL Rule

OREGON CLEAN FUEL STANDARD (LCFS)
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										

Non Compliant
Compliant

* - Year
- % Reduction

Senator OLSEN

OREGON CLEAN FUEL STANDARD (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										
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ETHC027	58.50										
ETHC028	61.66										
ETHC029	60.52										
ETHC030	44.70										
ETHC031	53.69										
ETHC032	50.01										
ETHC033	50.26										
ETHC034	50.47										
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ETHS001	27.40										
ETHS002	12.40										
ETHS003	20.40										
ETHS004	32.94										
ETHS005	17.94										
ETHS006	25.94										

Non Compliant
Compliant

* - Year
- % Reduction

REVENUE IMPACT OF PROPOSED LEGISLATION

Seventy-Eighth Oregon Legislative Assembly
2015 Regular Session
Legislative Revenue Office

Bill Number:	**SB 324 - 6**
Revenue Area:	**Transportation Fuels**
Economist:	**Mazen Malik**
Date:	**Feb-4-2015**
	REVISED

Only Impacts on Original or Engrossed Versions are Considered Official

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The revenue impact of this measure is indeterminate:

The net effect of interactions of the following impacts is highly uncertain and equally likely.

Highway fund impacts: Revenues to the highway fund might be impacted negatively as a result of the price increases due to the costs added to the fuels at the consumer level. These increased costs are due to biofuels blending into conventional gasoline or diesel for consumption in the existing vehicle fleet. However, the level of the price increases are not known to a degree that allows for evaluation and forecasting of the price elasticity or impacts on demand. On the other hand, advanced vehicle technologies can be deployed, which consume alternative fuels such as natural gas, electricity, or hydrogen. However, due to constraints on how quickly the vehicle fleet can be turned over and the speed of deployment of advanced vehicle technologies which are able to consume those fuels without losing fuel efficiency and MPG levels, the assumption of higher demand on fuel will result and persist. This higher demand on fuel might produce enough new revenue to offset the loss due to the price elasticity, but that level of offset is not clear at this point. Data from DEQ seem to suggest the same conclusion where the proposed standards/rules require a 10 percent reduction in average carbon intensity from 2015 to 2025, but it does not get to reduce the GHG emission by 10%.

Fines and Civil Penalties: The program centers on the idea of capping the intensity of the fuel and trading credits to achieve offsets for the importers/producers who couldn't comply. The program implies a market trading mechanism regulated by DEQ but without governmental fees. However, there are a number of civil penalties that can result from noncompliance. The structure and revenue from these penalties is also not clear at this time.

Personal income or other taxes: There can be additional impacts on the fuel and transportation industry and other tax revenue streams. The general idea assumes that the introduction of the clean fuel requirements can be a significant incentive for production of alternative fuels which might increase investment, employment, and income with all the associated tax revenue. It could on the other hand expand the reliance on out of state imports of fuel blends, consequently reducing investments, employment, and income and the associated tax revenues.

In conclusion, the net effect of interactions of these forces is highly uncertain and equally likely, which leads to the indeterminate revenue impact designation of this measure.

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https://www.oregonlegislature.gov/lro