



# Agenda Item D - Assessing options for additional cost containment in the Clean Fuels Program

Meeting #1 - Wednesday, November 2, 2016

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## Introduction

The Oregon Department of Environmental Quality (DEQ) is undertaking a review of additional cost containment mechanisms that can be used in the Clean Fuels Program. This review and the discussion with the advisory committee of the possible addition of one or more mechanisms, or the modification of existing mechanisms, is intended in order to fully implement SB 324 (2015)<sup>1</sup>:

*“The commission shall adopt by rule provisions for managing and containing the costs of compliance with the standards, including but not limited to provisions to facilitate compliance with the standards by ensuring that persons may obtain credits for fuels used as substitutes for gasoline or diesel and by creating opportunities for persons to trade credits.”*

This paper will discuss the cost containment mechanisms already in the Clean Fuels Program and provide examples of how other North American environmental markets manage compliance costs. Specifically, DEQ is considering whether a mechanism that uses the price of credits generated in the Clean Fuels Program can be used to manage compliance costs. DEQ believes that the addition of such a mechanism could create greater certainty for credit market participants and allow for the calculation of the maximum potential cost to comply with the program by regulated parties. Both of those factors should, in turn, provide for additional consumer protection and cost containment under the program.

Much of the information in this paper comes from a workshop that DEQ hosted in July 2016 in Portland. Professor James Bushnell from the University of California, Davis provided a high level overview of cost containment of market-based environmental regulations. Representatives from the California Air Resources Board and the British Columbia Ministry of Mines also presented on the cost containment mechanisms contained in their respective low carbon fuel standard programs. All workshop materials can be found at: <http://www.oregon.gov/deq/RulesandRegulations/Pages/Advisory/acfp2017.aspx>

## Existing cost containment mechanisms

It is important to recognize that the Clean Fuels Program already has numerous mechanisms that provide flexibility and multiple paths to compliance that should lower the overall cost of compliance under the program.

- The clean fuel standards are performance-based, inherently flexible, and technology- and fuel-neutral. In this style of regulation, the regulated parties have the opportunity and economic incentives to find their own least-cost compliance strategy.
- The program creates a credit market where providers of clean fuels can transact credits they generate to regulated parties who may need additional credits to comply.

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<sup>1</sup> Section quoted is ORS 475A.275(d): [https://www.oregonlegislature.gov/bills\\_laws/ors/ors468A.html](https://www.oregonlegislature.gov/bills_laws/ors/ors468A.html)

- Credits are fungible between the gasoline and diesel pools. That means that credits generated in the diesel pool can be used to comply with the gasoline standard and vice versa. Consumers of both fuels will benefit because the cheaper fuel pool can over-comply and lower the cost of compliance in the other fuel pool.
- Credits do not expire and can be banked. They can be generated now, while the reduction requirements are modest, and banked for future use when credits will be in much higher demand and cost more.
- Regulated parties can carry over any unfilled deficits, up to 10% of their compliance obligation, to the following year if they do not have sufficient credits on hand at the compliance deadline.
- There are three deferrals which allow for the program to be modified if compliance with the standards are shown to be difficult. For a complete discussion about the deferrals, here is a link to a paper developed for the 2014 Clean Fuels Program Phase 2 Rulemaking Advisory Committee: [http://www.oregon.gov/deq/RulesandRegulations/Documents/E\\_CostContainment.pdf](http://www.oregon.gov/deq/RulesandRegulations/Documents/E_CostContainment.pdf).

## General overview of cost containment

Environmental markets are created by governments to allow the private sector to efficiently achieve an environmental goal by averaging out the costs of compliance with a program through the creation of tradeable credits. This allows market forces to work out the most efficient path to getting to the environmental goal of increasing cleaner energy consumption or decreasing pollution.

Oregon's Clean Fuels Program (CFP) allows regulated parties and credit generators to sell credits created under the program. Now that credits have been generated and transfers are allowed, the environmental market created by the program will help show the cost of reducing carbon intensity under the program and help ensure the lowest-cost reductions are found across the different fuels in the program.

DEQ administers the CFP credit market in terms of accounting for credit and deficit generation by regulated parties and credit generators, requiring accurate fuel volume and carbon intensity reporting, setting the rules for participation in the credit market, and providing the tracking system for credit transfers. The agency oversees and monitors the credit market both to ensure that it serves the goal of lowering overall compliance costs with the program and that it is as well-functioning and provides as level a playing field for different entities in the market as is possible.

In addition to a well-functioning credit market, stakeholders have also indicated a desire for a new CFP mechanism to further contain the cost of complying with the program. For DEQ, the key question is how to balance the needs of fuel consumers with the impact to clean fuel providers and the environmental goals of the program.

Various cost containment mechanisms appear in many existing North American environmental markets and can be grouped into mechanisms that:

- Forgive or delay compliance obligations, such as in the Oregon Renewable Portfolio Standard (RPS).
- Allow for alternative compliance payments, such as in various RPS markets or the Alberta Specified Gas Emitters Regulation.
- Add to the supply of credits above certain price levels, such as in cap-and-trade programs.

These mechanisms create a ceiling on the price of the credits for the environmental market that they cover. While these mechanisms take various forms, fundamentally they operate by either lowering the demand in the environmental market or adding to the supply of credits for compliance.

Economists tend to grade cost containment mechanisms by how hard or soft the price ceilings they create in the program's environmental markets. Harder price ceilings do more to make sure that there is no economic incentive to ever trade credits above the set price of the price ceiling, while softer price ceilings provide a brake to rising credit prices but can be exhausted and may not be enough to fully arrest that rise if demand keeps pushing prices higher.

A number of legal and policy trade-offs exist in the creation of a price ceiling, and the structure of the mechanism must be carefully considered to limit the potential creation of unintended consequences or the degradation of the program's environmental integrity. A harder price ceiling may degrade the environmental integrity of the program or forestall investment in low-carbon fuel projects, while a softer price ceiling may not sufficiently check spikes in credit prices during periods of potential market volatility.

## **Examples of cost containment in existing programs**

### **Low Carbon Fuel Standards**

#### **California Low Carbon Fuel Standard**

California's LCFS contains the Credit Clearance Market as its cost containment mechanism. It was developed over two years of discussions between the California Air Resources Board (ARB) and its stakeholders starting in March 2013<sup>2</sup>. Under that mechanism the regulator asks for market participants to voluntarily pledge credits into its credit clearance market. Covered entities that do not have enough credits on hand to cover their compliance obligations at the end of a compliance period must go into that market that the regulator has mediated in order to purchase credits.

The Credit Clearance Market provides one last opportunity for regulated parties to buy any available LCFS credits before annual compliance is due. If credits are unavailable at or below the price ceiling in the credit clearance market, then regulated entities are allowed to roll over any unfilled deficits they have to future compliance periods, with a 5% interest rate being charged on the number of deficits. California set their price ceiling at \$200/t in 2016 with an annual adjustment for inflation<sup>3</sup>.

If there are insufficient credits pledged into the market to cover the shortfall from the regulated parties, then regulated parties are required to purchase their share of the overall shortfall based on the available supply of pledged credits and are then allowed to roll over their remaining deficits. Rolled-over deficits and the interest they incur must be filled by retiring credits within the next five years.

The Credit Clearance Market was chosen by the ARB because it would maintain the environmental integrity of the program and ensure that there is a path for regulated parties to remain in compliance with their program even if there is a shortfall in the total supply of credits in a given compliance period. The mechanism maintains the environmental integrity of the program because rolled-over deficits must eventually be filled with credits, so the shortfall in carbon intensity reductions in one year is made up down the road. It also provides an avenue for credit generators to sell any credits they have available at the end of the compliance period and makes sure that the program continues to incentivize the production of low-carbon fuels.

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<sup>2</sup> [http://www.arb.ca.gov/fuels/lcfs/regamend13/20130522ccp\\_conceptpaper.pdf](http://www.arb.ca.gov/fuels/lcfs/regamend13/20130522ccp_conceptpaper.pdf)

<sup>3</sup> See § 95485(c)(3)(C) in the current California LCFS regulation:  
<http://www.arb.ca.gov/regact/2015/lcfs2015/lcfsfinalregorder.pdf>

ARB held its first successful Credit Clearance Market earlier this year<sup>4</sup>, which was used to help one regulated party purchase credits to cover a relatively small shortfall in its compliance obligation.

During its deliberations leading up to its decision to choose the Credit Clearance Market as its cost containment mechanism, ARB also considered:

- A Credit Window option that would allow regulated parties to purchase compliance-only credits through a credit window that the regulator would run.
- A Non-Compliance Penalty option where a regulated party would pay into the California Air Pollution Control Fund for their unfilled deficits at the end of a compliance period.
- A Reinvestment option where if credits rose above a certain price, companies would be allowed to invest in certain low-carbon fuel projects that would advance the objectives of the LCFS.
- A Credit Multiplier option where very low-carbon intensity fuels would be granted a credit multiplier in order to increase the supply of credits in the market and create a stronger price signal for those fuels.

ARB summarized what it views as the tradeoffs between those options in the following table:

Design Feature	Credit Window	Non-compliance penalty	Reinvestment Plan	Credit Multiplier	Credit Clearance
All credits represent real CI reductions?	Maybe	N/A	N/A	No	Yes
Easy to develop and implement?	No	Yes	No	Yes	Yes
ARB collects funds?	Yes	Yes	No	No	No
Who determines use of funds?	Legislature	Existing Statute	Fuel Producers	N/A	N/A
Confidence in limit on credit prices?	Strong	Strong	Strong	Weak	Moderate

The complete slide deck of ARB’s presentation at the July 2016 workshop can be found here: <http://www.deq.state.or.us/aq/cleanFuel/docs/arbcont.pdf>.

### British Columbia Low Carbon Fuel Standard

British Columbia’s LCFS has two cost containment mechanisms: a Reinvestment Plan option and a Non-Compliance Penalty option.

- The Non-Compliance Penalty option allows regulated parties who have unfilled deficits to pay a per-tonne administrative penalty for non-compliance of C\$200/t (US\$155/t).

<sup>4</sup> [http://www.arb.ca.gov/fuels/lcfs/ccm\\_051316.pdf](http://www.arb.ca.gov/fuels/lcfs/ccm_051316.pdf)

- The Reinvestment Plan option, known as Part 3 Agreements, grant fuel providers extra credits if they undertake projects that increase the ability to supply low-carbon fuels to the province. Examples include paying for infrastructure to facilitate higher blending of ethanol and for conversion of vehicles to dual-fuel (gasoline and propane). That extra supply of credits is additional to the credits that low-carbon fuels would normally generate under their program, and is limited to 25% of the expected number of deficits of compliance obligation that regulated parties will incur across their system each year. In 2014, 130,000 credits were allocated to support four projects. In 2015, 122,000 credits were allocated to support six projects.

The complete slide deck of BC's presentation at the July 2016 workshop can be found here: <http://www.deq.state.or.us/aq/cleanFuel/docs/bccont.pdf>

## **Renewable Portfolio Standards (RPS)**

Renewable Portfolio Standards are in place in 29 states, the District of Columbia, and three other US territories<sup>5</sup>. RPS requires electric utilities and service providers to purchase a percentage or amount of renewable energy to serve the electricity needs of their customers. Each program defines renewable energy for itself and those definitions can vary greatly from program to program. Renewable energy is not necessarily the same thing as zero- or low-carbon generation.

Similarly to the credit markets that are established to support the low carbon fuel standards, the renewable portfolio standards have the Renewable Energy Credit (REC) market to assist the generators of renewable electricity participate in the program. Also similarly to the low carbon fuel standards, the cost containment mechanisms in these programs are aimed at incentivizing or requiring a certain private market activity to occur.

Oregon's RPS ranks among the most aggressive with a 50% requirement for its large utilities, though they have until 2040 to hit that mark. In contrast, California and New York require 50% by 2030 and Vermont requires 75% by 2032. Hawaii has the most aggressive requirement in the nation at 100% renewable power by 2045. Oregon sees the state's RPS and CFP as complementary policies as the RPS will drive reductions in the carbon-intensity of the state's electricity mix while the CFP creates an incentive for the greater adoption of electricity as a source of transportation energy.

## **New England and the Mid-Atlantic region RPS**

Many of the RPS markets in New England and the Mid-Atlantic region limit prices by creating alternative compliance payments. These alternative compliance payments allow electric service providers in their states to pay a per-MWh price to regulators if they cannot obtain enough qualifying RECs to show compliance with the RPS.

These alternative compliance payments create a fairly hard price ceiling, as there is little economic sense in a compliance entity under the program paying a higher price for RECs than the alternative compliance payment. Those REC markets are harmonized to varying degrees, with similar definitions of renewable power and unified registries for RECs that create interstate trade in those instruments among the utilities and electric service providers in those states. The alternative compliance payments in those markets are state-specific and only apply to the entities with compliance obligations under those standards.

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<sup>5</sup> <http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2014/11/Renewable-Portfolio-Standards.pdf>

## **Oregon RPS**

In Oregon, the RPS has two overlapping cost containment mechanisms – an alternative compliance payment<sup>6</sup> of \$110/MWh that was set by the Oregon Public Utilities Commission for 2014-2015, and an overall limit on RPS costs so they cannot exceed 4% of a utility's annual revenue<sup>7</sup>.

The alternative compliance payments under the Oregon RPS are set-aside in holding accounts by the utilities and may be expended only to buy new renewable electric generating capacity or fund energy efficiency and conservation investments in their territories. That requirement means that even if the program's targets cannot be met in one year, the money that would have been spent procuring the renewable power will still go to renewable electricity projects. The alternative compliance payment price is also set well above current market prices for RECs, so it would likely not be triggered under normal market circumstances.

If utilities would have to spend over 4% of their revenue in order to meet the RPS's requirements in a given year, then they are not required to comply with the standard in that year and are forgiven of their compliance obligations for that year.

## **Cap-and-trade and other carbon programs**

While credits are the market mechanism used to manage costs in LCFS and RPS, allowances are the market mechanism used in cap-and-trade programs. The key difference between credits and allowances is the source of the environmental credits - allowances are created by the state while credits are created by private entities. Because cap-and-trade allowances are the creation of the state, it is common for the state to set aside some of their allowances in Allowance Price Containment Reserves. The state is then responsible for allocating or auctioning those allowances into the hands of the regulated entities that need them to comply.

## **Western Climate Initiative (WCI)**

In the WCI market, those price containment reserves are made available for sale once a quarter by the member jurisdictions at prices well above the program's floor price. Each jurisdiction operates those reserve sales separately for the entities regulated within their own borders. Currently California has their reserve arranged in three tiers at \$47.54, \$53.49, and \$59.43/metric tonne CO<sub>2</sub>e, each funded by 40.6mn t of allowances. That adds up to close to half a year's covered emissions in the state. Those price levels are relatively high compared with the program's current primary market floor price of \$12.73/t.

## **Regional Greenhouse Gas Initiative (RGGI)**

The RGGI states have had two waves of cost containment mechanisms in their power sector-only cap-and-trade program. The first set of mechanisms called for allowing for more domestic carbon offsets to be used in place of allowances if prices rose above \$7/short ton CO<sub>2</sub> in 2005 dollars, and allowing the use of international offsets if prices rose above \$10/st in 2005 dollars. If prices rose above the \$10/st trigger price the program would also extend its usually triennial compliance periods to include a fourth year.

The first set of mechanisms was never used as carbon prices in the program hit and stayed on the program's floor. It was amended in 2013-2014 in favor of a simpler mechanism that would inject a limited additional supply of allowances into the program's normal quarterly auctions if the clearing price

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<sup>6</sup> Authorized by ORS §469A.180 [https://www.oregonlegislature.gov/bills\\_laws/ors/ors469A.html](https://www.oregonlegislature.gov/bills_laws/ors/ors469A.html)

<sup>7</sup> Set by ORS §469A.100

for the auction goes above a certain level. That mechanism will allow market participants in RGGI to buy an additional 10mn/yr in allowances, which this year is set at \$8/st and increases in future years at a set schedule.

One difference between the set-up of the WCI and RGGI programs is that the WCI members pulled allowances out of their original caps for the program to fund the price containment reserve, while the RGGI states made an ex post decision to create the 10mn st/yr reserve. Both mechanisms effectively target a certain amount of emissions reductions in a range of ‘normal’ prices between the program’s price floors and ceilings, and then if prices rise to or above the ceiling the programs automatically allow for fewer emissions to be reduced as the cost is considered too high.

The price ceilings in the RGGI and WCI markets are also reinforced by their regulators’ statements that prices staying above the price ceiling level would be a reason for them to make modifications to the program or pursue other strategies to reduce pollution outside of the carbon market. Both of these price ceilings are so-called soft price ceilings, because the supply of additional allowances can be exhausted and prices could continue to rise thereafter.

### **Alberta Specified Gas Emitters Regulation**

One of the few alternative compliance payment structures in a carbon program exists in the Alberta Specified Gas Emitters Regulation, which is soon to be transitioned into their new Carbon Competitiveness Regulation. That program requires that the major emitting facilities in the province reduce their carbon-intensity per unit of production over time, either through direct reductions and energy efficiency improvements at the facility or through the purchase of carbon offsets to make up the gap. If the facility decides to do neither, it can make a C\$20/t payment into Alberta’s technology fund<sup>8</sup>, which invests in energy efficiency, renewable energy, and carbon capture and sequestration-related projects<sup>9</sup>. Alberta’s technology fund payments create a harder price ceiling, but without a limit on its usage there is no guarantee that the program’s environmental goal will be met.

## **Key Questions**

DEQ is providing these examples to solicit feedback, and has not screened any of these options for legal or other policy conflicts. To guide the discussions at this meeting, DEQ has developed some key questions for members to consider. We will cover these questions at a high level for now and allow you additional time to consider your response. We are not expecting a detailed discussion about specific design considerations at this meeting but see it an opportunity to solicit general feedback about what you like or dislike about the approaches presented or what is missing. DEQ will use this feedback to narrow down the potential options for further development, analysis, and discussion at future advisory committee meetings.

- Do you think the existing cost containment mechanisms are sufficient to safeguard against high compliance costs?
- If not, then should the agency consider mechanisms to:
  - Forgive or delay of compliance obligations?
  - Allow for alternative compliance payments?
  - Add to the supply of credits above certain price levels?

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<sup>8</sup> <http://aep.alberta.ca/climate-change/programs-and-services/investing-in-science-technology-and-innovation.aspx>

<sup>9</sup> <http://ccemc.ca/projects/>

- Are there any other approaches the agency should consider?
- What parameters need to be considered in designing the preferred cost containment mechanism?
  - Appropriate trigger point
  - Effective time period
  - Implementation procedure
  - Use and creation of paper credits that do not represent real carbon intensity reductions
  - Use of imported carbon intensity credits
  - Use of credits from external voluntary or compliance greenhouse gas programs
  - What safeguards need to be in place
  - Alignment with other programs
  - Handling of revenue
  - Anything else
- Should the agency target a specific credit price?
  - Should that price be fixed through 2025 or vary?
  - If you think DEQ should adopt a variable credit price ceiling, what variable should the agency base adjustments to the credit price ceiling on?
- What parameters need to be considered in setting that targeted credit price?
  - What price levels are, or will be, needed to support ongoing deployment of existing commercially available low-carbon fuels and the research and development of new low-carbon fuels?
  - Any potential tradeoffs between achieving the full standard and consumer protection when setting a price?
  - Whether there should be both a floor and a ceiling price mechanism?
    - If you are advocating for a floor price, please detail how the agency could establish such a mechanism.
  - Correlation to the cost per gallon for gasoline and diesel?

## Comments

The agency invites comments addressing all aspects of this paper. This discussion will be captured in the meeting summary and posted on the committee webpage. DEQ will accept written comments one week after the posting in order to develop materials for the next meeting. Comments received after one week will still be considered, but may not be reflected in the next meeting's materials. Please e-mail any written comments to: [OregonCleanFuels@deq.state.or.us](mailto:OregonCleanFuels@deq.state.or.us).