

Oregon Clean Fuels Program

Item D: Cost Containment

November 2nd, 2016
Portland, Oregon

Communications

- As the Clean Fuels Program has created a credit market, DEQ is mindful of the need to control how it issues market sensitive information.
- DEQ staff will discuss the proposals in one-on-one meetings, but will not indicate any planned changes in those settings.
- Details of any proposed modifications to the program's market rules will be posted to the DEQ's website and announced via our email listserv so that all market participants have equal and simultaneous opportunity to access them.

Agenda

- Environmental econ and Cost containment 101
- Credit price ceiling models from other environmental markets
- Discussion
- Next steps

Cost Containment

- Cost containment as applied to the Clean Fuels Program encompasses the strategies and mechanisms in the rule that make compliance with the program more flexible and cheaper for regulated parties
- Cost containment mechanisms already in the program include but are not limited to:
 - The credit system, including banking, trading, and fungibility of credits between the gasoline and diesel pools
 - The program's three existing deferral mechanisms
 - The slope of the program's compliance obligations
 - Inclusion of fuels outside of the liquid fuel pools
 - Rollover of small deficits and extended initial compliance periods

Statutory changes in SB 324 (2015)

- Deleted: *(d) The commission shall provide exemptions and deferrals as necessary to mitigate the costs of complying with the low carbon fuel standards upon a finding by the commission that the 12-month rolling weighted average price of gasoline or diesel in Oregon is not competitive with the 12-month rolling weighted average price in the PADD 5 region.*
- Replaced with: (d) 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.

Cost Containment

- Per the statutory change in SB 324 (2015), DEQ will consider the addition of a new mechanism to contain costs in the program, which will possibly replace the fuel price deferral which is no longer required by statute
- While this presentation will focus on a credit price ceiling mechanism as a source of additional cost containment, DEQ is open to other mechanisms that could contain costs outside of credit prices and invites suggestions and comments from the committee on such mechanisms

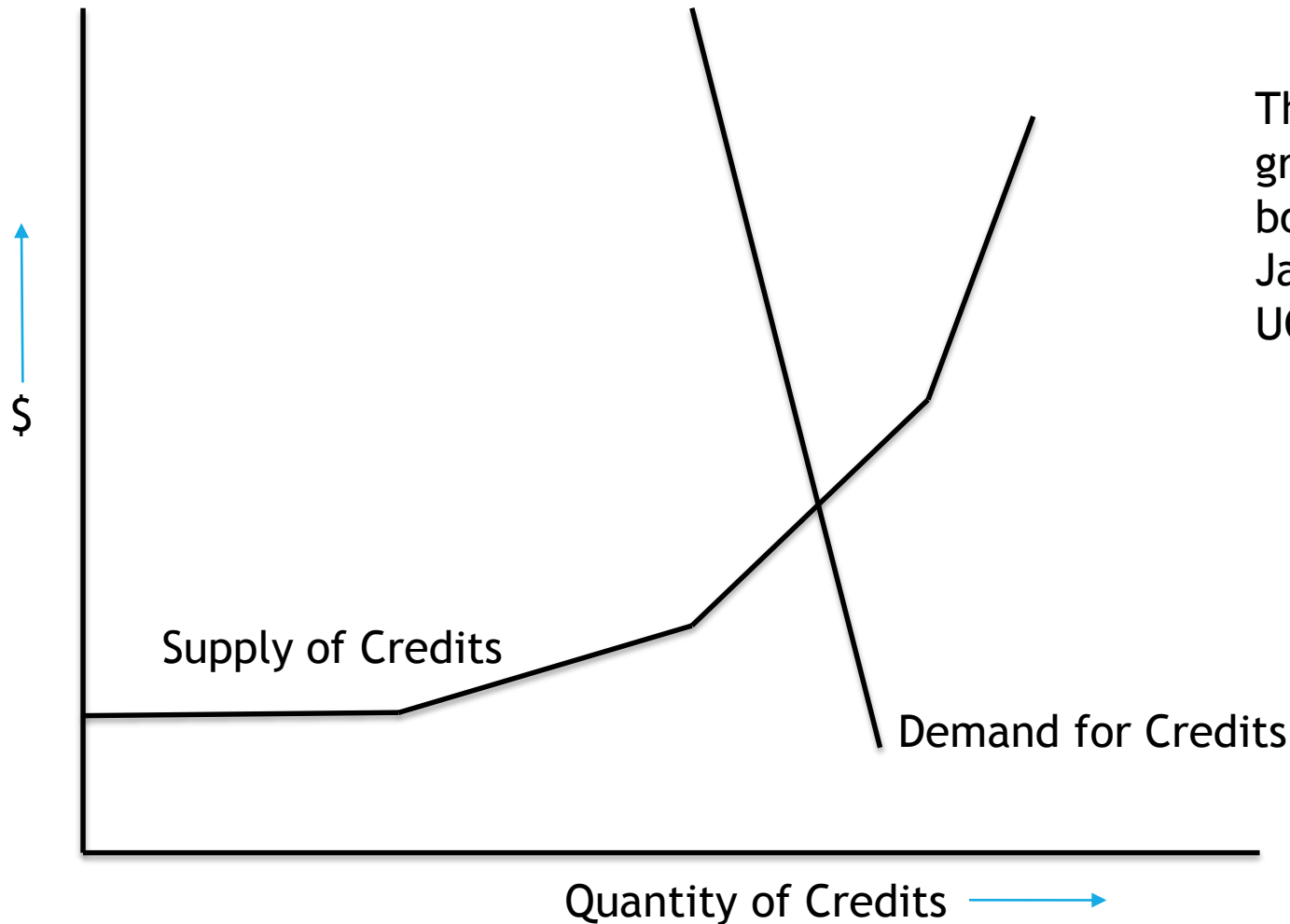
Environmental Econ 101

- The credit market in the Clean Fuels Program is a key flexibility mechanism for achieving the 10% by 2025 reduction target at the lowest cost.
- The credit market should lower the cost of compliance for the program across all of the regulated entities by allowing those with cheaper reductions to over-comply the standard and sell the credits they don't need to entities that would otherwise have a higher cost of compliance.

Environmental Econ 101

- For example, Entity A has easy access to low-CI biodiesel and a large diesel customer asking for B20, while Entity B does not.
- For Entity B to comply with the standards, they would need to build a new biodiesel tank, pay more for transport, and also find a new customer that will take blends higher than B5.
- Instead of that more expensive strategy, Entity B can buy Entity A's excess credits from them.
- Buying the credits results in the same environmental outcome, but with a lower overall cost of compliance.

Environmental Econ 101



The following graphs are borrowed from James Bushnell of UC Davis

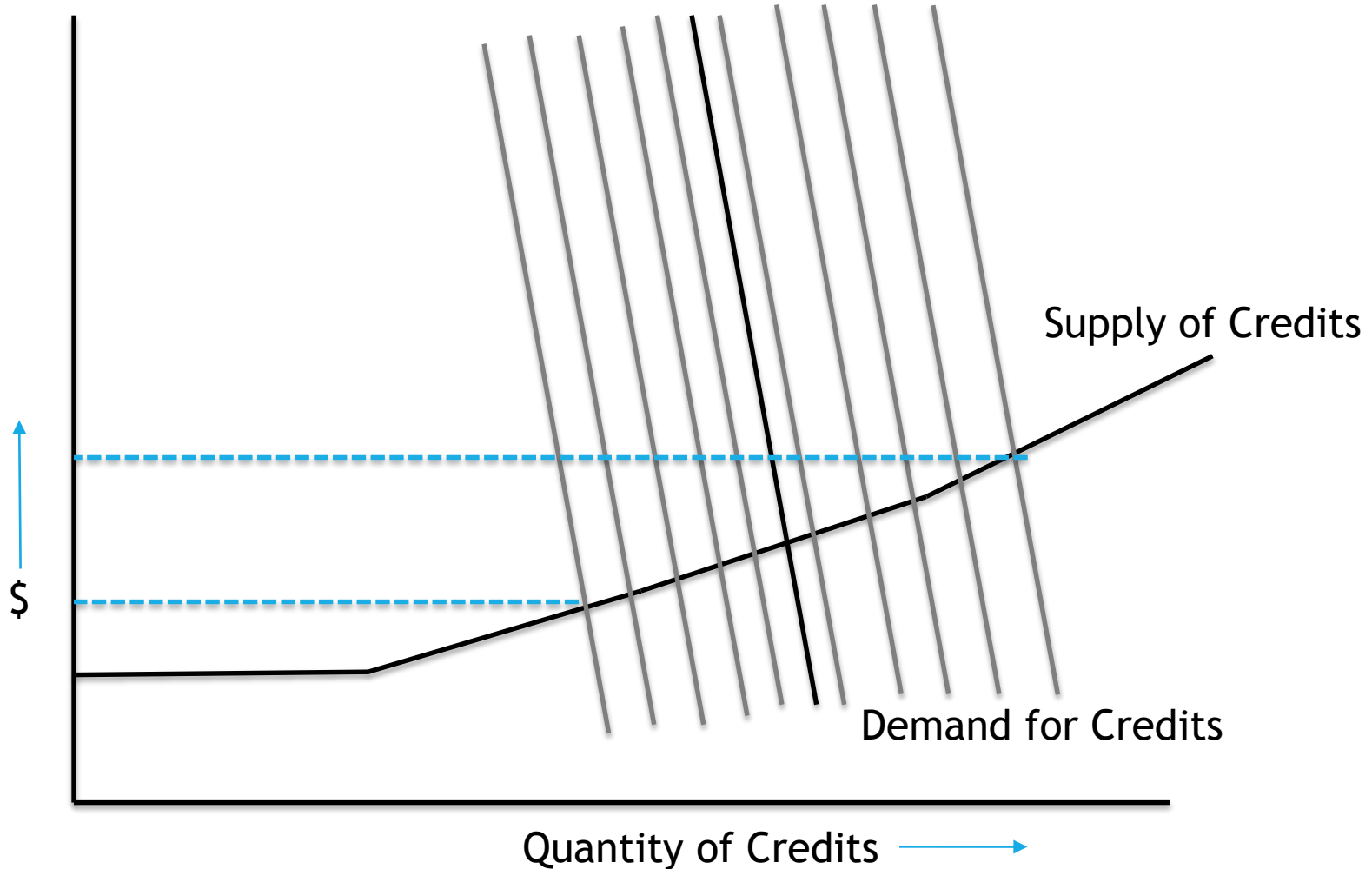
Environmental Econ 101

- Cost containment mechanisms that act on credit markets can include those 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 like California's.

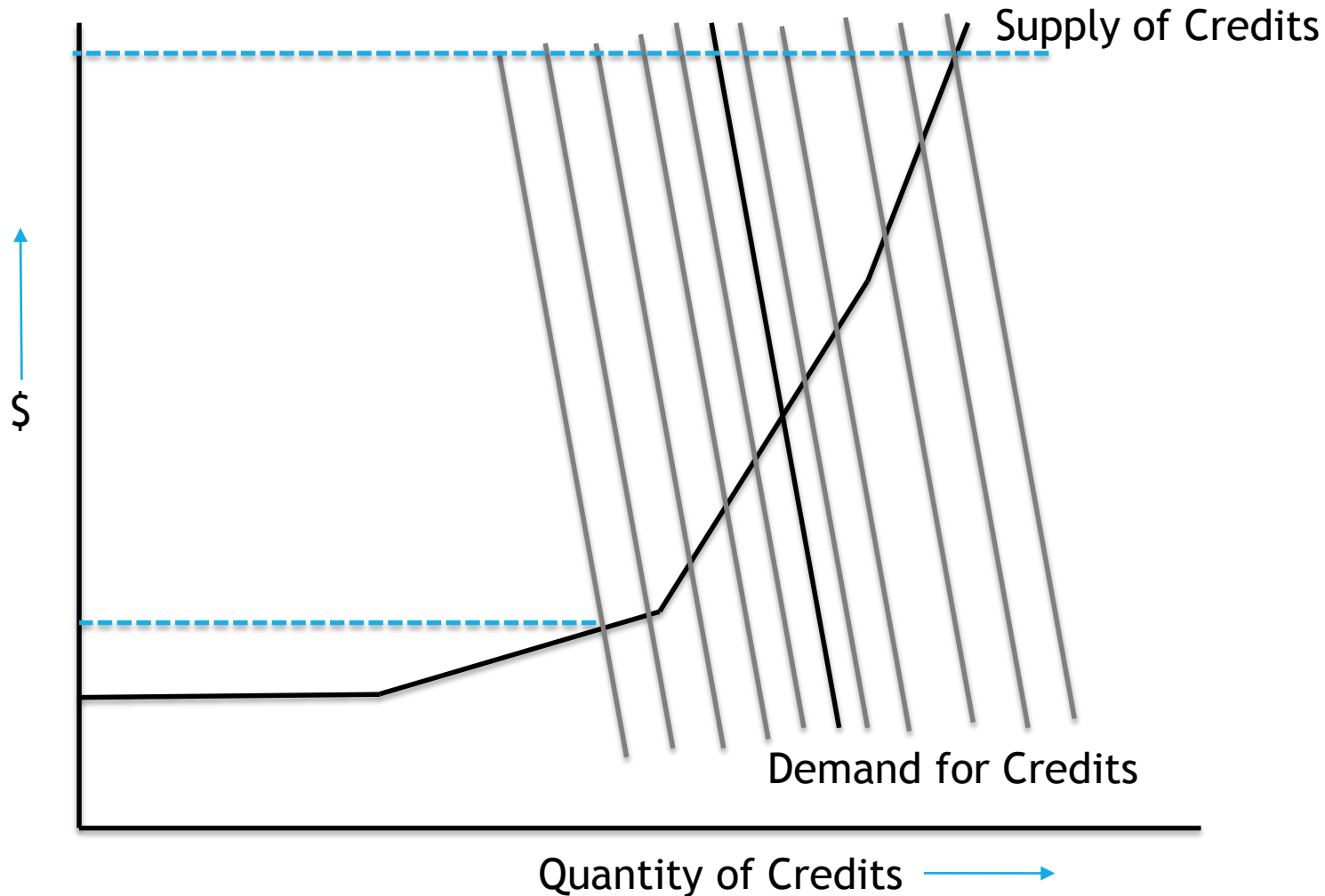
Environmental Econ 101

- The shape of the demand and supply curves in the Clean Fuels Program are known unknowns.
- We can make inferences about how much supply will show up at various prices, but perfect knowledge is impossible.
- Because of that, bounds on credit prices provide a way to limit the cost of the program under exceptional circumstances. The mechanism is not meant to interfere with the credit market under normal circumstances.

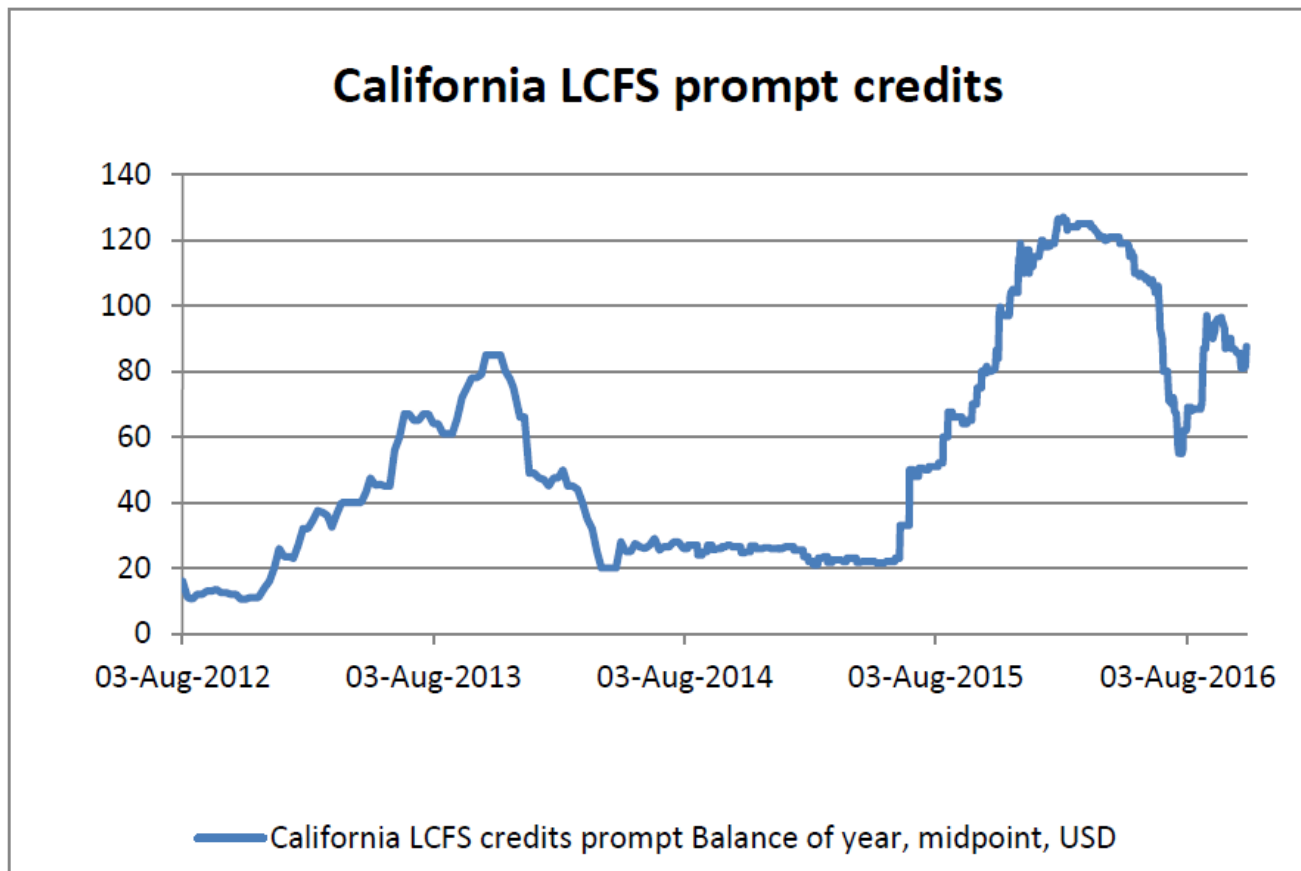
Environmental Econ 101



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Environmental Econ 101

- Price ceilings are a way of clarifying the trade-off between environmental goals and economic effects of the program.
- Price ceilings put a limit on the maximum cost of an environmental market by making it economically illogical to trade credits above a certain price.
- The price ceiling being hit by the market over a significant time period may result in the program's environmental goals not being achieved.
- The price ceiling can degrade the incentive to invest in low-CI fuel production if it is set too low.

Price Ceiling 101

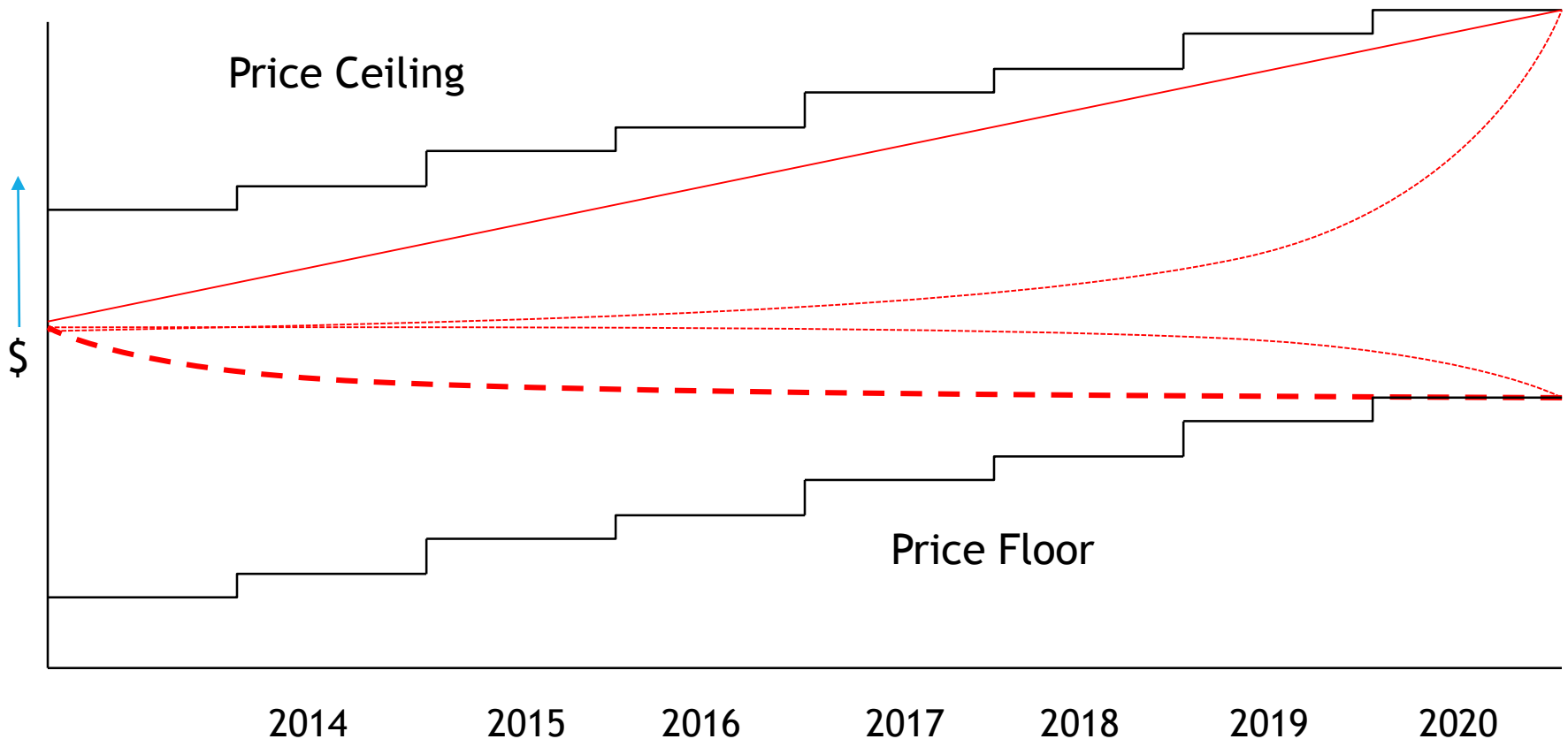
- A credit price ceiling is meant to:
 - Provide a reasonable and predictable range of costs for the program
 - Provide limits on abnormal credit market volatility and its effects on fuel consumers
 - Increase the incentive to invest in low carbon-intensity fuels
 - Provide regulated parties with an avenue to compliance with the program even in the unlikely event of an overall shortfall of available low-carbon fuels and credits

Price Ceiling 101

- A credit price ceiling is not meant to:
 - Substitute for a feasible Clean Fuels Program and achievable standards under the program. That is the aim of the Fuel Supply Deferral
 - Address long-run shortfalls in credit availability or fuel supplies
 - Affect the credit market on an ongoing basis other than putting a lid on credit prices. Any price ceiling is meant to only be in effect when prices are rising above the normal range of trade
 - Reduce or eliminate any regulated party's overall obligation under the program to generate or buy credits

Price Ceiling 101

Example from the California-Quebec carbon market



Environmental Econ 101

- Questions?

Cost Containment Mechanism examples

- Credit Clearance market
- Investment Plan
- Alternative Compliance Payments
- Credit window
- External credits

Credit Clearance Market

- This is the option California went with.
- Allows for unfilled deficits to be rolled over if there are insufficient credits supplies available at \$200/t or below.
- Mechanism operates once a year at the compliance deadline.
- Does not create paper credits, and keeps providing financial incentives to low-carbon fuel users and distributors.

Credit Clearance Market

The way it works:

1. Near the compliance deadline, ARB issues a call for credits to be pledged into the Credit Clearance Market. The seller agrees to sell the credits at \$200/t or below.
2. When annual reports are due, buyers with unfilled deficits tell ARB that they need to access the credit clearance market.
3. ARB posts lists of both sellers and buyers pledged into the market, and tells buyers their pro-rata share of the available credits if there are more unfilled deficits than available credits.
4. Sellers and buyers negotiate privately for credits.
5. Once buyers purchase their pro-rata share, remaining unfilled deficits are rolled over to next year and charged a 5% interest rate. Those unfilled deficits must be filled in the next 5 years.

Investment Plan

- This is the option BC went with, along with their CAD\$200/t alternative compliance payment/penalty.
- Under this option, the ministry allows regulated parties to apply for a supply of tradeable paper credits that are awarded for investments in projects that will increase the province's supplies low-carbon fuels to consumers.
- The supply of paper credits are limited to 25% of the number of deficits generated in the prior year.
- Examples of projects include: Blending pumps, scrap-iron incentives, bio-crude tests, hydrogen fueling stations

Investment Plan

- Projects eligible for credits under these plans must be additional to those already occurring, and would not have happened but for the incentive of the paper credits.
- Credits are issued by the ministry, at the discretion of its director.
- BC's principles for these include:
 - Equal credit is awarded for equal action, within project types
 - The risk that emission reductions may not be realized is that of the Ministry
 - The risk that a project may not be completed is that of the proponent

Alternative compliance payments

- A set payment or fee in lieu of compliance for any unfilled compliance obligations at the end of a compliance period.
- Would create a fairly hard price cap, used in other credit-generating markets like those for Renewable Energy Credits.
- Could create revenue for the state if there are insufficient credits in a given year for compliance.

Credit Window

- Nearly identical in function to an alternative compliance payment, except that a paper credit is issued.
- Credit window could be available just around the compliance deadline, or it could be available year-round.
- Paper credits may warrant differential treatment from real credits that represent CI reduction, such as restrictions on banking or trading.

ACP's & Credit Windows

- Both of these options could create an unpredictable stream of revenue to the state in years with unexpected shortfalls of credits in the marketplace.
- The use of any funds received by the state under these mechanisms may be constrained by law.
- Revenue may end up being used for purposes that do not further the goals of the Clean Fuels Program.

External Credits

- Under this option, DEQ would allow the use of carbon credits external to the system for compliance.
- These could be carbon-intensity credits from another program, or more classical carbon offset credits from a voluntary or compliance program.
- If the credits are from a compliance program, DEQ would likely need to negotiate for this option with that program's regulator.
- This option could help maintain progress towards the environmental goals of the program versus so-called paper credits, even if the carbon-intensity reductions are not being achieved.

External Credits

- Identifying an appropriate source of credits with a sufficient supply to serve as a price ceiling may be difficult.
- Could be available on an ongoing basis, or when a trigger price is hit.
- An exchange rate or surrender ratio may need to be applied under this option to make sure that external credits are only used after the program's internal credit supply has been exhausted.
- The rate may need to be revised on a sub-annual or more frequent basis depending on price moves in the external credit market.

Cost containment options

Option	Currently in place	<u>Possible</u> additions
Shift abatement across parties	<ul style="list-style-type: none"> • Credit trading • Fuels outside of the liquid fuel pool included in the program 	
Shift abatement across time	<ul style="list-style-type: none"> • Banking • Rollover of up to 10% of deficits (delay of compliance obligations) 	<ul style="list-style-type: none"> • <i>Credit clearance market</i>
Pay your way out		<ul style="list-style-type: none"> • <i>Alternative compliance payment or fee in lieu</i>
Expanded options for abatement	<ul style="list-style-type: none"> • Credits fungible between gasoline and diesel pools 	<ul style="list-style-type: none"> • Credits for light rail, street car, and forklifts • <i>Investment plan</i> • <i>External credits</i>
Deferral mechanisms	<ul style="list-style-type: none"> • Annual fuel supply deferral • Fuel price deferral • Fuel supply deferral 	

Discussion

- Are additional mechanisms necessary?
- Are there other mechanisms that should be considered?
- Which mechanism do you think would be most effective at containing credit prices within the current structure of the Clean Fuels Program?
- If we adopt a credit price mechanism, should we get take out any existing mechanisms in the program?

Discussion

- Should the agency target a specific credit price or cost per gallon for gasoline and diesel? Where should such a credit price ceiling be set?
 - 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?
 - How should the agency weigh any potential tradeoffs between achieving the full standard and consumer protection when setting the ceiling price?

Discussion

- If the agency pursues an alternative compliance payment model, should it take the form of a credit window or payment in lieu of compliance?
- Should the number of credits made available in the window or the degree to which a compliance entity can use payments in lieu be limited?
- Should the rules retail the current 10% deficit roll-over or fold it into the credit clearance market?

Discussion

- If the agency were to allow external emissions reductions to be imported into the program, what would be an appropriate source of those reductions?
 - What safeguards should be required on the validity of those reductions?
 - Should there be a limit on the amount allowed in?
 - When should such a mechanism be triggered and should the importation and use of those instruments be limited to compliance entities?

Next Steps

- Written comments are due next Friday, November 11th to Oregoncleanfuels@deq.state.or.us
- DEQ will review oral and written public comments and use those to inform the next step in its discussion about an additional price ceiling or other cost containment mechanism.