Allowance Supply & Demand: Implications for Cap & Trade Through 2030

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Remarks draw upon

“Expecting the Unexpected: Emissions Uncertainty and Environmental Market Design”, Severin Borenstein, James Bushnell, Frank Wolak, and Matthew Zaragoza-Watkins and

“(Overly) Great Expectations: Disillusion with Cap-and-Trade in California” James Bushnell and

Framing the “Overallocation” Issue

• Capped emissions through 2017 have been increasingly below caps set for those years
  – Some allowances have been unsold, others unused (or “banked”)

• The system post-2021 introduces a hard cap and two price “Steps” along with a rising floor
  – Analogous to a progressive carbon tax where tax rates rise with higher levels of emissions

• Should we be focused on (just) 2030 emissions? Cumulative emissions through 2030? or expected carbon price?
BAU Forecast Updated through 2017

Broad Scope Emissions

Solid line shows actual values; Stairstep line shows annual broad scope cap level
Reductions Dominated by Electricity

Annual GHG Emissions by Sector

mmTons/year

Local Electricity
Natural Gas and Industry
Imported Electricity
Transportation

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Emissions Excluding Electricity are Following BAU

Broad Scope Emissions Excluding Electricity

Solid line shows actual values; Stairstep line shows annual broad scope cap level
Transportation: Scoping Plan Assumes a Stark Break from Trend Starting Now
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BAU Uncertainty Dominates the 2030 Compliance Outlook

Figure plots BAU emissions with RPS rising to 50% in 2030

Hi BAU draw: Abatement Needed to reach the cap
Low draw: No Abatement Needed to reach the cap
Net Emissions and Abatement Supply 2018-2030

With Currently Planned APCR

BAU net emissions are (2018-2030) BAU emissions less unused allowances not in reserves

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Net Emissions and Abatement Supply 2018-2030

Removing 150 mmTons of Allowances

BAU net emissions are (2018-2030) BAU emissions less unused allowances not in reserves
Supporting the Floor Price (ARP)

• Since 2013 the cost of supporting the floor price has fallen completely on government allowance sales
  – Freely allocated allowances are not adjusted when auctions clear at the floor
  – Reduction in allowance sales come from government shares
• This was a major source of revenue volatility between 2015 and 2017
• An alternative approach would reduce allocations proportionally with unsold government allowances
Actual and Anticipated Quarterly Auction Revenues

- **Actual Revenues**
- **Anticipated Minimum Revenue**

Includes sales of both current and future vintages. Anticipated revenues assume full sales at price floor.
Expected Revenues by Allocation Policy

Actual Allocation Policy

Priority for State Allowances

Pro-rata Allocation

$14.50 Carbon Tax

Conditional on cap prices being at price floor
Emissions quantities from Borenstein, et al. (2016)
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Summary thoughts

• Allowance availability first and foremost impacts the market through price expectations
  – Price step and ceiling *levels* as important as allowance quantity in this sense

• Positioning state planning and policy to prioritize meeting only a 2030 target is bad policy

• Transportation and Industry Sectors need to show dramatic change in trend to support scoping plan assumptions

• If allowance market price is at the Floor, the State will Continue to bear the full cost of supporting the Auction Reserve Price
  – Reducing all allocations pro-rata to unsold amounts would distribute cost of supporting the floor price more evenly amongst stakeholders
Thank you

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