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

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

Annual GHG Emissions by Sector

- Local Electricity
- Imported Electricity
- Natural Gas and Industry
- Transportation

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

Assumed Average Vehicle GHG Intensity (tons/1000 miles)

Equivalent Assumed Transport GHG (mmTons)

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BAU Uncertainty Dominates the 2030 Compliance Outlook

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

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.
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

Includes sales of both current and future vintages.
Anticipated revenues assume full sales at price floor.

Expected Revenues by Allocation Policy

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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