The Climate Action Reserve in the California Offset Offset Market

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Climate Action Reserve
Background

• Non-profit created by state legislation in 2001
  – Promote the reduction of GHG emissions through market-based policies

• Serve compliance and voluntary carbon markets

• Balance business, government, and environmental interests

• Consulting to governments on climate policy development and offset program design
Current Role in California

• Protocols the Reserve developed formed the basis for those adopted by California Air Resources Board:
  – Also were approved for generating early action compliance credits

• Accredited by ARB as an official Offset Project Registry (OPR)
  – Depth of expertise on protocols
  – Strong customer service
  – Strong reputation among buyers
  – About 90% of all ARB offsets to date have for Reserve-issue
Our Early Action Mine Methane Projects

• Elk Creek Coal Mine (Colorado)—Drainage
  – Developer: Vessels Coal Gas
• Green River Trona Mine (Wyoming)—Drainage
  – Developer: Solvay Chemicals
• Pinnacle Coal Mine (West Virginia)—Drainage
  – Developer: Pinnacle Mining Company
• JWR Coal Mine (Alabama)—VAM
  – Developer: Biothermica
• McElroy Coal Mine (West Virginia)—VAM
  – Developer: Verdeo McElroy LLC
1. Market demand will change sharply in 2015

- Transportation fuel and natural gas suppliers come under the cap for the first time
- These are mostly big companies with big obligations — so cost savings on offsets matters
  - Fuel suppliers get no free allowances
  - Gas supplies get some free allowances, but will have more flexibility than power utilities in buying offsets

- Big companies want to buy from big projects
- First compliance deadline is November 1, 2016
  - Key date for the market
2. What happens after 2020 matters now

• Market is now expected to be long through 2020—so post-2020 hedging will soon be a major source of demand

• ARB has already indicated that it wants to continue the cap-and-trade system beyond 2020

• ARB expected to announce 2030 target next year
  – It will have a big impact on offset demand
  – Expectation is that year-over-year cuts will be much deeper than currently
3. Demand for offsets will exceed supply through 2020
## California Carbon Budget: 2013-2020

<table>
<thead>
<tr>
<th>Compliance Period</th>
<th>Year</th>
<th>Allowance Budget (mt CO₂e)*</th>
<th>Max Offset Demand (8%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First (narrow scope)</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2013</td>
<td></td>
<td>162,800,000</td>
<td>26,800,000</td>
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<tr>
<td>2014</td>
<td></td>
<td>159,700,000</td>
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<td><strong>Second (broad scope)</strong></td>
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<tr>
<td>2015</td>
<td></td>
<td>394,500,000</td>
<td>91,784,000</td>
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<tr>
<td>2016</td>
<td></td>
<td>382,400,000</td>
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<tr>
<td>2017</td>
<td></td>
<td>370,400,000</td>
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<tr>
<td><strong>Third (broad Scope)</strong></td>
<td></td>
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<tr>
<td>2018</td>
<td></td>
<td>358,300,000</td>
<td>83,104,000</td>
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<td>2019</td>
<td></td>
<td>346,300,000</td>
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</tr>
<tr>
<td>2020</td>
<td></td>
<td>334,200,000</td>
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</tr>
</tbody>
</table>

*Source: California Air Resources Board (CARB)*
4. Offsets will trade in a narrow range through 2020

- All forecasts suggest that allowance market will be long through 2020
  - Price is expected to remain near the auction price floor through 2020
  - This could change if economy takes off or hedging behavior creates scarcity
- Offsets trade at a discount to the price of allowances
- Auction price floor (and therefore, the price of offsets) increases 7-8% each year
5. Buyers will seek to manage invalidation risk

- Result of Clean Harbors—an increased spread for “golden” offsets
- Business opportunity for companies willing to take on this risk
- Conservative companies will pay someone else to take on this risk
- For a big enough spread, some companies will happily take on the risk themselves
6. So is there a business opportunity here?

• The good news: demand for offsets will almost certainly exceed supply

• The bad news: price is effectively capped—but it will increase by 7-8% every year, and is unlikely to drop

• So, if you can make money at forecasted prices, the demand should be there.....
Thank You