Outline

• California context for carbon pricing
• California Cap-and-Trade Program basics
• Status update
• The future of carbon policy
California Context for Carbon Pricing

- Sub-national jurisdiction
- Suite of climate change mitigation measures
- Regulation of air pollutants and greenhouse gases
The Global Warming Solutions Act of 2006 (AB 32)

- Reduce GHGs to 1990 levels by 2020 – 20% reduction from business as usual
- Sets the path to a 80% reduction in GHGs from 1990 levels by 2050
- Directs design of Scoping Plan of regulatory measures to meet 2020 target
- Authorizes California to adopt market-based compliance mechanism
The Global Warming Solutions Act of 2006

- 20% reduction in GHGs by 2020
- Directed ARB to Climate Change Mitigation Strategy

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**Climate Change Mitigation Strategy**

### California Emission Sources (2008)
(Sector, Percent of Total)

- High GWP 3%
- Other 6%
- Transportation 37%
- Utilities 34%
- Industrial 20%
- Source: CARB, California GHG Inventory for 2000-2008

### AB 32 Emission Reduction Strategies
(Measure, Percent of Total)

- High GWP Measures 7%
- Forestry 4%
- Cap and Trade 16%
- Renewable Energy 19%
- Energy Efficiency 12%
- LCFS 13%
- Smart Growth 3%
- Clean Cars Standards 27%
- Source: CARB, Emissions Reductions from Scoping Plan Measures; 2020 GHG Emissions Forecast
2030 Climate Commitments and Greenhouse Gas Reduction Target

• 50% of electricity from renewable sources

• 50% reduction in petroleum usage for transportation

• Doubling of building energy efficiency

• 40% reduction in greenhouse gases from 1990 levels by 2030
California Cap-and-Trade Program

- The cap covers 85% of GHG emissions in California
  - 2.37 billion tonnes from 2013-2020
  - Declines 2-3% per year

- Covered entities must surrender compliance instruments to cover GHG emissions
  - Allowances
  - Offsets credits
## Quarterly Auction Results

<table>
<thead>
<tr>
<th>Auction Name</th>
<th>Total Current Vintage Allowances Offered</th>
<th>Total Current Vintage Allowances Sold</th>
<th>Current Auction Settlement Price</th>
<th>Total Future Vintage Allowances Offered</th>
<th>Total Future Vintage Allowances Sold</th>
<th>Advance Auction Settlement Price</th>
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Auction Settlement Over Time

- **Current Vintage Settlement Price**
- **Auction Reserve Price**
- **Future Vintage Settlement Price**
Secondary Market Carbon Price

Price of California Carbon Allowance Futures over time from ICE End of Day Reports. Daily trading volume units are 1000 allowance futures. Download source data.
Performance Metrics and Complications

• Metrics
  • Emission reductions
  • Energy prices
  • Auction proceeds
  • Air pollution co-benefits
  • Distributional impacts

• Complications
  • Timing of the analysis
  • Complementary policies
  • Leakage
California Milestones

• 10 quarterly auctions earning $1.6 billion for the Greenhouse Gas Reduction Fund

• 100% full compliance at November 2014 surrender event

• Declining carbon intensity of California’s gross state product

• Linkage
  • Western Climate Initiative
  • Pacific Coast Collaborative
  • International cooperation
“Carbon Intensity,” the amount of carbon pollution related to the State’s economy, has fallen steadily over the last three years. California is getting more economic growth for each ton of greenhouse gases emitted overall. 

Source: DOF & 2012 GHG Inventory
Anheuser-Busch InBev

- Use of biogas fills 15% of on-site fuel needs
- Installed 1.5 MW wind turbine and 1.3 MW solar array
- Over the next 20 years will reduce GHG emissions by 6 million tonnes and save $2.5 million
Linkage

• Western Climate Initiative
  • January 2015 Bilateral linkage with Québec
  • April 2015 Ontario announces intent to link

• Pacific Coast Action Plan
  • Oregon, Washington, British Columbia

• Global outreach
  • MOUs
  • Multilateral engagements
  • International offset credits
International Climate Agreements

North America
- United States
  - Connecticut
  - Illinois
  - Massachusetts
  - Maryland
  - New York
  - Oregon
  - Rhode Island
  - Vermont
  - Washington
  - Wisconsin
- Mexico
  - Baja California
- Pacific Coast Collaborative
  - British Columbia
  - Oregon
  - Washington
- Quebec and California
- Cap-and-Trade Linkage
  - Quebec

Europe
- Austria
- Denmark
- Netherlands
- Spain
  - Catalonia

South America
- Brazil
- Chile
- Peru

Middle East
- Israel

Asia
- China
  - Beijing
  - Chongqing
  - Guangdong
  - Inner Mongolia
  - Jiangsu
  - Shanghai
  - Zhangjiang
  - Shenzhen
- Indonesia
- India
- Japan
- Osaka
- Malaysia
- South Korea

Oceania
- Australia
- New Zealand

September 2014
Next Steps

• Design Scoping Plan to achieve 2030 target in the context of 2050 goals

• Extend the Cap-and-Trade Program

• Continue linkage discussions

• Consider the role of a carbon price in 111d compliance

• Quantify economic impacts of carbon price