California’s Cap-and-Trade Program
February 29, 2016
What Is the Cap-and-Trade Program?

- One of a suite of measures to reduce greenhouse gas (GHG) emissions under AB 32

- The economy-wide cap limits annual GHG emissions from all regulated sources, and it declines each year

- Covered entities must purchase and surrender allowances and offsets to match their emissions at the end of each compliance period
  - This places a price on emissions and incentivizes reductions

- Participants are allowed to trade State-issued GHG emissions allowances
  - Trading provides flexibility and reduces compliance costs
Definitions

- **Covered entity**: A regulated party under the Cap-and-Trade Regulation

- **Compliance instrument**: An allowance or offset credit that is issued by the State and equal to one metric ton of GHG emissions

- **Offset credit**: A compliance instrument derived from GHG emissions reductions that take place outside of the Program

- **Annual cap**: The limit on GHG emissions from all covered sources in a given year, which is set by the number of allowances issued each year

- **Leakage**: Emissions increases outside California that result from activities moving out of California due to policies within California
Cap-and-Trade Program Goals

- Reduce GHG emissions by putting a firm limit on total emissions from all covered sources
- Allow the price of carbon to motivate the most cost-effective reductions and spur innovation
- Complement existing programs to reduce smog and air toxics
- Ensure AB 32 emissions goals for GHGs are realized through a strict limit
- Facilitate integration of regional, national, and international GHG reduction programs
Who Is Covered by the Program?

- Stationary sources with GHG emissions at or above 25,000 metric tons of CO$_2$e per year, imports of electricity, and supplied fuels:
  - Large industrial sources
  - Electricity generation
  - Electricity imports
  - Transportation fuels
  - Natural gas and propane

- These sources cover 85% of California’s GHG emissions
Requirements of Covered Entities

- Register with the California Air Resources Board (ARB)
- Report GHG emissions annually
- Surrender allowances and offsets to match emissions at the end of each compliance period
  - Reductions are program-wide, not facility specific
- Comply with recordkeeping, market rules, verification, and other requirements in the regulation
How Are Allowances Distributed?

- Free allocation to industrial producers to provide transition assistance and to minimize emissions leakage
  - Started at 90% of the average emissions intensity for most industrial sectors and declines each year with the cap
- Free allocation to electric utilities and natural gas suppliers on behalf of ratepayers
- Allocation to a ‘reserve’ to contain prices
- Remaining allowances are sold at auction, with proceeds going to the State to be appropriated during the budget process
  - In 2015, about 45% of allowances were distributed via auction
Free Allocation to Electric Utilities and Natural Gas Suppliers

- Allocation is provided for ratepayer benefit and in support of emissions reductions
- Some residential households received a ~$15 to $143 climate credit twice a year on their electricity bills

Figure 1. IOU expected use of vintage 2013 allocated allowance value.
Market Integrity

- Purchase and holding limits are established to prevent market manipulation.
- Corporate associations must be disclosed so that ARB may monitor potential collusion.
- All traders must register in the Cap-and-Trade tracking system.
- The tracking system provides a chain of custody for allowances and offsets.
- Financial penalties and account restrictions deter violations.
Market Oversight and Enforcement

- ARB coordinates oversight with the U.S. Commodity Futures Trading Commission (CFTC) and Federal Energy Regulatory Commission (FERC)
  - Sharing market data and analysis
  - Training
  - Legal coordination
- ARB coordinates enforcement with California Department of Justice
Offset Credits

- Offset credits are tradable compliance instruments that represent verified GHG emissions reductions or removal enhancements made in sectors and sources outside of the Cap-and-Trade Program.

- Offset credits are issued directly by ARB or a linked jurisdiction and must result from Board-adopted compliance offset protocols.

- Reductions must meet AB 32 criteria:
  - Real, permanent, quantifiable, verifiable, enforceable, and additional (beyond regulation or what would otherwise occur).

- Offsets may satisfy up to 8% of a covered entity’s compliance obligation.
Six ARB compliance offset protocols have been adopted:

- U.S. forests
- Urban forests
- Livestock digesters
- Ozone depleting substances
- Mine methane capture
- Rice cultivation
Considering jurisdictional Reducing Emissions from Deforestation and Forest Degradation (REDD) Programs

- Addresses significant portion of global emissions (roughly 11%-14%)
- Tropical forest sector is a heavily studied sector
- California program already includes domestic forestry offsets
- Multiple co-benefits: biodiversity, water management, and soil conservation
The Western Climate Initiative (WCI) is a collaboration among Western States and Canadian Provinces seeking to reduce GHG emissions in a cost-effective manner.

- California, Québec, British Columbia, Ontario, and Manitoba

A nonprofit corporation entitled Western Climate Initiative, Inc. was established in November 2011.

- WCI, Inc. provides technical and administrative services to support Program implementation.
Linkage

- California’s Program is linked with Québec’s cap-and-trade system
- In 2015, Ontario announced intentions to develop a cap-and-trade program with a launch in 2017, and they are proposing to link their program with California/Québec’s linked programs
- In late 2015, Manitoba announced intentions to develop a cap-and-trade program that could link with California/Québec’s linked programs
General Program Statistics

- ~450 entities are covered by the Program
- ~260 voluntary entities are in the Program
- ~760 million compliance instruments are held in private accounts
- Approximate market value of compliance instruments in private accounts is $9.67 billion
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>November 2012</td>
<td>First auction</td>
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<tr>
<td>January 2013</td>
<td>First compliance period began</td>
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<tr>
<td>January 2014</td>
<td>Program linked with Québec</td>
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<tr>
<td>November 2014</td>
<td>First annual compliance event</td>
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<tr>
<td>November 2014</td>
<td>First joint auction with Québec</td>
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<tr>
<td>November 2015</td>
<td>First compliance period compliance event</td>
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Auction Update

- State holds quarterly allowance auctions and there have been 14 auctions to date
  - ~ $3.527 billion placed into the Greenhouse Gas Reduction Fund (proceeds from Feb. 2016 auction not yet included)

- State-owned allowances for sale in 2016: ~171 million

- 2016 auction floor price: $12.73

- February 2016 auction settlement prices:
  - Current vintage = $12.73
  - 2019 vintage = $12.73
California Cap-and-Trade Program webpage:
http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm