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California's New GHG Cap-and-Trade Program

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California's GHG Mitigation Program

- Global Warming Solutions Act of 2006 (AB-32)
  - 1st economy-wide mandatory statewide GHG emissions cap adopted in the U.S.
  - Final regulations adopted Dec. 2011.



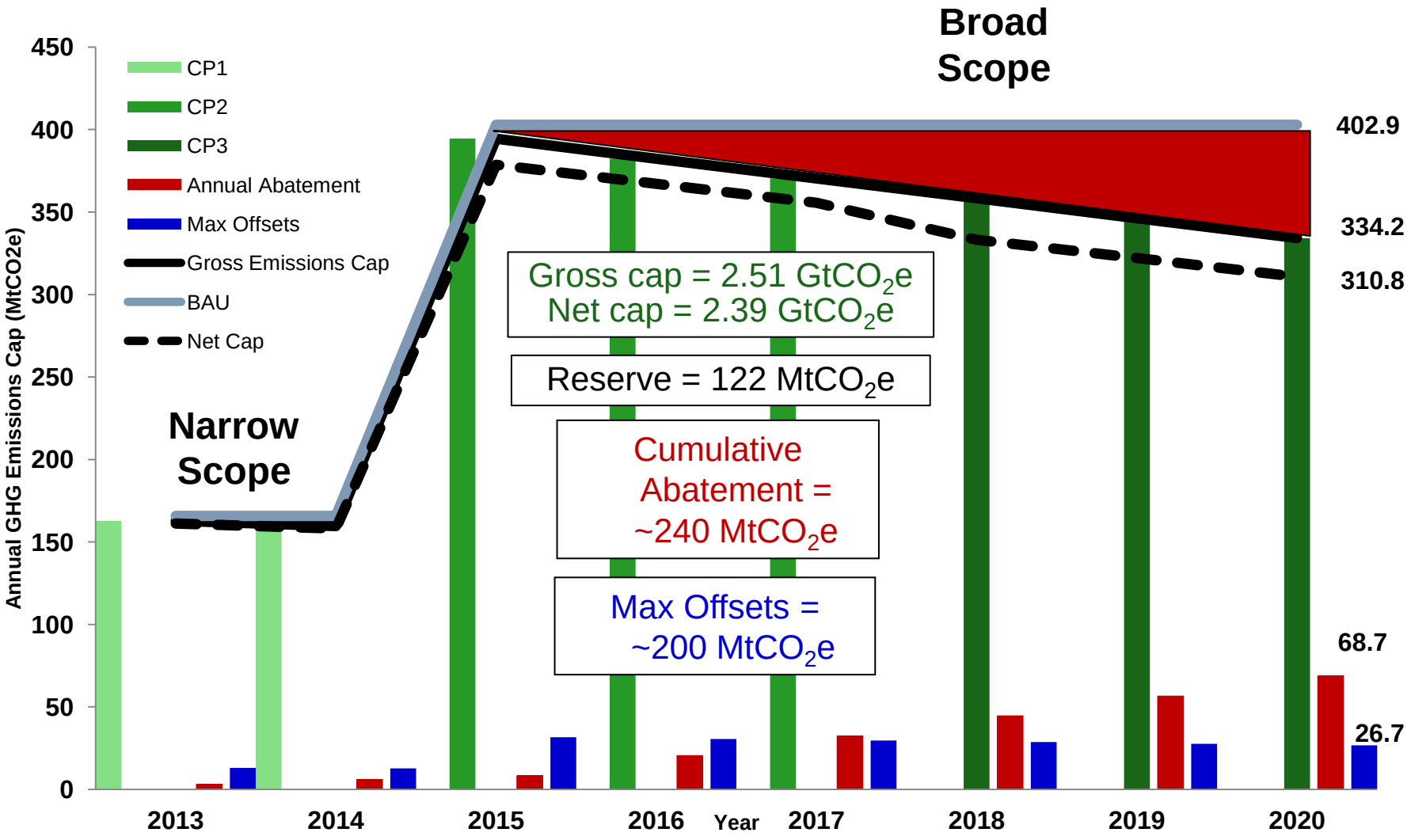


Gov. Arnold Schwarzenegger California

- Goal: **1990 statewide GHG emissions by 2020**
  - Direct regulatory measures (LCFS, RPS, EE, others).
  - Mandatory GHG cap-and-trade program with offsets. Compliance obligations originally to begin Jan. 1, 2012; postponed to Jan 1. 2013.
- Scope of GHG Cap-and-Trade
  - 1/1/2013: **Electric sector** plus imports, and large industrials >25,000 tCO_2 annually. Covers ~37% of the CA state economy-wide emissions.
  - 1/1/2015: Expands to cover distributors **of transportation fuels, natural gas and other fuels**. Covers ~85% of economy-wide GHGs.

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CA CO_2 Emission Cap 2012-2020



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Key Differences Between CA and Other GHG Emissions Cap-and-Trade Programs

- Comprehensive, economy-wide emissions cap that covers electricity, industry, and transportation & household fuels
- Covers "1st deliverers of electricity" to avoid regional leakage
- Free allocation to electric consumers not asset owners
- International offsets by direct linkage and sectoral; no CDM
- "Buyer" liability for offsets used for compliance
- Cost containment reserve with price "tiers"
- Complex holding limits for asset owners and auction rules
- Compliance – Annual "deposit" plus three-year "true up"

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The Complex Role of Offsets

- Where? Qualifying offsets can be created *anywhere* in the U.S. Some international offsets are possible.
- Who? Offsets must be issued directly by ARB or by a formally linked regulatory program (e.g., Quebec?)
  - Offset project registries provide “back office” support to ARB
  - Only 4 approved ARB compliance offset protocols
  - More protocols expected 2013 (CMM, Rice, Nitrogen management?)
- How Much? Covered entities are allowed to use offsets to cover up to 8% of their compliance obligation in each period
  - ~200 $MtCO_2e$ cumulatively 2013-2020
  - Some observers believe there may be a significant shortage of offsets, particularly in CP2 and CP3. REDD-based offsets or additional offset types could add to the supply.

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International Offsets

- Direct linking with states/provinces in the WCI (e.g. Quebec), or others (EU ETS, Australia, Mexico)
- Includes a "framework" to allow use of international offsets from developing countries with "sectoral" programs
  - Initial focus on REDD-based offsets
  - MOU signed by California, Acre, Brazil & Chiapas, Mexico
  - International offsets are not anticipated until 2015 or later
- Use of international sector-based offset credits is limited:
  - CP1 & 2 – 2% of compliance obligation
  - CP3 – 4% of compliance obligation
  - Excludes CERs for compliance use

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"Buyer" Liability for Offsets

- "To ensure enforceability of compliance offsets, ARB needs to have the ability to investigate and take action for violations or noncompliance with the regulations." (ARB)
- ARB may invalidate offsets after issuance for these reasons:
  - >5% overstatement
  - Offsets previously submitted to another program (including voluntary)
  - Projects not done in accordance with applicable laws
- If an offset is invalidated and was used for compliance or retired, it must be replaced.
  - Entity that used or retired it is responsible
  - CPUC requires electric companies to include "seller" liability in all offset emissions reduction purchase agreements

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Allowance Allocation

- Free allowances to electric utility (customers), and industries vulnerable to competition outside of CA.
- Electric sector starts in 2013 with ~90% free allocation
  - Given directly to ratepayers, not owners of IOUs
  - **Utilities must sell free allowances at auction to benefit consumers, and buy them back for compliance at "arms length."**
  - Free allowances are reduced over time
- Industrial sources receive >90% free allocation, but this also is reduced over time
- ~4% AVG of total allowances placed in a cost containment reserve
- Remaining allowances to be auctioned, increasing over time.
  - ~5% in 2013 growing to 50% in 2015.
  - Auction reserve price starts @ \$10/tCO_2 in 2013; grows 5% annually.

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CO_2 Cost-Containment Mechanisms

- Trading – Emissions allowances can be widely traded between covered entities and others
- Banking – Allowed, but subject to complex *holding limits and CPUC requirements*
- Offsets – Can be used for up to 8% of compliance obligation for each compliance period
- Linking to other programs (e.g., WCI/Quebec, International offsets)
- Allowance price containment reserve

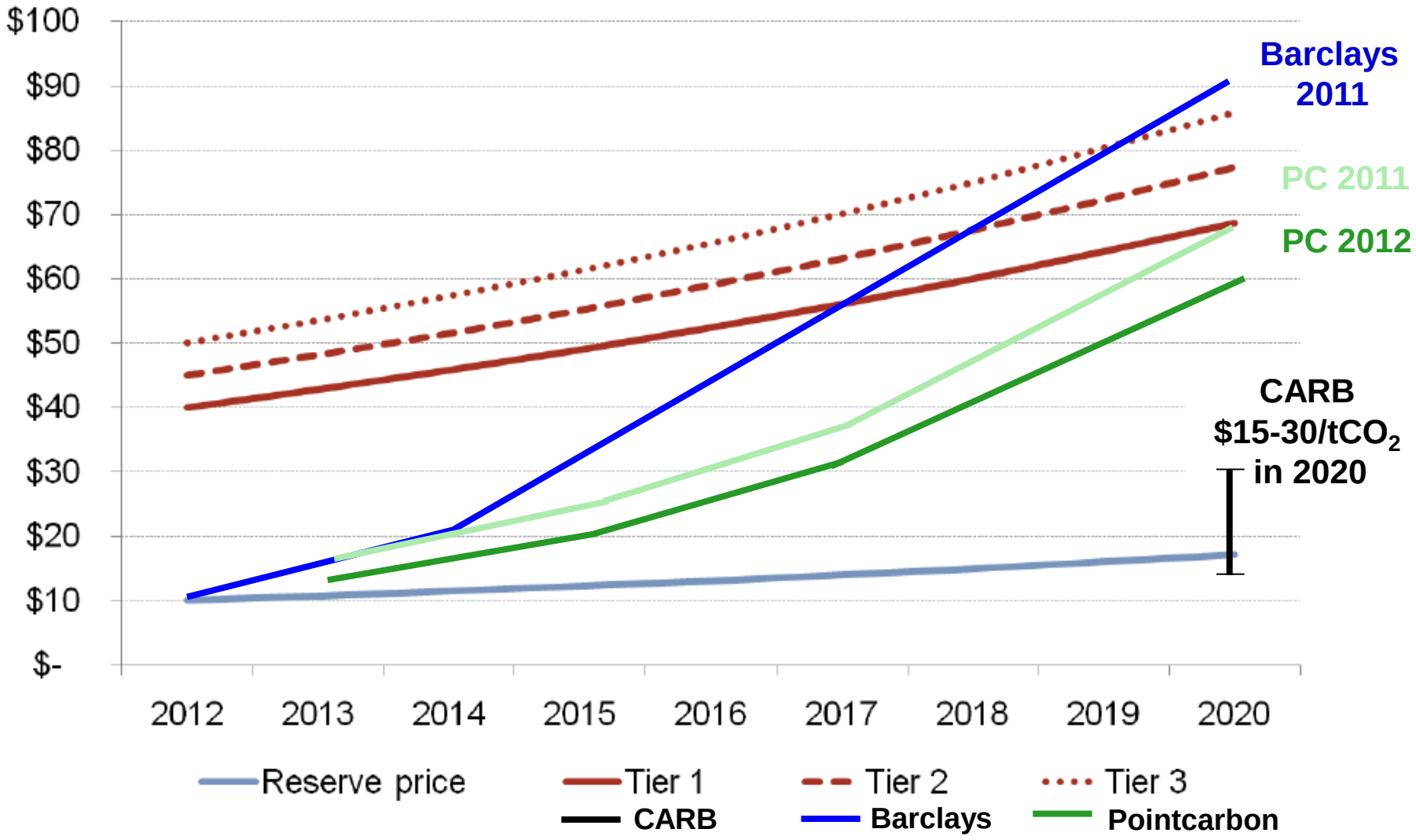
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Allowance Price Containment Reserve

- ~4% AVG of allowances over time = ~122 $MtCO_2$
- Allowances not sold at auction added to the reserve.
- Reserve allowances can be sold only to entities with compliance obligations at fixed prices
  - Three fixed-price tiers (2013: $40, $45, and $50/$tCO_2e$).
  - Price levels escalate 5% plus inflation annually.
  - 2020 reserve prices: $60, $65 and $70/$tCO_2e$.

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Cost-Containment $40-$50/tCO$_2$ in 2012



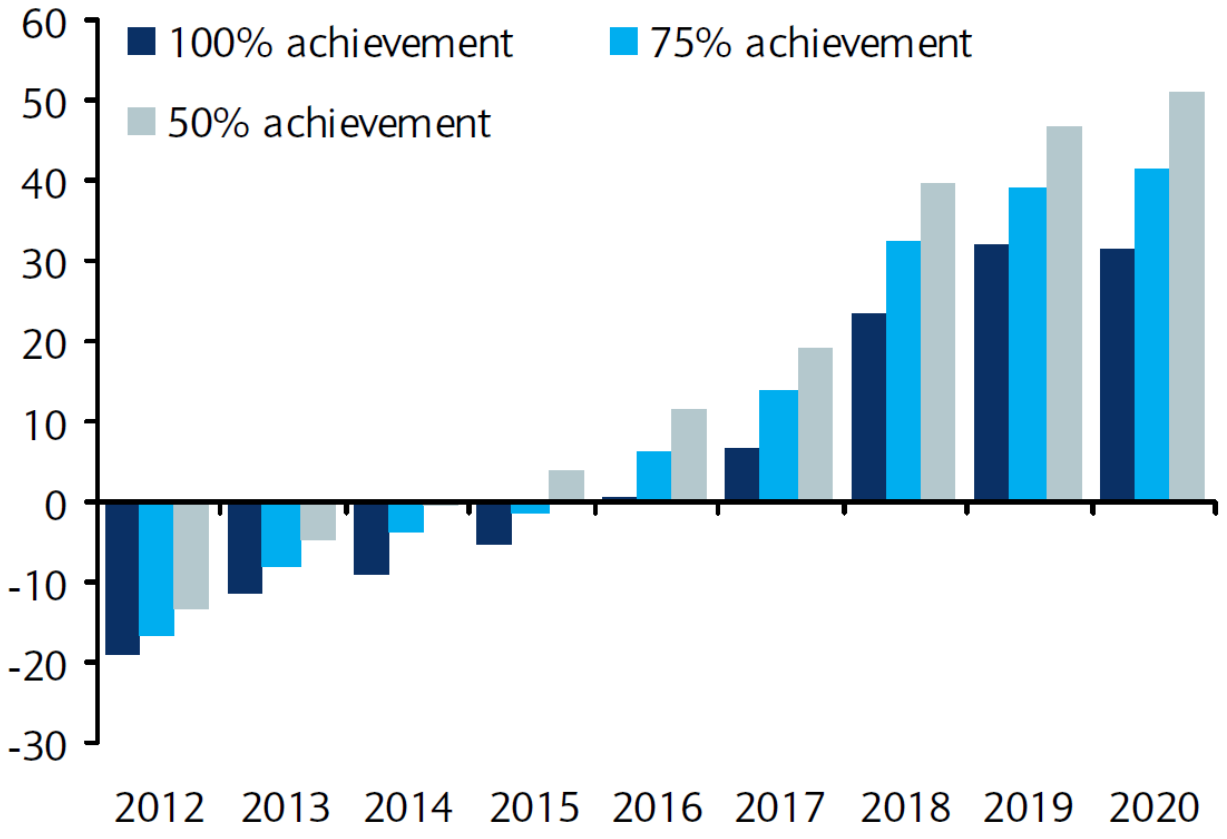
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Interaction Between "Complementary Policies" & GHG Cap and Trade Important!

- Cap-and-trade is a "backstop" to the complementary policies (aka direct measures)
- ARB expects 85% of GHG reductions to come form direct measures, i.e., LCFS, 33% RPS. EE measures, CHP, others.
- Compliance obligation under cap depends on actual achievement of complementary policies

Figure 16: Annual total emissions to cap (Mt) – scenarios



Note: uses 75% achievement case. Source: Barclays Capital

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Linking to Other GHG Trading Systems

- Framework exists to link CA program to other state and provincial programs in the Western Climate Initiative (WCI).
- Recent CA legislation requires Governor to approve linking.
- Link with Quebec originally expected Q4 2012. Now, ARB staff expected to make recommendation to Gov. Brown by end of 2012. Gov. Brown will have 45 days to decide.
- Exploring potential linkage with Australia
- Other informal linkage continues to be of interest, but are less active, including linkage between WCI-RGGI-MGA.
- No formal linkage to EU ETS or CDM likely in the near term.

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Compliance and Enforcement

- Annual *"Deposit":* Covered facilities are required to surrender allowances and offsets equal to at least 30% of the previous year's emissions annually.
- **Tri-Annual *True-Up***: Covered entities must surrender allowances and offsets covering their remaining emissions for each three-year compliance period (i.e., 2013-14; 2015-17; 2018-2020)
- Non-compliance – If the compliance deadline is missed, the compliance obligation becomes 4 allowances per ton CO_2 of "excess" emissions (1 to be retired and 3 to go into the allowance reserve).

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Outstanding Issues

- Complete necessary IT infrastructure and credit registry
- Nov. 14, 2012 initial allowance auction
- Enable smooth transition to Jan. 1, 2013 start of compliance
- Decide on “resource shuffling” provisions in 2013
- Resolution of LCFS lawsuit
- Resolution of offsets program lawsuit (expected Q4, 2012)
- Potential link to Quebec in 2013, pending Gov’s approval
- Implement sectoral REDD offsets with Acre and/or Chiapas
- Explore future linkages with Australia, Mexico & EU ETS

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Thank You

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