

# California Cap-and-Trade Program Potential Border Carbon Adjustment for the Cement Sector

California Air Resources Board  
February 5, 2014

# Participation and Comments

- Presentation posted at <http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- Email questions to [sierrarm@calepa.ca.gov](mailto:sierrarm@calepa.ca.gov)
- Comments accepted through 2/20/2014

# Agenda

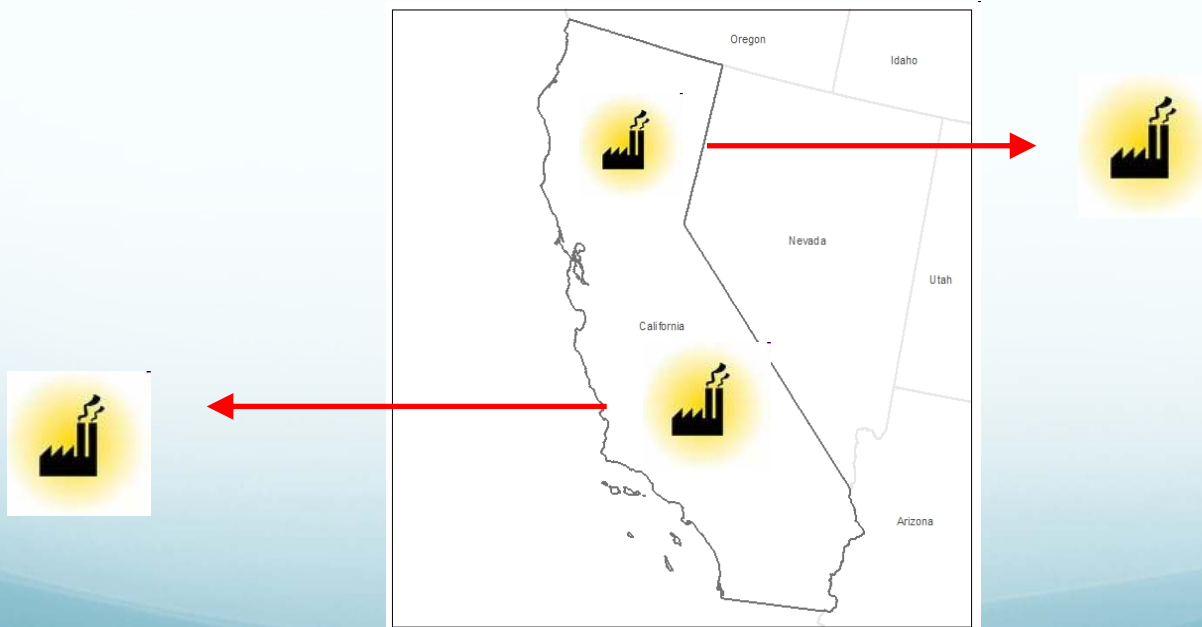
- Background and Definition
- Border Carbon Adjustment (BCA)
  - preliminary concept
- BCA design considerations
  - Scope and applicability
  - Program framework & stringency
  - Program elements

# Background

- AB 32 requirement to minimize emissions leakage in industrial sectors
  - Cap-and-Trade uses free allocation as one mechanism
- Resolution 10-42
  - Directed staff to review technical/legal issues related to border adjustment for cement sector
- Cement – first sector for consideration
  - High leakage risk category
  - Homogeneous product with relatively small number of additional point of regulation

# What is Emissions Leakage?

- “Leakage” means a reduction in emissions of greenhouse gases within the state that is offset by an increase in emissions of greenhouse gases outside the state.
- AB 32 goal: to minimize emissions leakage to the extent feasible

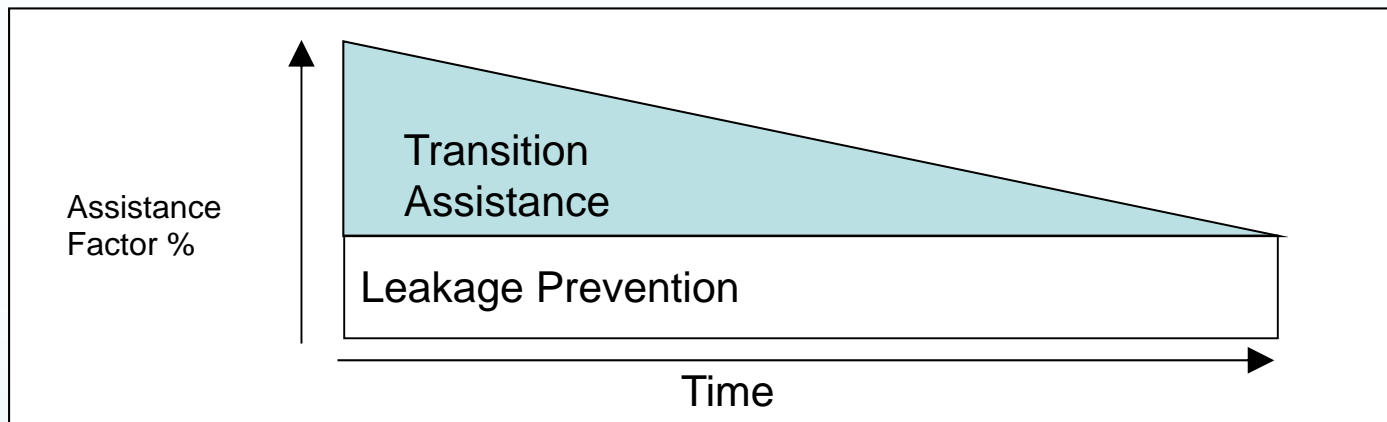


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- Background and Definition
- **Border Carbon Adjustment (BCA)**
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# BCA Preliminary Concept: Industrial Assistance

- Free allocation provided to covered industrial sectors
  - Transitional assistance
  - Leakage prevention



- Border adjustment would further reduce the risk of emissions leakage

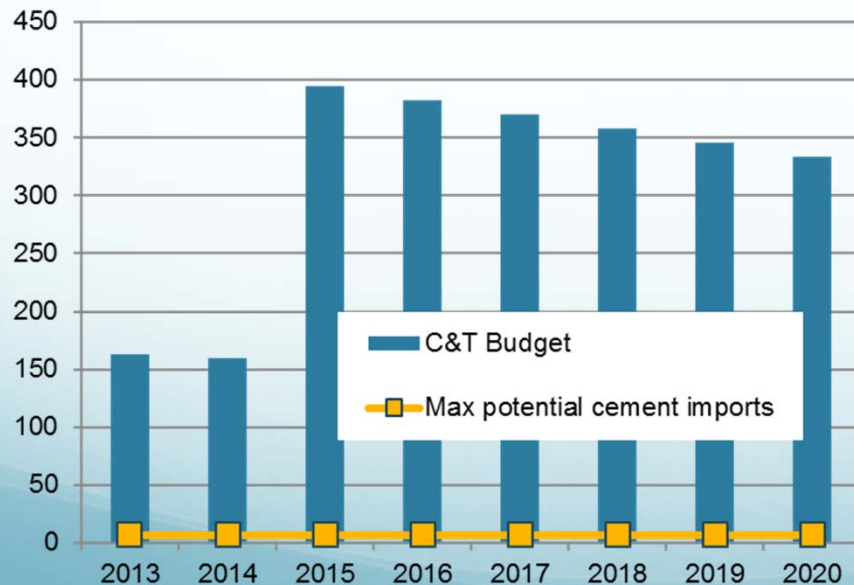
# BCA General Design Concept: Potential Options

- Option 1: Include importers in the Cap-and-Trade program
  - Importers are subject to full Cap-and-Trade requirements as covered entities
- Option 2: “Linked cost” for importers with no market mechanism
  - Importers are subject to a cost calculated based on emission obligation x Cap-and-Trade allowance price(s)
- Option 3: Create an independent allowance pool for importers with equivalent program stringency
  - Replicate a “mini” Cap-and-Trade allowance pool with full market mechanism
  - Create a simplified purchase/sales system with equivalent program stringency



# Option 1: Include Importers in the Cap-and-Trade Program

- PROS: Administratively simple with no change in regulatory framework
- CONS: Current allowance budget does not account for emissions associated with potential production outside of California due to leakage



– Potential BCA allowance demand: 1- 6 MM tonnes

# Option 2: “Linked cost” for Importers with no Market Mechanism

- Importers are subject to a cost calculated by compliance obligation x Cap-and-Trade allowance price(s)
- PROS: May be easier to administer
- CONS:
  - Does not provide market flexibility such as offsets to importers that Cap-and-Trade participants
  - Does not guarantee consistent emissions reduction associated with imported cement

# Option 3-1: Create Independent Allowance Pool for Importers

Replicate a “mini” Cap-and-Trade allowance pool with full market mechanism

- Set a cap only for importers based on projected cumulative emissions through 2020
- Conduct quarterly auctions
- Allow banking, trading, access to offsets/other compliance instruments and access to price containment reserve to provide equal flexibility to comply
- PROS: California covered entities and importers are subject to consistent requirements if designed properly
- CONS: Challenge to set appropriate allowance budget

# Option 3-2: Create Independent Allowance Pool for Importers

Create a simplified purchase/sales system with equivalent program stringency

- Set an updating allowance limit instead of a permanent cap
- Determine a single sales price tied to Cap-and-Trade auction
- Conduct sales upon bidding
- Allowances are not fungible with the main Cap-and-Trade
- Allow market flexibility mechanisms such as access to offsets to provide comparable level of flexibility to comply
- PROS: Avoid setting a permanent cap
- CONS
  - May still be associated with some complexity & allowance budget uncertainties
  - Does not guarantee consistent emissions reduction associated with imported cement

# Cap-and-Trade Program Design

Sub Article	Title	Sub Article	Title
3	Applicability	8	Disposition of allowances
4	Compliance instruments	9	Direct allocation
5	Registration	10	Auction and sale
6	Allowance budgets	11	Trading and banking
7	Compliance requirements	15	Enforcement & penalties
		16	Other provisions

## Principal issue categories for BCA

- How to determine what/who to cover?
- How to create equivalent program stringency relative to the main Cap-and-Trade?
- How to operationalize the program?

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# Design Considerations: Scope & Applicability

Strive for consistency with Cap-and-Trade Program

- Determination of compliance obligation
  - GHG reporting of covered emission
  - GHG from biomass combustion including waste tire
- Consideration of country or regional level program exemption
  - Regions with equivalent carbon regulation
- “Wheeled-through”
  - Cement imported at CA ports but shipped to other regions for consumption

# Design Considerations: Options for Greenhouse Gas Reporting

- Options for emissions documentation provided by cement importers
  - Importer specific
    - Use MRR or other methodology?
  - Emissions certification
    - Imported estimated emissions
    - Reviewed by ARB accredited verifiers or other bodies?
  - Documentation submission
- Mechanism to maintain similar rigor
  - Use MRR methods?
  - Conservative technology specific emissions factors?



# Design Considerations: Greenhouse Gas Reporting Best Estimated Data

- Conservative emissions factors
- Apply default emissions factor(s) similar to imported electricity based on sound engineering estimates
  - Default emission factor(s) by technology
    - Identify “typical” production configurations, equipment efficiency and fuel that represent imported cement
    - Require reporting about the plant specification to some degree

# Design Considerations: Scope & Applicability

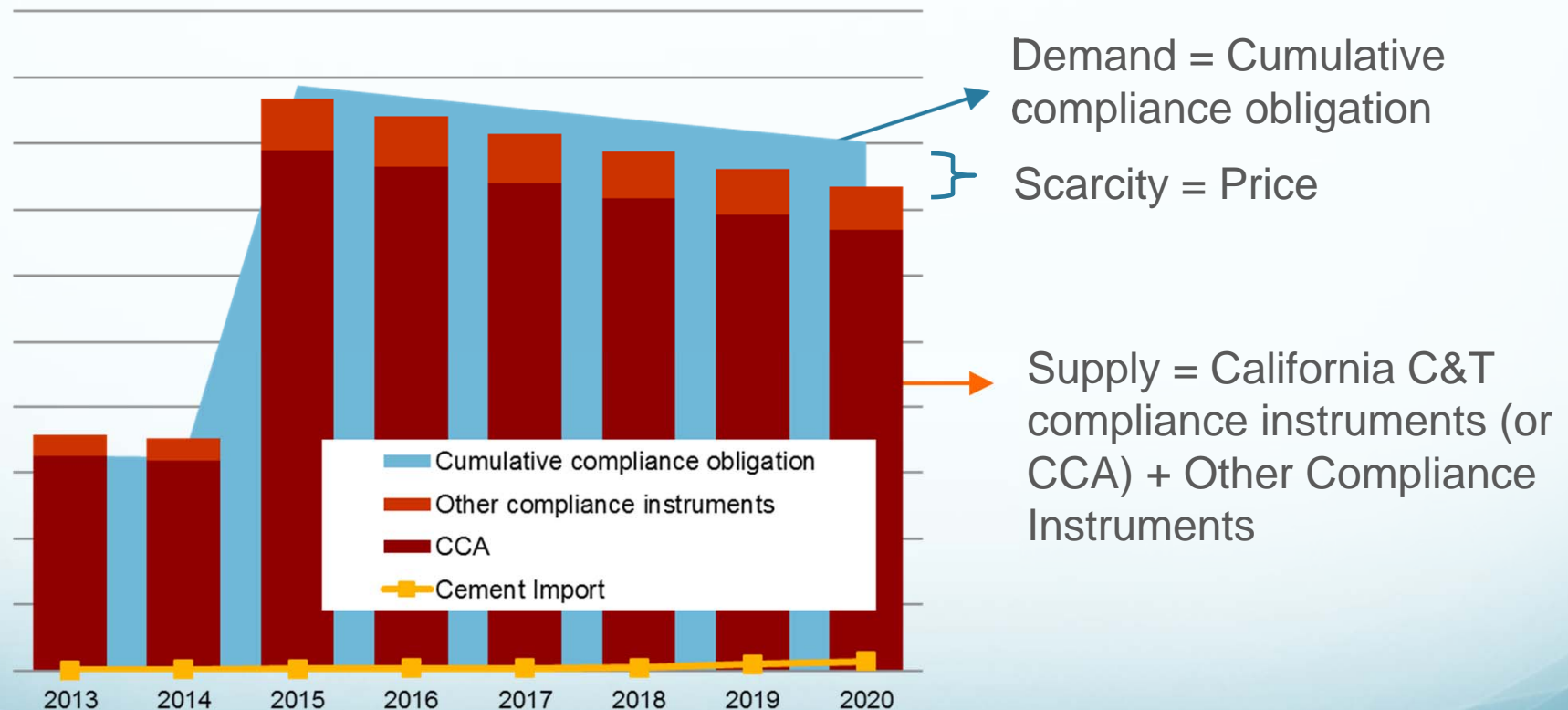
- Covered gases
  - CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O for California cement manufacturers
- Covered emissions sources
  - Direct emissions
    - Combustion emissions
    - Process emissions
  - Indirect emissions from electricity
  - Transportation emissions
- Covered product
  - C&T cement benchmark: clinker + mineral additives
- Covered entities
  - Importer of cement from other countries
  - Importer of cement from other states

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# Design Considerations: Cap-and-Trade Supply & Demand

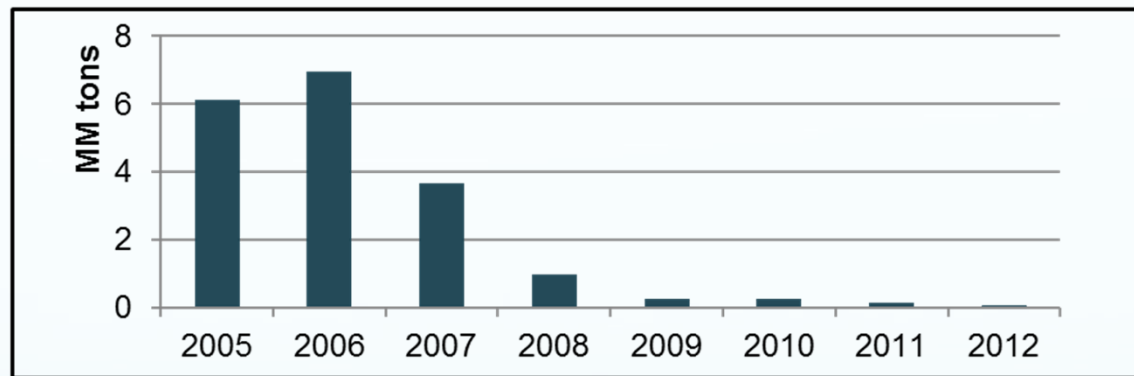
- Conceptual supply & demand



- Can this relationship be replicated in a separate system?

# Design Considerations: BCA Supply & Demand

- Demand: Uncertainty to forecast ~ 2020
  - Cumulative amount of cement imported to California tied to economic growth



- Cumulative emission efficiency for production
- Supply : Challenges to set if uncertainty in demand

Note: Data source for imported cement: International Trade Commission <http://dataweb.usitc.gov/>

# Design Considerations: Other Considerations

- Challenges setting allowance budget (cap) for imported cement in advance
- Alternative to allowance budget
  - Allowance quantitative limit?
- Price setting
  - Tied to Cap-and-trade allowance prices?
- Maintain same level of emission reduction incentive with the Cap-and-Trade program

# Design Considerations: Potential Access to Flexible Mechanisms

- Allowances are not fungible with the main Cap-and-Trade
  - BCA does not affect Cap-and-Trade allowance budget
- Access to other compliance instruments
  - Offsets
  - Compliance instruments from linked program(s)
- Bilateral trading among BCA participants
  - May occur if sales quantitative limit is smaller than compliance obligation
- Banking
- Access to price containment reserve

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# Design Considerations: Potential Disposition of Allowances

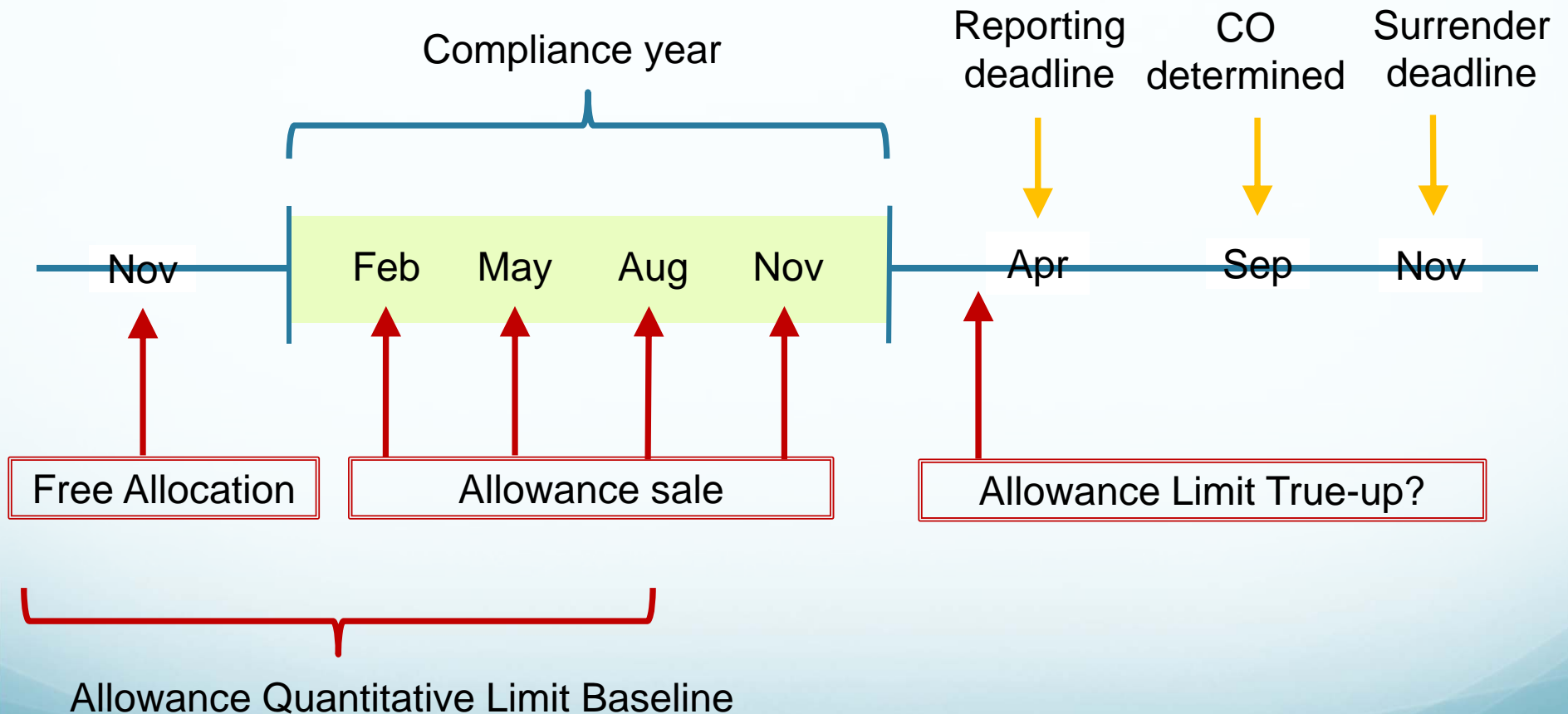
- Free allowance allocation
  - Based on the same calculation method as currently covered entities using the same benchmark
$$FA = O \times B \times A \times C$$

O: Output (short ton of clinker + mineral additives in t-2)  
B: Benchmark (0.742 MT of CO<sub>2</sub>e/ Short ton of cement)  
A: Assistance Factor: (100% for the 2<sup>nd</sup> and 3<sup>rd</sup> compliance period)  
C: Cap Adjustment Factor (declines around 2% per year)
  - Occurs annually in November of the previous year

# Design Considerations: Potential Disposition and True-up of Allowances

- Quarterly allowance sale
  - Harmonized timing with Cap-and-Trade auction:  
Immediately after the publication of auction clearing price?
- True-up if necessary
  - Allowance limit to adjust the timing of
    - Allowance quantitative limit (Based on Sept-Aug ITC data)
    - Compliance obligation (Jan-Dec)
  - Free allocation
    - Same as the Cap-and-Trade true-up
      - Cover the difference between the amount an entity is eligible for a given compliance year and the allocation occurred in November of the previous year

# Design Considerations: Potential Compliance Cycle



# Technical Work Group Meeting

- Open to any stakeholders interested in providing input on technical aspects of BAM
- Meet every 3-4 weeks

WG meeting	Timing	Discussion Topic
No. 1	February 2014	<b>Scope &amp; Applicability</b> <i>How to determine what/who to cover?</i>
No. 2	March 2014	<b>Scope &amp; Applicability</b> <i>How to determine emission factor(s)?</i> <i>Emission factor(s) for compliance obligation</i> <i>Emission factor for allowance limit setting</i>
No. 3	April 2014	<b>Program framework &amp; stringency</b> <i>How to establish a system with the equivalent scarcity relative to the main C&amp;T?</i> <b>Program Elements</b> <i>How to operationalize the program?</i>

# Schedule and Next Steps

2014	Schedule
February-April	Technical work group meeting
May	Public workshop to consider draft regulation
Late July	Proposed regulation language release
Early August	45 day comment period starts
September	Board hearing

- Next Steps
  - Contact ARB to participate in technical work group meeting
  - Comment accepted through 2/20/2014

# Discussion

- BCA preliminary concept (60min)
- BCA design considerations
  - Scope and applicability (30min)
  - Program framework and stringency (30min)
  - Program elements (30min)

# Contact Information

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- Comments accepted through 2/20/2014