



Cap-and-Trade Regulation 2016 Amendments: Setting Post-2020 Emissions Caps

March 29, 2016

Workshop Materials and Submitting Comments

- ▣ This presentation is posted:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- ▣ The presentation webcast is available:
<http://www.calepa.ca.gov/broadcast/?BDO=1>
- ▣ Written comments may be submitted until 5 pm (PDT) on Friday, April 15, 2016, at this site:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- ▣ During this workshop, e-mail questions to:
auditorium@calepa.ca.gov

Agenda

- ▣ Setting Post-2020 Emissions Caps
 - ▣ Pre-2020 cap-setting
 - ▣ Options for Post-2020 cap-setting
 - ▣ Questions and comments
- ▣ Staff Proposal for Post-2020 Allowance Allocation
 - ▣ Overview of allocation
 - ▣ Industrial allocation
 - ▣ Electrical distribution utility allocation
 - ▣ Other allocation types
 - ▣ Questions and comments

Background

- Cap establishes limit on emissions covered by the Program
- Cap level is critical to motivating emission reductions
- Cap trajectory to support gradual path toward emissions target
- Long-term cap levels provide market certainty and inform covered entity compliance and financial planning

Pre-2020 Cap-Setting

- Economy-wide coverage of ~85% of states emissions
 - Phase-in for upstream fuel and natural gas suppliers
 - Covered sources must be quantifiable and verifiable with high degree of certainty
- Covered gases include carbon dioxide, methane, nitrous oxide
- Based on Second Assessment Global Warming Potentials
- Informed by top-down historical emissions and early Mandatory GHG Emissions Reporting data

Post-2020 Cap-Setting

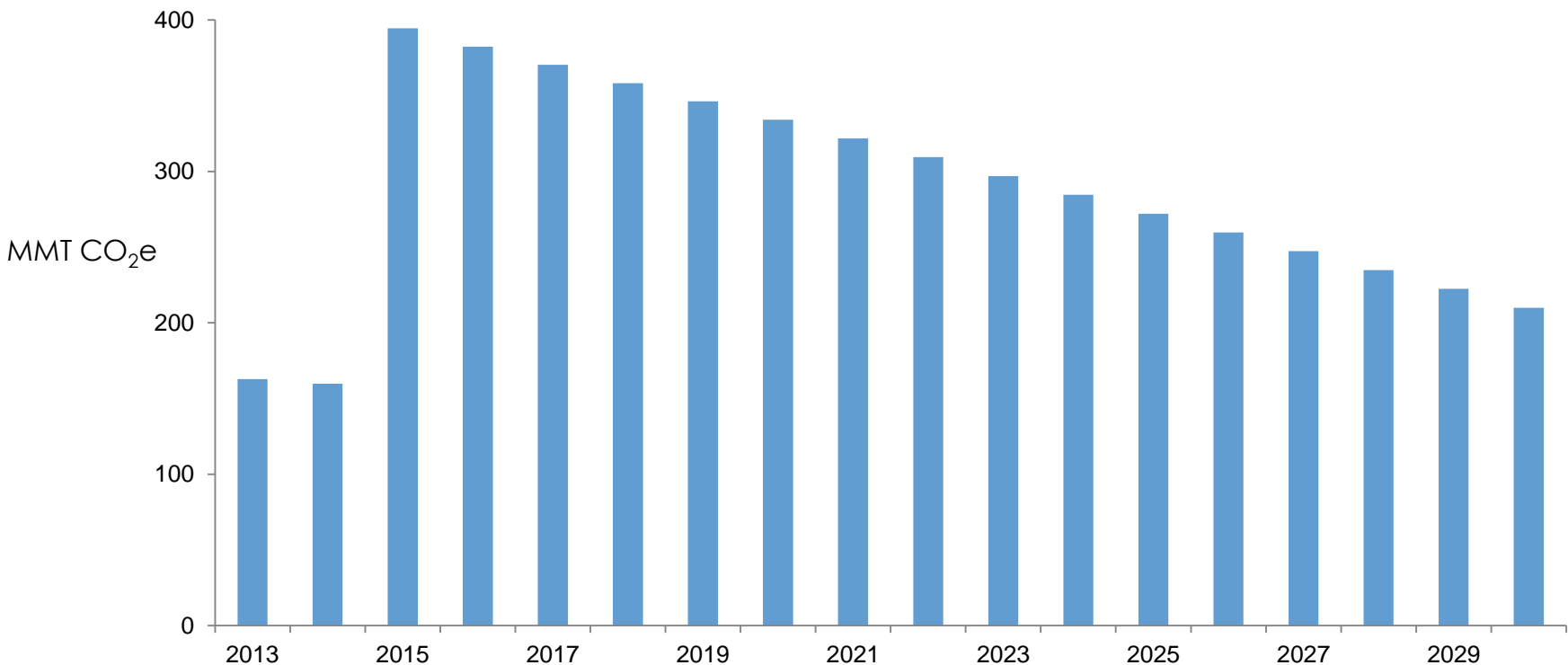
- Current staff proposal:
 - Maintain economy-wide coverage sources that are quantifiable and verifiable with high degree of certainty
 - Covered gases continue to include carbon dioxide, methane, nitrous oxide
 - Update to the Fourth Assessment Global Warming Potentials

Gas	2 nd Assessment Report GWP	4 th Assessment Report GWP
CH ₄	21	25
N ₂ O	310	298

- Harmonized process with linked partner jurisdictions

Post-2020 Cap Setting Option 1

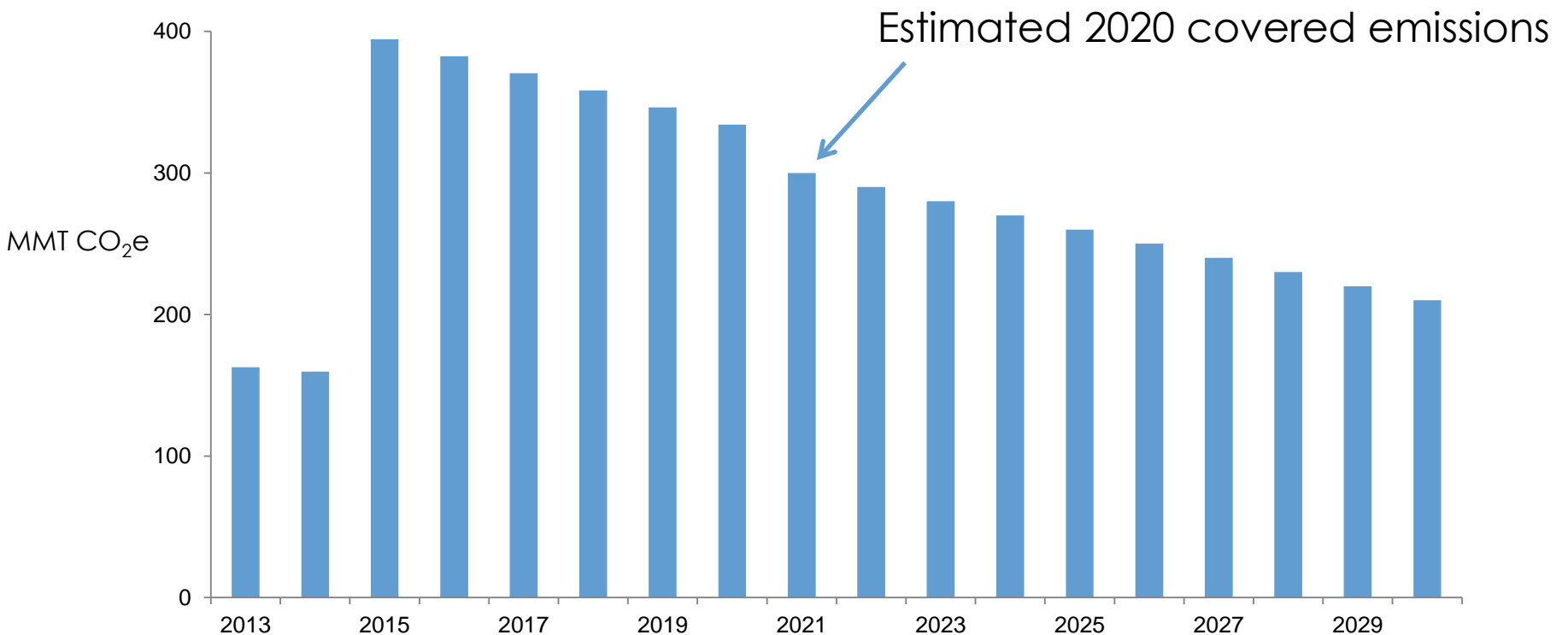
- Linear decline between current 2020 and expected 2030 cap level



Cap values are for illustration purposes only

Post-2020 Cap Setting Option 2

- Linear decline from **estimated 2020 covered GHG emissions** and estimated 2030 cap



Cap values are for illustration purposes only

Stakeholder Questions

- Should other sources of GHG emissions be considered for inclusion?
- Should other greenhouse gases be included?
- For cap-setting, Is Option 1 or Option 2 preferred? Why?
- Should Option 2 be implemented by directing allowances equal to the “adjustment” for an updated 2020 forecast into a post-2020 Allowance Price Containment Reserve?

Questions and Comments

Email questions to: auditorium@calepa.ca.gov



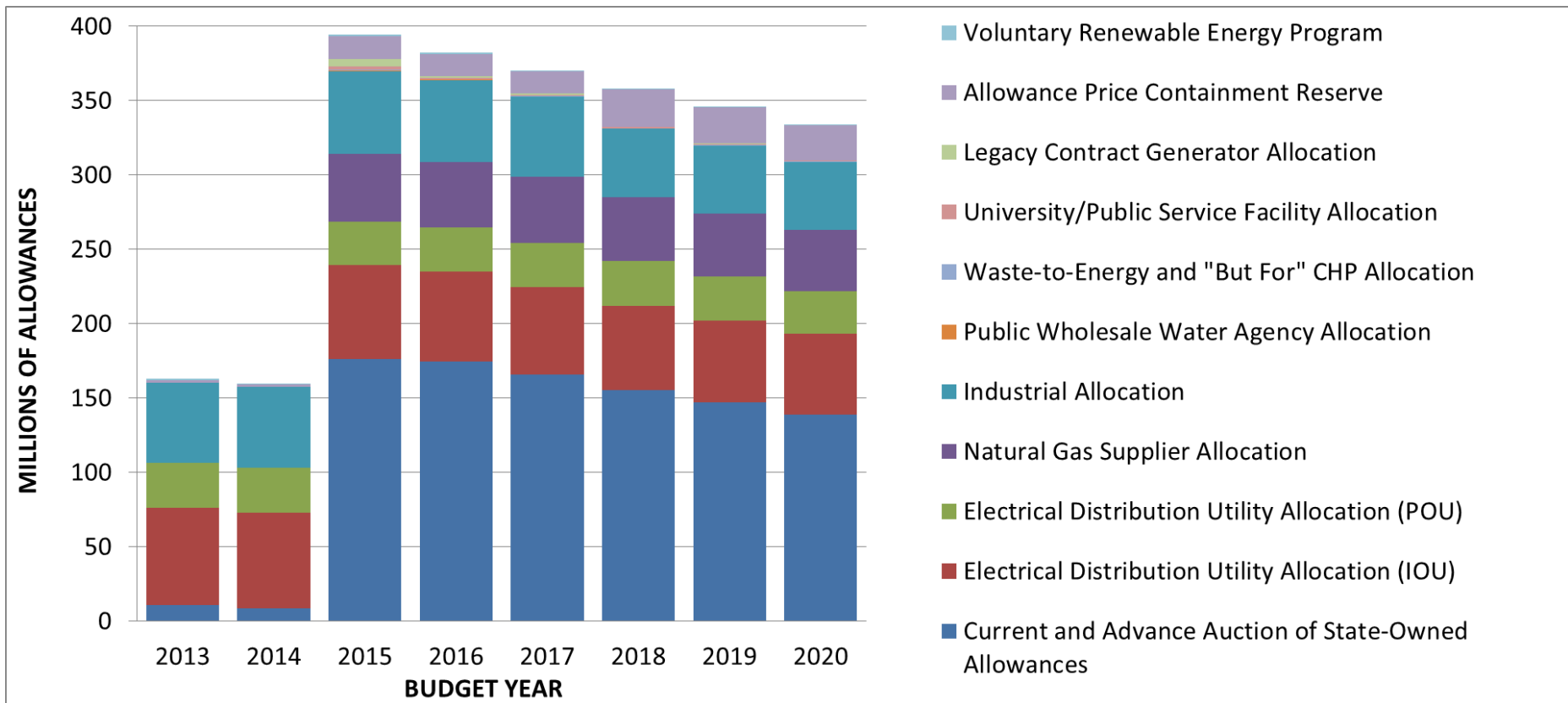
Cap-and-Trade Regulation 2016 Amendments: Staff Proposal for Post-2020 Allowance Allocation

March 29, 2016

Distribution of Allowances

- ▣ **Auction.** ARB supports auctioning allowances because it is transparent, fair, and allows for price discovery
- ▣ **Allocation.** ARB provides free allowances for the following reasons:
 - ▣ **Leakage Prevention.** AB 32 requires ARB to prevent emissions leakage to the extent feasible. The Cap-and-Trade Program (Program) protects against emissions leakage by allocating allowances to emissions-intensive, trade-exposed industries based on their leakage risk.
 - ▣ **Ratepayer Protection.** Allocation to electrical and natural gas utilities protects end-users from cost increases.
 - ▣ **Transition Assistance.** Incorporating a carbon price into most energy sources increases production costs. Transition assistance allocation eases carbon costs into the economy in the initial years of the Program.

Allowance Allocation Overview: 2013 through 2020



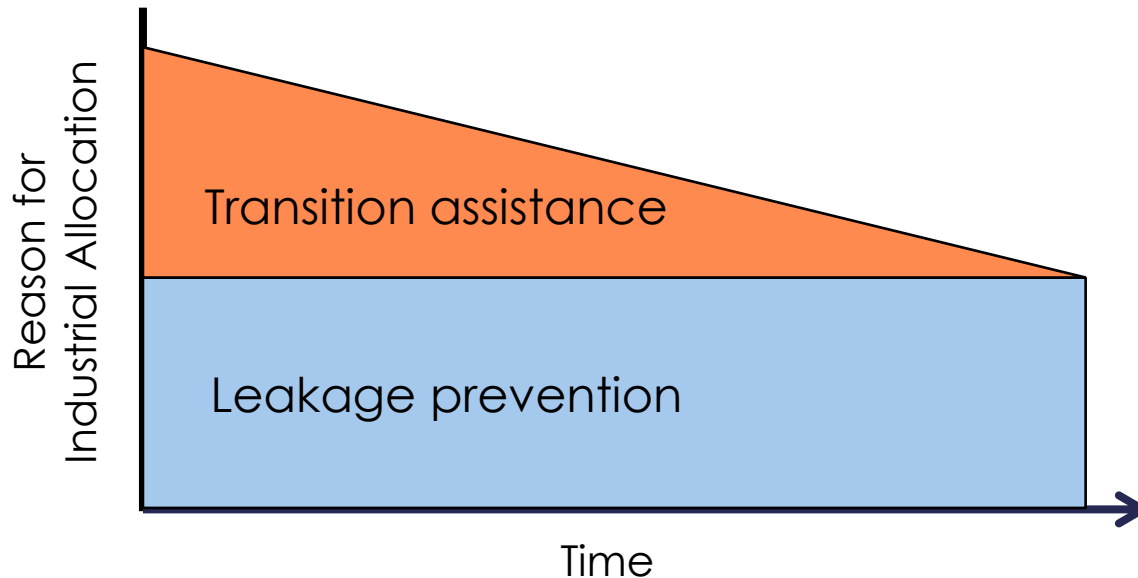
Data source: ARB Estimated State Auction Budget (<http://www.arb.ca.gov/cc/capandtrade/stateauction.htm>)

Allocation Eligibility Requirements

- To receive free allowance allocation, entities must:
 - Comply with the requirements of the Mandatory Reporting Regulation (MRR)
 - Report emissions and product data (if applicable) pursuant to MRR
 - Receive a positive or qualified positive verification statement
 - For those allocation types where submission of materials and/or a request for allocation is required, fulfill all requirements for information submission/allocation request by deadlines specified in the Cap-and-Trade Regulation
 - Have an active CITSS account

Industrial Allocation

- Industrial Allocation serves two main purposes:
 - Leakage prevention**, which continues as needed, and
 - Transition assistance**, which decreases over time.



Overview of Product-Based Industrial Allocation in First Compliance Period

- Annually, staff compares baseline emissions to allowance allocation for each industrial sector receiving allocation under product-based benchmarks
 - $\text{Baseline emissions} = \text{covered emissions} + \text{emissions associated with purchased steam} - \text{emissions associated with electricity and steam}$
- Staff's analysis shows that overall industrial allocation in the first compliance period was in line with expectations

Industrial Allocation: Updates to Benchmarks for CP3 (2018-2020)

- Staff is exploring updates to product-based benchmarks under the following sectors:
 - Dairy Product Manufacturing (31151)
 - Roasted Nuts and Peanut Butter Manufacturing (311911)
 - Paper (except Newsprint) Mills: (322121)
 - Secondary Smelting, Refining, and Alloying of Nonferrous Metal (331492)
 - Nonferrous Forging (332112)
- Benchmark updates are being considered to streamline product data reporting and/or more accurately represent current makeup of the sector
- Staff have begun to reach out to representatives from each of these sectors to discuss these changes

Post-2020 Industrial Allocation (1 of 5)

- ▣ Continue to implement current industrial allocation policy
 - ▣ Continue use of product-based and energy-based benchmarks
 - ▣ Continue leakage assistance
 - ▣ Continue to reduce the transition assistance portion of allocation over time for low- and medium-risk sectors

Post-2020 Industrial Allocation (2 of 5)

- Staff propose to directly allocate for purchased/obtained electricity
 - Update energy- and product-based benchmarks to include purchased electricity emissions before post-2020 allocation
 - Direct allocation for purchased electricity will ensure equitable treatment of leakage-exposed industries that are customers of publicly owned utilities and those that are customers of investor-owned utilities
 - Leakage-exposed industrial entities that operate below the Cap-and-Trade Program inclusion threshold and are customers of investor-owned utilities would still be eligible for EDU proceeds through CPUC
 - How should industrial POU customers that are below the Program threshold be treated?

Post-2020 Industrial Allocation (3 of 5)

- Product-Based Benchmark (PBB) equation for a product produced by an industrial sector:

$$\text{PBB} = \frac{(\text{Covered Emissions} + \text{Net}^{\#} \text{ Electricity Emissions} + \text{Net}^{\#} \text{ Steam Emissions})}{\text{Production}} \times 0.9$$

PBB will be set equal to the best-in-class emissions efficiency (with 100% stringency instead of 90%) if no single facility is at or below the 90% of average benchmark.

- Energy-Based Benchmark (EBB) equation for a single facility:

$$\text{EBB} = \text{Fuel Consumed} \times \text{Fuel Benchmark} + \text{Net}^{\#} \text{ Electricity Emissions} + \text{Net}^{\#} \text{ Steam Emissions}$$

$$\# \text{ Net} = (\text{Purchased and Obtained}) - (\text{Sold and Provided})$$

Post-2020 Industrial Allocation (4 of 5)

- Staff proposes using MRR data as the source for benchmarking data, including covered emissions data, covered product data, and net electricity and steam emissions
 - There is much higher confidence in the accuracy of verified data compared to non-verified data. Steam and electricity purchase/sales data are likely not currently reviewed for accuracy by third-party verifiers, so staff is proposing to amend MRR to ensure that these data are checked by verifiers for $\pm 5\%$ accuracy.
 - Because almost all steam and electricity data are reported using financial transaction records, we anticipate that verifying these data will be possible

Post-2020 Industrial Allocation (5 of 5)

- Recognize investments in zero-emitting energy sources by including zero emissions electricity or steam net generation in benchmark calculations
 - Technology types might include solar electricity, zero-emissions steam generation, and back pressure turbogenerators¹
- Emissions = Net Generation × Emission Factor
 - Electricity emission factor could be statewide or utility-specific
- This incentive for zero-emitting energy is in addition to those already presented by the Cap-and-Trade Program

¹ http://energy.gov/sites/prod/files/2014/05/f16/steam20_turbogenerators.pdf

Post-2020 Electrical Distribution Utility (EDU) Allocation (1 of 2)

- Continue EDU allocation through 2030 based on compliance obligation associated with supplied electricity
 - For EDU sector allocation, subtract out emissions associated with electricity sold to industrial covered entities
 - Current EDU sector allocation = 97.7 million allowances \times c
 - Post-2020 EDU sector allocation =
(97.7 million – industrial sector electricity emissions) \times c
 - For EDU-level allocation, use 2020 allocations with an adjustment for utility-specific industrial emissions as the starting point, but account for planned changes in electricity sources (e.g., planned coal divestiture, availability of nuclear resources)

Post-2020 EDU Allocation (2 of 2)

- Continue EDU consignment provisions (100% auction consignment for IOUs, optional consignment for POUs)
- Evidence-based allocation for increased electrification
- Staff requests feedback on appropriate data sources and methodologies to use to:
 - Project post-2020 industrial sector purchased electricity emissions
 - Calculate EDU-level allocation
 - Quantify and verify increased load due to electrification

EDU Allocation: Clarify Allowed Uses of Allowance Value for CP3 & Beyond

- Clarify allowed and disallowed uses of allocated allowance value
 - Allowed: non-volumetric return of value, funding greenhouse gas emissions reductions
 - Disallowed: volumetric return of value, paying for program costs (e.g., MRR reporting/verification costs, AB 32 COI fees)

Post-2020 Natural Gas Supplier Allocation (1 of 3)

- Continue current allocation methodology based on 2011 emissions and the post-2020 cap adjustment factors
- Staff proposes to escalate the percentage of allocated allowances that must be consigned to auction
 - Full price pass-through will more closely align NG supplier allocation with EDU allocation
 - Consignment incentivizes GHG reductions and creates equity between below- and above-threshold facilities

Post-2020 Natural Gas Supplier Allocation (2 of 3)

- Staff propose to increase the percentage of natural gas supplier allocation allowances consigned to auction

Options for annual percentage of natural gas supplier allocation allowances consigned to auction

APPROACH	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Current Regulation / Continuation of Current Reg.	40	45	50	55	60	65	70	75	80	85	90	95	100
Option 1: Increase to 100% in 2021	40	45	50	100	100	100	100	100	100	100	100	100	100
Option 2: Double rate (+10%/yr) starting in 2018 to reach full consignment by 2023	45	55	75	85	95	100	100	100	100	100	100	100	100
Option 3: Increase rate (+15%/year) starting in 2021 to meet full consignment by 2024	40	45	50	65	80	95	100	100	100	100	100	100	100

Post-2020 Natural Gas Supplier Allocation (3 of 3)

- Clarify allowed and disallowed uses of allowance value, effective in 2018 (same as for EDU allocation)
- Continue the “but-for” exemption, but remove when there is full carbon pass-through in NG rates (i.e., 100% consignment is achieved)
 - Entities already approved for the exemption will continue to not have a compliance obligation as long as the requirements are met
 - The exemption will no longer be needed when full carbon price pass-through is achieved for natural gas

Post-2020 University & Public Service Facility Allocation

- Continue university and public service facility allocation with no changes to the Regulation
 - Facilities would continue to be allocated allowances based on historical fuel use

Post-2020 Legacy Contract Generator Allocation

- Continue legacy contract generator allocation with no changes to the Regulation
 - Last allocation to legacy contract generators without industrial counterparties: vintage 2017 allowances
 - Continue allocation to legacy contract generators with industrial counterparties as needed

Staff Proposal for Post-2020 Public Wholesale Water Agency Allocation

- Continue water agency allocation
 - Use the same baseline used for 2020 allocation as the starting point allocation, and reduce each year by the cap adjustment factor

Post-2020 Voluntary Renewable Electricity Program

- Continue Voluntary Renewable Electricity (VRE) allowance retirement
 - Less than 15% of 2013-2014 VRE allowances have been retired to date
 - No further VRE allowances will be set aside post-2020, but entities will be able to request retirement of remaining VRE allowances
 - Staff are considering changes to allow eligibility for projects that meet Solar Electric Incentive Program Guidelines
 - Staff seeks feedback:
 - Why is the VRE program undersubscribed?
 - How can eligibility for the Solar Electric Incentive Program be verified?

Additional Information

- Cap-and-Trade Program:
<http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>
- Written comments may be submitted until 5 pm (PDT) on Friday, April 15, 2016, at a link found here:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- Tentative Future Workshops:
 - April 5: Cost containment, sector-based offsets
 - April 25: Emissions leakage
 - April 28: Linkage process, safeguards for sector-based offsets

Questions and Comments

Email questions to: auditorium@calepa.ca.gov