Cost Containment in a Greenhouse Gas Cap-and-Trade System

Program Design Technical Stakeholder Workgroup
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Program Design Stakeholder Meetings

February 6	Overview and Analytic Approach
February 29	Scope and Point of Regulation
March 17	Allocation
April 4	Offsets
April 25	Cost Containment
May 5	**Scenarios Workshop**
May 19	Enforcement/Reporting/Verification
June 16	To be decided

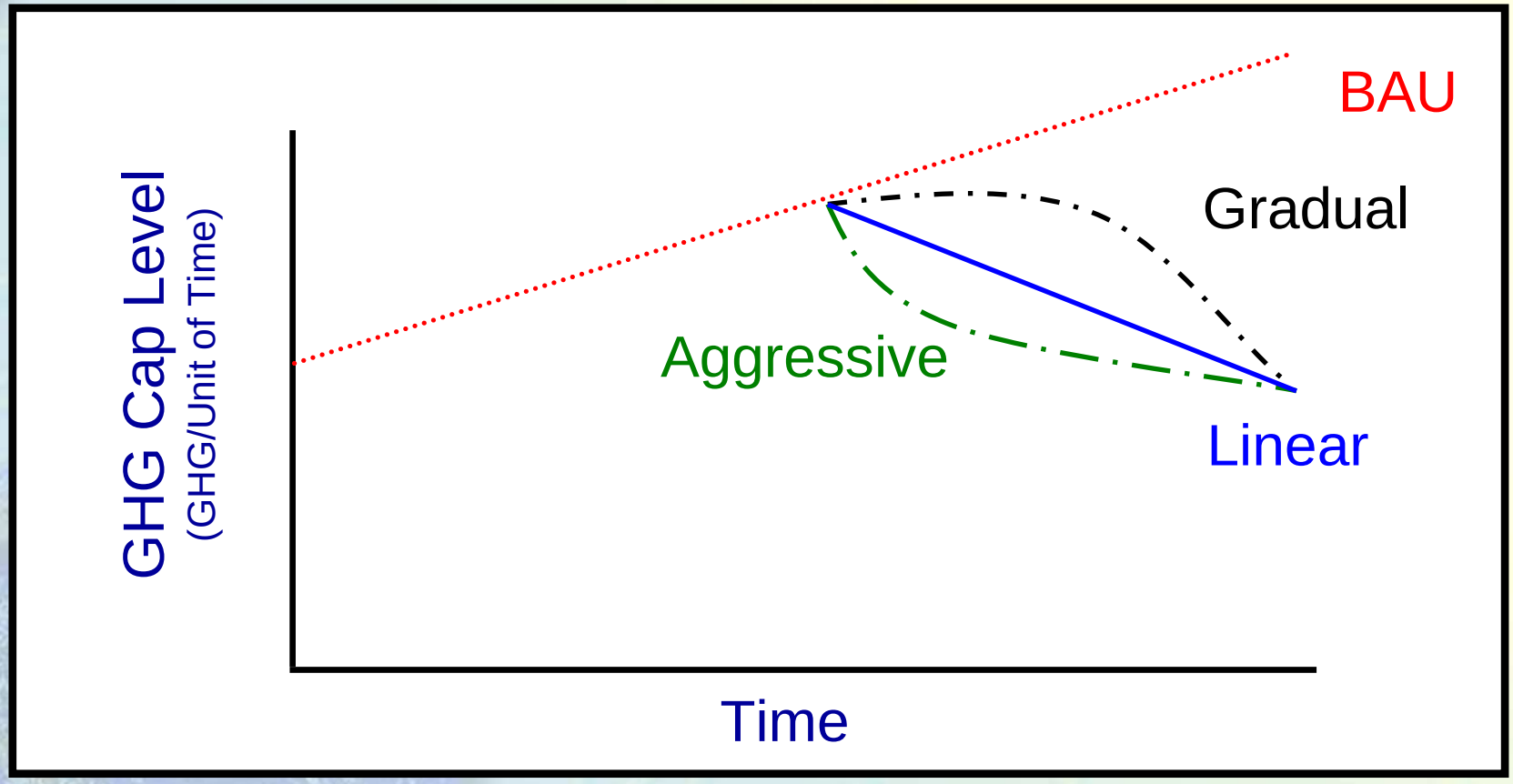
Outline

- Background
  - How the emission reduction path influences the need for cost containment
  - Short-term vs. long-term carbon price issues
- Cost Containment Mechanisms
  - Length of compliance periods
  - Banking and borrowing
  - Price triggers
- Possibility of a Market Oversight Body
- Linkage
- Questions

Key Questions for Today's Discussion

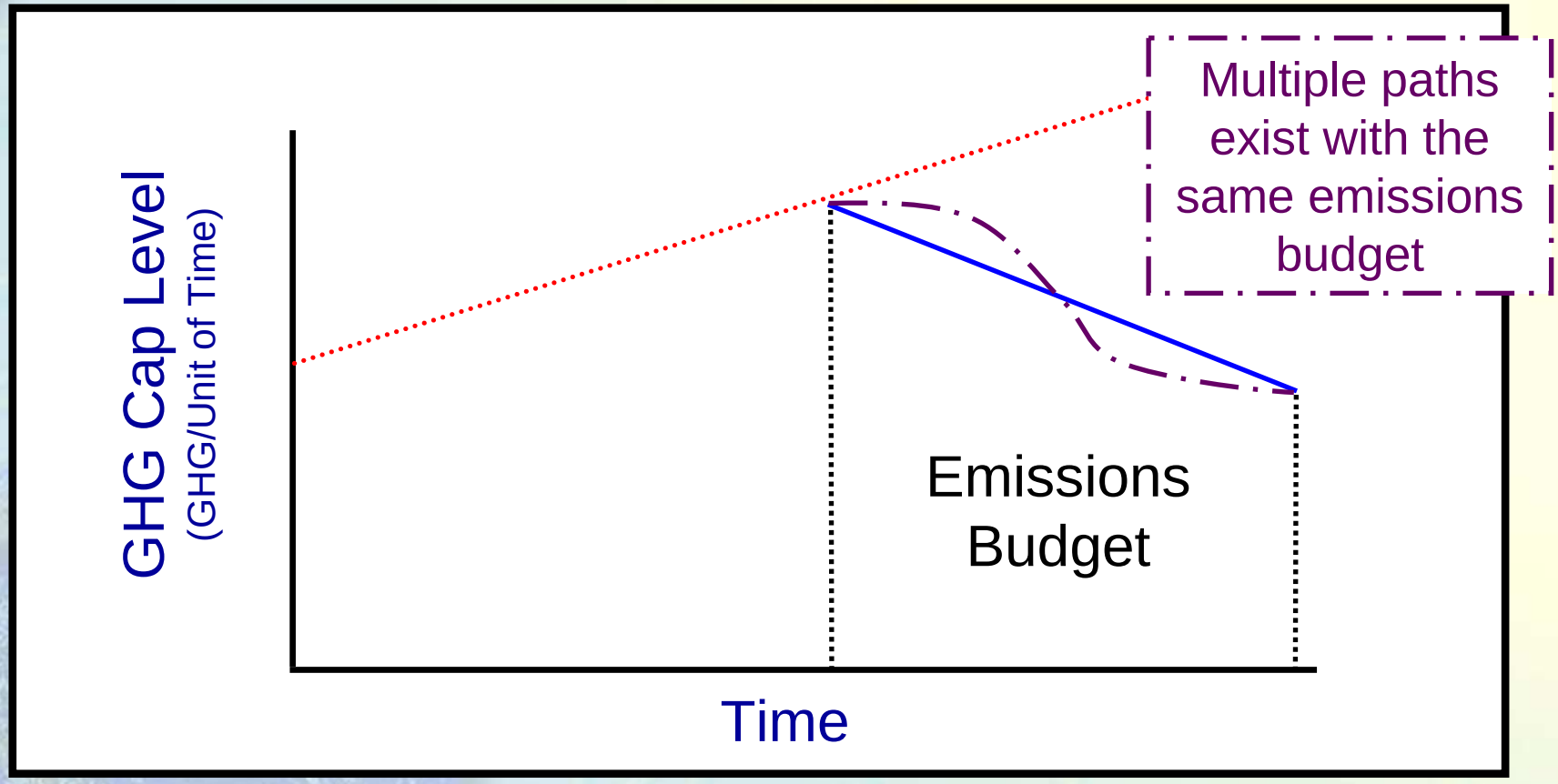
- What type of cost containment mechanisms should California consider for a potential cap-and-trade program?
- Is there a need to establish an independent market oversight body?
- Which systems should be considered for linkage with a potential CA cap-and-trade system?

Impact of Cap Level on the Need for Cost Containment



- Various emission reduction paths are possible to reach a 2020 target.
- A more aggressive emissions reduction path may be possible if certain cost containment mechanism are in place.

Emissions Budget



- The area under each curve is equal to the total amount of greenhouse gases emitted during that time period.
- This may be thought of as an “emissions budget”.

Short-term vs. Long-term Impacts

- A wide range in allowance prices and sudden significant changes in allowance price (volatility) could both be economically disruptive in the short-term.
  - Cost containment measures can address these issues.
- In the long-term, high allowance prices will make GHG emissions expensive, and will help force investment decisions in the direction of a low-carbon economy.
  - The goal of cost containment measures should not be to prevent a steady increase in allowance prices over the long-term.

Length of The Compliance Period

- The “compliance period” is the window of time in which a regulated entity’s emissions must match their allowances held.
- Multi-year compliance periods can help reduce volatility related to annual variations.
- Examples of compliance period length:
  - Acid Rain Program: 1 year
  - EU ETS: 1 year
  - RGGI: 3 years
  - WCI: 3 years (draft recommendation)

Banking and Borrowing (1)

- Banking: Saving allowances from the current compliance period for use in future periods.
- Borrowing: Using allowances from future compliance periods in the current period.
- Banking and borrowing allow “intertemporal” trading between compliance periods.
  - Provides flexibility as to the timing of emission reductions.
  - Reduces allowance price volatility.

Banking and Borrowing (2)

- Banking may incentivize beneficial behavior:
  - Incentive to make early reductions
  - Encourages long-term commitment to the program from stakeholders.
- Borrowing may create a perverse incentive:
  - Allowance debt discourages long-term commitment to the program from stakeholders.

Banking and Over-allocation: Example from EU ETS Phase 1

Source: European Climate Exchange.
Dec '07 contracts

- EU ETS did not allow banking between Phase 1 and Phase 2.
- Allowance price crashed in Phase 1
  - Due to a sudden market understanding of over-allocation of allowances.
  - Could have been prevented if banking had been permitted.

Banking and Borrowing in Other Cap-and-Trade Systems

- Acid Rain Program
  - Banking, no borrowing
- EU ETS
  - Phase 1: no banking between phase 1 and phase 2, no borrowing
  - Phase 2: full banking, no borrowing
- RGGI
  - Banking, no borrowing
- WCI
  - Banking, no borrowing (draft recommendation)

Price Triggers (1)

- Basic definition: When allowance price reaches a predetermined value, a predetermined market intervention occurs.
  - Primary mechanisms to implement these triggers is to buy up allowances, issue additional allowances, or allow more offsets.
  - To maintain emissions budget regulators can potentially move allowances from future periods to current period in conjunction with these triggers.

Price Triggers (2)

- Types of price triggers:
  - Increase/Decrease Offset Limits
    - Locations or amount of offsets allowed for compliance altered
  - Circuit Breakers
    - Emissions cap level held constant until prices come back down
  - Accelerator/Price Floor
    - State purchases allowances at a preset low price
  - Safety Valve/Price Ceiling
    - State issues allowances at a preset high price

Does AB 32 Contain an Implicit Circuit Breaker/Safety Valve?

"In the event of extraordinary circumstances, catastrophic events, or threat of significant economic harm, the Governor may adjust the applicable deadlines for individual regulations, or for the state in the aggregate, to the earliest feasible date after that deadline."

– H&S Code 38599(a)

Price Triggers: RGGI Example

- RGGI
  - If allowance price rises above $7 per short ton,
    - Sources will be allowed to cover up to 5% (up from 3.3%) of their emissions using domestic offsets.
  - If allowance price rises above $10 per short ton
    - Sources can cover up to 10% of their emissions with offsets.
    - Allow offset projects outside the U.S. as well as allowances from the EU Emissions Trading Scheme and the Kyoto Protocol's Clean Development Mechanism.
    - The compliance period will be extended by one year, for a maximum compliance period of 4 years.

Creation of a Market Oversight Body

- The concept:
  - Establish an independent oversight board to manage carbon market efficiency and transparency.
  - Likely modeled after the Federal Reserve.
- Primary duty:
  - Control the allowance budget to balance environmental and economic goals.
- Other potential duties related to cost containment:
  - Collect and analyze market information.
  - Report to the public and to policymakers on the functioning of the market.
- Suggested names:
  - California Carbon Trust (ETAAC)
  - Carbon Market Efficiency Board (Lieberman-Warner)

Linkage (1)

- California could choose to accept allowances or offset credits issued by other trading programs.
- Advantages of Linkage:
  - Further potential for lower cost abatement options.
  - Reduce concerns about market power.
  - Potentially reduce volatility.
- Disadvantages of Linkage:
  - Reduced potential for co-benefits in California

Types of Linkages

- Direct Linkage: One or both linked systems accepts the other system's allowances for compliance purposes.
  - Unilateral linkage
    - Allow the use of credits or allowances from other cap-and trade programs to be used for compliance in CA.
  - Bilateral linkage
    - Allow credits and allowances to be fully fungible in both systems.
- Indirect Linkage: Market dynamics in one system impact market dynamics in another system through direct links with a common system.

Examples and Issues Associated with Potential Linkages

- Direct with EU ETS by accepting European Union Allowances (EUAs) for compliance in the CA system.
- Indirect with EU ETS through CDM by accepting Certified Emissions Reductions (CERs) offset credits for compliance in the CA system.
- Direct with RGGI by accepting Regional Greenhouse gas Allowances (RGAs) for compliance in the CA system.
  - Issue: Activation of RGGI offset trigger would affect allowance prices in all linked system.
  - Some of the other cost containment tools discussed today may influence feasibility of linking with other programs in a similar fashion.

Questions for Stakeholders

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