Potential Issues for Analysis

UC Market Simulation Group

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Market Structure and Incentives

- Cap and trade is a market-based mechanism that limits total GHG emissions from all regulated sources and declines over time to achieve economy-wide emissions reductions
- Participants are required to surrender one compliance instrument (allowances and offsets) for each metric ton of covered GHG emissions
- Compliance instruments may be traded between entities
- The market price of compliance instruments creates the incentive for firms to make emissions reductions that can be achieved more cheaply than purchasing additional permits

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Market Structure and Incentives

- Starting in 2013, stationary sources emitting at least 25,000 metric tons of CO_2e per year will be covered under the cap
  - Large industrial sources
  - Electricity generation and importers of electricity
- Beginning in 2015, combustion from smaller emission sources will be captured by assessing the obligation on fuel suppliers
  - Transportation fuels
  - Residential and commercial use of natural gas

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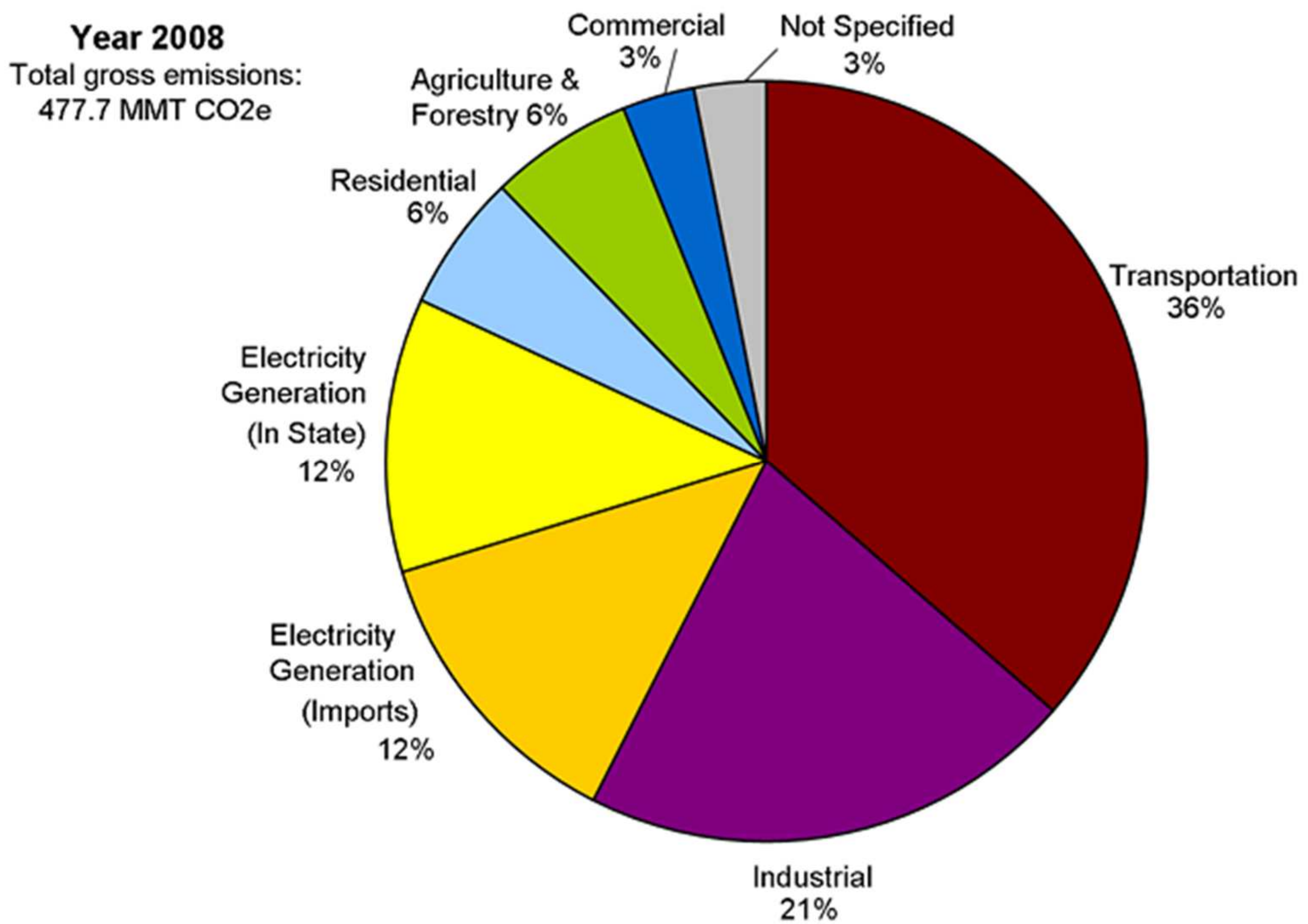
Distribution of Emissions Across Sectors



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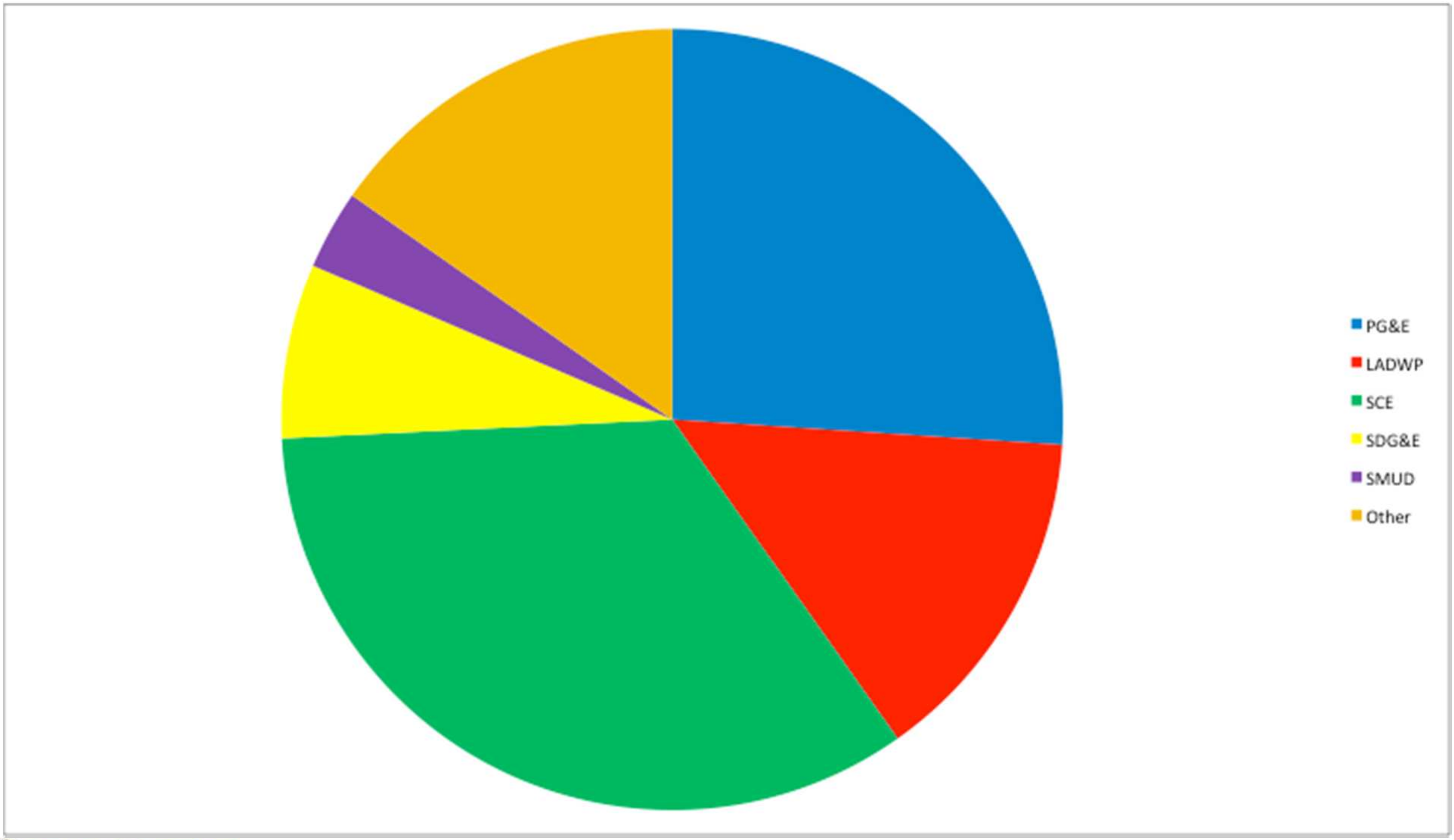
Distribution of Allowances: Electric Sector



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Holding Limits

- Covered Entities and Voluntarily Associated Entities are subject to a Holding Limit, the maximum number of allowances an entity (or group of associated entities) is allowed to hold
- The holding limit applies separately to current and future period compliance instruments
  - Roughly speaking, no entity can hold more than 2.5% of the number of allowances issued for the current period
  - For future vintages, the Holding Limit is roughly equal to 2.5% of the number allowances sold at the advance auctions
- Allowances in an Exchange Clearing Holding Account count toward the purchaser exceeding the holding limit

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Holding Limits

- Certain allowances held by a Covered Entity do not count toward the entity exceeding the holding limit
  - Allowances in a Limited Use Holding Account do not count toward that entity exceeding the holding limit
  - Each compliance entity receives a Limited Exemption. Specifically, the allowances held in an entity's Compliance Account up to a maximum number equal to the number of emissions by that entity in the most recent year (or compliance period) do not count toward that entity exceeding the holding limit

Timing and Compliance

- Each year, an entity's compliance obligation is calculated by summing the facility-specific covered emissions
- Each year entities must surrender compliance instruments equal to 30% of the previous year's compliance obligation
  - There is no limit on the use of offsets to satisfy this requirement
- In 2015, 2018, and 2021, entities must surrender compliance instruments equal to the obligation for the entire compliance period, minus what has previously been surrendered
  - No more than 8% of the total compliance instruments surrendered by an entity during a single compliance period may be offsets

Strategic Compliance Behaviors

- Broadly, these behaviors include any strategy of complying with the regulation that results in the under-reporting of GHG emissions or the undermining of the cap and trade program
  - Leakage of emissions by shifting production
  - Default emissions rate for imported electricity
  - Resource shuffling
- ARB's prohibition against resource shuffling is an example of a market rule designed to limit strategic compliance behavior
  - Other rules include special treatment of historical coal imports and differentiation between new and existing renewable sources

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Auctions and Secondary Markets

- Quarterly auctions of current and future vintage allowances
- A reserve price, beginning at $10 per allowance, will scale up by 5% plus inflation per year
- Only electric distribution utilities offer allowances at auction
- All registered entities may bid for allowances at auction
- Each entity will be subject to a limit on the number of allowances that may be purchased at each auction
  - No entity can buy more than 25% of the future vintage allowances offered in an auction
  - IOUs can buy up to 40% of the current vintage allowances offered at auction
  - All other covered entities can buy up to 15% of the current vintage allowances offered at auction
  - Voluntarily associated entities can buy up to 4% of the current vintage allowances offered at auction

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Auctions and Secondary Markets

- In addition to the auction mechanism, and the reserve sales (discussed next), allowances will be traded on the secondary market
- All entities may participate on the secondary market
- Brokers will report allowance transactions to the market tracking system administrator

Volatility Mechanisms

- 4% of the eight-year allowance total is set aside in an Allowance Price Containment Reserve
  - Sales are conducted 6 weeks after each quarterly auction
  - Allowances are offered for sale in equal tiers of $40, $45, and $50, which will scale up by 5% and adjusted for inflation each year
  - Only Covered Entities can purchase from the reserve
- A reserve price will be enforced at each of the auctions
  - The reserve price will begin at $10 in 2012, and scale up by 5%, plus inflation each year
  - The reserve price is not a minimum price guarantee. ARB is committed to defending the price by reducing the supply at auction, but will not extend a standing offer to purchase allowances at the reserve price

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