

Economic Analysis of California Climate Initiatives: An Integrated Approach

Background

- The State of California has set climate policy goals to reduce greenhouse gas (GHG) emissions by 80% by 2050
- The California Global Warming Solutions Act of 2006 (AB 32) mandates reductions in future California greenhouse gas emissions so that 1990 levels are reached by 2020
- Many key aspects of the policies California intends to implement to meet these goals remain unclear. EPRI's past research has shown that these details matter when it comes to limiting the overall costs of a given climate policy

Approach

- EPRI integrated two advanced, widely accepted economic models: the Multi-Region National (MRN) model and the North American Electricity and Environment Model (NEEM)
- The California Environmental Protection Agency and the Air Resources Board are currently using the EPRI modeling tool for climate implementation work
- This linked modeling approach enables understanding of the economy-wide impacts of specific climate policies, as well as the specific impacts on the electricity sector in detail
- Using these linked models, EPRI conducted a detailed analysis of 20 different implementation scenarios of various policy options, including industry-specific command-and-control regulations as well as market-based cap-and-trade programs

Findings

- Implementation options based on a broad, market-based cap-and-trade program will likely be more cost-effective than a sector-specific program of command-and-control regulations, or an approach that covers only one part of the State's economy
- All scenarios analyzed showed real economic costs to the state, with costs increasing as future GHG emissions decrease. Depending on the implementation scenario, cumulative real costs to the State's economy could range from -0.2 percent to -1.2 percent (\$100 to \$511 billion) through 2050
- Establishing a maximum price on CO₂ (an allowance price safety valve) reduces the economic uncertainty of a market-based cap-and-trade system. The safety valve would be a way to limit economic costs if low-cost reduction options fail to achieve the desired reductions. However, under such a scenario, the GHG reduction target is not met
- California's Climate Action Team Report (March 2006) suggests various in-state forestry activities could provide offsets that would augment the cap. EPRI used the CAT estimate and found that forestry offsets provide a cost-savings of \$33 billion through 2050
- The role of out-of-state electric generation needs to be carefully examined as there is the potential for increased GHG emissions from nearby states ("leakage") if those states shift low-carbon electricity to California and send higher-carbon electricity elsewhere

Contact Information

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