Greenhouse Gas Reduction Options

The ongoing evolution and implementation of carbon management policies at state, regional, and national levels, as well as renewed consideration of multipollutant regulation, are forcing electric companies to evaluate potential impacts of mandatory carbon constraints and technology mandates on operations and financial performance. Companies need to understand the costs and risks associated with low-carbon generation, delivery, and end-use technologies, as well as the costs and risks of the myriad of potential reduction opportunities outside the electric sector, to effectively communicate insights to policymakers and regulators.

The Greenhouse Gas Reduction Options program provides public- and private-sector decision makers with vital insights regarding the costs, availability, performance, and potential risks of greenhouse gas (GHG) emission reduction and mitigation options. The program provides investment strategies for expanding these options over time and insights on how to integrate GHG policy risk management and multipollutant compliance into corporate business strategies as companies respond to growing demand for electric power. This information helps members develop coherent corporate strategies in response to climate change and helps decision makers create and implement cost-effective, environmentally sound public policies in a complex and multifaceted regulatory environment.

Research Value

Policymakers and utility personnel need to understand the implications of climate policy implementation choices (e.g., program scope, use of market mechanisms, and offsets) and potential compliance costs. They need to understand how possible overlaps in regional and national policy initiatives, and in energy policies mandating renewables and energy efficiency and promoting nuclear and advanced fossil generation, complement each other, or lead to unintended consequences. And they need to understand all of these forces within a broader environmental and energy regulatory context. Through its GHG reduction options program, the Electric Power Research Institute (EPRI) helps the industry and the public understand the costs and risks associated with a low-carbon future; make strategic generation, delivery, and end-use technology choices; and communicate these insights to policymakers and state regulators. With this research, utilities and the public may see

- more-efficient (and thereby less expensive) policy designs due to better effectiveness of the user community in informing the policy development process,
- lower compliance costs and less risky business strategies due to better understanding of potential impacts of climate policy on power markets and incentives to add or retire generation, and
- a higher probability that cost-effective GHG offsets will be available to reduce compliance costs.

Approach

The program provides improved analytical approaches to support strategic decisions and consideration of generation investments and emission reduction options. It produces tools and methodologies that help companies develop least-cost approaches to achieving voluntary and mandatory GHG emissions reduction targets. The program informs the public policy process by communicating research results to the broadest possible audience through issue briefs; newsletters; congressional testimony; technical workshops; briefings for stakeholders, policymakers, researchers, and the press/media; and peer-reviewed literature submitted to prestigious journals. This program delivers

- a greater understanding of how climate policy will fundamentally change electric sector economics and roil power markets,
- opportunities to inform evolving climate policies by helping companies understand subtle nuances of climate policy design and their impact on utility asset owners and customers,
- development of robust compliance strategies, and
- increased understanding of how detailed policy design alternatives, impacts on power markets, the role of advanced low-emission technologies, and opportunities for GHG offsets can have tremendous value in forging robust corporate business and compliance strategies in a turbulent environment.

Accomplishments

Climate policy designs for achieving an environmental goal can vary in cost by trillions of dollars, and climate policy can significantly affect returns on existing capital and on new corporate investments. Sound analyses and clear communication are critical to creating effective, efficient policies and effective corporate strategies. Program accomplishments include the following:

- Expanded the Global Climate Policy Design Forum Series to inform company, congressional, and administration discussions on key domestic policy choices. Recent workshops have focused on emission offset policy.
- Helped companies develop and communicate publicly their climate strategies.
- Developed and applied frameworks for helping companies evaluate specific generation and emissions reduction investments.
- Launched a comprehensive effort to re-evaluate the potential global and U.S. supplies of GHG emission offsets.
- Examined and communicated the implications of a CO_2 price in a regional electricity market.

Current Year Activities

Program R&D for 2011 will focus on the following:

- Analyses examining GHG offset mechanisms, particularly technical challenges in their implementation, design issues affecting environmental and political feasibility, and economic value
- Analyses of detailed implementation of climate policy choices, such as the interplay between market and regulatory/technology-forcing approaches to climate and energy policy
- Frameworks to incorporate power market and GHG regulatory impacts into corporate business and compliance strategies
- Assessment of experience to date with policies managing GHG emissions from the electric and energy sectors throughout the world
- Frequent domestic and international climate policy workshops and policy forums

Estimated 2010 Program Funding

$3.7M

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