

Financial and Regulatory Issues

Climate change presents many shared challenges to private sector investors and energy regulators at the state and federal levels. Uncertainties surrounding future policy choices and direction, at the federal level especially, cloud decision makers' abilities to plan future technology and infrastructure investments and to ensure adequate, reliable service in the longer-term. While regulators and private sector executives may not need perfect information in order to make sound decisions, some degree of certainty with regard to the likely choices of climate policy instruments (e.g., carbon taxes, cap-and-trade system) and some degree of confidence in the stability of those policies once implemented will be necessary to catalyze large new investments in energy infrastructure in the U.S.

Dispelling Misleading Assumptions about Climate Policy

Particularly in the current climate of uncertainty, some Forum participants felt that it is important to dispel a few widely held assumptions regarding energy and climate change policy. In their opinion, challenging these assumptions will also be an important step in the development and adoption of sound and politically sustainable climate policies.

Assumption #1: Climate change can be managed at no cost. Several political leaders contend or imply that climate change mitigation

could pay for itself, through efficiency gains, growth of green industry, and other unspecified means. Yet climate change may possibly be the largest problem in human history and one that will require major transformations of infrastructure, technology, and the economy as a whole. The expectation that such a transformation might be achieved without any net costs to the economy appears highly unlikely and, if proven false, could ultimately undermine support for climate change policies.

Assumption #2: All megawatts are created equal. Due to its carbon intensity, coal has drawn attention from many analysts and legislators who advocate emissions reductions from electricity production. Yet wind and solar are not perfect substitutes for coal, due to their different operating characteristics. Significant expansion of renewable energy would require a large-scale modernization and expansion of the grid, which will be difficult to attain considering the many state and municipal-level jurisdictions and siting regimes that would necessarily be involved. These jurisdictional constraints present major barriers to the expansion of more distributed and intermittent generating technologies.

Assumption #3: We can get by without coal. Coal's abundance, low price, and prevalence as a baseload generating fuel in U.S. electricity generation suggest that it will remain unrivaled by any other fuel in the foreseeable future. Given the scale of U.S. electricity consumption and demand growth, and the value of investment in coal-generating plants, coal is likely to remain the industry's predominant fuel even under a climate change policy. If CCS technologies prove commercially viable in the coming years, these systems would lend even greater certainty to the predominance of coal as the fuel of choice in the power industry for the next century.

Assumption #4: While technology will be a critical element of climate change strategies, technology alone will be insufficient in the absence of well-designed policies, markets, and behavioral changes to address the climate problem. Also, while there will be technological advances and breakthroughs in the future, these advances may not be achieved on schedule and

at projected cost. Thus, delaying action on climate change in the short-term with the expectation that better technologies will facilitate adequate mitigation later will necessitate costlier and more drastic policy actions in the long term.

Assumption #5: Barriers to energy efficiency will fall away under climate policy. Barriers to energy efficiency exist at the federal, state, and municipal levels, in current codes, standards and regulations, and in many industrial practices. While there are enormous opportunities for energy efficiency in the U.S., barriers to higher levels of efficiency will have to be actively removed and will not be as easy to achieve as some observers suggest.

Assumption #6: Expansion of nuclear power will not be necessary. In the light of anticipated growth in U.S. electricity demand, nuclear power may be uniquely able to expand baseload generating capacity without contributing additional greenhouse gas emissions. However, the expansion of nuclear capacity is likely to be limited by several factors including cost and waste management concerns.

Investment Risks and Challenges

Climate change mitigation will create new markets that require large capital flows. While many large investors are already poised to enter these markets, the continuing uncertainties surrounding questions of market design and policy choice have thus far precluded significant new investments in technologies to manage carbon emissions reductions. While investors are confident that climate change will be a game-changing opportunity for energy industry incumbents as well as new entrants, these players are now waiting on the periphery until the federal government fills what many regard as a climate policy vacuum in the U.S.

Private investors will have strategies to manage risk and to profit in the new markets for energy, technology, and emissions credits regardless of whether the market rises or falls, yet the absence of government action to establish basic market structures to date prompt investors to make only small market commitments suffi-

cient to grant them access to information and remain in the game for now. Since investments in the energy industries can have life spans of 50 years, investors are wary of the highly dynamic, non-linear nature of the situation in the U.S., which could lead to another round of large stranded investments in the power industry.

One fundamental question concerns the mechanisms of eventual federal government action on climate change. Will the government use blunt policy instruments that act primarily to “bulldoze” bad behaviors and penalize emissions, or will it be able to adopt a more flexible and nuanced approach that provides incentives for preferred behaviors and technologies, acknowledges regional differences, and involves key stakeholders? Advocates of the latter strategy, with its emphasis on harmony of contending interests, policy integration and resilience, contrasted this “Zen garden” approach to the “bulldozer” approach. While some combination of these alternative approaches may be warranted, the establishment of markets and mechanisms that are durable over the long term may require more tailored and flexible designs.

The absence of a transparent mechanism for carbon price discovery is the most important barrier to private investments in carbon management technologies such as CCS. Yet it is also important to recognize that emerging technologies such as CCS entail additional risks that will not be solved by the establishment of functioning carbon markets. For example, since CCS has not been demonstrated at scale, investors cannot assume that it will be technically viable once the market structures are in place. For large-scale technologies like CCS that involve high capital costs and high risks, the federal government may have an important role to play in catalyzing deployment by limiting the liability of those who initially adopt these systems. Without some federal government protection, fears of endless litigation could inhibit critical investments in emissions mitigation infrastructure. Some Forum participants suggested that these risks make a strong case in favor of a stronger role for the Federal Energy Regulatory Commission which, in their opinion, needs clear regulatory jurisdiction in carbon management.

While some observers have argued that the adoption of cap-and-trade legislation will not create price certainty, many state regulators and electricity providers agree that the structural stability associated with the adoption of a cap-and-trade or other policy is more important than price stability. Like private firms, state regulatory agencies will be able to plan based on analysis and educated guesses once an architecture is erected to establish emissions reduction targets, compliance dates, cost containment mechanisms (e.g., safety valves) and procedures for allocating allowances.

Regulatory Risks and Challenges

Policy uncertainty also presents many risks and challenges to state energy regulators. Like private investors, state regulators need some degree of certainty in order to ensure reliable, affordable service in both the short and the long term, particularly in traditionally regulated states. Continued delay in climate policy making at the federal level makes it extremely difficult for state regulatory agencies to decide which resources should be approved, what regulatory actions might be necessary, and how to ensure that the competitive market will provide adequate supply. Like private sector decision makers, many state regulators are responding to uncertainty by attempting to do as little as possible in the short term to avoid doing harm in the longer term. Yet at some point, inaction also becomes an action plan with its own consequences for the future.

Coping with the short-term consequences of policy uncertainty is in many ways more challenging than coping with long-term ones. Regulators are encouraging power companies to boost energy efficiency to reduce demand and to develop renewable energy to the extent that it makes sense in the light of its relatively high cost and intermittency. These options are clearly not risk free and will be insufficient responses in the long term to control prices and guarantee reliability of service. With major questions still clouding the futures of nuclear power and CCS, state regulators are adopting a near term strategy that relies primarily on gas, despite serious con-

cerns about cost and availability. In the longer term, sparing approval of new pulverized coal plants appears to be the best option, with the intention that some combination of nuclear and clean coal technologies is likely to be the best pathway ultimately.

Regulators and industry both agree that there are steps that they can take together now to reduce the longer-term likelihood of political turmoil in reaction to climate change policies. Since responding to climate change will impose costs on consumers, it is essential that the public is informed prior to the adoption of climate policies. The fact that a policy will raise costs does not mean that it ought not be adopted. But the public must buy in to the importance of climate change mitigation, especially since it will also be asked to tolerate additional rate increases to fund the overhaul and expansion of the nation's aging electricity infrastructure. Recent experiences in California, Maryland, and Illinois, where sudden rate increases prompted political backlash, are instructive in this regard. While there can be no guarantee that legislators will not change policy course again once a policy has been adopted, concerted public education efforts could go a long way toward the avoidance of unpleasant surprises and costly reversals of course later on. The responsibility for educating the public lies with those who are already informed.