STATE PERSPECTIVES ON CLEAN COAL TECHNOLOGY DEPLOYMENT

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ABSTRACT

State governments have been funding partners in the Clean Coal Technology program since its beginnings. Today, regulatory and market uncertainties and tight budgets have reduced state investment in energy R&D, but states have developed program initiatives in support of deployment. State officials think that the federal government must continue to support these technologies in the deployment phase. Discussions of national energy policy must include attention to the Clean Coal Technology program and its accomplishments.

I. INTRODUCTION

I'm pleased to be a part of this panel to represent the states' perspectives on the future of Clean Coal Technologies. Before I begin, I would like to thank all of the state officials who took time to talk to me about their views and activities.

States have been active partners in the Clean Coal Technology Program since its beginnings. Of the 40 projects funded through the program, 15 received support from state governments or state universities. The states of Alaska, Ohio, Pennsylvania, Indiana, Illinois and New York and the universities of Georgia and North Dakota all have participated in Clean Coal projects. Ohio alone was a funding partner in six projects, and Illinois and Pennsylvania supported two projects each. States provided only about 3% of total program funding, but their participation was crucial in building political and funding support for many of the co-funded projects.

It's always been clear that the participating states perceive they have something to gain from the commercial development and deployment of Clean Coal Technologies. The states' role in Clean Coal Technology development has been a parochial one, aimed at fortifying specific economic strengths as well as providing long-term energy and environmental benefits to their citizens.

When the Clean Coal Technology program began in 1985, there was a very different culture in states than the one that exists now. At that time, a typical debate in my state legislature involved which tax to raise, how to come up with a dedicated funding stream, how much more bonding authority to approve -- basically, how to get the money to pay for more and bigger programs.

Coal development programs enjoyed strong political and funding support in a number of states even before the federal Clean Coal Program was established. In Illinois, for example, we had already cofunded several technology demonstration projects by 1985. We were embarking on a

series of industrial-scale demonstrations using advanced fluidized bed combustion systems. We were developing a demonstration of the Chiyoda scrubber at the University of Illinois. We had just received funding for a major coal R&D effort, in addition to participating in the national Clean Coal Technology program. Clean energy was a real priority in state and national programs and policies.

Ten years later, states are still interested in clean coal technologies, but there have been some fundamental changes in the type and amount of support that states provide. I'm going to briefly discuss some of the challenges states face and how they have influenced state activities.

II. CHALLENGES

Many speakers over the last few days have cited the challenges facing Clean Coal Technology deployment: emerging environmental issues, electric utility deregulation, the current excess capacity in domestic utility markets, the dynamic relationship between coal and natural gas, the costs and status of technology deployment, et cetera. All of these factors have undoubtedly influenced the decisions of all of the participants in the Clean Coal Program in some respect.

The unique differences between states make it difficult to talk about a "generic" state outlook or response. From the state perspective, it makes sense to look at these challenges in a kind of aggregate way, and you can boil them down to two central forces: The first is a kind of "uncertainty factor," related to all of the regulatory and market issues that other panelists have discussed. The second is related to the budget problems that states are experiencing. These forces together have changed how states see their role in any future technology deployment initiatives.

Everyone here understands the regulatory and market issues. As of June 30, 1996, regulatory commissions in 44 states had adopted or were evaluating utility deregulation alternatives, according to a study by the General Accounting Office. There are at least 12 deregulation bills in the works in Congress, although it's still unclear whether legislation will advance during this session. Illinois' Office of Coal Marking and Development has produced a white paper on the effect of utility restructuring on our state, with specific attention to impacts on the coal industry. The paper predicts several major changes in utility operations, including consolidation, a switch to performance-based regulations, and the development of regional power pools. It also predicts that with an emphasis on efficiency, existing coal-fired power plants will increase production in the short run due to their lower marginal generation costs. Over the longer term, however, the older, less efficient plants will be retired and replaced with or converted to natural gas. Other states have similar predictions, although there is an emerging body of experts who believe that gas-fired, highly efficient "micropower" plants will supplant utilities as we know them by the end of the next decade. In either scenario, the outlook for new coal use technologies is uncertain.

The impacts of change in environmental regulations on the coal industry are well documented. In 1985, the FOB price of Illinois coal was $30.80/ton; a decade later, the price had fallen 29%, to

$21.80/ton. Mine employment dropped 67% over the same period. Electric utility purchases of Illinois-mined coal fell 25%, from 54.5 million tons to just over 41 million tons. Ohio, Pennsylvania, Indiana, and Kentucky -- the states traditionally most active in coal research and development -- all experienced similar decreases. Meanwhile, exports to the Midwest from the Power River Basin reached an all-time high. Still to come, of course, are the impacts of Phase II of the Clean Air Act. In the environmental arena in particular, uncertainties are driven by forces that are external to state government and it's difficult for states to formulate meaningful technology policy in response.

Then there's the fiscal challenges to states. Over the last decade, states have increasingly had to cope with a structural imbalance between the rate of growth of state revenues and the rate of growth of expenditures. This imbalance has affected every state in some way and it's almost all due to increases in the costs of Medicaid, which pays for health care for the poor and elderly. From 1990 to 1995 these costs -- which are mandatory entitlements -- grew by almost 20% per year, while state revenues increased by about 5% a year.

Today, these Medicaid costs make up 20 to 30% of our state budgets. In Illinois alone, the tab is $6 billion a year. It's impossible to argue that this is not a priority, yet every single other state initiative -- education, child welfare, prisons, mental health, law enforcement, as well as energy and environment and economic development -- has been affected. In the 1990s, states have stopped looking for new ways to spend money, because we are told how we **must** spend it.

Governors and state legislatures have not been inclined to raise revenues to make up the difference. In fact, according to the most recent *Fiscal Survey of the States*, a report produced annually by the National Governor' Association and the National Association of State Budget Officers, 35 states actually decreased taxes in some way last year, continuing a trend that started in the early 1990s.

The regulatory and market uncertainties combined with serious fiscal constraints have led, directly or indirectly, to changes in state programs. In August 1996 *Governing* magazine reported that many states had closed or restructured their energy offices. In fact, Washington, New York, Pennsylvania, Illinois, Mississippi, North Carolina and Tennessee have all recently consolidated their energy programs into larger departments. In the last 6 years, the number of employees in state energy offices has fallen by an average of 14.5%, according to a survey by the National Association of State Energy Officials.

State funding for energy R&D has also declined. In 1995, the General Accounting Office looked at changes in electricity-related R&D for technologies cited by a Secretary of Energy task force as having high and medium long-term potential for meeting national energy goals, including fuel cells, coal gasification and advanced turbines as well as alternative energy technologies. The report noted that "of the 11 large (R&D) programs in the nine states reviewed, 7 have been reduced in the last three years." Overall, the GAO study found a 30% reduction in state funding for advanced power generation R&D, from $83 million to $58 million, over the two year period surveyed.

I should also note here that the federal government and electric utilities also reduced R&D funding over the same period. Overall tight budgets and the increased competition expected from utility deregulation were cited as the principal reasons for declining support.

III. STATE ACTIVITIES

The good news is, even though programs have been downside and restructured, there is still a significant amount of state activity and interest in the support of coal and clean coal technologies. The state energy officials that I interviewed consistently cited a sharpening of goals in their programs and a feeling of greater accountability in setting economic development priorities.

In those states that have traditionally pursued clean coal technologies and coal development, the approach today appears to have shifted from big incentives for major development projects to more pragmatic, focused actions such as exploration of niche markets, promoting export opportunities, technical assistance and education.

There is one notable exception to this generalization. Mississippi, one of a handful of states projected to need new generating capacity, is undertaking a major lignite development project that will likely use an advanced, clean technology. Last year, the Mississippi state legislature expanded the scope of general obligation bonding authority and earmarked $30 million toward the development of a 400 MW lignite-fired generating plant and associated industrial complex, diverting bonding authority previously earmarked for the Strategic Petroleum Reserve. A coal company, electric utility and the state and local government are partnering in the project, which is still in its developmental stages.

In Kentucky, a state with a long history of support for coal research and technology projects, state officials have made a decision to focus their efforts on education at the elementary school level. Bill Grable, director of the Kentucky Coal Marketing and Export Council, plans to personally visit public schools throughout the state to bring students the message of the importance of coal to the state economy and the opportunities for environmentally sound coal use.

Pennsylvania has restructured its energy office and put it in the state Department of Environmental Protection. The Pennsylvania Energy Development Authority no longer exists as an active R&D organization. The new Department of Environmental Protection has become business-friendly, according to state officials, and has created the Office of Compliance Assistance to work with companies on pollution reduction. This would include assistance in planning for advanced technology retrofit projects.

In Ohio, the state is exploring niche markets for coal, including industrial projects. Ohio appears to be the only state where programs are specifically configured to promote Clean Coal Technology deployment. The Ohio statute allows state funding for up to three replications of a

first-of-a-kind technology. Other states might consider such a statute to allow for participation in the deployment phase.

Illinois has a number of major projects ongoing. The state has also undertaken specific activities relevant to the deployment of Clean Coal Technologies, including the development of an interactive, computer-aided design package for State of the Art Power Plants using advanced technologies. Illinois is also supporting a series of workshops to bring together technology manufacturers and electric utility operators to share solutions to changing environmental standards. In addition, Governor Edgar has recently announced a multi-million dollar plan to expand markets for Illinois coal and improve the state's coal transportation, export and delivery systems. Our Lieutenant Governor, Bob Kustra, has formed a Coal Strategy Group to explore ways to improve the economic viability of Illinois coal. The group is made up of leaders of the Illinois Coal Association, the United Mine Workers of America and several state agencies. The Coal Strategy Group has been active in development of legislation to support the state's coal industry.

IV. THE NEED FOR LEADERSHIP

Realistically, individual states will not make much of an impact on Clean Coal Technology deployment in the near term. State energy officials are highly supportive of deployment, and they think that these technologies merit continued federal support and leadership in the deployment phase. Federal tax incentives, expedited permit protocols, targeted export assistance and graduated support for successive replications were some of the ways that states suggested to help promote commercial deployment.

It's interesting to note that one regional organization, the Southern States Energy Board, has established an effort to promote the increased use of U.S. coal and the transfer of Clean Coal Technologies. SSEB's activities include participation in major coal forums to serve as a focus for state interest in Clean Coal Technologies, facilitating discussions of market development and penetration potential for these technologies, and identifying institutional barriers to their use. Other states might want to join forces with SSEB or organize their own regional effort.

State officials also stressed the importance of raising the profile of the program at the national level. The Clean Coal Technology program has not received nearly enough credit for what it has accomplished. I'm not being critical of the federal Clean Coal program leadership, because they've done an admirable job of keeping interested parties informed about its accomplishments. States are concerned, however, about the lack of attention to this program in national policy, and beyond that, the lack of attention to any coherent policies that incorporate realistic energy goals.

Our national political leaders seem to spend a lot of time hyping things like public-private sector cooperative efforts, development of emerging markets for technologies, export opportunities, building national excellence, and promoting environmental quality. These are all attributes of the Clean Coal Technology program. It should be recognized as a model initiative and the

embodiment of important national policy goals. We are taking a lot of rhetorical and actual pride in our ability to get things done, but, as far as energy is concerned, there is very little attention given to what it is we should do and why we should do it.

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