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RACE TO THE TOP:

THE EXPANDING ROLE OF U.S. STATE RENEWABLE PORTFOLIO STANDARDS

by Barry Rabe*

INTRODUCTION

The role of U.S. state governments in developing policies to reduce greenhouse gas (“GHG”) emissions continues to expand. One of the most widely-used policy tools is a renewable portfolio standard (“RPS”). RPSs mandate that utilities operating within a state must provide a designated amount of power from renewable sources as a portion of their overall provision of electricity. This policy is not unique to the United States, but the RPS has proliferated among the U.S. states at a rapid rate. Twenty-three states and the District of Columbia have adopted an RPS as of mid-2007, with a strong likelihood of continued expansion.

The proliferation of state RPSs and the decision to expand initial policies illustrate that these regulations tend to draw a fairly broad base of political support that often crosses partisan lines. States are motivated to enact or expand RPSs for multiple reasons, and GHG emissions may or may not be a central factor. This paper presents an overview of the RPS as policy tool and examines key factors in both policy formation and implementation. This work considers the experience of all RPS states but devotes particular attention to five case studies illustrating common themes and points of divergence among individual state programs. The analysis concludes by identifying opportunities and challenges facing future development.

PROLIFERATION OF THE RPS

The RPS combines the policy strategies of regulation and reliance on market mechanisms that is a hallmark of more recent innovations in U.S. environmental and energy policy.¹ For most states, establishing an RPS merely involves an incremental expansion of existing regulatory powers over electricity generation and distribution. Alongside their historic roles in overseeing regulated utilities, market restructuring, approval and siting of new generating facilities, and electricity rate-setting and taxation, states have for decades sought ways to promote renewable energy sources as well as energy conservation.² Consequently, many state officials view RPSs as simply a new mechanism to respond to public demand for a reliable, inexpensive, and environmentally friendly electricity supply. With the exception of the Southeast, every region in the United States has at least one RPS in operation at this point. Many states with the largest populations and levels of electricity consumption have enacted RPSs, including California, Illinois, New York, Pennsylvania, and Texas.

POLITICAL DRIVERS

Many areas of state energy policy are enormously contentious, particularly those that propose significant changes for privately held utilities that have traditionally dominated service

delivery in a jurisdiction, as has been evident in the battles over proposed restructuring (or deregulation) of wholesale and retail electricity rates.³ RPSs indeed call for significant changes from past practice, but generally receive bi-partisan support.

Formal representation in the state legislative process from renewable energy developers eager to expand their role is becoming increasingly apparent.⁴ In numerous states, these organizations are more visible and influential in RPS deliberations than conventional environmental advocacy groups. GHG reduction constitutes one important benefit from greater use of renewable energy and has been an important consideration, but in many instances, climate benefits are deemed ancillary to a variety of economic advantages. For example, for states frustrated with the unanticipated volatility in natural gas prices over the past half-decade, the prospect of more predictable generation costs through renewables is increasingly attractive.

One common factor facilitating diverse support of RPSs is the perception that promoting renewable energy through these standards produces economic benefits compatible with the major state goal of promoting economic development.⁵ Whereas fuel accounts for much of the cost for conventional electricity, renewables concentrate a larger share of their total costs on labor. Development is particularly attractive if new renewable sources are developed within a state’s boundaries supplanting imported fossil fuels.

COMMON DESIGN TRENDS

Individual RPSs differ but share similar design features. All RPSs establish a percentage or amount of renewable electricity generation or capacity requirement that suppliers must provide by a particular date. Each state program defines qualifying renewable electricity sources and, over time, increases the amount of renewable capacity or generation to meet the standard. Most states allow regulated parties to generate their own renewable supply or purchase credits from other suppliers. The so-called renewable energy credit (“REC”) system is an example of market-based mechanisms that allows options for assuring compliance, enabling suppliers to meet regulatory requirements in the most inexpensive way feasible. In turn, each state RPS

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designates a lead governmental agency, commonly the state public utility commission, to oversee implementation.

States have increasingly tended to elevate the bar for the amount of electricity required by an RPS;⁶ resembling a multi-state “race-to-the-top,” whereby many states are committing to future renewable energy levels that seemed inconceivable a half-decade ago and many states are revising their initial requirements upward. State RPS programs are increasingly complemented by other initiatives to promote renewable energy and energy efficiency. While states historically did not favor one renewable source over another in their RPSs, they have begun to modify that practice placing renewables into differing classes. Some mandate that a specific source comprise some percentage of the RPS to boost relatively expensive technologies, such as solar photovoltaics,⁷ raising cost concerns in policy debates.

As RPSs proliferate, increased issues of inter-state collaboration arise.⁸ To date, there has been relatively modest interaction on RPS development between neighboring states, reflecting the “home-grown” nature of RPS. But issues such as inter-state recognition and trading of RECs loom larger and may necessitate new forms of inter-state collaboration. Greater intergovernmental collaboration could also cross national boundaries, involving Canadian provinces and Mexican states, reflecting the reality that much North American energy flows north-south and is indifferent to national borders.⁹

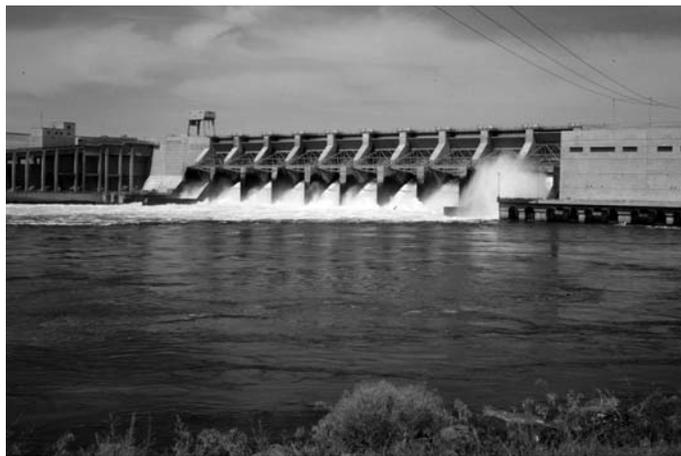
Finally, as states move beyond RPS policy enactment into implementation, extensive rule-making provisions are necessary and in some cases, leading to revised legislation. A growing concern involves siting processes, both for renewable energy facilities and transmission capacity to move renewable energy from its point of generation to its point of use. In some instances, political issues related to facility or transmission line siting may be the most important determinant of long-term RPS viability and development.

ILLUSTRATIVE CASE STUDIES

Five cases—Texas, Massachusetts, Nevada, Pennsylvania, and Colorado—represent different patterns of political control at enactment, and have divergent historic levels of commitment to environmental policy. Representing different time periods at enactment, they vary in their degree of interstate engagement on policy collaboration. The following cases do not constitute any effort to highlight “best practices.” Instead, they provide a glimpse into common patterns and divergence in current practice.

TEXAS: A GUST IN THE WIND RUSH

Given its historic role in fossil fuel development and use, Texas might appear to be an unlikely setting for a major RPS commitment. However, the RPS enacted in 1999 under then-Governor George W. Bush triggered a massive increase in the supply of renewables at highly competitive prices. The program has proven so successful that the Texas Legislature overwhelmingly endorsed a major extension and expansion of the legislation, signed into law by Republican Governor Rick Perry on August 1, 2005.¹⁰



Courtesy of Anne Nolan

Ice Harbor Dam, on the Snake River in Southeastern Washington State, is an example of a renewable energy source being utilized by a state as a portion of its overall provision of electricity.

Electricity restructuring in the late 1990s opened a window of opportunity for Texas to reconsider all dimensions of its electricity system. Several factors converged to push an RPS onto the state’s political agenda, including supply concerns, environmental problems, and the availability of enormous wind resources. Moreover, an extensive series of “deliberative opinion polls” demonstrated strong public consensus for a commitment to renewables.¹¹

The first piece of RPS legislation is regarded as a textbook model, establishing a clear and effective REC program, a transparent market transaction process, and an “alternative compliance mechanism” that provides options, albeit costly ones, for electricity suppliers unable to meet standard requirements. The RPS focused on total renewable generation capacity and called for an increase from 1280 megawatts (“MW”) in January 2003 to 2880 MW by January 2009, including approximately 880 MW of renewables, primarily older hydro facilities, in operation for many decades before enactment of the RPS.

While the policy did not favor any particular source, it has had the effect of tapping into the state’s massive wind capacity. In 2007, 1361 MW of new wind generation is expected to be on line, leading to a total of 2600 expected MW of wind generation online by 2011.¹² This new wind capacity, alongside renewable projects under construction or advanced stages of the approval process, indicates that Texas will easily meet and exceed its 2009 standard. Moreover, wind energy is produced at rates that are highly competitive with conventional sources when the federal production tax credit (which stands at 1.9 cents per kilowatt hour in April 2007) is included.¹³

The second RPS iteration did not change the basic mechanics of the initial design but it elevated the levels of renewables required by 2007 and 2009 and specified continued expansion into the next decade. The legislation amended Section 39.905 of the Texas Utilities Code to require that “The cumulative installed renewable capacity in this state shall total 5880 megawatts by January 1, 2015.”¹⁴

The unexpectedly rapid development of wind energy in remote sections of Western Texas placed significant demands on

the relatively modest transmission systems that deliver electricity to areas of high demand. This constraint is linked with a larger challenge in Texas, and nationwide, to upgrade and expand the transmission system. As the Texas Public Utilities Commission (“TPUC”) considers transmission, developers realize that there are many possible places for renewables and are aware of the need to link new generation with transmission access. Texas faces a particularly acute challenge and the new legislation calls upon the TPUC “to construct transmission capacity necessary” to deliver anticipated expansion of renewables. Implementation of this provision may be the single most important factor in determining effectiveness of the new RPS.

MASSACHUSETTS: ONE COMPONENT OF A BROAD CLIMATE STRATEGY

Like Texas, Massachusetts developed its RPS in the late 1990s in conjunction with legislation authorizing electricity restructuring. The state also had prior history with promoting renewable energy and significant concerns about electricity cost and supply reliability. While it considers renewable development as part of its long-term economic development, unlike Texas, Massachusetts is explicit about the role of its RPS as part of a broad strategy to address climate change.

The Massachusetts RPS focuses exclusively on new sources of renewable energy or expansion in existing generating capacity, with an initial one percent level to represent sources brought on line between December 31, 1997 and January 1, 2003. Thereafter, renewables must be increased at a rate of 0.5 percent per year, reaching four percent by 2009. At this point, the legislation creates an open-ended increase of one percent per year, until 2009 unless the Massachusetts Division of Energy Resources decides otherwise.¹⁵ The 1997 authorizing legislation establishes a series of alternative compliance payments “to maximize the commercial development of new renewable generation capacity” where direct purchase of renewables is not viable.¹⁶ Similar to seventeen other states, Massachusetts enacted a mandatory “public benefits” charge on electricity bills to support renewable energy. Collectively, these efforts provide a base of support for renewables that is not offered in Texas or some other states.

At the same time, the RPS and related energy initiatives are only a component of Massachusetts’ broader effort to link GHG reduction with economic development. In February 2007, Massachusetts formally joined the Regional Greenhouse Gas Initiative (“RGGI”), a regional “cap-and-trade” program for carbon dioxide emissions from fossil fuel burning power plants.¹⁷ The

state pioneered efforts in 2001 to cap its own releases from these sources.¹⁸ It is also among the parties who successfully challenged the United States Environmental Protection Agency at the Supreme Court level to regulate carbon dioxide from automobile emissions as a pollutant under the Clean Air Act.¹⁹ Each of these steps systematically link climate protection with economic development.

Implementation of the Massachusetts RPS has not triggered the exponential growth of renewable energy that is occurring in Texas, but it has successfully met requirements by relying on out-of-state renewable electricity. A comprehensive report from the Massachusetts Division of Energy Resources (“DOER”) released this year concluded that all twenty parties covered by the RPS achieved compliance in 2005.²⁰ However, there was a shortage of RECs available in the market, which all but three of the parties required to achieve compliance due to increased

demand, among other factors.²¹ Additionally, the report noted that DOER expects a better supply/demand balance due to an expected increase in new renewable capacity by 2007.²²

Massachusetts officials recognize that there may be increasing regional demand for renewable energy and consequently will emphasize in-state renewable energy development, attractive for economic development reasons, but posing serious challenges to implementation. For instance, the Cape Wind Project, a major wind siting initiative off the shore of Nantucket is in serious jeopardy due to political opposition. If imple-

mented, this would involve the placement of approximately 130 wind turbines on a shoal and would meet a significant portion of Massachusetts’ RPS requirement in the coming years.²³ Local response has been largely negative, out of concern about the appearance of the turbines and their possible impact on tourism, recreation, and property values of some of the most expensive real estate in the Northeast. Opponents include U.S. Senators from both political parties whose families hold property in the area; they have attempted to amend various federal laws to thwart the proposed project.²⁴ Massachusetts’ officials acknowledge that the Cape Wind development is highly doubtful.

In response to the Cape Wind controversy, wind proponents have attempted public outreach in exploring the possibility of developing a set of smaller wind sources. In turn, other renewable technologies are receiving greater attention, reflected in a particularly strong emphasis by potential private developers and state officials in a possible expansion of biomass capacity in Massachusetts and neighboring states. Biomass, however, does not begin to match the scale of renewable energy anticipated

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from Cape Wind, and has triggered its own set of controversies. State officials are moving toward finalization of regulations for biomass eligibility but these will not resolve the considerable uncertainty regarding Massachusetts' ability to achieve its ascending RPS targets in the coming years.

NEVADA: THE NEXT TEXAS?

Unlike Texas and Massachusetts, Nevada decided not to pursue electricity restructuring, shaken by the experience of California. However, energy issues retained saliency in Nevada throughout the last decade. As the state's population and economy have expanded, so too have electricity demand and reliability concerns. Additionally, as the federal government continues to press the case that all of the nation's high-level radioactive waste should be transferred to a repository in the southern part of the state at Yucca Mountain, a unifying theme in Nevada politics has been to take every conceivable step to demonstrate to the nation that there are viable alternatives to nuclear energy.²⁵

These factors have converged to make renewable energy, and RPS legislation, a staple in the Nevada legislature. Building on a fairly modest start in 1997, Nevada has continually expanded its RPS and come to depict itself as an emerging national leader in renewable energy generation. In its most recent iteration, signed into law by Republican Governor Kenny Guinn in June 2005, Nevada elected to "up the bar" again, mandating that twenty percent of Nevada's electricity come from renewable sources by 2015.²⁶

Few anticipated such an ambitious target in 1997 when the legislature enacted an RPS that called for a very modest set of incremental increases in renewable energy, reaching one percent by 2009.²⁷ The primary driver behind that legislation was an effort to promote a large solar facility near the Nevada Test Site, which is best known as a former weapons testing facility proposed as a transitional waste transfer site prior to the planned opening of Yucca Mountain. The project collapsed for financial reasons; however, the framework for RPS expansion was established. Four years later, during the California electricity crisis that prompted that state to desperately attempt to increase imports of energy from its neighbors, the Nevada legislature repealed the earlier bill and replaced it with a far more expansive and ambitious RPS, including a markedly higher standard that reached fifteen percent of electricity from renewable sources by 2013.²⁸ Many important provisions were modeled after the RPS experience in Texas, including the renewable energy credit system and a provision to confine eligible electricity to that generated within state boundaries or imported through a dedicated transmission line.

Unlike Texas, Nevada decided to retain a solar carve-out, although reducing the level from solar electricity to five percent from the higher level established in 1997. Additionally, whereas Texas quickly realized that it was likely to derive most of its renewables from one source (wind) in one part of the state (West Texas), Nevada prepared for a much more diverse set of energy sources (including geothermal, wind, solar, biomass, and others) from virtually every corner of the state.

Over the next four years, however, Nevada would return its RPS to the legislative shop for further modification, reflecting broad consensus about the potential for renewable expansion and its possible impact on economic development, although environmental benefits remain salient as concerns about air

quality and nuclear waste storage persist. Anticipated GHG reductions have not figured prominently, although state officials have become increasingly aware of this issue.

Nevada's 2003 revisions provided a new boost for solar energy, through development of a REC bonus or "multiplier" for electricity that is generated from the sun as opposed to other sources.²⁹ Two years later, Nevada literally transformed its renewable energy credits into "portfolio energy credits" by giving RPS credit to approved energy efficiency activities.³⁰ The repeated modifications of the Nevada RPS have given the Public Utility Commission of Nevada a series of implementation challenges, involving a massive set of rule-making procedures that have continued into 2007.

PENNSYLVANIA: GREEN AS GOLD

Pennsylvania's attraction to renewable energy has mainly been economical, but under unique circumstances. The Commonwealth suffered from a significant loss of jobs, particularly in the manufacturing sector, and recent governors and legislators have struggled to revitalize the economy. It has also suffered from a series of environmental problems that may have impaired economic development, including an unusually large number of land tracts with extensive environmental contamination. At the same time, coal mining and coal use in electricity have been Pennsylvania staples for generations, posing formidable challenges for any policies that might encroach on that resource.

In recent years, Pennsylvania has given new prominence to environmental protection and renewable energy, a hallmark of the administration of Democratic Governor Edward Rendell, who frames environmental improvements and renewable energy as essential for economic development. As a result, legislation and program initiatives supporting the Commonwealth's development of renewable energy sources and technologies, as well as environmental clean-up expertise, have been part of a larger

RPSs continue to proliferate and mature, with the possibility of eventual incorporation into a policy that applies across jurisdictions.

strategy to revitalize the economy. This effort has included a series of tax incentives and renewable energy development programs, with the centerpiece being the enactment in November 2004 of the Pennsylvania Alternative Energy Portfolio Standards Act.³¹ Introduced with bipartisan support, this legislation took effect in March 2005, followed by extensive rulemaking directed by the Pennsylvania Public Utility Commission.

Pennsylvania had some prior experience with renewables, including 129 MW of wind power and a variety of hydro sources. It retains, of course, its strong historic linkage with coal, which was evident in its unique definition of what constitutes a qualifying source. Like several other states, Pennsylvania divided its Alternative Energy Portfolio Standard (“AEPS”) into two distinct categories, with Tier I sources required to climb to a level of eight percent by 2020 and Tier II sources required to reach a level of ten percent by that same year. Under Tier I, the legislation includes such familiar renewable sources as wind, geothermal, solar photovoltaic, low-impact hydropower, biologically derived methane gas, biomass, and fuel cells. However, it also includes coalmine methane. Under Tier II, Pennsylvania joins Nevada in including energy efficiency, but also adds environmentally controversial sources such as waste coal, integrated coal gasification combined cycle, and incineration of municipal trash and poultry farm wastes. This expansive definition made the passage of the Pennsylvania legislation unusually controversial and state-based environmental groups characterized the proposal as “the dirtiest RPS” in the nation and urged the legislature to narrow the definition of eligible energy sources. At the same time, supporters contended that the creation of Tier II essentially accepted energy sources that were already on line to be developed and that Tier I would foster considerable new renewable capacity in the state.

Overshadowed by the definitional controversies, the Pennsylvania AEPS does make specific commitments to solar energy and energy efficiency. It continues the trend in recent years toward boosting the prospects for solar electricity through a designated percentage of Tier I energy that must be derived from solar sources. In turn, it preceded Nevada by several months in encouraging “the participation of demand side management and energy efficiency resources” as eligible for inclusion within an RPS, placing them alongside the more controversial items in Tier II.³²

Many of the details of these provisions continue to be refined through rule-making procedures. Initial rule-making indicates that defining the boundaries from which renewable energy can be counted toward the Pennsylvania standard will entail a major challenge. Much like other Eastern states, Pennsylvania has substantial cross-border exchange of energy. Most of the Commonwealth is located within one regional transmission organization, the PJM Interconnection that integrates Pennsylvania with electricity providers in twelve states and the District of Columbia. However, portions of the state are located in other regional organizations, suggesting that a wide range of states could conceivably contribute renewable energy to Pennsylvania. The RPS legislation establishes that eligible energy must be “derived only” from

within Pennsylvania or “within the service territory of any regional transmission organization that manages the transmission system in any part of this Commonwealth.”³³ Debate over just how to interpret that clause continues, weighing the constitutional requirement not to constrain interstate commerce against Pennsylvania’s desire to capture economic and environmental benefits of renewable energy internally.

COLORADO: POWER TO THE PEOPLE

For many years, the lone mechanism whereby states enacted RPSs and related state policies to reduce GHGs involved the traditional channels of representative government. But the majority of U.S. states have constitutional provisions allowing legislation through majority vote of the electorate; states have used them increasingly in recent decades on a range of environmental and energy issues.³⁴ Consistent with that trend, in November 2004, Colorado became the first state to enact an RPS through “direct democracy” when Proposition 37 passed by a 54-to-46 percent margin. This led to rule-making by the Colorado Public Utility Commission, with an Order released in December 2005 requiring three percent of electricity generation from renewables, and increasing their renewable output to ten percent by 2015.

More recently, Colorado has vastly expanded its RPS goals as newly elected Democratic Governor Bill Ritter signed two bills in April 2007 doubling the state’s RPS to twenty percent by 2020 and constructing new transmission crucial to delivering the renewably generated energy.³⁵ The development of a new energy economy is central to Governor Ritter’s policy platform, and is focused on creating jobs, adding economic value to the state and establishing Colorado as a potential national leader in the new energy economy.³⁶

The ballot initiative happened after a coalition headed by utilities and coal-mining interests blocked an RPS in three consecutive sessions of the Colorado legislature. Indeed, Colorado had been among those states most reluctant to take any steps related to GHG emissions during the previous decade.³⁷ At the same time, proponents felt that there was a strong base of support for the RPS. Consequently, supporters decided upon a ballot initiative and the opposition, under a banner of Citizens for Sensible Energy Choices, spent more than U.S. \$2 million investing heavily in a television advertising campaign focusing on potential costs. However, support was maintained through a campaign with bipartisan leadership and a tapestry of supporters, representing numerous renewable energy developers, agriculture and ranching interests, public health and environmental protection constituencies, and various religious organizations. Proposition 37 also received endorsements from most of the state’s major media outlets. A number of anticipated environmental benefits were raised during the campaign but the most important driver behind the passage of Proposition 37 was projected economic development from expanding renewable capacity.³⁸

Just as new policies can diffuse across states through representative institutions, there is ample precedent for one state’s use of direct democracy provisions to trigger replication elsewhere. The Colorado RPS attracted considerable national publicity due to its route of enactment and RPS proponents in Washington

state successfully followed its model in November 2006 with the enactment of its own RPS by ballot initiative.³⁹

CHALLENGES AND OPPORTUNITIES: THE NEXT ROUND OF RPS DEVELOPMENT

In anticipating the next generation of RPS development, a series of important challenges and opportunities appears to loom, concerning both continued policy development by individual states and increasingly salient interstate and intergovernmental factors.

First, a series of important issues has begun to emerge that may not have been fully anticipated at the point of enactment but could pose a challenge to successful implementation. Part of the initial attraction of the RPS concept was that while it did impose regulatory requirements specifying the amount of renewable energy that would be provided, it did not favor one source over another as long as it was deemed eligible. The growing tendency to accord specialized status to more expensive renewable sources removes the level playing field originally intended in most states and, in some instances, may require significant financial subsidies from state sources or rate payers and thereby raise the cost of the policies. Moreover, the shift toward differential treatment has moved some of the recent debate over renewable energy policy in state capitals toward a collision between competing special interests, each seeking preferential treatment.⁴⁰ Over time, one could envision a transformation whereby a well-intended effort to supplement select renewable sources altered RPSs into a complex formula with differential treatment for varied sources, thereby removing much of the flexibility of this policy tool and increasing the cost of implementation.

Second, much of the early planning for RPS targets assumed public support for renewable energy not only in general terms but also in presumed receptivity to siting facilities and related transmission capacity. In two of the five cases, one of the most important determinants of RPS success will involve siting issues. This problem may become common for states with relatively concentrated and populated areas for outstanding renewable sources. More generally, the development of both intra-state and inter-state transmission capacity remains a significant challenge, particularly in those regions of the country where there is substantial physical distance between the energy source and its potential consumers.

Third, the challenge of developing superior transmission capacity and RPS proliferation more broadly suggests an increasing likelihood that states may benefit from greater interaction and collaboration with each other. This may include agreements for common definitions of renewables and related credits as well as shared efforts to promote regionally based renewable resources with high potential. States will also need to guard against “double counting,” ensuring that renewable generation can only count toward RPS and GHG reduction requirements in one state. Thus far, states are clearly learning lessons from one another, just as Nevada has closely monitored developments in Texas in refashioning its own RPS. Much of this cross-state interaction, however, occurs only sporadically and state officials across the United States acknowledge that they lack

resources to carefully evaluate other programs and draw important lessons. Review of legislative testimony in all of the states examined as case studies suggests only occasional and often imprecise reference to the experience of other states. State budget woes erode the capacity of some state agencies to maintain policy analysis expertise, attend conferences and workshops out of state, and monitor developments in neighboring states.

In turn, pressures to maximize the capture of economic development benefits within state boundaries can serve to deter serious exploration of cross-state collaboration. One area with considerable potential for inter-state collaboration is the development of a common metric for determining the GHG emissions impacts as various levels of renewable energy are brought on line in concert with RPS requirements. Interstate collaboration could also take other forms, allowing neighboring RPS states to trade RECs and encourage integration between RPS implementation and other state policies designed to reduce GHG through both informal and formal agreements between states.

Renewable energy—and RPSs—may offer similar opportunities for states, much as other states are beginning to join common cause on other climate initiatives. Such collaborative precedents might fruitfully guide states away from steps that significantly constrain interstate movement of renewable energy and potentially violate the Commerce Clause of the U.S. Constitution. It is conceivable that policies that are in some way designed to minimize the role of out-of-state renewables in meeting RPS targets could face a Constitutional challenge. Examples of such policies include those that confine acceptable imports to those that arrive via a dedicated transmission line, most notably Nevada and Texas. The Constitutional boundaries are not at all clear in this area, especially given the recent departure from the Supreme Court of Justices William Rehnquist and Sandra Day O’Connor, who held strong views on the power of states in relation to the federal government. To date, no legal challenges invoking the Commerce Clause have been brought against a state RPS. Nonetheless, the very possibility of such a challenge further underscores the potential benefits of greater interstate collaboration to minimize the likelihood of such a confrontation.

Fourth, as the United States moves toward a *de facto* national RPS through a tapestry of state-based programs, it is important to find ways that the federal government can play a constructive and supportive role. President George W. Bush signed the Texas RPS into law in 1999. That statehouse experience has not, however, necessarily translated into constructive federal engagement and support for continued state experimentation with RPSs. Indeed, it is difficult to understate the antipathy across partisan and regional lines that individuals responsible for different areas of RPS development and implementation at the state level express over their dealings with the federal government. Moreover, repeated fluctuation in the federal production tax credit for renewable energy has fostered a boom-and-bust cycle for renewable development in a number of states, leaving significant lags in the development of renewables during those periods in which the credit has been terminated or

its status has remained uncertain. Additionally, state officials are opposed to any federal legislation that would preempt or constrain existing state policies and are very concerned about any steps that would penalize them for taking early actions.

One constructive step that could occur on the national level is a sequence of Congressional hearings designed to distill lessons from state practice that could guide future consideration of the design of a federal RPS.⁴¹ Such hearings might also explore models for a two-tier RPS system, with one tier that established a national framework and national REC trading process alongside another that allowed them to sustain renewable targets above any federal level through their own programs. Terms for state entrance into a possible federal program have been a major focus in the creation of the RGGI, the multi-state effort to establish a carbon cap-and-trade program in the Northeast. This experience and lessons from other forms of intergovernmental collaboration in environmental policy could also afford useful guidance for possible models of state and federal cooperation under a multi-tier RPS.

State policy makers perceive the federal production tax credit as an essential step to level the playing field with conventional sources that have long received a range of governmental subsidies. They also acknowledge the need for federal assistance in improving transmission capacity, particularly given the challenge of tapping renewable sources in remote areas and finding ways to transfer such electricity to high-demand areas. In turn, many state officials note that the federal government could also promote interstate learning about RPS experience and help with the development of common metrics to determine GHG impacts

as well as foster cross-state collaboration. It remains unclear whether the federal government might at some point draw larger lessons from the states and develop a nation-wide version of an RPS that thoughtfully and systematically builds on the best practices of state experience.

At present, the American experience resembles that of other federated systems of government, such as the European Union and Australia. In all of these cases, RPSs continue to proliferate and mature, with the possibility of eventual incorporation into a policy that applies across jurisdictions. For now, states have moved to the cutting edge of this issue, having evolved in recent years from modest experimentation to the assumption of central roles in this area of climate policy development.

CONCLUSION

The 23 states that currently operate an RPS represent nearly every region in the country. Each RPS embodies the same principles, but tailor particular programs to special state circumstances. Early indicators suggest that RPSs have considerable promise for boosting renewable energy supplies and doing so in a cost-effective manner. The basic structure of an RPS involves a blending of regulation and delegation of many choices to the marketplace that is clearly appealing to a diverse set of elected officials and organized interests. Collectively, the evolving and expanding state experience with RPSs confirms the very real potential of policy development that simultaneously advances economic and environmental progress. At the same time, a number of implementation challenges have arisen that underscore the importance of careful policy design.



Endnotes: Race to the Top

¹ MAZMANIAN & KRAFT, TOWARD SUSTAINABLE COMMUNITIES: TRANSITION AND TRANSFORMATION IN ENVIRONMENTAL POLICY (1999).

² PAUL TESKE, REGULATION IN THE STATES (2004); WILLIAM T GORMLEY, THE POLITICS OF PUBLIC UTILITY REGULATION (1983); ED SMOLOFF & PETER ASMUS, REINVENTING ELECTRIC UTILITIES (1987).

³ MATTHEW BROWN, RESTRUCTURING IN RETROSPECT (2001), available at http://www.oe.energy.gov/DocumentsandMedia/restructuring_in_retrospect.pdf (last visited Apr. 15, 2007).

⁴ Barry G. Rabe & Philip Mundo, *Business Influence in State-Level Environmental Policy*, in BUSINESS AND ENVIRONMENTAL POLICY 265, 297 (Michael Kraft & Sheldon Kamieniecki eds., 2007).

⁵ PAUL E. PETERSON, THE PRICE OF FEDERALISM (1995).

⁶ While all maintain some phase-in policy over a specified period of time, the end target date tends to feature increasingly high levels of renewables. More recent RPS enactment has tended toward more ambitious levels, consistently in double-digits and as high as twenty percent by 2020 in California and 25 percent by 2013 in New York.

⁷ For instance, approximately 80 percent of New Jersey's new renewable capacity must fall into Class I, which includes sources that have been deemed to have the least environmental impact. In turn, New Jersey's RPS features a "solar carve-out," which mandates that at least 90 megawatts of the new capacity in that class must come from solar sources by 2008, and 1500 megawatts by 2020.

⁸ States have a clear incentive to attempt to retain any economic development and environmental benefits from promoting renewables. See generally Barry G. Rabe et al., *State Competition as a Source Driving Climate Change Mitigation*,

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