

Power to the people

How states are taking the initiative in alternative energy development

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Executive summary

Concerns over high energy prices, sustainability, and energy security have spurred interest in, and action toward, expanding the alternative energy industry in the United States. Rather than depending solely on federal action, many states have taken the initiative to develop their own alternative energy programs and incentives. These programs are investments that are expected to yield multiple benefits beyond energy generation, such as job creation and economic development, increased individual incomes and business revenues, and with them, state tax revenues. The stakes are high, as states are jockeying to attract the investment and qualified human resources needed to fuel ventures in their jurisdictions.

Energy prices, sustainability of resource use, and energy security concerns significantly influence public policy decisions relating to international relations, geopolitics, environmental policy, and economics. Furthermore, externalities from private actions such as pollution also influence public policy design and implementation. Consequently, maintaining clean air and a healthy environment require public policy action.

Various public policy levers can be employed to expand the alternative energy envelope. These levers include:

1. Incentives to boost supply, such as production subsidies, tax relief on property, and sales tax exemption for projects.
2. Incentives to encourage demand, such as tax relief on alternative energy consumption.
3. Policies to improve distribution networks for alternative fuels, such as targets for gas stations providing E85 fuel.

4. Developing and implementing standards, mandates, and regulations, such as Renewable Portfolio Standards, that define the portion of total production that should come from renewable sources.
5. Funding to develop new technologies or refining existing ones, such as Renewable Energy Development Funds that provide research grants for developing new technologies.
6. Developing markets and market mechanisms to nurture the alternative energy space, such as the emerging market for carbon credits.

Developing alternative energy requires a portfolio of government programs that address demand, supply, distribution, and technology development and commercialization aspects of the challenge. There is no “silver bullet” that will achieve the intermediate policy objective of developing alternative energy or the broader policy objectives of managing energy security, sustainability, and energy prices.

State government initiatives

Recent years have witnessed a flurry of activity at the state level to develop and deploy various alternative energy initiatives. Alternative energy production levels and growth rates vary widely across U.S. states, since they are a product of resource availability, public interest, consumer demand, public sector leadership and commitment, economics of production, and programs and incentives from federal, state, and local governments. While local resource availability is a natural endowment, the other factors are variable, and each can influence the creation, utilization, and effective implementation of state government programs. It is not surprising to me, then, to see differences in the size of the state program portfolios, range of programs offered, funding, and alternative production capacity sponsored by these programs.

California and Minnesota are two states that are taking a leading role in developing alternative energy. The Governors of California and Minnesota have not only encouraged the development of the alternative energy space in their jurisdictions, but have also spearheaded initiatives at the national level, particularly through the National Governors Association. For example, Minnesota is a member, along with Indiana, Iowa, Kansas, Michigan, Ohio, South Dakota, and Wisconsin, of the Energy Security and Climate

Stewardship Platform Plan. This Plan establishes energy program goals for the Midwest region.

California and Minnesota have portfolios of alternative energy programs and incentives (see Table 1 and Table 2). For example, Minnesota's portfolio of government programs range from Renewable Portfolio Standards (RPS) mandates, tax exemptions, loan programs for local production, production subsidies, and infrastructure development programs. As a result, Minnesota is a leading producer of wind and biofuels in the U.S.

Table 1: Examples of recent state programs and fiscal incentives — California

Type of Program/Incentive	Name
Production Incentive	Supplemental Energy Payments (SEPs), California Feed-In Tariff
Property Tax Exemption	Property Tax Exemption for Solar Systems
State Loan Program	Energy Efficiency Financing Program
State Rebate Program	1. California Solar Initiative — Photovoltaics Incentives 2. California Solar Initiative — Pilot Solar Water Heating Program 3. CEC — New Solar Homes Partnership 4. Self-Generation Incentive Program 5. Emerging Renewables Program
Alternative Fuel Development	Alternative Fuel Incentive Development
Alternative Fuel Infrastructure	Alternative Fuel Vehicle (AFV) and Refueling Infrastructure Grants and Loans
Alternative Fuel Development	Alternative Fuel Research and Development
Sources: Database of State Incentives for Renewables and Efficiency. U.S. DoE Energy Efficiency and Renewable Energy.	

Table 2: Examples of recent state programs and fiscal incentives — Minnesota

Type of Program/Incentive	Name
Production Incentive	Renewable Energy Production Incentive
Property Tax Exemption	Wind and Solar-Electric (PV) Systems Exemption
Sales Tax Exemption	1. Solar Sales Tax Exemption 2. Wind Sales Tax Exemption
State Loan Program	1. Agricultural Improvement Loan Program 2. Energy Investment Loan Program 3. Home Energy Loan Program 4. Methane Digester Loan Program 5. MHFA Rental Rehabilitation Loan Program 6. Rental Energy Loan Fund 7. Rural Wind Energy Revolving Loan 8. Value-Added Stock Loan Participation Program
State Rebate Program	State of Minnesota Solar-Electric (PV) Rebate Program
Alternative Fuel Infrastructure	Ethanol Infrastructure Grants
Alternative Fuel Development	Ethanol Production Incentive
Sources: Database of State Incentives for Renewables and Efficiency. U.S. DoE Energy Efficiency and Renewable Energy.	

California is one of the leaders in the development and deployment of policies and mandates. Through the Solar Water Heating and Efficiency Act of 2007, California is providing incentives to attain its

goal of installing 200,000 solar water heating systems in the state by 2017. Examples of California's policies are presented in Table 3.

Table 3: Examples of recent state-level policies, laws and regulations — California

Type of Policy/Law/Mandate	Name
Public Benefits Fund	Public Benefits Funds for Renewables & Efficiency
Renewable Portfolio Standard	Renewable Portfolio Standard
Solar Access Law	1. Solar Easement and the Solar Shade Control Act 2. Solar Rights Act
Standards	West Coast Global Warming Mitigation Initiative
Alternative Fuel/Vehicle Development	1. Alternative Fuels Commission 2. Biofuels Production Mandate and Alternative Fuel Use Study 3. Alternative Fuel Vehicle (AFV) Acquisition Requirements 4. Hydrogen Energy Plan 5. Biofuels Use 6. Alternative Fuel Vehicle License 7. Alternative Fuel Tax

Sources: Database of State Incentives for Renewables and Efficiency. U.S. DoE Energy Efficiency and Renewable Energy.

Minnesota leadership has also been active in new policy development and implementation. In January 2008, Governor Pawlenty of Minnesota, through executive orders and additional proposed legislation, launched energy initiatives that promote the use of local renewable energy technologies, focus on research and development, and create the Minnesota Office of Energy Security

and the Carbon Market Planning Authority. In February 2007, the Minnesota Governor signed legislation that requires energy companies to provide 25 percent of power from renewable sources by 2025 (30 percent for Xcel Energy). Examples of Minnesota's policies are presented in Table 4.

Table 4: Examples of recent state-level policies, laws and regulations — Minnesota

Type of Policy/Law/Mandate	Name
Generation Disclosure	Fuel Mix and Emissions Disclosure
Interconnection Standards	Interconnection Standards
Community Initiatives	Community-Based Energy Development (C-BED) Tariff
Net Metering	Net Metering Rules
Mandatory Utility Green Power Option	Mandatory Utility Green Power Option
Public Benefits Fund	Renewable Development Fund
Standards	Renewable Portfolio Standard
Renewables Set Aside	Xcel Energy Wind and Biomass Generation Mandate
Solar and Wind Access Law	Solar and Wind Easements
Alternative Fuel/Vehicle Development	1. Ethanol Blend Mandate 2. Alternative Fuel Use Requirement 3. Hydrogen Energy Plan 4. Plug-In Hybrid Electric Vehicle (PHEV) and Neighborhood Electric Vehicle (NEV) Initiatives 5. Biodiesel Blend Mandate 6. Biodiesel Task Force 7. Alternative Fuel Use and Vehicle Acquisition Requirements 8. Alternative Fuel Vehicle (AFV) Acquisition Requirements 9. State Agency Emissions Reduction Requirement 10. Alternative Fuel Tax 11. Neighborhood Electric Vehicle (NEV) Access to Roadways

Sources: Database of State Incentives for Renewables and Efficiency. U.S. DoE Energy Efficiency and Renewable Energy.

Other states are also actively developing the regional and local alternative energy markets. For example, Pennsylvania, under Governor Ed Rendell's leadership, intends to develop the state's alternative energy space under an "Energy Independence Strategy." In March 2008, Governor Jim Doyle of Wisconsin released "Clean Energy Wisconsin: A Plan for Energy Independence."

Natural role for state governments

For states, alternative energy programs are investments that are expected to yield multiple benefits beyond energy generation, including job creation and economic development, increasing individual incomes and business revenue, and with those, state tax

revenue. In periods of economic slowdown, the importance of these programs as employment-creation instruments can be even greater. Moreover, as programs take hold, the impact of these benefits can be magnified in a virtuous circle: New investment can attract human resources from other jurisdictions, creating demand for local property, goods, and services and increasing tax revenues.

While some argue that states are acting to "fill in the gap" created by the relative inertia at the federal level, I believe that state-level leadership in developing regional alternative energy industries through programs and incentives is a natural mandate of state governments that goes beyond stop-gap measures. First, variance in natural resource endowments (solar resources in New Mexico,

agricultural resources in the Midwest), industrial infrastructure, fiscal constraints, and human resource availability and quality, require different combinations of programs and incentives at the regional and local level. I expect state government responsiveness to regional characteristics by developing, deploying, managing, and improving programs will be greater than that managed from Washington, D.C.

Second, programs and incentives involving property and sales tax exemptions are predominantly state and local government concerns. Setting the level of local property tax or state sales tax (and exemptions for alternative energy projects) is most effectively handled by local and state governments.

Third, siting issues for new energy production facilities are handled by local and regional stakeholders. State and local government officials are in a better position to design, deploy, manage, and reconfigure programs and manage the stakeholder approval process than officials based at the federal government. Political processes associated with siting decisions managed at the local level are likely to be perceived more favorably than federally managed processes.

Fourth, state and local governments understand local employment and economic conditions better, as they are under direct and closer voter pressure to respond to employment and economic development challenges. This is an important argument for states to develop regional alternative energy industries: They have the strongest incentive to do so. Local governments benefit more, and have a bigger stake in developing regional and local alternative energy industries, than the federal government, which is financed by taxes from the entire set of U.S. regional and local economies.

State governments' role in developing, deploying, managing, and reconfiguring programs neither precludes the leadership role of the federal government in setting national policies nor reduces the importance of federal programs in developing the alternative energy industry in the U.S.. The federal government mandate for setting national emission standards, national energy policy, environmental policy development and implementation with the international community, cannot be substituted by state governments. Furthermore, federal investments in technology development, funding for education and research, policies for conventional energy sources, and programs to accelerate alternative energy development, are critical to the effectiveness of state government actions.

Broader policy focus required for developing alternative energy

The effectiveness of state initiatives to develop regional energy industries and achieve multiple policy objectives depends on several factors that go beyond natural resource endowments or state funding levels. For example, public policy action is required in a space broader than incentives targeted at alternative energy. Appropriate workforce development strategies such as investments in K-12 education, developing research centers in universities, curriculum development to support the new industry, and technical skills and staff development, are force multipliers for developing the alternative energy industries.

Benefits from investments in government incentives can be magnified by retaining as much of the jobs created within the state. Collectively these programs represent components of a state's workforce development strategy. For example, a state that is funding wind energy development in its jurisdiction through production incentives would like to retain, as much as possible, within its jurisdiction, the jobs created by the incentives. Moreover, it would like the state to become a regional hub for the wind industry, capturing the benefits created by incentives offered by other states.

Competition between states and survival of the fittest

State government programs as alternative energy development platforms are likely to be governed by a competitive, market-based, survival-of-the-fittest model. States, and their economies, entrepreneurs, and academic institutions, are competing. States with a combination of effective program design and implementation, well-funded initiatives, commitment from leadership, institutional capacities and infrastructure, and balanced support from businesses and consumers will attract investment and qualified human resources and are likely to emerge ahead of others. Other states may retrench their programs as the costs of running them may grossly outweigh the limited benefits. In these cases, failure can be a sunset clause for the programs—an unfortunate end for initiatives with strong potential to further both state and national interests.

About the author:

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