

In the US, leadership, impetus and replicable policy models for decentralized energy have recently been coming from the regional and state levels rather than the federal level. Christine Hurley Brinker offers some insight on the reasons for and effects of this.

# Decentralized leadership

## policy progress in the US

Policies supporting decentralized energy (DE) in the United States are not racing forward in a blur, much to the dismay of many DE developers, clean energy advocates and potential customers. But nor are they stalled, either. The past year or so has seen a few impressive policy achievements, primarily at the state and regional level.

The need for effective policy facilitating and encouraging DE is clear. In the intermountain region, as in other regions, we are seeing high growth in electricity consumption and water usage, while at the same time facing escalating fuel costs, 'not in my backyard' attitudes towards new transmission lines, continuing air pollution challenges, growing climate change concerns, and new concerns over electric reliability to better cope with major disasters. Given these unprecedented challenges, it will be difficult to meet the demands of load growth solely based on the outdated paradigm of centralized generation with large transmission and distribution investments. DE clearly has a large role to play. As evidence of a need for new solutions, the Western Governors Association recently included DE and CHP (combined heat and power) in its Clean and Diversified Energy Initiative, seeking policy recommendations to ensure adequate, sustainable capacity in the coming decade.<sup>1</sup>

An ideal, gift-wrapped package of policies to encourage and facilitate DE would probably include fair, simplified, streamlined and consistent interconnection standards and procedures; output-based emission standards; reduced or eliminated stand-by/backup charges; adding DE to utility demand-side management programmes, least-cost planning and integrated resource

plans; including DE in state implementation plans; decoupling utility revenue from kilowatt-hour throughput; ensuring various forms of DE are included in renewable portfolio standards; and potentially, tax credits or other incentive programmes for clean and efficient DE.

### SMALL GAINS ON THE FEDERAL LEVEL

For reasons of consistency and effectiveness, some of these policies (especially interconnection, output-based emission standards, renewable portfolio standards and greenhouse gas emissions trading) would probably be best adopted at the federal level.

But the past year has seen only small policy gains on the federal level. One success at the federal level was the development of Federal Energy Regulatory Commission (FERC) interconnection procedures and agreements, though this will have only limited effectiveness. Its major shortfall is that due to jurisdictional issues, the procedures and agreements only apply to interconnections at the transmission level, whereas the vast majority of DE and CHP interconnections are at the distribution level. States and individual utilities are left to fill in the procedures and agreements at the distribution level. It is hoped that states will use the FERC standards as a model when developing their own procedures. (Colorado, for one, recently adopted the FERC procedures in whole for its investor-owned and large municipal utilities. Other states are less likely to adopt it in whole.)



New Belgium Brewery in Fort Collins, Colorado has invested in its own brewery wastewater treatment plant and digester methane-fuelled cogeneration system. New renewable energy projects like this could benefit in the coming years from Colorado's voter-approved renewable portfolio standard, known as Amendment 37. At least 21 US states have similar renewable portfolio standards (New Belgium Brewing Company)

One other small success at the federal level is the Energy Bill, passed by Congress and signed into law in 2005. It contained provisions encouraging states to 'consider' upgrading their standards for interconnection of small generators, directing a government study to quantify the benefits of DE, and creating new tax incentives for renewable energy projects.

Beyond those achievements, much of the progress made at the federal level has not been directly policy-rated – such as the Department of Energy's research, development and demonstration (RD&D) projects, or the Environmental Protection Agency's CHP project facilitation. These are valuable but are not sufficient. The reason for the lack of federal policy achievements can be summed up as a lack of recognition amongst poli-

cymakers of the environmental, efficiency, economic and security benefits of DE. Unfortunately, DE and CHP lack the political clout of the oil and gas, coal, nuclear energy and even renewable energy industries.

Many are curious to see what will happen after some rearranging at the US Department of Energy. The Distributed Energy Program has been moved from its long-time home at the Office of Energy Efficiency and Renewable Energy to the Office of Electricity Delivery and Energy Reliability, which works on grid infrastructure security and modernization. Distributed Energy will be in their Research & Development wing. It is not yet clear what effect this will have, and whether it will give distributed energy more, or less, exposure than it had before, but early indications are that budget reductions could have a substantial negative impact.

The 2007 fiscal year budget calls for a nearly 50% overall reduction in the Distributed Energy programmes. That, along with a growing pattern of earmarks – funding that is mandated to go towards specific projects determined by Congress and usually benefiting an individual congressman's territory – will yield far less flexibility and discretion to the Distributed Energy Program staff to determine how best to progress.

#### ATTENTION SHIFTS TO THE REGIONAL AND STATE LEVEL

In the last few years, the leadership, impetus and replicable policy models for DE are coming from the regional, state and even local levels. When we look at the situation cynically, the reason for this is partly through default: the lack of policy at the federal level has caused us to have to address the issues state-by-state, nearly 50 times rather than once. Nevertheless, shifting focus to the state and regional level has many advantages.

There are many innovative and committed DE proponents in each state, with new ideas and tactics for addressing persistent DE policy concerns. Of course, action at the state level implies a mix of leading and lagging states. Some of the recent successes at the state level have been in Oregon, Connecticut, Pennsylvania, Vermont and California (see box on pages 70–71). These add to the bank of notable existing policies in such states as New York, New Jersey and Texas.



Adopted in January, the California Solar Initiative will benefit distributed generation via photovoltaics. The Initiative will provide up to about \$3 billion in incentives over the next 11 years (Sharp)

### HOW POLICIES IN SOME STATES AFFECT THE OTHER STATES

Now that we have a modest-sized set of model state policies, other states should be replicating these models – so the theory goes. This isn't always the case on the ground, though. States are showing they can be unwilling to adopt model state policies in whole, preferring instead to develop their own versions, using other states' policies only as an additional source of input. This is the case in Arizona, where efforts are underway to develop interconnection standards, rates and tariffs for DE, and net metering.

The end result of the interconnection standards will likely be a combination of language from original Arizona utility requirements, FERC, NARUC (National Association of Regulatory Utility Commissioners), Texas, New Jersey, Wisconsin, and other states, as well as some brand new language. It was clearly expressed from the first day of the Arizona DG Interconnection Working Group (a voluntary group of utility representatives, DE advocates and consumer advocates) that 'just because other states have done it, and just because FERC recommends it, doesn't mean we want to follow it here in Arizona.' The process of developing the interconnection standards is slower and more cumbersome than need be.

Looking on the bright side, at least in the end we will have statewide interconnection standards in some states, where before we only had disparate utility-by-utility standards. Furthermore, each of these state standards will likely have at least some of the same elements and procedures.

There is another small but significant silver lining that should not be underestimated. Developing interconnection standards or other DE policies in each individual state allows the local DE installers, utilities and other stakeholders to get in the same room, face-to-face, and educate each other on the issues.

For instance, what is the real risk of connected DE to the grid? What are the real sources of delays? What small or minor steps taken by DE installers could greatly reduce the headaches of utilities, and vice versa? Such interaction and education is invaluable, and will smooth future DE interconnections. The same effect may be present in developing other policies as well.

### REGIONAL EFFORTS – BETTER, BUT HARDER TO GET

For the same reasons that statewide standards are preferable to disparate utility-by-utility standards, regional policies are preferable to disparate state-by-state policies. Many DE installers work in multiple states, and consistency makes it easier for them to navigate through the requirements and/or look for incentives – speeding up both the sales and installation process.

Yet, it's difficult to get states to work together. While states say that they want to co-operate with each other, when it comes down to it, they want to do it their own way.

That's why when any regional effort does proceed, it garners much attention and admiration. The Mid-Atlantic Distributed Resources Initiative<sup>2</sup> and the Northwest Power and Conservation Council<sup>3</sup> are two such efforts.

### MID-ATLANTIC DISTRIBUTED RESOURCES INITIATIVE

Public utility commissioners in Delaware, Maryland, New Jersey, Pennsylvania and the District of Columbia, along with the US Department of Energy and electricity transmission company PJM, established the Mid-Atlantic Distributed Resources Initiative (MADRI) with the goal of developing regional policies and market-enabling activities to support the use of CHP, other forms of DE, and demand response in the Mid-Atlantic region. MADRI is managed by a steering committee comprised of utility commissioners from the five Mid-Atlantic States and representatives from DOE, EPA and PJM.

The initiative started by identifying key issues affecting the use of decentralized energy and has formed five working groups to address them: Interconnection Standards, Environmental Impacts, Pricing and Regulatory Framework, Advanced Metering, and DE Business Case.

The desired outcome of this effort is consensus agreements on how these issues should be treated from the state regulatory standpoint, along with a series of draft model rules. Progress to date includes the development of model interconnection procedures. Pennsylvania will be the first to implement these standards, and Delaware, Maryland and Washington DC are expected to follow. These model interconnection standards are notable in that:

- they include expedited procedures for systems that don't export power to the grid
- they address interconnection to networks
- they clearly define the certification process and tie it to IEEE standard 1547.1.

MADRI's current efforts are focused on the Mid-Atlantic states, though once recommendations are developed and those states are satisfied, work will shift to communicating those recommendations to states that recently joined PJM and others that express interest.

### NORTHWEST POWER AND CONSERVATION COUNCIL

Another regional success worth mentioning is the Northwest Power and Conservation Council (NPCC), the Northwest's lead



energy-planning body. The Fifth Northwest Electric Power and Conservation Plan has now been adopted and published by the Council. For the first time, CHP is included and supported in the plan. The federal enabling legislation for the Council is an interstate compact that provides a priority order of electrical resource acquisition as follows: 1) conservation; 2) renewable resources; 3) cogeneration; and 4) central power plants. The policy direction laid out by the Council is implemented in individual Integrated Resource Plans and operating policies.

### **INTERACTION BETWEEN THE FEDERAL, REGIONAL AND STATE LEVELS**

One point not fully reflected here is that there is actually much interaction between the federal, regional, and state levels, with some of the same players involved in multiple levels. While direct legislative or regulatory actions may be slow at the federal level, the federal government is providing financial, personnel, educational, technical and research support to state and regional efforts. The MADRI group, noted above, is an example of this.

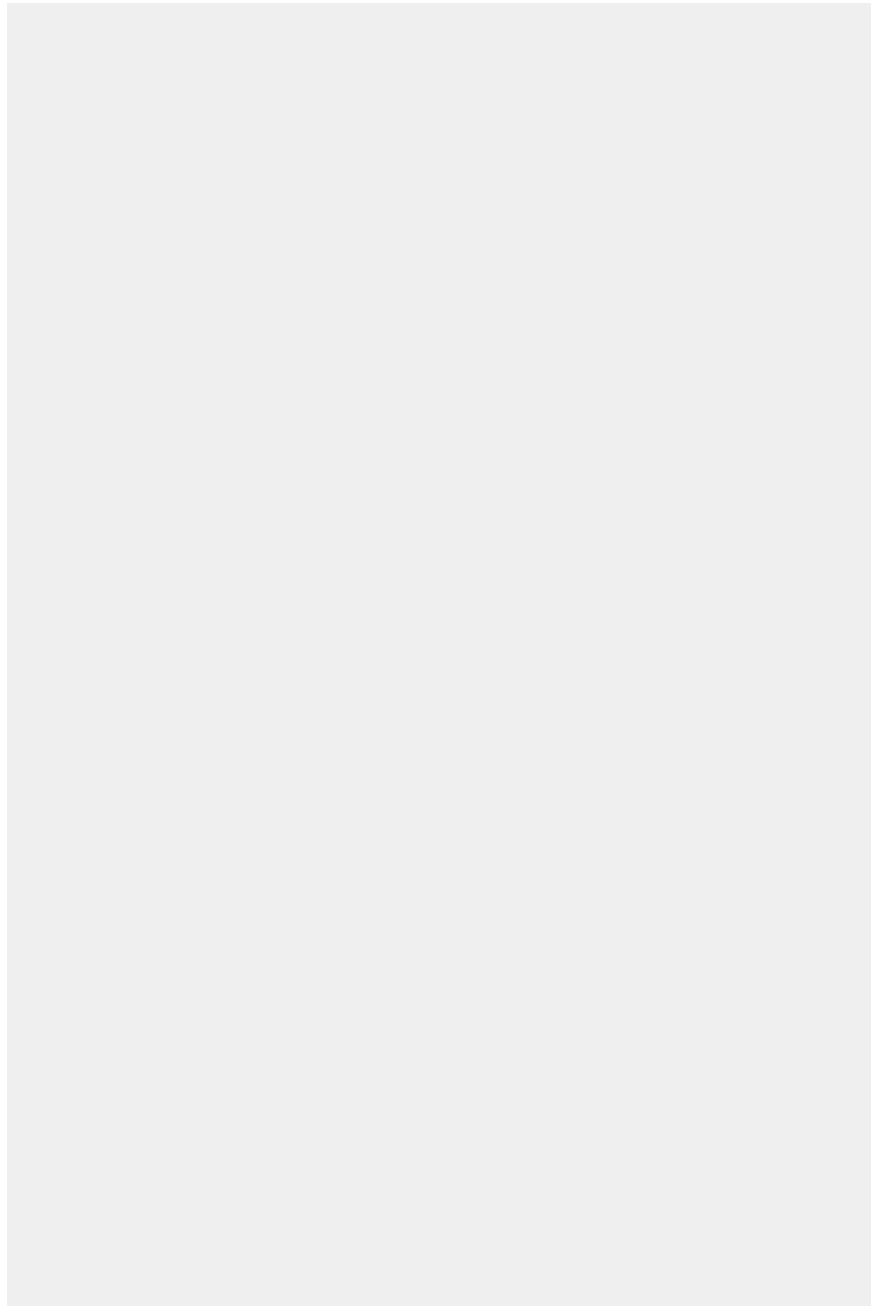
Another key example of this is the Department of Energy's establishment and funding of eight Regional CHP Application Centers, which work on-the-ground providing educational and technical expertise for state and regional market development activities.<sup>4</sup> The Regional CHP Application Centers, in turn, interact regularly with Regional CHP Initiatives – voluntary groups of stakeholders that drive policy changes at the state and regional level.

### **CLIMATE CHANGE – A NEW POLICY PUSH FOR DE**

Decentralized energy may be a beneficiary of state and regional actions regarding climate change. The lack of attention given to climate change at the federal level is, again, prompting state and regional policies to fill in the gaps – particularly in the Northeast. Each of the eight Northeast states has developed a Climate Change Action Plan, and almost every one portrays CHP as one of the top solutions.

One of the results stemming from the New England Regional Climate

Change Action Plan is the Regional Greenhouse Gas Initiative (RGGI).<sup>5</sup> RGGI is developing a regional strategy for reducing CO<sub>2</sub> emissions. The core strategy is a market-based cap-and-trade programme for reducing CO<sub>2</sub> emissions. The cap-and-trade programme is currently dominated by large stationary power plants, but RGGI is not entirely ignoring CHP and other forms of DE. RGGI has done a separate analysis recommending three complementary energy strategies outside the immediate cap-and-trade programme, of which CHP is one of the three. While most CHP projects will not be eligible to the states as 'offsets', they will indirectly help states meet their carbon caps by lowering the total amount of CO<sub>2</sub> emitted.





## Recent US state policy successes

A few states have pushed through some impressive policy and regulatory changes in the past year that will give decentralized energy a better chance in the marketplace. Most are a combination of reducing barriers, implementing incentives, and generally shaping the state's energy supply to be cleaner and more efficient. Other states are unlikely to adopt these policies in whole, but they do give the states models to look at when eventually developing their own.

### OREGON

Oregon has a very active and well co-ordinated six-prong effort to enable CHP. The combination of Governor-led action plans and strategies, revised Oregon Public Utilities Commission (OPUC) ground rules for CHP, and financial incentives from three Oregon energy and climate change state agencies or state-established non-profit organizations, has proven to be very effective in advancing CHP.

- The Governor of Oregon has released the Oregon Renewable Energy Action Plan, part of which focuses on the biomass opportunity fuel for power and CHP.<sup>6</sup>
- The Governor's Advisory Group on Global Warming has published the Oregon Strategy for Greenhouse Gas Reductions, which also supports renewable CHP.<sup>7</sup>
- The OPUC has completed an initial information study entitled 'Removing Regulatory Barriers to Distributed Generation'.<sup>8</sup> Following this study, the OPUC has worked to eliminate the barriers as they appeared before the commission in regulatory proceedings.
- The Oregon Department of Energy provides Business Energy Tax Credits to help finance CHP projects.<sup>9</sup>
- The Energy Trust of Oregon has a biopower programme that is renewable CHP-focused, with up to \$4.7 million available in financial incentives.<sup>10</sup>
- The Climate Trust established under Oregon law provides funding for GHG offsets including CHP.<sup>11</sup>

### CALIFORNIA

California continues to be ahead of the curve in terms of recognizing barriers to decentralized energy, attempting to correct those barriers, providing financial incentives, revising regulatory rules, and continuing to sponsor research, development and demonstrations on new technologies and applications.

In January 2006, the California Public Utilities Commission (CPUC) adopted the California Solar Initiative, which provides up to \$2.9 billion in incentives toward solar development over 11 years. The goal of the initiative is to install 3000 MW by 2017. This is in addition to several other incentive programmes that aid DE in California, including the Self Generation Incentive Program (recently renewed and revised, but uncertain to continue beyond the end of 2007) and the ongoing Public Interest Energy Research (PIER) Program.

The 2005 Integrated Energy Policy Report, sent to the Governor and Legislature from the California Energy Commission, includes a detailed status of ongoing efforts to reduce barriers to DE and CHP, and contains further recommendations (including an accelerated renewable portfolio standard of 33% by 2020).<sup>12</sup> The California Environmental Protection Agency's draft Climate Action Team Report to the Governor and Legislature likewise recommends specific policy actions to encourage DE and CHP.<sup>15</sup> In addition, two Executive Orders from the Governor over the past year have various indirect effects on the DE and CHP market in California, including one calling for improved market response to critical peak demand periods and other energy crises, and another requiring increased energy efficiency in new and retrofit state buildings.

In terms of reducing the regulatory barriers for CHP installation, California has instituted comprehensive

### CONCLUSION

Policy leadership for clean and efficient energy has shifted to the states rather than the federal level. In recognition of this, even the US Department of Energy has shifted some of its Distributed Energy Program focus to providing technical expertise and education for state-level efforts and funding eight Regional CHP Application Centers. The Regional CHP Initiatives have also proven to be an effective way to bring the industry together to advance policy. A handful of states have had recent policy successes worth commending – in particular, Oregon, Connecticut, Pennsylvania, Vermont and California – and a number of other states have new policies in the works. One benefit to developing policies state-by-state is the involvement, interaction and education of a broader array of stakeholders than would be seen at the federal level, and this can be invaluable in the long run.

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The Intermountain CHP Center helps facilitate clean and efficient CHP projects in the US states of Arizona, Colorado, New Mexico, Utah and Wyoming.

As one of eight Regional Application Centers started by the US Department of Energy, the Intermountain CHP Center provides technical assistance, project support, economic evaluations, case studies, workshops, trainings and coalition building, as well as educational and technical expertise for policy efforts. The

interconnection standards, exempted customers deploying CHP from standby charges and exit fees, and implemented a renewable portfolio standard.

## CONNECTICUT

An extremely constrained electric grid in south-western Connecticut, especially during summer peaks, has been a main factor prompting Connecticut to encourage DE and CHP. In July 2005, Connecticut passed An Act Concerning Energy Independence.<sup>14</sup> This law contains numerous positive developments for DE and CHP, including:

- **New Efficiency and CHP Portfolio Standard:** The bill requires standard offer and competitive electric suppliers to obtain a percentage of their output from energy conservation services and CHP generation at commercial and industrial sites, ramping up to 1% by 1 January 2007 and to 4% by 1 January 2010.
- **Back-up Power Rates:** If a customer develops a customer-sited DE project and the capacity is less than the customer's maximum metered peak load, the customer will not have to pay back-up power rates, provided the resource is available during system peak periods.
- **Natural Gas Distribution Cost Rebate:** Customer-sited DE projects that use natural gas will be eligible for a rebate of gas delivery charges from the electric distribution company. The rebate will be recovered through electric rates.
- **Connecticut Clean Energy Fund:** it will now provide support to CHP and thermal storage technologies.

## PENNSYLVANIA

Economic development, energy availability and reliability have been amongst the main drivers for Pennsylvania state policymakers' support of DE. Kathryn McGinty, Secretary of Pennsylvania's Department of Environmental Protection,

noted, 'We are keenly interested in attracting investment in Pennsylvania. Whether it's agriculture or heavy industry, we're not going to grow any of those sectors unless DE and CHP technologies come into full force.' Pennsylvania has a law requiring electric suppliers and distribution companies to increase use of selected alternative generation sources, one of which is CHP. Pennsylvania also has implemented a series of grant programmes that have provided direct financial support for CHP projects.

These programmes have included three rounds of Energy Harvest grant solicitations, along with grants of US\$10 million to 17 projects issued by the Pennsylvania Energy Development Authority. A third area of support is an interconnection rulemaking starting in August 2005. In addition, Pennsylvania is an active participant in the MADRI process.

## VERMONT

Vermont passed a comprehensive energy-related act, commonly known as Act 61, that includes provisions promoting DE and CHP development.<sup>15</sup> The Sustainably Priced Energy Enterprise Development (SPEED) programme will encourage the development of renewable electricity in Vermont to support goals of the Renewables Portfolio Standard, as well as high-efficiency CHP facilities that may consume non-renewable sources of fuel. Details of the programme are still being designed, but it will likely encourage developers and utilities to enter into long-term, affordable contracts for new renewable energy and CHP projects.

Second, the Public Service Board was directed to establish standardized interconnection standards for renewable and CHP generators up to 50 MW by September 2006. The act also allows retail electricity companies credit for efforts taken to encourage efficient CHP, by the state's efficiency utility. There is some possibility that a programme targeting CHP as an efficiency measure will be initiated.

Intermountain CHP Center is run jointly by the Southwest Energy Efficiency Project, the etc Group and Energy Strategies. web: [www.intermountainCHP.org](http://www.intermountainCHP.org)

## NOTES

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3. [www.nwcouncil.org/energy/powerplan/default.htm](http://www.nwcouncil.org/energy/powerplan/default.htm). See Volume One, page 58 and Volume Two (the generating resources chapter), pages 5-5 to 5-7.
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