State Solar Incentives – News from DSIRE

Report by Susan Gouchoe

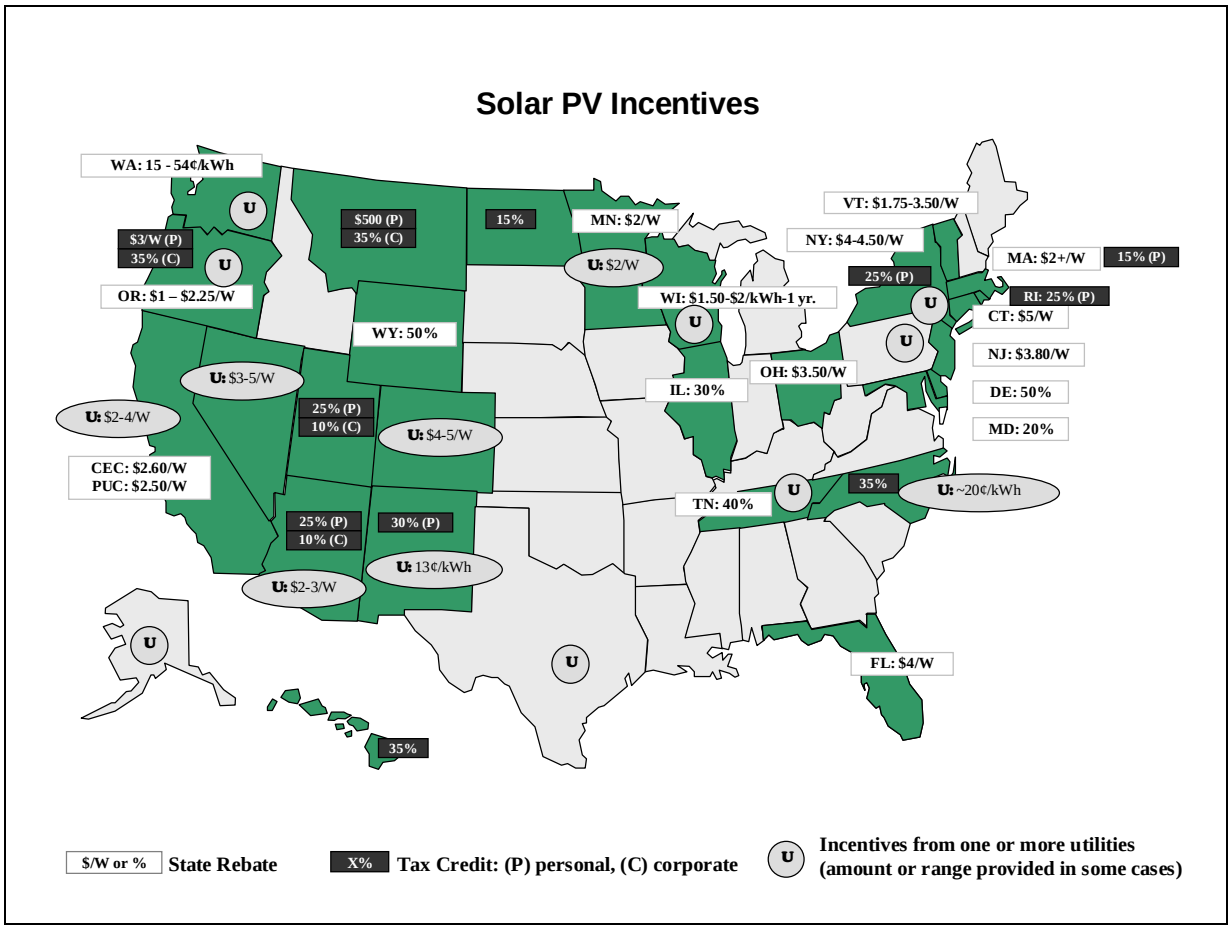
Over the past year, we've seen a number of states respond to escalating energy prices, concerns about climate change, and other energy challenges with wide-ranging legislation to foster the use of biofuels, green building practices, and renewable energy technologies. This article highlights some of the new policy developments specifically designed to advance solar electric and solar thermal markets.

California and New Jersey made big news with aggressive new solar policies. New Jersey is ratcheting up its Renewable Portfolio Standard (RPS) and solar set-aside to support about 1,500 MW of new PV capacity by 2021, and California announced a $3+ billion initiative to add 3,000 MW of solar capacity by 2017.

Three states (New Mexico, Arizona, and South Carolina) created new tax credits to piggyback with the 30% federal solar tax credits that kicked in back in January. Three other states (Oregon, Hawaii, and New York) raised the maximum allowable incentive on their existing tax credits to better support solar photovoltaics.

A new solar rebate and other renewable energy incentives emerged in Florida this year, while incentives were revived in California, Maryland, Illinois, Vermont, and Ohio after running out of money earlier this year or last year in the face of overwhelming interest that outpaced solar budgets. Many states have reduced their rebate levels to adapt to the mushrooming demand for solar, and the Maine and Pennsylvania Sustainable Development Fund programs are now fully subscribed. The map below illustrates the status of solar PV tax credits, rebates, and production incentives as of September 2006. Note that in addition to these programs, 16 states (most of which also offer PV rebates) provide grants for larger renewable energy or distributed energy projects, including PV.

On the net metering front, the public utilities commissions of four states (Colorado, Louisiana, North Carolina, and Pennsylvania) adopted net-metering rules, while around 30 states have initiated proceedings to "consider" net metering, as required by the federal Energy Policy Act of 2005. The federal requirement presents states with an opportunity to adopt new net metering rules or expand existing rules, and many are acting accordingly. In addition, three states (California, Vermont, and Washington) increased the limit on aggregate net metering capacity; and one state (Washington) raised the capacity limit for an individual system eligible to net meter.



Highlights of solar policy activity over the past year

New Mexico establishes solar tax credit; PNM offers PV REC purchase program.
In February 2006 New Mexico established a 30% personal tax credit up to $9,000, less any federal credit, for photovoltaics, solar water heating, and solar space heating or cooling systems. Although New Mexico's credit stipulates that the state and federal credits combined can not exceed 30% of project costs, it effectively raises the overall incentive cap to $11,000. Additionally, the state credit will be available through 2015 – well past the federal credit's scheduled expiration date – and technologies eligible under New Mexico's tax credit law extend to solar space heating and cooling systems, which are ineligible for the federal credit. The New Mexico Energy, Minerals, and Natural Resources Department, tasked with certifying systems as eligible for the state credit, released application and certification rules in June. Aggregate credit levels are capped annually at $2 million for solar thermal and $3 million for PV systems.

Customers of Public Service Company of New Mexico (PNM) who install PV systems up to 10 kW can combine the tax credits with PNM's Renewable Energy Certificate (REC) purchase program, initiated in March 2006 as part of its plan to comply with New Mexico's 10% renewable portfolio standard. PNM purchases RECs at a rate of $0.13/kWh through 2018. Note that customers are paid for total generation output (not just the amount exported to the grid) and retail their net metering benefit. Although there is no solar set-aside in New Mexico, each kilowatt-hour of solar power is equivalent to three kilowatt-hours for compliance purposes. The program has funding for 1.2 MW of solar installations, at a cost of about $2.8 million. Plans for commercial customers are in the works.

Colorado utilities launch PV programs to comply with Amendment 37.
Xcel Energy, Aquila, and Colorado Public Utilities each launched PV incentive programs this year to comply with Colorado's Amendment 37 – the Renewable Energy Standard (RES) – passed in 2004. The RES calls for certain Colorado utilities to generate or purchase 10% of their electricity from renewables by 2015. (Utilities subject to the standard are those with 40,000 or more customers that have not voted to exempt themselves, and are subject to the public utility commission's regulatory authority.) A minimum of 4% of the renewable energy must come from solar electric technologies, with at least one-half of this percentage derived from customer-sited solar systems.

To meet the solar set-aside, utilities subject to the RES are required to offer customers a minimum PV rebate of $2.00/watt for on-site systems up to 100 kW and allow net metering. Subsequent implementation rules directed the utilities, by June 1, 2006, to make a one-time offer to purchase the solar on-site renewable energy credits (SO-RECs) for systems up to 10 kW for a period of 20 years -- in addition to the rebate payment. As a result, investor-owned utilities Xcel Energy and Aquila each launched a combination $2/W-DC rebate/SO-REC purchase program this year. Xcel Energy's SO-REC payment is currently set at $2.50/W and Aquila's is set at $3/W, but these amounts may be adjusted based on expected performance and may vary over time. Xcel will also buy SO-RECs from Colorado customers of other utilities, even from off-grid systems.

As a municipal utility, Colorado Springs Utilities (CSU) is allowed to adopt a similar program rather than complying with all of the elements of the standard. CSU's $4/W-AC incentive, adjusted based on expected performance, assigns SO-RECs to CSU for as long as the system is operational.

The situation is a little different for solar electric systems greater than 10 kW. These systems are still eligible for the standard $2/W rebate (for the first 100 kW) and utilities must offer to purchase the SO-RECs, but the SO-RECs are determined by directly metering system output. For these larger systems, Aquila will set the value of the REC payment at the average annual market price of SO-RECs in Colorado for the calendar year. In contrast, Xcel Energy issued a request for proposals soliciting bids to provide SO-RECs over a 20-year term. The RFP was open to any Colorado electric customers, off-grid respondents, and third-party developers. The utility plans to issue additional RFPs in 2006 and 2007.

New Jersey approves 20% by 2020 RPS revision; 1,500 MW of solar to come online.
The New Jersey Board of Public Utilities (BPU) made extensive revisions to the state's RPS in April 2006, boosting the previous requirement from 4% renewables by 2008 to 22.5% by 2021. The new rules require that just over 2% of the state's electricity needs must be met with solar electric generation by 2021 – an estimated 1,500 MW – and the most aggressive solar portfolio standard in the country. The original solar set-aside was 0.16% by 2008 (~90 MW).

Under the state's rebate program, the 12.5 MW of solar capacity installed just this year (as of August 2006) is more than double that installed in all of 2005. The total capacity installed since the program's inception in 2001 stands at nearly 22 MW. In response to the overwhelming demand for solar electric systems and growing waiting lists for funding through 2008, the BPU has decreased incentive levels several times over the past year; the rebate for systems under 10 kW now stands at $3.80/watt, with government entities and non-profits receiving a higher incentive rate. In the coming months, watch for developments in New Jersey as they address the funding mechanisms and incentive structures needed to meet the state's accelerated solar goal.

Florida initiates solar rebate program, offers demonstration grants.
Solar incentives are back in the Sunshine State thanks to the Renewable Energy Technologies & Energy Efficiency Act, signed in June. As of July 1, Florida residents, businesses, non-profits, and public facilities can get a $4-per-watt incentive for a PV system, $500 for a residential solar water heater, $15 per 1,000 BTU for non-residential solar water heaters, and $100 for a solar pool heater. The *Solar Energy Incentives Program* runs through June 20, 2010. A total of $2.5 million is available for the 2006-2007 fiscal year, with future funding subject to appropriations.

Grants are also available on a competitive basis for renewable energy demonstration, commercialization, research, and development projects. Solar projects, in addition to a wide range of other renewables, are eligible for support under this *Renewable Energy Technologies Grants Program*. Municipalities and county governments, businesses, universities and colleges, utilities, and not-for-profit organizations are eligible to apply. Up to $15 million is allocated for FY 2006-07.

Program rules and applications for these and other renewable energy and alternative fuel incentives created by Florida's Energy Act are now available on the Florida Energy Office website.

South Carolina establishes tax credit for solar heating and cooling.
Also approved in June 2006 was South Carolina's 25% tax credit for the purchase and installation of solar heating and cooling systems on homes and businesses. The maximum credit is $3,500, up to 50% of the taxpayer's tax liability for that taxable year; unused credit may be carried over for up to 10 years. The credit is retroactive to January 1, 2006.

Arizona creates new tax incentives; RPS revisions are in the works.
Since 1995, Arizona's residents have been able to claim a 25% tax credit for solar and wind installations. Now, as a result of legislation enacted in June 2006, commercial and industrial facilities can now take a tax credit of 10% of installed costs for solar and wind. A wide range of solar technologies is eligible, including solar water heating, solar space heating and cooling, and photovoltaic systems. The credit is retroactive to January 1, 2006 and extends through December 31, 2012. The June legislation also created a property tax exemption for a wide array of solar technologies and eliminated the $5,000 limit to the sales tax exemption on solar and wind equipment.

Back in February 2006, the Arizona Corporation Commission (ACC) voted to move forward with formal rulemaking to expand the state's Environmental Portfolio Standard. Proposed provisions would increase the portfolio mix to 15% renewables by 2025 and replace the solar-set aside with a requirement that 30% of the renewables come from distributed generation (~1,800 MW), which would mean a good dose of solar. A final decision is expected by the end of 2006. The ACC is also in the process of developing interconnection standards for distributed generation and has indicated that it intends to adopt statewide net metering rules after it has addressed interconnection. Net metering rules currently vary by utility in Arizona.

California commits $3+ billion on quest for 3,000 MW of installed solar by 2017

In January 2006, the California Public Utilities Commission (CPUC) adopted a program – the *California Solar Initiative* (CSI) – to provide $3.2 billion in incentives for solar projects with the objective of providing 3,000 MW of solar capacity by 2017. The CSI will fund solar photovoltaics initially, with other solar technologies included at a later point.

The program shuffles administrative responsibilities of the current incentive programs in which the California Energy Commission (CEC) handles the *Emerging Renewables Program* for projects under 30 kW and the PUC oversees the *Self-Generation Incentive Program* (SGIP) for renewables larger than 30 kW up to 5 MW. Here's how it will be rearranged: The CPUC will manage the solar program for commercial and existing residential customers, while the CEC will oversee the program targeting the residential new construction market. Originally limited to customers of the state's investor-owned utilities, the CSI was expanded in August, as a result of Senate Bill 1, to encompass municipal utility territories as well. The total program budget was increased to $3.35 billion and funding allocations among the CPUC, CEC, and municipal utilities were adjusted accordingly:

- Nearly $2.2 billion for commercial projects and residential retrofit systems (CPUC)
- $400 million for solar in residential new construction (CEC)
- $784 million for municipal utility solar incentive programs

SB 1 addressed other issues outside the purview of the CPUC well. To resolve the fast approaching limit of aggregate net metering capacity afforded by the state's existing net metering law, SB 1 raises the net metering cap from 0.5% to 2.5% of a utility's peak demand beginning in 2007. And, starting in 2011, new housing development with more than 50 homes must include solar as an option.

Performance-based incentives in California set to begin in 2007

Among the elements of the CSI is the transition to performance-based incentives in 2007 (rather than continue with capacity-based buydowns) with the aim of promoting effective system design and installation. In late August, just days after the signing of SB 1, the CPUC announced the structure of the new incentive. Incentives for systems less than 100 kW in capacity will be designed as a buydown (up-front payment) based on expected performance, taking into consideration system rating, location, tilt and orientation, and shading. All new construction applications other than building-integrated systems will also be subject to the expected performance-based buydown. Larger projects and building-integrated systems will be metered, and incentives will be disbursed monthly over 5 years based on actual system output. For all projects, higher incentives will be available to non-taxable entities to compensate for their lack of access to the federal tax credit. Ultimately, incentives for all systems greater than 30 kW will likely be paid based on actual energy produced.

CSI Performance-Based Incentive Levels for 2007:

Systems under 100 kW:

- $2.50 per watt for residential and commercial systems
- $3.25 per watt Government and nonprofit organizations

Systems 100 kW and larger:

- $0.39/kWh for first 5 years for taxable entities
- $0.50/kWh for first 5 years for government/nonprofit organizations

Incentive levels will automatically be reduced over the duration of the CSI program in 10 steps based on the aggregate capacity of solar installed. In this way, incentive reductions are linked to levels of solar demand rather than an arbitrary timetable.

The program will be managed by the existing SGIP administrators – Pacific Gas and Electric Company, Southern California Edison, and the San Diego Regional Energy Office. However, at a later point, an independent administrator may run the residential retrofit component of the CSI.

The CPUC expects that some program and budgetary issues will require modification in light of SB 1, but otherwise, the program is on track to commence January 1, 2007. Watch for other CSI rulemaking activities that will address energy efficiency requirements, incentives for non-photovoltaic solar projects, affordable housing incentives, and other program elements.

For more information on these and other incentives and policies, visit DSIRE at www.dsireusa.org. DSIRE provides detailed information on a wide range of incentives and policies at the state, local, utility, and federal level that promote renewable energy and energy efficiency.