HEADLINE

Using RPS policies to grow the solar market in the United States

TEXT:

The market for photovoltaics in the United States remains small relative to the nation's solar resource potential. Nonetheless, annual grid-connected PV installations have grown from just 4 MW in 2000 to over 100 MW in 2006, fast enough to the catch the attention of the global solar industry.

The state of California deserves much of the credit for this growth. The State's historical rebate programs resulted in roughly 75 percent of the nation's grid-connected PV additions from 2000 through 2006 being located in California, and the $3 billion California Solar Initiative will ensure that the State remains a mainstay of the US solar industry for years to come.

But California is not the only market for solar in the US; other states have recently developed policies that may rival those of the western state in terms of future growth potential. In particular, 25 states, as

well as Washington, D.C., have established renewables portfolio standards (RPS), sometimes called quota systems in Europe, requiring electricity suppliers in those states to source a minimum portion of their need from renewable electricity. (Because a national RPS is not yet in place, my focus here is on state policies).

Under many of these state policies, solar is not expected to fare particularly well: PV installations simply cannot compete on cost or scale with large wind plants in the US, at least not yet. In response, an expanding list of states have established solar or distributed generation (DG) set-asides within their RPS policies, effectively requiring that some fraction of RPS-driven supply derive from solar energy.

The popularity of set-asides for solar and/or DG has increased dramatically in recent years. Already, 11 states and D.C. have developed such RPS set-asides. These include states with outstanding solar resources, such as Nevada, Arizona, Colorado, and New Mexico, as well as areas where the solar resource is less robust, including North Carolina, Maryland, Pennsylvania, New Jersey, New York, New Hampshire, Delaware, and D.C.

Among those states with set-asides, two are restricted to PV applications, nine also allow solar-thermal electric to qualify, three allow solar heating and/or cooling to qualify, and three have broader renewable DG set-asides. The policies also differ in their targets and timeframes, whether projects must be located in-state, the application of cost caps, and the degree of oversight on how suppliers contract with solar projects.

Only three of these states have more than two years of experience with solar or DG set-asides so far: Arizona, Nevada, and New Jersey. And yet, despite the embryonic stage of these policies, they have already begun to have a significant impact on the grid-connected PV market. From 2000 through 2006, 16 percent (or 48 MW) of grid-connected PV installations in the US occurred in states with such set-asides, a percentage that increases to 67 percent if one only considers PV additions outside of California.

The importance of these programs is growing and will continue to expand. In fact, if one assumes (admittedly somewhat optimistically) that these policies will be fully achieved, then *existing* state solar or DG set-asides could result in 400 MW of solar capacity by 2010, 2,000 MW by 2015, and

6,500 MW by 2025. This equates to annual additions of roughly 100 MW through 2010, increasing to over 500 MW per year by 2015 and 700 MW per year by 2020. PV is not assured of all of this capacity, and will receive strong competition from solar-thermal electric facilities in the desert southwest. Nonetheless, set-asides in those states outside of the southwest will favor PV, and even some of the southwestern states have designed their RPS programs to ensure that PV fares well, relative to other forms of solar energy.

Since 2000, Arizona and, more recently, New Jersey have represented the largest solar set-aside-driven PV markets. Even more-recent additions are coming from Colorado, Nevada, New York, and Pennsylvania. In the long-term, the largest markets for solar electricity are predicted to include New Jersey, Maryland, Arizona, and Pennsylvania.

How do these states stack up against California, with a goal of 3,000 MW of new solar capacity by 2016? Though none of the states with solar set-asides are predicted to reach 3,000 MW of solar from their RPS policies alone, three are expected to exceed 1,000 MW (New Jersey, Maryland, and Arizona). And, if stated on a percentage-of-load basis, then the solar targets in New Mexico,

Arizona, New Jersey, and Maryland all exceed California's goal.

Of course, achieving these targets is not assured. States with solar set-asides have developed various types of cost caps, many of which may ultimately become binding, thereby limiting future solar growth. Penalties for lack of compliance may be insufficient. Finally, some states continue to struggle with how to encourage long-term contracting for solar generation, and to ensure continued rebate programs for smaller PV installations. Paving the solar future of the US will require states to proactively address these challenges, and soon.

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1 CAPTION:
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