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Solar Photovoltaic (PV) Capacity Quickly Expands When States Provide the Right Incentives

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The American solar photovoltaic (PV) industry has grown tremendously in recent years. In 2012, more than 3,300 MW of solar power were installed throughout the United States, with a record 1,300 MW installed in the last three months of the year alone.[2] Falling costs for hardware and installation have accelerated this trend, but it has mainly been driven by public policies that generously reward those who install solar systems. The importance of these policies has been illustrated by adoption in states that have shown the most rapid PV growth. Interstingly, the growth has not been limited to sun drenched southern and western states with their vast treeless plains. Indeed, there has been significant growth in states further north that are known to be often cool and cloudy, and where land for solar development is often in short supply.

Nowhere is the impact of supportive public policies more vivid than in Massachusetts, which has in recent years been transformed into a shining example of explosive PV growth. In 2007, shortly after taking office for the first time, Governor Deval Patrick called for Massachusetts to develop 250 MW of new solar PV capacity by 2017. He led the way to passage of legislation that dramatically expanded the public support for solar PV development. By the spring of 2013, a full four years earlier than first proposed, the Commonwealth had reached the 250 MW goal. Recently, the Governor announced a new, dramatically expanded goal of installing 1,600 MWs of solar capacity by 2020. If that target is reached, solar would equal roughly 12 percent of the state's total currently-installed electric generating capacity and, at that time, would be expected to contribute about 4 percent of the state's annual electricity supply.[3]

A symposium was recently held in Boston to understand this phenomenon, and the role of public policy in creating it. The New England Clean Energy Council (NECEC) and Mintz Levin invited solar industry experts and current and former policy-makers to analyze the trends that had fueled the growth of solar in Massachusetts, and beyond. Speakers included representatives of the national solar business association, a solar development company, a state energy agency and consultant to clean energy companies. The panel was moderated by NECEC's Vice President of Policy & Government Affairs, Janet Gail Besser.

Carrie Cullen Hitt, Senior Vice President of State Affairs for the Solar Energy Industries Association observed that residential and utility solar installations led the solar PV market nationwide. She predicted continued strong growth in PV installations in 2013, with a predicted installation of

approximately 4,300 MW of solar PV capacity and almost 1,000 MW of concentrated solar power capability.[4] She noted that some states, such as Arizona, have met their Renewable Portfolio Standard (RPS) goals and have begun public debates about whether or not to continue their incentive programs. Still, these states are expected to remain important areas for future solar development. Other states, however, continue to undertake aggressive policy initiatives. For example, New York, led by Governor Mario Cuomo, has pursued a NY Sun Initiative, which looks to increase the amount of customer-sited solar PV installations in the state by at least double the existing levels. Nevertheless, because the recent sharp decline in hardware costs can be expected to slow down over time, Ms. Hitt urged policy makers to focus policy initiatives on lowering "soft costs," such as taxes or labor.

Despite the uncertain future of some states' incentive programs, solar developers express excitement about the prospects for solar power. Pat Daly, CEO of Nexamp, pointed out that, even with the rapid growth of solar in recent years, solar constitutes barely 1/10 of 1% of the national electricity market, which means it has enormous room to grow. He believes that the best prospects for future development of solar lie in distributed generating projects in the densely developed areas of the country, rather than in the large utility-scale projects in the deserts of Western states that are located far from energy demand centers. To take advantage of this opportunity, developers of distributed projects will have to aggregate them and show that they can produce a competitive return for institutional investors. He has found that investors who provide the capital necessary for development of solar projects want strong, consistent, and transparent public policies and regulations.

Mark Sylvia, Massachusetts' Commissioner of Energy Resources (DOER), noted that the seeds of the solar boom in Massachusetts were planted when Governor Patrick set his goal to install 250 megawatts of solar by 2017 and when he proposed legislation at the start of his administration that was enacted into law in 2008 as the Green Communities Act. That law allowed his energy agency to "carve out", from its renewable energy portfolio, a separate obligation on retail electricity suppliers to purchase minimum amounts of power each year from distributed generating technologies. DOER chose to focus this obligation on solar PV and took action to increase the value of solar renewable energy credits compared to regular renewable energy credits. This incentive was coupled with another that allows "net metering" of solar-produced electricity that is not used on site. Surplus power is purchased by other consumers at a price roughly equal to the retail price of utility-delivered electricity. As a result of these incentives, Massachusetts' solar capacity has increased by over 700% since the introduction of these programs. These strong financial incentives put the Bay State on a development trajectory that has taken it to 7th among the states in terms of cumulative installed solar capacity.[5]

This author was one of the speakers at the symposium and discussed Governor Patrick's dramatic new goal for installing solar PV capacity by 2020. As the state expands the opportunity to qualify for solar incentives, it seems very likely it can make those incentives less generous. At the same time, there will be an imperative to preserve the value of incentives for investors that had stimulated the first phase of solar development.

Having reached its initial goals more quickly than originally planned, Massachusetts is not stepping away from the strong, consistent public policies that brought the Commonwealth its recent success. Quite the opposite, it is redoubling its commitment to solar power production. This bodes well for states with similar strong public policies. It also should provide continuing evidence that strong public incentives, properly targeted, can drive down solar installation costs. Finally, it may provide support for the hope that, one day, solar PV can compete with utility scale central generation without the need

for public subsidies.

[1] The author is the Senior Vice President for Energy and Technology at ML Strategies, LLC, a subsidiary of the law firm Mintz Levin. He was assisted in the preparation of this article by James Sasso, a Project Analyst at Mintz Levin.

[2] "U.S. Solar Market Insight 2012 Year in Review," *Solar Energy Industries Association*, http://www.seia.org/research-resources/us-solar-market-insight-2012-year-review.

[3] "Massachusetts 2012-13 State Profile," ISO New England Inc., February 2013, http://www.iso-ne.com/nwsiss/grid_mkts/key_facts/final_ma_profile_2012-13.pdf.

[4] "Next Steps for Solar in Massachusetts and Beyond," Hosted by the New England Clean Energy Council and Mintz Levin at One Financial Center, Boston, MA 02111 on April 25, 2013. Here and below, the speakers' comments reflect those made at the conference; The 2013 prediction (and also further years) can be seen in the Solar Energy Industries Association report, "U.S. Solar Market Insight 2012 Year in Review," http://www.seia.org/research-resources/us-solar-market-insight-2012-year-review.

[5] "Solar Energy Facts: 2012 Year-In Review," *Solar Energy Industries Association*, March 14, 2013,http://www.seia.org/sites/default/files/Q4%20SMI%20Fact%20Sheet%20FINAL.pdf.

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