

# Vermont Public Service Board

## Harmonizing Permitting and Interconnection Processes

**The time and effort involved in satisfying local permitting, inspection and interconnection (PII) requirements can add significant cost to a typical rooftop solar installation.** According to recent estimates by the U.S. Department of Energy, PII costs for the average solar PV system in the U.S. can be as high as \$0.24/watt installed.<sup>i</sup> As a result, these costs could add as much as an additional \$2,400 for a typical 10kW residential rooftop system.

A key driver of these costs is the lack of uniformity in permitting requirements at the local level and limited harmonization of local solar permitting and interconnection processes. However, several innovative state and local governments are beginning to take steps to ensure that the permitting and interconnection processes are considered jointly so as to reduce the costs of (and days involved in) obtaining PII approvals.

This case study will focus on the State of Vermont's unique approach to addressing PII costs. While Vermont's integrated statewide permitting is relatively uncommon, and may not be an option for many states, Vermont's approach to permitting and interconnecting could provide guidance for local governments interested in integrating permitting and interconnection into a single transaction.

### Vermont's PII Process Through 2011

Since the enactment of Vermont's first net metering law in 1999, nearly all customer-sited residential solar installations in Vermont

receive service from their local utility under a net-metering arrangement. When Vermont's initial net-metering law passed in 1999, the Vermont legislature took the unusual step of requiring all systems looking to conduct net-metering to go through the same permitting process as a large power plant, and removed all local-level requirements.<sup>ii</sup>

Therefore, prior to 2011, in order to receive permission to construct a net-metered rooftop system under 150kW, customers had to file an application with the Vermont Public Service Board (PSB) for a Certificate of Public Good (CPG). Upon submitting the application, the PSB would then submit the application for a 30-business day utility and public comment period.<sup>iii</sup>

During the comment period, the public was allowed to raise concerns that, if judged reasonable by the Board, could trigger a public hearing. In addition, the utility could also raise concerns regarding the interconnection of the customer's system during the comment period. If no concerns were voiced by either the customer or the utility, an order granting the CPG would be written and issued by the Public Service Board.<sup>iv</sup>

In all, according to developers operating in Vermont, the PII process could average 45 business days before construction was allowed to commence.<sup>v</sup>

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<sup>i</sup> Seel, et al. "Why Are Residential PV Prices So Much Lower in Germany than in the United States?: A Scoping Analysis". February 2013 revision. Available at: <http://emp.lbl.gov/sites/all/files/german-us-pv-price-ppt.pdf>

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<sup>ii</sup> Conversation with Andrew Perchlik, Vermont Department of Public Service, 27 June 2013.

<sup>iii</sup> Conversation with Gregg Faber, Vermont Public Service Board, 19 June 2013.

<sup>iv</sup> Ibid.

<sup>v</sup> Savage, Andrew. "First in the Nation Solar Registration Offering Model for Expansion". Renewable Energy World, 5 May 2012. Available at: <http://www.renewableenergyworld.com/rea/blog/post>

### Vermont’s Rooftop Explosion Leads to PII Inefficiencies

<b>Growth in Net-Metered PV Systems in Vermont by System Size (2007-2010)</b>			
<i>Year</i>	<i>&lt;5kW</i>	<i>5-10kW</i>	<i>10-150kW</i>
2007	275	33	15
2008	388	49	26
2009	551	83	55
2010	782	188	144
<b>Annual Growth Rate</b>	<b>30%</b>	<b>54%</b>	<b>76%</b>
<i>Source: Vermont Department of Public Service</i>			

**Table 1: Growth in Net Metered PV Systems by System Size (2007-2010)**

Increasing electricity rates, declining installed costs of PV, and supportive policies have led to a 373% increase in the number of small-scale PV systems in Vermont receiving service under a net-metering tariff.

However, the improving economics of net-metered systems also led to sharp increases in the number of larger-scale net-metered systems. Between 2007 and 2010, applications from net-metered PV systems between 10kW-150kW increased by 76% per year, while applications for systems between 5kW-10kW and less than 5kW increased only 54% and 30%, respectively.<sup>vi</sup> As Vermont’s PV market increased in size, this process began to create

inefficiencies for permitting staff and local solar developers.

*Permitting Staff:* According to Andrew Perchlik of the Department of Public Service, the sharp increase in commercial scale systems, which require more intensive permitting staff and utility review, caused staff at the Department and the Public Service Board to question if all projects, regardless of their size and complexity, deserved the same standard of review for a CPG.<sup>vii</sup>

*Residential-Scale Solar Developers:* Perhaps even worse than inefficiency, argues James Moore, the president of SunCommon, one of Vermont’s largest residential-scale solar developers, is the fact that delays in the permitting process can “cause the homeowner to lose confidence in the deal going through because of uncertainty associated with permitting,” leading homeowners to cancel their projects and causing significant financial losses for developers.<sup>viii</sup>

### 2011-2012: Streamlining the Process

Given the cost and resources Vermont’s PII process added to the pre-construction phase of the process, renewable energy advocates, developers, and Vermont’s utilities were able to reach consensus around a 2011 bill that became Act 47, which established a new PII process for systems under 5kW in size. Subsequent legislative action led to the process being extended to systems over 10kW.

Under the new process laid out in Act 47 for

/2012/03/first-in-nation-solar-registration-offering-model-for-expansion

<sup>vi</sup> Vermont Department of Public Service Net Metering Database, last updated June 2013.

<sup>vii</sup> Conversation with Andrew Perchlik, Vermont Department of Public Service, 27 June 2013.

<sup>viii</sup> Conversation with James Moore of SunCommon, 27 June 2012.

# Vermont Public Service Board

## Harmonizing Permitting and Interconnection Processes

all PV systems under 5kW, the customer or developer must:

- Submit a one-page registration form with the location, size and relevant customer information associated with the system;
- Self-certify that 1) all of the information is correct and 2) the system is in compliance with PSB interconnection rules;
- Send a copy of the one-page registration form to their local utility;
- Within ten (10) business days, if the utility has not formally raised a concern with the interconnection of the system, a CPG is granted without an explicit written order from the PSB. The requirement of a 30-day public comment period is waived.<sup>ix</sup>

The cumulative effect of this process is that no system under 5kW (and now 10 kW under the current law) would take longer than 10 business days after filing to receive full permitting and interconnection approval. This is down from 45 days before the reform took place.

### Staff, Utilities, Developers

As a result of this new procedure, permitting staff, solar developers and utilities alike have realized tangible savings and benefits.

*Vermont PSB and Utilities:* As a result of the new self-certification requirements, the PSB has been able to avoid the time and resources spent on writing thousands of orders for issuing CPGs. Gregg Faber of the PSB noted that this reform has saved Vermont’s utilities and Board staff “several dozen hours per year” that can now be dedicated to the review of

larger, more complex net-metered systems.<sup>x</sup> As of June 2013, no Vermont utility has objected to the interconnection of a system under 10 kW, which means no system has taken longer than 10 business days to fully permit.<sup>xi</sup>

*Residential-Scale Solar Developers:* In addition to taxpayer savings, the registration process has helped developers realize significant soft cost reduction. According to James Moore, the new permitting process has saved his company over half a million dollars, which averages to savings of \$1,500 for the average size system SunCommon installs. As of January 2013, according to Andrew Savage of AllEarth Renewables, the law has helped the rooftop solar industry save over 20,000 days in PII-related delays.<sup>xii</sup>

### Impact of Vermont’s Reforms: The Rooftop Explosion Continues

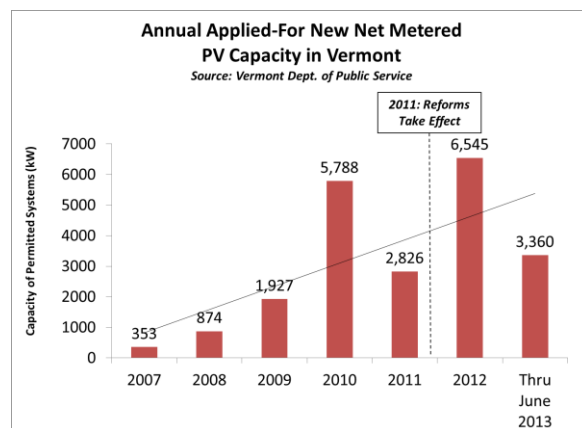


Figure 1: Vermont Net Metered PV Capacity

<sup>ix</sup> For more information about Vermont’s registration process, please see the [Vermont Public Service Board’s summary](#).

<sup>x</sup> Conversation with Gregg Faber, Vermont Public Service Board, 19 June 2013

<sup>xi</sup> Ibid.

<sup>xii</sup> Presentation by Andrew Savage, given to DOE SunShot Initiative Meeting, January 2013.

# Vermont Public Service Board

## Harmonizing Permitting and Interconnection Processes

As a result of this law and the timely expansion of Vermont's net metering cap, significant new net-metered PV capacity has been permitted since the beginning of 2012. Since that time, the PSB has received 10 MW of new net metering applications, and is on pace to see up to 4 MW more by the end of 2013.

### *Key Lessons for Cities and Counties*

While full one-stop permitting may not be an option for many local governments, Vermont's path-breaking example provides several helpful guideposts for municipalities interested in reducing PII costs for developers (and, ultimately, consumers) in their area.

- *Create Single-Page Forms and Process Descriptions:* For applicants interested in building a net-metered system, providing one-page applications and descriptions of the PII process creates greater customer and developer confidence in the process. Having a simple and easy to understand process also reduces the number of customers who choose not to install due to the complexity of the process.
- *Institute Presumptions in Favor of Granting Permits:* Establishing a presumption that the system will not pose a significant risk to the public good requires that entities that can delay the process provide explicit justification for doing so. In the off-chance that objection were to occur, limiting the pool of stakeholders involved in the review (in this case, to the applicant's utility) causes any objections to be more narrow, technical and substantive in nature.
- *Impose Maximum Overall Review and Comment Periods:* While limiting review

to local utilities on interconnection may not be an option for many municipalities with public comment or open meetings requirements, municipalities can help reduce costs associated with permitting and interconnection, and increase consumer confidence and developer certainty by imposing a ceiling on PII review times.

- *Consider Self-Certification for Small Systems:* Vermont's registration process also relies on developer and/or customer self-certification to PSB interconnection rules. This allows customers and developers to forego time-consuming inspections that would otherwise increase costs.

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