NASEO Best Practices Review: Streamlined Renewable Energy Permitting Initiatives

Introduction

Eager to take advantage of the growing potential of renewable energy, State Energy Offices are exploring innovative ways to reduce the soft costs associated with renewable—solar, wind, geothermal, hydro—projects. Complicated permitting processes are a major contributor to these costs, often adding weeks, months, or even years to a project development timeline; costly delays that ultimately drive up the price per kilowatt. In order to maximize the potential for abating the soft costs associated with renewable energy permitting processes, NASEO identified three best-practice streamlined renewable energy permitting initiatives in Colorado, Hawaii, and Vermont, to provide a reference for other states.

The first case presents a Pilot Program for small hydropower projects that resulted from an MOU between the state of Colorado and the Federal Energy Regulatory Commission (FERC). This program was designed to facilitate low-impact hydropower projects by coordinating the efforts of state and federal agencies with project developers and stakeholders to streamline the permitting process. The next case explores a suite of online resource tools implemented by the Hawaii Energy Office to provide potential developers and investors with the resources needed to initiate clean energy projects in Hawaii. By providing a one-stop hub for clean energy resources, these tools are designed to expedite the permitting process and reduce the soft costs associated with new projects. The final case presents a unique 10-day expedited permitting process for solar net-metering systems of 5-kW or less in Vermont. In addition to drastically reducing the permitting timeline for small scale solar installations, this initiative has also lowered soft costs to below the national average for similar projects.

Colorado Energy Office

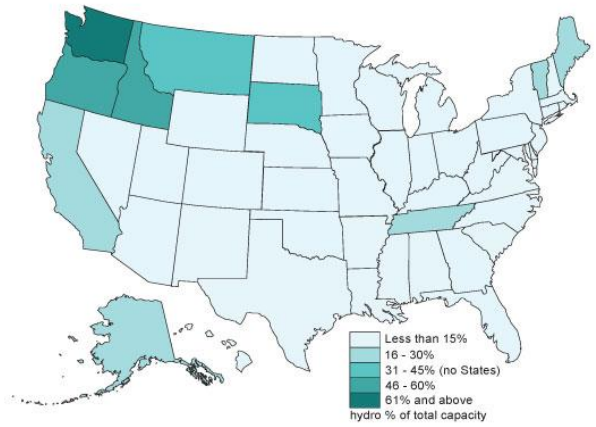
DBEDT
STATE OF HAWAII • DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

VERMONT

Background

In 2011, 7.6% of the total electricity generated in the United States came from hydropower.[1] However, with more than 80,000 dams nationwide, less than 3% are equipped to produce electricity.[2] It is estimated that more than 10,000 megawatts (MW) could be generated by converting just a small percentage of these dams to power-producing facilities.[3] The benefits of hydropower can be further realized through the targeted development of small and low-impact projects along the thousands of miles of irrigation systems in the United States. North Dakota, Nebraska, Massachusetts, Oklahoma, and several other states recognize the benefits of developing small hydropower and include this in their comprehensive energy plans.[4] In Colorado, it is estimated that the combined capacity of potential small-hydropower projects could contribute more than 1,400-MW to the state's renewable energy mix, if developed.[5]

2011 Conventional Hydroelectric Capacity as a Percent of Total Capacity by State



Source: U.S. Energy Information Administration, *Form EIA-860 Annual Electric Generator Report.*

The Federal Energy Regulatory Commission (FERC) is the federal agency tasked with licensing and inspecting all private, municipal, and state hydroelectric projects in the United States. While FERC's permitting process is predominantly designed to facilitate large-scale hydropower projects, most low-impact projects are eligible for either a Conduit or 5-MW exemption given they meet certain criteria. Projects qualifying for these exemptions have much less impact on water sources and the environment and are therefore much easier to permit. The initial requirements for a FERC low-impact exemption include the mandatory use of existing infrastructure, no new stream diversions, and minimal or easily mitigated impacts on ecological and recreational resources.

Source: Colorado Energy Office, CO Low Impact Hydropower Permitting Guide

Before the permitting process begins, FERC requires all relevant state and federal agencies, stakeholders, and public interests

[1] U.S. Environmental Protection Agency. "Clean Energy". 10 Oct 2013. Available Online: [http://www.epa.gov/cleanenergy/energy-and-you/].
[2] 2012 ASERTTI/NASEO State Energy Policy & Technology Outlook Conference. "Streamlining Small Hydro-power Permitting: An Infrastructure and Economic Opportunity". 8 Feb 2012. Available Online: [http://energyoutlook2012.naseo.org/presentations/McVeigh-CO_REDT.pdf].
[3] Ibid.
[4] NASEO. Statewide Comprehensive Energy Plans. Available Online: http://naseo.org/stateenergyplans
[5] MOU between FERC & the State of Colorado. 25 Aug 2010. Available Online: [http://www.ferc.gov/legal/maj-ord-reg/mou/mou-co.pdf].

be given the opportunity to comment on the proposed project. Projects are then required to go through the three-staged pre-filing, filing, and post-filing process, lasting anywhere from six months to several years depending on the feasibility, size, and perceived environmental impacts of the project. This time-intensive process can significantly increase costs, making it difficult, if not impossible, for small-scale hydropower projects to survive.

Case Presentation

In August 2010 the Colorado Energy Office led an effort that resulted in a memorandum of understanding (MOU) between the state and FERC to reduce low-impact hydropower permitting burdens and effectively streamline the time-intensive and costly process. Using American Recovery and Reinvestment Act (ARRA) funds administered through the Department of Energy, the MOU allows Colorado to implement a pilot program designed to prescreen low-impact hydropower projects to ensure eligibility for the FERC conduit and 5 MW exemptions. The Colorado Pilot Program process includes:

1. Prescreen Application and Review;
2. Full Application with detailed submission of project information and documents;
3. Expert Review and Feedback;
4. Resource Agency Review; and
5. FERC Application Submission.

Through this pilot program, the Colorado Energy Office oversees FERC's pre-filing and filing stages. Because the state intercedes at every stage, the prescreening process ensures the feasibility, accuracy, and completeness of any eligible permit application before submission to FERC, thereby reducing delays later in the process. The process is further facilitated by the agreement between Colorado and FERC to create respective points of contact to hold quarterly meetings to assess the ongoing implementation and development of the project.

Outcome

The MOU between Colorado and FERC and the resulting pilot program have drastically improved the permitting process for small hydropower projects in the state, reducing overall permitting timeframes from several years to as short as six months.[6] On average, one to two years are saved through efficient collaboration and coordination efforts between all relevant resource agencies and stakeholders. An additional one to two years are saved during the project feasibility and application review process, which ensures complete compliance with all federal regulation before any application is ever submitted to FERC.

Source: Colorado Energy Office, CO Low Impact Hydropower

[6] MOU between FERC & the State of Colorado. 2010.

Since its inception, the pilot program has pre-screened 26 new projects and submitted nine applications to FERC, resulting in the issuance of five FERC permits in the state. In comparison, only six other hydropower exemptions were issued nationwide in the two years since the program began—clear confirmation of the pilot program's success. One of the projects spurred by the pilot program is a 23-kW hydropower system installed on a ranch in Meeker, Colorado. The project utilizes water from an on-site irrigation ditch to generate enough power to offset the ranch's electrical load. The system now generates 100,000-kWh per year to meet 100% of the ranch's load and is expected to save $350,000 in utility costs over 30 years.[7]

The program also required coordination between a large number of state and federal agencies, resulting in strengthened inter-agency ties and highlighting the importance of inter-agency collaboration in the permitting process. Tom Hunt, Senior Policy Advisor at the Colorado Energy Office, pointed out that these relationships will continue to streamline permitting efforts by allowing the energy office to more efficiently direct project developers to relevant agency contacts.

Outlook

As of October 2013, the MOU between Colorado and FERC is still in effect. Although the maximum number of small-scale hydropower permits established under the MOU has not been reached, the ARRA funds that supported the Pilot Program have been exhausted. According to Mr. Hunt, these initiatives played an important role in educating project developers, as well as those agencies involved, about the complex nature of the permitting process. This ultimately achieved the goal of encouraging new development while revealing the significant amount of work required to consult with multiple agencies and prepare an application for submission.

In August 2013, Congress passed the Hydropower Regulatory Efficiency Act (HREA) to simplify the federal permitting process for low-impact hydropower. While the implementation of this legislation is currently under review as of October 2013, it employs much of the same criteria included in the FERC MOU and is seen by the Colorado Energy Office as a potential replacement. Regardless, the state hopes to continue developing small-scale hydropower by using the lessons learned from this initiative, such as the importance of public education and outreach and coordination among state agencies, to create a knowledge and resource center capable of training a small-hydropower specific workforce.

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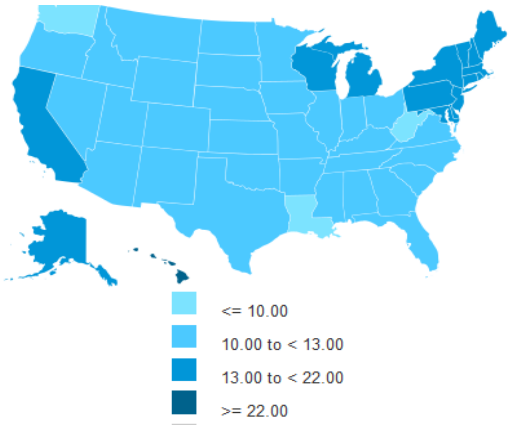
[7] Colorado Energy Office. "The Meeker Wenschof Project". 10 Oct 2013. Available Online: [http://www.colorado.gov/cs/Satellite/GovEnergyOffice/CBON/1251616729024].

Hawaii Online Renewable Energy Permitting Tools

Background

One of the greatest economic development challenges facing the Hawaii State Energy Office within the Hawaii Department of Business, Economic Development, and Tourism is the state's high costs of electricity and fuel. As of June 2013, the average price of electricity per kilowatt-hour (kWh) in Hawaii's residential sector was $0.37, nearly triple the national average.[8] Lowering the cost of energy has been a priority for the state since 2008, when it partnered with the U.S. Department of Energy to establish the Hawaii Clean Energy Initiative (HCEI). HCEI serves as a platform convening business leaders, policy makers, and concerned citizens to address energy efficiency and energy independence in the state.[9]

Average Retail Price of Electricity to Residential Sector: June 2013



Source: U.S. Energy Information Administration

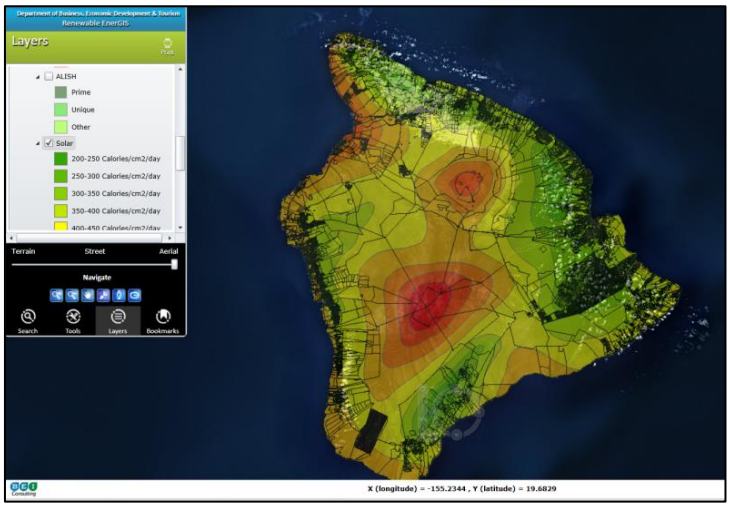
Through the HCEI, Hawaii committed to reaching 70% clean energy by the year 2030 through a combined increase in renewable energy generation and energy efficiency standards.[10] The increased capacity needed to meet these goals will require a permitting process that is capable of efficiently navigating Hawaii's regulatory system while maintaining the integrity of the state's ecology. Competition for project siting is fueled by limited land area throughout the state's eight main islands fuels, resulting in the tightening of regulatory controls to ensure adequate project reviews. This places additional burdens on the permitting process and threatens to slow the pace of renewable energy development. The State Energy Office and Hawaii regulatory agencies have taken on the challenge of streamlining the permitting process for these clean energy projects by developing tools to facilitate permit processing and improve the communication among relevant county, state, and federal agencies, the renewable energy industry, and the public.

Case Presentation

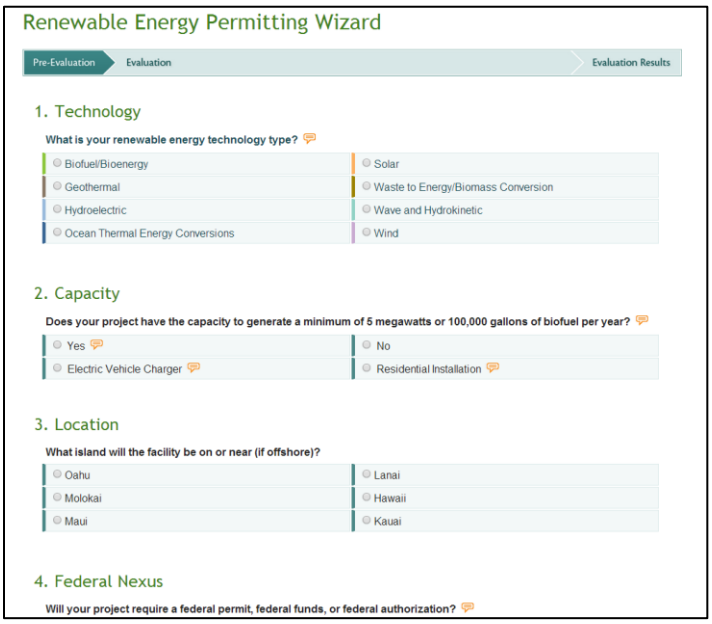
The State Energy Office created a suite of online resource tools designed to expedite the permitting process and reduce the soft costs associated with new projects. These tools are showcased on the State Energy Office's website in the *Developer and Investor Center*.[11] This one-stop resource hub is designed to provide potential developers and investors with the resources needed to initiate clean energy projects in Hawaii. Users can navigate permitting, financing, incentive, siting, and utility resources for all renewable energy projects (solar, wind, geothermal, etc.) through the variety of tools and permitting resources presented in this center.

[8] U.S. Energy Information Administration. "Hawaii: State Profile and Energy Estimates". June 2013. Available Online [http://www.eia.gov/state/rankings/?sid=HI#series/31]. Oct 2013.
[9] Hawaii Clean Energy Initiative. Available Online [http://www.hawaiicleanenergyinitiative.org/]. Oct 2013.
[10] Ibid.
[11] Developer & Investor Center. Hawaii State Energy Office. Available Online [http://energy.hawaii.gov/developer-investor]. Oct 2013.

Developers interested in researching sites for potential projects can use the *Renewable EnerGIS Map*, a Geographic Information System (GIS) tool designed to provide renewable energy resource and site information for specific locations around Hawaii.[12] In partnership with the Hawaii Office of Planning (GIS Program), the energy office provides this map that is composed of layers based on data made available in public GIS files and updated periodically to provide calculated estimates of renewable energy potential. Information presented in the map requires no special skill or prior experience to utilize. It is intended to help with "first-cut" site decisions by highlighting renewable energy potential and site permitting information for interested stakeholders.



Source: EnerGIS Map, Hawaii Department of Business, Economic Development & Tourism



Source: Renewable Energy Permitting Wizard, Hawaii Department of Business, Economic Development & Tourism

For developers who choose to pursue a project, there is the *Renewable Energy Permitting Wizard*, an online tool specifically developed to streamline the permitting process by providing a more efficient means of navigating Hawaii's complex permitting system.[13] The tool can be used for projects of any size and is intended to help stakeholders quickly identify and understand all of the local, state, and federal permitting requirements that may apply to a specific project. While the State Energy Office recommends and provides resources for expert consultation services to identify all applicable permit requirements, the *Renewable Energy Permitting Wizard* presents a series of up to 80 project-specific questions to give users a thorough list of relevant permits for a specific project in a specific location for initial due diligence purposes.

The *Developer and Investor Center* also provides access to the *Department of Health (DOH) e-Permitting Portal*, an initiative funded by the State Energy Office and designed by DOH that complements the *Renewable Energy Permitting Wizard*.[14] This tool is designed to provide access to environmental permit applications, instruction, and education. The *Portal* also allows for online application compilation and submission, online application fee payment, and online submission tracking. While the Hawaii State Energy Office strives for

[12] Renewable EnerGIS Map. Available Online [http://energy.hawaii.gov/resources/renewable-energis-map]. Oct 2013.
[13] Developer & Investor Center. "Project Permitting Assistance and Resources". Available Online [http://energy.hawaii.gov/developer-investor/project-permitting-assistance-and-resources]. Oct 2013.
[14] Ibid.

developing open source software—such as the *Renewable Energy Permitting Wizard—e-Permitting* is not open source and currently requires that agencies obtain a license to utilize the program.

Outcomes

The diverse library of resources collected and presented in the *Developer and Investor Center* demonstrates the value such a resource brings to the permitting process. In an ongoing effort to refine these tools, the State Energy Office utilizes Google Analytics to monitor and collect statistics about site activity. Traffic to the *Developer and Investor Center* climbed to over 1,500 unique page views over the last year, while the permitting and resources assistance page reached 549 unique page views. Over a six-month period from March 2013 to September 2013, the *Renewable EnerGIS Map* attracted 546 unique visitors, 28% of which were new to the website. As data continues to become available, the State Energy Office is using these statistics to develop innovative ways to improve the functionality and overall usability of these tools.

Briefs with process flowcharts, submission checklists, and other relevant information on over 160 permits are accessible through the first version of the *Renewable Energy Permitting Wizard* and the *Developer and Investor Center,* with 40 additional permits expected to be included in the next release. The next version is being developed in an open source software environment to include increased user functionality, up-to-date permitting timelines, enhanced website tracking and analytics tools, and a variety of other upgrades. The development of this tool in an open source format creates a unique opportunity for other states to utilize this platform and even contribute to its ongoing development. It also provides the State Energy Office the opportunity, at its discretion, to implement at little or no cost Wizard upgrades and features developed by others in the open source software community. Open source software development is supported by the Hawaii Office of Information Management and Technology.

The collaborative inter-agency development of the *Department of Health e-Permitting Portal* has led the State Energy Office to recognize a potential role for *e-Permitting* in the overall renewable energy permitting and development process. In addition to saving time and costs by allowing project developers to complete permitting tasks online, *e-Permitting* also provides the administering agency's staff the ability to modify and control all aspects of the online permitting system through a dynamic form management tool that empowers DOH staff to easily and immediately modify permit application forms and processes. Development of this tool gave DOH an opportunity to reassess and make uniform their permit processing steps and terminology across all DOH branches. Since April 2012, DOH reports e-Permitting has processed $83,665 in online payments, with online permit applications totaling $502,865 in fees. 1,019 permit applications have been submitted online, and 1,875 draft applications have been created and saved by applicants for possible future online submission to DOH.

Cameron Black with the Hawaii State Energy Office notes that an agencies' server and bandwidth capacity is a critical factor when considering the implementation of online permit processing tools. Significant information technology infrastructure upgrades may be required to allow newly developed software to operate at maximum functionality and speed. This should be one of the first considerations for any agencies considering online permitting. Long-term hosting and maintenance needs must also be factored early in the development

process. To develop a tool that meets staff needs and gains staff confidence, extensive staff time is required during tool development and implementation. Agency leadership must mandate a certain amount of staff time be dedicated regularly to online tool development. DOH conducted a beta testing session for selected regulated entities to enable them to test *e-Permitting* and provide feedback prior to launch, which is strongly recommended.

Outlook

The flagship version of the *Renewable Energy Permitting Wizard* reveals the benefit of increasing the transparency and availability of renewable energy permitting information and paves the way for future developments. As the State Energy Office continues to streamline the permitting process, this tool is poised to play a key role in creating a regulatory roadmap to facilitate project development. To realize the full potential of this tool and all streamline initiatives will require increased willingness and cooperation among local, state, and federal actors. A frequently changing political landscape often results in modifications to local permitting requirements; changes that must be reflected in the *Developer and Investor Center* and *Renewable Energy Permitting Wizard*. As renewable energy development is a high priority in Hawaii, the State Energy Office advocates a methodical and smart approach to this process in order to prevent unnecessary regulatory challenges in the long term and support the development of renewable energy projects that balance environmental, cultural, and social considerations.

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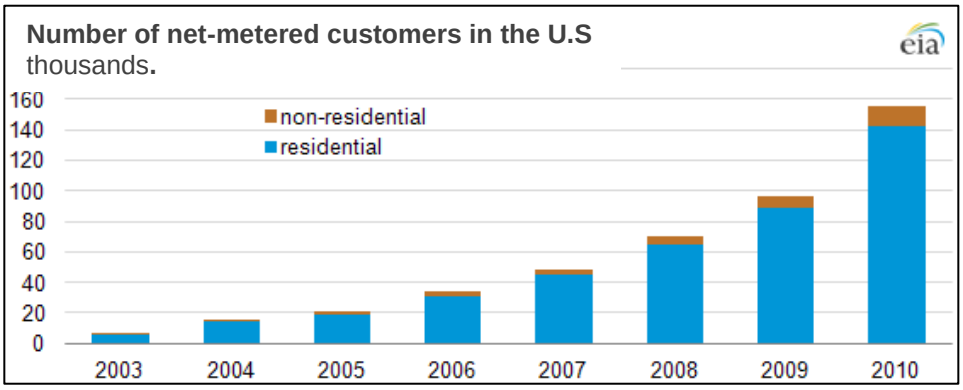
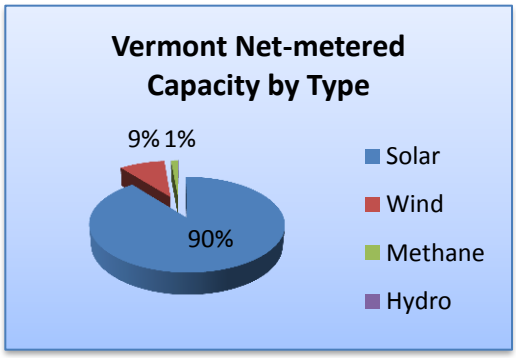
Background

In 2012, 3,313 Megawatts (MW) of solar photovoltaic (PV) were installed across the United States.[15] While the majority of these installations took place in the utility sector, 46% of this newly installed capacity occurred in the residential and commercial sectors.[16] Many factors have influenced the rapid growth of small-scale solar PV. Data from the Energy Information Administration suggests that a positive 10-year trend in state policy support for net-metering programs is one such influence.[17] As of 2010, more than forty states and the District of Columbia reported net-metering customers, 91% of which represented residential applications.[18] To better facilitate the deployment of small-scale PV installations, State Energy Offices recognized that the permitting process for these projects could be streamlined, making it more timely and cost-effective.



Source: U.S. Energy Information Administration, Electric Power Annual.

In 1998, Vermont enacted a self-generation and net-metering policy that provided customers the opportunity to offset their electricity requirements by feeding locally generated electricity back into the grid. The versatile policy allows for single, group, or farm net metering systems, provided the facility for generation of electricity employs a renewable energy source, has a capacity of less than 500-kilowatt (kW), and is located on the customer's premise. Participation in this system is open to all customers on a first-come, first-served basis with the cumulative capacity of net-metered systems capped at 4% of peak demand. While a variety of renewable energy sources are eligible for net-metering under this policy, almost 90% of all net-metered capacity in Vermont is comprised of solar.[19] The vast majority of these facilities are less than 10-kW.



Source: Vermont Clean Energy Development Fund

[15] Solar Energy Industries Association."U.S. Solar Market Insight 2012 Year in Review".Available Online: [http://www.seia.org/research-resources/us-solar-market-insight-2012-year-review]. Oct 2013.
[16] Ibid.
[17] U.S. Energy Information Administration."Participation in Electric Net-metering Programs Increased Sharply in Recent Years". 15 May 2012. Available Online: [http://www.eia.gov/todayinenergy/detail.cfm?id=6270]. Oct 2013.
[18] Ibid.
[19] Vermont Clean Energy Development Fund. "NASEO – Streamlined Permitting for Renewable Energy Generation". Presentation. Oct 2013.

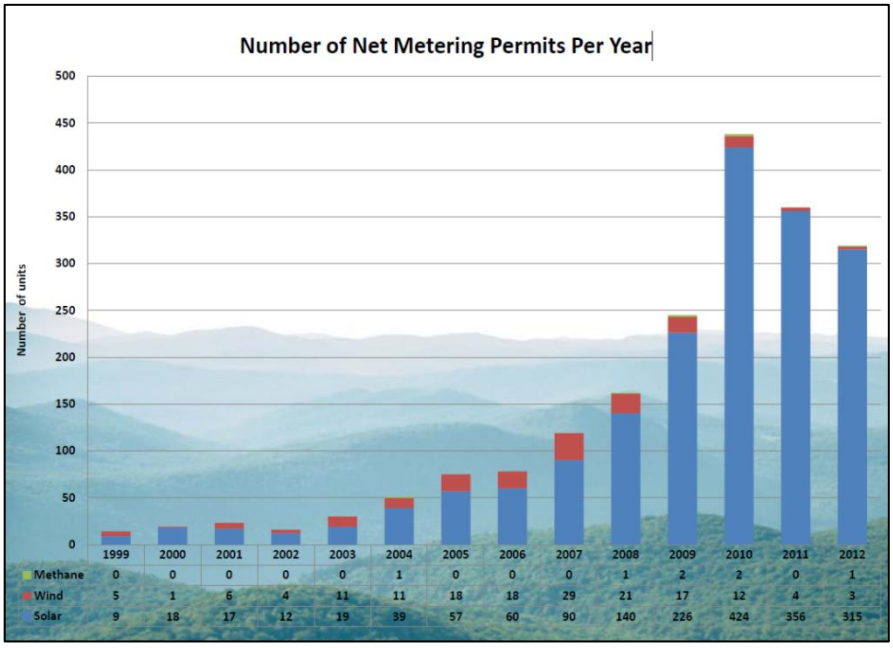
Case Presentation

Most states have a complex system of permitting requirements in which projects are subject to varying regulations depending on the municipality and county in which they are developed. In 2011, however, House Bill 56 was enacted in Vermont, amending the state's self-generation and net-metering policy to create a statewide 10-day expedited permitting process for solar net-metering systems of 5-kW or less. This state expanded the provision in May 2012 to include solar systems of 10-kW or less. To obtain a permit, customers must submit a completed, one-page registration form and a certification of compliance with any applicable interconnection requirements to the state energy office in the Vermont Public Service Board (PSB). The project then enters a mandatory ten-day waiting period, during which the interconnecting electric company may issue a letter to both the customer and the PSB listing any interconnection concerns. If no letter is submitted by the end of the waiting period, a Certificate of Public Good (CPB) is deemed issued and facility construction may begin on day eleven with no further approval required. A Certificate of Public Good represents a finding by the PSB that a proposed action will promote the general wellbeing of the state.

Source: National Renewable Energy Laboratory

Outcome

Since streamlining the permitting process for small solar facilities in Vermont, the overall permitting timeframe for these projects has gone from a minimum of forty days to a minimum of ten days.[20] According to Andrew Perchlik of Vermont's Clean Energy Development Fund, this streamlined permitting process in turn helped the state meet an overarching policy goal to lower soft costs in Vermont to below the national average for similar renewable energy projects. The residential sector is taking the greatest advantage of this policy.



Source: Vermont Clean Energy Development Fund

Despite the overall success of Vermont's streamlined renewable energy permitting process, there have been challenges that have impacted and will continue to shape this policy. The PSB

[20] Vermont Clean Energy Development Fund. "NASEO – Streamlined Permitting for Renewable Energy Generation". Presentation. Oct 2013.

initially expressed concern over the environmental impacts of a potential increase in projects. While the small residential rooftop systems which comprise the majority of projects pose minimal environmental concern, there is increasing potential for installations in ecologically sensitive areas, such as wetlands, with the emergence of pole-mounted systems. In the case of small scale solar, a Certificate of Public Good issued under this permitting process supersedes all other permits and ordinances in Vermont, in most cases overriding any local setback or zoning requirements. This complicated regulatory system can create confusion and pose problems for developers over which requirements must be met, potentially resulting in permitting delays and increased project costs. Though not a requirement, the State Energy Office recommends that customers comply with all local zoning regulations before registering a project.

Outlook

There has been some interest in revising the process to further facilitate small-scale solar residential deployment. One suggestion is to shorten or even eliminate the 10-day registration process for qualifying systems below 5-kw while maintaining the waiting period for 5 to 10-kw systems, ultimately allowing some projects to commence in as little as one day. While no official revisions have been proposed to the program, Vermont is committed to pursuing policy that further reduces soft costs.

Utilities appreciate small PV as a supplement during peak hours, but many are expressing concern as the energy source is steadily approaching the 4% net-metering capacity cap. The State Energy Office is therefore trying to develop new ways to cushion potential rate increases that may accompany growing levels of solar penetration.

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