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SunRun Comments on Proposed Renewable Planning and Permit Grants (Docket No 02-REN-1038)

Summary

The California Energy Commission should focus on actively organizing and encouraging jurisdictions to adopt a standardized permitting process for residential solar installations. The most cost effective lever to accelerate the installation of residential solar is to reduce the high costs of regulatory approval required to install the photovoltaic system. Permitting costs are immune from price reduction activities that the solar industry is driving (such as making technology advances and installation practice improvements), and therefore should be a top priority of government. Much of the permitting costs are caused by variation in

requirements and processes between neighboring jurisdictions. These costs are driven higher by the indirect expense of delay on approval, time wasted waiting for inspections and inefficient submittal procedures.

SunRun estimates a reform in permitting processes could lead to an incremental investment of $186 million in California residential solar in one year, creating an additional 1000 jobs[1], and $600,000 of customer utility savings. The primary reason to undertake this initiative is not environmental, though there are compelling environmental reasons to do so. The primary reasons the CEC should create incentives for jurisdictions to coalesce under a common standard is to generate local investment in purchasing and installing equipment used to reduce homeowner energy costs. Not only does the investment generate local economic activity by funding the sales and installation of solar equipment, but the homeowner will also save money through avoided electricity expenses. In this way we can begin to reinvigorate local economies through a smarter approach.

Specifically, SunRun recommends the CEC fund the development of a web-based permitting application for jurisdictions to enable them to use common forms and processes for the submittal, review and tracking of permits in as many jurisdictions as possible[2]. The majority of residential

[1]SunRun assumes 1 job is created for every six projects.
[2] SunRun suspects this type of tool has already been developed and simply needs to be commissioned for statewide use.

systems that meet pre-identified characteristics can quickly and safely move through the permitting process, while those falling outside the agreed upon norm can be reviewed in more detail. Currently approval processes are designed to subject all systems to the scrutiny that an atypical system requires. The higher costs of review can be placed on the more complicated systems, and not adversely increase the costs of every project. As jurisdictions opt-into this statewide permitting system they will be able to reduce the cost of each review and still ensure safety. As a result of the time and dollars saved by the streamlining, installers will increase their marketing spend and investment in employees and facilities as well as reduce prices in the participating jurisdictions. Secondarily the CEC should offer technical assistance to the local permitting department to help interface its systems with the new online permitting tool.

SunRun is a third party owner of residential solar systems in California. SunRun purchases the systems from local installer partners, and then sells the clean energy to homeowners, allowing them to pay for twenty years of electricity up-front, or on a monthly basis as the energy is generated. SunRun sells its service using what is referred to in the industry as a power purchase agreement (PPA)[3]. SunRun has interconnected 26 MW of residential solar systems in California. In 2010, alone SunRun entered

[3] SunRun uses a lease in the Los Angeles Department of Water and Power. Lease pricing can also be expressed in a cost per kWh electricity rate.

contracts to spend over $160 million on deploying systems for its customers. In 2010 SunRun built 16% of the residential solar systems built in the California Solar Initiative territories. As the owner of thousands of residential solar facilities in 8 California utility territories that were installed by a network of 10 local installation companies, SunRun has developed a deep understanding of how solar costs shape and limit the addressable market for solar.

Turn Key Pricing

The average "turnkey price" per watt to install residential solar is the baseline metric SunRun uses to assess the financial impact of permitting[4]. The turnkey price is easily translated into a price per kWh charged to homeowners for clean energy. The higher the turnkey price, the greater the electricity rate per kWh third party PPA providers must charge its customers. High turnkey prices limit the size of the solar market because solar companies are best able to sell to homeowners when the price for clean energy is at or below their current utility rate[5]. The residential solar industry's addressable market, grows or shrinks based on the relationship between the turnkey prices as expressed in a dollar per kWh rate relative to

[4] The dollar per watt average price for residential systems according to CSI data is in the $6.00 (DC) range at the end of 2010, after anomalies are removed.

[5] This is particularly true if the customer is using financing to buy the system, either to own it themselves or to buy the energy using a PPA or lease. The cost of the system including the financing cost, must be equal to or less than the amount the homeowner will save their electric bill on a monthly basis, often referred to as the Avoided Cost of Power (ACP).

the cost of traditional utility electricity. Reduction in the permitting costs embedded in the turnkey price will increase the number of economically viable solar homeowners and the amount of savings each homeowner will realize from investing in a solar system. By cutting the inefficiencies out of the permitting process the CEC can provide the leadership necessary to spur increased investment at the local level.

Permitting's Impact on Price

SunRun recently surveyed its installer network to quantify the total contribution of permitting to the turnkey price. The report entitled, "The Impact of Local permitting on the Cost of Solar Power[6]" identified that permitting costs increase the price of residential solar by $.50 cents per watt on average, or $2,500 per system. The report concluded that eighty percent of the permitting costs could be driven out of the price of residential photovoltaic systems through a standardized streamlined permitting process such as is recommended by the Solar America Board for Codes and Standards (SolarABC)[7]. This reduction of $2,000 per system would make solar economical for 17% more homeowners and facilitate an added $186 million in investment in California in year one of the cost

[6] http://www.sunrunhome.com/cost-of-solar/solar-panels/local-permitting

[7] http://www.solarabcs.org/permitting/

reductions assuming the CSI growth trajectory continues and the permitting changes are in place by 2012.

Estimating the Addressable Market

SunRun used a data base of 5,328 prospective and existing SunRun homes in California to determine the baseline of homes for which it is economical to go solar at a turnkey price of $6.00 per watt. Out of the 5,328 homes 3,502 passed our criteria for economical, which requires the homeowner to contribute a $1,000 up front payment and each homeowner had to save at least 5% on their utility bill. SunRun then reduced the turnkey price by $0.40 per watt to reflect a streamlined permitting process. When the data was rerun it became economical for an additional 597 homes – increasing the addressable market by 17%.

SunRun extrapolated the impact of the 17% increase in addressable market by using projecting CSI growth into 2012 to use as a baseline[8]. It then applied a 17% increase to those numbers which would result in an additional investment of $186 million to install solar on over 6,000 more homes. This would generate the installation of an incremental 34 MW of residential solar, to the projected base of 233 MW to be installed in 2012.

[8] There were 16,133 residential systems completed in 2010 according to Solar Statistics http://www.californiasolarstatistics.ca.gov/.

SunRun estimates the 6,000 incremental customers would save $601,000 in year one, and $11.4 million over twenty years.

Associated Benefits

The installation of residential systems is labor intensive and creates jobs that cannot be easily exported out of the locality, not to mention the state or country. Homeowner investment can be the antibody for a poor economy especially when that investment provides the homeowner a guaranteed return. The economic benefit of residential solar goes far beyond the direct purchase of the equipment or the homeowner energy savings, to increased home values, installer investment in local facilities and marketing, the purchase of goods and services (gas, lunch) by installation crews and of course the new installation jobs themselves. All of these elements increase the jurisdictions tax revenue as well as the prosperity of many local businesses.

Conclusion

In discussions with experts on the permitting process there does not seem to be a specific technical or policy reason why jurisdictions cannot agree to the same procedures. Furthermore SunRun has heard no compelling reasons why an entire state such as California could not agree to standardized rules and processes. The best explanation for the

problem is local inertia. The authority having jurisdiction's (AHJ)[9] primary objective is to protect safety – and they are appropriately less concerned with generating economic activity. Because solar systems are a relatively new technology there is a tendency to subject them to more scrutiny than is necessary. Contributing to the problem is the lack of resources AHJs have to assess whether they can streamline their processes and remove inefficiencies. Collaborating with neighboring jurisdictions is an effort that is unlikely to originate organically from within the AHJ. It is not the AHJs role to find ways to scale investment in solar investment though clearly this is in the best interest of the community. Due to these factors it is important for the California government to provide the vision, tools and guidelines for jurisdictions to safely permit residential solar, in a way that allows the industry to scale.

Jurisdictions may require additional motivation to participate in a statewide program. An extremely cost effective way to provide this motivation and trigger matching investment would be to provide a small rebate only to consumers within jurisdictions participating in the statewide permitting reform. A $0.20 per watt rebate would further open the addressable market and create pressure on jurisdictions to participate. The benefit of a temporary rebate program creates a greater sea change

[9] AHJs include entities involved in permitting such as the building, zoning, and fire department. The jurisdiction is the larger body within which the AHJ resides.

reducing the costs of solar lasting far beyond the limited rebate funds invested. It is this type of approach combined with further reductions from industry efforts that will make Governor Brown's goal of 12 GW of distributed generation of solar an achievable target. SunRun does not think of this as a green energy program, though certainly improved environmental quality will result. The reason the state should launch this initiative is purely economic. There is no better time to make this investment.