Solar Technical Assistance Team (STAT) Summer Webinar Series

Webinar 2: Solar Economics for Policymakers: Non-Hardware Costs of PV Systems

Question & Answer Session

July 25, 2012

1. **Do you believe the FERC pro forma Small Generator Interconnection Procedures (SGIP) and Small Generator Interconnection Agreement (SGIA) will be changed in the near future? OR do you believe changes to these rules will help the process to be streamlined?**

There has been quite a bit of discussion around the FERC SGIP. While it’s not a certainty, it does seem that FERC may consider some changes to the SGIP that could streamline the process for small PV. However, such changes may not have a similar effect on PV over 2MW.

1. **The price quote of Germany vs. the U.S., does that take into account the feed-in-tariff (FIT) for Germany?**

Like the illustrated U.S. prices, the modeled German price represents total installed PV system capital costs to the end consumer. In Germany, system prices are influenced by the German regulatory and policy environment, and pricing is determined by the ability to meet a desired return of investment (ROI) in the context of the FIT (and other factors). This is included in the modeled case. FIT policies can, arguably, lower system financing costs, but this is not included in the chart. Both German and U.S. systems in the chart represents cash purchase prices.

1. **Installer's profit margins current appear very large. What profit margin is embedded in the DOE's 2020 SunShot target?**

DOE 2020 non-hardware SunShot goals do not specify targets for profit, but rather aim to reduce the installed-system price contribution of *all* soft costs to approximately $0.65/W for residential systems, $0.44/W for commercial systems, and $.22/W for utility systems by 2020.

1. **Would selling Solar Renewable Energy Credits (SRECs) be more viable and avoid interconnection fees as opposed to grid tied solar buyback option to reduce soft costs? Also will normal permitting and inspections still be required in those installation projects?**

With respect to whether SRECs are more viable to avoid fees compared to grid tied solar buyback options, fees themselves are applicable in both instances and are largely dependent on the utility service territory. Likewise, a separate meter, which tracks production, may need to be installed, which can increase costs, in both instances.

However, with respect to over all viability of the two in driving down costs or increasing deployment, it largely depends on in market electricity rates and how the buyback option is structured (net metering or FIT?).There is always the need to weigh the current value of SRECs and how much one can get for a buyback, which is usually dependent on state/utility territory electricity rates. For example, in Idaho their electricity rates are so low that a utility buy back option may not significantly improve the overall cost of the system. In other areas where electricity rates are high, a buy back might be more attractive. Similarly, in states actively participating in REC markets the SRECS sales might be a better option.

Lastly, as permitting, inspection, and interconnection standards vary by municipality, all projects will be subject to *typical* requirements, for the jurisdiction in question. Taking advantage of SREC and buyback options does not necessarily affect the permitting requirements put forth by the municipality.

1. **From the data you presented, customer acquisition costs are significant. What are installers doing to reduce these costs?**

Customer acquisition costs include items such as bid preparation and system design. Today, installers are reducing these costs through remote design techniques that use satellite imagery, for example, or executing more up front customer acquisition activities, such as providing a system quote, via on-line interfaces. As the customer acquisition process becomes more streamlined with use of remote and web-based technologies, costs to the installer are reduced.

1. **You focused quite a bit on permitting throughout the presentation, but what about installation labor? How are installation labor costs expected to fall in the coming years?**

Installation labor costs are a function of many factors, including wages, productivity, hardware requirements, and the level of system customization. Today, the solar industry is making incremental advances in plug and play technology and balance of system hardware that decrease installation time and associated cost. Innovation in installation methods and hardware BOS, such as integrated mounting systems, ballasted modules, and pre-assembly manufacturing techniques have potential to reduce installation labor requirements significantly in the near term and long term.

1. **Can you just speak briefly on some of the financing cost data you collected and what kind of financing are installers doing for solar installations?**

Because the upfront capital requirements of PV installations can deter PV adoption, innovative third-party financing schemes that address these high upfront requirements, such as solar leases and power purchase agreements (PPAs), are becoming more prevalent. For example, in 2010 approximately 33% of residential systems (by capacity) installed through the California Solar Initiative used third-party financing arrangements. In 2011 this percentage grew to approximately 46%.

The survey attempted to benchmark the additional labor costs of arranging third-party financing. Installers were asked to report the average number of labor hours spent working with fund providers of third-party leases and PPAs. The installers reported spending an average of 2.4 labor hours working with third-party fund providers, translating into $0.02/W for a 5-kW system. Of the 66 respondents, 18 assisted with third-party leases, and 7 assisted with third-party PPAs. Overall, 46% of installations were financed through third-party schemes. PV systems completed by smaller-volume installers were more likely to be financed through direct-cash purchase (for which we assumed zero financing-related installer labor) compared with systems completed by large-volume installers.