

Why We Need to Support the Creation of a Viable Commercial Solar Energy Sector in Arizona

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CarbonFree Technology is a commercial solar energy project developer, whose accomplishments include developing the largest non-utility owned solar PV portfolio in Arizona (1.7MW at ASU's Tempe Campus). In 2008, CarbonFree was involved with the development of 13 solar projects (totaling ~ 6 MW) in CA, NJ and AZ having a value of over \$40 million.

Background

In November 2006, the Arizona Corporation Commission (ACC) adopted rules to expand the state's Renewable Energy Standard (RES) to 15 percent by 2025 with 30 percent of that amount to be derived from distributed energy (DE) technologies. The DE requirement must be derived equally from residential and non-residential sources. To date, most of the growth in Arizona's solar energy industry comes from residential projects, with some utility-scale (non-distributed) projects being contemplated. One major difference between residential and commercial (non-residential) solar PV incentives in areas falling under the ACC's jurisdiction is that residential systems are given a one-time cash rebate equal to \$3 per Watt (covering ~40 percent of the system cost) while large commercial systems receive a Performance Based Incentive (PBI) which rewards the solar system owner with \$0.25 per kWh produced by the system over a 10-year period, or \$0.18 per kWh produced by the system over a 20-year period.

Point #1

Increasing the volume of Commercial PV installed in Arizona benefits the entire industry.

The problem: In terms of compliance with the targets set by the RES, Arizona falls significantly short. While residential installations are growing at a healthy pace, it is unlikely that we will ever achieve the RES targets without a viable commercial DE sector.

The fix: A single commercial DE project can be the equivalent of hundreds of residential installations. However, at their current levels, PBI rates are not high enough to encourage large-scale adoption of solar energy in the commercial sector. This is due in part to the fact that rates for large commercial users can be significantly lower (as much as half, or even less) than for residential customers.

While the gap between commercial electricity rates and the cost of electricity from solar is narrowing, raising the

PBI rates by as little as \$0.03 or \$0.04 per kWh will have the added impact of closing the gap, and contributing towards the development of a viable commercial solar sector in Arizona. If the concern is that utility rates will continue to rise and eventually create a situation where solar system owners are making "excess profits" when the PBI payments are factored in, a simple formula can be applied whereby the PBI payment decreases proportionally, for every increase in the cost of electricity from the affected utilities.

By incentivizing a solar system owner based on the number of kilowatt-hours a system produces over the long run, this also encourages good system design and insures that the objectives of the utility seeking the Renewable Energy Certificates (RECs) and the solar system owner are aligned.

Point #2

Renewable Energy is the new Real Estate.

The problem: Historically, Arizona has relied on the real estate and construction industries to drive much of the state's economic growth. Many of us recognize how this has exacerbated our current situation, and that many of the unemployed workers are skilled tradespeople who have run out of projects to build.

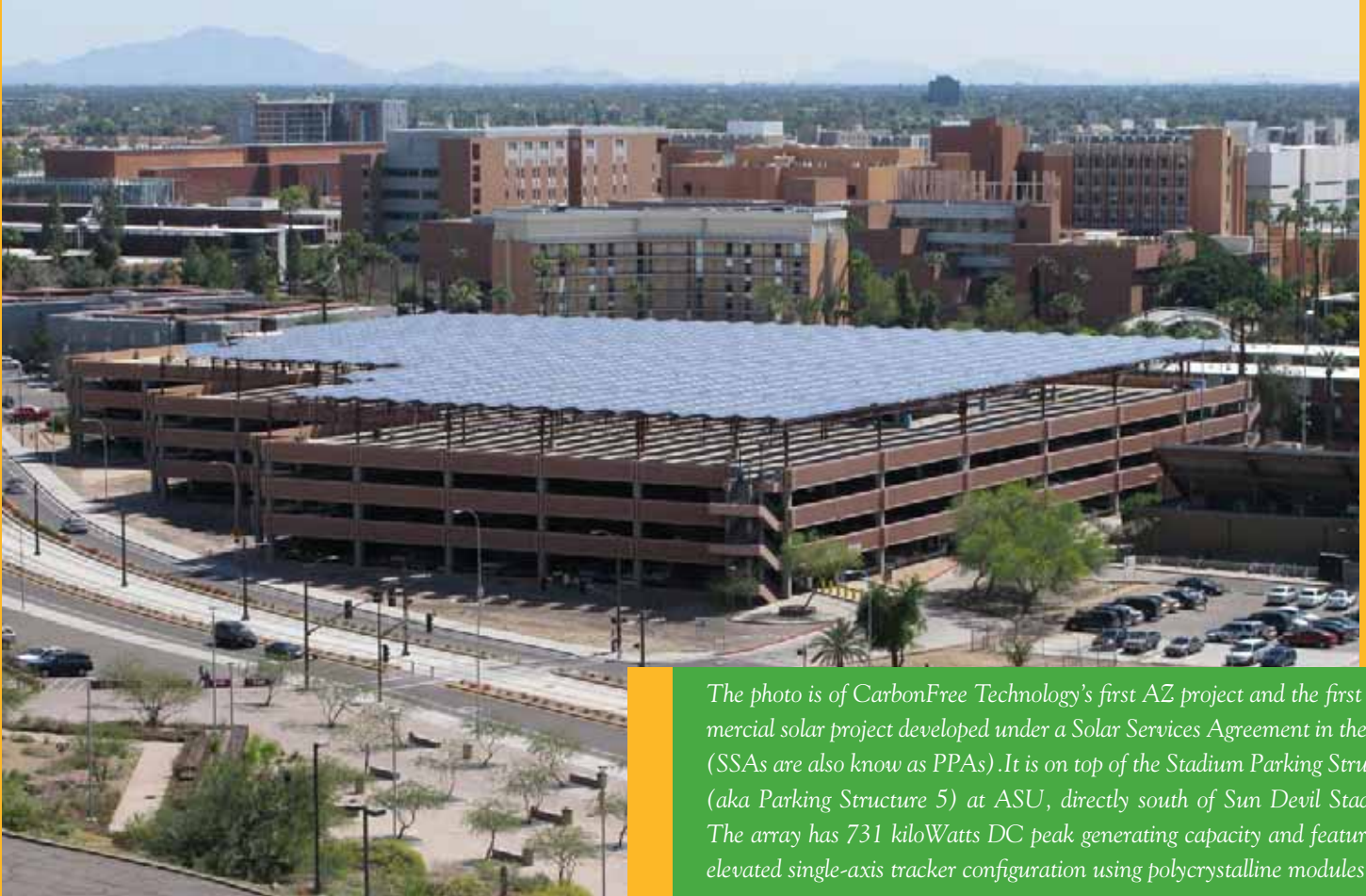
The fix: It is important to understand that solar project development utilizes many of those resources and can create jobs without having to subject the labor force to significant retraining. State and municipal policies that affect solar installations (including permit fees, application reviews, etc.) should be revisited to insure that they facilitate rather than discourage the development of solar projects.

Case in point: When CarbonFree Technology and its partners developed the largest solar power plant in Arizona which is not utility owned, the project utilized the services of structural and electrical engi-



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The photo is of CarbonFree Technology's first AZ project and the first commercial solar project developed under a Solar Services Agreement in the state (SSAs are also known as PPAs). It is on top of the Stadium Parking Structure (aka Parking Structure 5) at ASU, directly south of Sun Devil Stadium. The array has 731 kiloWatts DC peak generating capacity and features an elevated single-axis tracker configuration using polycrystalline modules

neers, electricians and steelworkers as well as ancillary services (e.g., security, equipment rentals, etc.), all sourced locally.

Point #3

Our electricity rate structures encourage waste.

The problem: In Arizona, some large users of electricity are given little incentive to reduce their consumption. In fact, some large users intentionally use more electricity during certain months of the year in order to bring their consumption levels to a point where they get a “volume discount” (i.e., pay a lower price per kWh once consumption level passes a certain threshold).

The fix: Rate de-coupling – the concept of separating a utility’s revenues from its volume of energy sales addresses the conflict that presently exists whereby utilities are asked to promote energy conservation and renewable energy without any compensation for lost revenue. This is a concept that has been around for some time and should probably be revisited.

A more specific example would involve a progressive stepped rate structure whereby the first XX kilowatt-hours of electricity are priced at a very reasonable rate, but higher consumption levels result in a steep price increase per kWh. This general approach towards

structuring electricity rates is commonplace in states like California, which happens to be the largest solar PV market in the U.S.

Keeping the first price tier for both residential and commercial electricity rates low also addresses the argument that raising rates will hurt low-income/fixed-income households and/or small businesses. On the large commercial side, this will also encourage utility customers to view solar as a way to eliminate the most expensive part of their electric bill, not necessarily 100 percent.

The above solutions will **not** cost taxpayers any additional funds (even the increased PBI rates which would tap into existing set asides) and will serve to advance the development of the solar energy market (particularly the commercial sector) in Arizona. This will allow us to tap into our state’s greatest resource: sunshine.



In both cases, the utility gets to keep the Renewable Energy Certificates or Credits (RECs) for a 20-year period.

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