

The Rise of Offsite Clean Energy

By Bryce Smith

Purchased electricity accounts for more than 40 percent of campus emissions at U.S. colleges and universities. For most schools, it is the single largest source of greenhouse gas emissions (<http://rs.acupcc.org/stats/ghg-source-stats/>). As an increasing number of facilities managers examine how to support their institution's sustainability initiatives, purchased electricity holds an enormous opportunity for reducing emissions.

While the cleanest (and cheapest) electricity will always be the electricity not consumed, colleges, universities, and schools will continue to purchase large amounts of grid-sourced electricity for years to come. Fortunately, there are an increasing number of ways that institutions can buy clean power – the trick is to understand which option makes the most sense for your institution.

The purpose of this article is two-fold: first, to introduce the concept of purchasing clean energy from an offsite project developed on your behalf; and second, to help determine if this approach fits your school's needs.

In order to understand the potential benefits of this approach, let's take a quick look at the alternatives. Historically, most colleges and universities that source clean energy have done so through either onsite renewable energy installations or renewable energy certificates (RECs). Each approach presents certain advantages and limitations.

ONSITE

Onsite clean energy projects can offer a highly visible source of clean power, a tangible commitment to

sustainability, and easy educational access for students and faculty. Institutions can benefit from attractive leasing options or PPA structures that amortize costs over many years.

However, an onsite facility may be difficult to build at a scale that significantly reduces an institution's footprint, and can be comparatively expensive. These drawbacks may be even more apparent on urban campuses with limited space.

RECS

Renewable energy certificates are notably easier and less expensive to procure than are onsite clean energy projects. RECs allow institutions to claim not only the environmental benefit of clean power generated elsewhere, but also to support the development of new projects. While a thriving REC market may be crucial to the health of renewable energy project markets, many colleges and universities believe that this financing mechanism falls short of delivering direct emotional and financial

connections to a particular clean energy project. The abstract nature of the REC purchase often carries less appeal for institutions and their stakeholders.

A THIRD APPROACH - OFFSITE CLEAN ENERGY PROJECTS

To overcome many of these limitations, one option for facilities managers to consider is to source clean power from an offsite renewable energy project that is relatively close to campus.

LOCATION

Offsite projects can be sited in much better locations than can onsite ones, in terms of both the available sun or wind and the ease of connecting the project to the power grid. In addition, ground-mounted, offsite systems are often less expensive to install and maintain than are many onsite rooftop projects – savings that can be passed on to the end-user.

SIZE AND SCALE

Offsite systems also help overcome size limitations that confront many onsite systems, allowing a school to benefit from efficiencies of scale. Beyond the ability to create larger, more meaningful projects, offsite systems present the flexibility of a scalable system. This means an institution can size a project based on desired energy output (e.g., 10 or 20 percent of energy use) rather than on available space on campus.

While offsite installations may not be visible from campus, there are many ways to integrate these projects into



student life. Schools can bring larger offsite facilities to life by installing kiosks that display real-time power generation data and avoided carbon emissions, and students can take advantage of academic and vocational opportunities afforded by a large offsite project. If awareness and technology demonstration are particularly important to a school, small-scale on-campus demonstration projects can complement the offsite power plant.

IS OFFSITE ON-TARGET? 5 QUESTIONS

To help you determine if an offsite project makes sense for your institution, consider these five questions:

1. Is your institution interested in purchasing clean power directly, but doing so on-campus is limited due to cost, complexity, or available space?
2. Is your institution reluctant to source clean power through RECs (either through a utility green power program or RECs provider)?
3. Is your institution in a deregulated electricity market? Deregulated markets can offer schools greater power purchasing options.
4. Is the solar or wind resource strong enough in your region? A higher quality resource allows a renewable energy system to generate the same amount of energy at a lower cost. Check the quality in your area by visiting the National Renewable Energy Laboratory's PVWatts Viewer online at <http://maps.nrel.gov/node/25>.
5. Is your institution located in a region with strong support for renewable energy? This assistance also helps lower the cost of power from an offsite project. Some states have "Renewable Portfolio Standards" (RPS) with specific requirements for solar. A map

highlighting those states is available through the U.S. Department of Energy online at http://www.dsireusa.org/documents/summarymaps/Solar_DG_RPS_map.pdf.

If facilities managers can affirmatively answer some of these questions, then an offsite project is a possible viable source of clean energy (in addition to RECs and onsite projects). By considering these three options, institutions can make powerful decisions about how to reduce the impact of purchased electricity, and can move closer to reaching their sustainability goals. ☺

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