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Clearer Expectations Over Energy Storage Needed in Utility-scale Project Contract Negotiations

Insight — October 8, 2019

Republished with permission, originally published in Solar Power World on October 8, 2019.

Enthusiasm about solar energy and battery storage projects is reaching celestial heights. And for good reason. Thanks to the falling costs of lithium-ion batteries and new government policies designed to promote clean energy, deployment of utility-scale solar-plus-storage is growing rapidly.

But as developers and utilities approach this technology in contract negotiations, they should ground themselves in reality with a clear and shared understanding of what batteries can and cannot do (and for what price). If they fail to do so, parties risk talking past each other, resulting in cost miscalculations, missed opportunities and unmet goals.

As batteries become more mainstream, this concern is no longer theoretical. After utility-scale battery capacity in the United States quadrupled between the end of 2014 through March 2019, it is projected to more than double by 2023, according to the U.S. Energy Information Administration (EIA). Record solar-plus-storage projects have been announced this year in California, Nevada and Arizona.

Still, integrated battery storage projects represent a tiny share of the overall market in the United States, and it's still very early in the development of the technology. Its nascency may help explain why some fundamental aspects of it are lost in translation and not fully appreciated.

I've seen it happen. Developers and utilities can spend months negotiating the terms of a power purchase agreement for a combined solar and battery project and still not realize that they have mismatched expectations and assumptions about what the battery needs to do, the battery's operating parameters (and its limitations) and who controls its use. Too often, a battery is seen as simply another line item in a budget that can be priced like another piece of equipment added to a generating facility. But it's much more than that.

Adding a battery to a solar project can appear deceptively simple. And it's true that for developers, adding a battery (especially to a utility-scale development) is not a particularly burdensome step in a greenfield solar project. Solar site selection, resource assessments, environmental reviews, engineering studies/economic modeling and interconnection

studies can all require more time, planning and due diligence.

By contrast, adding a battery to a solar project usually does not require additional permitting. And because they have a relatively small footprint, additional land acquisition is usually not required, nor is an additional environmental impact review required.

To be sure, there are some important operational questions that must be addressed around where to connect a battery to the electrical system. Should the solar energy be transmitted to the battery and then to the grid? Or, should the solar energy be allowed to flow directly to the grid or to the battery? Answers to these questions can have a significant impact on the cost of the project as well as significant tax implications that go beyond the scope of this article.

Aside from the development process, a fundamental question to be answered in contract negotiations between a developer and a utility needs to be: **what is the battery's purpose?**

Specifically, is the battery primarily being added because the utility wants to relieve pressure on the grid during peak demand periods? Is it being added to provide ancillary services like frequency regulation or voltage support? A combination of both?

Not being clear about the operating parameters can lead to misunderstandings. It's easy to imagine a scenario where the utility wants to use the battery without limits to help smooth out periods of high demand. But the developer likely priced the use of the battery with specific charging and discharging limitations in mind, for example, that the maximum usage of the battery would include one full cycle per day and up to 365 per year.

How often the battery is used matters of course because the more you use the battery, the more quickly it degrades, and the sooner it must be replaced. In order to finance the battery, a developer must price it appropriately. That means being able to accurately predict how long the battery will last.

These issues are hardly insurmountable. With a clear understanding of what utilities want from a battery, developers can make appropriate pricing proposals.

Still, if developers and utilities don't take the time up front to agree on clear terms around the battery in contract negotiations, it may lead to protracted, and unfruitful negotiations, or even legal disputes.

Utility-scale solar power has come so far over the past ten years, and developers and utilities have become much more sophisticated about how to price those projects. Adding battery storage to those projects is still new and more clarity around its capabilities is needed.

Ashley Wald is a partner with the law firm Holland & Hart, where she advises energy companies around the country in the solar, battery storage,

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