

How to Diligence a Solar Development Pipeline (Part 1 of 4)

Wednesday, February 20, 2019

Introduction

Photovoltaic solar projects have become a rather conventional asset class. The technology is proven at scale, the revenue stream looks and feels like an annuity and, with customers like Walmart and your local utility, the sizzle is gone. In recent years, investors have flocked to the space hoping to seize on the final few opportunities for high-returns, coupled with infrastructure-like stability. As the market matured, margins compressed and double digit returns are now likely permanently in the past. Still looking for sizzle, investors, now comfortable with solar as a generating asset, are exploring ways to invest earlier in the development cycle. The increased risk ought to provide increased yields, so the thought goes.

Happy to oblige, developers have been offering up their development pipelines for sale. These pipelines promise attractive returns and the offerings are timely. With the federal Investment Tax Credit set to step down at the end of the year, projects must commence construction by December 31, 2019 in order to take advantage of the current 30% tax credit. Adding to the frenzy is a sense that we may be approaching market saturation for investment grade offtake. Projects with strong contracted revenue streams from investment grade rated counterparties are scarce, and offtake tenures, once a standard 20-25 years, continue to plummet. Given these circumstances, the market will continue to see increased investment in solar platforms and development pipelines.

The question inevitably arises whether the investment community understands solar development assets as well as it understands solar operating assets. If the glossy CIMs in circulation now are any indication, the answer is “no.”

This is part one of a four part series exploring how to value and diligence a solar development pipeline. This series will consider commercial and industrial (C&I) and utility scale pipelines and will not address residential pipelines.

Beyond Bragawatts

Development pipeline and operating portfolios are measured in megawatts. Generally, investments in solar portfolios at NTP (“notice to proceed”) or COD (“commercial operation date”) are assumed to be de-risked. System sizes tend to decrease slightly from NTP to COD, but these changes typically do not go beyond post-closing quibbles over liquidated damages.

Development pipelines, on the other hand, are mixed bag of risk. Pipelines tend to include (in order of declining risk): early stage assets, later stage assets and “NTP ready” assets. Since attrition occurs as projects move from early stage to NTP ready, developers looking to sale their pipelines often provide their views on the pull-



Article By [Mintz](#)
[Leslie C. Hodge](#)
[Energy & Environment Update](#)

[Environmental, Energy & Resources](#)
[Financial Institutions & Banking](#)
[All Federal](#)

through rate for projects in their pipelines. A common way to think of a pull-through rate is in the context of the offtake agreement. The offtake agreement, often a Power Purchase Agreement (PPA), is the centerpiece of the solar project. Developers pour an enormous amount of sweat equity into acquiring offtake. Sales cycles for unsolicited PPAs last anywhere from 3 months to 3 years. Sophisticated offtakers hold competitive RFP processes that reward bidders that are willing to build projects below cost in the hope that they will be awarded follow-on business. With the exception of feed-in-tariffs directly with a utility, offtake agreements are bespoke products of painstaking negotiation. Rightfully, many developers consider the PPA to be their biggest value-add and the most critical element of a project's success.

Therefore, a potential investor may see pipelines broken down into PPA-related categories for the purposes of determining attrition. For instance, a common set of categories and pull-through rates would be as follows: Projects in the "proposal" stage have a 5% likelihood of success; projects in the "term sheet" stage have a 30% likelihood of success; projects in the "negotiation" stage have a 50% likelihood of success; and projects in the "executed PPA" stage have an 75% likelihood of success. This approach is elegant in its simplicity, while maintaining just enough number crunching for an analyst.

If you are thinking that it probably takes more than a few short clicks to get to the probability-weighted megawatt number of a development pipeline, you'd be right.

Every individual solar project has four pillars on which it succeeds:

Pillar I: Revenue Streams

Pillar II: Interconnection

Pillar III: Site Control

Pillar IV: Permitting

A fault in any of the four could represent a binary risk to a project. In order to value a pipeline, one must diligence each of the four pillars and be able to assign a stage of development to each project for each pillar. Complicating matters, within a single pipeline there is often a stunning lack of standardization across the project documents that govern the four pillars. Interconnection requirements vary by utility, down to the feeder. Permitting requirements vary by jurisdiction, down to the subdivision. And site control is, well, site specific.

This post will explore the first pillar of project success, Revenue Streams.

Pillar I: Revenue Streams

A. Structure and Authority

Within a single development pipeline, you may encounter the following types of offtake agreements:

- Feed-in-Tariff (a project directly with a utility)
- Net-metered PPA (a project sited on or off the offtaker's premises)
- "Behind-the-meter" PPA (a project sited on the offtaker's premises)
- Contract for Differences (a project sited remotely from the offtaker)
- Community Solar Agreement (with subscription agreements)

Because each of these agreements rely on specific statutory authorities, legal review is essential. This post will not address the legal considerations of the terms and conditions of PPAs. Instead, we will focus on the nature of the offtake agreement and raise certain considerations for pipeline valuation. In brief:

- **Feed-in-Tariff:** This agreement generally represents the least amount of risk. The offtaker is a utility that likely maintains an investment grade rating, the agreement is drafted by a sophisticated party and the agreement itself is sanctioned by the authority having jurisdiction. Therefore, early diligence questions may be limited to any deadlines associated with the commissioning of the system and ensuring that the project generally complies with the terms of the feed-in-tariff. Additionally, look out for hefty performance and payment assurance provisions that require substantial bonding, a letter of credit or cash collateral.
- **Net-Metered PPAs:** This PPA is executed pursuant to a net metering tariff authorized by the state public utilities commission or public services commission and implemented by the utility. It is important here to ensure that the PPA and the project are structured in accordance with the applicable net metering tariff and all eligibility requirements are met including timely submission of application. Net metering tariffs vary by state and, in some cases, by the utility territory. Additionally, some states have multiple net metering tariffs. It is not unusual to find that an executed PPA may not fit within the confines of the net metering

tariff that the developer intends to use. This increases regulatory risk and may require redevelopment, transforming a later stage asset to an early stage asset. It is particularly important to understand the applicable net metering rules related to system size, co-location of multiple systems, remoteness from the offtaker, and the eligibility of the offtaker itself.

- **Behind-the-Meter PPA:** This is a bi-lateral agreement between the system owner and the offtaker for a system located on the offtaker's property. The primary diligence question here is whether behind-the-meter PPAs are enforceable in the jurisdiction where the system is set to reside. If so, these agreements can be the simplest to diligence. Generally, the offtaker also grants site control for the project, which also streamlines review. Risk for these projects may be particularly concentrated on the individual offtaker, as the single counterparty responsible for the revenue from and access to the system. What's more, because the system is generally sited on the offtaker's land or roof, in the event of termination or at the expiration of the PPA, alternative offtake opportunities may be limited.
- **Contract for Differences (CFD):** This is used for projects sited remotely from the offtaker, but within the same utility or regional transmission organization (e.g. PJM) territory. The CFD provides a fixed-for-floating rate and the agreement may indicate that it is for the physical delivery of power at the node. It is important to consult with a legal expert when reviewing this contract to ensure compliance with Dodd-Frank and other applicable regulations.
- **Community Solar:** This offtake arrangement (often a form of net metering) is enjoying popularity at the moment. "Community solar" is used to designate a wide variety of project configurations in the development community. It often means a structure whereby the system owner sells electricity to the utility, provided that the system owner is able to amass a certain amount of subscribers within the utility's territory. Compliance with the precise statutory authority and the utility's guidance is critical here. Early diligence should reveal the number of subscriptions and the total megawatts subscribed, as well as the number of subscriptions and total megawatts required to be subscribed in order to commence construction and to achieve commercial operation. Additionally note that there may be quota limitations with regard to certain classes of subscribers.

B. PPA Tenure and Price

Twenty years was the gold standard in solar. Recently, as the cost to deploy solar has fallen, so too have PPA tenures. Today, ten year tenures are not unusual. Conversely, the useful life of photovoltaic systems continues to lengthen and the degradation of the panels themselves is lessening. Thus, in order to recognize the true value of the system (and to stay competitive), investors are assigning value to the "tail period" after the expiration of the PPA. Some considerations for tail period valuation include:

Questions Related to Potential or Additional Offtake -

- *Where is the system located?*
 - *Is it on the offtaker's property?*
 - *Is it on a building or near a population center where continued occupancy is expected?*
 - *How long are the roof warranties valid?*
- *How long does the site control last?*
 - *Does the system have the right to be on the land post-PPA? For how long?*
 - *What are the renewal terms?*
 - *How competitive is the lease rate?*
- *What alternative offtake arrangements could be made given the regulatory landscape?*

Questions Related to Individual Investor Risk Appetite -

- *Where else / for what other investments / under what circumstances does the investor take merchant risk?*
- *Is there a hedge or insurance product to meet any floor return requirements?*

Along with tenures, PPA prices continue to fall. It is important to understand each of the various revenue streams of a project individually to appreciate the significance of the portion flowing from the PPA. In certain areas with high market rates for solar renewable energy credits (SRECs), it is not unusual for PPA rates to be at \$0.02/kWh or lower. It is important to understand your risk appetite and desired balance of contracted PPA revenue and market-based incentive revenue.

C. Offtakers

Most investors know to diligence the creditworthiness of the offtaker in order to determine a default rate. In recent years, many investment grade rated offtakers have made significant renewable procurements (as seen in splashy PR campaigns and Super Bowl ads). There is growing concern that investment grade rated offtake is no longer readily available in the market. Therefore, many investors are now investing in projects with unrated

oftakers or oftakers with below investment grade credit. Shadow ratings are gaining acceptance. Another important consideration is PPA price. If the PPA rate is lower than the avoided cost of energy, a default is less likely. If, on the other hand, the developer were to be so lucky as to have executed a PPA with a rate above the avoided cost of energy (maybe even with an escalator), it is important to consider the possibility an economic default. Finally, if a default is a genuine concern, attention should be paid to the location of the system and possible alternative offtake arrangements.

D. Environmental Incentives

Projects that rely heavily on SRECs or other incentives present their own set of diligence considerations. If the incentives, like SRECs, are based on production, the yield of the system is critical. Therefore, it is important to check the developer's yield assumptions, if provided. Engaging an engineer to review the early energy models for larger projects is most prudent. Another consideration is that the value of tradable incentive, like SRECs, fluctuates over time. Thus, the value of the asset changes over time. This could be a critical consideration for an asset in early stage development that relies heavily on SRECs for its economics, particularly in a state where the renewable portfolio standard (RPS) is set to decline. Such fluctuations in value could mean that an otherwise normal development delay of 6 to 9 months poses a binary threat to the economics of the project. Finally, if the incentive is grant-based, it is important to understand, at least in broad strokes, how the grant is awarded and recognized, which may affect the tax and accounting treatment of a project.

E. Stages of Development

Given the diverse array of offtake varieties, it is not surprising that there is no industry standard for stages of development related to a PPA. Therefore, when considering acquisition of a pipeline or platform, it is important to understand how the developer categorizes its own development stages. Additionally, investors ought to consider their own monetization strategy for the assets in the pipeline in order to determine the relative importance of the offtake. For instance, is the investor intending to build, own and operate the assets? Is the investors looking to sell the assets at COD? Or, is there a strategy to obtain large amounts of megawatts for a different type of exit? If you have the answer to these questions during the diligence process, the relative value of the stages of development for the PPA may emerge much more clearly.

In our next post, we will discuss the second pillar – Interconnection.

© 1994-2019 Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. All Rights Reserved.

Source URL: <https://www.natlawreview.com/article/how-to-diligence-solar-development-pipeline-part-1-4>