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September 2022

Streamlining clean energy purchases and sales

Two years ago (*Power Risk,* Mar 2020) we surveyed the landscape for providers of one of the holy grails of the clean energy economy: efficient PPA sourcing and execution. The motivation for the study was a perception that the PPA market was unnecessarily complex and expensive to transact, and that a simpler electronic solution could easily disrupt the status quo.

At the time there were only a small handful of companies involved in such efforts, and some providers were only getting started. The concept of online origination and execution of PPAs wasn't entirely new, but those with capability to provide online solutions were doing so in a rather piecemeal fashion. No single marketplace had emerged as a market leader in facilitating online transactions at the click of a mouse. It seemed as though the future was not far away, however. In time, we expected that technology providers would enable seamless and fully digital transactions to take place as they had in other markets.

Given the significant advancements that had been made in the digitization of asset marketplaces across equities, fixed income, commodities and foreign exchange, it seemed reasonable to assume that the same principles would apply to long-term power contracting. And while, in the interim, some changes have taken place in the marketplace for PPAs, they are still mostly transacted in legacy fashion, entailing all of the manual legal and financial processes they always have.

Clean energy project developers certainly have enhanced the means by which they market their assets and communicate their interest in fixed-price contracts. But buyers haven't pushed for the development of online marketplaces as they have in other asset classes. There are reasons for the inertia, which we'll explain below. But those factors are not permanent, and they probably existed in other markets until such time as the efficiency and accuracy of online execution and contracting reached a tipping point and eventual embrace by a critical mass of buyers.

The PPA market seems primed to change more dramatically in the future. With the evolution of technology and the expanding roster of participants, it's only natural to expect the ascendance of a central marketplace to improve transparency and ease of execution. This paper updates the status of the technology and is meant as an assessment of how contracting may change in the years ahead.

Steady evolution of participants

We have surveyed the PPA market from a number of perspectives in various papers over the past two years, including those focusing on technology as well as others outlining the changing roster of participants. The PPA market has evolved from one that previously was dominated by buyers from the technology sector, including software companies and, especially, those with significant data center usage such as Amazon and Facebook/Meta. It has branched out to include a host of companies with significant brand identities, including food manufacturers and financial institutions that buy renewable power to help meet their decarbonization goals, and can leverage their green energy purchases with customers. The roster of PPA buyers increasingly includes a broader array of participants across industries and geographic regions, including smaller participants as the market has matured from its large tech-dominated origins.

Meanwhile, on the sell side, the ranks of developers has also broadened from a handful of familiar names to include a host of smaller firms that have begun operations in recent years. The proliferation of private-equity backed developers is truly astounding and the roster seems to grow daily. Recent passage of the Inflation Reduction Act and its likely impact on renewable generation capacity suggests that the number of developers will continue to grow in the future as long as financing is readily available. Such companies all have merchant price exposure they need to hedge via long-term physical and financial offtake contracts. They also have environmental credits they may seek to monetize or transfer to other companies that assign greater value to them.

Such a proliferation on the buy and sell sides of the market argues strongly in favor of more streamlined processes and potentially a centralized marketplace. The ability for each side to find each other via other means, including introducing brokers and other financial intermediaries, has become increasingly inefficient. This is why some of the more tech-focused participants have been attracted to the idea of marketplaces that we addressed in our previous report.

Good information, but not transactable

Some solution providers have succeeded in creating comprehensive databases of projects. For potential buyers, being able to scan a map and to click through various projects can add significant efficiency to the procurement process if - but only if - they know what they're looking for. Such information might include various options on the tenor and price, as well as volumes available for purchase. Contracts may be offered on peak and off-peak hours, or on specific hours of the day. They may be guaranteed volumes or, alternatively, subject to what is actually produced by a given renewable generation asset.

Such attributes are straightforward and relatively easy to compare. But then there are others, including financial guarantees, credit, operational warranties, and liquidated damages specific to plant operation that might require more due diligence on the part of potential buyers. These considerations are the stuff of bilateral contracts throughout the energy industry, and often employ professional service providers to help define risk and to protect firms on both sides of the transaction.

Some market participants and their consultants may have avoided fully digital solutions because their process requires significant negotiation and several iterations of contract language to satisfy their interests. Importantly, the marketplaces that host the projects do not seem to have instituted any significant means of streamlining these negotiations. They simply list the projects – providing good information – and leave it to the two sides to figure out how to close a deal. This requires old-fashioned negotiation.

Level10 Energy exemplifies this role. The founders of this platform may have started with an intention to facilitate PPA execution but the platform is clearly focused on building a database of projects that buyers can use to gather information and transact manually. Indeed, their service includes not only projects seeking long-term fixed-price contracts like PPAs but also projects that are for sale on an outright basis. In this sense, the Level10 platform is a comprehensive database for those seeking to contract for energy as well as those seeking to invest in it.

As for actual execution, there really isn't any transactability mechanism on their platform. In order to proceed through a purchase or sale opportunity one must reach out directly to those listed in the database to begin negotiations. If there aren't enough interesting projects, one can enlist the platform to run a request for purchase (RFP) via their network of contacts. But the RFP will only bring interested parties together. Negotiating the terms of the agreement must still take place offline.

Similar approach across various energy and carbon markets

This format of PPA marketplaces extends to other energy and environmental markets. Efforts have been made to facilitate the online execution of physical offtake agreements in oil and gas markets. But there is still very little bilateral trading that is conducted on electronic platforms. The vast majority of these transactions are still negotiated directly between counterparties via phone or email at prices that are not visible to the broader market. These trades may be intermediated by a broker or a bank but visibility remains restricted.

Environmental markets are blossoming everywhere, especially in the realm of voluntary carbon offsets. In the absence of a national, compulsory carbon market in the U.S. many commercial enterprises have chosen to purchase carbon offsets as an additional means to help achieve decarbonization goals and transmit their environmental goals and activities to stakeholders. But the markets themselves are still extremely opaque and certainly can benefit from a more open online platform that covers the array of projects and their associated carbon-reduction attributes.

Some online platforms in the carbon space have been established with this goal in mind. xPansiv, for example, lists voluntary credits as well as government-issued renewable energy certificates on its marketplace, CBL markets. But liquidity on the platform is limited and the platform, like Level10, addresses that shortcoming by offering participants the ability to conduct RFPs in order to generate counterparty interest. Perhaps noteworthy, xPansiv recently acquired a well-established broker of environmental credits, Evolution Markets, underscoring the continued importance of established business networks in facilitating trade execution.

Similarly, InCubEx, which is affiliated with the established power futures marketplaces EEX and Nodal Exchange, offers voluntary environmental credits among its offerings. But these contracts are typically

intermediated by brokers familiar with online futures marketplaces. Direct participation by corporate buyers of environmental credits is limited.

In the PPA space another marketplace site, Renewafi, is focused on renewable energy offtake agreements, including those involving battery storage. But there is no execution platform available for such trades; instead, the company organizes RFPs and other auction processes to bring interested parties together for further negotiation of the terms of a trade.

Consultants vs. marketplaces

Given the foregoing, it has become apparent that even the most marketplace-minded enterprises in this realm perform the role of consultant rather than a medium of exchange. Companies like Level10, xPansiv, and Renewafi can bring value by tapping their network of contacts to showcase a given opportunity, sometimes at no cost to the buyer. They can advise the client on the most liquid benchmarks for pricing, on the most likely terms in which buyers may be interested. And they can cull the responses in order to simplify the process of determining the eventual contracting counterparty.

Such a role is not very different from more established energy consultants such as Schneider Electric (which also offers a database of projects via its Zeigo subsidiary) or Edison Electric, both of which can advise clients on the various opportunities to enter into contracts in order to fulfill an energy need or environmental goal. All of these providers offer tools that enable the client to outline the opportunity and to analyze the range of possible solutions provided. They may also have fairly sophisticated software to facilitate their RFP offering; in the case of Renewafi this includes a patented process.

But none of these platforms offers actual *transactability.* They offer a means by which one can enter information and broadcast it openly to hundreds or thousands of interested parties. And they can distill the responses into meaningful and efficient next steps. But they do not offer the ability to select a winning bid and to execute the transaction with the click of a mouse, as is possible in so many other asset markets, including equities, bonds, and commodities.

A truly digital marketplace

Tellus Markets is the only company in this space that is currently devoted to providing a fully digital transaction solution. The company operates a comprehensive solution called Tellus PPA that allows both sellers and buyers to list their interests directly onto the platform and then negotiate with responding counterparties via tools built into the site that enable either side to revise their terms and price levels.

This digital solution is especially unique because once both sides reach agreement on the terms of the transaction they can elect to have a contract executed automatically by the system. The contracts are representative of industry conventions and incorporate all of the relevant criteria to bind a contract. There is no need for additional legal resources, allowing both sides to quicken the process at every stage of the transaction: pre-trade, execution, and post-trade.

There are a number of factors that may make solutions more or less desirable for potential users. First, confidentiality. The listing of a given company's interest, whether buy or sell, may be visible to all of those enrolled on a certain system which may or may not be deemed desirable. One might believe that such transparency is required for a truly functioning electronic marketplace. Generally speaking, it is. But some firms guard their interests as intellectual property and thus prefer to transmit their market interests only to a subset of potentially interested parties. Level10 and Tellus PPA are unique in using a transaction process involving staged confidentiality, so any party's identity is only disclosed after a preliminary match is made. The Tellus platform goes further to maintain confidentiality by using a software algorithm rather than a searchable map to facilitate matches.

Second, customized terms. Some companies may seek unique terms in their contracts, often with the hope of achieving an advantage over their counterparty. Typically driven by lawyers and consultants, this desire for customization is a crucial aspect of their transaction process. But customization can also be achieved on certain electronic venues. For example, Tellus Markets' product makes all of the terms of a typical PPA negotiable, plus enables the addition of user specific terms, providing the opportunity for as much customization as a party might want.

Third, historical investment. Some companies have invested significantly in their manual front- and back-office capabilities in order to properly negotiate and document their energy and environmental market transactions. In the short term, an automated system may reduce the value of such investments, while in the long term it should reduce costs and be accretive to revenue and asset value.

There are many forward-thinking managers that value the role that open marketplaces play in facilitating efficient price discovery. Moreover, they see the benefits of negotiating and consummating trades via automated platforms that increase efficiency and reduce the potential for human error. For such managers, the future of energy markets lies in digitalization and, thankfully, such a solution already exists.

Conclusion

Since our initial survey of electronic marketplaces for energy contracts in 2020 the market for PPAs and other energy offtake agreements has grown substantially. Energy markets have also expanded to include various environmental markets, including renewable energy credits and carbon offsets.

But the trend toward digitization has faltered. Most of the companies that existed two years ago to provide online marketplace transparency and, potentially, transactability have instead scaled back their aspirations to focus on advisory work and RFP facilitation. With one exception, these companies do not provide a digital solution that covers the entire transaction process.

Some companies may choose to keep their energy procurement – or energy marketing, in the case of energy producers – process to a limited number of counterparties. But for those seeking the most efficient and transparent solutions there are opportunities to improve their practice. Seeking out open marketplaces has always been a worthy objective and the opportunity exists today to make it a reality.