

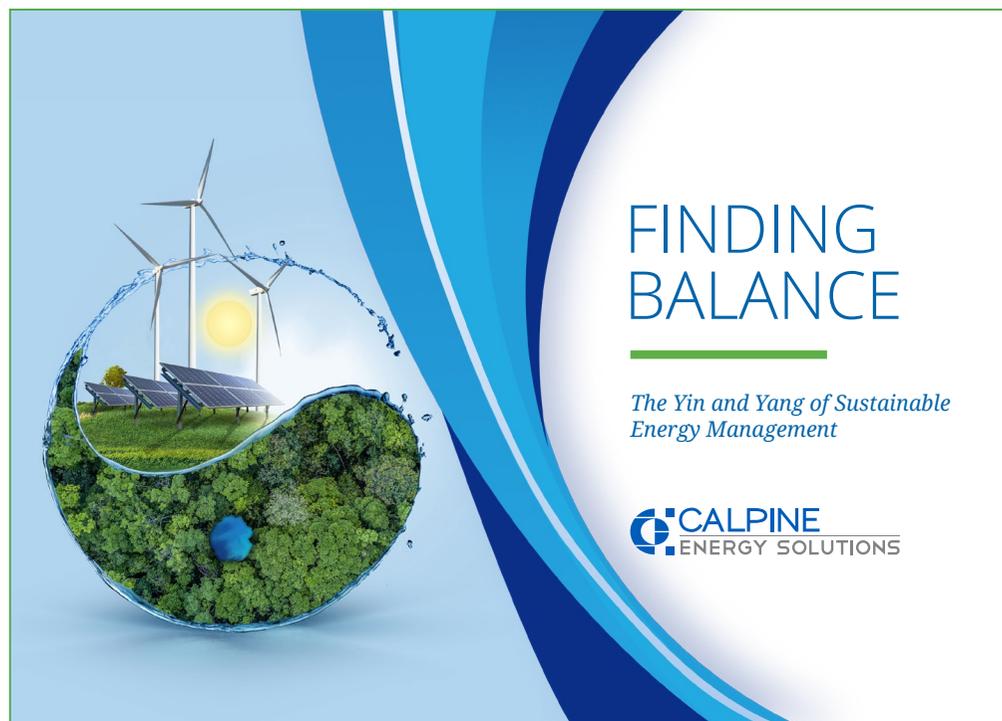
RENEWABLE ENERGY CONTRACTING & **THE LAW OF UNINTENDED CONSEQUENCES**



Earlier this year, we at Calpine Energy Solutions, published an essay called Finding Balance: The Yin and Yang of Sustainable Energy Management. In it, we posited that a large number of corporate entities are admirably pursuing Scope 2 GHG reduction goals, yet doing so while breaking discipline from sound energy risk management practices. We have received numerous inquiries about this statement from readers who have asked that we characterize how Virtual Power Purchase Agreements (“VPPAs”) fit into Scope 2 efforts in terms of both intended and unintended consequences.

Visit the Essay:

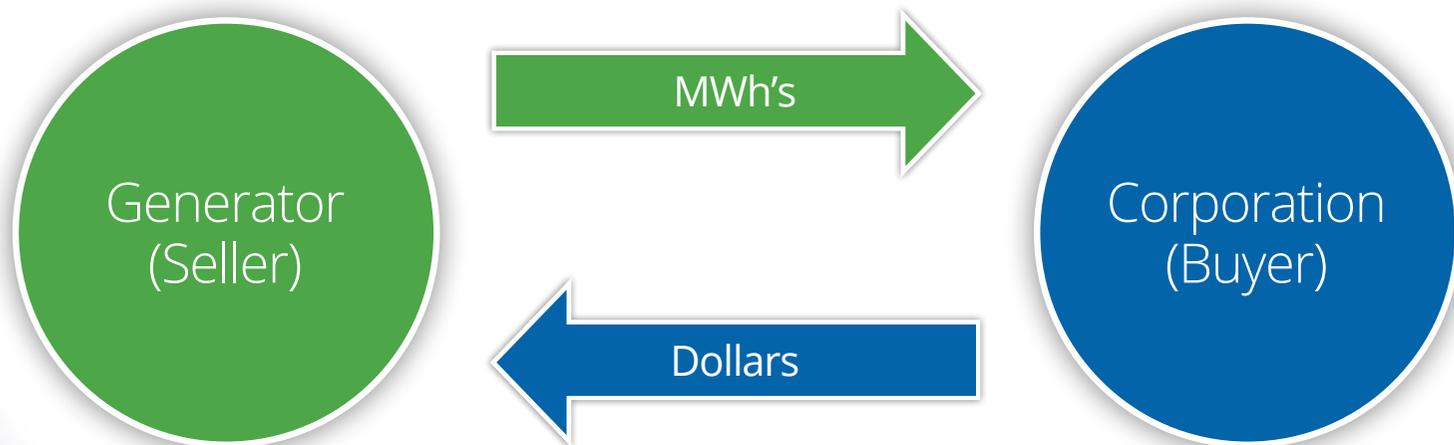
Finding Balance:
The Yin and Yang of
Sustainable Energy
Management



What's the Difference?

In the case of a Power Purchase Agreement ("PPA"), the consumer purchases power directly from a generator at a fixed price. PPAs provide a means to procure physical energy at a known price, for a known quantity over a known term, which most often is long-dated (5 – 15 years). PPAs therefore act to create a level of price certainty for the consumer and are subject to normal purchase / normal sale accounting as long as the quantities do not materially exceed those required to operate one's business.

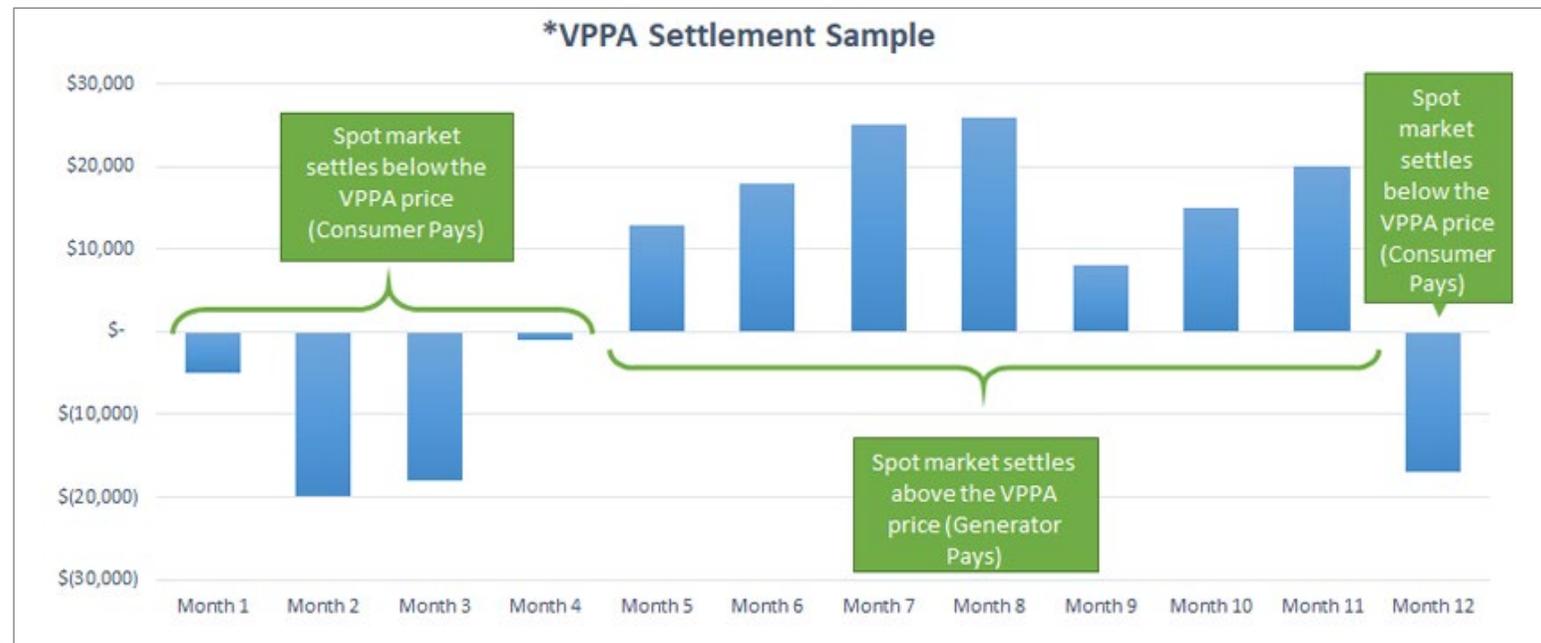
PPA Diagram



What's the Difference?

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A VPPA is a Contract for Differences (“CFD”) whereby the consumer is **not** buying physical energy from the project developer and often does not even have facilities located in proximity to the renewable asset. In a VPPA contract structure, the consumer enters into a long-dated agreement (10 – 15 years) to guarantee a known cash flow (fixed price * stated quantity) for the project developer or asset owner, facilitating financing for the generation project. Since the consumer does not take possession of the physical power, the project developer sells the power into the market. In the event the power is sold at a spot market price higher than the fixed price, the developer remits the difference to the consumer. Conversely, if the spot market price of the power sold is less than the fixed price, the developer invoices the consumer for the difference.



*This chart is for illustrative purposes only and is solely meant to convey the generic financial aspects of a VPPA. It is not intended as a recommendation either for or against entering into a VPPA agreement. The data represented is theoretical and does not correspond to any markets, financial or physical, nor does it correlate to any known VPPA offerings.



Some developers and consultants have claimed that VPPAs will be “revenue generators” for the consumer by projecting that the corresponding market energy prices will be higher than the fixed contract price over the course of time. **We would discourage that kind of thinking unless one’s perspective is that a VPPA is a revenue generator in the same way that taking a speculative long position in natural gas futures is a revenue generator.**

It is also important to note that VPPAs for stated quantities are generally externally reported using mark-to-market accounting treatment, adding complexity to the overall measurement of the transaction’s value over the course time. From an internal perspective, most senior managers for corporate consumers see VPPA’s as a means of attaining Scope 2 objectives without disturbing management of the cost of goods sold through its sourcing functions. For example, a Treasury group could choose to manage all aspects of the VPPA settlements and not involve any operational functions, insulating the profit centers from the settlement impacts. Others have decided to flow the cash impacts through to the profit centers as a debit or credit allocation often causing the operating stakeholders to take a more active role in the decision making process because they have more “skin in the game”.

None of this implies that VPPAs are worse or better than PPAs, it just means that the consumer needs to understand the implications associated with them. Indeed, VPPAs have been a catalyst for the rapid de-carbonization of the electricity grid that is under way, and they have been a helpful vehicle for corporates to achieve their ESG goals; specifically in the form of their Scope 2 GHG reductions.

So What's The Problem?

In the event that the company chooses not to flow the cash impacts to the profit centers, the question is one of contradictory logic. **Why is a company whose core business is real estate, manufacturing, or retailing using its Balance Sheet to secure financing for a renewable energy project?** If the answer is because they want to do social good and need to buy an equivalent amount of energy for their operations anyway, that's fine, but then why aren't they flowing the cash impacts to the profit centers? At a minimum, they should assure the profit centers are not also buying fixed price positions in their physical contracts which could duplicate the effect on their risk position and could put them into speculative territory.

If a corporation reaches the conclusion that they will flow the cash impacts through to the profit centers, the question becomes one of risk management policy and practice. Once again, a VPPA is not a bad thing, but one must consider its purpose which is to securitize project financing, and as such, requires a long-dated term. **The primary problem is not the VPPA, it's that many consumers are buying fixed price positions on 10 to 15 year terms for quantities approaching 100% of their total electricity load.** This is **NOT** a balanced approach. If consumers entered into long-dated, fixed price VPPAs for the equivalent of 10% to roughly 50% of their total electricity load, that would make more sense because they would still be significantly short and could layer into additional fixed price positions over the course of time and remain on a floating price for some amount as well. Consumers should also be aware that they still may own significant locational basis risk depending upon the strength of the correlation between the underlying floating price point used as a spot market settlement determinant for the VPPA and that used for the purchase of their physical power at their consuming locations.



So What's The Problem?

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While it's certainly positive that many companies are reducing their *carbon* impact to the environment and achieving their sustainability *reporting* objectives, too many are not considering other critical aspects of their business such as conformance with *risk*, *cost* and *governance* policies. No one knows where index power prices will settle in 10 years, let alone six months - and that's the point. **By taking financial, fixed price positions equivalent to the majority, if not all of their expected consumption levels, corporates are not spreading their risk management positions.**



How Do We Fix This?

Every situation is different, but a good starting point for any organization would be for senior management to harmonize the goals and clarify the responsibilities of pertinent internal stakeholder groups that may include: Treasury, Sustainability, Supply Chain, Energy Management and Operations or Real Estate. Once established, the responsible cross functional team should resist the temptation to think of their Scope 2 efforts as a series of long term transactional events that are segregated from the performance of the profit centers. Rather, they should integrate these purchases into their operations and implement a data-driven, sustainable business process that is one of the hallmarks of a great program according to CDP, (formerly the Carbon Disclosure Project).



Clearly, the market also needs to play an important role in offering solutions that don't require clients to accept such long terms at fixed prices. It's understandable that many of these new wind and solar projects are being enabled by a combination of inexpensive debt and firm off-take agreements, but customers need to be able to buy some of their renewable power as 1, 3 or 5 year fixed price positions and a healthy chunk on a floating index structure. Deregulated markets offer more choices both in terms of contract structures and potential providers, whereas regulated markets provide consumers with fewer choices, necessitating the VPPA structure, or potentially a green tariff from their utility.

It's also worth pointing out that from a carbon reporting perspective, the GHG Scope 2 guidelines treat the entire U.S. as a single market, which means purchasing relatively inexpensive source-specific RECs from a Texas wind or solar facility has the same emissions reduction benefit (using the "Market-Based" method) as purchasing a REC originating from a renewable source in a more expensive area like the Northeast. **In addition to the benefit of lowering de-carbonization costs with this structure, the consumer gains the ability to purchase energy for combinations of fixed and floating prices for varying terms, enabling the execution of a more sound risk management approach.**

Finding Balance requires tremendous collaboration across stakeholder groups to create the right alignment and the discipline to stick with the process over the course of time. However, the time spent up-front can reveal potential unintended consequences and save an immense amount of regret in years to come.

To learn more about attaining Scope 2 GHG reduction goals while also staying within established risk parameters, give us a call today at **1-877-273-6772** and press option **2**, email us at energysales@calpinesolutions.com or visit our website: calpinesolutions.com.

