
Structuring Virtual Power Purchase Agreements: Transaction Risks, Regulatory Considerations

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Structuring Virtual Power Purchase Agreements: Transaction Risks, Regulatory Considerations

Strafford live CLE webinar with interactive Q&A

Presented by:
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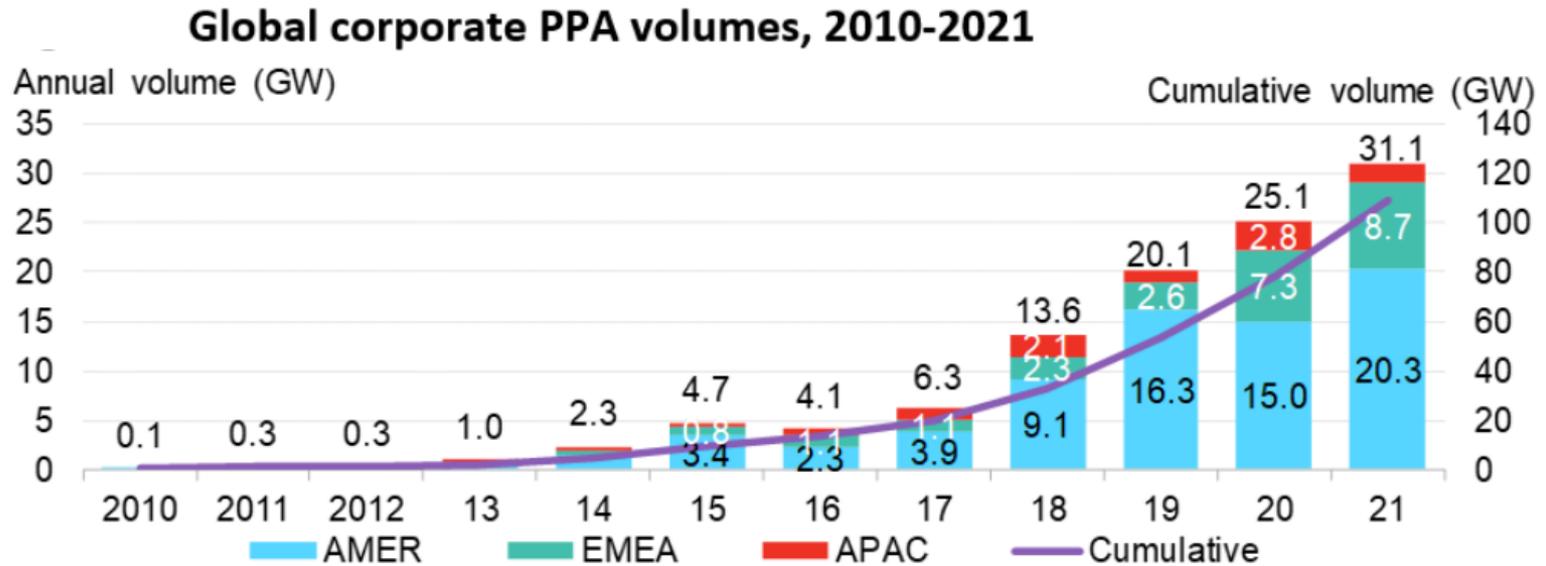
Fred Lowther
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November 2, 2022

Renewable Energy VPPA: What It Is and What It Isn't

- A VPPA is an agreement by a “buyer” to provide financial support to a “seller” for the development, construction and operation of a renewable energy project (typically wind or solar)
- In other words, it is a **financial** agreement and not an agreement to purchase energy

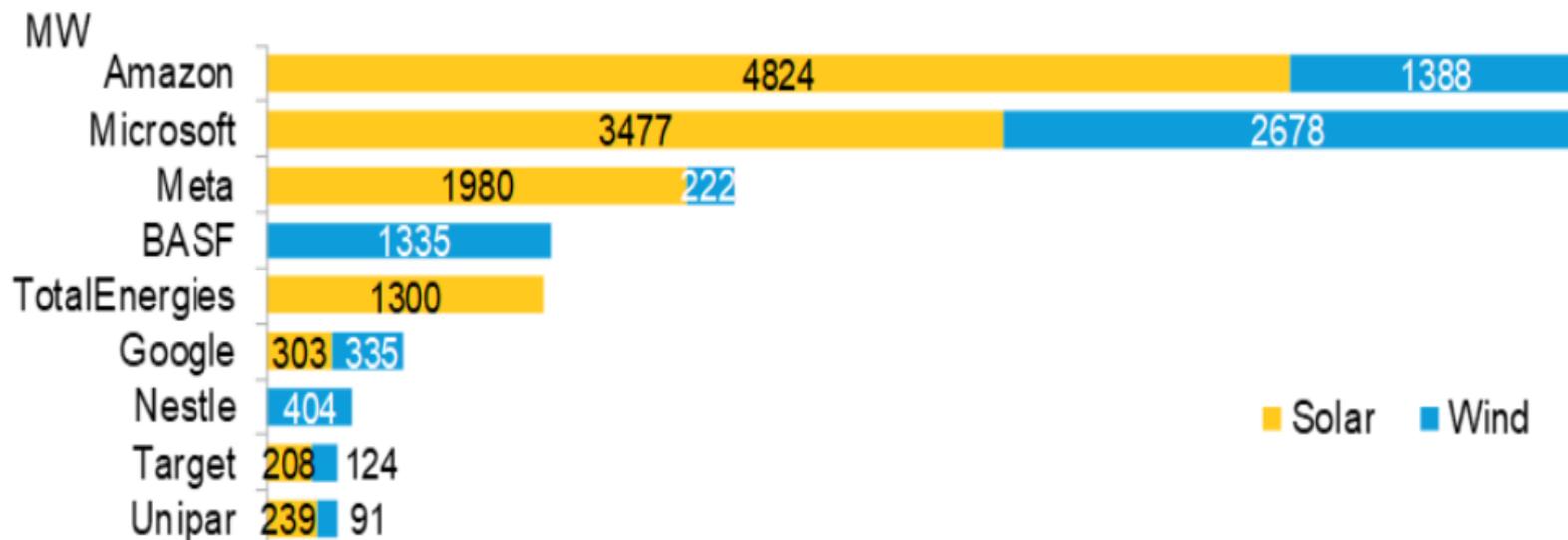
Global Corporate Renewable Deals (2010-2021)



Source: BloombergNEF. Note: Onsite PPAs excluded. APAC volume is an estimate. Pre-reform PPAs in Mexico and sleeved PPAs in Australia are excluded. Capacity is in MW DC.

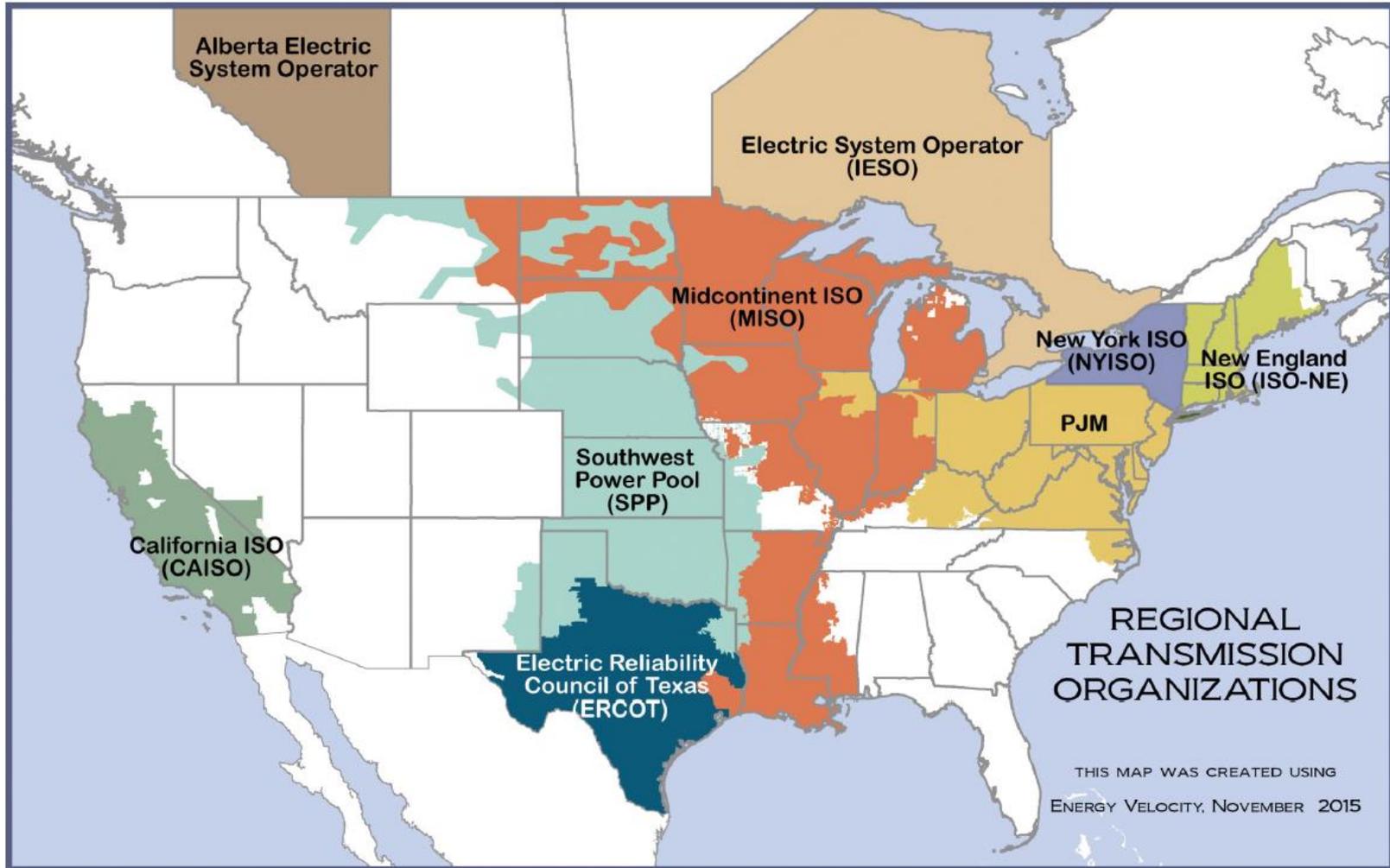
Top Global Corporate Buyers

Top corporate buyers of clean energy in 2021



Source: BloombergNEF. Note: Onsite PPAs excluded. Data is based on publicly available information.

U.S. Wholesale Power Markets



Source: Federal Energy Regulatory Commission (www.ferc.gov)



Types of Transaction Structures

REC's Only (no power)	Physical Delivery	Financial Delivery
<ul style="list-style-type: none"> • Buyer purchases RECs but never takes title to power at any location • Environmental Claims are key • Power procurement / redundancy not critical • Long term purchase agreements (3-5 yrs) available but with REC price risk • Where are these available? 	<ul style="list-style-type: none"> • Direct procurement of power from offsite generation source • Transmission / Distribution / Scheduling • Firm Delivery • Redundancy / certainty and continuity of power are key • Long-term power price certainty essential • Where are these available? 	<ul style="list-style-type: none"> • Typically Contract for differences (buyer retains RECs; power sold into spot market) • Transmission / Distribution / Scheduling by Buyer unnecessary • Firm Delivery not required • Redundancy / continuity of power critical to maintain flow of RECs • Long term fixed price certainty is essential • Where are these available?

The Fixed-for-Floating Swap

- In a VPPA, the buyer commits that the seller will receive revenue equal to a **fixed price** for every megawatt hour (MWh) of electricity produced by the energy project
- The fixed price revenue will be paid to seller by the market, by the buyer or by a combination of the two
- The fixed price is not a price for energy
- It is the price against which the actual price for energy is measured to determine how the seller achieves the guaranteed revenue
- The actual price for energy is called the **floating price**

The Fixed-for-Floating Swap (continued)

- The floating price is determined on an hourly (sometimes daily) basis by the market into which the renewable energy is sold
- The market need not be proximate to the location(s) of the buyer **because the buyer will receive none of the renewable energy generated by seller's project** (hence to term “virtual” PPA)
- When the floating price exceeds the fixed price, seller pays buyer the difference (passes along possible gains), and vice versa (buyer essentially guarantees a price floor)
- The only time the buyer pays the seller the full fixed price is when the floating price is **zero**

The Fixed-for-Floating Swap (continued)

- It is not uncommon for the floating price to be zero or even less than zero (i.e., negative), especially in strong wind markets
- If the floating price is negative, buyer would owe seller more than the fixed price
- A seller will sometimes sell energy at less than zero in order to generate the renewable energy credits (“RECs”) or to avoid curtailing the output of the facility
- Buyers typically protect against paying more than the fixed price by insisting on a “floor” or “minimum floating price” of zero, or deemed delivery quantity of zero if pricing is below zero

The Most Common Misconceptions of a VPPA

- The VPPA fixes the price of renewable energy over the term of the contract – **wrong**
- The buyer can never pay more than the fixed price – **wrong (negotiable caveats)**
- The VPPA fixes the price of the renewable energy credits – **wrong**
- The VPPA will always produce enough RECs to support a quantitative claim by the buyer (“my products are made with 100% renewable energy”) – **wrong**
- The VPPA itself will ensure that the buyer controls the cost of the energy it actually consumes – **wrong**

The Five Most Critical Elements of a VPPA

- **First**, the fixed price is negotiated and must bear a reasonable relationship to the market into which the energy will be sold but must also be adequate to support seller's project financing
- **Second**, the schedule for development, construction and operation of the energy facility must be well-defined and reasonable, with adequate protections for delays
 - A buyer should not make "green" claims based on a VPPA until the energy project is up and running

The Five Most Critical Elements of a VPPA (continued)

- **Third**, the relationship between the fixed and floating price must be well-defined
 - The buyer should limit the risk of paying seller more than the fixed price
 - The seller should limit the risk of losses associated with curtailments and negative floating prices
- **Fourth**, the VPPA must provide a level of assurance that the number of RECs generated or otherwise provided will meet the regulatory requirements governing buyer's "green" claims

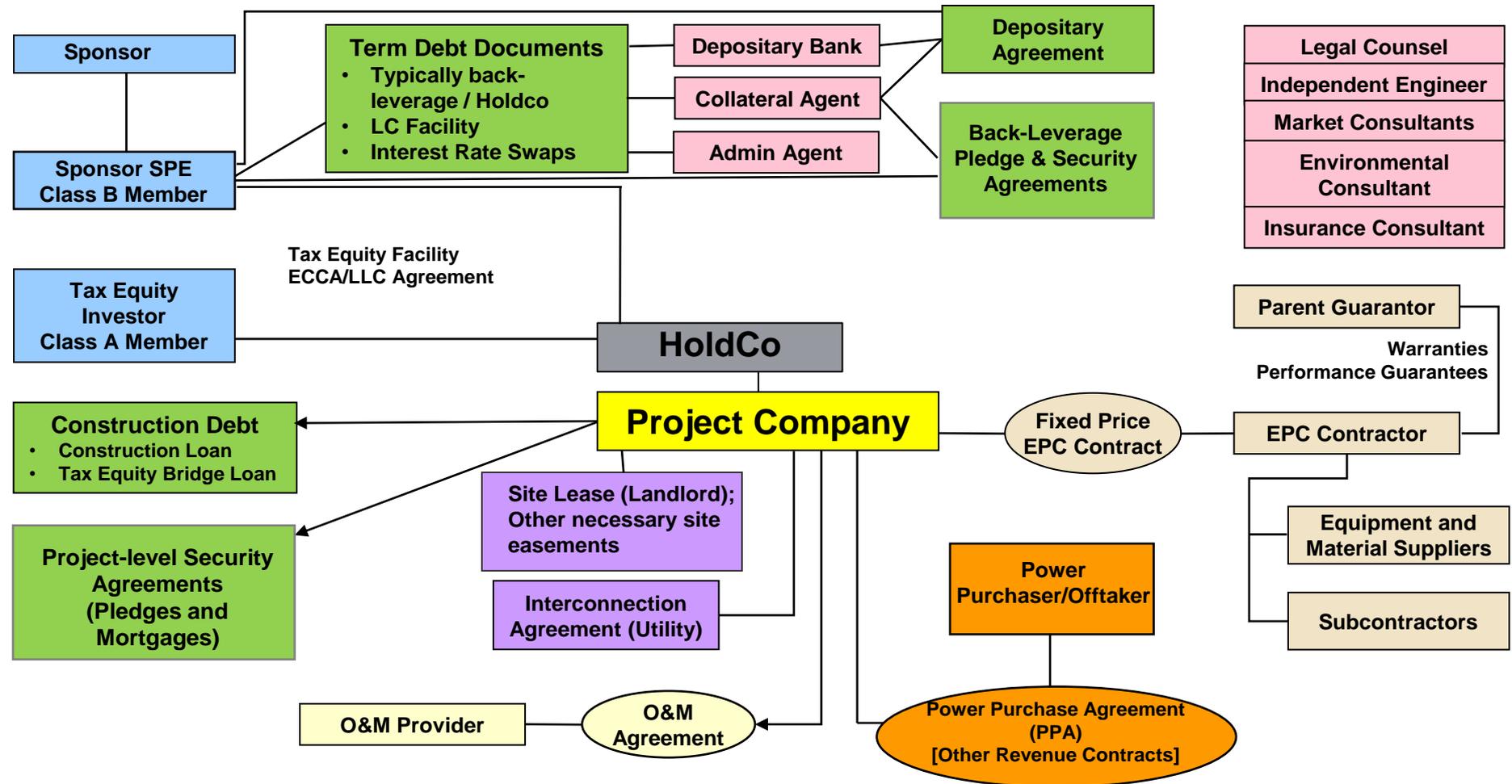
The Five Most Critical Elements of a VPPA (continued)

- **Fifth**, public messaging about the impacts of the VPPA must be carefully controlled
 - Regulatory oversight (discussed below) will largely determine the boundaries of public messaging

Additional Negotiation Points / Risks

- Differences in negotiating with a corporate versus a utility offtaker?
 - Delivery Point or Settlement Point
 - Term of Agreement (correlated to corporate needs, e.g., manufacturing facility) – generally between 12-15 years
 - Price – basis risk (busbar v. hub)
 - Additionality - to meet corporate sustainability objectives
 - Offtaker credit risk (required security / credit enhancement)
 - Firming and shaping power supply
 - Execution risk – schedule often critical
 - Market & regulatory risks
 - Environmental / climate risks
 - Competitive and reputational risk to offtaker

Parties to the Transaction



Financing Issues

- Requirements of tax equity and banks or higher-risk lenders
- PPA Terms and Conditions – standardization through market intermediaries
- Credit Support Requirements for Seller and Buyer
- Sponsor Role and Contracting Party Role – guarantors of credit enhancements

Financing Issues

- Loan Sizing and Resizing (prepayments) – complex with mix of revenue streams
- Key distinction – shorter PPA tenors
- Onsite v. Off-site (onsite rare)
- Master Agreement v. individual project confirmations
- Long-term financial benefits to offtakers
- Regulatory certainty

Financing Issues – Tax Credit Bonus / Storage

- Investment Tax Credit Bonus Amounts:
 - For Projects placed in service after December 31, 2022, additional credit amounts are available:
 - **10% increase** if the following domestic content requirements met (reduced to 2% increase if construction of the facility begins after the Act Beginning Construction Deadline and the prevailing wage and apprenticeship requirements are not met)
 - **10% increase** if facility is located in an “Energy Community” (reduced to 2% increase if construction of the facility begins after the Act Beginning Construction Deadline and the prevailing wage and apprenticeship requirements are not met)
 - **10% increase** for wind and solar facilities less than 5 MW (AC) placed in service in certain low-income communities (separate category from “Energy Community” requirements) beginning in 2023
- Standalone ITC for Energy Storage (same credit amounts as described above)
 - (i) property (other than property primarily used in the transportation of goods or individuals and not for the production of electricity) which receives, stores, and delivers energy for conversion to electricity (or, in the case of hydrogen, which stores energy), and has a nameplate capacity of not less than 5 kWh, or
 - (ii) thermal energy storage property

Financing Issues – Tax Credit Flexibility

- Direct Pay
 - Tax-exempt entities, States and Political Subdivisions and others (TVA, native entities) can qualify for direct pay option:
 - For the PTC, ITC, Section 45Y and Section 45E) if the applicable facility is placed in service after December 31, 2022
 - The election must be made no later than the due date for the tax return of the year in which the election is made (or a date determined by Treasury if the eligible entity is not required to file a return), but not earlier than 180 days after the enactment of Section 6418
 - For those that can qualify for direct pay, and with respect to certain credits, a facility loses its ability to qualify for 100% direct pay over time, absent meeting domestic content requirements
- Dramatically Expanded Transferability of Tax Incentives
 - Taxpayers can transfer all (or any portion of) the ITC, PTC, Section 45Y credit, or Section 48E credit to another taxpayer under new Section 6418.
 - The election to transfer must be made no later than the due date for the tax return of the year in which the credit is determined (or, for a transfer of the PTC or Section 45Y credit, for each taxable year during the 10-year period beginning on the date the facility is placed in service), but not earlier than 180 days after the enactment of Section 6418. Once made, the election is irrevocable.

VPPAs Are Evolving

- The nature of renewable energy projects is evolving and VPPAs are evolving with them
- Renewable energy projects have typically been “unitary” – wind or solar or hydro or biofuel
- There is a trend now toward hybrid projects – wind combined with solar, or wind/solar coordinated with hydro
- The prospect for addition of energy storage components to renewable energy projects is growing and will affect VPPAs

VPPAs Are Evolving (continued)

- VPPAs for hybrid projects present interesting challenges because of the differing production curves and pricing models for wind, solar, and hydro
- The fact of complementary production curves is a primary motivation for hybrid facilities
- Energy storage adds several other interesting elements because the storage input and output cycles are not well-defined in terms of pricing and rec creation
- The legal and energy/financial consulting professions need to focus on evolutionary models for hybrid-project VPPAs

VPPAs Are Evolving (continued)

- Some thought is being given to a combination VPPA/PPA, where part of the project output is sold into the wholesale market and part of contracted directly (or indirectly) to power consumers or distributors
- There is no inherent reason by a VPPA and PPA could not co-exist on a single project, but allocating output between the virtual and actual agreements (short of segregating the facility itself) could have complications
- A VPPA/PPA variant could involve hedging the PPA power price with a variable REC price

VPPA Revenue Sources are Evolving

- In addition to revenues from the Fixed-for-Floating payment arrangement, projects with VPPA contracts may have additional revenue sources:
 - Capacity payments (e.g., PJM)
 - Merchant Power for additional power generated
 - Ancillary services / reactive power
 - RECs, if negotiated or segregated
- Risk mitigation tools
 - Capacity insurance policies
 - Output generation insurance policies
 - Offtaker credit insurance policies

Regulatory Oversight of VPPAs Is Evolving

- Our webinar in September 2019 spelled out in detail the framework for the FTC, sec and Dodd-Frank regulation of VPPAs
- The Dodd-Frank rules and forms have not changed since then – that continues to be a stable component of VPPA regulation
- It was once rumored that various industry associations were working to exclude VPPAs from Dodd-Frank regulation, but nothing has happened on that front
- Similarly, there have not been any material developments on the FTC/SEC front in the past several years; the regulatory environment for VPPAs is stable

Regulatory Oversight of VPPAs Is Evolving (continued)

- The FTC has not revised the green guides since 2012
- There have been no publicly-reported FTC cases of material consequence in the past several years
- The primary evolution of VPPA “green claim” regulation has been at the state level
- The National Association Of Attorneys General (“NAAG”) remains focused on false and misleading “green” claims under state law, but VPPAs are no longer a target

The Fundamentals of Regulation

There are three fundamentals to the regulation of VPPAs

- **First**, do not cut corners on Dodd-Frank
 - Seller's almost exclusively assume the burden of Dodd-Frank reporting, which is the right way to do it
 - Be careful of tweaks to VPPAs which may move the transaction out of the "swap" category into the "derivative" category, which the accounting is significantly more complex
 - The primary "danger" comes in attempting to fix or guarantee the minimum output of the energy facility (although a guaranteed minimum performance level with damages for non-compliance is ok)

The Fundamentals of Regulation (continued)

- **Second**, make sure the availability of RECs is consistent with any quantitative “green” claims
 - The November 2019 webinar listed the claims which are ok and those which are not
 - The typical quantitative claims are “made with 100% renewable energy”; “X% of our energy comes from renewable sources”; “we support renewable energy projects responsible for Y% of the state’s energy supply.” **All** of these claims must be backed up by **actual RECs** and VPPAs must be structured to assure that those RECs are in fact available.
- **Third**, do not treat VPPAs as energy contracts
 - Assertions such as “we have fixed the price of renewable energy for 20 years” or “we have limited the cost of our power” are not accurate and must be avoided

For More Information



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