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# CLE Weeks

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## **Virtual Power Purchase Agreements**

What You Need to Know About  
this Tool for Meeting Your  
Business's Clean Energy and  
Sustainability Goals

# Presenters



**John T. Dunlap** is a partner and business lawyer with Foley & Lardner LLP where he assists clients in many industries with a broad range of commercial, transactional and financial matters. He works extensively with clients in the energy industry, counseling utility companies, developers, and investors in the development, sale and acquisition of both traditional and renewable energy facilities. He also advises clients involved in the financing of energy facilities, including tax equity financing. He is a member of the Finance & Financial Institutions and Transactional & Securities Practices and the firm's Energy Industry Team.

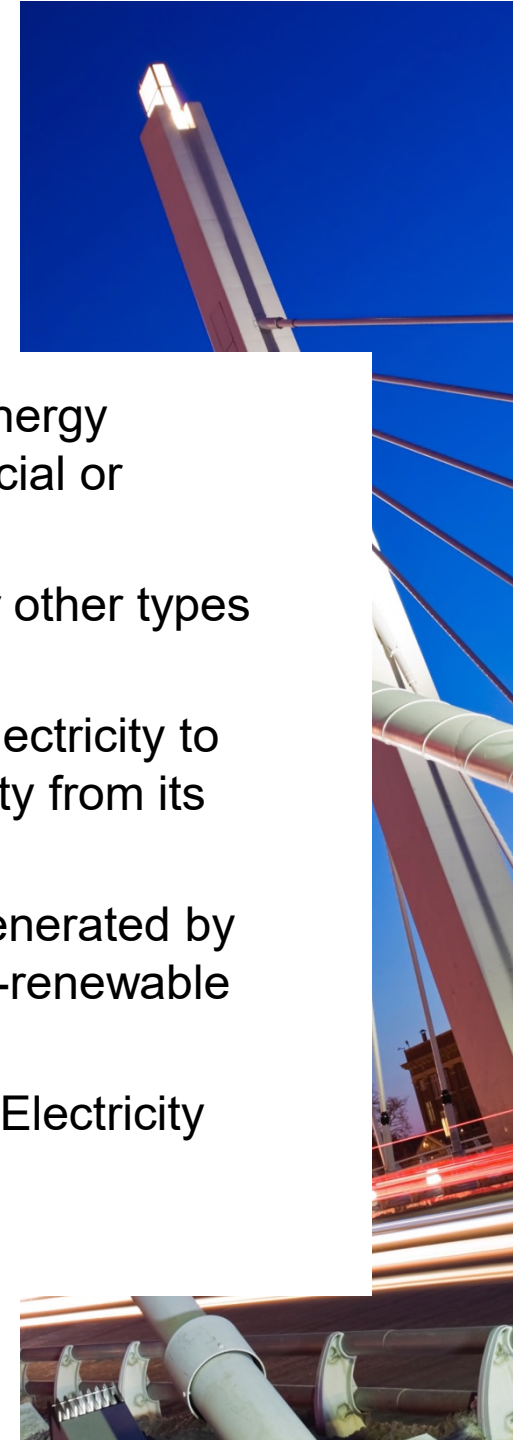


**Lynn Parins** is a senior counsel and business lawyer with Foley & Lardner LLP, where he is a member of the firm's Finance & Financial Institutions Practice and Energy Sector. Lynn is a co-lead of the Electrified Mobility and Infrastructure team, and is also a member of both the firm's Renewables and Environmental, Social, and Corporate Governance (ESG) teams. His practice focuses on the intersection of finance, clean infrastructure and renewable energy development, as he assists sponsors, developers and investors to navigate the sale, acquisition and project financing of predominantly solar, wind, energy efficiency, EV charging infrastructure and other sustainability improvements to the built environment.

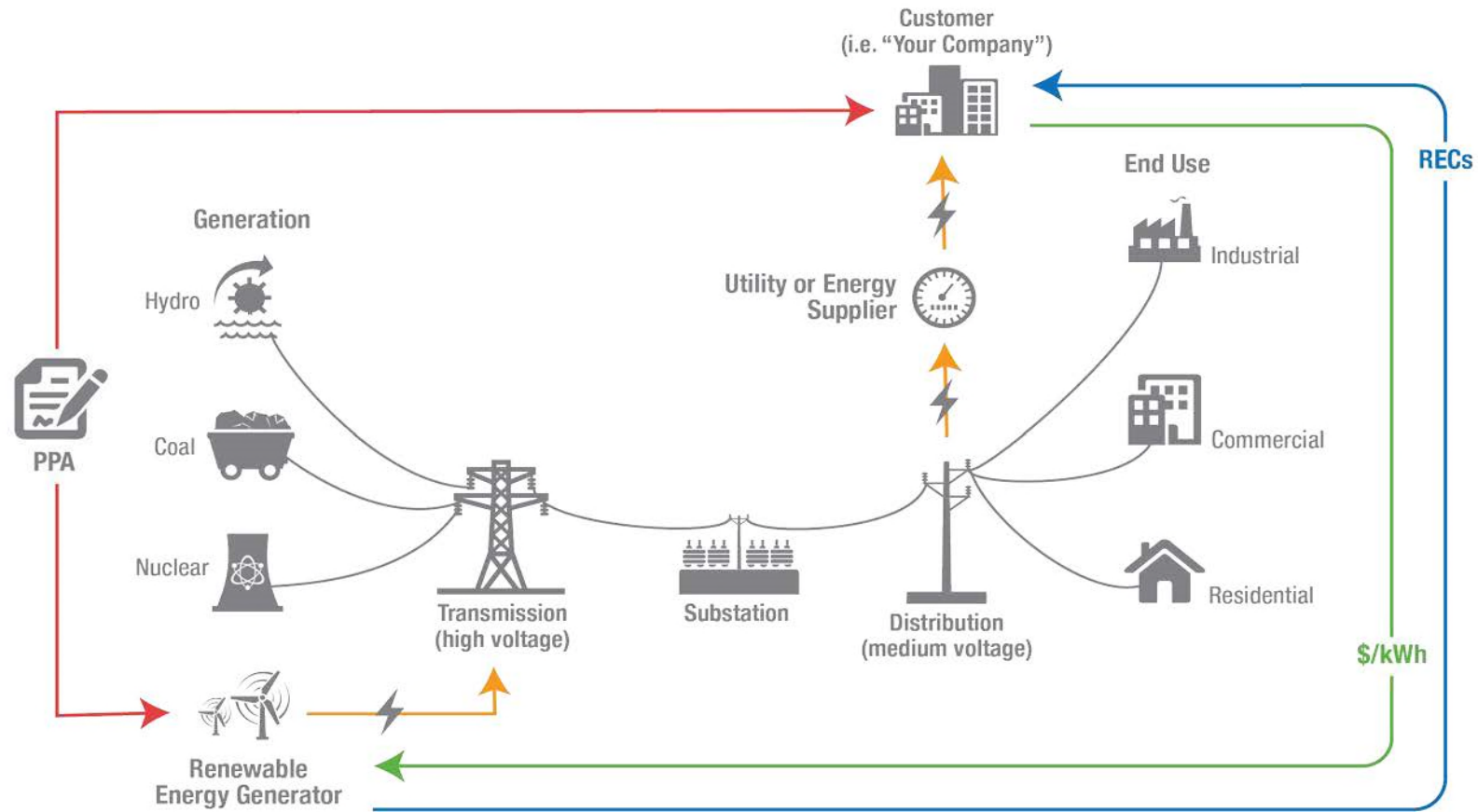


# What is a Virtual Power Purchase Agreement?

- A Virtual Power Purchase Agreement (VPPA) is a contract for the “sale” of renewable energy between a project developer/owner (the Seller) and an offtaker, usually a large commercial or industrial user of power (the Buyer).
- Most commonly used for wind and solar projects (the Project), but may also be used for other types of electric generation.
- The Seller does not actually deliver electricity to the Buyer. Rather, the Seller delivers electricity to the power grid at a “point of interconnection” and the Buyer continues receiving electricity from its local utility.
- Renewable Energy Credits (RECs) or similar attributes associated with the electricity generated by the Project are delivered to the Buyer, who retires them to offset its consumption of non-renewable energy from its local utility.
- Also known as a “Synthetic Power Purchase Agreement”, “Contract for Differences” or “Electricity Hedge Agreement”.



# How Does a VPPA Work?



Source: U.S. Environmental Protection Agency, Green Power Partnership



# Key Concepts - Settlement

- Settlement – The process for the parties to determine the net payment due from Seller or Buyer to the other. Typically occurs monthly.
- Settlement Interval – A short-term period used for each settlement calculation. Typically based on pricing intervals in the regional energy market. Often hourly.
- Settlement Amount – For each Settlement Interval, the difference between the Fixed Price and Floating Price, multiplied by the electricity generated by the Project.
  - Floating Price > Fixed Price → Buyer pays Seller the difference.
  - Floating Price < Fixed Price → Seller pays Buyer the difference.
- Fixed Price – A set price (outlined in the VPPA) upon which the parties agree to base their determination of the Settlement Amount for each Settlement Interval.
- Floating Price – The market price for electricity from time to time in a determined energy market. Often a real-time or day-ahead price at a certain trading hub.



# Key Concepts – Renewable Energy Certificates (RECs)

- RECs represent a fixed quantity of renewable energy generation (often 1-megawatt hour (MWh) of electricity). They represent the environmental and other non-energy attributes of renewable energy.
- RECs are generated by qualifying, registered projects and are tracked and transferred through several regional tracking systems in the United States (e.g., WREGIS in the Western U.S., PJM-GATS in the mid-Atlantic, NEPOOL-GIS in New England).
- The RECs sold under a VPPA may be the specific RECs generated by the Project, or they may be an equivalent number of similar RECs from other projects purchased by the Seller for resale to the Buyer.
- Companies “retire” RECs to achieve their sustainability goals. Once a REC is retired, it cannot be used again or transferred to another owner.



# Key Concepts – Project Development

- Large renewable energy projects are costly and time-consuming to develop.
- Once a site is selected and preliminary interconnection work is completed (referred to as an “early-stage” project), the developer will begin to seek offtakers for the electricity, RECs, and any other products of the project. VPPAs are likely to be negotiated and executed at this stage.
- Once the project has a contracted, long-term stream of revenue, the developer can begin to pursue project financing for the project to fund procurement and construction. Most developers will employ up to three forms of financing:
  - Debt
  - Tax Equity
  - Sponsor Equity
- From the time that a VPPA is signed, the total development and construction timeline for a Project maybe 2-4 years before the Project achieves commercial operation.
- Some of the terms of the VPPA are likely to be driven by the anticipated requirements of future finance parties.





# Key Concepts – Guaranteed Commercial Operation Date

- Guaranteed Commercial Operation Date (or GCOD): Seller guarantees that the Project will achieve commercial operation (which is the stage at which the project is generating power at a commercial scale, and thereby can start generating benefits for Buyer) by a fixed date or period of time after signing the VPPA.
- Usually subject to extension for force majeure events and interconnection delays.
- Liquidated damages are payable for a limited period of time (often up to 180 days) based on a price per MW per day of delay. After the “outside” GCOD, Buyer is typically entitled to collect maximum liquidated damages and terminate the VPPA.



# Key Concepts – Availability Guaranty

- Because renewable energy is a variable resource, the Seller does not guarantee the total amount of electricity generated. Instead, Seller guarantees that the Project will be *available* to generate electricity for a minimum number of hours. Usually measured annually or biennially.
- Typical guaranteed availability rates are 90-95%. Sometimes lower in the first year to account for start-up issues.
- Liquidated damages are typically payable for availability shortfalls. The methodology for calculating liquidated damages varies:
  - Simple: Fixed dollar amount per 1% shortfall per MW of Project capacity.
  - Complicated: Based on the Buyer's replacement cost for RECs at the time that the shortfall occurs.
- The buyer is usually entitled to terminate the VPPA for an “Event of Default” if the availability falls below a floor percentage (sometimes determined based on the availability level on which the cap on the Seller's liquidated damage liability is reached).



# Key Concepts – Credit Support

- The Seller is almost always a “project company” with few or no assets, and no source of revenue, at the time the VPPA is signed. Consequently, Seller credit support is a key consideration for Buyers in entering into the VPPA.
- Common forms of credit support are:
  - Cash collateral
  - Letter of credit
  - Parent guaranty
  - Payment and/or performance bond (uncommon for VPPAs)
- The amount of credit support depends on the value of the underlying contract but is often set between \$50,000 and \$150,000 per MW of Project capacity.
- Sellers may propose that the amount of credit support vary over time. This is often a negotiated point, but the initial Seller credit support provided at VPPA signing must be substantial.
- If the Buyer is not rated (or cannot demonstrate its creditworthiness), it may also be required to provide credit support. Buyer credit support is usually a parent guarantee.



# Other Important Concepts

- Metering and testing of the Project
- Force majeure
- Casualty events/damage to the Project (and insurance)
- Support for Seller financing (e.g., direct agreements, estoppels, etc.)
- Seller assignment/changes in ownership.
- Limits of liability
- Curtailment of the Project
- Compliance with Dodd-Frank Act



# A Shift in the Market – Changes in Law/Cost

- Historically, project developers have borne virtually all risks associated with the cost of developing, constructing, operating, and maintaining the Project.
- VPPAs would sometimes introduce limited cost-sharing in the event of a Change in Law relating to REC tracking and certification programs.
- Changes in the wind and solar development landscape over the last twelve years have resulted in longer timelines and less predictable costs for projects, leading developers to try to shift some timeline and cost risk to Buyers:
  - Solar panel tariff issues (Auxin petition)
  - Supply chain uncertainty
  - Cost inflation
- It is now common for Sellers to look for an ‘out’ or to share cost overages if it becomes untenable for them to develop a project and sell power at the negotiated price.
- It is important for project cost and risk-sharing provisions to be carefully calibrated to ensure the parties’ interests are aligned and the Seller isn’t provided a walkaway right.



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