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Structuring Corporate PPAs for Renewable Energy: Key Contract Provisions and Guidance for Energy Counsel

Critical Buy-Side and Sell-Side Drivers in Negotiations, Financing, Mitigating Risks, Regulatory Challenges

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Today's faculty features:

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Structuring Corporate PPAs for Renewable Energy: Key Contract Provisions and Guidance for Energy Counsel

Critical Buy-Side and Sell-Side Drivers in Negotiations, Financing, Mitigating Risks, Regulatory Challenges

S DEATHERAGE LAW

ENVIRONMENT · ENERGY · BLOCKCHAIN

This Part Covers:

Drivers for Corporate PPAs (CPAs)

Overcoming Regulatory Risks

Financing Issues

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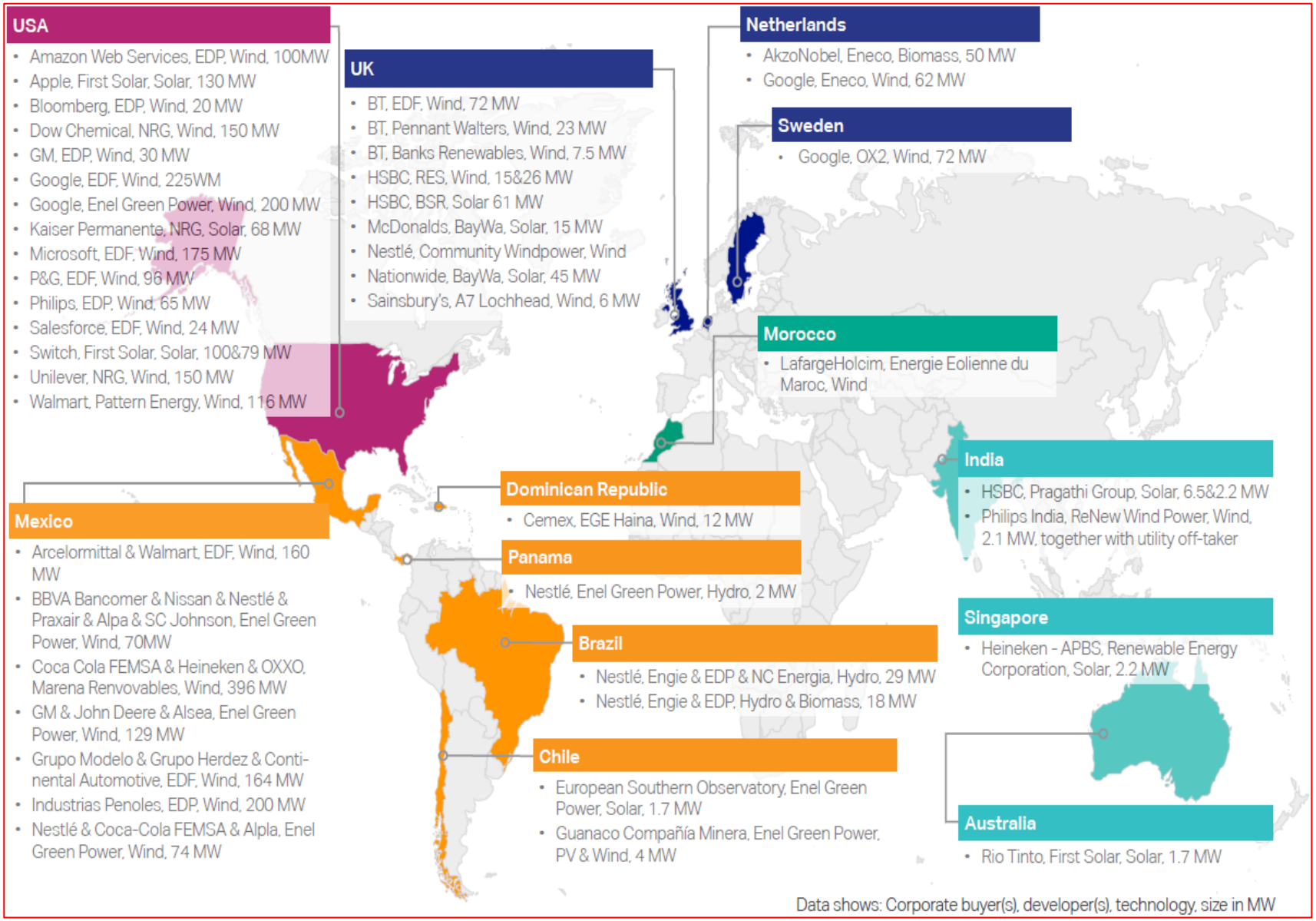
Drivers for Corporate PPAs

Examples of corporate renewable PPAs

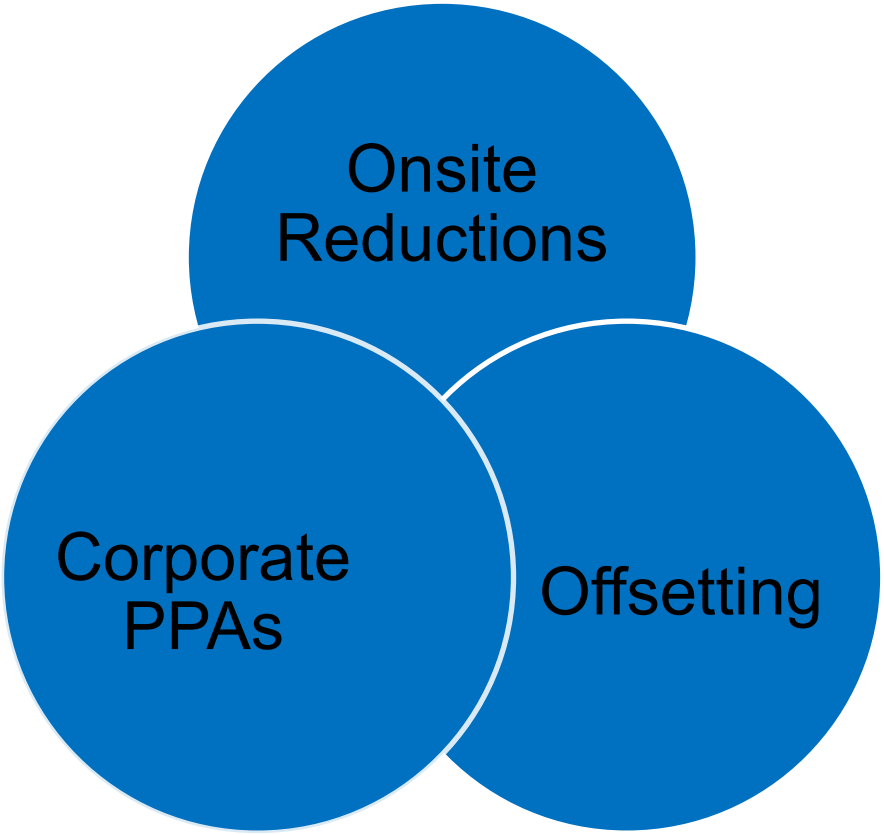


Source: World Business Council for Sustainable Development, Corporate Renewable Power Purchase Agreements (2016)

What Is a “Bundled” Renewable CPPA?

- Contract between two parties where one party sells electricity *and* renewable energy certificates (RECs) to another party.
- Corporate PPA
  - Seller is usually a renewable energy developer
  - Buyer is a commercial or industrial entity
- Why renewable energy PPAs: Increasing numbers of corporations are seeking to purchase as much renewable energy as possible to address sustainability and climate action goals.

Corporate engagement with climate mitigation



CPPAs VS Offsetting

Has entered into a corporate PPA	Uses or has used offsets
Amazon Web Services	
Apple	
Bloomberg	
Cemex	✓
Coca Cola	
Heineken	
Dow Chemical	
Facebook	
General Motors	✓
Google	✓
HSBC	

Has entered into a corporate PPA	Uses or has used offsets
Kaiser Permanente	✓
McDonalds	
Mercedes-Benz	
Microsoft	✓
Nestlé	
P&G	
Rio Tinto	
Salesforce	✓
Unilever	✓
Walmart	

Examples of renewable CPPAs in the US

- Google (discussed below)
- Microsoft (discussed below)
- Amazon through AWS (discussed below)
- Apple (200 MW wind in Oregon)
- Facebook (375 MW solar in Texas)

- AT&T (800 MW in wind projects)
- Walmart (Solar on stores and warehouses)
- Dow Chemical (150 MW wind in Texas)
- General Motors
- ExxonMobil (250 MW solar 250 MW wind in Texas)

Public Case Study: Google

Corporate PPA commitments:

- World's largest corporate purchaser of renewable energy
- 26 agreements signed since 2010 totalling almost 3 GW
- $2.5 billion in investment commitments since 2010
- USA: 2017: 225WM Wind PPA with EDF
- Netherlands: 2017:10 year PPA with Eneco for all energy generated by Sunport solar park

Offsetting commitments*:

- Carbon neutral since 2007
- Partnered with over 40 carbon offset projects to offset over 17 million metric tons of CO2 equivalent
- Uses offsets to compensate for any remaining emissions not eliminated by efficiency initiatives and renewable energy purchases

Climate commitments and goals:

- 2016: committed to achieving zero waste to landfill
- 2017: achieved goal of matching 100% of electricity consumption with renewable energy purchases

Public Case Study: Microsoft

Corporate PPA commitments:

- 2014: 175 MW wind PPA with EDF
- 2017: 180MW wind PPA with Vattenfall – the largest corporate PPA in Europe
- 2018: 315 MW solar PPA with sPower – the largest single corporate purchase of solar power in the USA

Offsetting commitments*:

- Global operations 100% carbon neutral since 2012
- Invest in carbon offsets for emissions related to air travel
- 2017: purchased the first-ever carbon credits generated by US rice farmers

Climate commitments and goals:

- Goal of reducing operational carbon emissions by 75% by 2030**
- ‘Carbon fee’ project: holds business groups financially responsible for cost of reducing and compensating for their carbon emissions

Why corporations are seeking renewable PPAs

Corporate PPAs easier sell: climate + economics

In absence of stronger carbon price signals, offsetting = climate + additional cost

Despite this, evidence shows that drive to corporate PPAs can open path to offsetting

What are the conditions to enhance:

- Long term carbon purchase as low cost hedge?
- Bundled products (*i.e*. wholly neutral retail products)?

Overcoming Regulatory Challenges

Can CPPAs be used in all markets?

- No. Some traditional, regulated markets may not allow CPPs
- Regulated markets are more like the traditional model with utility owning generation, transmission and distribution, and the retail seller of electricity
- Regulated markets present challenges as the utility may be the only party that may sell electricity to a customer or user of the power
- Utilities may not offer sufficient renewable energy to meet market demand
- This makes a PPA difficult to achieve
- A company in a regulated market may have to enter a Virtual PPA and “offset” the electricity bought from a utility in the state in which it operates.

Example #1: ERCOT

- In more deregulated markets, buyers and sellers are free to contract for physical sale of power
- In the Electric Reliability Council of Texas (ERCOT), power generators can physically supply and deliver power from a renewable generator to a corporate buyer, in most cases
- ERCOT requires a series of parties to handle the electricity before it reaches the corporate customer

ERCOT registrations and participants for physical CPPAs

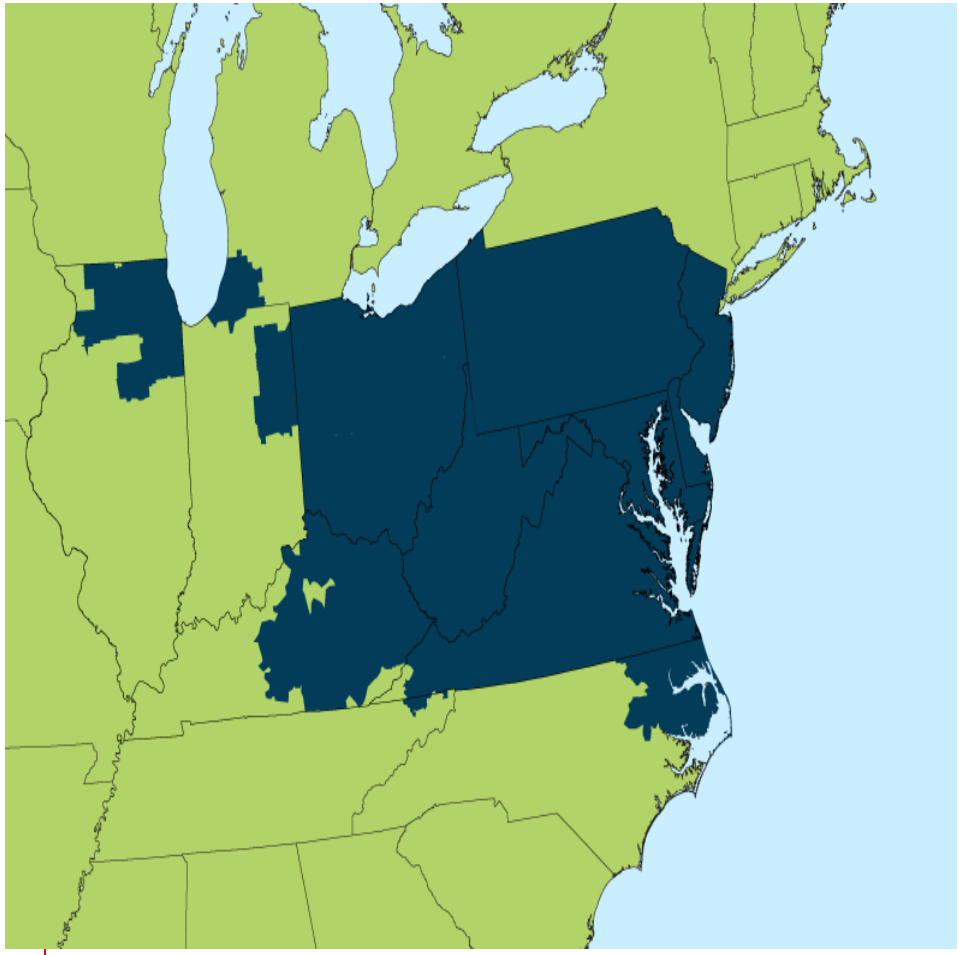
- Renewable generator must register
  - with the Public Utility Commission of Texas as a power generation Company, and
  - with ERCOT as a Resource Entity.
- Obtain interconnection agreement with transmission utility to transmit power from their renewable energy project to a purchaser within ERCOT (but sometimes 100s of mile away)
- Negotiate with market participants such as a Qualified Scheduling Entity (QSE) and Retail Electric Provider (REP) to schedule sale into the wholesale market and to physically sell the power to a customer in ERCOT
- Because solar or wind generators cannot provide constant, uninterrupted power supply to the corporate buyer, electricity must be provided by a REP to fill those gaps
- REP arranges to purchase and resell power from ERCOT markets to the corporate buyer to address intermittency of power

Example #2: California

- Except in limited instances, commercial and industrial (C&I) customers are not able to use PPAs for direct retail sale of power through electricity grid from generating facilities that are not located on-site
- State allowed “direct access” sales in 1990s, but suspended with 2001 state electricity crisis
- Limited direct access sales permitted to C&I
- Corporate PPAs generally limited to virtual PPAs into grid operated by California Independent System Operator (CAISO)
- Corporate buyers purchase power at retail prices from their utility
- Generators submit bids into CAISO as or contracting with a Scheduling Entity

Example #3: PJM

- PJM Interconnection, L.L.C. grid area where FERC, PJM, and individual state regulation apply
- States in PJM: all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.



PJM

- Ability of corporate buyer to purchase physical power from a remotely located generator is governed by state utility law
- Currently, IN, KY, NC, TN and WV do not permit electric retail choice and physical retail sales of electricity to Customer by Seller or a third-party “sleeve” entity would not be possible absent submission to the state regulator's full regulatory authority (and even then, potentially not possible)
- In many PJM states, retail customers can purchase from a state-licensed retail provider
- In states where permitted, the retail provider can become a member of and purchase commodity electric energy from PJM, and resell that power to the corporate buyer.

PJM

- Ability of a generator to market its power greatly facilitated by becoming a PJM member, which allows a seller to sell its power output into PJM's energy and capacity markets, without having to negotiate bi-lateral agreements with a utility
- Utilities may or not be motivated to enter into such an agreement).
- Availability of highly liquid PJM markets facilitates ability of generator and corporate buyer to enter into a contract for differences or similar financial transaction that
  - replicates the economics of a direct retail supply arrangement and
  - facilitates development of renewable energy supply corporate buyer can characterize as dedicated to serving its load.

Solving Renewable CPPA in PJM

- **Problem:**
  - Under Virginia regulations, solar farm would have to sell into the PJM Interconnection at wholesale market prices
  - Amazon Web Services (AWS) data centers in Virginia would have to pay retail rates for power supplied by Dominion Virginia Power (DVP) from a mix of renewable and fossil fuel power plants, diluting amount of renewable energy received
- **Solution:**
  - (AWS) and DVP entered into agreement approved by Virginia State Corporation Commission(SCC) under which AWS may contract for and DVP may administer the scheduling and settlement activity related to AWS's wholesale market participation of AWS's investments in its wind and solar projects, including any future Amazon contracts for renewable energy
  - Separate agreement allows AWS to pay Utility a market-based retail rate that closely matches the wholesale rates the renewable projects are paid
  - Allows Utility to help AWS meet its renewable energy goal without shifting costs to other customers
- Deals like this allow utilities to help meet the demand for corporate renewable PPAs

Financing Renewable Energy Projects with Corporate PPAs

Challenge of financing renewable CPPAs

- **Problem:**
  - Because of virtual PPAs, the financier must absorb merchant wholesale risk
  - Corporate PPA has upended traditional finance model, introduced merchant risk for lenders, and produced lower returns for equity investors
  - Shorter time periods for PPAs, down from 20 years to 12 to even less than 10 years
  - Key for financiers is underwriting investment that is
    - With very conservative financial modelling assumptions, and
    - Costs to build the asset must be controlled
    - A bankable off-taker company

Steps developers can take to improve ability to finance CPPAs

- Secure innovative PPAs with companies with demonstrated financial strength
- Seek lower costs in building projects and operating them to increase profits
- Adding storage helps developer manage timing and pricing of power sales
  - Now specific Investment Tax Credit for energy storage

Bitcoin Miners in ERCOT

- Growing number of bitcoin miners in ERCOT
- CPPA requires collateral before solar or wind companies will agree to PPA
  - Lien on mining building and electrical equipment
  - Lien on bitcoin miners (mining computers) may be difficult if the off-taker is a “hosting” company or partially a hosting company
  - Behind the meter
    - Private Use Networks
    - ERCOT working through issue of large loads (up to several hundred MWs)
  - Miners provide off-take and reduce or avoid congestion risk

Disclaimer

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STRUCTURING CORPORATE PPAS FOR RENEWABLE ENERGY

September 7, 2022

Presented by:

Seth Doughty, McDermott Will & Emery

THIS PART COVERS:

- Corporate PPA Structures
- Determining the Likelihood of Success
- How Corporate PPAs Work and Key Corporate PPA Provisions

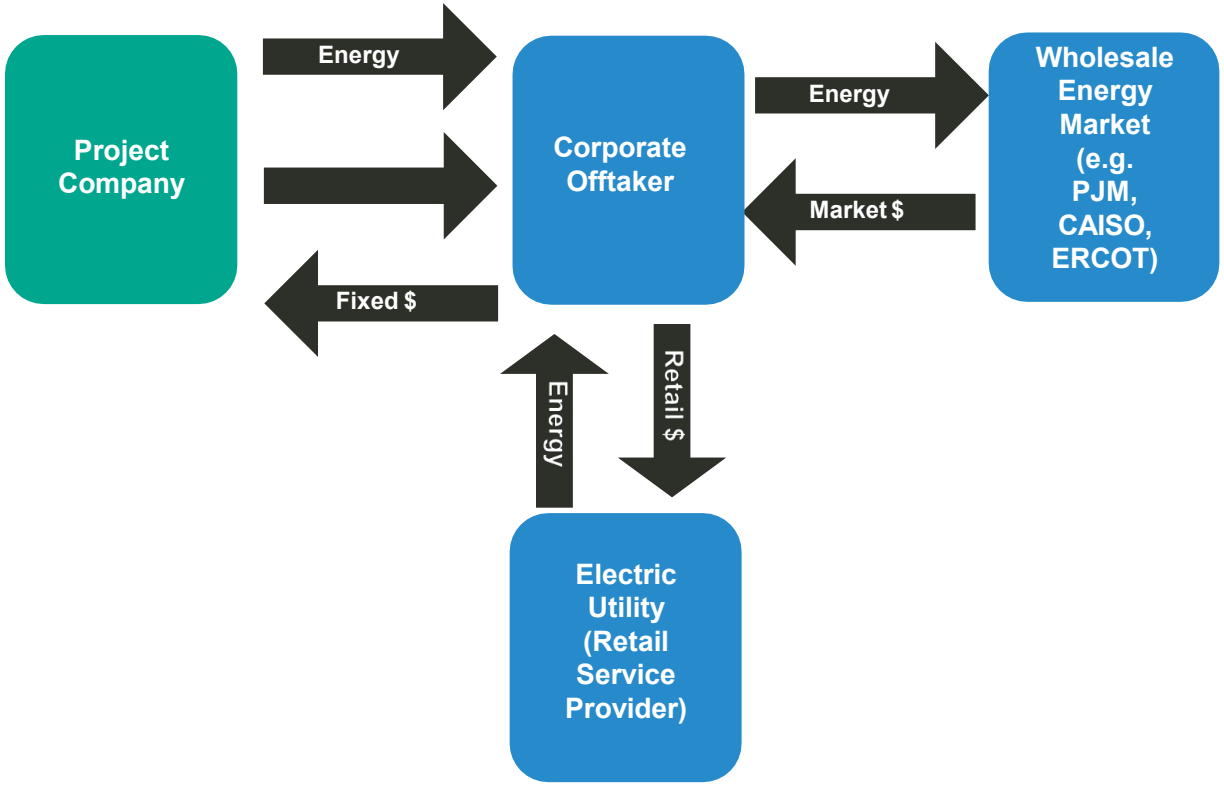
CORPORATE PPA STRUCTURES AND APPLICATIONS

VARIETY OF CORPORATE PPA STRUCTURES

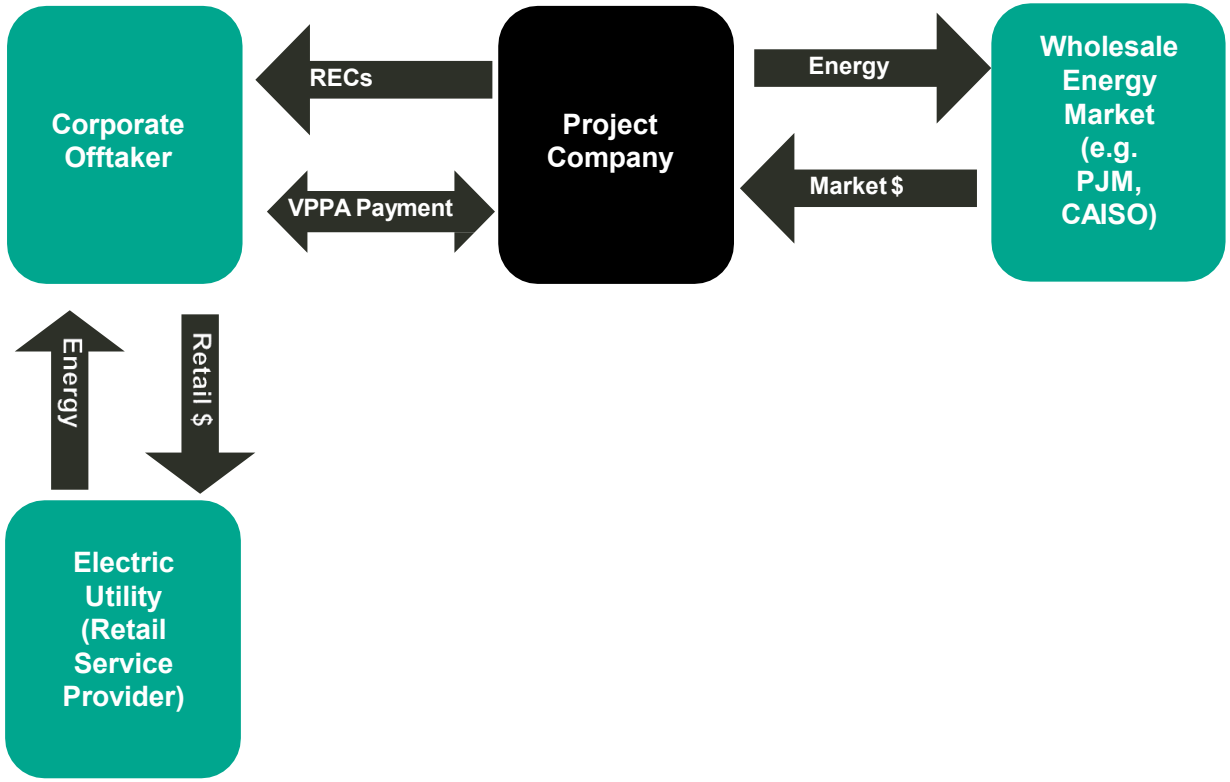
- Direct – On-site
- Virtual (aka “synthetic”) PPA – contract for differences

- Direct with utility delivery arranged by buyer
- Back-to-back with utility resale to corporate
- Back-to-back with “sleeve” entity resale to corporate

PHYSICAL CORPORATE PPAS



SYNTHETIC PPAS



PROS AND CONS OF DIFFERENT MODELS

Synthetic PPA

- Common approach in US
- Requires corporate buyer to take a view that there is a close correlation between selected reference market price in the virtual PPA and the variable price they are exposed to under general energy procurement for their corporate demand
- Likely to be additional considerations relating to derivative nature of deal, such as accounting and financial services regulation

Sleeved or Physical PPA

- Removes correlation risk but replaces this with need to agree to approach and costs by which intermittent renewable output will be sleeved into corporate's demand profile
- Can involve protracted negotiations between developer, corporate and incumbent utility and/or other "sleeve" entity
- Regulatory barriers to physical PPAs in the US

DETERMINING THE LIKELIHOOD OF SUCCESS

ASSESSING OPPORTUNITIES: CORPORATE BUYER CONSIDERATIONS FOR DEVELOPERS

- Is the Buyer creditworthy (or willing to post security)?
- How steep is the Corporate's "Learning Curve"?
- Has the Buyer engaged with other developers, but failed to arrive at a PPA? (This could be a red flag that Buyer is requiring "unbankable" terms)
- Will the capacity procurement be worth the effort?
- Will the Buyer have "all" the output of a project, or will a project have multiple offtakers?
  - Consider how interconnection, performance or availability guarantees, curtailment, etc. be allocated.

ASSESSING OPPORTUNITIES: COUNTERPARTY CONSIDERATIONS FOR CORPORATE BUYERS

- Experience
  - Has the counterparty successfully built other projects and of what size?
  - What is the counterparty's plan for dealing with module supply and other supply chain issues?
- Creditworthiness/Collateral Capabilities
  - Most project companies are newly-formed entities, so there is often heavy reliance on parent guarantees. RFPs should ask for credit information and plans for providing collateral.
- Responsiveness; Exceptions to RFP PPA/Materials
- Closing of Prior Transactions

ASSESSING OPPORTUNITIES: PROJECT CONSIDERATIONS FOR CORPORATE BUYERS

- Location
  - Location will dictate available types of PPA and pricing structures
  - For virtual PPAs, the location of project vs. settlement or delivery point is important
  - The type and value of renewable energy credits
- Status
  - Existing or new build?
  - If existing, assess project performance & compliance history
  - If “greenfield”:
    - Have the real estate and preliminary permits been secured?
    - Where in the interconnection queue is the project?
    - What are the financing plans & status?
    - Performance forecasting & forecasting assumptions
  - What material contracts are in place?
    - *E.g.*, material component supply contracts; engineering, procurement and construction contracts; operations & maintenance and energy management contracts

ASSESSING PROJECTS (CONT.)

- Environmental Diligence
  - Status of environmental, hazardous waste, cultural, and historic studies
    - Important for assessing marketing potential of the offtake arrangements – more desirable to advertise partnership with an environmentally-friendly project
- Community Outreach
  - If there has been community resistance to project development, consider what impact it may have on corporate Buyer
- Storage Requirements
  - Is the resource dependent upon weather? Will there be energy storage?

HOW CORPORATE PPAS WORK AND KEY PPA TERMS

COMMON CORPORATE PPA TERMS: KEY TERMS, MARKET TRENDS & HOT TOPICS

- Volume typically amount of energy delivered to Delivery Point
- Delivery Point is the project node
- Payment for Physical PPA: fixed price to Seller
- Payment for Synthetic PPA:
  1. Seller gets fixed price; Buyer gets floating price, either at node or hub.
  2. Floating Price: market price at time of delivery (locational marginal price or LMP).
  3. Netting: If fixed price payments exceed floating price payments, Buyer pays Seller the difference. If fixed price payments are less than floating price payments, Seller pays Buyer the difference.

COMMON CORPORATE PPA TERMS: KEY TERMS, MARKET TRENDS & HOT TOPICS (CONT.)

- Importance of settlement point – basis risk
  Settlement Point: Where floating price is determined

  A. Floating price is determined at point of interconnection:
     i. Seller pays interconnection point floating price to Buyer
     ii. Seller receives interconnection point floating price from market
     iii. Seller receives fixed price from Buyer

  B. Floating Price at Hub – Basis Risk
     i. Seller pays hub floating price to Buyer
     ii. Seller receives interconnection floating price from market
     iii. Seller receives fixed price from Buyer
     iv. Net result fixed price to Seller plus or minus difference in node v. hub

COMMON CORPORATE PPA TERMS: KEY TERMS, MARKET TRENDS & HOT TOPICS (CONT.)

Credit Support for both Seller and Buyer

- Seller credit support
  - Typically cash, letter of credit, or investment grade parental guaranty
- Buyer credit support
  - Buyer typically investment grade or has investment grade guarantor at signing
  - If Buyer is later downgraded, will be required to provide letter of credit or replacement investment grade guarantee
  - Amount negotiable

COMMON CORPORATE PPA TERMS: KEY TERMS, MARKET TRENDS & HOT TOPICS (CONT.)

- Tariffs and other supply chain risks (who bears the costs)
- RECs: who retains (no RPS requirement)
- Capacity auctions
- Future attributes (could include capacity) – associated costs, penalties
- Milestones, late COD delay damages and termination
- Option for physical delivery sale
- Minimum performance requirement; availability/production; performance excuses.
- Risk of curtailment by market operator – impact on minimum performance requirement; payments for energy
- Compliance cost caps; market disruption events
- CFTC reporting party for Synthetic PPAs

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Biography

Seth Doughty focuses his practice on transactional matters in the energy industry. He has in-house experience at Southern California Edison. There, he gained experience drafting and negotiating a large variety of contracts, amendments and consents for supply and power procurement agreements.

In the power procurement area, Seth has drafted and negotiated a wide variety of power purchase agreements and other purchase and sale agreements, including for energy, resource adequacy and other capacity products, energy efficiency and distribution deferral products. He is also experienced in handling conventional, renewable and energy storage technologies for both the “in-front-of-the-meter” and “behind-the-meter” projects.