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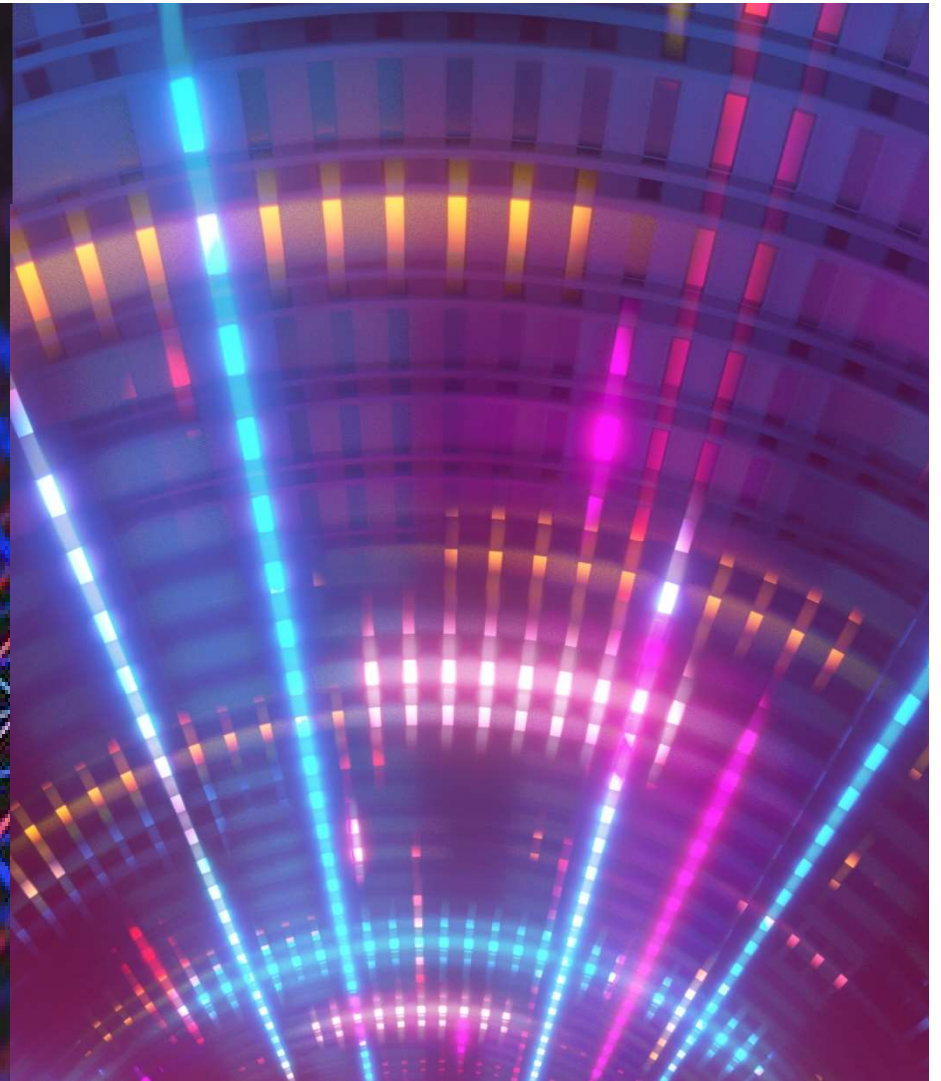
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**An Energy Industry
Webinar Series**

**Negotiating Virtual Power Purchase
Agreements**

October 15, 2020

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Presenters



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Adam Cherry



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Agenda

- Overview of Virtual Power Purchase Agreements and Market Developments
- Key Virtual VPPA Legal Provisions in Negotiations
- Hot Topics in Today's VPPAs
- Beyond Standard VPPAs
- Questions and Conclusions

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Overview of Virtual Power Purchase Agreements and Market Developments

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Renewable Industry Trends from the Buyer Side

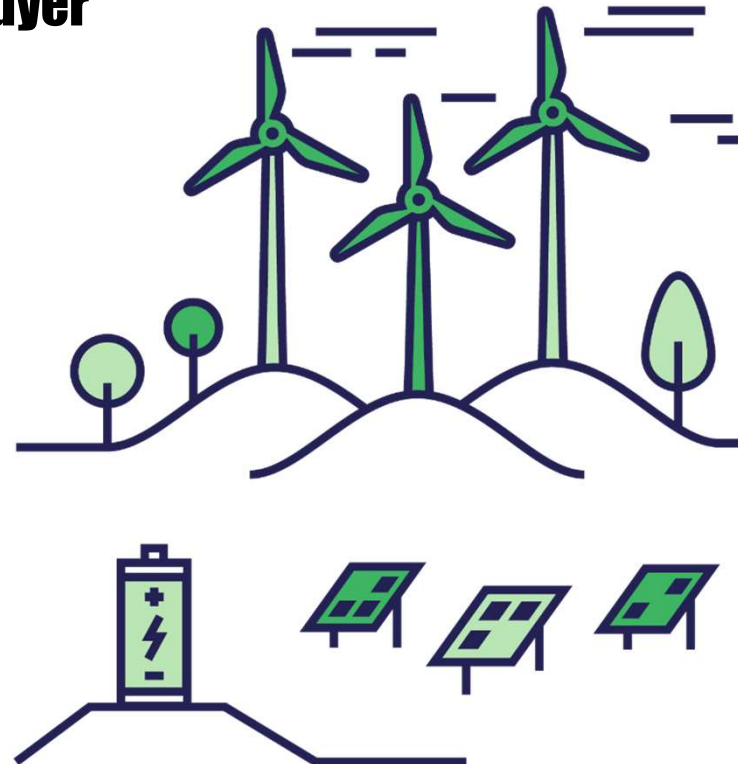
While COVID-19 has caused unprecedented upheaval in energy markets, we have seen continued demand from corporate buyers to move forward with renewable buying and expect to see a record-breaking year in 2020 in terms of MW of deals under our advisory

Sustained demand, growing to **international markets**

Focus on **Science-Based Targets** and holistic strategies

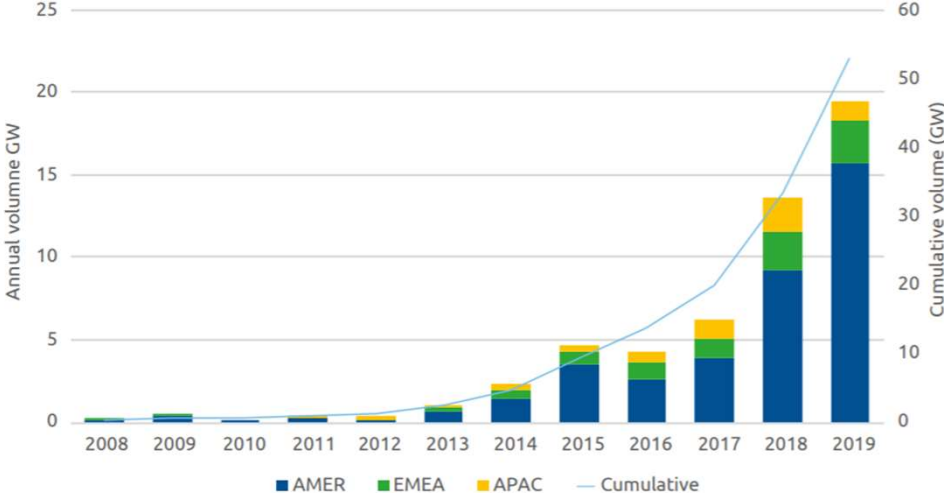
Buyer expansion beyond tech and first wave of consumer brands

Continued **evolution in commercial structures** available across markets



US Market Continues to Lead but Other Regions are Growing

Global Corporate Offsite Deals by Region

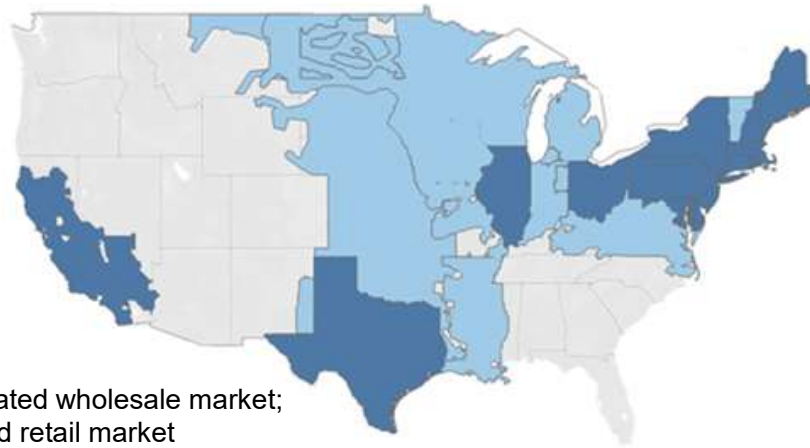


Source: WindEurope



Where are VPPAs occurring in the US?

The US is a patchwork of different electricity markets and jurisdictions, where electricity is regulated at both the wholesale and the retail level.



Light blue square: Deregulated wholesale market; regulated retail market

Dark blue square: Deregulated wholesale and retail markets

Virtual PPAs

- › Possible anywhere there is a deregulated wholesale market

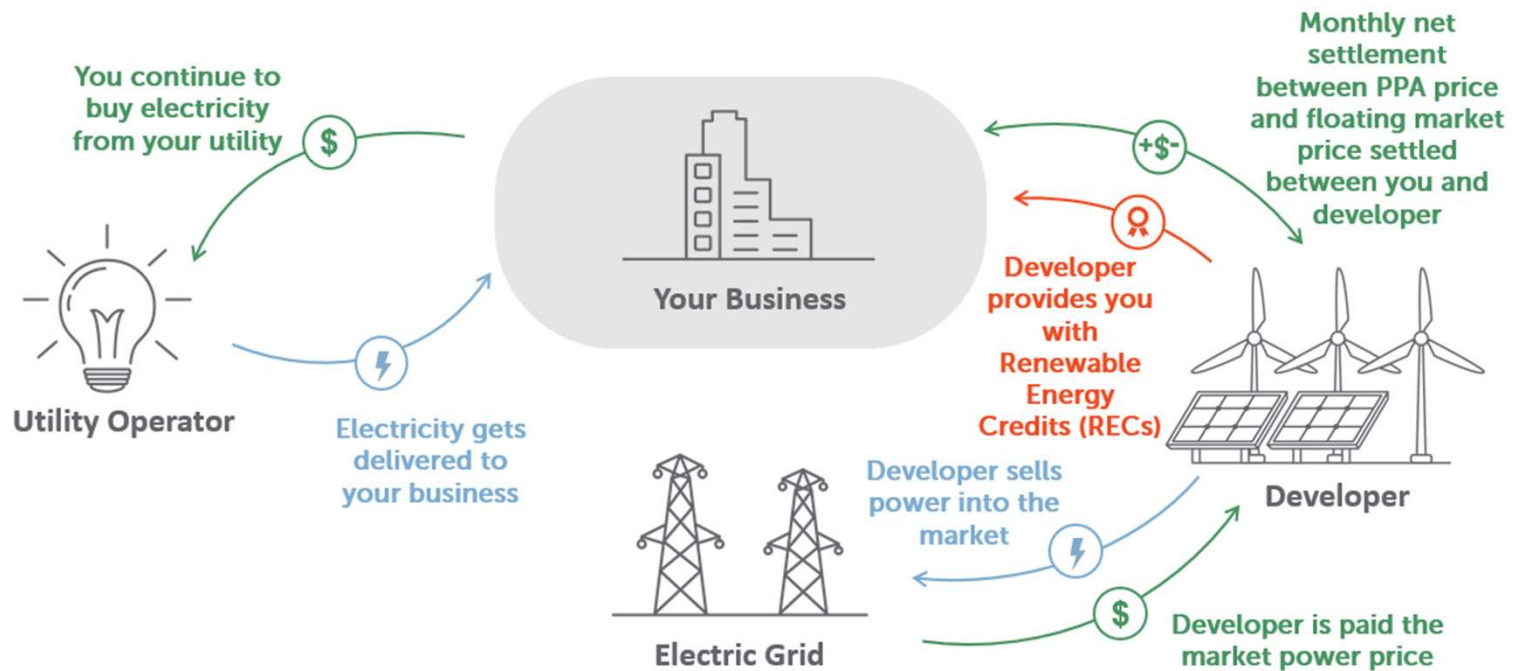
Retail Delivery

- › Possible anywhere there are deregulated wholesale and retail markets

Other Contract Structures

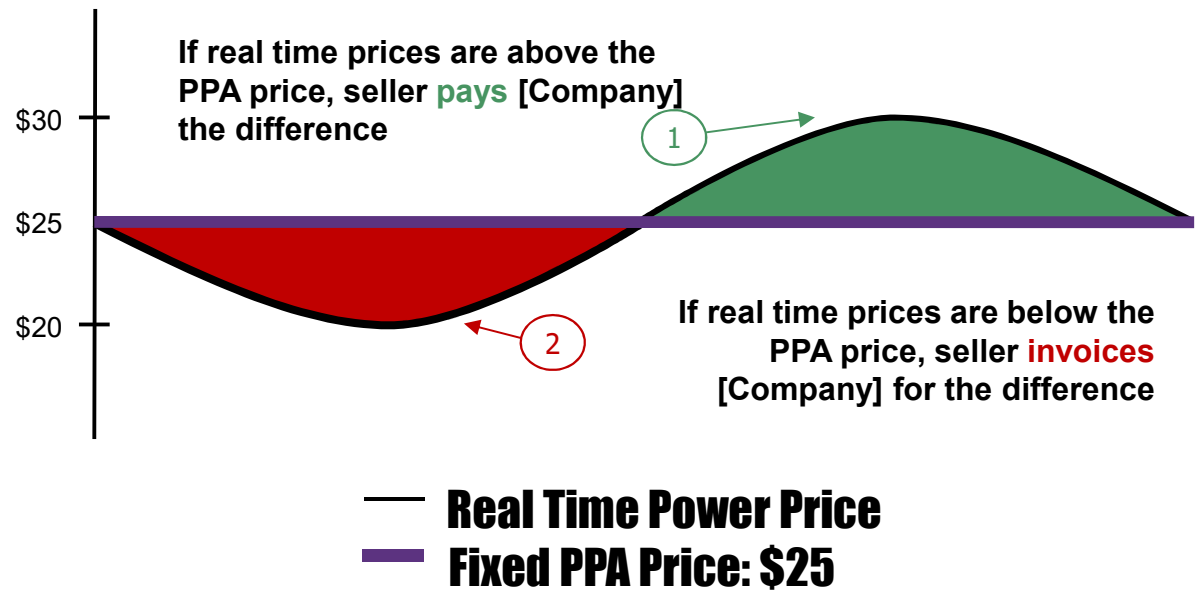
- › May be available outside of deregulated wholesale markets

Virtual Power Purchase Agreement (vPPA): How it Works



vPPA Settlements

- Buyer pays fixed price per unit of energy generated (\$/MWh)
- Developer provides Buyer with the value of the energy sold on the market + RECs
- As energy is generated by the asset, Developer sells physical energy to the grid at market price, which fluctuates
- The vPPA is settled as a unit-contingent contract-for-differences
- The contract settlements are netted & invoiced monthly



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Key VPPA Legal Provisions in Negotiations

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VPPA Structure and Legal Provisions

- Project Development Provisions
 - Commercial Operation
 - Project Description and Construction Requirements
 - Milestone Design and Early Termination
 - Delay Damages
 - Capacity Adjustment
 - Complexities of Pro Rata Projects
- Environmental Attributes
 - Alignment with REC tracking systems and sustainability goals
 - Planning for evolving environmental attributes and allocating costs

VPPA Structure and Legal Provisions

- Project Operation and Delivery
 - Availability Guarantees
 - Damages and Termination Rights
- Performance Assurance (Buyer and Seller)
 - Forms of Performance Assurance
 - Performance Assurance Amounts and Replenishment
- Events of Default
- Buyer / Seller Remedies
- Damages Calculations

VPPA Structure and Legal Provisions

- Seller and Buyer Covenants
- Limitations and Warranties
- Confidentiality and Publicity
- Dodd-Frank Reporting and Compliance
- Assignment
- Collateral Assignment for Financing Purposes
- Change in Law

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Hot Topics in Today's VPPAs

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Future Products and PJM Capacity are Two Key Issues for US Buyers Today

› **Future Facility Attributes:**

- › Buyers typically expect to receive all future attributes associated with a facility, including environmental attributes, ancillary services, and capacity benefits that don't currently exist
- › Where products outside of Energy & RECs exist today, Sellers typically retain the associated revenues and provide a more competitive PPA price to Buyer

› **Counterparties navigating through regulatory uncertainty in PJM Capacity:**

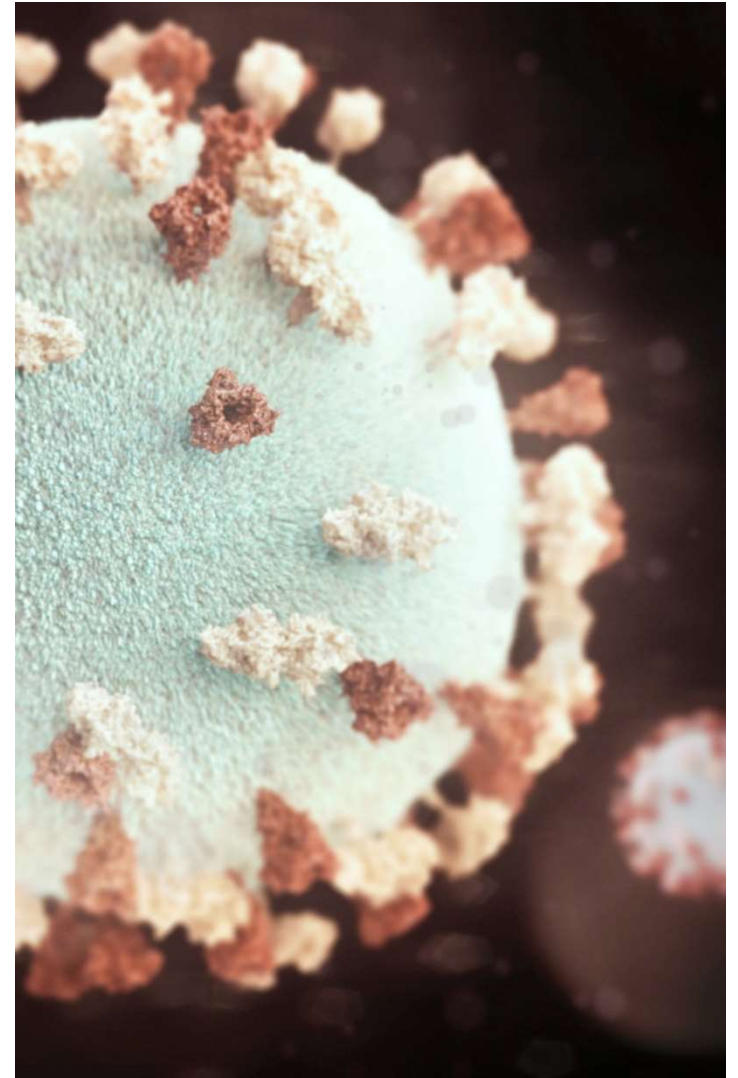
- › Capacity revenue can impact PPA price by several dollars
- › Rulemaking uncertainty around MOPR (Minimum Offer Price Rule) initially had chilling effect on transactions
- › Parties have found creative solutions to move through execution:
 - › Seller takes risk: comfort with expected rules as currently filed with FERC
 - › Buyer takes risk: Capacity attributes rolled into buyer's products



COVID-19 has Impacted Some Near-term Projects

2020 and 2021 projects have experienced some issues

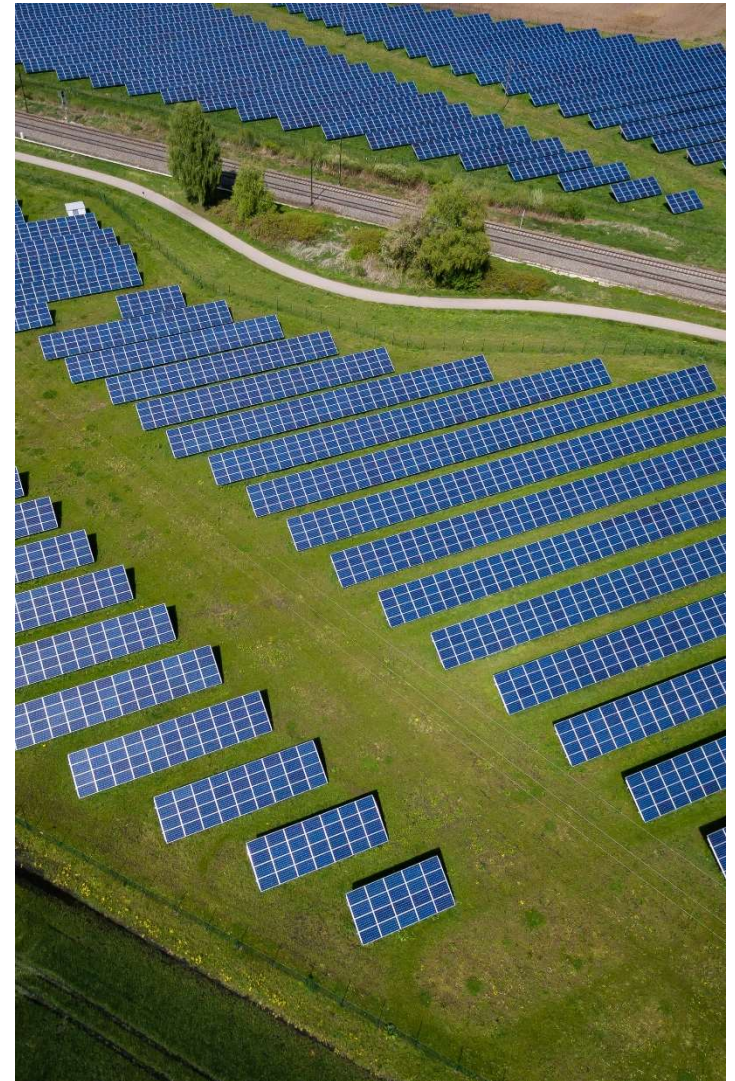
- › **Project concerns include:**
 - › Manufacturing delays
 - › Permitting delays
 - › Transportation and logistics delays
 - › Labor impact
 - › Nervous financiers
 - › Near-term energy market impact
 - › Force Majeure notices issued by supply chain
- › Ultimately, Developers continue to execute new contracts, and meet COD obligations on new projects.



Force Majeure is the Hot Topic in Negotiations Today

Parties must navigate PPA terms that protect parties and keep projects financeable

- › **Common Force Majeure relief for Sellers in PPAs:**
 - › Pre-COD: Negotiated delay to COD for a limited time period, followed by termination rights for sustained events
 - › Post-COD: Excused from carrying out contract obligations for period of time, followed by termination rights for sustained events
 - › In both cases, liquidated damages may be reduced
- › **Buyers response to COVID:**
 - › Seek to avoid "Day-1" Force Majeure declaration



What is “Market” in Negotiating Force Majeure Clauses?

- Use definitions of standard force majeure events (including “epidemic”)
- Consider risk associated with indirect COVID-19 effects (e.g., governmental offices or utilities closed or delayed due to COVID-19)
- Tailor clauses to provide flexibility and different consequences for force majeure effects to reflect project evaluation and risk appetite for both pre-COD and post-COD delays

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Beyond Standard VPPAs

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Beyond Standard vPPAs: Other Risk-Mitigation Structures

- › **Increased interest in physical delivery from some buyers:**
 - › For concentrated, long-term load in deregulated markets
 - › Wholesale market participant required
 - › Firming, shaping, load-following products can be layered into transaction to cost effectively manage shape
- › **Case-by-case departures from standard CfD structure of vPPA to include risk management structures such as:**
 - › Collar: If floating price is outside of agreed upon range, settlement price pegged at upper or lower limit
 - › Upside/Downside Sharing: Floating price exposure outside of range can also be split between parties
 - › **Key considerations:**
 - › *Risk management structures impact hedge efficacy*
 - › *Is the insurance appropriately priced or can a different party wear the risk more cost effectively?*

Risk	Physical Delivery	Proxy Gen	Volume Firming Agreement	Firm or Shaped Volume	Upside /Downside Sharing	Collar
Operational		X	X	X		
Volume	X		X	X		
Market Price Risk					X	X
Generation Shape	X		X	X		
Accounting Treatment Complexity	X		X			X

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Questions?

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Biography



Colin Schofield

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Colin leads the Commercial team at Edison Energy, responsible for supporting the structuring, review, and negotiation of renewable energy contracts. Colin also works on the analysis and due diligence of renewable energy projects to support selection of the most competitive offers. While working at Edison, Colin has led the negotiations for over 3,000 MW of onsite and offsite renewable transactions.

Prior to joining Edison Energy, Colin worked on the Origination team at EDP Renewables, one of the largest renewable energy project developers in the world, and assisted in the successful negotiation of renewable energy PPAs with Utilities, Cooperatives, and University and Corporate Buyers. He studied Environmental Studies and Economics at Brown University, and is a CFA charterholder.

Biography



Adam Cherry

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Adam Cherry manages commercial negotiation and structuring of renewable energy contracts for Edison Energy clients, with a focus on power purchase agreements. In his role, Adam facilitates communication between buyer and seller representatives, advising clients on key commercial terms and contract language through transaction close. Adam has in-depth expertise in environmental attributes, forward capacity markets, and credit support contracts.

Previously, Adam worked in a variety of roles at Avangrid Renewables, where he supported contracting of more than 1.1 GW in new-build renewable generation and operation of more than 6 GW of installed wind and solar capacity in the United States. He has hands-on experience in a broad range of renewable energy topics. Adam holds a B.S. in Journalism and Mass Communication from the University of Oregon and an M.B.A. from Portland State University.

Biography



Elizabeth P. Hanigan

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Elizabeth P. Hanigan focuses her practice on business and financial matters concerning renewable energy and infrastructure development, project finance, mergers and acquisitions, and joint ventures. She advises developers, private equity and financial investors in connection with the acquisition, construction, development, sale, and financing of renewable energy generation projects, with an emphasis on wind and solar facilities.

Clients seek her advice in navigating the legal issues associated with the negotiation of purchase and sale agreements, project financing agreements, including tax equity documentation, development agreements, power purchase agreements, engineering, procurement, and construction (EPC) contracts, equipment supply and warranty contracts, operations and maintenance (O&M) agreements, and other commercial contracts.

Biography



Ken Kulak

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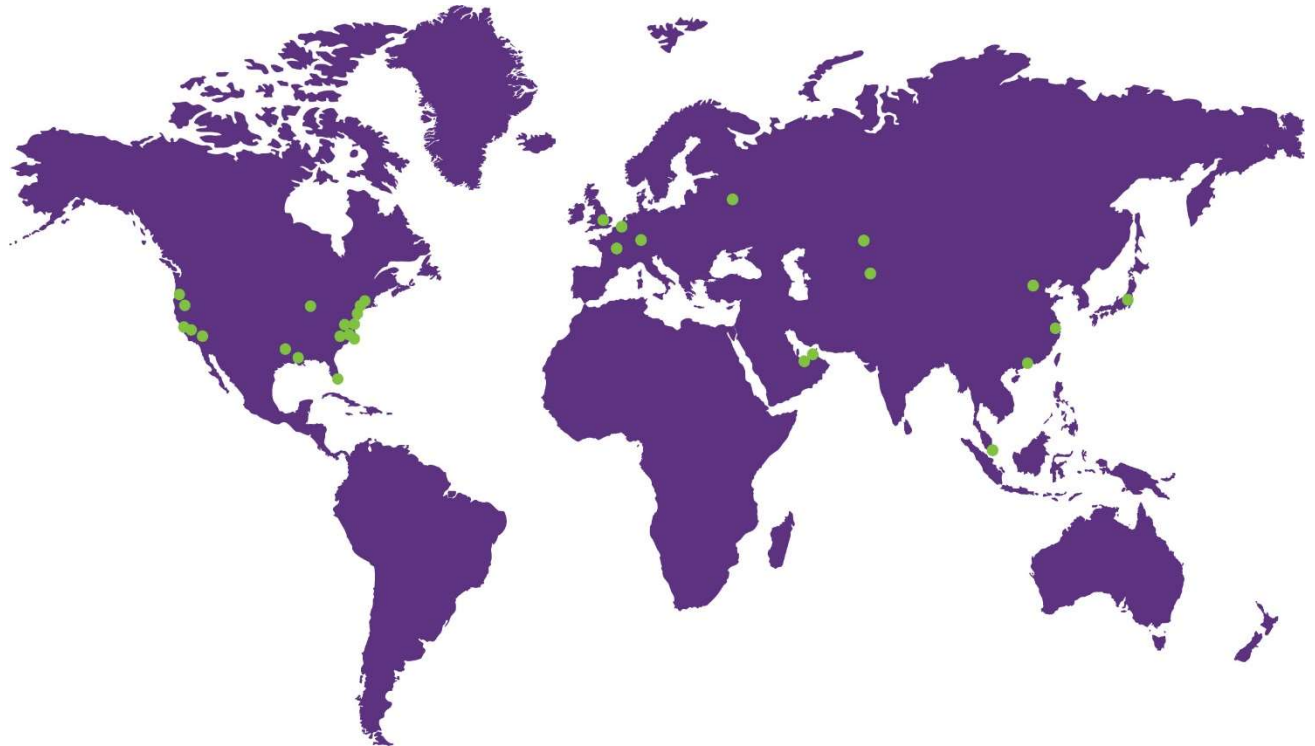
Ken Kulak counsels energy companies in regulatory proceedings, including ratemaking proceedings, before public utility commissions and in transactional matters. He advises public utilities, project developers, investors, and corporate energy users on retail and wholesale electricity markets, renewable portfolio standards, distributed generation (including microgrids), demand response, and energy efficiency. Clients seek his advice in navigating the legal issues associated with the development, purchase, sale, and financing of renewable energy and storage projects, including the negotiation of power purchase agreements; engineering, procurement, and construction (EPC) contracts; and operations and maintenance (O&M) agreements.

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