

RENEWABLE ENERGY – FROM POLICY TO IMPLEMENTATION

SUNY/PPAA & NYAPPA 2019 SUMMER CONFERENCE

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Introduction

- Over the last several years, there has been a renewed and very strong push toward cleaner and more sustainable forms of electric generation
- The primary focus of this effort has been on decarbonizing New York State's generation sector
- Toward that end, the State has established very aggressive goals for installing and relying upon renewable generation and energy storage facilities
- In our experience, colleges and universities often are leading this charge, and are crucial to its overall success

Introduction

- Presenters: Mike Mager, Adam Conway, and Bob Loughney of Couch White, LLP
- Couch White has an extensive energy practice
 - Represents large energy consumers (including colleges and universities), municipalities, developers of energy infrastructure projects (including electric generation and electric and gas transmission lines), and energy marketers
 - A large part of Couch White's energy practice relates to renewable energy, and we are working – and have worked – on projects involving customer-sited solar, utility-scale solar, community solar, land-based wind, off-shore wind, biomass, hydropower, fuel cells, and energy storage

Introduction

- This presentation will cover four primary topics:
 - A review of the State's clean energy goals
 - An explanation of how these goals currently are being implemented
 - The impact of Clean Energy Standard (CES) and other State policies on colleges and universities, and options to develop renewable energy and energy storage projects
 - Overview of contract-related issues that buyers should recognize in pursuing renewable generation and energy storage projects

New York's Clean Energy Goals

- New York State has had renewable generation goals for some time
- Renewable Portfolio Standard (RPS)
 - On September 24, 2004, the Public Service Commission (PSC) issued an order establishing an RPS
 - RPS goal was 25% renewable penetration by 2013 (25 by 13)
 - At the time, approximately 19.3% of the State's electricity consumption was generated by renewable resources
- On January 8, 2010, the PSC issued an order modifying the RPS goal
 - PSC modified goal to 30% renewable penetration by 2015 (30 by 15)
 - At the time, the State was not on track to make the "25 by 13" goal
- In 2018, renewable energy accounted for approximately 27% of the State's electricity generation
- This background is important to understand the aggressive nature of the state's clean energy goals, and why they are unlikely to be achieved under a "business as usual" approach

Establishment of CES

- The PSC instituted Case 15-E-0302 on June 1, 2015
 - Scope of proceeding modified on January 21, 2016 to focus on CES
 - Two key events led to PSC’s examination and adoption of CES
- 2015 SEP
 - Focused extensively on global warming and associated impacts
 - Recommended achievement of following goals by 2030:
 - 40% reduction in greenhouse gas emissions
 - 50% reliance on renewable resources by 2030 (50 by 30)
 - 600 trillion BTU in energy efficiency goals
- Governor Cuomo’s December 2, 2015 Letter
 - Directed a PSC proceeding be instituted to establish a CES
 - CES goal is 50 by 30
 - Mandates that CES is to ensure that goal is “converted from aspirational to actionable”

Establishment of CES

- On August 1, 2016, PSC issued an “Order Adopting a Clean Energy Standard”
 - Requires compliance with 50 by 30 goal
 - Requires support of upstate nuclear facilities
 - CES organized into three tiers
 - Tier 1: new, larger-scale renewable generation projects
 - Tier 2: existing, larger-scale renewable generation projects
 - Tier 3: existing, upstate nuclear facilities
 - Information regarding the implementation of Tier 1 follows; additional information regarding Tier 2 and/or Tier 3 is available upon request

Implementation of CES

- CES Tier 1
 - Commenced January 1, 2017
 - Applies only to “new” renewable generation facilities (commencing operations after January 1, 2015)
 - Incentivizes eligible facilities by compensating them for renewable, carbon-emission-free attributes in the form of Renewable Energy Credits (RECs)
 - 1 REC = 1 MWH of Generation By Eligible Facility
 - Load-serving Entities (LSEs) are required to procure increasing amounts of RECs each year based on percentage of the LSE’s total annual load served
 - EXAMPLE: LSE serving 6% of statewide load would be required to procure 6% of statewide REC target

Implementation of CES

- PSC'S CES order established incremental statewide REC procurement obligations through 2021
 - Future requirements to be established in next phase of proceeding
- A very large portion of Tier 1 RECs will be procured by the New York State Energy Research And Development Authority (NYSERDA) through a central procurement process
 - Relies on long-term (i.e., 20-year), REC-only contracts
 - Projects can sell output into wholesale electric markets or through bilateral contracts
 - LSEs can comply with Tier 1 REC procurement obligations by:
 - Purchasing some or all RECs from NYSERDA or third parties
 - Self-supplying RECs by owning new renewable generation facilities
 - Making an Alternative Compliance Payment (ACP)

VDER Proceeding

- PSC instituted Case 15-E-0751 on December 23, 2015 to determine a successor to Net Energy Metering (NEM)
- PSC'S objective was to establish a methodology for calculating the value that Distributed Energy Resources (DER) provide to system
 - Became known as VDER proceeding
 - Valuation methodology not limited to renewable generation projects
 - Some applications of NEM (e.g., mass market solar installed before a certain date) were grandfathered

VDER Proceeding

- PSC adopted and has refined methodology for valuing DER output – referred to as “value stack”
- Elements of value stack compensation
 - Energy value – based on wholesale energy prices
 - Capacity value – based on wholesale capacity prices
 - Environmental value – based on REC compliance cost
 - Demand Reduction Value (DRV) – based on reductions to utility distribution costs due to DER output
 - Locational System Relief Value (LSRV) – based on reductions to utility distribution costs due to DER output in certain designated regions where system is constrained
- VDER proceeding also addressing other issues, such as community distributed generation, rate design, and standby service rates

Energy Storage

- Because most renewable generation technologies are intermittent, storage is considered essential for achieving State's renewable generation goals.
- PSC established energy storage goals
 - 1,500 MW of storage by 2025
 - Aspirational Goal of 3,000 MW of storage by 2030
- Implementation
 - Compensation rules being worked upon in VDER proceeding
 - Electric utilities and NYSERDA both have energy storage programs
 - CES large-scale renewable procurements to be refined to include storage paired with renewable generation projects

NEW YORK STATE CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT

- Passed by State Senate and Assembly at end of this past legislative session
- Establishes objective of eliminating carbon emissions from State economy by 2050
- Codifies in Public Service Law that by June 30, 2021, PSC must establish a program that requires:
 - By 2030, 70% reliance on renewable generation resources
 - 50 by 30 modified to 70 by 30
 - By 2040, 100% reliance on zero-emission generation resources
- To meet these goals, New York will have to ensure that renewable resources are developed at a much faster pace than ever before

Project Development Opportunities

- In our experience, there are three main procurement options for renewables/storage:
 - Onsite or Behind-the-Meter Projects
 - Remote Net Metered or Community Projects
 - Contracts-for-Differences (CFDs) or Virtual PPAs (VPPAs)
- We will review basic structure and pros and cons of each option

Onsite or Behind the Meter

- Project interconnected “behind” the onsite customer meter
- Project output offsets onsite consumption
 - Acts as a “load modifier”
- Excess energy can be exported to the grid

<u>Pros</u>	<u>Cons</u>
'Showpiece' Better Control Simpler Interconnection Help with Peak Demand (Storage) Offset Surcharges	Space Constraints Complicated Utility Tariffs Challenging to Align with Peak

Remote or Community Projects

- Project interconnected “in front of” the customer meter
- Project output is exported to the grid
- Utility converts exported energy into bill credits
 - Bill credits calculated using “Value Stack” methodology
- Projects can be dedicated to a single customer (remote net metering) or shared among multiple customers (community)
- Community projects limit large, “anchor” customers to no more than 40% of total capacity

Remote or Community Projects

<u>Pros</u>	<u>Cons</u>
Easy to Administer	Limited Value for Large Customers
Mature Third-Party Development	Require Longer-Term PPAs
No Onsite Space Limitations	REC Retention Drops Value
Community Partnership Options	40% Limit (Community Projects)
'Interzonal' Crediting	Some Added Billing Complexity

Typical Remote/Community Deal

Utility

- Collects Bill from Customer (\$21/mo)
- Applies Credit to Customer's Bill (\$42/mo)

Has Utility Allocate Credit

Developer

- Produces Credits from Solar Array Valued at \$0.21/kWh
- Sells 200 Credits to Customer for \$0.19/kWh (~90% of value)
- Credit is like a "coupon"
- Has Utility Allocate Credit to Customer

Monthly Payment

Customer

- Consumes 300 kWh/mo at \$0.21/kWh (\$63/mo)
- Purchases 200 kWh Credit from Developer for \$38/mo
- Bill reduced by \$42/mo
- Pays Utility \$21/mo
- Nets \$4/mo

Reduced Utility Bill

Monthly Credit

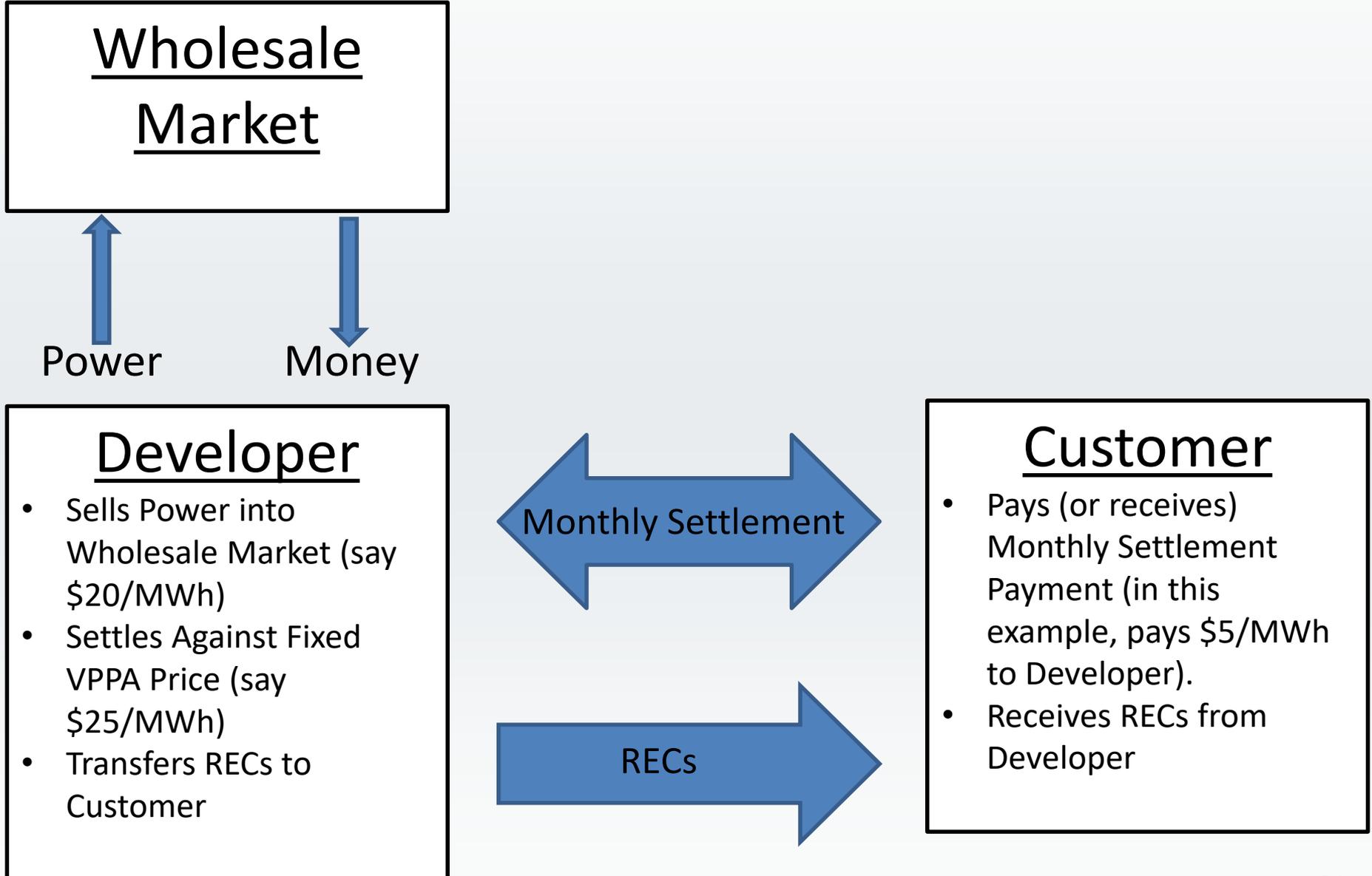
CFDs and VPPAs

- Projects constructed by third party developer
- Projects generally designed to operate as wholesale market participants (i.e., sell all output into wholesale energy market)
- Buyer guarantees developer fixed price for output
 - Usually monthly settlement between Fixed Price and Market Price (“Floating Price”)
- Buyer usually receives RECs
 - Can be project-specific or “replacement” RECs

CFDs and VPPAs

<u>Pros</u>	<u>Cons</u>
Easy to Administer	Institutional Concerns
No Onsite Space Limitations	Financial Instrument
Projects Usually Larger	Tenuous Buyer Connection
Flexibility on REC Retention	Difficult to Find
Hedge on Power Prices	Make Sure The RECs “Count”

Typical CFD/VPPA Deal



Legal Issues Associated with Renewable Energy Agreements

- Real Property Issues
- Construction, Operation and Maintenance
- Sales of Energy
- Rights Upon Termination
- Contractual Provisions to Guard Against

Real Property Issues – Onsite Projects

- Site selection is important; a 20-Year burden on your property
 - Consider whether unique site usage could impact project operations
 - Thorough on-site survey is required by both installer and customer at outset
- Lease v. License
 - Co-Terminus with PPA
- Customer needs to maintain control of facility while allowing project to operate
 - Limit access as necessary to construct, operate and maintain the project
 - Provide for reasonable ingress and egress to project
 - Require supplier to comply with customer's safety rules
 - Limit exposure to exposure to hazardous materials
 - Customers need to ensure that supplier has adequate insurance

Construction, Operation and Maintenance

- All construction and operation and maintenance activities must be in accordance with applicable laws and regulations as well as prudent engineering and operating practices
 - All subcontractors must be qualified and experienced
- Construction schedule should be agreed to and enforceable
- Detailed design plans and equipment should be clearly stated
 - If project on customer-owned property, customer should have to pre-approve any changes in design or equipment
- Supplier should be responsible for securing all permits and approvals, at its cost

System Operations

- All project equipment typically will be owned by the supplier for the duration of the term
 - Supplier must operate equipment as agreed upon within the PPA
 - Supplier may monitor system remotely
 - Supplier must respond and take corrective action
 - Supplier should perform routine maintenance as per equipment requirements including preventative maintenance and system repairs

Sales of Energy and RECs

- Sales quantity and price must be clearly stated in PPA
- To extent possible, prices should be fixed in advance to remove uncertainty
- Performance obligations of supplier must be clearly stated and enforceable
- Customer payment obligations also must be clearly stated
- Remedies for non-performance (e.g., supplier “covers” any premium that customer must pay to replace supply)
- Adequate metering must be in place to properly measure performance and bill
- Supplier obligations to transfer RECs must be clear and definitive

Price and Proforma Review

- Scheduled and unscheduled outages
 - Perform sensitivity analysis to determine impacts from outages
- Review current commodity contract(s) terms
 - If using a third party supplier, determine any potential penalties for change in load profile on your existing contracts
- Review tariffs and regulatory changes
 - Future changes in regulations or tariffs can significantly impact the economics of a project
 - Sensitivity analysis should be prepared to quantify potential risks
 - Possible to address via a “Change in Law” clause

Rights Upon Termination

- Early termination
 - If there is a breach, customer may want option to purchase project at fair market value or some other price
 - PPA must spell out the terms of any buy-out; PPA also must address project removal and restoration of premises
- Expiration
 - If no renewal provisions, PPA must address buy-out or termination, including removal and restoration

Contractual Provisions to Guard Against – Broad “Exit” Clauses

- Governmental Intervention Clauses
 - ...provided that X will have the option to pass along incremental costs to Y or terminate this contract in the event that any governmental, regulatory or quasi-regulatory body enacts or issues a law, regulation, order or other decision that imposes additional costs on X or makes this Contract more difficult for X to perform its obligations...

Contractual Provisions To Guard Against

- Indemnity
 - Renewable purchases not buyer's primary business line
 - Buyer should be protected against damages arising from facility operation
- Breach and damages
 - Are the breach terms fair and clearly stated?
 - How is a breach of contract addressed?
 - Is the method for calculating damages fair and clearly stated?
 - Are consequential damages (e.g., lost profits) precluded?

Review

- Planning throughout process can ensure an effective PPA
- Energy contracts require a thorough technical and legal review
 - Usually requires input from several consultants (Business, Legal, Accounting, Marketing, etc.)
- Do not accept any provision just because it is “standard” or “our boilerplate”