Direct Purchasing and PPAs 101

PPA Fundamentals

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REM Conference

October 19, 2015

Customer First Renewables

CFR is a Different Kind of Supplier: A *Renewable Energy Integrator*

Our Business

We deliver the benefits of competitively and predictably priced green electricity directly to large customers without the challenges of owning and operating their own renewable energy assets

We…

> manage the entire process of procuring renewables from strategy to operation

> look at all pieces of the puzzle—not just the PPA price

> integrate strategy and real-world execution in a turn-key manner

> are objective, transparent and technology neutral

> have no financial interest in any project or company

3 Major Types kinds of Direct Purchase or Ownership

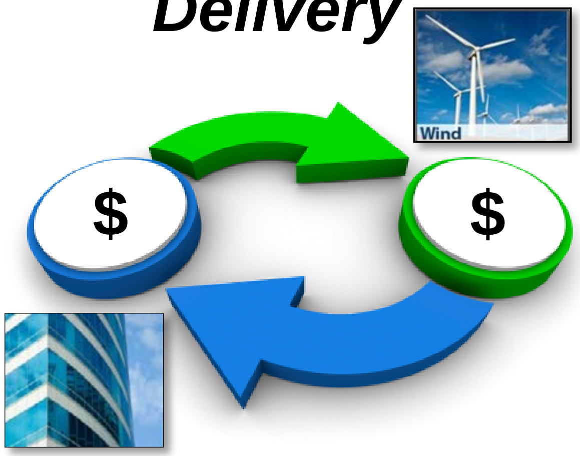
Onsite

- > On customer site
- > kWh used by customer
- > Offsets utility power needs
- > Excess kWh sold to utility
- > Customer gets RECs

Offsite Direct Delivery

- > Same grid as customer
- > Customer earns revenue from energy, capacity
- > Retailer “sleeves” product along with remaining supply
- > Customer gets RECs

Offsite Indirect Delivery



- > Solution located anywhere
- > All kWh sold to the grid
- > Customer earns revenue from energy, capacity
- > Net revenue offsets local bill
- > Customer gets RECs

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Options for Buying Renewables

RECs

Utility green tariff

Green Power Product

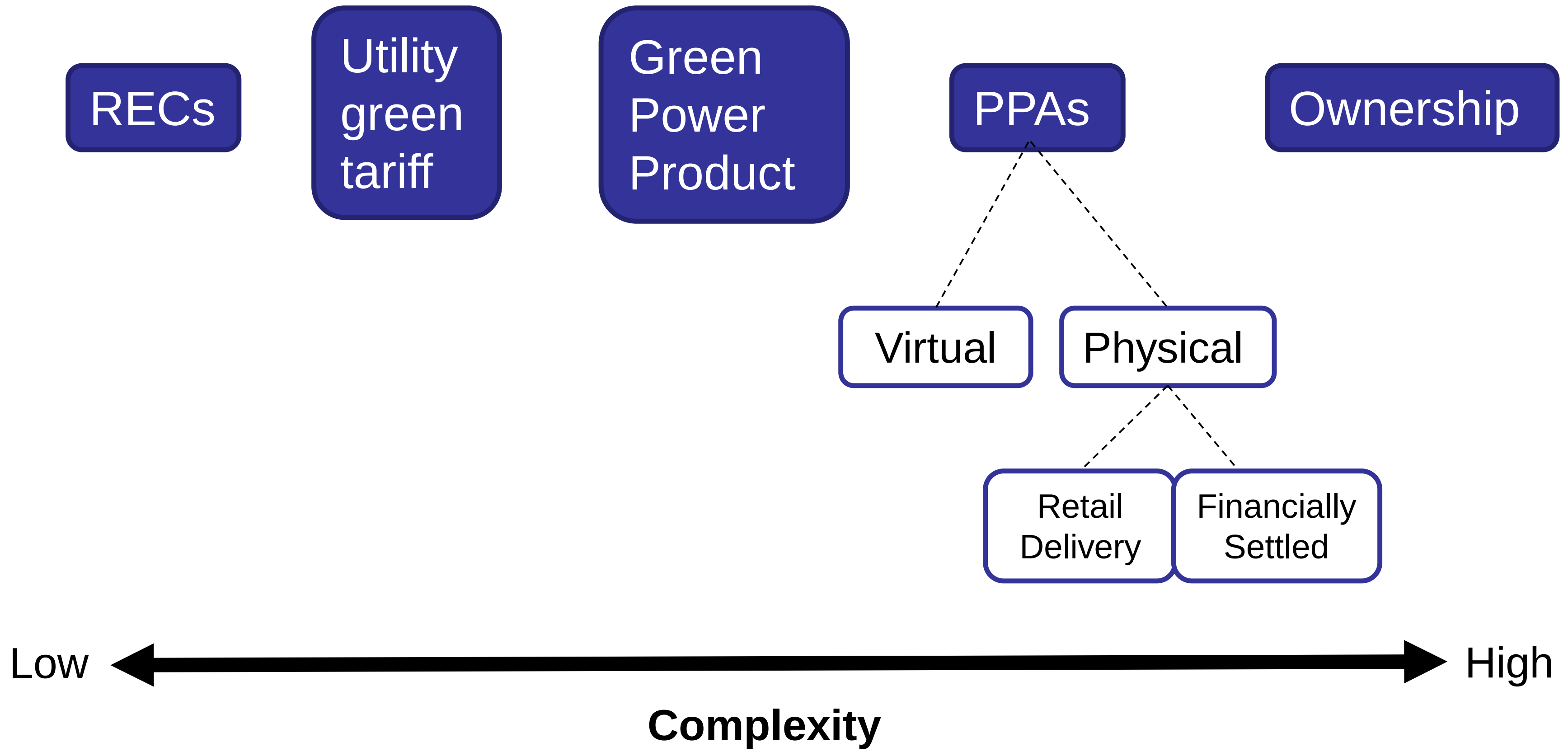
PPAs

Ownership

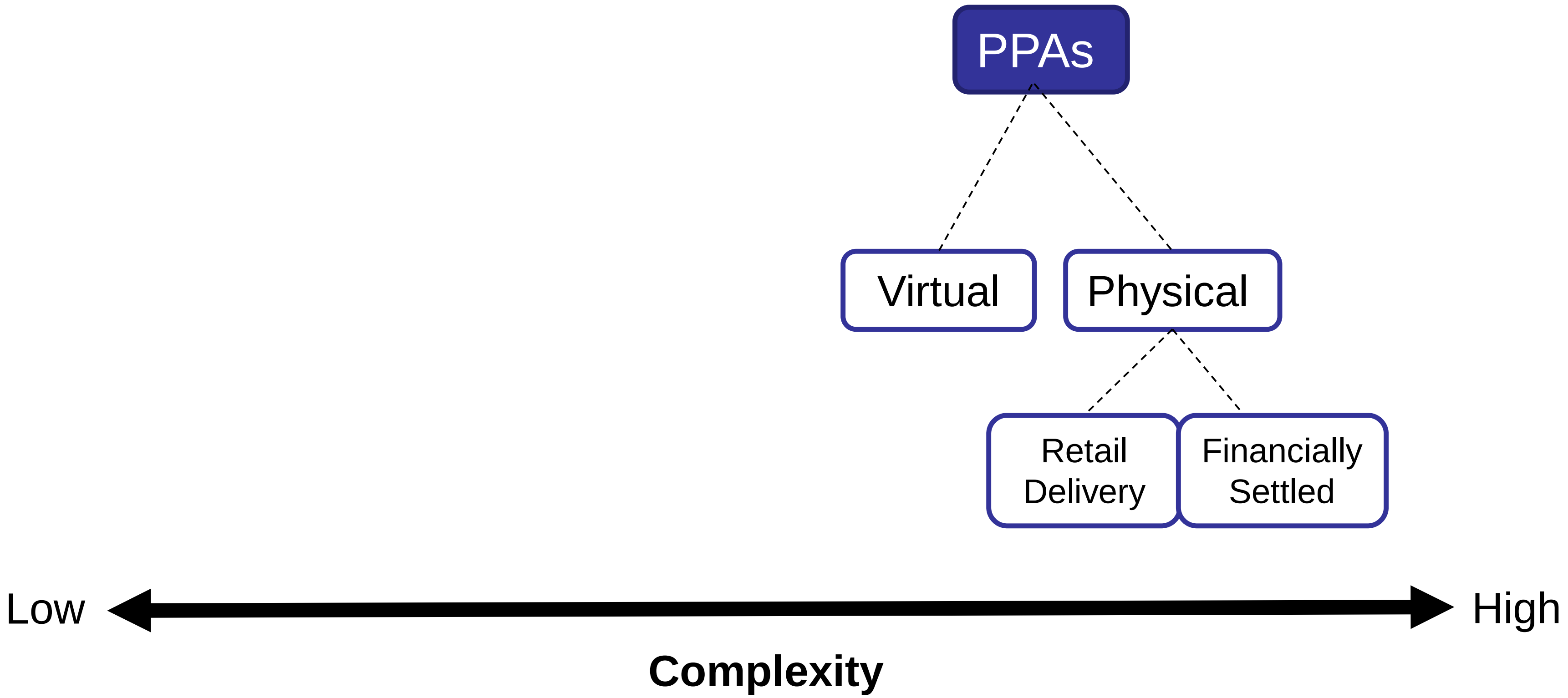
Low ←→ High

Complexity

Options for Buying Renewables



Options for Buying Renewables



Attractiveness of PPAs

- No upfront capital costs
- Can tap tax credits through third parties
- No need for substantial technical expertise
  - assuming an advisor or external counsel can provide 3rd-party scrutiny
- Limited risk (if properly structured) vs ownership
- No financing process and requirements
- Can remain off-balance sheet with the right structuring
- Buyer can have more direct control over costs rather than paying seller to manage costs

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- Simple?

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- For direct purchases, buyer can have more direct control over costs
- Simple? Not really.
  - 80-100 pages
  - Risk allocation is key
  - Accounting issues

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Virtual vs Physical PPAs

- Primary difference is who holds title to output
- In virtual deal, developer/seller maintains title and handles scheduling and all market interactions
  - Typical arrangement is Contract for Differences (CfD) where buyer and seller determine a target price (PPA price) and a benchmark price, typically a wholesale market price (Locational Marginal Price or LMP)
  - When LMP price is above the PPA price, seller pays buyer
  - When market price is below the target price, buyer pays seller
- Physical deal means that buyer or buyer's agent gets title and rights to schedule energy
  - May also mean rights to and obligations around marketing capacity, which in some markets may entail risk
  - Buyer maintains control over costs rather than paying seller to deal with them

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PPA Basics

- Under a PPA, the Seller is obligated to sell all or a clearly defined portion of the output of a specified renewable energy (RE) plant to Buyer, subject to certain limitations (e.g., grid emergencies)
- Seller's PPA obligations need to be backed up by Seller security or guaranty
- Seller owns the RE generation plant and should be at risk if the plant fails to generate for other than specific reasons (e.g., Force Majeure)
- Risks need to be allocated between the parties, particularly transmission congestion, curtailment, negative pricing in the market and other grid system costs, some risks are often buried in the definition of Force Majeure
- PPA can be structured with or without customer receiving RECs and other attributes such as capacity
- Retail supply contracting can be a complicating factor if customer wants a "delivered" product and retailers are not willing to "sleeve" the product

Source: CFR

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Renewables

Maximizing the Value of Renewables for
Large Businesses and Institutions