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## Renewable Energy - Bypassing the Grid



# **PPA** Contract for Differences

Factors that make PPAs less competitive versus direct connect

- Less consideration for investment rating of offtaker
- Curtailment and Congestion Risk
- Basis Risk
- Firming costs

### **Direct Connect**

Additional advantages of direct connect (generation to load)

- Reduction in Demand Charges
- Minimal transmission risk
- Decoupling market pricing volatility



## Case Studies of Direct Connect



#### **ERCOT** (Texas North Hub)

#### Characteristics:

- Low Energy Price
- Abundance of Wind Energy
- Curtailment and Congestions Constraints
- Demand Charges
- Retail Choice Areas

### **PJM** (Pennsylvania)

#### Characteristics

- Stable Energy Price
- Dominant Capacity Market
- Low Renewable Penetration
- Demand Charges
- Retail Choice Areas