Bilateral Contracts for Power

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What is a Bilateral Contract?

• Basically it is a written agreement between two parties in which each party promises a performance. In other words, one party agrees to provide power to the other party for a payment. The general characteristics of these contracts include price, time limits, and defining the two parties.
Definitions

1. Power – Energy and/or capacity
2. Megawatts (MW or Mwe) – megawatts electrical
3. Energy (kWh) - amount of kilowatts generated/used over a period of time; kilowatt-hour, megawatt-hour
4. Capacity (kW) – amount of kilowatts or megawatts available, generating unit capability.
5. Heat Rate – the efficiency of a generating unit, how much fuel/energy does it take to generate a kilowatt.
6. O&M – Operating and maintenance costs associated with a generating unit.
Definitions (cont)

- 7. Market price – The price of a hourly sale or purchase available in any point in time which is available to multiple parties. Typically set by Regional Transmission Operator/Independent System Operator such as SPP, Midwest ISO, PJM.
- 8. Generating unit – Boiler/turbine, combustion turbine, wind turbine, etc.
- 9. Generating plant – Several generating units at a site. May include several types of generating units.
Types of Contracts

1. Sale Contract – Utility signs contract/agreement with other utility/entity to provide a certain amount of power for a price. Considered off system sales.

2. Purchase Contract – Utility signs an contract/agreement with another utility/entity to purchase a certain amount of power for a price. Referred to as purchased power.
Types of Contracts (cont)

1. Why would a utility enter into a sales contract?
   - a) Utility has excess capacity/energy.
   - b) Utility needs additional revenue.

2. Why would a utility enter into a purchase contract?
   - a) Utility needs capacity/energy.
   - b) Utility needs less cost capacity/energy.
   - c) Utility needs a known cost for capacity/energy and/or delivery.
Types of Contracts (cont)

• 3. Energy Contract – Can be either a sale or purchase. Contract/agreement is for energy only. No expectation of capacity as part of transaction. A contract without capacity, may result in energy not being available at all times.

• 4. Capacity Contract – Can be either a sale or purchase. Contract/agreement includes energy and capacity. A contract with capacity has the possibility of providing energy at all times.
Items of a contract

1. Source of energy/capacity
   - a) Generating unit specific – the contract specifies that the energy and/or capacity will be generated by a specific generating unit. Typically means when the generating unit is not available due to outages the energy/capacity is not available.
   - b) Non generating unit specific – the contract does not specify that the energy/capacity will be generated by a specific generating unit. Typically means that any available unit could be used for contract. Which also eliminates the outage concerns.
Items of a contract (cont)

- c) Multiple unit specific – the contract specifies that the energy/capacity will generated by one or more specific generating units. This type also is used for a site that has multiple units such as wind turbines, or other renewable energy units, and are not usually dispatchable.
Items of a contract (cont)

2. Energy/capacity amount
   - a) Fixed amount not to exceed
   - b) Fixed amount must take
   - c) Variable amount with minimum and maximum limits
   - d) Variable amount based on output – hydro, wind, solar
Items of a contract (cont)

3. Time period of contract
   - a) length of contract – weeks, months, years
   - b) Length of commitment for energy/capacity
     1) Hours in a day – such as the term 5x16, which means available 5 days a week, 16 hours a day.
     2) Days of a week
   - c) Extensions – may include any changes to the terms of the contract, such as cost.
Items of a contract (cont)

4. Energy Cost Determination
   a) Fixed rate per kWh
      1) Long term may include escalators in costs.
      2) May be slightly lower than market price.
   b) Variable rate for kWh
      1) Calculated based on known or expected variables such as: heatrate, fuel cost, O&M:
         - \[\frac{\text{mmBTU}}{\text{kW}} \times \left( \frac{\$}{\text{mmBTU}} \right) + \left( \frac{\$}{\text{kWh}} \right) \] \times \text{kWh}
      2) Market price
   c) Other - Tolling agreement
Items of a contract (cont)

• 5. Capacity Cost Determination – Demand Charge
  – a) Fixed rate per kW
    ($/kW-month) x months x kW
  – b) Typically paid regardless of amount of energy taken.
  – c) Capacity costs may be determined by the level of energy costs. Higher capacity costs may result in lower energy costs, or the opposite may occur.
Items of a contract (cont)

- 6. Environmental Costs
  a) SOx and NOx credits
  b) Limestone for scrubbers
- 7. Transmission Costs – who pays
- 8. Delivery point
- 9. Ownership of renewable Energy Certificates
Handouts

- Examples of contracts:
  - Example 1: Station participation contract
  - Example 2: Unit participation contract
  - Example 3: Wind contract
  - Example 4: Short term capacity & energy contract
  - Example 5: Request for proposal