Episode 4 – Introduction to Pool / Bilateral Electricity Markets

The fourth episode of SmartWatt's Electricity Market series, we delve into Pool and Bilateral trading markets in the electricity sector. Continuing from last week, we'll look at the concept of liberalization in electricity, and how the market developed to reintroduce the private sector players. After reading this segment, you should be able to answer the following questions:

1. What is the power pool?

2. What is the two-sided contract model or bilateral contracts?

3. What are the separating factors between these two power advertise models?

Following the success of liberalization of various sectors of the economy, power markets experienced a comparable change. Vertically incorporated utilities, managed generation, transport and supply of electricity, were unbundled, and competition in generation and supply was introduced. Given the distinctions in power regulatory structures and administrative approaches the world over, there is no single standard market model. In any case, from the few market models actualized in various parts of the world, we recognize two fundamental categories of market association:

1. Power Pools or unified markets

2. Bilateral Contracts Model or decentralized markets.

Most power markets can be named of being of sort 1, 2 or its variations.

In a power pool, all producing organizations offer value amount sets for the supply of power. These structures are totaled on a supply curve. The offered prices are predetermined variable costs (such pools are referred to as Cost Based Pools) or the generators can be free to offer any price they like (such pools are referred to as Price Based Pools). On the demand side, the market operator could forecast demand and dispatch generating units against this. This is called a one-sided pool. In more high-level pools (two-sided pools), the market operator may dispatch based on a demand curve created from price-quantity bids made by the buyers on the market.

Offers are set, and they are synchronized in the market clearing procedure and result in a commitment to take and convey the matched volumes. These volumes will be monetarily settled. A pool can operate a day-ahead market or a close to real time market (for example five minutes ahead). There can likewise be a combination of several markets (day-ahead, intra-day, and five minutes ahead). Where a five-minutes-ahead market is operated, different sessions can at present be kept

running based on non-firm offers and bids. These sessions are utilized to make an estimate of the market costs as a sign for the market members. Such price seeking sessions depend on non-firm offers and are essential to take into consideration non-dispatched request side reaction if there should arise an occurrence of high market costs. Amid the matching process, the system can be treated as a "copper plate" bringing about a single energy price in the whole control area. The least expensive generation gets priority regardless of network constraints. On the off chance that there is network congestion, some out-of-merit generators are dispatched to supplant in-merit generators. This is the so-called “constrained-on/off” generation. The cost of this action constitutes the uplift charge and is added to the energy price.

Physical bilateral contracts on the other hand, means that sellers and buyers are free to enter bilateral contracts for power supply. Normally, sellers will be generators and buyers will be distribution companies alongside eligible consumers. Conversely, generators could also become a buyer. Similarly, consumers can become sellers. In this case, brokers act as an intermediate between buyers and sellers dealing in standard contracts. These transactions are known as Over the Counter (OTC). There will always be differences between the contracted volumes and the actual metered volumes. Thus, the system operator will have to determine these imbalances and will have to settle them. In more advanced markets, the system operator runs a regulating power market to establish a market-based price for the settlement of these imbalances. Also, a voluntary power exchange could be set up or could
develop in the future on the initiative of the market participants. A power exchange offers day-ahead and intra-day trade and includes the following benefits market participants:

- More price transparency,
- No counter party risk,
- Anonymous trading,
- Tool to optimize trading portfolio.