

Merchant Power Market: A Trend in the Global Energy Business

Have you ever wondered where the electricity we use all day and night comes from? Is everyone given the opportunity to access environmentally friendly electricity that ensures stability, reliability, security, and blackout prevention? And is there any way we can use electricity at a reasonable price that reflects its real-time cost?

Power generation industry is another sector that needs being adaptive and transform in order to meet climate targets and net zero goals as many countries launch their policies in reducing greenhouse gas emissions. In the interim, electricity generators are working to stabilize their electricity generation and distribution to meet the needs of buyers while creating value for all group of stakeholders. For this reason, the structure of power generation and distribution systems, and electricity markets that exist in the industry, are worth studying if we want the quality megawatts of power generation that meets economic, social and the environmental requirements.

Who's who in the power market

There are five major groups involved in the electricity supply chain when it comes to delivering electricity to end consumers: Public and private power generators which are independent power producers (IPPs), small power producers (SPPs) and very small power producers (VSPPs), power transmission line operators that transport electricity from power producers, power distributors that deliver electricity to several areas, retail power suppliers that deliver electricity to small-scale users, and finally consumers who use electricity.

In cases where electricity is supplied by a state-owned utility, government agencies make long-term power purchase agreements with power producers and buy all the electricity generated for distribution to consumers. The mechanism in the merchant power market drives the purchase and sale of electricity allowing power producers to sell their electricity directly to retailers who then re-selling the electricity to consumers. However, power transmission and distribution lines are generally overseen by government agencies.



Banpu Power Public Company Limited (BPP), a leading power generating company in the Asia-Pacific region, is expanding quality megawatts of power generation according to its Greener & Smarter strategy with a balanced portfolio of thermal power and renewable power businesses. The Company currently operates power businesses in eight countries including Thailand, Lao PDR, China, Indonesia, Japan, Vietnam, Australia, and the United States. By consistently learning and studying electricity markets in each country, BPP is building a better understanding and realization towards the different characteristics of electricity markets.

The foreign electricity markets

“With the severe competition in merchant power markets such as in the United States, Australia and Japan, electricity prices reflect real-time costs in power generation. This is because all existing power producers in the market compete electricity generation cost against one another. This results in greater benefits for consumers who can use electricity at reasonable prices,” said Dr. Kirana Limpaphayom, Chief Executive Officer of BPP. “In addition, many power producers are both producers and distributors whereas the government agencies take part in monitoring the purchase and sale of electricity systems and setting measures to prevent power shortages or blackouts.”

In terms of the transition towards renewable resources like solar or wind power, the current production cost tends to be at a lower level which is considered competitive in the market. Furthermore, the deployment of advanced energy storage technologies, including batteries, can increase the popularity of electricity generated from renewable energy resources. Moreover, the higher demand for electricity brings about competitive pricing from power producers allowing consumers to use electricity generated from renewable energy at lower prices.

“Technologies related to fuel production for power generation have been continuously developed. In 2010, a major change in electricity production in the US occurred with the switch from coal to shale gas. As a result, the average price of electricity in the US electricity market, considered one of the world’s largest markets, has steadily declined since 2013. This incident marked as a major shift in the US electricity market. It affected the cost of power generation from natural gas to become cheaper than the cost of power generation from coal. Such an incident occurring within five to ten years would have been impossible if it was not in a merchant power market.” said Dr. Kirana on the impact of the fuel transition in the US merchant power market.

“Power producers in highly competitive merchant power markets share a common goal of operating their businesses to meet the needs of consumers. If a majority of power producers in this type of market choose to generate electric power from renewable energy resources, which provide less stability in terms of power production, this could trigger a decreasing number of coal or gas-fired power plants, which provide greater stability in power generation or production capacity as per requirements. In some cases, this could also reduce the overall stability of the electricity system. As a result, electricity prices in the market have been sharply increasing to reflect the higher risk of power outages at certain times. In some electricity markets in the US, the government sector has occasionally issued policies to deal with drops below a certain level in reserve capacity. In the event of any anticipated instability in the electricity system, the government is encouraged to regulate incentive compensation policies exclusively for base load power plants to make their overall system more stable,” added Dr. Kirana.

Does market size influence the competitive landscape?

The characteristics of the merchant power market make it suitable for countries with strong demand for electricity where residents have higher purchasing power and in countries that have energy policies and action plans that contribute to privately-owned business operations. However, some smaller countries which have a power generation capacity of about 40,000-50,000 megawatts have already started to promote free market competition, such as Singapore, which has a wholesale market with the auction concept that is supervised by its government agencies. Though small in size, Singapore's residents have a high-level of purchasing power that makes it possible to deal with electricity bills at competitive prices – and without government subsidies.

In the US, Australia and Japan, where BPP operates, we note the following differences:

- The US is an extremely large market with a range of electricity markets that differ in the market policy. Each market is individually operated by separate agencies under different policies. Interestingly, the state of Texas, which has an electricity market called the Electric Reliability Council of Texas (ERCOT), has a policy that is clearly separated from other markets and is rarely influenced by federal policies, making it a highly competitive market that offers competitive pricing demonstrating growth momentum in many aspects.
- Australia has electricity spot markets without a day-ahead market. The Australian government has announced its target of achieving net zero GHG emissions by 2050. As a result, each state is obliged to issue policies to promote electricity production from renewable energy sources.
- Japan's regulatory framework includes clear-cut energy policies focused on creating energy balance. It is a market with growing demand for electricity whereas the government has rolled out policies to support the use of renewable energy and provides a platform for energy trading that is amenable to smaller users.

The kinds of electricity markets reflect the demand, types of energy resources used in power generation, and measures to cope with climate change. Meanwhile, the government in each country is playing a pivotal role in regulating suitable energy policies which benefit consumers. The

competitive market landscape is one dimension that should be looked at in greater detail to understand how it influences power stability and security. The economic justification reflected in production costs and the eco friendliness are, therefore, the factors to complete the balance within these three dimensions including economic, security of supply and impact to environment.

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About BPP

Banpu Power Public Company Limited is a leader in power generation and distribution in the Asia-Pacific, including Thailand, Lao PDR, China, Japan, Vietnam, Indonesia, Australia and the U.S., with a position of “We ARE (Affordable, Reliable, and Eco-friendly) Power for the Sustainable World”. For more than two decades, BPP has been committed to operational excellence to achieve efficient power generation while deploying high-efficiency, low-emissions (HELE) technologies that are safe and environmentally sound in accordance with its Greener & Smarter strategy. The Company is continuously moving forward to reach a total equity-based power generation capacity of 5,300 MW within 2025.

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