

## **BPP Harnesses Four-Pronged Approach to Power Quality Megawatts to Society in the US Merchant Market**

The United States is one of the countries with the highest electricity consumption and the most rapidly increasing electricity demand, driven by extensive electrification trend, namely, electric car, the rise of AI technology, and the proliferation of data centers, all of which require a substantial amount of electricity to store and manage massive amounts of data. **Banpu Power Public Company Limited (BPP)**, an international quality power generating company, foresaw this opportunity and invested in gas-fired power plants using “High Efficiency, Low Emissions” (HELE) technologies, such as Temple I (768 MW) and Temple II (755 MW) in 2021 and 2023, respectively.

With a commitment to powering quality megawatts to society and all stakeholders, and the United States remaining a key strategic country for the Company’s energy generation business, BPP runs the two power plants with operational excellence through the following four-pronged approach to ensure stable income from power generation and distribution, alongside sustainable development.

### **1. Operating Gas-Fired Power Plants in a Merchant Power Market**

The United States of America, with its vast territory, has several merchant power markets. BPP currently operates in the ERCOT (Electric Reliability Council of Texas) market, located in Texas — a state with high and continuously growing electricity demand, and one of the economic hubs with a rapidly growing population. The acquisition of the adjacent Temple I and Temple II power plants has enhanced BPP’s strengths. Pooling the acquired resources and knowledge allows for more efficient production and cost management via economies of scale (EOS), resulting in lower unit costs and higher returns, as well as helping the Company to maintain a balance between

long-term power purchase agreements (PPAs) and the merchant market in the power generation portfolio. The former generates stable cash flow, while the latter provides a high potential for profit with various related energy businesses. The Company is leveraging the advantages of each electricity trading model to maximize income. The goal is not only to ensure power generation and distribution's reliability to meet electricity demand, but also to deliver steady returns to stakeholders.

## 2. Balancing Profitability and Creating Consistent Cash Flows with Hedging Tools

Seizing profit opportunities during high-demand periods by increasing prices and creating consistent cash flows from merchant power markets by means of hedging is crucial for BPP's success in delivering steady returns from investing in the merchant power markets stateside.

The Company uses two types of hedging tools available in the merchant power markets: the **Heat Rate Call Option (HRCO)** and the **Spark Spread Hedge**. The **HRCO** is a contract that grants the right to purchase electricity at a predetermined price. These rights are sold to buyers, such as investors or financial institutions, who wish to secure electricity at a fixed rate to help manage the risk of electricity price fluctuations. In return, the power plant receives a premium and stable, predictable cash flow, regardless of the time of year both in the peak months and shoulder months. As for the **Spark Spread Hedge**, the contract locks in the price of electricity sales and the cost of natural gas fuel, based on the amount and price the contractual parties agreed upon. This allows the electricity producer to secure profit margins by reducing the risk from fluctuating fuel costs and electricity prices in the market. In simple terms, the two hedging tools enable the Company to plan its finances more efficiently, considered as a business strategy that BPP has adopted in the merchant power markets.

### 3. Optimizing Electricity Distribution with Digital and AI Technologies

Investing in the two power plants provides BPP with valuable experience in operating within a merchant power market that fosters competition among electricity producers and sellers, ultimately benefiting consumers. BPP leverages digital and AI technologies to optimize the planning of electricity generation and sales, aligning with market demands in both wholesale and retail markets, as well as in real-time power trading. As a result, BPP has broadened the opportunities to enhance its profitability.

### 4. Delivering Quality Megawatts with Environmental Care

Beyond generating consistent cash flows, BPP cares about energy security and sustainability. Temple I and Temple II power plants, for example, excel in three areas. The first area is **air quality management**. Commissioning modern and highly efficient CCGT (Combined Cycle Gas Turbines) power generation technology further reduces greenhouse gas emissions intensity per BPP's unit of products.

The second area is **water resource management**. Despite being located in areas with medium to high water stress, the two power plants achieve operational efficiency by reusing water. They collect community reclaim water and initially subject it to biological treatment to minimize chemical use in subsequent water treatment stages, producing treated water that meets standards for use in power generation, which also keeps reusing it. This reduces the depletion of local water resources and prevents the release of wastewater back into them.

The third area is **operational efficiency improvement during periods of volatile and severe weather conditions**. Despite these two power plants being located in areas with fluctuating weather, good management ensures effective operations. For instance, during Texas's exceptionally hot summers, auxiliary transformer cooler system maintains optimal transformer temperatures despite power generation spikes, effectively enhancing production capacity and income potential. In

winter, to counteract subzero temperatures that can disable water pump stations, BPP has augmented them with a permanent automatic guideway structure for a water pumping station. This ensures continuous production of purified water, keeping the power plants operationally efficient. These prudent measures ensure BPP's gas-fired power plants in the US remain stable, reliably supplying electricity for community's needs during normal times and climate crises.

**Mr. Issara Niropas, CEO of Banpu Power Public Company Limited or BPP** stated, "The operating standards of the twin power plants – Temple I and Temple II showcase BPP's excellent worldwide operations, honed over nearly 30 years in various electricity markets. Undoubtedly, we are capable of managing power plants efficiently while maintaining sustainability in every business process. In 2023, after acquiring Temple II in July and facing increased electricity demand due to a Texas heat wave, in the 3<sup>rd</sup> quarter, the Company achieved an EBITDA of THB 12,262 million, a 48 percent increase from 2022."

BPP plans to build on this success with a three-year investment plan (2024–2026), allocating approximately USD 500–700 million mainly for expanding CCGT gas-fired power plants. This will allow the Company to continue generating consistent cash flows. Moreover, we also plan to invest in related businesses pertaining to energy infrastructure and battery energy storage systems. Additionally, BPP will explore new energy forms under the "BEYOND MEGAWATTS PORTFOLIO" strategy, whose focus is on diversifying the portfolio beyond simply expanding power generation capacity.

Learn more about BPP's businesses at [www.banpupower.com](http://www.banpupower.com).

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#### About BPP

Banpu Power Public Company Limited (BPP), an international quality power generating company, is committed to delivering sustainable energy through its aim of “Powering Society with Quality Megawatts.” The Company generates and distributes power in the Asia-Pacific region, including Thailand, Laos, China, Japan, Vietnam, Indonesia, Australia and the U.S. For almost three 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.

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