

Banpu Powers Up Its U.S. Energy Value Chain: A Leap Towards Sustainable Energy Solutions

Since venturing into the natural gas sector in the United States in 2015, Banpu has continually expanded its business portfolio. Through BKV-BPP Power, LLC (BKV-BPP Power), a U.S.-based joint venture between the company's subsidiaries, Banpu Power US Corporation and BKV Corporation (BKV), the company progressed into the power generation business in 2022 and launched a retail marketing business to sell electricity to commercial, industrial and residential retail customers in Texas in 2023. BKV embarked on a new Carbon Capture, Utilization and Sequestration (CCUS) business in 2022 and commenced commercial sequestration of CO₂ waste at its first CCUS project, Barnett Zero, in November 2023. BKV-BPP Power has also constructed a 2.5 MW solar facility that is gearing up to commence operations this coming August.

Banpu's comprehensive coverage across the energy value chain promotes interconnected and streamlined operations among its business segments. This integration spans from production to the distribution of electrical energy, enabling effective resource management, cost reduction, risk control, and enhanced profit potential. However, Banpu's aspirations extend beyond mere profit; the company is dedicated to generating value for all stakeholders, embodying its commitment to being a leader in the energy sector with robust and holistic operations.

Core business strengths that forge competitive advantage

Banpu has established a remarkable competitive edge in the U.S. market, beginning with BKV's **high quality, low decline natural gas assets that serve key demand markets**. BKV's natural gas upstream operations span the Barnett Shale natural gas field in Texas and the Marcellus Shale natural gas field in northeastern Pennsylvania, boasting a combined net production of 860 million cubic feet of natural gas equivalent per day (MMcfe/d) in 2023. This impressive output has

positioned BKV among the top 20 gas-weighted natural gas producers in the U.S. market. Furthermore, BKV oversees a natural gas gathering, processing and transportation system that enhances margins and lowers break-even operating costs while allowing BKV to manage the timing, development and optimization of production of its upstream assets.

Leveraging years of **business acumen** and actively **pursuing opportunities to improve overall commercial optimization of the full value chain**, the BKV-BPP US joint venture has diversified Banpu's portfolio by investing in the power generation sector through the acquisitions of **Temple I and Temple II, Combined Cycle Gas Turbines (CCGT) power plants** located in in the Electric Reliability Council of Texas (ERCOT) North Zone in Temple, Texas. This strategic move aims to bolster operational efficiency, foster resources and expertise sharing, and efficiently manage costs from production to electricity generation, allowing the company to benefit from economies of scale by achieving lower unit costs and higher returns. The two power plants boast a combined capacity of 1,499 megawatts and their co-location optimizes the use of shared facilities.

A **robust electricity production process** is established through a large-scale power plant leveraging modern CCGT technology, which combines gas and steam turbines to respond to rapidly changing market signals in real time, ensuring the highest operational readiness during the time when electricity consumption peaks (in winter and summer). As a result, Temple I and Temple II are well-suited to serve the competitive demands of the ERCOT market. Poised for growth, Banpu is venturing into Power Trading and Power Retail businesses, aiming to supply electricity directly to consumers. Since the BKV-BPP Power joint venture launched its retail power business in February 2023 under the brand name BKV Energy, it has already made strides in the retail power sector, serving over 58,000 customers throughout the deregulated portions of Texas.

Leverage and expand current businesses to enhance value for sustained profits

Leveraging BKV's current natural gas resources, Banpu is broadening its enterprise to forge a robust value chain. Through BKV dCarbon Ventures, LLC, a subsidiary of BKV, the company is

participating in the energy transition by investing in **CCUS projects**, marking a milestone in utilizing cutting-edge technology to permanently sequester carbon dioxide waste collected as a byproduct of natural gas processing and other industrial processes.

BKV's CCUS operations also enhance business prospects through the potential sale of **Carbon Sequestered Gas (CSG)**, a Scope 1, 2 and 3 carbon neutral gas product. Production of CSG may be achieved by bundling BKV's Responsibly Sourced Gas (RSG) with carbon offsets generated by CCUS projects and renewable energy credits (RECs) sufficient to offset the estimated emissions associated with the production, gathering and boosting of such RSG, as well as the estimated emissions from its transmission, distribution (if applicable) and ultimate combustion. BKV anticipates that the quantified emissions and requisite volume of CCUS offsets and RECs will be third-party certified, in part using CCUS carbon credit methodologies currently in development. This innovation broadens Banpu's energy business chain and aligns with the upward trends in market growth. In August 2023 and June 2024, BKV entered into contracts with ENGIE Energy Marketing NA, Inc, a subsidiary of global energy utility ENGIE S.A., and Kiewit Infrastructure South Co., a subsidiary of Kiewit Corporation, respectively, for the sale and purchase of CSG. Following satisfaction of certain conditions precedent, delivery of CSG is expected to commence by the end of 2024.

Through the BKV-BPP Power joint venture, Banpu is capitalizing on the opportunity to develop a **Solar Power Plant (Ponder Solar Project)**, on the existing land in the Barnett Shale, slated for commercial operation by August 2024. The BKV-BPP Power joint venture is also considering potential opportunistic acquisitions and organic growth opportunities, such as the expansion into **Battery & Energy Storage Systems**. If completed, a Battery & Energy Storage System could store and provide energy to meet the growing demand for alternative energy sources, aiding businesses and industries in achieving their sustainability objectives and opening up new opportunities for Banpu, particularly with corporate clients across various sectors in the United States.

"Banpu views the United States as a pivotal market, actively broadening and diversifying our business portfolio to embrace the strategic opportunities it presents. Our commitment to developing a robust energy business chain and exploring new ventures to forge a competitive edge is beneficial to a steady growth of Banpu's energy business. This year, we've allocated over 50 percent of our investment budget to our U.S. businesses, with a focus on generating both commercial value for the energy business chain and efficiency value through cutting edge technology, and achieving environmental objectives while promoting sustainable business expansion," said Mr. Sinon Vongkusolkrit, Chief Executive Officer of Banpu Public Company Limited.

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About Banpu

Banpu Public Company Limited is an international versatile energy provider, operating 3 core groups of businesses – energy resources, energy generation, and energy technology – in Thailand, Indonesia, China, Australia, Laos, Mongolia, Japan, the United States of America and Vietnam.

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