

October 8, 2025
Idemitsu Kosan Co.,Ltd.

Solar Power Generation and Australia's Largest Vanadium Flow Battery introduced at Boggabri Coal Mine

Leading the Promotion of Renewable Energy Use in the Mining Industry

Idemitsu Kosan Co.,Ltd. (Head Office: Chiyoda-ku, Tokyo; Representative Director, President: Noriaki Sakai; hereinafter referred to as "Idemitsu") commenced operation of a solar power generation facility in September 2025 at the Boggabri Coal Mine (New South Wales), in which it holds a 90% interest through its Australian subsidiary, Idemitsu Australia Pty Ltd. (Head Office: Brisbane). In addition, Idemitsu will introduce a Vanadium Flow Battery (VFB), which offers superior durability and safety as energy storage equipment and is environmentally friendly (scheduled to begin operation in the second half of 2026). Through the introduction of solar power generation and the VFB, we aim to verify the effectiveness and become a model case for energy transition in the mining industry.



Solar power generation facility that has commenced operation

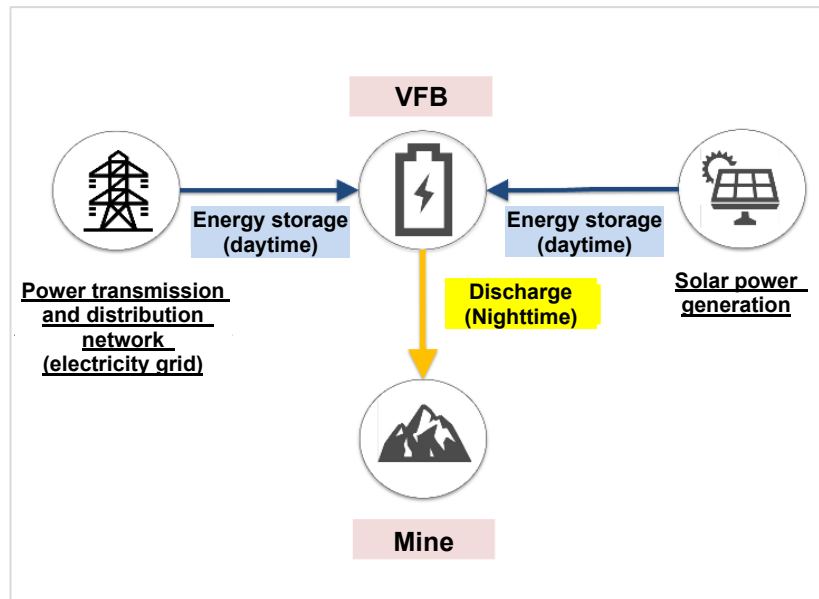


VFB to be introduced

In Australia, measures to mitigate the environmental impact of mining development are being intensified year by year, and the establishment of legal regulations concerning greenhouse gas emission reductions is underway. Amidst these circumstances, Idemitsu has commenced the implementation of self-generation of electricity at the Boggabri Coal Mine using solar panels installed on the premises. The power generation capacity is 5 MW, sufficient to meet the electricity demand during peak periods for infrastructure facilities within the mine and the operation of crushers. This is expected to reduce its CO₂ emissions by approximately 5,000 tons in the first year of operation.

Additionally, Idemitsu will be the first company to introduce VFB with Australia's largest energy storage capacity in the same mine. With a storage capacity is 12.6 MWh and an output of 2 MW, the VFB will be capable of meeting the mine's power demand for approximately 6 hours, comparable to solar power generation. Storing electricity generated during the day and utilizing it at night will reduce reliance on fossil fuel power generation during nighttime hours, thus enabling environmentally-friendly mine operations. The vanadium electrolyte used in the VFB will be manufactured and supplied by Vecco Group Pty Ltd. (Head office: Brisbane), in which Idemitsu Debella Pty Ltd. (a wholly-owned Australian affiliate of Idemitsu) holds a 51% stake, while Sumitomo Electric Industries Ltd. (Head office: Osaka City, Osaka Prefecture; President : Osamu Inoue) will supply the VFB.

Idemitsu will advance the optimization and decarbonization of power supply to mines through the introduction of solar power generation and VFB, establish sustainable mining operations, and lead the promotion of renewable energy utilization in the mining industry.



Schematic diagram of VFB power supply

■ Features of VFB

- Long service life: Due to minimal degradation of the electrolyte and electrodes, capacity loss is extremely low, enabling long-term operation (typically 20 or more years).
- High safety: Utilizes non-flammable vanadium electrolyte and flame-retardant components, resulting in low fire risk.
- Low environmental impact: Electrolyte is reusable and 99% of the equipment materials are recyclable.
- Low lifecycle cost: No need to replace cells or electrolyte; minimal waste during removal.

[Reference]

Press Release: Acquisition of 10% Interest in Boggabri Coal Mine, Australia (January 31, 2025)
https://www.idemitsu.com/jp/news/2024/250131_en.pdf

Press Release: Majority investment in Vecco, a company promoting a vanadium project in Australia, and full-scale entry into a critical minerals business (December 18, 2024)
https://www.idemitsu.com/jp/news/2024/241218_2_en.pdf

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