

MEDIA RELEASE

Japan's coal power decarbonisation plans not viable, new analysis finds

- **Coal plant losses would far exceed revenues if ammonia co-firing plans implemented.**
- **Modelling suggests losses of more than 100% if blue ammonia replaces half of coal.**
- **Subsidies to aid low-carbon transition for hard-to-abate industries would need to be as much as JPY30 trillion (USD200 billion), 10-times greater than current allocation.**
- **Findings should serve as clear signal for policymakers and companies to redirect capital investment toward scaling renewables and battery storage, and strengthening the grid.**

10 April 2025, SINGAPORE — Japan's coal-fired power plant operators and their investors face substantial losses if they pursue the current decarbonisation strategy to co-fire coal with ammonia, according to new analysis that raises concerns over the economic viability of the country's long-term energy policy.

Production costs would be double revenues at plants that replace 50% of coal with blue ammonia, while subsidies to offset high ammonia costs would need to be up to 10 times greater than those currently allocated to industries transitioning to low-carbon fuels, analysis by Singapore-based Asia Research & Engagement (ARE) has found.

Under Japan's 7th Strategic Energy Plan, formalised in February 2025, thermal power is projected to account for 30-40% of the country's power-generation mix in 2040. To maintain this share and meet emissions targets, thermal plant operators need to develop and scale decarbonisation technologies. Co-firing with low-carbon ammonia is the path chosen for coal plants, though to date there has only been one completed trial.

“Our modelling shows that even at a modest 20% co-firing rate, coal plant operators are looking at EBIT margins of –48%,” said Mira Cordier, Research Analyst, Energy Transition at ARE. “Once that rate climbs to 50%, we calculated the probable losses at 112%, which would render the strategy unviable as a solution to transition the majority of the coal fleet.”

The Japanese government has allocated about JPY3 trillion (USD20 billion) to a “Contracts for Difference” (CfD) subsidy programme for hard-to-decarbonise industries. This is designed to cover the cost gap between low-carbon hydrogen (and its derivatives, including ammonia) and the price of conventional fuels over a 15-year period.

ARE’s modelling – outlined in the “Japan’s Ammonia Strategy” report released on April 10 – suggests that the total fuel subsidies needed only for coal power generation could be five to ten times greater, depending on its eventual share in Japan’s electricity mix.

The continued upward trends in renewables and battery storage deployment are likely to further erode the economic viability of Japan’s coal power and render the expense of developing ammonia co-firing even more prohibitive. Therefore, the logical course of action for the government is to redirect support toward scaling alternative electricity sources and strengthening Japan’s power grid.

“Time is short and resources are limited, so steering power generation in the best possible direction is paramount,” Cordier said.

– To access the full report, click [here](#).

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