

The LNG Paradox: The Role of Gas in the Energy Transition

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Abstract : The LNG paradox addresses the issue of how the most expensive form of gas supply, which is LNG, will grow in an end user market where demand is most competitive, which is power generation. In this case, LNG demand growth is under siege from two entirely different directions. At one end is price; it will be extremely difficult for gas to replace coal in Asia due to the low price of coal and the age of the generation plants. Asia's coal fleet, on average, is less than two decades old and will need significant financial incentives to retire before its state lifespan. While gas would cut emissions in half relative to coal, it would also more than double the price of the fuel source for power generation, which puts it in a precarious position. In most countries in Asia other than China, this cost increase, particularly from imports, is simply not realistic when it is also necessary to focus on economic growth and social welfare. On the other end, renewables are growing at an exponential rate for three reasons. One is that prices are dropping. Two is that policy incentives are driving deployment, and three is that China is forcing renewables infrastructure into the market to take a political seat at the global energy table with Saudi Arabia, the US, and Russia. Plus, more renewables will lower import growth of oil and gas in China, if not end it altogether. Renewables are the predator at the gate of gas demand in power generation and in every year that passes, renewables cut into demand growth projections for gas; in particular, the type of gas that is most expensive, which is LNG. Gas does have a role in the future, particularly within a domestic market. Once it crosses borders in the form of LNG or even pipeline gas, it quickly becomes a premium fuel and must be marketed and used this way. Our research shows that gas will be able to compete with batteries as an intermittency and storage tool and does offer a method to harmonize with renewables as part of the energy transition. As a baseload fuel, however, the role of gas, particularly, will be limited by cost once it needs to cross a border. Gas converted into blue or green hydrogen or ammonia is also an option for storage depending on the location. While this role is much reduced from the primary baseload role that gas once aspired to land, it still offers a credible option for decades to come.

Keywords : natural gas, LNG, demand, price, intermittency, storage, renewables

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