

NTPC AND GE GAS POWER SIGN MOU FOR DEMONSTRATING HYDROGEN CO-FIRING IN GAS TURBINES TO FURTHER DECARBONIZE POWER GENERATION

Relevant for: Indian Economy | Topic: Infrastructure: Energy incl. Renewable & Non-renewable



In its efforts to adopt advanced powering technology to decarbonize power generation in India, NTPC Ltd., the country's largest power generating utility, and GE Gas Power signed today a Memorandum of Understanding (MoU) for feasibility to demonstrate of hydrogen (H₂) co-firing blended with natural gas in GE's 9E gas turbines installed at NTPC's Kawas combined-cycle gas power plant in Gujarat. Under this significant collaboration, the two companies will jointly explore the pathways to reduce CO₂ emissions from the Kawas gas power plant and further implementation at scale across NTPC's installed units in India.

NTPC's Kawas gas power plant is powered by four GE 9E gas turbines operating in a combined-cycle mode and has an installed capacity of 645 megawatts (MW). Further, GE's advanced E- Class gas turbine portfolio currently can burn up to 100% by volume of hydrogen when blended with natural gas. This capability varies depending on the type of combustion system used. For fuels with over 5% hydrogen by volume, gas turbine accessories need to be evaluated and possibly modified to reliably deliver the fuel to the combustors.

In this first-of-its-kind MoU with NTPC in India, GE Gas Power will evaluate the possible modifications in the gas turbine unit and auxiliaries required for blending H₂ with natural gas. Thereafter, a pilot project for 5% Co-firing of hydrogen may be implemented at the Kawas gas power plant in a safe environment based on the feasibility report. NTPC shall provide H₂

required for the project.

“NTPC, with a large fleet of power generation facilities delivering more than 70 GW across India, has been at the forefront when it comes to piloting new hydrogen-related initiatives. NTPC is committed to playing a key role in India’s energy transition journey as the country marches ahead to achieve the net-zero target and climate goals. In parallel, it’s crucial to invest and effectively utilize the proven technology that can generate electricity, which is affordable, accessible, and reliable. This MoU is among the steps we are taking in the direction to meet the objectives of the National Hydrogen Mission. As our collaboration with GE grows deeper, we are more focused to use advanced technology and leverage our gas power assets with a higher percentage of zero-carbon fuels such as H2, as the availability of the fuel becomes viable.” said, Ujjwal Kanti Bhattacharya, Director (Projects), NTPC Ltd.

“India’s power landscape is strengthened by the emerging technologies that are at various stages of development and industrial competitiveness. Hydrogen has a significant potential to play a complementary role along with other low-to-zero carbon fuels in generating electricity at scale. We applaud NTPC’s leadership, commitment, and investment in hydrogen that can further set new industry benchmarks in terms of discovering low-cost hydrogen industry going forward and achieving energy self-reliance.” said Deepesh Nanda, CEO, GE Gas Power South Asia.

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