BUSINESS LINE, Delhi, 5.9.2024
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Centre initiates feasibility study for green hydrogen transportation pipeline

Our Bureau
New Delhi

The government has launched a study to ascertain the cost dynamics and reliability of transporting green hydrogen through pipelines from renewable energy zones to ports for domestic consumption and exports.

"In green hydrogen, we are thinking that there is a huge requirement of power. There are two options. Can I really transfer power from Rajasthan to port areas or can we go for a pipeline as well. We have already formed a team with GAIL, Indian Oil Corporation (IoCL), CEA, NTPC, and so on to explore possibilities because there will be a challenge of having a huge number of transmission lines," Central Electricity Authority (CEA) Chairperson Ghanshyam Prasad told reporters.

So, as an alternative, can there be a green hydrogen pipeline so that it can meet the domestic and export requirements in a cheaper manner, he added.

"In one of the simplest studies of what we did from Rajasthan to Paradip (port), it was found that a pipeline could be a cheaper alternative instead of going for transmission lines," Prasad said.

India's annual demand for hydrogen is around 6 million tonnes, which accounts for about 6 per cent of the global demand.

In March 2024, the Petroleum and Natural Gas Regulatory Board (PNGRB) said that it is working on avenues for transporting green hydrogen through natural gas transmission lines by blending hydrogen with natural gas.

TRANSMISSION LINES

The regulator is considering gas transmission lines as a first choice for transporting green hydrogen as 33,000 km of natural gas transmission pipelines network has been authorised, out of which 24,000 km is operational and rest is under-construction.

PNGRB Chairman Anil Kumar Jain had said that since August-2023, the regulator has collaborated with the World Bank is undertaking a study.

The study comprises mapping demand and supply of hydrogen, technical assessment of existing pipeline network for its compatibility, commercial assessment of pipeline sector, identifying bottlenecks in policy and regulatory framework and framing of roadmap milestones till 2040 for expeditious implementation of hydrogen blending in India.

LOW-COST OPTION

According to the initial findings of a report by state-run Engineers India (EIL) and IIT Kanpur on the impact of green hydrogen on city gas distribution (CGD) pipelines, 3 per cent green hydrogen can be mixed in CGD pipelines without any adverse effects.

Sources said that transporting hydrogen through pipelines is a low-cost option for delivering large volumes.

However, there are technical concerns related to pipeline transmission. For instance, the embrittlement of steel and welds used in fabricating pipelines. Besides, controlling hydrogen permeation and leaks as well as a reliable and durable compression technology.

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Feasibility study for transporting green H_2 through pipelines

THE CENTRAL ELECTRICITY Authority in collaboration with state-owned energy and power companies including GAIL, IOCL, and NTPC is conducting a feasibility study to explore possibilities and cost dynamics of transporting green hydrogen through pipelines from renewable energy zones to ports to meet domestic demand as well as exports. Presently, green hydrogen is converted into green ammonia before transportation. Despite greater emphasis on the use of green hydrogen as an alternative fuel, challenges in terms of its transportation and storage remain. —FE BUREAU

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