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Summary

Climate change is driving legacy energy companies in India to transition towards green operations. This paper examines how India's top five oil and gas companies—including state-owned ONGC, NTPC, and private giant Reliance Industries—are investing trillions of rupees in renewable energy and green hydrogen production to cut carbon emissions and enhance profitability through green hydrogen and ammonia exports. ONGC plans to invest ₹2 lakh crore in energy transition projects to achieve net zero emissions by 2038, while Reliance Industries has committed ₹75,000 crore, with plans to double the amount by 2030, aiming for net zero by 2035. Oil India, another major explorer, will invest ₹25,000 crore to reach net zero by 2038. However, renewable energy in India faces challenges, including supply chain constraints, technological gaps, and workforce shortages. To meet its target of 500 GW of non-fossil capacity by 2030 and net zero by 2070, India needs broader industry participation and substantial investments in research and manpower training. The energy transition is expected to generate green jobs and support domestic manufacturing across sub-sectors such as solar module and wind equipment production, renewable farm operations, engineering and construction, electrolyzer production, and supporting industries, supported by an estimated ₹8–9 trillion government capital expenditure.

Key words

* Climate change

* Energy transition

* Renewable energy

* Green hydrogen

* Green ammonia

* Carbon emissions

* Net zero emissions