

India Green Hydrogen Sector Opportunity, Government Incentives & Projects Insights 2024

<https://marketpublishers.com/r/IEB65DA83288EN.html>

Date: June 2024

Pages: 100

Price: US\$ 3,300.00 (Single User License)

ID: IEB65DA83288EN

Abstracts

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India Green Hydrogen Sector Opportunity, Government Incentives & Projects Insights
2024 Report Highlights:

National Green Hydrogen Mission Sets Target Of Green Hydrogen Capacity: 5
MMT By 2030

Insight On Federal & State Level Incentives & Subsidies

Green Hydrogen Pilot Projects Launched In India

Green Hydrogen Sector Current & Future Outlook

Recent Collaborations, Investments & Activities

Competitive Landscape: Insight On Key 15 Companies

India, a rapidly growing economy with a massive population, is facing the dual challenge of meeting its energy demands while combating climate change. In this context, the country has embarked on an ambitious journey to harness the potential of green hydrogen, a clean and renewable fuel that could revolutionize its energy landscape. Green hydrogen, produced through the electrolysis of water using renewable energy sources like solar or wind power, is gaining significant traction as a viable alternative to fossil fuels. India, endowed with abundant renewable energy resources, is well-

positioned to become a global leader in the green hydrogen industry.

The Indian government recognizes the strategic relevance of green hydrogen and has launched many programs to accelerate its development. The government announced the National Hydrogen Mission, which would be renamed National Green Hydrogen Mission in 2023, with the goal of making India a global powerhouse for green hydrogen production and exports. The objective anticipates establishing a strong green hydrogen ecosystem that includes everything from research and development to production, storage, and transportation. It also seeks to assist the development of globally competitive green hydrogen technologies and establish India as an export hub for green hydrogen and its derivatives.

Several Indian companies, both public and private, have already embarked on ambitious green hydrogen projects. Reliance Industries, India's largest conglomerate, has announced plans to invest US\$ 10 Billion in the green energy sector, including a significant focus on green hydrogen production. The company aims to become a global leader in green hydrogen and is exploring opportunities for producing it at a competitive cost.

The Indian Oil Corporation (IOC), the country's largest state-owned oil company, has also announced plans to build the nation's first green hydrogen plant at its Panipat refinery. According to the company's tenders, the plant has been planned to have a capacity to produce 10 kilo tonnes of green hydrogen per annum, marking a significant step towards decarbonizing India's refining sector. Other companies like NTPC, India's largest power generation company, and Adani Group, a conglomerate with interests in energy and infrastructure, have also announced plans to venture into the green hydrogen space.

The Indian government's efforts to promote green hydrogen are not limited to domestic initiatives. It has also been actively engaging with international partners to foster collaboration and knowledge sharing. In October 2023, India and Saudi Arabia signed a memorandum of understanding (MoU) for green hydrogen supply chain and power grid interconnection.

Despite its potential, India's green hydrogen industry faces several challenges. High production costs due to expensive electrolyzers and renewable energy are major barriers. Reducing costs requires economies of scale, technological advancements, and increased investments. Infrastructure development, like hydrogen refueling stations and pipelines, is also crucial, along with streamlined regulatory frameworks. However, the Indian government's commitment and the private sector's growing interest, along with falling renewable energy costs, provide a strong foundation for the industry's growth. Looking ahead, the future of India's green hydrogen industry appears promising. With continued government support, technological innovation, and strategic investments, India is well-positioned to become a global leader in green hydrogen production and

utilization. The successful development of this industry can significantly contribute to India's energy transition, enhancing energy security, reducing carbon emissions, and fostering sustainable economic growth.

In conclusion, India's green hydrogen industry is at a nascent yet rapidly evolving stage. The synergistic efforts of the government, industry stakeholders, and research institutions are paving the way for a sustainable and self-reliant energy future. As the industry matures, it holds the potential to revolutionize India's energy landscape, aligning with global sustainability goals and driving economic growth.

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