



Ministry of Foreign Affairs

India's ambition and potential to become world's largest green hydrogen exporter

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While everybody is waiting for the publication of the National Hydrogen Mission, that was announced in the Union Budget of India 2021-22 and launched by PM Modi in his **Independence Day's speech** (15 August 2021), there have been some developments in India that reinforce the **country's** ambition and potential of becoming the cheapest (green) hydrogen producer in the world by 2050.

*"Green Hydrogen is the future of the world.
Today, I announce the setting up of the National Hydrogen Mission
with the aim of becoming the new global hub of Green Hydrogen,
and also its largest exporter,"*

- PM Modi, 15 August 2021

India is a significant global player when it comes to climate change. India is the 3rd largest greenhouse gas emitter and the 3rd largest final energy consuming country in the world, after China and the USA. With the **country's** population growth, currently reaching almost 1.4 billion inhabitants, increased access to modern services, increasing electrification rates and GDP growth, the **expectation is that India's final energy use and CO₂ emissions will increase strongly in the years to come.** At the same time, in 2015 India has committed to the Paris Agreement with ambitious goals of cutting emissions of greenhouse gases by 33-35% and have 450 GW of non-fossil power generation capacity by 2030. To meet these goals, the Indian government made large-scale funding in renewable energy production available and has created policy to support this sector. In the last seven years, over USD 70 billion were invested in the renewable energy sector. **India's installed renewable energy capacity currently stands at more than 100 GW.** Solar power capacity has increased by more than 5 times in the last five years from 6.7 GW to 40 GW in March 2021.

Policy developments

However, to address all the future energy demands in a green way, even more will be needed. After vast solar and wind power investments, India is now exploring other sources to produce green energy and eliminate carbon emissions. Among the new solutions, hydrogen has found its way to the national priority status. In the Union Budget 2021-22, the Government of India has allocated EUR 90 million for the current fiscal year to hydrogen research and production. By the end of this year, the government is supposed to introduce a policy framework on hydrogen, specifically in the green form, which will expedite producing and commercializing fuel cells and end-user applications **for the industry's power needs.** **India's ambition is to get the price of green hydrogen below \$2/kg** in the next decade, and to become its largest exporter. By 2050 the Indian government estimates to have 75% of its hydrogen in green form, produced by the decreasing in price renewable energy sources, with focus on solar.

Developments in the private sector

"Made in India, by India, for India and for the world"

- Mukesh Ambani, Reliance Industries, 5 September 2021

Some energy providers from the public and private sector have already prioritized producing green hydrogen on a large scale. The Indian Oil Corporation (IoC), **for instance, recently unveiled India's** first green hydrogen plant in Mathura, Uttar Pradesh. At the same time, the domestic oil refinery giant Reliance Industries Ltd. plans to invest USD 2.5 billion in setting up gigawatt factories to develop electrolyzers to produce energy and getting the price of hydrogen to \$1/kg. NTPC, the nation's largest electricity generator, has also announced plans to set up India's first green hydrogen fueling station in Leh, Ladakh. NTPC is currently looking to set up a pilot project for blending hydrogen with national gas for use in city gas distribution. Next to that, IITs, IISc, Banaras Hindu University, Council for Scientific and Industrial Research laboratories etc. are exploring different aspects of hydrogen production.

Moreover, recently the Ministry of New and Renewable Energy (MNRE) proposed to include green hydrogen in Renewable Purchase Obligations. This move states that it will be mandatory for user

industries to produce or procure green hydrogen to meet a certain percentage of their needs. Oil refineries and fertilizer manufacturers will be asked to implement the policy immediately after the Cabinet approves the proposal, which is expected to be in 2023-24. The policy might be extended to other industries at a later stage.

Time and again India's government has emphasized the fact that India can meet the global demand of the green hydrogen production by mass producing at an economical cost. As per the current situation, India is at a stage where the government creates demand through policies that mandate green hydrogen and developing technologies to produce and store through its research institutions. At the same time, the current ecosystem still leaves a massive void between the need and demand, which can be bridged with ready to deploy economic solutions that already exist in the Netherlands. So far India collaborates on hydrogen with Norway and UK, and the country indicates its intention towards initiating hydrogen trade relations with other countries as well. Time for the Netherlands to step in?

Get connected:

- ➔ Explore more on the green hydrogen plans of India during the Business Day India on 12 October 2021. Join our expert session on hydrogen and meet like-minded entrepreneurs. More information: [Save the date: Business Day India 2021 | RVO.nl | Rijksdienst](#). **Registration opens September 20th**.
- ➔ Read the summary of our recent study towards opportunities in Renewable Energy production in India [here](#), or apply for the full report via ahmedabad@nbso.info.
- ➔ Get in contact with the Netherlands Embassy in New Delhi via nde@minbuza.nl or [connect with RVO](#) for support in doing business abroad.

This is a publication of
Netherlands Enterprise Agency
Prinses Beatrixlaan 2
PO Box 93144 | 2509 AC The Hague
T +31 (0) 88 042 42 42
E klantcontact@rvo.nl
www.rvo.nl

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