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## Editorial Committee

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### India will be epicenter for green H<sub>2</sub> development: Hardeep Singh Puri

Oil minister Hardeep Singh Puri said that India will be the place for green hydrogen development because there is a demand here. The private sector has shown great interest in the green hydrogen segment in India and acquired large manufacturing facilities and contracted to supply green ammonia, Puri said, speaking at a conference on India's Role in the Future of Energy. Many Electrolyser manufacturers in the world today have got a tie up or production here, he said. IEA chief Fatih Birol, who also addressed the session, said India has the opportunity to become a "superpower" in green hydrogen space with its cheap and abundant renewable energy sources.

Ref: <https://economictimes.indiatimes.com>

### Central aid for R&D to set up pilot using green hydrogen to make steel

Centre will aid R&D projects to set up pilot plants for production and utilization of green hydrogen in the iron and steel making processes, the steel ministry has said. It said ₹455 crore has been earmarked under the National Green Hydrogen Mission to support the domestic steel industry's endeavours to find scalable uses of hydrogen produced using environmentally sustainable practises. This low-environment-footprint hydrogen is called green hydrogen to signify its superior acceptability. Tightening regulatory regimes around the world threaten to make steel produced in India uncompetitive due to the levy of higher duties (CBAM- Carbon Border Adjustment Mechanism) by the European countries. Most steel around the world, including in India, is made using direct reduction of iron, which is the chemical removal of oxygen from iron ore. This activity is carried out in a blast furnace, usually with the help of coking coal. To reduce emissions from this exercise, efforts are being made globally to use green hydrogen instead of coal.

Ref: <https://economictimes.indiatimes.com>

“When everything seems to be going against you, remember that the airplane takes off against the wind, not with it.”

HENRY FORD



## No interstate transmission fee for offshore wind, green H2 projects

The government has waived off interstate transmission charges on offshore wind power units commissioned by calendar 2032 for 25 years from the date of commissioning. It has also extended the commissioning date for applicability of such charges on green hydrogen and ammonia projects to 2030 from 2025. Offshore wind projects should be established through power purchase agreements or on a merchant basis, the power ministry said in a notification. For offshore wind projects commissioned after 2032, the charges will be 25% of existing interstate transmission system (ISTS) charges and increase biennially by 25 percentage points till 2038 when it becomes 100% of applicable charges, it said. For green hydrogen and ammonia projects, exemption is being given for 25 years starting the date of commissioning of the project. The projects should be using renewable energy from solar, wind, or large hydro projects commissioned after March 8, 2019, or energy storage systems, the ministry said. For green hydrogen and ammonia plants commissioned after 2030, the ISTS charges will be levied at 25% of the applicable charges and thereafter increase biennially by 25 percentage points till 2036.

Ref: <https://economictimes.indiatimes.com>

## India eyes green hydrogen bunkering at major ports by 2035

India has set a deadline of 2035 to establish green hydrogen bunkering and refueling facilities at major ports in the drive to cut its carbon footprint, the shipping ministry said in guidelines issued. One of the world's biggest emitters of greenhouse gases, India aims to cut emissions to net zero by 2070, and the shipping minister said three of its ports would initially have bunker facilities for green hydrogen and ammonia. "Our target is to cover all 12 major ports with a green hydrogen bunkering facility by 2035,". To meet the net-zero goal, at least 40% of India's electricity will have to come from renewables. To that end, the new shipping guidelines require ports to satisfy at least 60% of electricity needs through renewables by 2030 and 90% by 2047. To boost use of gas, the shipping ministry wants ports to set up at least one liquefied natural gas (LNG) bunkering station by 2030 and electric vehicle charging stations in and around port areas by 2025.

Ref: <https://economictimes.indiatimes.com>

## Ohmium partners with NTPC to manufacture PEM to produce green hydrogen

Ohmium and NTPC have partnered to manufacture proton exchange membrane (PEM) Electrolysers to produce green hydrogen in India. Ohmium is a leading green hydrogen company that designs, manufactures and deploys advanced PEM Electrolysers. In a statement, Ohmium said, "Its India-based subsidiary has been selected as the PEM Electrolyser partner of NTPC Renewable Energy Limited (REL), the renewable energy subsidiary of NTPC". The agreement is valid for two years till May 2025, the company added. Ohmium's advanced green hydrogen technology will be used by India's largest power company to decarbonize energy, transport and ammonia projects. "This green hydrogen opportunity is the largest-ever PEM Electrolyser deal in India and one of the largest globally," Ohmium said. Ohmium's technology is expected to help NTPC deploy 5 GW of renewable energy for green hydrogen and ammonia production (forming part of NTPC's ambitious goal to deliver 60 GW of renewable energy capacity by 2032).

Ref: <https://www.business-standard.com/>





## Reliance Industries may earn \$10-15 bn revenue from new energy biz by 2030: Report

Mukesh Ambani's Reliance Industries Ltd (RIL) may earn nearly \$10-15 billion from its new energy business spanning solar to hydrogen by 2030, however, it will need acquisitions or partnerships to make up for limited expertise in technology, reported PTI, citing a report by Sanford C Bernstein. Clean energy (solar, battery, electrolyzers, and fuel cells) represents a new growth pillar for Reliance with \$2 trillion in investment in India through 2050. India is targeting solar capacity of 280GW and 5 million tonnes of green H2 production by 2030. "We expect EV penetration will reach 5 per cent for passenger and commercial vehicles and 21 per cent for two-wheelers. Clean energy could have a TAM (total addressable market) of \$30 billion in 2030 (\$10 billion currently). By 2050, we estimate the TAM could reach \$200 billion and cumulative spending of \$2 trillion," PTI quoted the brokerage report as saying. Oil-to-telecom conglomerate Reliance has announced forays into solar manufacturing as well as hydrogen in pivot away from fossil fuels. Reliance plans to have 100GW of installed solar capacity by 2030 which is 35 per cent of India's targeted capacity of 280GW.

Ref: <https://economictimes.indiatimes.com>



## L&T to build energy infra for world's largest green hydrogen plant at NEOM

L&T Construction will create renewable energy infrastructure for the world's largest green hydrogen plant at NEOM, the company said in a BSE filing. L&T will engineer, procure, and construct a 2.2 GW PV solar plant, 1.65 GW wind generation balance of plant and a 400 MWh battery energy storage system at Oxagon in Saudi Arabia's region of NEOM. NEOM Green Hydrogen Company (NGHC) is an equal joint-venture by ACWA Power, Air Products and NEOM. The scope also includes the Energy Power Monitoring System (EPMS) for the complete network. The value of the packages awarded to L&T aggregate to \$2.779 billion. NGHC is setting up a mega plant to produce green hydrogen at-scale for global export in the form of green ammonia with a total investment of \$8.4 billion.

Ref: <https://www.business-standard.com/>



## G20 energy transition group backs 'universal access' to green power

G20 Energy Transition Working Group Committee has reached a consensus on the importance of 'universal access' to modern, sustainable energy and its priority in the energy transition, which is considered as a key area of potential success for India's presidency. Although solar energy was once seen as the most crucial, other possibilities such as small hydro and wind have also emerged recently. On the margins of the third leg of the group meeting, Power secretary Alok Kumar stated, "India is representing the voice of the global south and our priority is that energy transition is done in a manner that we fulfill our energy requirements, ensure energy security, and nobody is left behind." "We are negotiating with developed countries regarding what they had promised at the time of the Paris Agreement, that they need to give more concessional funding, long-term low interest funding to developing countries for deployment of clean energy tech," he said. In the joint communique's preamble, there are discussions about the transition to clean energy and climate change.

Ref: <https://www.theindustryoutlook.com/>





## Upcoming events:

- GH2 INDIA 2023**  
 India Expo Centre & Mart,  
 Gr. Noida, 3-5<sup>th</sup> August,  
 2023
- 4th International  
Hydrogen Aviation  
Conference, IHAC2023**  
 Edinburgh, Scotland.  
 7<sup>th</sup> September, 2023
- HY-FCELL STUTTGART  
2023** Stuttgart, Germany  
 13-14<sup>th</sup> September, 2023
- Hydrogen Conference  
2023** Hilton London Tower  
 Bridge London, United  
 Kingdom 20<sup>th</sup>  
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## Toyota's Next-Gen Fuel Cell Could Be Up To 50% Cheaper than Today's System

Toyota is aiming to launch a new generation of fuel cells in 2026 and they'll be significantly cheaper than what's available today. Toyota is gearing up to launch their next-generation of electric vehicles in 2026, but the company isn't giving up on hydrogen. Quite the opposite as the automaker has released new details about their next-generation fuel cell. Since high prices and a lackluster refueling infrastructure are holding fuel cell vehicles back, Toyota is aiming to address both issues to make hydrogen-powered vehicles more viable. In particular, Toyota aims to launch "innovative next-generation fuel cells" in 2026. These are designed for commercial use and the automaker expects the cost of the fuel cell stack will drop by 50% compared to today's models.

Ref: <https://www.hydrogenfuelnews.com/>



## Aircraft will fly on 35% hydrogen-based fuels by 2050 under new EU blending rules

Aircraft departing European airports will need to refuel with ever-increasing quantities of sustainable aviation fuels (SAFs) and hydrogen-based synthetic fuels as soon as 2025, under new blending rules agreed by the European Commission (EC). The proposal, agreed by the EC, envisages planes refuelling with blends containing at least 2% of SAFs in 2025, of which 1.2% should be derived from synthetic aviation fuels – hydrocarbons such as e-kerosene made by combining carbon molecules with green hydrogen made with renewable energy. Blend mandates will be ratcheted up every five years until they reach 70% of SAFs by 2050, of which 35% should be made from synthetic aviation fuels, sometimes called e-fuels.

Ref: <https://www.hydrogeninsight.com>



## Total Energies to switch from grey to green hydrogen at German refinery by 2030

French oil major Total Energies is to switch to using green hydrogen at its Leuna refinery, part of one of Germany's largest chemical works, by 2030 after signing a renewable H2 off take agreement with gas company VNG. The green H2, which will replace the refinery's existing polluting fossil gas-based grey hydrogen supply, will be sourced from VNG's planned Bad Lauchstädt energy park, in eastern Germany. The gas company is co-developing a 30MW electrolyser at the park as part of a consortium which includes German energy company Uniper and wind developer Terawatt. This project is fully in line with Total Energies' ambition to decarbonise all hydrogen used in its European refineries by 2030," said Jean-Marc Durand, senior vice president at Total Energies' European refining business.

Ref: <http://www.hydrogenfuelnews.com/>

