

Govt may float bids to set up green hydrogen plants by May: Report

Reuters

New Delhi

By May the Government is likely to invite bids for subsidies to set up green-hydrogen manufacturing and utilisation hubs, fertiliser and steel plants based on the fuel, and factories for making electrolyzers, two government sources told *Reuters*.

The bidding process will be part of the first phase of a \$2-billion incentive, National Green Hydrogen Mission, announced last week to boost use of green hydrogen to cut emissions and make the country a major exporter in the field.

The plan aims at using it in fertiliser and steel production in place of hydrogen made with fossil fuels, blending it into urban gas supply and promoting its use in



transportation. The Ministry of New and Renewable Energy did not respond to a query sent by *Reuters*.

Establishing electrolyzer factories and hubs for making and using green hydrogen could attract interest from such big companies such as Reliance Group and Adani Group, which have already committed billions of dollars to green-hydrogen activities. Electrolyzers are devices for making hydrogen.

The government will call,

within three to four months, for competitive bids for establishing two green hydrogen hubs, the government sources who did not want to be named, told *Reuters*.

In the same period it will seek bids for setting up two fertiliser plants using green hydrogen and green ammonia - ammonia made with green hydrogen - they said.

It will subsidise establishment of the activities proposed by the winning bidders, which will retain ownership.

The government intends to award contracts within a year, both sources said.

The government wants India to produce 5 million tonnes of green hydrogen annually by 2030.

Similarly, steel projects using 100 per cent green hydrogen will be set up, according to the two sources.

Trafigura sells out of Russia-backed Nayara Energy

REUTERS

New Delhi, 11 January

Trafigura has sold its 24.5 per cent stake in Russia-backed Indian refiner Nayara Energy to a Rome-based energy investment group, following on from a deal on Monday where a group of firms backed by the commodity trading company agreed to buy Lukoil's Italian refinery.

Trafigura said it had completed the sale of its "indirect minority interest" in Nayara Energy to Hara Capital Sarl, a wholly-owned subsidiary of Mareterra Group Holding formerly known as Genera Group Holding.

Reuters reported in 2021 that the global commodity trader was looking to sell its stake in the Indian oil refining joint venture with Russia's Rosneft to an Italian group Genera. It is unclear how much Trafigura's stake in Nayara, formerly known as Essar Oil, is worth now.

Rosneft owns a 49.13 per

cent stake in Nayara. A similar-sized holding was split between Trafigura and Cyprus-based Russian investment group United Capital Partners (UCP).

Trafigura and UCP had 49.84 per cent stake each in Singapore-based Tendril Ventures Pte, whose Cyprus-registered parent company owns a 49.13 per cent stake in Nayara Energy.

Trafigura's equity investment in Tendril was worth about \$166 million, according to its 2022 annual report.

"UCP remains committed to its investment in Nayara Energy and believes in its future growth opportunities," Trafigura's statement cited Irina Lanina, Managing Director of UCP Investment Group as saying.

Nayara operates a 400,000 barrels per day Vadinar refinery in western Gujarat state and 6,000 retail fuel stations. It is also building a 450,000 tonnes-a-year polypropylene plant.



India, Japan to work on green mobility: Gadkari

INDIA AND JAPAN will undertake joint projects for digital transformation in the areas of Intelligent Transport Systems (ITS) and eco-friendly mobility, road transport and highways minister Nitin Gadkari said on Wednesday. The minister interacted with the Japanese delegation led by Koichi Hagiuda and ambassador of Japan to India Hiroshi Suzuki.

PTI

India to seek bids for green hydrogen plants by May

SARITA CHAGANTI SINGH
New Delhi, January 11

INDIA WILL BY May invite bids for subsidies to set up green-hydrogen manufacturing and utilisation hubs, fertiliser and steel plants based on the fuel, and factories for making electrolyzers, two government sources told *Reuters*.

The bidding process is part of a first phase of a \$2 billion incentive plan announced last week to boost use of green hydrogen to cut emissions and make India a major exporter in the field.

Green hydrogen is hydrogen made with renewable energy. The plan aims at using it in fertiliser and steel production in place of hydrogen made with fossil fuels, blending it into urban gas supply gas and promoting its use in transportation.

The ministry of new and renewable energy did not respond to a query from *Reuters*.

Establishing electrolyser factories and hubs for making and using green hydrogen could attract interest from such big companies such as Reliance Group and Adani Group, which



have already committed billions of dollars to green-hydrogen activities. Electrolysers are devices for making hydrogen.

The government will call within three to four months for competitive bids for establishing two green hydrogen hubs, two government sources, who did not want to be named, told *Reuters*. In the same period it will seek bids to set up two fertiliser plants using green hydrogen and green ammonia — ammonia made with green hydrogen — they said.

It will subsidise establishment of the activities proposed

by the winning bidders, which will retain ownership.

The government intends to award contracts within a year, both sources said.

Other countries are working in this field, but high costs of transporting and storing hydrogen and of making electrolyzers are key issues that need to be resolved.

The plan, called the National Green Hydrogen Mission, aims at substituting all ammonia-based fertiliser imports with domestic fertilisers using green ammonia by 2034-35.

— REUTERS

EXPLAINER

HYDROGEN: FROM ABUNDANCE TO PROMINENCE

Hydrogen, the most abundant element, has had a nondescript existence for centuries. It is now in the news, with energy firms across the globe betting big on it, as the fuel of the future.

Rajat Mishra examines the feasibility of 'green hydrogen' as a fuel and industrial feedstock, as well as its role in the global decarbonisation project



Industrial uses

H₂ CAN produce energy without causing GHG emissions. It can be used in fuel cells where it reacts with oxygen to produce electricity. This makes it a potentially viable transportation fuel. It is also a potential fuel for power generation.

It is also feedstock for production of ammonia and can be used in a host of other industries, including steel and oil refining.

Hydrogen as a fuel option is being weighed only now...

THOUGH IT is the most abundant element in the universe, hydrogen (H₂) exists in nature predominantly as compounds (rather than in its elemental, gaseous form), mainly water. This makes it necessary to have the technology and infrastructure to produce it at an industrial scale.

Absence of cost-effective ways to produce such hydrogen has been dampener for long. Processing of fossil fuels like natural gas and electrolysis are the two ways to produce H₂, but the scaling up of these technologies is a relatively late and still-evolving process. There are other factors also that need to be sorted out—H₂'s explosive combustion poses storage, transport and controlled combustion challenges.

5 million tonnes

per annum capacity goal under National Green Hydrogen Mission

₹19,744 crore

initial outlay for the Mission

\$3.5-5/kg

present cost of green hydrogen

Grey, blue, and green hydrogen

FOSSIL FUEL feedstocks such as natural gas, LPG, and naphtha are mixed with steam to produce synthesis gas, or Syngas, which is a mixture of carbon monoxide and H₂. Further refining of this produces "grey H₂." Another way to make grey H₂ is partial oxidation of refinery residues.

Blue hydrogen is derived from the same fossil fuel sources but with the involvement of carbon capture usage and storage (CCUS), lowering the emission footprint of production. Both grey and blue hydrogen use either Steam Methane Reforming process or the Auto Thermal Reforming process, but the former is sans CCUS. Green H₂, the most environmentally benign version of the element in industrial scale, is produced via electrolysis—by splitting the water molecule into elemental hydrogen and oxygen using the electricity generated from renewable sources like solar and wind.

Green H₂ Mission

THE MISSION aims to make India a global green H₂ hub.

The initial outlay will be ₹19,744 crore, including ₹17,490 crore for the "SIGHT" incentives for domestic production of electrolyzers and green H₂. India targets a capacity of 5 million tonne per annum by 2030, with associated renewable energy capacity addition of ~125 GW. Investment of ₹8 trillion and 0.6 million new jobs are projected; ~50 mtpa of CO₂ is expected to be averted by 2030.

Initiatives by India Inc, and challenges



RELIANCE INDUSTRIES in 2021 announced capital outlay of Rs 75,000-cr over the next three years to develop clean-energy manufacturing technologies, including electrolyzers to produce green H₂. It targets to cut production cost of the fuel to below \$1/kg by the end of the decade.

A partnership between French giant TotalEnergies and Adani Group aims to invest \$50 billion in 10 years. State-run NTPC seeks to push costs below \$2/kg by 2025-2026; it's developing India's first H₂-to-electricity project using US-based Bloom Energy's solid-oxide electrolyzers and fuel cell tech.

At current costs of \$3.5-5/kg,

green H₂ is far more expensive than competing benign fuels. Since these are still early days (advanced economies are investing in R&D to make the fuel commercially viable), India must develop indigenous technology and/or assimilate global know-how at competitive prices. It is also important to boost demand.

Availability of necessary transmission infrastructure (pipeline, tankers and storage units) is vital. Since smaller units will likely form the bulk of the market, they may need incentives in the initial phases. Industry also demands consumption obligations on fertiliser units, petroleum refineries, etc.

SWISS COMMODITY TRADER ENDS TIES WITH RUSSIA'S ROSNEFT

Trafigura Sells Nayara Stake to Hara

Italian investment company Mareterra's arm said to have paid \$166 million

Nayara operates Vadinar refinery in Gujarat and over 6,000 fuel pumps



It was bought by Russian oil major Rosneft-led consortium in 2016 for **\$12.9 b**

Trafigura selling its **25%** stake would have been valued at **\$3.25 b** based on 2016 nos

Stake sale comes at a time when Russia is facing western sanctions

Our Bureau

Mumbai: Swiss-headquartered commodity trader Trafigura sold its 24.5% interest in Nayara Energy Ltd, formerly Essar Oil, to Hara Capital Sarl, severing ties with Russian energy giant Rosneft. Nayara runs India's second-largest private refinery and more than 6,000 petrol pumps. Trafigura said it had completed the sale of its "indirect minority interest" in Nayara to the Itali-

an investment firm on Wednesday. Rosneft is Nayara's single largest shareholder with a 49.13% stake.

The deal size was not disclosed in the official statement. People involved in the transaction said Hara, a wholly owned subsidiary of Italian energy investment company, Mareterra Group Holding, paid \$165.9 million or the book value of the stake, based on disclosures in Trafigura's last annual report.

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Expertise in Reducing Carbon Footprint

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Trafigura had classified the investment as "held for sale," with a possible disposal to Mareterra, then known as Genera.

A 25% stake would have been valued at \$3.25 billion based on 2016 numbers. Most industry observers feel this is a distress sale. Nayara was bought by a Rosneft-led consortium in 2016, two years after Russia and Rosneft had first faced west-imposed sanctions for the annexation of Crimea, for \$12.9 billion. Trafigura's decision to join a Russia-led group cemented its position in Moscow and with Rosneft, the latter's petroleum trading aspirations having been hindered by western sanctions. Trafigura's rivals Vitol and Glencore had long fought for access to Rosneft crude and even provided short-term trade financing to one of the world's largest crude producers, since this was allowed under sanc-

tions introduced after Crimea's annexation.

Nayara operates the 400,000 barrels per day Vadinar refinery in Gujarat state and is also building a 450,000 tonne-a-year polypropylene plant, marking the first phase of its expansion into petrochemicals.

Headquartered in Rome, Mareterra is active in Italy, Luxembourg, France and Spain. It has a focus on energy and carbon efficiency infrastructure and is expanding to regions outside Europe. Over the past two years, Mareterra has installed pumps as well as charging systems for electric cars in Italy and France.

"We will share our relevant experience with Nayara Energy to strengthen both the technological and environmental leadership of the company in the Indian market," Mareterra founder Filippo Ghirelli said in a release.

For full report, go to www.economictimes.com



Oil Gains 2% on Optimism Over Global Economy

New Delhi: Oil prices rose 2% to a one-week high on Wednesday as hopes for an improved global economic outlook and concern over the impact of sanctions on Russian crude output outweighed a massive surprise build in US crude stocks. Brent futures rose \$1.67, or 2.1%, to \$81.77 a barrel by 1611 GMT, while US West Texas Intermediate crude (WTI) rose \$1.54, or 2.1%, to \$76.66.

That puts both benchmarks on track to close the day at their highest since Jan. 3 with WTI up for a fifth day in a row for the first time since October 2022 and Brent up for a third day in a row for the first time since December 2022.

Global equities were up slightly on Wednesday on hopes that US inflation and earnings figures due on Thursday point to a resilient economy and slower pace of interest rate hikes. – **Reuters**

BIG TASK OF LIFTING OUTPUT SAGGING FOR YEARS

ONGC to Rely More on Advanced Tech

PSU's exploration chief says co will drill more, deeper and increase reliance on advanced tech

Sanjeev.Choudhary
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New Delhi: Oil and Natural Gas Corporation (ONGC) will drill more, drill deeper and increase reliance on advanced technologies and tech-savvy younger minds to boost chances of making major discoveries, said Sushma Rawat, the first woman to be appointed as the state-run company's exploration chief.

"We have to image better, drill deeper, and monetise faster," Rawat told ET.

The company will acquire more exploration acreage and bring in new technologies to enhance the quality of seismic surveys and data interpretation, she said.

She took over as director (exploration) at ONGC this month, a rare feat in the traditionally male-dominated exploration and production sector.

Rawat, who studied geology in college, inspired by the story of a geologist in Desmond Bagley's novel 'Landslide', faces the onerous task of leading major discoveries that can help lift ONGC's output sagging for years.

Drilling would be crucial to locating commercially viable discoveries, she said. ONGC plans to drill 150 exploratory wells annually in the next three years, 50% more than the annual average in the past five years, she said, adding, "We have generally been probing only up to 3.5-4 km deep. With improved technologies, we can go deeper up to 5 km."

Many global firms have reduced the number of exploratory wells they drill compared to a few decades ago and are instead relying more on advanced analytical tools to interpret seismic data for zeroing in on discoveries. "Seismic has its limitations. Drilling is important to get a better sense of the sub-surface, the rock type, pressure, temperature etc," said Rawat.

ONGC is also planning to streamline processes to quickly access technologies for exploration. Rajesh Srivastava, who retired last month as ONGC's exploration chief, had helped forge key ties with foreign companies with access to advanced technologies for joint exploration, especially in difficult terrains. ONGC has preliminary agreements with ExxonMobil and Chevron and is in talks with Total for a tie-up.

The company has made several discoveries in the past few decades but has received criticism for its inability to match Bombay

Drilling Deep

ONGC will acquire more exploration acreage and bring in new technologies to enhance the quality of seismic surveys and data interpretation

Drilling would be crucial to locating commercially viable discoveries

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DISCOVERIES

'Several discoveries have been made around Bombay High in recent decades, which has helped nearly quadruple the total estimated reserves of the block to more than 2,200 mtoe from 590 mtoe initially'

Hig, its most famous discovery made in the 1970s.

Rawat said several discoveries have been made around Bombay High in recent decades, which has helped nearly quadruple the total estimated reserves of the block to more than 2,200 million tonnes of oil equivalent (mtoe) from 590 mtoe initially. "It's almost like discovering Bombay High three times over," she said.

Augmenting recovery in mature fields by improving the understanding of the reservoir and sub-surface is also like finding another discovery, she said.

Increasing focus on digitalisation and involving a younger workforce that's more tech-savvy will also help the exploration effort, said Rawat. "We have a lot of data from our years of exploration. We can apply artificial intelligence (AI) and machine learning (ML) for better outcomes," she said.

Crude oil price cap takes small slice of Russia war chest: report

Combination of cap by the Group of Seven major democracies & the EU ban are costing Russia an estimated 160 mn euros (\$171.9 mn) per day

FRANKFURT (Germany): A price cap and European Union embargo on most Russian oil have cut into Moscow's revenue from fossil fuels, but the Kremlin is still earning substantial cash to fund its war in Ukraine because the \$60-per-barrel cap was "too lenient", researchers said on Wednesday.

The combination of the cap by the Group of Seven major democracies and the EU ban are costing Russia an estimated 160 million euros (\$171.9 million) per day, the Helsinki-based Centre for Research on Energy and Clean Air said in a study of the first weeks of the sanctions, which took effect December 5.

But the group's figures showed that Russia was still taking in 640 million euros a day from fossil fuels, down from 1 billion euros daily from March to May 2022 just after the country invaded Ukraine on February 24.

Russia would lose an additional 120 million a day starting February 5, when the EU bars imports of refined oil products such as diesel fuel, for which Russia is a major supplier. That would drop Moscow's earnings to 520 million euros a day by February.



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The group said Russia still managed to make 3.1 billion euros in revenue shipping oil under the price cap, reaping 2 billion euros in tax income. Lowering the cap to \$25-\$35 per barrel would almost completely eliminate the tax income by putting the price much closer to Russia's cost of production.

The current price cap is

above the market price for Russian oil and remains in the range of what Moscow needs to balance its budget.

Western governments have struggled to find a way to cut into the fossil fuel income that is the main funding source for Russia's government budget and its war against Ukraine.

Early rounds of sanctions mostly avoided block-

Highlights

- » Russia still managed to make 3.1 billion euros in revenue shipping oil under the price cap, reaping 2 billion euros in tax income
- » Lowering the cap to \$25-\$35/ barrel would almost completely eliminate the tax income by putting the price much closer to Russia's cost of production
- » The current price cap is above the market price for Russian oil and remains in the range of what Moscow needs to balance its budget

ing oil and natural gas shipments.

That's because the European Union had been heavily dependent on Russian fossil fuels to run its economy and because sharply higher energy prices early in the war helped send inflation through the roof in Europe and the United States.

The Group of Seven major democracies came up with the

price cap as a solution to keep Russian oil flowing to other parts of the world and avoid sharply higher energy prices while still cutting into the Kremlin's income.

The cap is enforced by barring insurers, mostly based in the West, from handling Russian oil shipments priced above the cap.

The EU oil embargo blocks the bulk of Russian oil that coming by tanker.

Lowering the cap could have unpredictable effects because President Vladimir Putin has said Russia will not sell oil to countries obeying the cap, a threat which has not materialized because the cap is above the market price.

Oil markets, however, are now less focused on a potential loss of Russian oil than on weak demand from a slowing global economy, and prices have fallen.

The research centre compiling the estimates called for restrictions on the sales of old tankers to prevent Russia, its allies and related traders from assembling a replacement fleet to circumvent the oil price cap and to strengthen penalties for dodging the cap by increasing penalties.

AGENCIES

इंडियन ऑयल के रिफाइनरीज मुख्यालय में कर्मचारियों के लिए क्रेच सुविधा



वैभव न्यूज ■ नई दिल्ली

एस.एम. वैद्य, अध्यक्ष, इंडियन ऑयल, ने शुक्ला मस्त्री, निदेशक (रिफाइनरीज), इंडियन ऑयल की उपस्थिति में नई दिल्ली स्थित रिफाइनरीज मुख्यालय में कार्यरत आईओसियन्स के छोटे बच्चों के लिए एक क्रेच का उद्घाटन किया।

गणमान्य व्यक्तियों ने कहा कि कर्मचारियों को सशक्त बनाने की यह पहल कॉर्पोरेशन के संरक्षण मूल्य को दर्शाती है। उन्होंने बताया कि लोगों की यह पहल कामकाजी माता-पिता, विशेष रूप से इंडियन ऑयल में कामकाजी माताओं के लिए एक बड़ी सुविधा साबित होगी।



‘ऊर्जा पारेषण- एक सतत भविष्य के लिए समाधान’ पर सम्मेलन आज नई दिल्ली पेट्रोलियम एवं प्राकृतिक गैस हरदीप सिंह पुरी कल गुरुवार 12 जनवरी को यहां आयोजित होने वाले भारतीय उद्योग परिसंघ के प्रमुख कार्यक्रम ‘जैव ऊर्जा शिखर सम्मेलन 2023’ के 11वें संस्करण को संबोधित करेंगे। ‘ऊर्जा पारेषण- एक सतत भविष्य के लिए समाधान’ विषय पर आयोजित किया जा रहा यह शिखर सम्मेलन नव अन्वेषकों को एक अवसर प्रदान करेगा और भविष्य के स्वच्छ एवं हरित ऊर्जा समाधानों के लिए एक विकल्प प्रदान करेगा।

कोरोना काल से सीएनजी की कीमतों में हो रही लगातार बढ़ोतरी

किराया बढ़ाना तो ठीक लेकिन सीएनजी के दाम घटाएं : यूनियन

मांग

नई दिल्ली, प्रमुख संवाददाता। ऑटो-टैक्सी के किराये में बढ़ोतरी को लेकर यूनियनों का कहना है कि फैसला स्वागत योग्य है लेकिन इसका लाभ तभी मिल सकेगा जब सीएनजी की कीमतें स्थिर बनी रहेंगी।

कोरोना काल से लगातार सीएनजी की कीमतें बढ़ रही हैं, जिससे किराया बढ़ाने की नौबत आई। लेकिन यह भी देखना होगा कि हमारी तरफ से बीते वर्ष अप्रैल में सीएनजी की कीमतों का हवाला देकर किराया बढ़ाने की मांग की गई थी। तब से लेकर सीएनजी की कीमतों में करीब आठ रुपये प्रति किलो की बढ़ोतरी हो चुकी है।

दिल्ली ऑटो रिक्शा संघ के महामंत्री राजेंद्र सोनी ने कहा कि हम भी नहीं चाहते कि जनता पर बोझ बढ़े लेकिन मजबूरी है। क्योंकि सीएनजी के दाम लगातार बढ़ रहे हैं। टायर से लेकर स्पेयर पार्ट्स के दाम भी बढ़ गए हैं। बीते वर्ष 18 अप्रैल को किराया बढ़ाने के लिए हड़ताल हुई थी। उस वक्त सीएनजी की कीमतें दिल्ली में 71.61 रुपये प्रति किलो थी, जो आज बढ़कर 79.56 रुपये प्रतिकिलो पर पहुंच गई हैं।

राजधानी में बढ़े हुए किराये का गणित इस प्रकार जानें

टैक्सी का किराया

	पहले		अब	
	गैर एसी	एसी	गैर एसी	एसी
डाउन मीटर (शुरुआती डेढ़ किलोमीटर)	25	25	40	40
प्रति किलोमीटर	14	16	17	20
रात्रि शुल्क (11 बजे से सुबह 5 बजे तक)	25%	25%	25%	25%
प्रतीक्षा शुल्क (15 मिनट रुकने के बाद)	30	30	1 रु/मिनट	
अतिरिक्त शुल्क	10	10	15	15

६६ ऑटो व टैक्सी चालकों के अनुरोध पर दिल्ली सरकार ने कमेटी गठित की थी, जिसकी सिफारिश को अनुमोदन के बाद आज से लागू किया जा रहा है।

- कैलाश गहलोत, परिवहन मंत्री

ऑटो का किराया

	पहले	अब
डाउन मीटर (शुरुआती डेढ़ किलोमीटर)	25	30
प्रति किलोमीटर	9.5	11
रात्रि शुल्क (11 बजे से सुबह 5 बजे तक)	25%	25%
प्रतीक्षा शुल्क (15 मिनट रुकने के बाद)	0.75	0.75
अतिरिक्त शुल्क	7.5	10

दिल्ली में ऑटो टैक्सी की स्थिति

ऑटो - 95 हजार
काली-पीली टैक्सी - 60 हजार
इकोनॉमी टैक्सी - 20 हजार

अब प्रति मिनट के हिसाब से लगेगा शुल्क

- अब टैक्सी को 15 मिनट से ज्यादा इंतजार कराने पर प्रति मिनट एक रुपये का शुल्क देना होगा।
- ऑटो में बैग और अन्य सामान रखने पर 10 रुपये देने होंगे।
- टैक्सी में सामान रखने के 15 रुपये देने होंगे।

विरोध के बाद बनी थी कमेटी

बीते वर्ष 18 अप्रैल को ऑटो-टैक्सी यूनियन ने सीएनजी के बढ़ते दामों के चलते हड़ताल की थी। फिर परिवहन विभाग ने 13 सदस्यीय कमेटी गठित की थी, जिसकी रिपोर्ट पर सरकार ने 28 अक्टूबर को मुहर लगाई थी।

