

Fuel prices may fall if crude remains low: Official

RAKESH KUMAR @ New Delhi

OIL marketing companies (OMCs) may consider reducing petrol and diesel prices domestically if international crude prices remain low for an extended period, according to a senior official from the Petroleum Ministry.

Pankaj Jain, secretary at the Ministry of Petroleum and Natural Gas, mentioned that he is discussing the possibility of withdrawing windfall tax on crude oil exports with finance ministry. Jain noted that if the product cracks (the difference between the price of crude oil and refined products) remain low, there might be no need for windfall taxes on refined fuels.



Regarding potential reductions in petrol and diesel prices, Jain said OMCs would consider lowering fuel prices if crude prices remain low for a sustained period. "OMCs will contemplate a cut in retail prices if global crude oil prices stay

subdued for an extended duration. In the past 7-10 days, crude prices have decreased. Currently, the ministry is analysing these prices and evaluating how long they will stay low. It would be premature to adjust retail prices based on developments over just one week. We need more time to analyse this trend," Jain explained.

For the first time since December 2021, Brent Crude traded below \$70 a barrel for two consecutive days, following OPEC+'s downward revision of its demand forecast. However, prices rebounded on Thursday, with Brent crude futures trading at \$71.51 a barrel and US West Texas Intermediate (WTI) crude at \$68.37 at 15:16

PM Indian Standard Time. This decline in oil prices has improved profitability for OMCs, which may pass on the benefit to consumers through a price cut. OMCs revised fuel prices across the country in March 2024 by ₹2 per litre.

Additionally, Indian oil marketing companies, including Indian Oil Corporation Ltd (IOCL), Bharat Petroleum Corporation Ltd (BPCL), and Hindustan Petroleum Corporation Ltd (HPCL) have reported significant profits in recent quarters, with a combined consolidated net profit of ₹7,371 crore in the first quarter of this fiscal year. Jain also urged OPEC+ to increase production, given India's growing demand.

Govt bets big on buses in new EV scheme

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NEW DELHI

Heavy industries minister H.D. Kumaraswamy said the new electric vehicle (EV) subsidy scheme would spend most of its outlay, nearly 40%, on subsidizing public transport such as e-buses. The money will be spent on aiding state transport units and public transport agencies procure more electric buses.

The ministry has allocated nearly 40% of the total outlay of ₹10,900 crore towards e-buses.

The PM E-drive scheme will also have an outlay of ₹500 crore each for e-ambulances and e-trucks, Kumaraswamy said at a press conference on Thursday, adding that the scheme will also incentivize scrapping of road transport vehicles. The ministry is also in talks with the ministry of road transport and highways over pricing of e-trucks, officials said during the press conference.

The government has set aside ₹4,391 crore to subsidize the procurement of over 14,000 e-buses in nine cities with populations over 4 million—Delhi, Mumbai, Kolkata, Chennai,



Heavy industries minister H.D. Kumaraswamy. Nearly 40% of PM E-drive's total outlay of ₹10,900 crore will go towards e-buses. HT

Ahmedabad, Surat, Bengaluru, Pune and Hyderabad.

While allocating these buses, preference will be given to those buses that are being procured after scrapping old state transport buses through authorized scrapping centres (RVSFs) following the ministry of road transport and highways' Vehicle Scrapping Scheme guidelines, as per a ministry of heavy industries press release.

The ministry of heavy

industries will coordinate with central agencies and state governments, as well as the ministry of road transport and highways for rolling out EV charging

infrastructure on highways, and the ministry of health and family welfare for consultations about e-ambulances, officials said.

The scheme also has a ₹2,000 crore outlay for

fast charging infrastructure to address range anxiety among consumers, according to a ministry of heavy indus-

tries press release from 11 September.

"All charging infrastructure will be standardized," said Kamran Rizvi, secretary in the heavy industries ministry, at the press conference. The scheme proposes the installation of 22,100 fast chargers for electric four-wheelers, 1,800 fast chargers for e-buses and 48,400 fast chargers for electric two- and three-wheelers, as per the ministry.

"There are two components to charging infrastructure—the upstream infrastructure and the interface. We consulted with the industry and found that they have difficulties funding the upstream infrastructure, which includes the power supply. So we decided to subsidize that. We paid 80% of the cost of upstream infrastructure in the previous subsidy schemes, and this time we have promised to fund 100%," a senior government official said on the sidelines of the briefing.

The PM E-drive scheme plugs gaps in previous subsidy schemes such as FAME and the Electric Mobility Promotion Scheme (EMPS), ministry of heavy industries officials said during the press briefing.

The govt has set aside ₹4,391 crore to subsidize the procurement of over 14,000 e-buses in nine cities



Govt may cut fuel prices if crude rates continue to fall: Oil Secretary

Our Bureau
New Delhi

The government is reviewing the recent decline in international crude prices. If the downward rally continues, it will take a decision on reducing the retail prices of auto fuels, Secretary to the Ministry of Petroleum and Natural Gas Pankaj Jain said on

Thursday. Brent crude oil prices fell below \$70 per barrel this week, which is the lowest since December 2021.

Speaking to reporters, Jain said the oil marketing companies (OMCs) will consider a cut in retail prices if international prices of crude oil stay subdued for a longer duration.

“In the last 7-10 days, crude oil prices have come

down. At present, the Ministry is analysing the prices and how long they will stay low. It would not be appropriate to cut (retail prices) by following the developments of just a week. We need time to analyse this trend for a longer duration.”

On the delay in reaching a decision pertaining to production cuts by OPEC+, Jain said a decision would be

taken by December 2024.

He underlined India’s preference for growth in output amid rising demand.

WINDFALL TAX

On windfall tax, the Secretary said, “We are in continuous discussions with the Revenue department, which will take a final call on the calculation mechanism.”

On September 10, the US

EIA (Energy Information Administration) said, “Despite a drop in the Brent crude oil spot price to \$73 per barrel on September 6, we expect ongoing withdrawals from global oil inventories to push prices back above \$80 per barrel this month.”

Amid OPEC+ announcing a delay in its plan to increase production till December, countries may utilise oil

more than what the US EIA anticipated, from the inventories in the fourth quarter of 2024. This increase in production was supposed to start in October.

PL Capital-Prabhudas Lilladher said that the recent global developments, leading to ample supplies amid weaker demand prospects, had pushed Brent oil prices to lows of \$71 per barrel.

Green hydrogen exports: India flags issue of single bidding zone in EU regulations

Rishi Ranjan Kala
New Delhi

Power Secretary Pankaj Agarwal said on Thursday that India had, in August, raised the issue of single bidding zones in the European Union's Renewable Energy Directive (RED II).

The issue relates to the European Union's (EU) RED II which, along with the delegated act (DA), defines a methodology for the source of renewable electricity used for the production of green hydrogen.

INDUSTRY CONCERNS

Speaking at a session during the second day of the International Conference on Green Hydrogen, Agarwal pointed out that Indian industry has been raising a few concerns in the recent past, particularly regarding the delegated legislation following the RED II.

"But the issue of geographic and temporal correlation is something that has been bothering the industry in India. There has also been concern regarding the single bidding zone which our industry has been regularly flagging, and how exactly we can address it."

"Though we have given an adequate explanation to the delegation from the European Commission, which visited a month ago, we are looking forward to further interactions with the officials, the Director General and the team from the European Commission for further clarification," Agarwal said. The issue of additionality probably is more or less accepted, he added.

Additionality means that after a phase-in period, a RE plant cannot be much older than the electrolyser and cannot receive public support unless it is located in a low-carbon bidding zone.



SPATIAL STRUGGLES. The issue of geographic and temporal correlation is bothering the industry in India

Jorgo Chatzimarkakis, CEO of Hydrogen Europe, who represents the European hydrogen industry, explained that hydrogen is only defined 'green' in Europe if the electricity required for the electrolyser is produced in the same hour, which means that electricity from renewables

is produced in the same hour as the electrolyser splits water into hydrogen and oxygen.

SINGLE BIDDING ZONES

Speaking on the issue of single bidding zones, he said Europe has a complex system of bidding zones, which

stipulate that electricity is deemed green only if the electrolyser is in the same bidding zone where the electricity is being generated.

"The same rules apply for imports, including those from India, and this is what we need to stop. This strait-jacket hinders hydrogen production in Europe. It hampers hydrogen production in India which is a key production country for Europe.

"And if I have a wish for Ursula von der Leyen (President of the European Commission) because she said her first 100 days of her office will be devoted to (removing) unnecessary bureaucratic burden to cleantech. This should be a priority, and it would be good, Mr Secretary (Agrawal), if your government humbly hints that this issue is also detrimental to India. She will understand and address it."

Considering India as a

single bidding zone would allow green hydrogen producers to set up manufacturing facilities near ports and source renewable energy (RE) from generators in other parts of the country.

This will lower the production costs of green hydrogen, thereby bringing down import costs to Europe.

Government officials emphasise that India is one of the world's largest synchronous interconnected electricity grids globally with a very low (as low as 0.06 per cent) quantum of electricity not being cleared in power exchanges, which is much lower than the congestion happening in the European grids. The green hydrogen requirement in Europe, which will be importing 10 million tonnes by 2030 besides producing a similar quantity, is being considered as a very good export opportunity for India.



IEA lowers oil demand growth forecast

London: Global oil demand will rise less than anticipated this year, led by weakness in China, the International Energy Agency said, bolstering its view that consumption is heading towards a plateau this decade. REUTERS

'Lower Margins to Hurt Domestic Refiners Not Operating Fuel Pumps'

Oil secy Pankaj Jain says current refining margins unsustainable

Our Bureau

New Delhi: Refining margins on fuels have fallen to unsustainably low levels and will hurt domestic refiners, especially those that do not operate petrol pumps, oil secretary Pankaj Jain said on Thursday.

"Do you think the cracks of zero or one (\$/barrel) on gasoline (petrol) are sustainable? Even the cost of refining is not getting recovered on petrol," Jain told reporters on the sidelines of an industry event. "The entire product market for exports is in complete turmoil."

Crack spreads are the difference between the prices of crude oil and refined products such as petrol and diesel. Globally, a combination of weak fuel de-



PANKAJ JAIN
Oil Secretary



Every refiner is not a marketer. A lot of refiners will

lose money. The refinery which doesn't market fuels has to take a hit

mand and higher refinery runs has sharply pulled down margins on diesel and petrol in recent months. This hit domestic refiners' earnings in the April-June quarter.

On whether declining crude prices — down about 18% since July 4 — would prompt a reduction in pump prices, Jain said oil companies would take that call if they are confident that crude prices would stay low for longer.

Lower refinery margins may be offset by higher marketing margins at domestic refiners such as

IndianOil and Bharat Petroleum, which operate a large network of fuel pumps.

"Every refiner is not a marketer. A lot of refiners will lose money. The refinery which doesn't market fuels has to take a hit," Jain said, referring to standalone refiners such as Mangalore Refinery and Petrochemicals Ltd that do not have a retail network, and so will not have the benefit of wider marketing margins to balance weaker refining margins.

Hindustan Petroleum, another state-run refiner that sells more fuels at pumps than it produces at its refineries, is likely to gain as it can obtain fuels from other refiners at relatively lower prices while selling them to drivers at pump prices that have barely changed in a long time.

Refiners also benefit from falling crude prices, which are down about \$16 per barrel or about 18% since July 4 to \$71 per barrel. Lower crude prices bring down the energy bill at refineries.

S DINAKAR
New Delhi, 12 September

OIL FALL, BITTERSWEET TASTE FOR REFINERS

But plunge in crude levels this week to near three-year lows will come as a relief to a government which is boosting spending on welfare and infra

A sharp fall in global crude benchmarks will reduce costs of fuel, both oil and gas, to Indian consumers if State-run oil companies choose to pass them on. Alternatively, it will help Indian Oil, Bharat Petroleum and Hindustan Petroleum boost profitability at the pump even as the margins from processing crude into fuels decline.

The plunge in crude oil levels to near three-year lows this week at \$70/bbl, a \$20/bbl decline in five months, will also come as a relief to a government which is boosting spending on welfare and infrastructure.

"Low oil prices can help lift the burden on the import bill of India, in line with the budgetary aim to reduce the Centre's fiscal deficit to 5.1 per cent of GDP in FY25 from 5.6 per cent in the previous financial year," said Sourav Mitra, senior practice leader and director consulting, CRISIL Market Intelligence and Analytics.

Crude oil futures dipped to the lowest this week in nearly three years, wiping out all the gains made earlier this year after seasonal demand for crude from China did not materialise as expected. Traders cut their net long position — the difference between bullish and bearish bets — to the lowest level in the week to September 3 since exchanges began compiling such data in 2011, Oilprice.com reported, citing exchanges' data.

US bank Goldman Sachs revised its forecast downward for 2025 by \$5/bbl to an average \$77/bbl, and Morgan Stanley predicted \$75-\$78/bbl, with both expecting that the crude market will be oversupplied and see prices leaning lower over 12 months.

"We have seen crude above \$90/bbl in April and now close to \$70/bbl," said Bhanu Patni, associate director, India Ratings and Research. "To arrest the decline, we could see some production cuts from Opec+ as was done in the past," Patni added.

Opec has already announced postponing withdrawal of the 2.2 million b/d (barrels per day) in voluntary cuts it took to December from October. That could send oil prices snapping out of their recent downturn, pushing from their sub-\$70 levels back into the \$80-\$90/bbl range, UK-based publisher Energy Intelligence reported, citing US EIA



(Energy Information Administration). "We expect prices will stay generally soft through the autumn, averaging \$75-80/bbl in December and lower in 2025," Mitra said. "Oil prices may not be heading higher anytime soon as China's appetite shows signs of slowing and the US economy may face some demand pressures, but robust outlook in some other demand centres, such as India, could provide a floor to the market," Mitra added.

Even a typically bullish Opec this week revised downward its global oil

demand forecast by 80,000 b/d. The US EIA lowered its global oil demand growth outlook for this year and next, seeing Chinese oil demand growing by just 100,000 b/d this year compared to Opec estimates of 559,000 b/d year-on-year (Y-o-Y), on average, in the second half of 2024, reflecting a wide chasm between producer cartel Opec on the one hand, and independent agencies like EIA and Paris-based International Energy Agency on the other.

"Since marginal cost of production is

at \$70/bbl, we don't expect Brent to remain at current levels for long," said Swamendu Bhushan, co-head of Institutional Equities, PL Capital-Prabhudas Lilladher. "We expect Brent to be in \$75-85/bbl in the medium term," Bhushan added.

Pump prices

A change in pump prices is a political decision, something possible because of impending polls in Maharashtra and Haryana, industry officials said.

TRACKING OIL

Indian crude oil basket average (\$/bbl)



Source: Oil Ministry

Moreover, lower fuel rates may bring down overall inflation, prompting the RBI to consider softening interest rates.

But the impact of a price cut at the pump may hurt the overall profitability of OMCs because of lower profits from refining.

The government will monitor the situation for a few days and see how oil prices move, oil secretary Pankaj Jain told reporters on the sidelines of a green hydrogen event in Delhi today. Replying to a question on if fuel prices will be lowered, Jain said that the power to change rates rests with oil marketing companies.

At current oil prices, oil marketing companies (OMCs) would be making ₹12-15/litre as gross marketing margins on petrol/diesel, Bhushan said, adding: "We do anticipate that the government may cut down on retail pump prices."

"GRMs (gross refining margins) have come down from the highs seen in FY24 on account of the fall in crude and product spreads, which is being compensated by the marketing margins for OMCs," Patni said. "There could be some wait-and-watch on retail prices by OMCs, and if low crude levels sustain for a longer period, we could see some price cuts," Patni added.

"All three major OMCs registered a weak first quarter in FY25 due to lower refining margins. Further, the reduction in pump prices also adversely impacted their marketing margins. Now, with crude at the \$70/bbl level, the marketing margins are likely to enhance, especially if there is a lag in pump price cuts," Mitra said.

Changing times

The sharp declines in prices of both the European and US benchmarks matter more for India now than they did a few years back because a large portion of the \$133 billion in crude that India imported last financial year and the \$13.3 billion in

2024 monthly average



LNG imports are pegged to Brent, and some portion of the crude to WTI (West Texas Intermediate).

The ICE November Brent contract, European crude benchmark, declined by nearly 4 per cent to \$69.2/bbl — the first time Brent went below \$70/bbl since December 2021. The decline in Brent is significant because it has become a key benchmark for India in the last three years.

That was not the case in the past. Before Russian oil started dominating India's crude oil basket — after Moscow declared war on Ukraine — Gulf countries led by Iraq, Saudi Arabia and UAE accounted for a major portion of India's crude shipments. These were typically higher sulphur, medium density crudes bought under term contracts, the price of which was linked to the Oman/Dubai benchmark.

But the advent of Russian oil, India's biggest crude source, accounting for over 40 per cent of its imports, changed the pricing. Urals and other lighter crudes are typically linked to Brent oil and purchased on spot basis. So, the Brent benchmark is important for India. Also, some of India's term LNG contracts and some spot volumes are linked to Brent. US sweet crude purchases, which accounted for 4 per cent of India's crude purchases last month, is linked to WTI.



Oil prices fall: Petrol, diesel price cut if decline sustains, say industry sources

NEW DELHI, Sept 12: Price of international crude oil – the raw material for making petrol and diesel – dropped to a three-year low before marginally recovering but a revision in domestic petrol and diesel rates is likely only if lower rates are sustained, industry sources and officials said.

Global oil benchmark

Brent crude futures fell below USD 70 per barrel on Tuesday – the first time since December 2021 – but gained thereafter after Hurricane Francine hit crude supply in the Gulf of Mexico. Brent rose above USD 71 a barrel on Thursday while West Texas Intermediate advanced to trade near USD 68.

Petrol and diesel prices –

which have been on a freeze for over two years now barring a pre-election reduction earlier this year – will be revised if the declining trend sustains, they said.

Oil Secretary Pankaj Jain speaking to reporters on the sidelines of an event here, said the oil companies will be taking appropriate decisions on reducing fuel prices

if international oil prices were to settle lower on a sustained basis.

Industry sources said the three state-owned fuel retailers are making good profits on petrol and diesel but want the trend to continue before deciding on a revision.

“They don’t want a situation where they cut prices

and are faced with a situation where international prices rise,” an official explained.

Brokerage Emkay Global Financial Services in a note said it expects Indian Oil Corporation (IOC), Bharat Petroleum Corporation Ltd (BPCL) and Hindustan Petroleum Corporation Ltd (HPCL) to cut petrol and diesel prices before elections in

Maharashtra.

“We believe there are expectations of a retail price cut in auto-fuels for oil marketing companies (OMCs) amid the upcoming State elections. While we do not rule out the same, the model code of conduct for J&K and Haryana is on for a month. There could be a cut only toward Diwali and before

Maharashtra election’s Model Code of Conduct, which could be Rs 2 per litre each for petrol and diesel and possibly coupled with an equivalent increase in excise duty,” it said.

However, during the next month, OMCs can earn super-normal marketing margins, covering LPG under-recoveries and inventory

losses to a large extent.

“We estimate implied July-September gross marketing margins at Rs 9.7/8 per litre for petrol/diesel vs Rs 4.7/3.8 in Q1 (April-June) and a normative range of Rs 3.5-4 each,” it said.

India imports 85 per cent of its oil needs and its fuel pricing is indexed to international rates. – PTI

OilMin in talks with FinMin over windfall tax review

Secy says petrol, diesel prices may be cut if crude prices remain low

SUBHAYAN CHAKRABORTY

New Delhi, 12 September

The Ministry of Petroleum and Natural Gas is currently in discussions with the finance ministry for a review of the windfall tax, Petroleum Secretary Pankaj Jain said on Thursday. He also said that oil marketing companies (OMCs) would consider a cut in pump prices of petrol and diesel if global crude oil rates remain low for an extended period.

Classified as Special Additional Excise Duty (SAED), windfall tax is levied on domestically produced crude oil, and export of diesel, petrol, and aviation turbine fuel (ATF). The tax rates are reviewed every fortnight based on average oil prices in the previous two weeks. As on August 30, the windfall tax on domestically produced crude oil was reduced to ₹1,850 per tonne, from ₹2,100 per tonne earlier. The tax has climbed down from ₹7,000 per tonne in July-end. The windfall tax on diesel and aviation turbine fuel exports remains unchanged at zero.

Speaking on the sidelines of the International Conference on Green Hydrogen, Jain said the recent fall in global crude prices has necessitated the review of the windfall tax, in order to provide relief to OMCs. "There is a calculation mechanism for that... We are in continuous discussions with the revenue department, which will take a final call," he said. Jain expects "no windfall tax" on refined fuels in the short term if product cracks stay low.

On retail fuel prices, Jain said the ministry is analysing the fall in global prices, and studying for how long it may remain low. "It would not be appropriate to cut (retail prices) by following the developments in just a week. We need time to analyse this trend for a longer duration," Jain said.

Global crude prices have fallen every month since April, when it had breached the \$90 per barrel (bbl) level. Earlier this week, benchmark Brent crude futures prices fell to a 33-month low of \$69/bbl over weak demand and concerns of oversupply.



Global prices may be impacted in the short term as Opec is set to take a call on the ongoing 2.2 million barrels per day (b/d) production cuts by member nations in December. Another set of cuts totalling 1.65 million b/d announced in April 2023 has been extended until the end of 2025.

► OIL FALL, BITTERSWEET TASTE FOR REFINERS P17

Petroleum Secretary Pankaj Jain said the recent fall in global crude prices has necessitated the review of the windfall tax

'OMCs may cut prices if crude stays low for long'

Rituraj Baruah

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NEW DELHI

State-run oil marketing companies (OMCs) may consider reducing petrol and diesel prices if international crude prices stay low for an extended period, said Pankaj Jain, secretary in the Union ministry of petroleum and natural gas.

Oil firms and the government would analyse the price trend for a longer duration, he said on the sidelines of the International Conference on Green Hydrogen on Thursday.

Brent has been below \$75 a barrel for over a week now. The November contract of Brent on the Intercontinental Exchange was trading at \$71.81 per barrel, 1.70% higher than the previous close. Earlier this month, global oil prices fell to three-year low levels amid demand concerns.

The decline in oil prices is expected to improve the profitability of OMCs, which would be expected to pass on the benefit to consumers through a price cut. International oil prices are key for India as the country imports about 85% of its total energy requirement.

Petrol and diesel prices were last revised ahead of the general election in March when they became cheaper by ₹2 per litre after a nearly two-year-long hiatus.

To read an extended version of this story, go to livemint.com.

Petrol price cut likely if low crude rate sustains

PRESS TRUST OF INDIA
New Delhi, September 12

AREVISION IN domestic petrol and diesel prices is likely only if lower crude oil rates are sustained, industry sources and officials said.

Global oil benchmark Brent crude futures fell below \$70 per barrel on Tuesday — the first time since December 2021 — but gained thereafter after Hurricane Francine hit crude supply in the Gulf of Mexico. Brent rose above \$71 a barrel on Thursday while West Texas Intermediate advanced to trade near \$68.

Petrol and diesel prices — which have been on a freeze for over two years now barring a pre-election reduction earlier this year — will be revised if the declining trend sustains, they said.

Oil secretary Pankaj Jain, speaking to reporters on the sidelines of an event here, said the oil companies will be taking appropriate decisions on reducing fuel prices if international oil prices were to settle lower on a sustained basis.

Industry sources said the three state-owned fuel retailers are mak-

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MINISTRY OF PETROLEUM**

OIL COMPANIES WILL BE TAKING APPROPRIATE DECISIONS ON REDUCING FUEL PRICES IF INTERNATIONAL OIL PRICES WERE TO SETTLE LOWER ON A SUSTAINED BASIS

ing good profits on petrol and diesel but want the trend to continue before deciding on a revision.

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Brokerage Emkay Global Financial Services in a note said it expects Indian Oil Corporation, Bharat Petroleum Corporation and Hindustan Petroleum Corporation to cut petrol and diesel prices before elections in Maharashtra. India imports 85% of its oil needs.



Rlys plans field trials of hydrogen train by Jan

Abhishek Law

New Delhi

The Railways plans to conduct field trials of the country's first hydrogen fuelled train by January 2025. The first prototype of the train is expected by December and "field trials of the same would begin a month later", senior officials told *businessline*.

Some existing diesel locomotives will be retrofitted in the first phase. Contracts have been awarded to convert a 1,200 KW DEMU (diesel electric multiple unit) into a hydrogen fuel cell-based DPRS (distributed power rolling stock).

Typically, hydrogen-powered trains convert hydrogen into electric energy in fuel cells. In comparison to diesel locomotives, hydrogen trains have the advantage of being emission-free at the point of use.

According to a senior official, the Railways "envisages manufacturing a train set with a fuel cell-based propulsion system to provide traction energy from hydrogen fuel cell".

"If successful, 35 train-set rakes (of six cars each) are being proposed. Eight-odd sections are being looked at for introduction of these trains," the official said.

PILOT PROJECT

Another official said a pilot project for the development of a hydrogen fuel cell and associated ground infrastructure — that includes a system integration unit, battery and two-unit fuel synchronisation tests — have been



"successfully done".

A design by global major Shell has also been approved and hydrogen plant (designs) have been approved by PESO (Petroleum and Explosives Safety Organisation). Onboard hydrogen safety approval is being carried out.

TÜV-SÜD, among the select agencies globally which carry out such certification processes, has been roped in. "TÜV SÜD is the third-party safety auditor for the project," the official said.

With hydrogen as a source of rolling stock, the Railways would move towards being a net zero carbon emitter by 2030, the official said.

GLOBAL EXAMPLES

In 2021, European major Alstom introduced the Coradia iLint, claiming it was the world's first hydrogen fuel cell passenger train. Its prototype was presented to local stakeholders.

Coradia iLint was among the first to operate hydrails, transporting passengers in North America. It carried more than 10,000 passengers in a demonstration project in Quebec on the Réseau Charlevoix rail network along the Saint-Lawrence River.

Singapore's AG&P in Talks to Buy H-Energy's LNG Terminal

Deal to help AG&P use terminal to source LNG and expand city gas distribution biz

Kalpana Pathak

Mumbai: Singapore-headquartered Atlantic, Gulf & Pacific Company (AG&P) is in talks with Darshan Hiranandani's H-Energy to acquire the latter's liquefied natural gas (LNG) terminal in Jaigarh, Maharashtra, said two people aware of the development.

The deal would be significant for AG&P as it plans to use the terminal to source LNG in the country and expand its city gas distribution business. Darshan Hiranandani declined to comment on the matter.

ET's queries emailed to AG&P did not elicit a response till press time.

"The deal is likely to close in a few weeks. AG&P has been looking for an LNG terminal in the country to import LNG for its city gas distribution operations. Jaigarh terminal is the right fit," said an industry executive, who did not wish to be identified. HE Terminals, a group company of H-Energy, has set up an LNG regasification project at Jaigarh through its subsidiary Western Concessions.

It had plans to build two LNG terminals in the country at a cost of \$3 billion—one in Jaigarh and the se-

Wider Footprint

H-Energy formerly known as **Salus Developers**



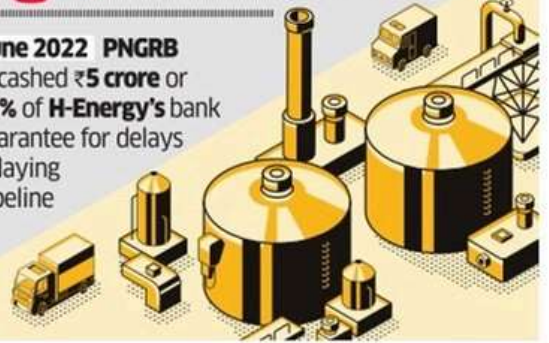
It primarily engaged in business of investing in securities of cos

Mar 2016 HEPL awarded authorisation for laying **Jaigarh-to-Mangalore** natural gas pipeline of **635 km**

Pipeline was to be completed by **June 2019**



June 2022 PNGRB encashed **₹5 crore** or **25%** of **H-Energy's** bank guarantee for delays in laying pipeline



VIJAY P

cond, a floating LNG import terminal off Haldia, West Bengal.

In March 2016, it was awarded authorisation for laying, building, operating or expanding the Jaigarh-Panjim-Karwar Udupi-Mangalore natural gas pipeline spanning 635 kilometres. The total estimated cost of the pipeline project was ₹2.4 crore. However, till 2021, only 10% of the pipeline was complete.

The Petroleum and Natural Gas Regulatory Board, in June last year, encashed ₹5 crore or 25% of H-Energy's bank guarantee for delays in laying a pipeline from Jaigarh to Mangalore. The pipeline was to be completed by June 2019. H-Energy's appeal against the oil sector regulator's order is pending.

According to HE Terminal's consolidated financial statements for the April 2022-March 2023 period filed with the Registrar of Companies, it made losses after tax of ₹360

crore and has accumulated losses of ₹649 crore.

"AG&P plans to complete the pipeline and connect it to the national gas grid to transport gas to its city gas distribution geographies across the country," said another person aware of the development.

City gas distribution (CGD) refers to the transportation or distribution of natural gas to consumers in domestic, commercial, industrial and transport sectors through a network of pipelines.

ET reported in March that global infrastructure investor I-Squared Capital-backed CGD companies in India—AG&P Pratham and Think Gas Distribution—merged to create an over \$1.1 billion entity. In the merged entity, I-Squared Capital holds more than 60% stake while AG&P holds up to 15% and an Osaka Gas and Sumitomo-led consortium holds 25%.



World oil demand growth is slowest since pandemic: IEA

Global oil demand growth is “slowing sharply” as China’s economy cools, pushing prices to a three-year low, the International Energy Agency said. World consumption increased by 800,000 barrels a day in the first half of the year, barely a third of the expansion in the same period of 2023, the adviser to major economies said in a monthly report. It’s the lowest rate since oil demand crashed during the 2020 pandemic. “Chinese economic growth is slowing down, and the penetration of the transportation system by electric cars is going at a very strong pace,” Fatih Birol, the agency’s executive director, said in an interview from Paris. Oil prices slumped below \$70 a barrel in London on Wednesday for the first time since late 2021 on concern over data from both China and the US, the world’s top two oil consumers. A major disruption to Libyan output and prolonged supply curbs by the OPEC+ alliance have done little to arrest the slide. **BLOOMBERG**

अगर लंबे समय तक अंतरराष्ट्रीय बाजार में कच्चे तेल के दाम नरम बने रहते हैं, तो भारत की ऑइल मार्केटिंग कंपनियां पेट्रोल-डीजल सस्ता करने पर फैसला कर सकती हैं। - पंकज जैन, पेट्रोलियम सचिव (गुरुवार को टीवी चैनल से)

राहत की आस • सरकार की तरफ से पहली टिप्पणी से पेट्रोल-डीजल सस्ते होने की उम्मीद

कच्चा तेल 21% सस्ता, लेकिन छह माह से नहीं घटे पेट्रोल-डीजल के दाम

भास्कर न्यूज़ | मुंबई

पेट्रोल 10 और डीजल 6 से 8 रुपए सस्ता करने की गुंजाइश

कच्चे तेल के दामों में लगातार कमी के बीच पेट्रोलियम सेक्रेटरी पंकज जैन ने गुरुवार को संकेत दिया है कि लंबे समय तक अंतरराष्ट्रीय बाजार में कच्चे तेल के दाम नरम बने रहते हैं, तो ऑइल मार्केटिंग कंपनियां पेट्रोल-डीजल सस्ता कर सकती हैं।

सरकार की तरफ से पहली टिप्पणी ऐसे समय आई है, जब कच्चे तेल के दाम तीन साल के निचले स्तर पर हैं और संभावना है कि सरकार डीजल-पेट्रोल के दामों में फिर कटौती कर सकती है। आखिरी बार लोकसभा चुनाव से पहले 15 मार्च 2024 को पेट्रोल-डीजल के दाम 2-2 रुपए प्रति लीटर कम किए गए थे। अब कच्चा तेल भी सस्ता हुआ है और हरियाणा-जम्मू-कश्मीर में विधानसभा चुनाव भी हैं। इसके बाद महाराष्ट्र में विधानसभा चुनाव होने हैं। ऐसे में उम्मीद है कि चुनाव से पहले दाम घटाए जा सकते हैं।

पेट्रोलियम मंत्रालय के ही पेट्रोलियम प्लानिंग एंड एनालिसिस सेल (पीपीएसी) के डेटा की मानें तो छह महीने में इंडियन बास्केट में कच्चे तेल के दाम 20.61% नीचे आए हैं। अप्रैल में यह 89.44 डॉलर/बैरल थे, जो अब घटकर 71 डॉलर प्रति बैरल रह गए हैं। इसके विपरीत 30 महीने में पेट्रोल-डीजल के दाम 2 बार ही घटे हैं।

तेल कंपनियों ने हर लीटर की रिफाइनिंग पर 6.50 रु. कमाए

तेल कंपनियों ने रिफाइनरी मार्जिन से जोरदार कमाई की है। केयर रेटिंग्स की मानें तो 2022-23 में कंपनियों ने एक बैरल तेल की रिफाइनरी पर 18 डॉलर (9.57 रु./लीटर) कमाई की। 2023-24 में यह रिफाइनरी मार्जिन प्रति लीटर 6.50 रु./लीटर रहा। कंपनियां इस साल भी मार्जिन से खासा मुनाफा बनाने वाली हैं।

तेल कंपनियां आधे मार्जिन का लाभ भी दे तो राहत मिले

जानकार कहते हैं छह माह के आधे मार्जिन का लाभ तेल कंपनियां दें तो पेट्रोल 10 रुपए, डीजल 6 से 8 रुपए लीटर सस्ता करने की गुंजाइश है। केयर रेटिंग्स के अनुसार वित्त वर्ष 2023-24 में 26.15 करोड़ टन कच्चे तेल की रिफाइनिंग की गई। यह 10-12 डॉलर/बैरल यानी 6.5 रु./लीटर के मुनाफे पर की गई थी।

पिछले छह माह में इंडियन बास्केट में कच्चा तेल

सितंबर	71.00
अगस्त	78.27
जुलाई	84.15
जून	84.15
मई	83.62
अप्रैल	89.44

(दाम डॉलर/बैरल)



33.58 करोड़ को फायदा

देश में 27 करोड़ टू-व्हीलर, 58 लाख भारी वाहन, 6 करोड़ निजी वाहन हैं। कटौती का सीधा फायदा इतने लोगों को होगा। मालभाड़ा कम होने से चीजों के दाम घटेंगे।

• दीपावली और चुनावी गिफ्ट : पेट्रोल-डीजल में पिछली कटौती मार्च 2024 में होली पर हुई थी। उसके बाद ही लोकसभा चुनाव हुए। अभी फिर त्योहारी सीजन शुरू हो चुका है। इसी महीने चुनाव भी हैं। अगले महीने दीपावली है। दाम घटते हैं, तो यह दीपावली और चुनावी गिफ्ट होगा।

कच्चा तेल सुस्त रहने पर पेट्रोल-डीजल सस्ते होंगे

नई दिल्ली, एजेसी। कच्चे तेल की अंतरराष्ट्रीय कीमतें मामूली रूप से सुधरने से पहले तीन साल के निचले स्तर पर आ गईं लेकिन घरेलू स्तर पर पेट्रोल और डीजल की कीमतों में कटौती तभी संभव है जब कच्चा तेल निचले स्तर पर बना रहे।

पेट्रोलियम सचिव पंकज जैन ने कहा कि यदि अंतरराष्ट्रीय तेल की कीमतें निरंतर कम होती हैं तो पेट्रोलियम कंपनियां ईंधन की

कीमतों को कम करने के बारे में उचित निर्णय लेंगी।

वैश्विक तेल मानक ब्रेंट क्रूड वायदा मंगलवार को 70 डॉलर प्रति बैरल से नीचे आ गया था। दिसंबर, 2021 के बाद पहली बार ऐसा हुआ। लेकिन फ्रैंकाइन तूफान आने से कच्चे तेल की आपूर्ति प्रभावित होने से कच्चा तेल फिर से चढ़ गया। गुरुवार को ब्रेंट क्रूड 71 डॉलर प्रति बैरल से ऊपर रहा।

कच्चे तेल की वैश्विक कीमतें घटने से घरेलू बाजार में सस्ते हो सकते हैं पेट्रोल व डीजल

नई दिल्ली। कच्चे तेल की कीमतों में भारी गिरावट आ रही है। इससे देश में भी पेट्रोल और डीजल सस्ते होने की उम्मीद बढ़ गई है। पेट्रोलियम और प्राकृतिक गैस मंत्रालय के सचिव पंकज जैन ने कहा, कच्चे तेल की कीमत लंबे समय तक कम रहती है तो तेल कंपनियां ईंधन की कीमतें कम करने पर विचार करेंगी। कई राज्यों में पेट्रोल 100 रुपये प्रति लीटर और डीजल की कीमतें 90 रुपये प्रति लीटर पर बनी हुई हैं।

एक माह में कच्चा तेल 14 फीसदी घटकर 70 डॉलर प्रति बैरल से नीचे



पहुंच गया है। इस गिरावट से भारत को सर्वाधिक फायदा होगा, क्योंकि सबसे बड़ा आयातक है। अमेरिका और चीन में मंदी की चिंता के कारण तेल के दाम घट रहे हैं। विश्लेषकों का मानना है कि तेल के दाम घटने से पेट, तेल वितरण कंपनियों व एयरलाइंस क्षेत्र को अधिक फायदा होगा। एजेंसी

चुनाव से पहले दो रुपये घटे थे दाम

दो साल पहले कच्चे तेल का दाम 90 से 100 डॉलर के बीच था। अब यह 70 डॉलर प्रति बैरल से भी नीचे आ गया है। कच्चे तेल के दाम में गिरावट के बावजूद घरेलू बाजार में ग्राहकों को कोई फायदा नहीं हो रहा है। तेल कंपनियों ने 18 माह में पहली बार इस साल आम चुनाव से ठीक पहले पेट्रोल व डीजल के दाम में दो रुपये प्रति लीटर कटौती की थी।



तुर्कमेनिस्तान से सीधे भारत में आएगी गैस, तापी पाइपलाइन का काम शुरू

काबुल| अफगानिस्तान ने लंबे वक़्त से लटके तापी गैस पाइपलाइन पर काम शुरू कर दिया है। 10 अरब डॉलर के इस प्रोजेक्ट के तहत तुर्कमेनिस्तान से गैस की एक पाइपलाइन अफगानिस्तान से होते हुए पाकिस्तान और फिर भारत में आएगी। तापी का पूरा नाम तुर्कमेनिस्तान, अफगानिस्तान, पाकिस्तान, इंडिया गैस पाइपलाइन है। इसके जरिए तुर्कमेनिस्तान के गल्किनीश गैस क्षेत्र से दक्षिण एशिया तक प्राकृतिक गैस पहुंचेगा।

दिसंबर तक महारत्न होगी एचएएल!

हर्ष कुमार
नई दिल्ली, 12 सितंबर

सरकारी कंपनी हिंदुस्तान एरोनॉटिक्स लिमिटेड (एचएएल) को इस साल के अंत तक महारत्न कंपनी का दर्जा मिल सकता है। एचएएल इस समय नवरत्न कंपनी में शामिल है।

इससे एचएएल के बोर्ड के परिचालन संबंधी और वित्तीय स्वायत्तता में वृद्धि हो जाएगी और कंपनी सरकार की अनुमति के बगैर 5,000 करोड़ रुपये तक की परियोजनाओं में निवेश कर सकेगी।

वहीं नवरत्न कंपनी को सिर्फ 1000 करोड़ रुपये तक स्वायत्त रूप से परियोजना में निवेश की

■ एचएएल के बोर्ड के परिचालन संबंधी और वित्तीय स्वायत्तता में वृद्धि हो जाएगी और कंपनी सरकार की अनुमति के बगैर 5,000 करोड़ रुपये तक की परियोजनाओं में निवेश कर सकेगी

अनुमति है। एक वरिष्ठ अधिकारी ने नाम न सार्वजनिक किए जाने की शर्त पर कहा, 'एचएएल को अपग्रेड करके नवरत्न का दर्जा दिए जाने की अपार संभावना है। शीर्ष समिति (सचिवों के समूह) ने इसके लिए सभी औपचारिकताएं पूरी कर ली हैं। यह करीब अंतिम दौर में है और हम उम्मीद कर रहे हैं कि इस साल के अंत तक ऐसा कर दिया जाएगा।' प्रधानमंत्री नरेंद्र मोदी की

■ शीर्ष समिति (सचिवों के समूह) ने इसके लिए सभी औपचारिकताएं पूरी कर ली हैं, यह करीब अंतिम दौर में है और उम्मीद है कि इसे साल के अंत तक ऐसा कर दिया जाएगा

आत्मनिर्भर भारत योजना में एचएएल ने उल्लेखनीय रूप से ध्यान खींचा है। इसकी वजह है कि कंपनी को रक्षा व विनिर्माण के व्यापक ठेके मिले हैं।

मई में आम चुनाव के पहले प्रधानमंत्री नरेंद्र मोदी ने एचएएल के प्रदर्शन की सराहना की थी, जब इसे चौथी तिमाही में रिकॉर्ड 4,000 करोड़ रुपये मुनाफा कमाया था। इस समय देश में सीपीएसई में 13

महारत्न कंपनियां (सीपीएसई) और 25 नवरत्न कंपनियां हैं। अगस्त 2023 में वित्त मंत्रालय ने ऑयल इंडिया को नवरत्न से महारत्न कंपनी की श्रेणी में डाल दिया है। अधिकारी ने यह भी कहा कि सरकार रत्न के श्रेणीकरण के मानदंडों की समीक्षा करेगी। सरकार प्रदर्शन खराब होने पर कंपनी को डाउनग्रेड करने का विकल्प भी पेश कर सकती है। पिछले महीने वित्त मंत्री निर्मला सीतारमण ने 4 सीपीएसई को अपग्रेड करने को मंजूरी दे दी थी। इसमें रेलटेल कॉर्पोरेशन आफ इंडिया, सोलर एनर्जी कॉर्पोरेशन ऑफ इंडिया, सतलज जल विद्युत निगम और नैशनल हाइड्रोइलेक्ट्रिक पॉवर कॉर्पोरेशन शामिल हैं।



बायोडीजल पंपों की डीलरशिप दे रही भारतीय ऑयल कंपनी

नई दिल्ली (वि)। भारतीय ऑयल कंपनी मुख्य रूप से उत्तर प्रदेश, बिहार, पंजाब और हरियाणा में बायोडीजल पंपों की डीलरशिप प्रदान कर रही है। कंपनी में उपभोक्ताओं को 10 से अधिक वर्षों के अनुभव वाले उद्योग विशेषज्ञों से परामर्श और सहायता मिलती है। कंपनी के अनुसार कागजी कार्रवाई, प्राधिकरण से मंजूरी और संबंधित विभागों से अनुमोदन के लिए भारतीय ऑयल कंपनी वन स्टॉप समाधान प्रदान करती है। इसके अलावा पंप के चालू होने के बाद ईंधन की निरंतर आपूर्ति का ध्यान रखती है, ताकि संचालन में कोई बाधा न हो। कंपनी अपने डीलरों के साथ मिलकर काम करती है।

भारत में हरित हाइड्रोजन क्रांति

आरिफ आगा

(लेखक स्मर एनर्जी इंडिया के निदेशक हैं)



दुनिया जलवायु परिवर्तन के भयानक परिणामों से जूझ रही है और टिकाऊ और स्वच्छ ऊर्जा स्रोतों की तलाश कर रही है। ग्रीन हाइड्रोजन, अक्षय ऊर्जा का उपयोग करके उत्पादित एक शक्तिशाली वैकल्पिक ईंधन, एक व्यवहार्य विकल्प के रूप में उभरा है।

अब, भारत में, ग्रीन हाइड्रोजन क्रांति गति पकड़ रही है, जिसमें सरकार, निजी क्षेत्र और स्टार्ट-अप देश को इस परिवर्तनकारी तकनीक में वैश्विक नेता के रूप में स्थापित करने में महत्वपूर्ण भूमिका निभा रहे हैं। हाल के वर्षों में, सौर और पवन जैसे नवीकरणीय ऊर्जा स्रोतों द्वारा संचालित इलेक्ट्रोलिसिस के माध्यम से उत्पादित ग्रीन हाइड्रोजन ने महत्वपूर्ण ध्यान आकर्षित किया है।

2006 में पेश किए गए राष्ट्रीय हाइड्रोजन ऊर्जा रोडमैप ने भारत में हाइड्रोजन की क्षमता का पता लगाने के लिए सरकार द्वारा पहला औपचारिक प्रयास किया। तब से, तकनीकी प्रगति और अक्षय ऊर्जा के प्रति बढ़ती प्रतिबद्धता ने ग्रीन हाइड्रोजन क्रांति के लिए एक ठोस आधार तैयार किया है। भारत जीवाश्म ईंधन पर अपनी भारी निर्भरता और भारी कार्बन उत्सर्जन के कारण अपनी ऊर्जा प्रणालियों को डीकार्बोनाइज़ करने के लिए भारी दबाव का सामना कर रहा है। ग्रीन हाइड्रोजन एक बहुमुखी ऊर्जा वाहक के रूप में काम कर सकता है, जिसका उपयोग औद्योगिक प्रक्रियाओं और परिवहन से लेकर बिजली उत्पादन और भंडारण तक में किया जा सकता है। ग्रे या ब्लू हाइड्रोजन के विपरीत, जो जीवाश्म ईंधन से उत्पादित होता है और इसमें कार्बन उत्सर्जन होता है।

ग्रीन हाइड्रोजन पूरी तरह से स्वच्छ है, इस प्रकार वैश्विक स्थिरता लक्ष्यों के साथ संरेखित है। भारत के विशाल नवीकरणीय ऊर्जा संसाधन, विशेष रूप से सौर और पवन, इसे बड़े पैमाने पर ग्रीन हाइड्रोजन उत्पादन के लिए एक आदर्श स्थान बनाते हैं। अंतर्राष्ट्रीय ऊर्जा एजेंसी ने नोट किया है कि भारत की नवीकरणीय ऊर्जा क्षमता



ग्रीन हाइड्रोजन उत्पादन के लिए आवश्यक कम लागत वाली बिजली प्रदान कर सकती है, जो संभावित रूप से इसे दुनिया के सबसे अधिक लागत प्रभावी उत्पादकों में से एक बना सकती है। ग्रीन हाइड्रोजन के रणनीतिक महत्व को पहचानते हुए, केंद्र सरकार ने इसके विकास और अपनाने को बढ़ावा देने के लिए कई नीतिगत उपायों को लागू किया है। देश को ग्रीन हाइड्रोजन उत्पादन और निर्यात का वैश्विक केंद्र बनाने के लिए, भारत सरकार ने 2021 में अपना

महत्वाकांक्षी राष्ट्रीय हाइड्रोजन मिशन शुरू किया। मिशन विभिन्न क्षेत्रों में मांग पैदा करने, आपूर्ति श्रृंखला लचीलापन सुनिश्चित करने और हाइड्रोजन प्रौद्योगिकियों में अनुसंधान और विकास का समर्थन करने पर केंद्रित है। प्रमुख नीतिगत प्रोत्साहनों में पायलट परियोजनाओं के लिए सब्सिडी और वित्तीय सहायता, हाइड्रोजन हब का विकास और उद्योगों के लिए अपने संचालन में हरित हाइड्रोजन का उपयोग करने के लिए अनिवार्यताएँ शामिल हैं। इस सक्रिय

दृष्टिकोण ने अब सकारात्मक परिणाम देने शुरू कर दिए हैं। हालांकि, रिफाइनिंग, उर्वरक और परिवहन सहित कई क्षेत्रों में ईंधन के रूप में हाइड्रोजन के उपयोग को सुविधाजनक बनाने के लिए एक मजबूत नियामक ढांचा बनाने की आवश्यकता है। कॉप26 शिखर सम्मेलन में घोषित 2070 तक शुद्ध-शून्य कार्बन उत्सर्जन प्राप्त करने के लिए भारत की प्रतिबद्धता। स्टील, सीमेंट और पेट्रोकेमिकल्स जैसे कठिन-से-कम करने वाले क्षेत्रों को डीकार्बोनाइज़ करके इस यात्रा में हरित हाइड्रोजन की महत्वपूर्ण भूमिका निभाने की उम्मीद है। हरित हाइड्रोजन में परिवर्तन से आयातित जीवाश्म ईंधन पर भारत की निर्भरता भी कम हो सकती है, ऊर्जा सुरक्षा में वृद्धि हो सकती है और एक महत्वपूर्ण आर्थिक बढ़ावा मिल सकता है।

भारतीय समूह और बड़े निजी व्यवसाय हरित हाइड्रोजन की क्षमता को पहचानने में तेज़ रहे हैं और इस क्षेत्र में पर्याप्त निवेश कर रहे हैं। हाइड्रोजन उत्पादन इकाइयां स्थापित करने और परिवहन में हाइड्रोजन ईंधन कोशिकाओं को एकीकृत करने के लिए निवेश किया जा रहा है। ऊर्जा क्षेत्र में स्टार्ट-अप इलेक्ट्रोलाइजर विकसित करने और उन्हें तैनात करने, मजबूत

हाइड्रोजन भंडारण समाधान बनाने और हाइड्रोजन ईंधन सेल तकनीक के साथ परिवहन क्षेत्र में नवाचार करने पर भी ध्यान केंद्रित कर रहे हैं।

भारत में वैश्विक सर्वोत्तम प्रथाओं को लाने और हरित हाइड्रोजन क्रांति को गति देने में अंतर्राष्ट्रीय सहयोग महत्वपूर्ण होगा। भारत ने जर्मनी, जापान, ऑस्ट्रेलिया और यूरोपीय संघ के साथ सक्रिय रूप से सहयोग करने, संयुक्त उद्यम विकसित करने, प्रौद्योगिकी साझा करने और क्षमता निर्माण के लिए साझेदारी बनाने की मांग की है।

भारत में हरित हाइड्रोजन क्रांति देश के ऊर्जा परिदृश्य को बदलने और एक स्थायी भविष्य की ओर वैश्विक परिवर्तन का नेतृत्व करने का एक अनूठा अवसर प्रस्तुत करती है। मजबूत सरकारी समर्थन, निजी क्षेत्र के सक्रिय प्रयासों और स्टार्ट-अप से गतिशील नवाचार के साथ, भारत एक हरित हाइड्रोजन पावर हाउस बनने की यात्रा पर निकल पड़ा है। शुद्ध-शून्य उत्सर्जन के लक्ष्य को प्राप्त करने के लिए, हरित हाइड्रोजन भारत के ऊर्जा भविष्य को आकार देने और वैश्विक स्थिरता प्रयासों को आगे बढ़ाने में महत्वपूर्ण भूमिका निभाएगा।