

Ajay Shankar

The National Green Hydrogen Mission is highly ambitious. The goal is 'to make India the Global Hub for production, usage and export of Green Hydrogen' and 'to assume technology and market leadership'. The production of 5 million tonnes of green hydrogen for domestic use is the goal. Green hydrogen is a potential substitute for fossil fuels and can be used for transport (cars, trucks, trains, ships and aircraft), for production of ammonia, fertilisers, chemicals and steel, and for generating electricity. A beginning in each of these is envisaged.

The cost of green hydrogen is considerably higher than that of the fossil fuel it can replace. Further, downstream uses are at different stages of development in the world. While the construction of a pilot plant for making green steel can be taken up now, work on powering planes with green hydrogen is just starting on the drawing board. Governments in the advanced industrial economies are putting in money for the development of a green hydrogen economy which can make the transition to net zero feasible. At the same time this would also help their firms gain competitive advantage. India has joined the advanced economies in attempting this.

As the production of green hydrogen begins, ensuring that demand for downstream uses is created to match production would be essential. In comparison to designing a PLI (Production Linked Incentive) Scheme for a mature product in an existing market, such as mobile phones, the task here is more complicated as domestic demand for green hydrogen must be created.

THE OPTIONS

How to do so while minimising the need for budgetary support? Can other instruments be devised for the same outcomes? One way would be to go in for competitive procurement, create a competitive industry structure so that movement down the cost curve is accelerated through successive bids enabling India to also get the full benefit of the global decline in prices that is likely. This approach gave us exceptionally good results in the National Solar Mission when the price of solar power was initially about four times the price of thermal power and has now become clearly much cheaper.

For the Hydrogen Mission, the minimum size of plants for least cost production would need to be determined for the production of green hydrogen and its downstream uses at the outset. To illustrate, the minimum size of a new fertiliser plant, a green ammonia manufacturing unit, and a green hydrogen producing plant may be determined. Then working backwards

from the fertiliser plant, supply and demand of green ammonia and green hydrogen would have to be matched for the supply chain.

Competitive bids may be invited to get the least cost of production of green hydrogen. With this green hydrogen cost, the price of green ammonia may be competitively determined. This input price would then become the basis for inviting bids for production of green fertiliser.

Subsidy from the Budget for each tonne of green fertiliser produced may then be given to bridge the gap between the market determined price of green fertiliser and the price fixed by government for sale to farmers. This subsidy would naturally be far higher than the subsidy being given per tonne for normal fertiliser production. No subsidy would, however, be needed for the intermediate stages.

Similarly, government could enter

A Budget subsidy for each tonne of green fertiliser produced can be given to bridge the gap between the market price of green fertiliser and the government-fixed sale price for farmers.

Hydrogen Mission needs solid implementation

ECO PUSH. For creating demand for green hydrogen, a combination of competitive procurement and subsidy is needed



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into a long-term procurement contract for the entire production of a green steel plant. As this would be one of the first green steel plants in the world, our major steel producers should be persuaded to form a consortium and set up the plant so that they all learn the new technology. The purchase price would then have to be on a cost plus basis. It would also be necessary to accept at the outset that cost and time overruns could occur.

This more expensive steel may be used by government in all its own construction projects as well as of its agencies. The impact on the final cost per square meter would be marginal and could be easily absorbed by the budgets of the construction projects. No direct subsidy would be needed.

For shipping, the supply chain up to green ammonia would be the same as for fertiliser production. Competitive procurement of green shipping services from a reasonable future date could be done through a long-term contract indicating the price at which green ammonia would be supplied. This would completely de risk the investment in building a cargo ship that would use green ammonia. The higher cost of the shipping service can easily be absorbed by the Indian user as freight costs are a fairly small portion of his total cost. In this case again, subsidy would not be needed.

For the market-based competitive

chemical, pharma and other industries, use of green hydrogen could be promoted by making its cost comparable to the fuel it would substitute and this could be done by a combination of a lower GST rate as has been done for Electric Vehicles (EVs), and/or a direct subsidy per kg of green hydrogen used. This would also need to be done for the use of green ammonia for electricity generation for meeting seasonal spikes in electricity demand. However, storage and transport of hydrogen have high costs.

Provision of public money for technology development as well as cost reduction would be essential if India is to reach the technology frontier, not just as an user but also as an innovator. The potential for this is high due to the abundance of young talent. Financing the private sector in partnerships with our research institutions to work to develop scalable outcomes would be the challenge needing leadership.

That likelihood of success is inherently uncertain would need to be explicitly accepted to give decision makers the confidence to be ambitious and take risks. With creative policy instruments used with speed, flexibility and agility we could be at the global frontier in this decade and that too at affordable costs.

The writer is Distinguished Fellow, TERI and former Secretary, DIPP, Govt of India

Indian Oil, BPCL Exceed FY23 Capex Targets

Our Bureau

New Delhi: Indian Oil Corp and Bharat Petroleum (BPCL) have exceeded their capital expenditure targets for the current financial year.

During April-February, India Oil spent ₹31,800 crore against the full year's capex target of ₹28,550 crore while BPCL spent ₹10,280 crore, crossing its target of ₹10,000 crore, according to the oil ministry data.

Indian Oil has been spending on a variety of projects from refinery and petrochemical expansion to enhancing natural gas infrastructure, fuel marketing and new pipelines. It aims to raise refining capacity to 107 mtpa by 2025 from the current 70 mtpa.

BPCL too has been on a spending spree, using most of its capex in enhancing petrochemical capacity, pipelines, retail infrastructure and natural gas business.

Indian Oil's ₹31,800 crore spending this year is a third of combined spending of ₹97,800 crore by all state-run oil companies. By comparison, ONGC has spent ₹24,670 crore in the 11 months through February. ONGC's capex target for current financial year is ₹29,950 crore. ONGC's overseas arm, ONGC Videsh, has spent only ₹2,550 crore, staying far behind its target of ₹8,200 crore for the year.



India Oil spent ₹31,800 cr and BPCL spent ₹10,280 cr during Apr-Feb

OMCs get ₹800 crore to set up over 7K charging hubs

NITIN KUMAR & SUBHAYAN CHAKRABORTY
New Delhi, 27 March

In a push for green mobility, the Centre on Monday sanctioned ₹800 crore under Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME II) to three public sector oil-marketing companies (OMCs) for setting up 7,432 public fast-charging stations across the country.

In the first instalment, the Ministry of Heavy Industries has released 70 per cent (₹560 crore) of the dedicated ₹800 crore to Indian Oil Corporation (IndianOil), Bharat Petroleum Corporation (BPCL), and Hindustan Petroleum Corporation (HPCL) for installation and commissioning of upstream infrastructure and charging equipment of electric vehicle (EV) public charging stations at respective retail outlets.

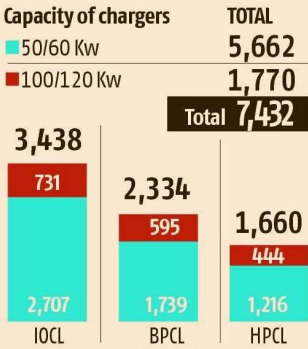
Union Minister for Heavy Industries Mahendra Nath Pandey, while calling the move India's commitment towards a green and clean future, said that with the addition of 7,432 public fast-charging stations, the country's total installed charging capacity will cross the 14,000 mark. "These fast-charging stations will be set up in all the metros, million-plus cities, smart cities notified by the Ministry of Housing and Urban Affairs, cities of hilly states, highways and expressways across the country," said Pandey.

The installation is expected to be completed by March 2024.

"Our ministry, along with Ministries of Petroleum, Power, and Highways are jointly working towards implementation of FAME India. We are working towards setting up charging stations at about 22,000 petrol pumps across the country," said Pandey.

CHARGE IT UP

Proposed installation of charging stations, including upstream infrastructure



Source: Ministry of Heavy Industries

According to the Ministry of Power's guidelines, there must be at least one charging station every 25 kilometre (km) on both sides of a highway and at least one charging station for long-range and heavy-duty EVs every 100 km on both sides of a highway.

Source of funding

Under Phase II of FAME India, ₹1,000 crore is allocated for the development of charging infrastructure. The ministry has sanctioned 2,877 EV charging stations in 68 cities across 25 states/Union Territories. Further, 1,576 charging stations across nine expressways and 16 highways under Phase II of FAME India have been sanctioned.

The ministry was able to spend about ₹150 crore of the ₹1,000 crore allocated for supporting charging infrastructure so far because the ministry was providing subsidies for just EV supply equipment.

With the move, the ministry has now approved financial assistance for setting up upstream infrastructure, which generally costs up to 60 per cent of the overall cost for setting up a public EV charging station. "Now, the Ministry of Heavy

Industries will provide subsidy of up to 80 per cent of the total cost of the charging station," the minister said. The move came after the ministry received few takers for the scheme due to high capital costs. OMCs have sufficient land on the premises of their retail outlets, which can be utilised for setting up charging stations.

Industry view

While initially reticent, all three OMCs have since 2019 unveiled ambitious plans to establish EV charging infrastructure at their fuel retailing spots. They have tied up with EV charging solutions providers, often start-ups, on a case-by-case basis in specific geographies. IndianOil, the largest OMC, has targeted 4,000 charging stations by the end of 2022-23. The plan is part of IndianOil's aims at achieving net-zero operational carbon emissions by 2046.

BPCL has unveiled EV fast-charging stations across its 110 fuel stations along 15 highways in Karnataka, Kerala, and Tamil Nadu. Set along particular EV corridors, the company plans to set up charging stations every 100 km.

Petronet works to expand gas storage

Bloomberg

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India is considering building a strategic reserve of liquefied natural gas (LNG) to guard against future price spikes or supply shortages after last year's energy crisis, according to a senior executive at the nation's top importer.

The government has "proposed we should have more storage space for LNG so that when prices are lower we should store, and supply when there is crisis," Vinod Kumar Mishra, finance director at Petronet LNG Ltd, said in an interview. "We have seen the crisis and it was difficult for the government also to ensure supply."

India curbed LNG imports last year after Russia's invasion of Ukraine upended the market and sent prices surging. While Prime Minister Narendra Modi's administration aims to more than double the share of gas in the country's

energy mix, high prices have proved a deterrent for some industries.

More governments are looking to set up emergency stockpiles of LNG, similar to the oil industry's strategic reserves, as the super-chilled fuel becomes a more important element of the global energy mix. Japan—one of the world's top buyers—said last year that it is considering a similar plan.

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While no storage targets have yet been discussed, Petronet is adding more tanks at its LNG import terminals to store the imported fuel and is working on a floating import

plant in the eastern state of Odisha, Mishra said.

Last year's crunch is also prompting Indian buyers to hunt for long-term supply deals, which ensures deliveries to customers at more stable prices, Mishra said.

Some of these deals are likely to be sealed in 2023, he said.

PSU Oilcos to Get ₹800-Cr Subsidy to Set Up Charging Infra under FAME II

To deploy 7,432 stations at ₹1kcr cost, of which govt will bear 80%: Heavy ind minister

Twesh.Mishra@timesgroup.com

New Delhi: India's public sector undertaking oil companies will soon set up 7,432 electric vehicle (EV) charging stations with the support of a ₹800 crore subsidy transfer by the Ministry of Heavy Industries. According to official data, these new stations will supplement the existing 6,586 public EV charging stations in the country.

This will boost the adoption of EV four wheelers, Minister for Heavy Industries Mahendra Nath Pandey told the media.

CCS-II PIPS CHADEMO

According to officials in the know, the

Powering Up

Public sector oil companies to get subsidy

80% cost of EV chargers to be subsidised



CCS-II GETS SUPPORT

- Subsidy for Combined Charging System (CCS)-II fast chargers
- CCS-II adoption higher in India than CHAdeMO (CHAdeMO)
- Similar stand adopted by US administration

subsidy will be offered for setting up Combined Charging System (CCS)-II EV fast charger and not for CHAdeMO (CHAdeMO). "There are more use-cases for CCS format chargers in the country. Developers are free to set up CHAdeMO fast chargers but subsidy will not be given for it," a senior government official told ET.

The EV stations will deploy fast as well

as slow chargers. To reduce the cost of setting up a charging stations supported by the scheme, the proposed number of guns has been halved for both fast and slow chargers eligible for being subsidised under the programme. "The new charging stations will be deployed at roughly ₹1,000 crore of which 80% will be subsidised through FAME-II," Pandey said.

Sri Lanka clears global oil companies' entry into country's retail fuel market

Meera Srinivasan
COLOMBO

Sri Lanka on Monday decided to award licences to three global oil companies to operate in the domestic retail market as part of the government's efforts to restructure State-Owned Enterprises, including the loss-making Ceylon Petroleum Corporation (CPC).

Confirming the development in a tweet, Sri Lanka's Minister of Power and Energy Kanchana Wijesekera said the Cabinet had approved the awarding of licences to Sinopec; United Petroleum, Australia; and RM Parks, USA, in a collaboration with Shell, to enter the retail market in Sri Lanka. The three companies will each be allocated 150 dealer-operated fuel stations, currently operated

Sinopec; United Petroleum of Australia; and RM Parks of U.S.A. were granted licences

by the state-owned Ceylon Petroleum Corporation, and obtain 20-year licences to import, store, distribute and sell petroleum products in Sri Lanka. A further 50 fuel stations will be established at new locations by each company, the Minister said.

The move is aimed at diversifying Sri Lanka's retail fuel market that is currently a duopoly, with the state-owned CPC and Indian Oil Corporation subsidiary Lanka IOC, which controls a third of the market.

During last year's eco-

nomie meltdown, Sri Lanka experienced acute fuel shortages, as the government ran out of dollars to import crude oil. Citizens waited in long queues outside petrol sheds for days together to access fuel, and it was following Indian assistance that supply was partially restored.

Subsequently, the government introduced a QR-code system rationing weekly fuel sales to consumers. Further, in May last year, Sri Lanka raised petrol prices by 24.3% and diesel by 38.4%, a record hike that in turn led to a rapid increase in costs of essentials.

Indian delegation

Meanwhile, an official delegation from India led by Pankaj Jain, Secretary to the Ministry of Petroleum

and Natural Gas, held talks with President Ranil Wickremesinghe in Colombo on Saturday. "The delegation led by @Secretary_MoPNG called on President H.E @RW_UNP and briefed him on developments in jointly-identified priority areas for collaboration in energy sector. The President provided his guidance and insights on early implementation of these initiatives," the Indian High Commission in Colombo said in a tweet.

The officials also visited Trincomalee in the Eastern Province, where Lanka IOC, Ceylon Petroleum Corporation and the Government of Sri Lanka have agreed to jointly develop World War II-era oil tanks. India has pledged to help Sri Lanka emerge a "regional petroleum hub".

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ECONOMIC CRISIS

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Meera Srinivasan is The Hindu's correspondent in Colombo

तेल कंपनियों को सार्वजनिक परिवहन में योगदान देने का निर्देश देने की मांग

नई दिल्ली (एसएनबी)। हाईकोर्ट ने जीवाश्म ईंधन से राष्ट्रीय राजधानी में हो रहे पर्यावरण नुकसान की भरपाई के लिए सार्वजनिक एवं निजी तेल कंपनियों को अपनी कमाई का दो फीसदी धन सार्वजनिक परिवहन सेवाओं में योगदान करने का निर्देश देने के मामले में केंद्र सरकार से जवाब मांगा है। मुख्य न्यायाधीश सतीश चंद्र शर्मा एवं न्यायमूर्ति सचिन दत्ता की पीठ ने इस मामले में पेट्रोलियम और प्राकृतिक गैस मंत्रालय, सड़क परिवहन और राजमार्ग मंत्रालय एवं पर्यावरण और वन मंत्रालय से जवाब मांगा है।

तेल कंपनियों की तरफ से सार्वजनिक परिवहन के लिए धन का योगदान देने का निर्देश देने की मांग करते हुए एक संगठन सुनामी ऑन रोड ने याचिका दाखिल की है। उसने कहा है कि तेल कंपनियां कारपोरेट सोशल रिस्पॉन्सिबिलिटी (सीएसआर) के तहत अपने कमाई का दो फीसदी धन सार्वजनिक परिवहन में योगदान दे और केंद्र सरकार इसको लेकर निर्देश जारी करे। याचिकाकर्ता ने केंद्र सरकार

को यह भी निर्देश देने की मांग की है कि वह राजधानी एवं उसके आसपास को सार्वजनिक परिवहन प्रणालियों का अध्ययन करने एवं अपना सुझाव देने के लिए तकनीकी और पर्यावरण

हाईकोर्ट ने याचिका पर केंद्र से मांगा जवाब

सार्वजनिक व निजी कंपनियां सीएसआर के तहत अपने कमाई का दो फीसदी धन सार्वजनिक परिवहन में योगदान दें :

याचिकाकर्ता

तेल कंपनियों की वाहन प्रदूषण को कम करने में बड़ी सामाजिक जिम्मेदारी एवं प्रतिबद्धता है

विशेषज्ञों की एक समिति बनाए।

याचिकाकर्ता ने कहा है कि पृथ्वी विज्ञान मंत्रालय की वर्ष 2018 की रिपोर्ट में स्वीकार

किया गया है कि परिवहन क्षेत्र उत्सर्जन का प्रमुख स्रोत है जिससे पीएम 2.5 (41%) के उत्सर्जन होता है। वाहन प्रदूषण मानव स्वास्थ्य के लिए सबसे खतरनाक प्रदूषक है। यही कारण है कि तेल कंपनियों की वाहन प्रदूषण को कम करने में बड़ी सामाजिक जिम्मेदारी एवं प्रतिबद्धता है। याचिकाकर्ता ने यह भी कहा है कि दिल्ली जैसे भारी प्रदूषित शहर के लिए एक बेहतर सार्वजनिक परिवहन प्रणाली की सख्त आवश्यकता है। उसने कहा कि दुनिया भर में एक सार्वभौमिक रूप से स्वीकृत तथ्य है कि वायु प्रदूषण व यातायात की भीड़ को कम करने में बड़े पैमाने पर सार्वजनिक परिवहन सबसे महत्वपूर्ण एवं प्रभावी साधन हैं। यह लोगों के लिए किफायती भी है। यह जरूरत विश्व के 50 लाख से अधिक शहर के लिए है। दिल्ली की आबादी 1.7 करोड़ है और यह उम्मीद की जाती है कि शहर के 75-85 फीसदी जनता सार्वजनिक परिवहन का इस्तेमाल करे जिससे भीड़भाड़ से बचा जा सके।