

घंटों बंद रही महानगर गैस की सप्लाई

■ कल्याण, (सं). चिंचपाड़ा रोड पर दुर्गा नगर में देवऋषि टॉवर, राजाराम टॉवर, कृष्णविला टॉवर, विजयनगर में शुभम टॉवर के क्षेत्र की इमारतों को 4 बजे से रात 8 बजे तक महानगर गैस की आपूर्ति आपात कालीन कार्य के कारण बंद कर दी गई, जिससे नागरिकों को भारी परेशानी उठानी पड़ी. महानगर गैस कंपनी ने एक संदेश के माध्यम से कहा था कि शाम 7 बजे ग्राहकों को गैस आपूर्ति बहाल कर दी जाएगी, लेकिन लगभग डेढ़ घंटे बाद गैस आपूर्ति धीरे-धीरे बहाल की गई.





■ To achieve 100 per cent coverage of country's area for the development of CGD network, the PNGRB hosted a Concluding Ceremony for the 12th CGD Bidding Round. The event was inaugurated by Hardeep Singh Puri, Minister for Petroleum and Natural Gas & Housing and Urban Affairs.

EXPLAINED ECONOMICS

The green hydrogen push

The Govt has announced a scheme to support efforts to test the viability of green hydrogen as a fuel for cars and heavy vehicles. Green hydrogen presents both a big opportunity and some major challenges

AGGAM WALIA & SUKALP SHARMA
NEW DELHI, APRIL 5

THE MINISTRY of New and Renewable Energy (MNRE) has announced a Rs-496-crore (until 2025-26) scheme to support pilot projects that either test the viability of green hydrogen as a vehicle fuel or develop secure supporting infrastructure such as refuelling stations.

Big Indian commercial vehicle manufacturers such as Tata Motors, Volvo Eicher, and Ashok Leyland are doubling down on efforts to develop hydrogen-powered trucks and buses by ramping up research and development, and building manufacturing capacities.

Indian energy companies too are trying to scale up production of green hydrogen and bring down costs to make it affordable enough to compete with other fuels.

Hydrogen is expected to be used widely in the transportation sector in the coming years, and as a large and growing market for both vehicles and energy, India stands to gain significantly from the large-scale adoption of green hydrogen as vehicular fuel.

Green hydrogen promises significant reductions of emissions to help slow global warming and climate change. India sees advantages ranging from curbing pollution and meeting its climate goals to reducing costly fossil fuel imports, as well as a business opportunity to become a global hub for the production and export of green hydrogen.

Green and grey hydrogen

Hydrogen is colourless, and green hydrogen is 'green' only by virtue of the way it is produced, and the source of the energy used to manufacture it. Green hydrogen refers to hydrogen that is produced from the electrolysis of water — splitting it into hydrogen and oxygen — using an electrolyser powered by renewable energy. This is considered to be a virtually emission-free pathway for hydrogen production — it is 'end-to-end' green because it is powered by green energy, uses water as feedstock, and emits no carbon on consumption.

Currently, most hydrogen produced for industrial consumption and applications is 'grey' hydrogen, which is produced from natural gas through energy-intensive processes, and has high carbon emissions. Except for a difference in the production pathway and emissions, green hydrogen is essentially the same as grey — or hydrogen categorised by any other colour.

Transport sector scheme

The major objectives of the MNRE



An October 2020 file photo of a hydrogen fuel pump in Torrance, California. Shell has now shut its hydrogen refuelling stations for cars in the state. *The New York Times*

THE COLOURS OF HYDROGEN

GREY hydrogen constitutes the bulk of India's production currently. It is extracted from hydrocarbons (fossil fuels and natural gas), and carbon dioxide is the byproduct of consumption.

BLUE hydrogen is also sourced from fossil fuels, but byproducts such as

carbon monoxide and carbon dioxide are captured and stored, so it is better than grey hydrogen.

GREEN HYDROGEN is an 'end-to-end' green fuel. Electricity generated from renewable sources such as wind or solar is used to electrolyse water. Byproducts are water or water vapour.

scheme, guidelines for which were issued in February, include (i) validation of technical feasibility and performance of green hydrogen as a transportation fuel, (ii) evaluation of the economic viability of green hydrogen-powered vehicles, and (iii) demonstration of safe operation of hydrogen-powered vehicles and refuelling stations.

The Ministry of Road Transport & Highways will appoint a scheme implementation agency that will invite proposals for pilot projects. The selected company or consortium will be the project's executing agency.

Based on the recommendation of a Project Appraisal Committee, the MNRE will approve viability gap funding (VGF) for the project. The VGF amount will be finalised after considering "specific needs, merits, and feasibility of each project". The executing agency will be required to complete the pilot project within two years.

Hydrogen fuel cell vehicles

A hydrogen internal combustion engine (ICE) vehicle utilises hydrogen through combustion — which is similar to cars running on diesel and petrol, except there are no carbon emissions.

A hydrogen fuel cell electric vehicle (FCEV) utilises hydrogen electrochemically by converting hydrogen stored in a high-pressure tank into electricity, leaving water as the byproduct. Even though hydrogen ICE vehicles do not emit carbon, research suggests that burning hydrogen is far less energy efficient than converting it into electricity in a fuel cell.

Compared to battery electric vehicles (BEVs), in which the battery is the heaviest part, hydrogen FCEVs are typically much lighter because hydrogen is a light element, and a fuel cell stack weighs lesser than an electric vehicle (EV) battery.

This makes hydrogen fuel cell technology a viable alternative to EV battery technology, especially for heavy-duty trucks that can benefit from an increased payload capacity — without coughing clouds of smoke from burning diesel.

Indeed, research shows that long-haul FCEVs can carry freight amounts similar to diesel trucks, whereas long-haul BEVs have a weight penalty of up to 25% due to heavier batteries. Given the need to cut carbon emissions in the transportation sector while ensuring there is no loss in revenue-generating payload capacity, green hydrogen holds promise.

A number of challenges

There are significant challenges to the large-scale use of green hydrogen in the transportation sector. The foremost among these is the prohibitive cost of production, followed by challenges of storage and transportation at scale. With more innovation in technology and scaling-up of production though, costs are likely to come down in a few years.

Green hydrogen-powered vehicles are not yet seen as a suitable alternative to four-wheel BEVs due to challenges arising from fuel costs and building supporting infrastructure. Shell, a pioneer in hydrogen refuelling technology, last month announced it was shutting all its hydrogen refuelling stations for cars in California due to "supply complications and other external market factors". Hydrogen filling stations for heavy-duty vehicles, however, continue to remain operational there.

For hydrogen FCEVs to compete with BEVs, green hydrogen needs to cost between \$3 and \$6.5 per kilogram by 2030. For perspective, retail green hydrogen prices in California touched \$30 per kilogram in 2023. Also, the California Transportation Commission estimates that building a hydrogen truck fuelling station costs up to 72% more than the cost of building a battery electric truck fuelling station.

The MNRE plans to convene a meeting with stakeholders to discuss the development of specialised cylinders to store green hydrogen after manufacturers of commercial vehicles flagged challenges related to high-pressure storage cylinders.

Currently, most cylinders manufactured in India are designed to carry compressed natural gas (CNG). But hydrogen is stored at a much higher pressure, and CNG cylinders cannot carry hydrogen. For cylinders to carry a high mass of hydrogen, the carbon fibre needs to be stronger, which makes high-pressure hydrogen cylinders expensive. This is a key barrier to the adoption of hydrogen as a transport fuel. For the same reason, the existing natural gas pipeline infrastructure is also not seen as viable.

Hydrogen is extremely flammable, which means that special care would be needed in handling the fuel at retail stations compared to diesel, petrol, or even CNG. Robust and fool-proof handling and safety standards need to be developed before pushing large-scale adoption.

Finally, as advancements in battery technologies continue to reduce the overall weight of EV batteries, the long-term viability of green hydrogen-powered heavy-duty commercial vehicles could also come under pressure.



Monthly natural gas trades down 80% in Mar: IGX

An increasing trend in gas prices and an extended winter, which reduced gas-based power demand, led to over 80 per cent fall in monthly natural gas volumes traded on the Indian Gas Exchange Limited (IGX) to 1.13 metric million British thermal units (mmBtu) in March, the company said on Friday.

Traded volumes were down from 6.13 mmBtu in February, an 81 per cent slump on a sequential basis. IGX is the only national-level gas exchange for the physical delivery of natural gas. The latest figures come as a surprise, given that IGX gave a growth forecast last month. It had said demand would grow in the near term, driven by the expansion of city gas distribution networks and increasing uptake from the power sector.

Rajesh Kumar Mediratta, MD & CEO, Indian Gas Exchange, earlier said a cut in gas prices in February had resulted in demand rising steeply. Consequently, there was an increase in the volume trade from gas-based power plants on IGX during the month. Global freight rates for LNG have stabilised even as carriers continue to avoid the Suez Canal due to piracy threats. However, prices have been on the rise since February. **SUBHAYAN CHAKRABORTY**



Can pricier oil bring ‘inflation elephant’ back from forest?

PUNEET WADHWA

New Delhi, 5 April

The Reserve Bank of India (RBI) on Friday maintained a status quo on rates for the seventh consecutive time and said it remains watchful of the developing geopolitical situation that may trigger a further rise in crude oil prices, thereby impacting the inflation trajectory in the country.

After sustained moderation, cost-push pressures faced by firms are showing upward bias, said the RBI. Geopolitical tensions and volatility in financial markets also pose risks to the inflation outlook, it said.

“Two years ago, around this time, when CPI (consumer price index) inflation had peaked at 7.8 per cent in April 2022, the elephant in the room was inflation. The elephant has now gone out for a walk and appears to be returning to the forest. We would like the elephant to return to the forest and remain there on a durable basis,” said RBI Governor Shaktikanta Das. The RBI lowered its CPI inflation forecast for the first, second, and the fourth quarters of FY25. For FY25, the inflation forecast remains unchanged at 4.5 per cent.

Rising oil prices

In calendar year 2024 (CY24), crude oil (Brent)



ILLUSTRATION: BINAY SINHA

prices have increased by more than 18 per cent to hit the \$91 a barrel mark, fuelled by geopolitical tensions and tight supply. In the last one month, Brent crude oil prices have surged nearly 10 per cent, with nearly 3 per cent of this gain coming in the last three days.

“Oil prices have begun to appreciate since the International Energy Agency (IEA) on March 14 increased its demand forecast and reduced its supply forecast. The latest data on China oil demand also shows a further increase reflecting the pattern prevailing last year. The other issue that could trigger a further rise in the oil price is clearly rising

geopolitical tensions,” said Christopher Wood, global head of equity strategy at Jefferies. Analysts at Rabobank International expect Brent crude oil prices to range between \$71 and \$93 a barrel in 2024. In the short-to-medium term, oil prices, according to G Chokkalingam, founder and head of research at Equinomics Research, can hit \$100 a barrel amid firm global demand.

“Globally, most frontline economies, including the US, Japan and India are doing well. I expect the demand for oil to remain firm. If the supply is constrained coupled with geopolitical concerns, Brent crude oil prices

can rise to triple digits going ahead,” he said.

According to estimates, a \$10 per barrel rise in oil prices leads to a 40 to 60 basis point (bps) increase in CPI in India, which imports nearly 80 per cent of its annual crude oil need. “The wider Mideast tensions stemming from the Gaza war are probably the highest in six months. Crude is reflecting that Mideast conflagration fear premium. But does the heightened rhetoric, especially between Israel and Iran, subside or does it lead to more open warfare – that will decide whether it’s a leg up or down for crude from here,” said Vandana Hari, founder, Vanda Insights.

While low core inflation gives India comfort, Upasna Bhardwaj, chief economist at Kotak Mahindra Bank, believes uncertainty on food inflation remains a worry. “The higher US yields, higher oil prices and other commodities along with possible delay in Fed’s rate easing cycle will keep the MPC wary. We do not see much scope for any rate easing until Q2-FY25. Earliest possibility of rate easing can emerge in Q3-FY25,” she said.

With an unchanged inflation projection for FY25 at 4.5 per cent, growth conditions improving and the US Fed also pushing out its rate cut cycle, Indranil Pan, chief economist at YES Bank expects the RBI to be in a position to cut rates either in the August policy or later.



Oil Holds Above \$90 on Fears of Middle East Tensions Escalating

Oil held above the \$90-a-barrel threshold as escalating tensions in the Middle East prompt a dramatic repricing of geopolitical risks.

Fears of a wider region conflict are rising, with Israel increasing preparations for an attack from Iran in retaliation for its strike on the country's diplomatic compound in Syria. Limiting crude's gains were US jobs data that beat expectations and strengthened the dollar.

"The market now knows that some kind of retaliation from Iran will likely come — but it doesn't know when and where and what — and that creates a great discomfort and nervousness," said Bjarne Schieldrop, chief commodities analyst at SEB AB.

Global benchmark Brent and US benchmark West Texas Intermediate were both up less than 1%. The rising tensions have also spurred activity in the oil options market, with volatility surging and bullish calls trading at a rare premium to bearish puts.

Oil has surged this year as geopolitical concerns in the Middle East further bolstered a market shaped by supply restrictions and stronger-than-expected demand. The conflict between Israel and Hamas had led to Houthi attacks on shipping in the Red



Sea, raising transport costs, but so far hasn't escalated into a wider war in a region that accounts for around a third of the world's supply. Cease-fire talks between Israel and Hamas — which could see the release of hostages held in Gaza — remain deadlocked.

Earlier this week, OPEC+ chose to stick with supply cuts for the first half of the year, which means roughly 2 million barrels a day of output curbs will remain in place. Those cuts have been compounded by Mexico's decision to curb some oil exports, which will further reduce volumes to market. Mexico's president played down those concerns on Thursday.

The conflict had led to Houthi attacks on shipping in the Red Sea, raising transport costs

Bloomberg

India's Diesel Exports to Asia Down 63% in Mar

Increased competition from Chinese & South Korean suppliers erodes margins; exports to Europe see marginal rise

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New Delhi: India's diesel exports to Asia slumped 63%

month-on-month in March as increased competition from Chinese and South Korean suppliers eroded margins.

Indian refiners exported 61,000 barrels per day (bpd) of

diesel in March to customers in Asia, down from 163,000 bpd in February, according to energy cargo tracker Vortexa. Exports to Europe, however, rose 6.5% to 214,000 bpd in March. No diesel was exported to the US. "Ample supplies of diesel in Asia, especially due to strong exports from South Korea and China, have eroded export margins to Asia. Meanwhile, increasing planned or unplanned refinery maintenance in Europe has led to growing import demand," said Serena Huang, analyst at Vortexa.

India's monthly export volumes to Asia vary widely based on margins available on

diesel, with shipments varying from 11,000 bpd in April 2023 to 189,000 bpd in August. The average monthly diesel shipments to Asia in 2023-24 was 92,000 bpd. The diesel supplies to Europe are more stable, averaging 222,000 bpd in 2023-24. The exports have remained above 200,000 bpd in all but two months of the last fiscal year. In January, the volumes had dramatically fallen to 56,000 bpd after the Houthi attacks in the Red Sea forced ships to avoid the Suez Canal and take the alternative longer route via the Cape of Good Hope. The exports quickly recovered in February. "On refined product exports,

nearly 380,000 bpd of cargoes that loaded from India and mainly headed to the US and Europe in March are being diverted through the Cape of Good Hope, as a result of the attacks," said Huang.

India's overall refined products exports to Asia also fell 15% month-on-month to 332,000 bpd in March. Exports to Europe fell 4.5% to 319,000 bpd in March.

Due to the Red Sea tensions, some of the refined product shipments meant for Europe had been diverted to Asia in January. Refined product supplies to Europe had fallen to 141,000 bpd in January while volumes to Asia had risen to 382 bpd.



भू-राजनीतिक स्थितियों पर नजर

क्या कच्चे तेल की मांग बढ़ने से बढ़ेगी महंगाई?

पुनीत वाधवा
नई दिल्ली, 5 अप्रैल

भारतीय रिजर्व बैंक ने शुक्रवार को ब्याज दर लगातार सातवीं बार यथावत रखी। रिजर्व बैंक ने कहा कि वह बदलती भू-राजनीतिक स्थितियों पर नजर रखे हुए है। इन स्थितियों से कच्चे तेल की कीमतें भी बढ़ सकती हैं। इससे देश में महंगाई पर भी असर पड़ सकता है।

आरबीआई ने कहा कि कंपनियों पर निरंतर नरमी के बाद अब लागत बढ़ाने का दबाव दिख रहा है। भू-राजनीतिक तनाव और वित्तीय बाजारों में अस्थिरता से महंगाई बढ़ने का जोखिम हो सकता है।

आरबीआई के गवर्नर शक्तिकांत दास ने कहा, 'दो साल पहले अप्रैल 2022 में उपभोक्ता मूल्य सूचकांक (सीपीआई) उच्चतम स्तर 7.8 फीसदी पर पहुंच गया था। महंगाई चरम बिंदु के करीब थी। इसके बाद महंगाई घटने का दौर शुरू हुआ और यह काबू में आ गई है। हम यह चाहते हैं कि महंगाई पर लंबे समय तक लगाव लगी रहे।'

केंद्रीय बैंक ने वित्त वर्ष 2024-25 (वित्त वर्ष 25) की पहली, दूसरी और चौथी तिमाही के लिए उपभोक्ता मूल्य सूचकांक आधारित मुद्रास्फीति के अनुमान को कम कर दिया है। पूरे वित्त वर्ष 25 में मुद्रास्फीति के अनुमान को 4.5 फीसदी पर यथावत रखा गया है।



महंगाई पर काबू पाना चाहता है रिजर्व बैंक

■ कैलेंडर वर्ष 2024 में कच्चे तेल (ब्रेंट) के दाम 18 फीसदी बढ़कर 91 डॉलर प्रति बैरल हुए

■ बीते एक महीने के दौरान कच्चे तेल के दाम करीब 10 फीसदी बढ़े

तेल के बढ़ते दाम

इस कैलेंडर वर्ष 2024 (सीवाई 24) में भू-राजनीतिक दबाव और आपूर्ति सीमित होने के कारण कच्चे तेल (ब्रेंट) के दाम 18 फीसदी बढ़कर 91 डॉलर प्रति बैरल हो गए हैं। बीते एक महीने के दौरान कच्चे तेल के दाम करीब 10 फीसदी बढ़ गए हैं। हाल यह है कि बीते तीन दिनों के दौरान ही कच्चे तेल के दाम करीब तीन फीसदी बढ़ गए हैं।

जैफरीज में इक्विटी रणनीति के वैश्विक प्रमुख क्रिस्टोफर वुड ने

कहा, 'अंतरराष्ट्रीय ऊर्जा एजेंसी (आईईए) के मांग बढ़ने व आपूर्ति घटने का अनुमान 14 मार्च को जारी करने के बाद तेल के दाम बढ़ने शुरू हो गए हैं। चीन में तेल की मांग का नवीनतम आंकड़ा भी यह दर्शाता है कि बीते वर्ष की तरह ही मांग बढ़ने का रुझान कायम रहेगा। इसमें अन्य मुद्दा जिससे निश्चित रूप से दाम बढ़ा सकता है वो है बदलती भू-राजनीतिक स्थितियों का दबाव।'

राबोबैंक इंटरनेशनल के विश्लेषक के अनुसार साल 2024 में ब्रेंट क्रूड ऑयल के दाम 71 डॉलर से 93 डॉलर के बीच रह सकते हैं। इक्विनॉमिक्स रिसर्च के शोध प्रमुख व संस्थापक जी. चोक्कालिंगम के अनुसार अल्प व मध्यम अवधि में वैश्विक स्तर पर मांग अधिक होने की स्थिति में तेल के दाम 100 डॉलर प्रति बैरल पर पहुंच सकते हैं। उन्होंने कहा, 'अमेरिका, जापान और भारत सहित ज्यादातर अर्थव्यवस्थाएं बेहतर प्रदर्शन कर रही हैं। मेरा अनुमान है कि तेल की मांग यथावत रहेगी। यदि भू-राजनीतिक दबाव में आपूर्ति सीमित होती है तो ब्रेंट क्रूड ऑयल के दाम तीन अंकों तक पहुंच सकते हैं।' कच्चे तेल के दामों में 10 डॉलर प्रति बैरल की वृद्धि होने पर भारत में उपभोक्ता मूल्य सूचकांक में 40 से 60 आधार अंक की बढ़ोतरी हो सकती है।



यूरोप में नेचुरल गैस की कीमतों में गिरावट, गैस भंडार भी बढ़ा

यूरोप में नेचुरल गैस की कीमत में गिरावट आई है। यह तब दर्ज हुई जब यह बताया गया कि यूरोपीय संघ में गैस के भंडार लगभग 60% भरे हुए हैं, जो वर्ष के इस समय के लिए एक रिकॉर्ड ऊंचाई है। आने वाले गर्म महीनों में इसमें ग्रोथ होगी क्योंकि गैस की आपूर्ति फिर से बहाल होगी। दो साल पहले रूस के यूक्रेन पर आक्रमण और कम भंडारण स्तर के कारण यूरोप को गैस की बढ़ती कीमतों का सामना करना पड़ा था। फिलहाल गैस की कीमत 26 पाउंड प्रतिघंटे मेगावाट है, जो पिछले साल 56 पाउंड थी।