DAINIK JAGRAN, Rastriya Sanskaran, 5.1.2023
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ग्रीन हाइड्रोजन : वैश्विक भूमिका के बीच तेजी से बढ़ते कदम

भारत ने ग्रीन हाइड्रोजन निर्माण की दिशा में बुधवार को अहम कदम बढ़ाया है। तैयारी पहले से थी, अब इसे अमली जामा पहनाया जा रहा है। ईंधन के इस नए स्रोत पर पूरे विश्व का ध्यान है और भारत इसका वैश्विक हब बनने की क्षमता भी रखता है। दरअसल रूस-यूक्रेन युद्ध के कारण यूरोपीय देशों में ऊर्जा का गहरा संकट है। रूस ने कई यूरोपीय देशों को प्राकृतिक गैस की आपूर्ति बंद की तो देशों ने विकल्प के बारे में गंभीरता से सोचना आरंभ किया। केंद्रीय पर्यावरण मंत्री भूपेंद्र यादव ने बीते वर्ष रायसीना डायलाग में कहा था कि कार्बन उत्सर्जन की विकराल समस्या के समाधान में भारत अग्रणी भूमिका निभाएगा। इसी कारण ग्रीन हाइड्रोजन के संदर्भ में भारत का उल्लेख अहम हो जाता है। नीदरलैंड तो इस क्षेत्र में भारत का सहयोगी बनने की बात भी कह चुका है। आइए समझें कैसे भारत सरकारी और निजी क्षेत्र में ग्रीन हाइड्रोजन के निर्माण में आगे बढ़ने को तैयार है और किस प्रकार यह विश्व, खासकर यूरोप के लिए हब बनने की संभावना रखता है।

160 अरब डालर से अधिक विदेशी मुद्रा प्रतिवर्ष भारत ऊर्जा आयात पर व्यय करता है। नीति आयोग के अनुसार 15 वर्ष में यह विदेशी मुद्रा खर्च दोगुना होने का अनुमान है

3.6 गीगाटन कार्बन डाइ आक्साइड उत्सर्जन भारत कम कर सकता है यदि ग्रीन हाइड्रोजन का उपयोग देश में बढ़े

500 गीगावाट नवीकरणीय उर्जा उत्पादन भारत ने वर्ष 2030 तक करने का लक्ष्य तय किया है

विश्व भर में बन रहीं नीतियां

- विश्व में ग्रीन हाइड्रोजन को लेकर जागरूकता और प्रयास बढ़े हैं, लेकिन कहा जा सकता है कि अभी इसका उत्पादन और प्रयोग शुरुआती दौर में है। देश न केवल इसके उत्पादन के लिए नीतियां बनाकर लागू कर रहे हैं, निवेश कर रहे हैं बल्कि सहयोगी भी खोज रहे हैं।
- इसी क्रम में बीते वर्ष नीदरलैंड ने एक प्रस्ताव दिया था जिसके अनुसार भारत के यूरोप के लिए ग्रीन हाइड्रोजन निर्यात हब बनने की संभावना है। नीदरलैंड के जलवायु दूत प्रिंस जेमी डि बर्बन डि पार्मे का कथन इस बात को पुष्ट करता है कि दोनों देशों में ग्रीन हाइड्रोजन के व्यापार को समृद्ध करने की क्षमता है।
- जेमी की यह बात काबिले गौर है कि भारत ग्रीन हाइड्रोजन का निर्यातक बनना चाहता है और नीदरलैंड यूरोप में इसका सहयोगी बन सकता है।

बन सकते अहम साझीदार

- भारत और नीदरलैंड ग्रीन हाइड्रोजन के निर्यात में बेहतर साझीदार बन सकते हैं। नीदरलैंड के पास अच्छा बुनियादी ढांचा है और उसकी भौगोलिक स्थिति भी ऐसी है कि वहां से यूरोप में आसानी से आपूर्ति की जा सकती है।
- नीदरलैंड के रोटरडम पोर्ट से यूरोप के उत्तर में स्थित जर्मनी और बेल्जियम जैसे देशों तक आसानी से उत्पाद भेजे जा सकते हैं।
- भले ही ग्रीन हाइड्रोजन के उत्पादन को लेकर योजना आगे बढ़ रही है, लेकिन एक अहम प्रश्न यह भी है कि निर्यात अमोनिया के रूप में होगा या जमी हुई गैस के रूप में। फिलहाल अधिक देश ग्रीन हाइड्रोजन का आयात नहीं कर रहे हैं। केवल सिंगापुर और जापान ही इस क्षेत्र में अग्रणी हैं।

बनने लगी अंतरराष्ट्रीय पहचान

बेंगलुरू में वैश्विक कंपनी ओहमियम इंटरनेशनल ने एक संयंत्र लगाया है जो भारत की पहली ग्रीन हाइड्रोजन इलेक्ट्रोलाइजर गीगाफैक्ट्री है। यहीं पर बना इलेक्ट्रोलाइजर अमेरिका को बीते वर्ष निर्यात किया गया था। इलेक्ट्रोलाइजर हाइड्रोजन उत्पादन की प्रक्रिया का अहम अंग है।

कीमत कम करने में भारत की स्थिति बेहतर

- पूरे विश्व में ग्रीन हाइड्रोजन की कीमत अभी एक अहम पहलू है। इसकी उत्पादन लागत काफी अधिक है। करीब 300 से 400 रुपये प्रति किलो लागत आती है। इसे कम करने की दिशा में काम किया जा रहा है।
- भारत इसमें अहम भूमिका निभा सकता है क्योंकि देश नवीकरणीय ऊर्जा कम लागत में पैदा करने में सक्षम है। इलेक्ट्रोलाइजर की कम होती कीमतें सोने पर सुहागा जैसा काम करेंगी। ऐसा हुआ तो भारत में ग्रीन हाइड्रोजन की कीमत वैश्विक स्तर से कम रह सकती है।
- ऊर्जा एवं संसाधन संस्थान (टेरी) की रिपोर्ट के अनुसार वर्ष 2020 में भारत की हाइड्रोजन मांग 60 लाख टन प्रतिवर्ष थी। अनुमान है कि वर्ष 2030 तक हाइड्रोजन की कीमत करीब आधी हो जाएगी।

सरकारी उपक्रमों की तैयारी

- काप-26 ग्लासगो में पीएम नरेन्द्र मोदी के भारत को नेट जीरो उत्सर्जन वाला देश बनाने की प्रतिबद्धता से सरकारी और निजी उपक्रम तेजी से जुड़ रहे हैं। ग्रीन हाइड्रोजन इसका अहम अंग है।
- सरकारी कंपनियों की बात करें तो इंडियन आयल कारपोरेशन (आइओसी) मथुरा में 1,60,000 बैरल प्रतिदिन क्षमता वाला ग्रीन हाइड्रोजन प्लांट लगा रहा है। कंपनी का लक्ष्य वर्ष 2024 तक 10 प्रतिशत ग्रीन ईंधन का उपयोग करना है। आइओसी का एक प्रोजेक्ट कोच्चि में भी होगा जहां एयरपोर्ट पर सौर ऊर्जा संयंत्र से ग्रीन हाइड्रोजन बनेगी। कंपनी का राजस्थान में पवन उर्जा से जुड़ा प्रोजेक्ट पहले से है।
- गैस अथारिटी आफ इंडिया लिमिटेड की योजना 10 मेगावाट का ग्रीन हाइड्रोजन प्लांट लगाने की है। एनटीपीसी गुजरात के कच्छ में 4.75 गीगावाट के साथ एक अन्य स्थान पर पांच मेगावाट का प्लांट लगाएगी। एनटीपीसी अपनी विंध्याचल इकाई में पायलट परियोजना संचालित कर रही है।
- भारत पेट्रोलियम कारपोरेशन और सौर ऊर्जा निगम लिमिटेड भी इस दिशा में आगे बढ़ रहे हैं।

निजी क्षेत्र भी सक्रिय

- गुजरात के जामनगर में रिलायंस इंडस्ट्रीज बड़ा ग्रीन प्लांट बना रही है। यह 600 अरब रुपये से 5,000 एकड़ में बनेगा। कंपनी अपने कार्यों के लिए जीवाश्म ईंधन के बजाय हाइड्रोजन का उपयोग भी शुरू कर रही है।
- अदाणी समूह ने भी मायर टेक्निमोंट के साथ मिलकर ग्रीन हाइड्रोजन उत्पादन के लिए कदम बढ़ाए हैं। जबकि राजस्थान में एसीएमई समूह ग्रीन हाइड्रोजन व अमोनिया प्रोजेक्ट लगा रहा है।
- एक अन्य प्रमुख कंपनी लार्सन एंड टुब्रो की इलेक्ट्रोलाइजर के उत्पादन की योजना है। कंपनी ग्रीन ईंधन पर करीब 15 अरब रुपये निवेश करेगी।

हाइड्रोजन और ग्रीन हाइड्रोजन में अंतर

- जल को हाइड्रोजन और आक्सीजन में विभाजित कर हाइड्रोजन प्राप्त की जाती है। यह प्रक्रिया इलेक्ट्रोलाइजर से संपन्न की जाती है। यदि इस प्रक्रिया में जीवाश्म ईंधन आधारित ऊर्जा का प्रयोग होता है तो उत्पाद हाइड्रोजन कहलाता है। यदि नवीकरणीय (सौर व जल) ऊर्जा का प्रयोग किया जाए तो बनने वाली हाइड्रोजन ग्रीन कहलाती है क्योंकि इसमें तनिक भी कार्बन उत्सर्जन नहीं होता।
- देश की तैयारी अलग-अलग ग्रीन हाइड्रोजन उत्पादन जोन बनाने की है। साथ में अंतरराज्यीय ऊर्जा स्थानांतरण शुल्क 25 वर्ष के लिए माफ करने और ग्रीन हाइड्रोजन व अमोनिया उत्पादकों को प्राथमिकता से पावर ग्रिड से जोड़ने पर भी विशेष ध्यान दिया जाएगा।

इन स्थानों पर हो सकता है उपयोग

- हाइड्रोजन का उपयोग वाहन चलाने के साथ घरेलू उपयोग में और पोर्टेबल पावर सोर्स के तौर पर भी किया जा सकता है।
- रसायन, लौह-स्टील तथा हीटिंग उद्योगों में इसका उपयोग हो तो प्रदूषण कम हो सकता है।

नेशनल ग्रीन हाइड्रोजन मिशन देश में इस नए ईंधन के लिए मजबूत परिवेश बनाने में सक्षम होगा। भारत को इलेक्ट्रोलाइजर विनिर्माण केंद्र बनाने के लिए सरकार की प्रोत्साहन योजना (पीएलआइ) स्वागत योग्य है।

-हेमंत माल्या, फेलो, काउंसिल आन एनर्जी, एनवायरमेंट एंड वाटर

(इनपुट: नीति आयोग, विज्ञान व प्रौद्योगिकी विभाग, रायटर, टेरी, इंवेस्टइंडियाडाटकाम) जागरण रिसर्च

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₹19,744 cr green hydrogen mission gets cabinet nod

Rituraj Baruah, Gulveen Aulakh & Saurav Anand
NEW DELHI

The Union cabinet on Wednesday approved the national green hydrogen mission, allocating ₹19,744 crore to produce 5 million tonnes of green hydrogen annually by 2030.

Of the total allocation, the government would provide incentives worth ₹17,490 crore for producing electrolyzers and green hydrogen for five years, ₹1,466 crore for pilot projects, ₹400 crore for research and development, and ₹388 crore for other mission components, a government statement said, adding that the ministry of new and renewable energy (MNRE) will formulate the guidelines for implementation of the respective components of the scheme.

"The mission will provide a much-needed boost to encourage the green hydrogen industry. This intervention is even more significant because it comes at a time India has the G20 presidency, clearly showcasing India's commitment to lead the global energy transition," said Vineet Mittal, chairman of Avaada Group, a green energy developer.

Mint first reported the government's plans to develop a green hydrogen programme on 1 July 2021. On 24 October 2022, *Mint* had also reported that the national green hydrogen mission would be allocated around ₹20,000 crore.

The government expects the mission to attract investments worth ₹8 trillion by 2030 and create 600,000 jobs. BLOOMBERG

The central government expects the mission to attract investments worth ₹8 trillion by 2030 and create about 600,000 jobs.

Minister for new and renewable energy, R.K. Singh tweeted: "The National Green Hydrogen Mission, approved by the cabinet today, will make India a global hub for production, utilisation and export of green hydrogen."

Addressing reporters after the cabinet meeting, information and broadcasting minister

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Union minister Anurag Thakur briefs the media about the decisions taken in the cabinet meeting, in New Delhi on Wednesday. PTI

₹19,744 cr green hydrogen mission gets cabinet nod

FROM PAGE 1

Anurag Thakur said that the mission would also result in a reduction in CO_2 emission by nearly 50 million tonnes annually and save India ₹1 trillion in its fossil fuel imports.

The mission aims to make India a hub for manufacturing and exporting green hydrogen.

"It will help the country achieve its target of becoming energy independent by 2047 and also achieve the vision of 'Atmanirbhar Bharat' (self-reliant India)," Thakur said.

The mission will also support pilot projects in emerging end-use sectors.

In addition, regions suitable for large-scale production and use of hydrogen will be identified and developed as green hydrogen hubs.

The draft national green hydrogen policy was released in February last year.

Rajat Seksaria, chief executive officer of ACME Group, said that the incentive programme makes the green molecule from India competitive.

"This is required for the initial few projects and create green hydrogen hubs, which will allow supply chains to be established and scale of production to increase. Several nations have already come up with green hydrogen subsidies and support programmes," he said.

In another cabinet decision to support India's energy transition, the government approved the investment for the 382MW Sunni Dam Hydro Electric Project by state-owned SJVN Ltd in Himachal Pradesh with an estimated cost of ₹2,614 crore, which would include the Centre's budgetary support of ₹13.80 crore.

According to the government, the implementation of the project will generate employment for about 4,000 people during the peak construction phase of the project.

The Union cabinet also approved a ₹2,539.61 crore 'Broadcasting Infrastructure and Network Development' central sector scheme to upgrade Prasar Bharati's broadcasting equipment and transmission capabilities.

All India Radio (AIR) and Doordarshan (DD) will use the scheme for financial support for expenses related to the expansion and upgradation of its broadcasting infrastructure, content development and civil work related to the organization.

The cabinet also okayed a ₹2,539.61 cr broadcasting infra scheme to upgrade Prasar Bharati's broadcasting capabilities

The scheme will increase coverage of AIR FM transmitters in the country to 66% by geographical area and 80% by population, up from 59% and 68%, respectively.

The scheme also envisages free distribution of over 800,000 DD Free Dish set-top boxes to people living in remote, tribal, left-wing extremism-affected districts and border areas, Thakur said.

The Union cabinet separately approved the ex-post facto renaming of the Greenfield International Airport Mopa, Goa, as 'Manohar International Airport – Mopa, Goa', as a mark of tribute to the former defence minister and Goa chief minister Manohar Parrikar, who died of cancer in 2019.

Saurav Anand contributed to the story

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India's green hydrogen push

Union Cabinet has cleared a Rs 20,000-cr National Green Hydrogen Mission to make India a global green hydrogen hub. What is green hydrogen, what are its advantages, what will the Govt's Mission entail?

ANIL SASI
NEW DELHI, JANUARY 4

THE GOVERNMENT has formally approved the National Green Hydrogen Mission with a stated aim of making India a global hub for the production of green hydrogen.

An outlay of Rs 19,744 crore was cleared by the Union Cabinet on Wednesday, aimed at the creation of export opportunities for green hydrogen and its derivatives; decarbonisation of the energy sector and use in mobility applications in a bid to lower the dependence on imported fossil fuels; and development of indigenous manufacturing capacities.

The ultimate aim is to fuel key sectors of the economy using hydrogen that is made by splitting water by an electrical process called electrolysis using a device called electrolyser that is powered entirely by renewable energy.

India's first indigenous hydrogen fuel cell bus was launched in August 2022. *ANI*

Hydrogen as a fuel

Hydrogen exists only in combination with other elements, and has to be extracted from naturally occurring compounds like water. Hydrogen is a clean molecule, but the process of extracting it is energy intensive.

While hydrogen's potential as a clean fuel source has a history of nearly 150 years, it was only after the oil price shocks of the 1970s that the possibility of hydrogen replacing fossil fuels came to be considered seriously. Three carmakers — Japan's Honda and Toyota, and South Korea's Hyundai — have since moved decisively to commercialise the technology, albeit on a limited scale.

The sources and processes by which hydrogen is derived are categorised by colour tabs. Hydrogen produced from fossil fuels is called grey hydrogen, which constitutes the bulk of the hydrogen generated today. Hydrogen from fossil fuels with carbon capture and storage options is called blue hydrogen, while hydrogen generated using electrolysers powered by renewable power sources is called green hydrogen.

Green hydrogen potential

Green hydrogen has specific advantages. One, it is a clean burning molecule that can decarbonise a range of sectors including iron and steel, chemicals, and transportation. Two, renewable energy that cannot be stored or used by the grid can be channeled to produce hydrogen.

Green hydrogen is not commercially viable at present. The current cost in India is around Rs 350-400 per kg; it is likely to become viable only at a production cost of under Rs 100/ kg. This is what the Hydrogen Energy Mission aims for.

With implicit subsidy support and a government-backed R&D push, the plan is to target lower costs of renewable power generation and to bring down the costs of electrolysers to make the production of green hydrogen cost-competitive. Green hydrogen could eventually potentially replace fossil fuels and fossil fuel-based feedstocks in fertiliser production, petroleum refining, steel production, and transport applications.

India's Mission was first announced by the Prime Minister in his Independence Day speech in 2021. The Ministry of New and Renewable Energy is in the process of formulating guidelines for the scheme that seeks to promote the development of green hydrogen production capacity of at least 5 million metric tonnes (MMT) per annum with an associated renewable energy capacity addition of about 125 gigawatts by 2030.

A major part of this is a proposed Strategic Interventions for Green Hydrogen Transition Programme (SIGHT), under which two financial incentive mechanisms — targeting domestic manufacturing of electrolysers and the production of green hydrogen — will be promoted to achieve a reduction in fossil fuel imports and abatement of annual greenhouse gas emissions by 2030.

Auto sector, fuel cells

Hydrogen is an energy carrier, not a source of energy. Hydrogen fuel must be transformed into electricity by a fuel cell stack before it can be used to power a car or truck.

A fuel cell converts chemical energy into electrical energy using oxidising agents through an oxidation-reduction reaction. Fuel cell-based vehicles most commonly combine hydrogen and oxygen to produce electricity to power the electric motor on board. Since fuel cell vehicles use electricity to run, they are considered electric vehicles (EVs).

Inside each fuel cell, hydrogen is drawn from an onboard pressurised tank and made to react with a catalyst, usually made from platinum. As the hydrogen passes through the catalyst, it is stripped of its electrons, which are forced to move along an external circuit, producing an electrical current. This is used by the electric motor to power the vehicle, with the only byproduct being water vapour.

Hydrogen fuel cell cars have a near zero carbon footprint. Hydrogen is about 2-3 times as efficient as burning petrol, because an electric chemical reaction is much more efficient than combustion. The Toyota Mirai and the Honda Clarity cars are powered by fuel cells.

Use cases in India

India's electricity grid is predominantly coal-based, thus negating collateral benefits from a major EV push — as coal will have to be burnt to generate the electricity that will power these vehicles.

Hydrogen vehicles can be especially effective in long-haul trucking and other hard-to-electrify sectors such as shipping and long-haul air travel. Using heavy batteries in these applications would be counterproductive, especially for countries such as India, where the electricity grid is predominantly coal-fired.

Besides auto, there is a concerted attempt to leverage green hydrogen in sectors such as petroleum refining and steel. In April 2022, Oil India Limited commissioned India's first 99.99 per cent pure green hydrogen plant in Jorhat.

In the proposed Mission, the steel sector has been made a stakeholder, and it is proposed to set up pilot plants with part funding from the government to explore the feasibility of using green hydrogen in Direct Reduced Iron (DRI) production by partly replacing natural gas with hydrogen in DRI plants.

Kerala has set up a high-level working group for its own Hydrogen Economy Mission to make the state "a green hydrogen hub".

Indian Oil Corporation Ltd's R&D centre, in collaboration with Tata Motor Limited, had earlier carried out trials of hydrogen fuel cell buses. Reliance Industries Ltd, Adani Enterprises, JSW Energy, and Acme Solar have plans to tap the green hydrogen opportunity. Adani announced in June that it will collaborate with France's Total Energies to create the "world's largest green hydrogen ecosystem". US-based Ohmium International has commissioned India's first green-hydrogen factory in Karnataka.

INDIAN EXPRESS, Delhi, 5.1.2023
Page No. 5, Size:(14.62)cms X (15.95)cms.

SUSTAINABLE ENERGY TRANSITION

Green hydrogen mission gets Cabinet nod, initial outlay Rs 19,744 crore

Target is Rs 8 lakh cr investment, 6 lakh jobs by 2030: Govt

DIVYA A & ESHA ROY
NEW DELHI, JANUARY 4

WITH THE aim to make India energy independent and decarbonise major sectors of the economy, the Union Cabinet on Wednesday approved the National Green Hydrogen Mission (NGHM), with an initial outlay of Rs 19,744 crore.

A flagship programme of the Centre, Prime Minister Narendra Modi had first announced the NGHM in his Independence Day speech in 2021, after which the Ministry of New and Renewable Energy (MNRE) was tasked with formulating a draft plan.

Announcing the Cabinet decision, Union Information and Broadcasting Minister Anurag Thakur said the programme aims to make India a global hub for production and export of green hydrogen and its derivatives.

The plan is to provide incentives to promote the manufacturing of low-cost green hydrogen in a bid to cut emissions. Green hydrogen will play a huge role in countering climate change in the coming years, said Thakur.

The target is to bring in an investment of Rs 8 lakh crore by 2030, and create over 6 lakh jobs.

CONTINUED ON PAGE 6

EXPLAINED

What is green hydrogen?

GREEN HYDROGEN is produced by splitting water through electrolysis, using an electrolyser that is powered by renewable energy. Green hydrogen has specific advantages. One, it is a clean burning molecule, which can decarbonise sectors including iron and steel, chemicals, and transportation. Two, renewable energy that cannot be stored or used by the grid can be channelled to produce it.

EXPLAINED
SIMPLY PUT
INDIA'S GREEN HYDROGEN PUSH
PAGE 16

INDIAN EXPRESS, Delhi, 5.1.2023
Page No. 5, Size:(14.62)cms X (15.95)cms.

Cabinet clears green hydrogen mission

"Nearly 50 MMT (million metric tonne) per annum of CO2 emissions is also expected to be averted with this by 2030," the government said in a statement.

The NGHM is a key component in India's attempt at energy transition from fossil fuels to renewables, with the government having announced its new nationally determined contributions after COP 26 in Glasgow. The government had committed to reduce emissions intensity of GDP by 45 per cent by 2030 (from its 2005 level) and achieve about 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.

The government envisages the production capacity of green hydrogen to touch at least 5 MMT per annum by 2030, the statement said. Besides, it also expects a cumulative reduction in fossil fuel imports of over Rs 1 lakh crore, and an abatement of 50 MMT of annual greenhouse gas emissions.

The outlay includes Rs 17,490 crore for the SIGHT programme, Rs 1,466 crore for pilot projects, Rs 400 crore for research and development, and Rs 388 crore towards other mission components, Thakur said. The MNRE will now formulate guidelines for the implementation of its respective components.

Under the Strategic Interventions for Green Hydrogen Transition (SIGHT) programme, two distinct financial incentive mechanisms – targeting domestic manufacturing of electrolysers and production of green hydrogen – will be provided. The mission will also support pilot projects in emerging end-use sectors, while regions capable of supporting large-scale production and/or utilisation will be identified, to be developed as green hydrogen hubs.

The minister said that NGHM will have other benefits such as creation of export opportunities for green hydrogen and its derivatives; decarbonisation of industrial, mobility and energy sectors; development of indigenous manufacturing capabilities; and development of cutting-edge technologies.

An enabling policy framework will be developed to support the establishment of the green hydrogen ecosystem, including the development of a robust standards and regulations framework. A public-private partnership framework for R&D (Strategic Hydrogen Innovation Partnership - SHIP) will be facilitated under the mission. A coordinated skill development programme will also be undertaken under the mission.

"Green hydrogen is an expensive technology and the viability of this technology can be improved through government support. Allocation of money for pilot projects and strategic interventions, especially if focussed on electrolysers, will improve feasibility of such projects and will help in garnering more investment from the private sector as well," said Vibhuti Garg, Director, South Asia, Institute for Energy Economics and Financial Analysis (IEEFA).

Hemant Mallya of the Council on Energy, Environment and Water (CEEW) said the programme will also increase India's energy security and reduce its dependence on import of LNG (liquefied natural gas). There are two major sectors that green hydrogen is likely to impact favourably – fertilisers and crude oil refineries – both of which currently use large amounts of LNG. The use of green hydrogen will not only reduce the dependence on imports, but the LNG can be channelled into other sectors currently dependent on fossil fuels, thus improving air quality.

Green Hydrogen will be an important factor in the energy transition of the transport sector – particularly long distance transport, in which electric vehicles are currently unviable due to the size of batteries and infrastructure required for it.

Meanwhile, the Cabinet Committee on Economic Affairs (CCEA) also approved the investment for 382 MW Sunni Dam Hydro Electric Project in Himachal Pradesh (estimated cost of Rs 2,614.51 crore), and the I&B ministry's proposal regarding a Rs 2,539-crore scheme called Broadcasting Infrastructure and Network Development (BIND), for infrastructure development of Prasar Bharati, which includes All India Radio (AIR) and Doordarshan (DD).

HINDUSTAN TIMES, Delhi, 5.1.2023
Page No. 1, Size:(18.32)cms X (19.54)cms.

Green hydrogen plan gets nod from Cabinet

Rajeev Jayaswal
letters@hindustantimes.com

NEW DELHI: In an ambitious move aimed at improving India's energy security and helping the country cut carbon dioxide emissions, the Union Cabinet chaired by Prime Minister Narendra Modi on Wednesday approved an initial outlay of ₹19,744 crore for the National Green Hydrogen Mission up to 2029-30, including incentives to attract investments worth ₹8 lakh crore and create 600,000 direct jobs. The mission is expected to cut around 50 million tonnes of carbon emissions.

Stating the expected deliverables of the mission after the meeting, information and broadcasting minister Anurag Singh Thakur said: "We will have annual production of 5 million tonnes of green hydrogen, it will annually reduce 50 million metric tonnes of carbon emission. Not only that; it will lead to [cumulative] savings of ₹1 lakh crore in fossil fuel imports."

Hydrogen produced using renewable energy to split water (electrolysis) is termed as "green hydrogen" as opposed to "grey hydrogen" produced from fossil fuel. India plans to invest in developing an electrolysis capacity (or electrolyser capacity) of 60-100 GW as part of the effort to produce green hydrogen, Thakur added.

There are two main components of the key incentive package of ₹17,490 crore under the approved mission — about ₹4,590 crore is set aside for manufacturing of electrolyser (which breaks water into hydrogen and oxygen) in next five years, and ₹13,000 crore for producing green hydrogen in the next three years, according to an official who requested anonymity.

Besides that, the mission also set aside ₹1,466 crore for pilot projects, ₹400 crore for research and development (R&D), and ₹388 crore for other components of the mission, this

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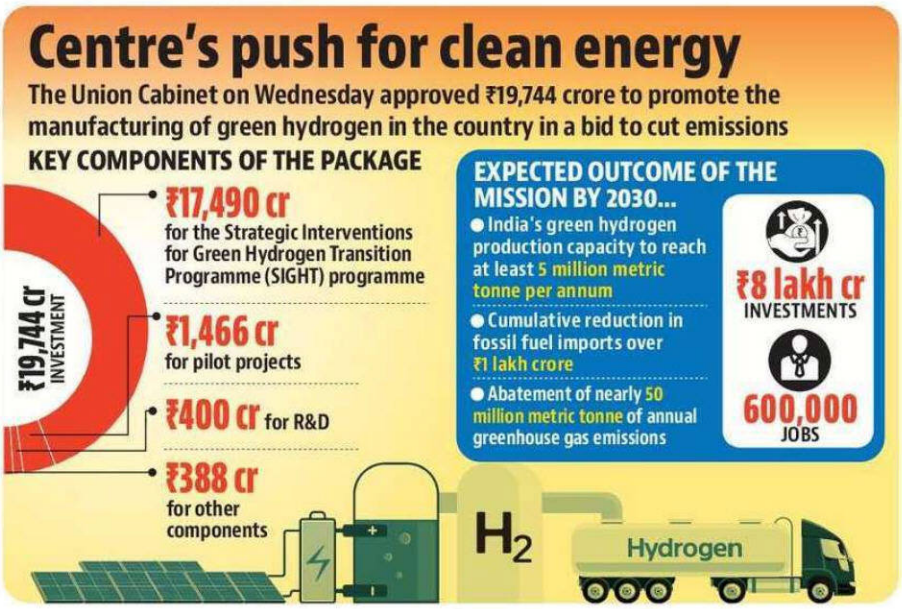


HINDUSTAN TIMES, Delhi, 5.1.2023
Page No. 1, Size:(18.32)cms X (19.54)cms.

person added.

"Incentives of ₹17,490 crore are expected to be available in a phased manner — for example, five-year incentive for electrolyser manufacturers may start at ₹4,440 per kw in 2025-26, which may subsequently reduce every year to ₹1,460 per kw in 2029-30," he said. For producers of green hydrogen, this incentive could be ₹50 per kg in 2025-26 and it may reduce annually to ₹30 a kg in the third year (2027-28). The government initially aims to create up to 100 GW electrolysis capacity by 2030. The incentives are expected to bring down the cost of green hydrogen to almost the same level as that of grey hydrogen, around ₹200 a kg.

"The Ministry of New and Renewable Energy (MNRE) is expected to formulate the scheme guidelines and announce the same soon," he added.

Speaking about the fuel of the future, Thakur said India can use green hydrogen for energy, feedstock and mobility, and also export it to other countries. Global green hydrogen demand is expected to be 100 million tonnes by 2030. The US and the EU have invested billions in their own green hydrogen campaigns. Several Indian companies have also articulated plans for the business.

"The mission will facilitate demand creation, production, utilization and export of green hydrogen... An enabling policy framework will be developed to support establishment of green hydrogen ecosystem," Thakur said. "Our aim is to establish India as a global hub of green hydrogen."

All concerned ministries, departments, agencies and institutions of centre and states will undertake focused and coordinated steps to ensure successful achievement of the mission objectives, he added, explaining that the government will create an empowered group involving key departments and stakeholders to facilitate the mission's objectives. MNRE will host the mission secretariat, and a professional will head the mission as director, Thakur said.

Experts termed the mission a "crucial policy measure" in establishing India as a leader in manufacturing and production of green hydrogen. "The announcement of incentives under the National Hydrogen Mission Plan, along with the scale of likely hydrogen demand (25 MT by 2030) in the country, positions India as among the top 3 attractive nations globally for green hydrogen demand and production," said Shubhranshu Patnaik, energy, resources and industrials partner, Deloitte India.

"What will be required alongside this ambitious mission is to create adequate demand by transiting hard-to-abate user industries through incentives and obligations towards green hydrogen," he added.

Deepto Roy, partner at law firm Shardul Amarchand Mangaldas & Co, said: "The successful fashioning of Green Hydrogen infrastructure is key for India's move towards net zero emissions, since green hydrogen has the potential to replace carbon heavy fuel in several key sectors. The outlay on the National Hydrogen Mission would also hopefully provide impetus to continued addition of renewable generation capacity which has been seeing some tail winds in recent times."

BUSINESS STANDARD, Delhi, 5.1.2023
Page No. 1, Size:(19.78)cms X (13.47)cms.

Cabinet approves ₹19,744 cr for National Green Hydrogen Mission

SHREYA JAI
New Delhi, 4 January

The Union Cabinet on Wednesday approved an initial outlay of ₹19,744 crore for the National Green Hydrogen Mission. Addressing the nation on its 75th Independence Day in 2021, Prime Minister Narendra Modi launched a national mission for green fuels in line with the Centre's stated target of making India energy-independent before completing 100 years of Independence. The mission will have four components that aim at enhancing domestic production of green hydrogen and promote the manufacturing of electrolysers — a key constituent for making green hydrogen.

The initial outlay for the mission will include ₹17,490 crore for strategic interventions for green hydrogen transition (SIGHT) programme, ₹1,466 crore for pilot projects, ₹400 crore for research and development (R&D), and ₹388 crore towards other mission components, the Centre said in a statement.

Turn to Page 6

'GREEN' REVOLUTION

Reliance, as part of its ₹75,000-crore green investment push, will set up electrolysers for manufacturing green hydrogen. Aim: 1-1-1 = 1 kilogram (kg) hydrogen at $1 in 1 decade

Adani New Industries to invest $50 billion, along with Total Energies, in building a green hydrogen ecosystem

ACME to invest $1.5 trillion in Tamil Nadu, Karnataka, and Oman over the next seven years for green hydrogen production

Larsen & Toubro commissioned its first green hydrogen manufacturing unit to produce 45 kg daily

ReNew Power to sign $8-billion pact with Egypt for setting up green hydrogen manufacturing

BUSINESS STANDARD, Delhi, 5.1.2023
Page No. 1, Size:(19.78)cms X (13.47)cms.

₹19,500 cr approved for National Green Hydrogen Mission

The initial target is to produce 5 million tonnes (mt) of green hydrogen annually.

SIGHT will include two financial incentive mechanisms for the domestic manufacturing of electrolysers and the production of green hydrogen.

The mission will also support pilot projects in emerging end-use sectors and the production pathways. Regions capable of supporting large-scale production and/or utilisation of hydrogen will be identified and developed as green hydrogen hubs.

An enabling policy framework will be developed to support the establishment of the green hydrogen ecosystem, said the government.

"A robust standards and regulations framework will also be developed. Further, a public-private partnership framework for R&D (strategic hydrogen innovation partnership — SHIP) will be facilitated under the mission," read the statement.

In February last year, the Ministry of Power notified the green hydrogen/ammonia policy at a production of 5 mt of green hydrogen by 2030. The same target remains in the final mission as well.

According to the policy drafted by the Ministry of Power, green hydrogen/ammonia manufacturers can set up green energy projects or procure the same from energy exchanges. Several waivers, including interstate transmission charges, ease of getting open access, and transmission connectivity, were provided under the policy.

Every leading conglomerate with interest in the energy sector — from new-age renewable energy companies to automotive makers — has announced either investment or consumption plans for green hydrogen.

Adani Enterprises, Reliance Industries, Tata Group, JSW Energy, Larsen & Toubro, ACME Group, ReNew Power, and others have announced investment plans.

Ashok Leyland, which is India's leading commercial vehicle manufacturer, is looking at a tie-up to run a section of its fleet on green hydrogen.

However, the sector has been demanding sovereign support since the cost of electrolysers and the overall cost of manufacturing green hydrogen is high. The current cost of green hydrogen in the country is around $5 per kilogram.

"The incentive programme makes the green molecule from India competitive. This is required for the initial few projects and to create green hydrogen hubs, which will allow supply chains to be established and the scale of production to increase. Several nations have come up with green hydrogen subsidies and support programmes," said Rajat Seksaria, chief executive officer, ACME Group.

The nodal department for the mission will be the Ministry of New and Renewable Energy. To meet the 5 mt target, it is expected an associated renewable energy capacity of close to 125 gigawatt will be required. The Centre expects close to 50 mt per annum of carbon emissions to be averted by 2030.

FINANCIAL EXPRESS, Delhi, 5.1.2023
Page No. 4, Size:(8.53)cms X (4.79)cms.

NTPC, HPCL in green energy pact

RAJAT MISHRA
New Delhi, January 4

NTPC GREEN ENERGY Ltd (NGEL), a subsidiary of state-run NTPC, and Hindustan Petroleum corporation Ltd (HPCL,) will jointly develop renewable energy projects as part of a new memorandum of understanding signed between the two companies on Wednesday.

The projects will supply 400 megawatts of energy round the clock for the requirements of Hindustan Petroleum.This MoU marks the first step for NGEL and HPCL to collaborate in renewable energy projects which could help HPCL in meeting its clean energy commitments.

Reportedly, state refiner HPCL is working on a plan for net zero carbon emissions by 2040. India, the world's third-biggest greenhouse gas emitter, is aiming to reach net zero emissions by 2070.

Apart from HPCL, in the past, NTPC renewables have signed MoUs and joint venture with ONGC and IOC for developing green energy assets. In July last year, NTPC renewable signed an MoU with IOC for supplying RE-round-the-clock power supply to IOC. Similarly, NTPC and ONGC had signed MoUs to accelerate their footprint in the renewable energy and boost the development of offshore wind energy in India.

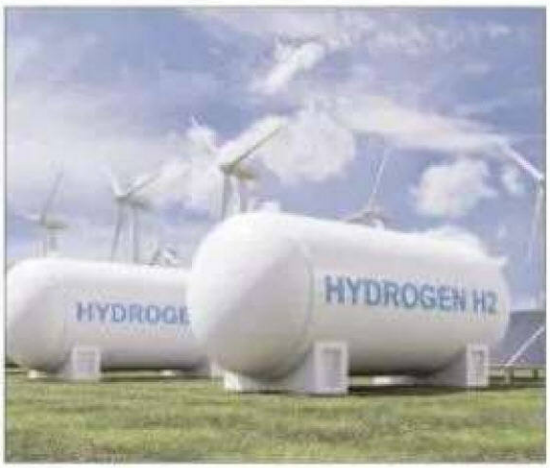
In a bid to reduce the carbon emission, NTPC also commissioned India's first green hydrogen blending project on Wednesday. The green hydrogen blending has been started in the piped natural gas (PNG) network of NTPC Kawas township, Surat. The project is a joint effort of NTPC and Gujarat Gas Limited (GGL). NTPC's aggressive green energy initiatives have enabled company to crosses the 1-gigawatt (GW) annual capacity mark in the renewable energy segment in FY23.

FINANCIAL EXPRESS, Delhi, 5.1.2023
Page No. 3, Size:(17.63)cms X (14.31)cms.

Cabinet clears ₹19,744-cr hydrogen mission outlay

Aims to attract ₹8-trn investments by 2030

FE BUREAU
New Delhi, January 4



THE CABINET ON Wednesday approved a National Green Hydrogen Mission with an initial outlay of ₹19,744 crore with a view to making India a global hub for manufacturing of this benign source of energy.

The mission, in sync with the plan to reduce carbon intensity of the country's gross domestic product (GDP) and achieve net zero emissions by 2070, seeks to promote development of annual green hydrogen production capacity of at least 5 million tonne (mt) by 2030 with associated renewable energy capacity addition of 125 gigawatt (GW).

Investments to the tune of ₹8 trillion are meant to be catalysed with the support, leading to creation of 600,000 jobs by 2030. It is estimated that the mission would allow cumulative reduction in fossil fuel imports of over ₹1 trillion and abatement of nearly 50 mt of annual greenhouse gas emissions by 2030.

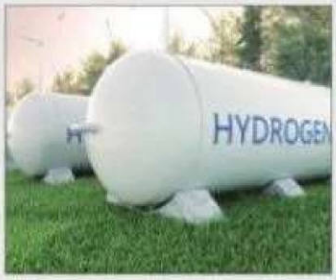
Continued on Page 4

FINANCIAL EXPRESS, Delhi, 5.1.2023
Page No. 3, Size:(17.63)cms X (14.31)cms.

Cabinet clears ₹19,744-cr hydrogen mission outlay

"The initial outlay for the mission will be ₹19,744 crore, including an outlay of ₹17,490 crore for the Strategic Interventions for Green Hydrogen Transition Programme (SIGHT) programme, ₹1,466 crore for pilot projects, ₹400 crore for R&D, and ₹388 crore towards other mission components," a government statement said. The idea is to promote production, utilisation and export of green hydrogen and its derivatives.

The details of the scheme will be worked out by the ministry of new and renewable energy, including the guidelines for its implementation.



Green hydrogen is hydrogen produced by splitting water into hydrogen and oxygen using renewable electricity. It is globally being recognised as an enabler of the global transition to sustainable energy and net zero emission economies. In November 2021, the World Business Council for Sustainable Development and the Sustainable Markets Initiative announced pledges by 28 global companies to drive growth in the supply of hydrogen.

Listing out the comprehensive benefits of the scheme, the government said it would spur creation of export opportunities for green hydrogen and its derivatives, decarbonisation of industrial, mobility and energy sectors; reduction in dependence on imported fossil fuels and feedstock; development of indigenous manufacturing capabilities; creation of employment opportunities; and development of cutting-edge technologies.

The mission will also support pilot projects in emerging end-use sectors and production pathways. Regions capable of supporting large-scale production and/or utilisation of hydrogen will be identified and developed as green hydrogen hubs. An enabling policy framework will be developed to support establishment of the green hydrogen ecosystem. A coordinated skill development programme will also be undertaken under the mission.

All ministries, departments, agencies and institutions of the Central and state governments will undertake focussed and coordinated steps to ensure successful achievement of the mission's objectives. The ministry of new & renewable energy will be responsible for the overall coordination and implementation.

BUSINESS LINE, Delhi, 5.1.2023
Page No. 1, Size:(12.71)cms X (12.49)cms.

Centre clears ₹19,744-cr green hydrogen mission

IN 'SIGHT'. PLI-type scheme planned for manufacturing base; to involve industry

Rishi Ranjan Kala
Amiti Sen
New Delhi

The Union Cabinet on Wednesday approved the national Green Hydrogen Mission with an initial outlay of ₹19,744 crore, which will focus on incentivising the domestic production of electrolysers and green hydrogen.

The mission aims to make India a global hub for production, utilisation and export of green hydrogen and its derivatives, said Anurag Thakur, Minister of Information and Broadcasting, at a media briefing post the Cabinet meet.

GOING GREEN

- ₹17,490 crore set for the SIGHT programme focussing on production of green hydrogen and electrolysers
- To develop green hydrogen production capacity of 5 mtpa by 2030 and associated RE capacity of 125 GW
- Likely to attract ₹8-lakh crore worth investments and create over 6 lakh jobs by 2030
- May reduce fossil fuel imports by over ₹1-lakh crore

Anurag Thakur, I&B Minister

ON PLI LINES

Two separate financial incentive mechanisms — for domestic manufacturing of electrolysers and for production of green hydrogen — will be offered as part of the Strategic Interventions for Green Hydrogen Transition (SIGHT) programme, which has been allocated ₹17,490 crore under the mission.

"The government is considering inviting the industry to participate in the scheme instead of allowing participation on first-come-first-serve basis. Now that the funds have been approved, the details can be finalised. The guidelines for applicants will be worked out soon," said an official.

The Ministry of New and Renewable Energy (MNRE), which is the nodal Ministry for implementing the scheme, will also decide how the funds allocated under SIGHT are to be divided between the two mechanisms, the official added. "SIGHT will be on the lines of the production linked incentive scheme with some variations," he said.

Under the Green Hydrogen Mission, the government has also allocated ₹1,466 crore for pilot projects, ₹400 crore for R&D, and ₹388 crore for other components. The Ministry will formulate the scheme guidelines for implementation of the respective components, per an MNRE statement.

By 2030, the mission aims to develop green hydrogen production capacity of at least 5 million tonnes per annum (mtpa) with an associated renewable energy capacity addition of about 125 GW. It anticipates over ₹8-lakh-crore in investments in the sector by 2030 and create over 6 lakh jobs. This is expected to reduce fossil fuel imports by over ₹1-lakh crore and abatement of nearly 50 mt of annual greenhouse gas emissions.

'SIGNIFICANT'

Avaada Group Chairman Vineet Mittal said the intervention is significant because it comes at a time when India has the G20 presidency, clearly showcasing the country's commitment to lead the global energy transition.

"We hope the government will eventually make it mandatory for select industries to use green hydrogen and solar power to reduce reliance on fossil fuels. We also see this as a prospect for the indigenous production of power components, panels, and parts," said Gautam Mohanka, MD of Gautam Solar.

ASIAN AGE, Delhi, 5.1.2023
Page No. 1, Size:(11.88)cms X (22.69)cms.

₹20K-cr cleared to make India a hub for 'green hydrogen'

Bid for energy sufficiency by 2047

MADHUSUDAN SAHOO
NEW DELHI, JAN.4

In a move to make India a global hub for the manufacturing of green hydrogen, the Union Cabinet headed by Prime Minister Narendra Modi on Wednesday cleared the National Green Hydrogen Mission with a total outlay of ₹19,744 crores. The move is also targeted to help India achieve net-zero carbon emissions by 2070 and become energy-sufficient by 2047.

In this megaproject, the government will spend ₹17,490 crores to encourage the manufacture of electrolyzers and the production of green hydrogen. Thereby, it is expecting an investment of ₹8-lakh crores and ₹1-lakh crores worth of import savings under the National Green Hydrogen Mission by 2030.

The ministry of new and renewable energy will formulate the scheme guidelines for the project implementation.

Briefing the media after the Cabinet decisions, Union minister Anurag Thakur said that a total outlay of ₹19,744 crores has been approved by the Cabinet and the initial outlay for the mission will be ₹19,744 crores, including an outlay of ₹17,490 crores for the Strategic Interventions for Green Hydrogen Transition Programme (SIGHT) programme, ₹1,466 crores for pilot projects, ₹400 crores for R&D and ₹388 crores for other mission components.

IN THIS megaproject, the govt will spend ₹17,490 crores to encourage the manufacture of electrolyzers and the production of green hydrogen. Thereby, it is expecting an investment of ₹8-lakh crores and ₹1-lakh crores worth of import savings under the National Green Hydrogen Mission by 2030.

"The mission aims to make India a global hub for production, utilisation and export of green hydrogen. It is a historic step in that direction. It will help India in becoming energy independent and decarbonisation of major sectors of the economy," the minister said.

The mission seeks to promote the development

Turn to Page 4

ASIAN AGE, Delhi, 5.1.2023
Page No. 1, Size:(11.88)cms X (22.69)cms.

₹20K-cr cleared to make India a hub for 'green hydrogen'

■ Continued from Page 1

of green hydrogen production capacity of at least 5 MMT per annum with an associated renewable energy capacity addition of about 125 GW in the country by 2030. It envisages an investment of over ₹8-lakh crores and the creation of over 6-lakh jobs by 2030.

"Besides, it will also result in cumulative reduction in fossil fuel imports of over ₹1-lakh crores and abatement of nearly 50 MMT of annual greenhouse gas emissions by 2030," Mr Thakur said.

According to the official statement, the mission will have a wide range of benefits, including the creation of export opportunities for green hydrogen and its derivatives; the decarbonisation of industrial, mobility and energy sectors; a reduction in dependence on imported fossil fuels and feedstocks; the development of indigenous manufacturing capabilities; the creation of employment opportunities; and the development of cutting-edge technologies, among others.

"The mission will facilitate demand creation, production, utilisation and export of green hydrogen. Under the SIGHT, two distinct financial incentive mechanisms — targeting domestic manufacturing of electrolysers and production of green hydrogen — will be provided under the mission," it added.

MILLENNIUM POST, Delhi, 5.1.2023
Page No. 10, Size:(17.37)cms X (9.47)cms.

NTPC Ltd commissions India's first green hydrogen blending operation in PNG network

NEW DELHI: Country's largest power generator, NTPC Ltd has commissioned India's first green hydrogen blending project. Green hydrogen blending has been started in the piped natural gas (PNG) network of NTPC Kawas township, Surat. The project is a joint effort of NTPC and Gujarat Gas Limited (GGL).

The first molecule of green hydrogen from the project was set in motion by P Ram Prasad, head of project, Kawas in presence of other senior executives of NTPC Kawas and GGL.

After the start of the blending operation, NTPC Kawas held awareness workshops for township residents with help of GGL officials.

NTPC and GGL have worked relentlessly towards achieving this milestone in record time after the foundation stone laid by the Hon'ble Prime Minister of India on 30th July 2022.

This set-up is geared up to supply H2-NG (natural gas) to households of Kawas township at Adityanagar, Surat.

Green hydrogen in Kawas is made by electrolysis of water using power from an already installed 1 MW floating solar project.

Petroleum and Natural Gas Regulatory Board (PNGRB), the regulatory body has given approval for 5 per cent/vol. blending of green hydrogen with PNG to start with and the blending level would be scaled phase wise to reach 20%. Green hydrogen when blended with natural gas reduces CO2 emissions keeping net heating content same.

This feat is achieved only by a few select countries like the UK, Germany, and Australia etc. This would bring India at the centre stage of the global hydrogen economy. MPOST

TIMES OF INDIA, Delhi, 5.1.2023
Page No. 14, Size:(14.84)cms X (16.06)cms.

Eye on climate goals, govt OKs ₹20k cr green hydrogen mission

Will Help Save Huge Amount Of Forex On Import Of Fuels

Vishwa.Mohan@timesgroup.com

EXPECTED OUTCOMES BY 2030

- Development of green hydrogen production capacity of at least 5 MMT (million metric tonne) per annum
- An associated renewable energy capacity addition of about 125 GW
- Over ₹8 lakh crore in total investments
- Creation of over 6 lakh jobs
- Cumulative reduction in fossil fuel imports by over ₹1 lakh crore
- Abatement of nearly 50 MMT of annual greenhouse gas emissions

New Delhi: In what could be a big step towards achieving India's updated climate action goals, the government on Wednesday approved the National Green Hydrogen Mission with initial financial outlay of Rs 19,744 crore. It will help India in not only reducing its carbon footprint but also saving a substantial amount of foreign exchange on import of fossil fuels in due course.

The mission that aims to make India a global hub for production, utilisation and export of green hydrogen and its derivatives will, in fact, eventually help the country become energy independent while taking a big leap towards decarbonisation of major sectors of the economy as part of its long-term goal of carbon neutrality by 2070.

Unlike grey hydrogen which uses natural gas, green hydrogen is produced by the electrolysis of water using renewable energy and thus doesn't emit carbon dioxide into the atmosphere. It is expected that the mission would help India in abating nearly 50 million metric tonnes of annual greenhouse gas (GHG) emission by 2030 in sync with India's updated climate action pledge under the Paris Agreement to reduce emissions intensity (emission per unit of its GDP) by 45% by 2030 from 2005 level.

The ministry of new and renewable energy (MNRE) will formulate the guidelines for implementation of the different components of the Mission, approved by the Cabinet in its meeting chaired by PM Narendra Modi.

The move comes a day after Modi spoke about the importance and necessity of the mission for meeting India's growing energy needs. Addressing a gathering of scientists at 108th Indian Science Congress, being held in Nagpur, through video-conference, the Prime Minister on Tuesday said it was necessary that various essential components like electrolysers should be made in the country itself to make the Mission successful.

The components of the mission include an outlay of Rs 17,490 crore for the Strategic Interventions for Green Hydrogen Transition Programme (SIGHT), Rs 1,466 crore for pilot projects, Rs 400 crore for R&D, and Rs 388 crore towards other related initiatives. The allocation is expected to attract huge investments and encourage R&D, focussed on electrolysers, in the next few years.

"The mission will have wide ranging benefits such as creation of export opportunities for green Hydrogen and its derivatives; decarbonisation of industrial, mobility and energy sectors; reduction in dependence on imported fossil fuels and feedstock; development of indigenous manufacturing capabilities; creation of employment opportunities; and development of cutting-edge technologies," said an official statement on the Cabinet's decision.

HINDU, Delhi, 5.1.2023
Page No. 1, Size:(12.71)cms X (11.73)cms.

Centre clears ₹19,744 cr. Green Hydrogen Mission

Plan is to reduce fossil fuel imports, decarbonise major sectors of the economy and turn the country into a global hub of production and export of green hydrogen and its derivatives

The Hindu Bureau
NEW DELHI

The Union Cabinet on Wednesday approved the National Green Hydrogen Mission with an initial outlay of ₹19,744 crore, in a move aimed at making the country a global hub to produce, utilise and export green hydrogen and its derivatives.

The government expects that the initiative will help abate nearly 50 million tonnes (MT) of annual greenhouse gas emissions by 2030 and cumulatively reduce fossil fuel imports estimated at over ₹1 lakh crore.

Briefing presspersons about the Cabinet decisions, Union Information and Broadcasting Minister Minister Anurag Thakur said the mission would be instrumental in making India energy-independent and decarbonising major sectors of the economy.

The initial outlay includes ₹17,490 crore for the Strategic Interventions for Green Hydrogen Transition Programme (SIGHT); ₹1,466 crore for pilot projects; ₹400 crore for research and development; and ₹388 crore for other mission components.

Hydrogen is sought after as a fuel because its combustion releases only steam. The Ministry of New and Renewable Energy is to formulate the scheme guidelines for implementation of the respective components.

GH2: promises & challenges

- Hydrogen produced is said to be 'green' if all its inputs are green. Decarbonisation plans of many countries include green hydrogen (GH_2) because combusting hydrogen releases only heat and steam
- 60% of India's energy comes from fossil fuel sources
- The production mode of choice of green hydrogen is through the electrolysis of water
- India currently lacks the required electrolysers and needs cheaper renewable energy

- Technologies to adapt hydrogen fuel cells for use in vehicles are largely immature in India
- Hydrogen leaks easily and liquid hydrogen reacts explosively with air, incurring significant storage and transport costs

Offers incentives

The government has already announced some incentives with a view to cutting the cost of hydrogen by half by 2030. They include priority power supply for manufacturers, concessions and short-term waivers for distributors and transmission costs, respectively; and the Ministry of New and Renewable Energy is expected to operate a single-window clearance system for proposals.

CONTINUED ON
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HINDU, Delhi, 5.1.2023
Page No. 1, Size:(12.71)cms X (11.73)cms.

Centre clears Green Hydrogen Mission

According to the government, the mission would lead to the development of green hydrogen production capacity of at least 5 MMT per annum with an associated renewable energy capacity addition of about 125 GW by 2030. It is expected to bring in investments of over ₹8 lakh crore, create over six lakh jobs, and help meet international commitments to fight climate change.

"Under the SIGHT programme, two distinct financial incentive mechanisms – targeting domestic manufacturing of electrolysers and production of green hydrogen – will be provided. The mission will also support pilot projects in emerging end-use sectors and production pathways. Regions capable of supporting large-scale production and/or utilisation of hydrogen will be identified and developed as green hydrogen hubs," it said.

Public-private partnership

While a robust standards and regulations framework is to be developed for the ecosystem, the mission will facilitate a public-private partnership framework for research and development (R&D).

The new policy is in part to green the hydrogen used as fuel in various sectors, to the tune of 6 million tonnes per annum as of 2020, and to replace fuels in other sectors.

Some roadblocks in its implementation are procuring the electrolysers and electrolytes required to produce 'green' hydrogen and reducing the contribution of fossil fuel sources in India's power generation mix. The former are already in great demand; the latter requires more and cheaper solar and wind power.

The Ministry of Power is expected to raise demand for use of hydrogen as a fuel, which, industry members have noted, could be another issue in the absence of a mandate to transition and technologies to adapt hydrogen fuel cells for use in vehicles.

Storing and moving hydrogen also incurs non-trivial costs because the gas leaks easily. Even small quantities of liquid hydrogen, which is easier to transport, react explosively with air.

ECONOMIC TIMES, Delhi, 5.1.2023
Page No. 4, Size:(8.57)cms X (14.74)cms.

Govt Panel to Take Call on Minimum Purchase of Green H2 by Key Sectors

Cabinet approves ₹19,000-crore green hydrogen mission

Anubhuti.Vishnoi
@timesgroup.com

New Delhi: The Centre is likely to set up an empowered committee or a group of secretaries to determine the mandatory green hydrogen purchase trajectory for refineries, fertiliser firms and city gas distribution companies.

The committee will determine the phase-wise minimum mandatory purchase of green hydrogen by various sectors keeping in mind feasibility and demand concerns, besides overall energy security considerations, **ET** has learnt.

The proportion of cost being passed on to end consumers will also be a critical factor.

Mandatory purchase of green hydrogen by big consumers is a major part of the government's plan to boost domestic production and demand for the fuel.

The committee is proposed to have on board secretaries/senior officials from the stakeholder ministries of power, new & renewable energy, petroleum & natural gas, steel, and fertilisers, among others. Some industry experts may also be brought on board the panel, which is expected to be chaired by the Cabinet secretary.

Mission Goals

At least 5 mmt green hydrogen capacity per annum

Associated 125 gw renewable energy capacity addition

₹8 lakh crore totalinvestment; 6 lakh new jobs

₹1 lakh crore reduction in fossil fuel imports

50 mmt of annual greenhouse gas emissions abatement

CABINET NOD

The Cabinet on Wednesday approved the ₹19,000-crore green hydrogen mission, a key project to ensure energy transition and also the cornerstone of India's climate action targets for 2030 as well as the 2070 'Net Zero' goal.

Originally, it was envisaged that the Cabinet proposal itself would spell out the percentage-wise mandatory green hydrogen purchase to ensure a clear-cut trajectory for the green fuel usage and scale-up.

Discussions were held on the issue and purchase obligations moving up from 10% to 25% considered for fertiliser and refineries sector, followed by others. However, concerns were raised by some of the stakeholder ministries.

There are other challenges too. The issue of transportation and storage will require prerequisites such as clearances from the Petroleum and Explosives Safety Organization (PESO) as well as various environmental safeguards and right of way across states.

MINT, Delhi, 5.1.2023
Page No. 4, Size:(9.04)cms X (7.55)cms.

Oil's new year slump deepens; falls below $75 on China woes

Bloomberg
feedback@livemint.com

Oil's rough start to the year worsened as a deteriorating demand outlook came to the fore, buttressed by China's near-term struggles with Covid-19, milder winter weather and US refinery disruption.

West Texas Intermediate fell 3.5% to below $75 a barrel after posting a 4.2% drop Tuesday, the most since November. Brent, the global benchmark, slid below $80 on Wednesday.

A rising death toll in China following the easing of virus curbs is overwhelming crematoriums, and there are warnings of more casualties heading into the Lunar New Year. Above-average temperatures in the US and Europe, meanwhile, are easing fears of an energy crunch.

West Texas Intermediate fell 3.5% on Wednesday. BLOOMBERG

Crude's dwindling levels of open interest have left it open to sharp swings in recent months, and a failed attempt to break above its 50-day moving average this week has done little to improve the technical picture. While sanctions against Moscow over Russia's war in Ukraine dragged its oil flows to 2022 lows late last month, that's been of little relief to bulls so far this year.

The impact of a pre-Christmas freeze that hobbled refinery capacity in parts of the US should become clearer in the inventory data this week, with industry-funded American Petroleum Institute's figures due later. In the short-term, it has lowered crude processing capacity in North America and is also weighing on prices.

TIMES OF INDIA, Delhi, 5.1.2023
Page No. 14, Size:(3.72)cms X (13.12)cms.

Incentive to put India among top 3 global 'fuel of future' hotspots

Sanjay.Dutta@timesgroup.com

New Delhi: The Rs 19,744 crore incentive for green hydrogen (GH2) along with the projected production capacity of 5 million tonnes by 2030 positions India amongst the top three hotspots globally for investment and production of the 'fuel of the future', industry players and analysts said.

India is the latest to incentivise GH2. The US recently extended support to GH2 under its Inflation Reduction Act. Germany, UK and Japan also have announced programmes to support clean hydrogen.

"The incentive will make the green molecule from India competitive and help the country become a global export hub of GH2 and green ammonia," said ACME group CEO Rajat Seksaria, whose company is building green hydrogen and ammonia plants in India and Oman.

According to Hemant Mallya of CEEW, incentive scheme for electrolysers will help establish India as an electrolyser manufacturing hub and tap into the global electrolyser market of $425 billion.

ECONOMIC TIMES, Delhi, 5.1.2023
Page No. 4, Size:(16.56)cms X (14.94)cms.

OIL IMPORTS FROM MOSCOW UP NEARLY A QUARTER OVER NOVEMBER

Top Supplier Russia Ships Record 1.17 M Barrels/Day of Crude in Dec

State-run refiners import 600k bpd and private sector 570k bpd: Vortexa data

Sanjeev.Choudhary
@timesgroup.com

New Delhi: Every fourth barrel of crude imported by India in December came from Russia, according to energy cargo tracker Vortexa. Russia remained the top exporter to the country for the third month in a row in December, supplying 1.17 million barrels a day (mbd) of crude, a record. This was 24% higher than imports from Russia in November, aided by a three-quarter rise in imports by private sector refiners.

Imports of Russian crude by state-run refiners remained nearly stable at around 600,000 barrels per day (bpd), while those by private sector refiners rose to about 570,000 bpd.

India's overall crude imports rose 7% month-on-month to 4.6 million bpd. Imports from Iraq and UAE fell marginally, while those from Saudi Arabia rose marginally. US exports to India fell by a fifth.

India's imports of seaborne Russian crude were 50% more than China's and nine times that of the EU's as the latter's ban on imports from Russia kicked in on December 5. For the first time, India's imports of Russian crude exceeded that of China's, which fell 27% month-on-month to 770,000 barrels per day in December.

The difference in shipping time helps explain the diverging trends between Indian and Chinese imports. "For India, the main grade that is imported is Urals, which takes about a month from Russia's Baltics and Black Sea to India. This means that the December arrivals into India were loaded in November, before the EU ban kicked in," said Serena Huang, an analyst at Vortexa.

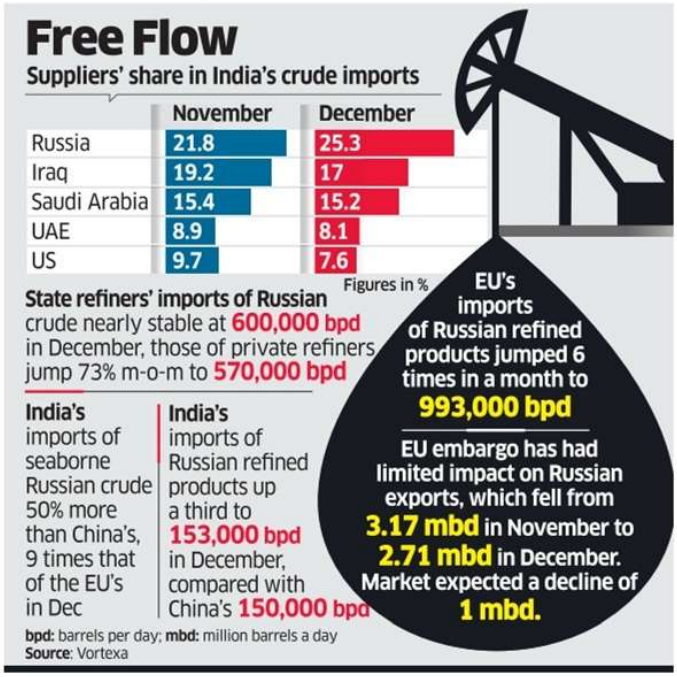
"For China, the main grade that is imported is ESPO Blend, which takes about two weeks from Russia's Kozmino to China. While some of these cargoes loaded in end November, majority of them loaded in December, and could explain the hesitation for Chinese traders or refiners to purchase them after the EU ban was implemented," she said.

The surge in Covid cases in China has dampened domestic demand and, in turn, margins, which may also weaken buying appetite from Chinese refiners, Huang added.

India's imports of Russian refined products also rose by a third from the previous month to 153,000 barrels per day in December, compared with China's 150,000 bpd. EU's imports of Russian refined products jumped more than six times in a month to 993,000 bpd.

The EU embargo had a limited impact on Russian exports in December. Loading of crude at Russian ports fell from 3.17 mbd in November to 2.71 mbd in December, down 14% but much lower than the market expectation of a decline of 1 mbd. "Nearly 280,000 bpd of Russian crude loaded in December does not have a firm destination yet, which means they could still be looking for buyers. It remains to be seen whether 'friendly' countries will be increasing their uptake or if new buyers will emerge," Huang said.

The Group of Seven nations imposed a price cap of $60 per barrel on the export of Russian oil on December 5, barring its shippers, insurers and financiers from backing any deal struck above the cap. A 45-day wind-down period has been given for Russian oil purchased above the cap, provided it was loaded before December 5 and unloaded before January 19.



BUSINESS STANDARD, Delhi, 5.1.2023
Page No. 6, Size:(39.14)cms X (17.91)cms.

Operational losses of OMCs may shrink in Q3

SUBHAYAN CHAKRABORTY
New Delhi, 4 January

After two tight quarters of profit-margin shrinkage due to global volatility, Indian oil-marketing companies (OMCs) are expected to see reduction in operational losses in the October-December quarter (third quarter, or Q3) of 2022-23 (FY23), observed analysts.

This will come about as a result of lower marketing losses and higher gross refining margins (GRMs) as global disruption in crude oil supplies continues, they added.

From late November onwards, blended marketing margins for petrol and diesel have begun to recover. Margins rose to a 10-month high of about ₹2.5 per litre in December, said analysts.

The marketing margin on petrol has improved to nearly ₹10 per litre in Q3FY23 after posting a loss in the preceding two quarters.

"Blended losses in Q3 are expected to come down to ₹3 versus ₹8.7 in the second quarter," said Avishek Datta, research analyst, Prabhudas Lilladher.

Based on current trends, OMCs are expected to see blended marketing profits (currently ₹1.5 per litre) in the fourth quarter, he added.

Higher GRMs

In recent months, losses in the marketing segment have also been partially offset by record-high GRMs in FY23.

GRM is the amount refiners earn from turning every barrel of crude into refined fuel products.

Average GRMs for Q3 have sustained at $13-16 per barrel for the three OMCs, said ICICI Securities.

Indian Oil Corporation (IndianOil) has been the biggest beneficiary of high GRMs, while the highest marketing leverage has put Hindustan Petroleum Corporation (HPCL) in the most disadvantageous position, Motilal Oswal Research pointed out in a recent note.

With the supply of refined products reducing as a result of supply disruptions in Russia and the lower export of petroleum products from China, Indian refiners have seen their earnings go up.

Case in point being the benchmark Singapore GRM hitting a record high $11.4 per barrel in FY23.

Logistics issues on the supply side remain a major headache for OMCs like IndianOil, Bharat Petroleum Corporation, and HPCL, as the diplomatic stand-off between the Western nations and Russia continues to harden in the wake of the war in Ukraine.

Challenges remain

Notwithstanding improvement in marketing margins, the overall operational losses will be upwards of ₹7,200 crore in Q3, said Dutta.

According to calculations by ICICI Securities, OMCs are expected to clock a combined operating loss of ₹31,500 crore in the marketing segment in the current financial year (FY23).

Public sector OMCs have reported cumulative losses of ₹27,276 crore during the first six months of FY23 against a profit before tax of ₹28,360 crore in the same period of 2021-22, the government informed Parliament. This was primarily due to underrecoveries or the difference between the retail selling price and the international rate for petrol, diesel, and liquefied petroleum gas.

Crude prices hit record highs in Calendar 2022, while pump prices remained unchanged.

While the average price of the Indian basket of crude increased 102 per cent (from $43.34 to $87.55 per barrel) between November 2020 and November 2022, the retail prices of petrol and diesel increased in India by only 18.95 per cent and 26.5 per cent during this period, respectively.

As a result, state-controlled oil refiners incurred average marketing losses of ₹9.5 per litre on diesel and ₹0.1 per litre on petrol in FY23 so far, according to Motilal Oswal.

TRICKLING PROFITS

OMCs remain under pressure (₹ cr)

	BPCL		HPCL		IOCL	
	Net sales	PAT	Net sales	PAT	Net sales	PAT
Q2FY22	76,439	**3,201**	82,828	**1,919**	133,195	**6,204**
Q3FY22	95,326	**2,805**	96,323	**1,353**	165,339	**6,143**
Q4FY22	104,080	**2,803**	97,288	**2,018**	175,292	**6,646**
Q1FY23	121,082	**-6,148**	114,127	**-8,557**	223,414	**-279**
Q2FY23	114,820	**-338**	108,101	**-2,476**	208,754	**-992**

PAT: Profit after tax; Source : Capitaline; Compiled by *BS* Research Bureau

FINANCIAL EXPRESS, Delhi, 5.1.2023
Page No. 15, Size:(7.55)cms X (11.28)cms.

Oil prices fall 4% on worry about global economy

LAILA KEARNEY
New York, January 4

OIL FELL BY more than $3 a barrel on Wednesday after slumping in the previous session, weighed down by demand concerns stemming from the state of the global economy and rising COVID cases in China.

Brent futures fell $3.53 to $78.57 a barrel for a 4.3% loss by 11:39 am EST (1639 GMT). US crude dropped $3.37, or 4.4%, to $73.56.

Both the benchmarks also plunged more than 4% on Tuesday, with Brent posting its biggest daily decline in more than three months.

"Worries about the state of the global economy are front and center of traders' minds and will remain so for the foreseeable future," said PVM Oil analyst Stephen Brennock.

The head of the International Monetary Fund warned that much of the global economy would face a tough year in 2023 because activity was weakening in all three main engines of global growth, the United States, Europe and China.

US manufacturing contracted further in December, dropping for a second straight month to 48.4 from 49.0 in November, in the weakest reading since May 2020, the Institute for Supply Management (ISM) said.

At the same time, a survey from the US Labour Department showed job openings fell 54,000 to 10.458 million on the last day of November, raising concerns that the Federal Reserve would use the tight labor market as a reason to keep rates higher for longer.

Also dampening oil prices was data out of China showing that while no new variant has been found there, the country also under-represents how many people have died in its recent rapidly spreading outbreak, World Health Organization officials said.

The Chinese government increased export quotas for refined oil products in the first batch for 2023, signalling expectations of poor domestic demand. Top oil exporter Saudi Arabia could cut prices for its flagship Arab Light crude grade to Asia in February, having been set at a 10-month low for this month, as concern about oversupply continued to cloud the market.

OPEC oil output rose in December, a Reuters survey found on Wednesday, despite an agreement by the wider OPEC+ alliance to cut production targets to support the market. The Organization of the Petroleum Exporting Countries pumped 29 million barrels per day (bpd) last month, the survey found, up 120,000 bpd from November. US crude oil stockpiles are likely to have risen by 2.2 million barrels, with distillate inventories expected to have fallen, a preliminary Reuters poll showed.

—REUTERS

MOUNTING CONCERNS

- The head of the IMG warned that much of the global economy would face a tough year in 2023 because activity was weakening in all three main engines of global growth
- The Chinese government increased export quotas for refined oil products in the first batch for 2023, signalling expectations of poor domestic demand

BUSINESS LINE, Delhi, 5.1.2023
Page No. 9, Size:(9.47)cms X (9.31)cms.

ONGC to revamp board ahead of FY24

Richa Mishra
Hyderabad

Public sector oil and gas mammoth ONGC is preparing to begin the new fiscal with a restructured board.

Come March 1, ONGC will have a restructured board in line with the Government's directive to merge the posts of Director (Offshore) and Director (Onshore) to create a new position of Director (Production).

It will also have a new post of Director (Strategy and Corporate Affairs). This will require certain internal restructuring lower down the cadre, for which ONGC may consider appointing a consultant.

BETTER SYNERGY

Explaining the rationale behind the Government directive, Pankaj Kumar, Director (Offshore), who also holds

additional charge of Director (Human Resources), said, "This could be for creating better synergy in the functioning of the company in keeping with the changing dynamics in the global energy space. Besides, a national oil company has its own priorities and commitments."

The restructuring will not bring down the strength of the Directors on the Board – six full-time directors besides the Chairman. Apart from the six directors, there is also a Government nominee. Besides them, the company also has six independent directors.

PORTFOLIO REJIG

To streamline the functioning in keeping with the proposed changes, "the company may require some portfolio re-arrangements between Directors. For this purpose, we are considering appointing a consultant," he told *businessline*.

ONGC is managed by a board, which formulates strategies, policies and reviews performance periodically.

On what it will mean for management of the subsidiaries, Kumar said, "if need be, a vertical to manage subsidiaries can be created."

"With the restructuring, the performance of the company will improve and clearly there will be separate units looking after operation and strategy, each setting their own checks and balances," Kumar said.

BUSINESS LINE, Delhi, 5.1.2023
Page No. 3, Size:(2.99)cms X (4.51)cms.

OPEC oil output up despite production target cuts

London: OPEC oil output rose in December, a Reuters survey found on Wednesday, despite an agreement by the wider OPEC+ alliance to cut production targets to support the market. OPEC pumped 29 million barrels per day (bpd) last month, the survey found, up 120,000 bpd from November. In September, OPEC output had been its highest since 2020. REUTERS

MILLENNIUM POST, Delhi, 5.1.2023
Page No. 9, Size:(13.16)cms X (19.47)cms.

Oil prices fall further as concerns grow over state of global economy

LONDON: Oil fell sharply on Wednesday after slumping in the previous session, weighed down by demand concerns stemming from the state of the global economy and rising COVID cases in China.

Brent futures fell $3.04 to $79.06 a barrel for a 3.7 per cent loss by 1452 GMT. US crude dropped $2.91, or 3.8 per cent, to $74.02.

Both benchmarks plunged more than 4 per cent on Tuesday, with Brent suffering its biggest one-day decline in more than three months.

"Worries about the state of the global economy are front and centre of traders' minds and will remain so for the foreseeable future," said PVM Oil analyst Stephen Brennock.

The Chinese government also increased export quotas for refined oil products in the first batch for 2023, signalling expectations of poor domestic demand, *Reuters* reported.

Top oil exporter Saudi Arabia could cut prices for its flagship Arab Light crude grade to Asia in February, having been set at a 10-month low for this month, as concern about oversupply continued to cloud the market.

The head of the International Monetary Fund warned that much of the global economy would face a tough year in 2023 because the main engines of global growth - the United States, Europe and China - were all experiencing weakening activity.

Monetary policy is also in focus, with the US Federal Reserve having raised interest rates by 50 basis points (bps) in December after four consecutive increases of 75 bps each. If the Fed intensifies its rate hikes, that could slow the economy and hamper fuel consumption.

'The Organization of the Petroleum Exporting Countries (OPEC)pumped 29 million barrels per day (bpd) last month, up 120,000 bpd from November'

OPEC oil output rose in December, a *Reuters* survey found on Wednesday, despite an agreement by the wider OPEC+ alliance to cut production targets to support the market.

The Organisation of the Petroleum Exporting Countries (OPEC)pumped 29 million barrels per day (bpd) last month, the survey found, up 120,000 bpd from November.

Lending oil some support, the dollar weakened on Wednesday after posting big gains in the previous session. A weaker dollar typically boosts demand for oil because dollar-denominated commodities become cheaper for buyers holding other currencies.

US crude oil stockpiles are likely to have risen by 2.2 million barrels, with distillate inventories expected to have fallen, a preliminary Reuters poll showed on Monday.

Industry group American Petroleum Institute is due to release data on US crude inventories at 4.30 p.m. EDT (2030 GMT) on Wednesday. The Energy Information Administration will release its figures at 10.30 a.m. (1430 GMT) on Thursday.

Bank UBS expects Brent prices to rise to $110 a barrel and WTI to rise to $107 in 2023. AGENCIES

RASHTRIYA SAHARA, Delhi, 5.1.2023
Page No. 9, Size:(3.74)cms X (5.85)cms.

क्या है ग्रीन हाईड्रोजन

नई दिल्ली (एसएनबी)। ग्रीन हाइड्रोजन का इस्तेमाल क्रांतिकारी निर्णय है। हरित हाइड्रोजन का उपयोग ईंधन के रूप में वाहनों और तेल रिफाइनरी तथा इस्पात, उर्वरक संयंत्र जैसे उद्योगों में ऊर्जा स्रोत के रूप में होता है। इसका उत्पादन इलेक्ट्रोलाइसिस प्रक्रिया के जरिये पानी को ऑक्सीजन और हाइड्रोजन में विभाजित कर किया जाता है। वर्तमान में दुनिया में अधिकतर देशों में हाइड्रोजन प्राकृतिक गैस और कोयले से बनाई जाती है। इस पद्धति में बड़े पैमाने पर कार्बन डाइअक्साइड का उत्सर्जन होता है इसलिए विकसित देश ग्रीन हाईड्रोजन का उत्पादन करने की योजनाएं बना रहे हैं, जिसे पानी, सौर व पवन ऊर्जा जैसी अक्षय ऊर्जा का इस्तेमाल करके बनाया जाता है।

ग्रीन हाइड्रोजन बनाने में कार्बनडाइ आक्साइड गैस का उत्सर्जन नहीं होता। उर्वरक के उत्पादन के लिए अमोनिया की जरूरत पड़ती है और अमोनिया हाइड्रोजन से बनाया जाता है। ग्रीन हाइड्रोजन पानी से बनाई जाती है। सौर और पवन जैसे अक्षय ऊर्जा का उपयोग करते हुए, 'इलेक्ट्रोलाइजर' नामक उपकरण जल में हाइड्रोजन को अक्सीजन (एच2ओ) से अलग करता है।

इस प्रक्रिया को 'इलेक्ट्रोलाइसिस' कहा जाता है। ग्रीन हाइड्रोजन के उत्पादन में कार्बन डाइअक्साइड का उत्सर्जन नहीं होता, लेकिन अक्षय ऊर्जा के उत्पादन में फिलहाल जीवाश्म ईंधन का उपयोग किया जाता है, जिसमें कार्बन डाइअक्साइड का उत्सर्जन होता है। हाइड्रोजन पारंपरिक रूप से गैर-नवीकरणीय ऊर्जा स्रोतों जैसे कोयले (ब्लैक हाइड्रोजन) और प्राकृतिक गैस (ग्रे हाइड्रोजन) से बनाई जाती है। अभी ग्रीन हाईड्रोजन का उत्पादन तेल केउत्पादन से महंगा पड़ता है लेकिन भविष्य में मांग और उत्पादन बढ़ने से इसकी लाग भी कम हो सकती है।

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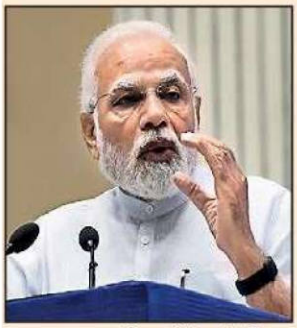
ग्रीन हाइड्रोजन मिशन को मंजूरी, सालाना तैयार होगी 50 लाख टन क्लीन एनर्जी

■ **विशेष संवाददाता, नई दिल्ली :** केंद्र सरकार ने नैशनल ग्रीन हाइड्रोजन मिशन को मंजूरी दे दी है। बुधवार को प्रधानमंत्री नरेंद्र मोदी की अध्यक्षता में इस मिशन को मंजूरी दी गई। सरकार ने कहा है कि इस मिशन से भारत ग्रीन हाइड्रोजन का ग्लोवल हव वनेगा। देश में सालाना 50 लाख टन ग्रीन हाइड्रोजन का उत्पादन होगा। इस योजना पर पहले चरण में लगभग वीस हजार करोड़ रुपये का खर्च आएगा।



प्रधानमंत्री, नरेंद्र मोदी

केंद्रीय मंत्री अनुराग ठाकुर ने फैसला के वाद कहा कि इससे ग्रीन हाइड्रोजन से जुड़े क्षेत्रों में आठ लाख करोड़ रुपये का निवेश आने की उम्मीद है। मिशन के तहत 2030 तक देश में लगभग 1 लाख 35 हजार मेगावॉट की रिन्यूवल एनर्जी वढ़ने साथ हर साल कम-से-कम 50 लाख टन ग्रीन हाइड्रोजन उत्पादन का करने का लक्ष्य रखा गया है। इससे 2030 तक छह लाख से अधिक नौकरियों के सृजन की उम्मीद है।

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ग्रीन हाइड्रोजन मिशन को मंजूरी

■ विस, नई दिल्ली : केंद्र सरकार ने नैशनल ग्रीन हाइड्रोजन मिशन को मंजूरी दी है। वुधवार को प्रधानमंत्री नरेंद्र मोदी की अध्यक्षता में इस मिशन को मंजूरी दी गई। सरकार ने कहा है कि इस मिशन से भारत ग्रीन हाइड्रोजन का ग्लोवल हव वनेगा। देश में सालाना 50 लाख टन ग्रीन हाइड्रोजन का उत्पादन होगा। इस योजना पर पहले चरण में लगभग वीस हजार करोड़ रुपये का खर्च आएगा। इसके अलावा, कैविनेट ने प्रसार भारती के वुनियादी ढांचे और नेटवर्क को मजवूत वनाने के मकसद से एक योजना को मंजूरी दी। इस योजना पर 2025-26 तक 2539.61 करोड़ खर्च होंगे। केंद्रीय मंत्री अनुराग ठाकुर ने कहा कि इसके तहत दूरदर्शन, आकाशवाणी को वेहतर वनाया जाएगा। ▶▶ पेज 11

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20 हजार करोड़ से ग्रीन हाइड्रोजन का हब बनेगा भारत, छह लाख को नौकरी

कैबिनेट ने नेशनल ग्रीन हाइड्रोजन मिशन को दी मंजूरी, कम होगा कार्बन उत्सर्जन

जागरण ब्यूरो, नई दिल्ली: भारत को ग्रीन हाइड्रोजन का वैश्विक हब बनाने के उद्देश्य से केंद्र सरकार ने नेशनल ग्रीन हाइड्रोजन मिशन को लागू करने का फैसला किया है। प्रधानमंत्री नरेन्द्र मोदी की अध्यक्षता में बुधवार को हुई कैबिनेट बैठक में इस संबंध में 19,744 करोड़ रुपये के एक प्रस्ताव को हरी झंडी दिखाई गई। यह मिशन रिफाइनिंग, स्टील, सीमेंट, लौह-अयस्क, जहाजरानी, आवागमन जैसे सेक्टरों में प्रदूषण फैलाने वाली मौजूदा गैसों के इस्तेमाल की जगह ग्रीन हाइड्रोजन के उपयोग की राह सुलभ कराएगा। सरकार का कहना है कि इससे ग्रीन हाइड्रोजन सेक्टर में कुल आठ लाख करोड़ रुपये के निवेश का रास्ता खुलेगा और छह लाख नई नौकरियां मिलेंगी।

कैबिनेट के फैसले की जानकारी देते हुए केंद्रीय सूचना एवं प्रसारण मंत्री अनुराग ठाकुर ने बताया कि ग्रीन हाइड्रोजन मिशन प्रधानमंत्री नरेन्द्र मोदी की तरफ से निर्धारित वर्ष 2070 तक नेट जीरो उत्सर्जन का लक्ष्य हासिल करने में भी देश की मदद करेगा। मिशन के तहत वर्ष 2030 के लिए कुछ बेहद महत्वाकांक्षी लक्ष्य रखे गए हैं। जैसे घरेलू स्तर पर 50 लाख टन ग्रीन हाइड्रोजन का उत्पादन करना। इसके लिए आठ लाख करोड़ रुपये के निवेश की दरकार होगी। इसका एक बड़ा फायदा यह होगा कि भारत एक लाख करोड़ रुपये के कम ईंधन का आयात करेगा।

साथ ही पर्यावरण को एक बड़ा फायदा यह होगा कि औद्योगिक सेक्टर से 50 लाख टन कम कार्बन उत्सर्जन किया जाएगा। बताते चलें कि अभी देश के विभिन्न उद्योगों में जिस हाइड्रोजन का इस्तेमाल किया जाता है उसे ग्रे-हाइड्रोजन कहा जाता है। इसमें इलेक्ट्रोलाइसिस की भूमिका अहम होती है। लेकिन, इस मिशन में रिन्यूवेबल सेक्टर से हासिल की हुई बिजली का इस्तेमाल हाइड्रोजन बनाने में किया जाएगा। यह भी उल्लेखनीय है कि रिलायंस और अदाणी जैसे दिग्गज उद्योग समूहों ने ग्रीन हाइड्रोजन को लेकर अपनी महत्वाकांक्षी योजनाओं का एलान पहले ही कर दिया है।

- ग्रीन हाइड्रोजन के उपयोग की सुलभ होगी राह
- आठ लाख करोड़ रुपये के निवेश का खुलेगा रास्ता
- 2030 तक 50 लाख टन उत्पादन का लक्ष्य

नई दिल्ली में बुधवार को कैबिनेट मीटिंग में लिए गए निर्णयों के बारे में मीडिया को जानकारी देते केंद्रीय सूचना एवं प्रसारण मंत्री अनुराग ठाकुर ● पीटू

सुदूर इलाकों में सरकार मुफ्त देगी डीडी डायरेक्ट के आठ लाख सेट टाप बाक्स

नई दिल्ली : दूरदर्शन व आकाशवाणी के बुनियादी ढांचे को मजबूत कर दूर-दराज के इलाकों में भी इनका प्रसारण सुधारने के लिए केंद्र सरकार ने 2,500 करोड़ से अधिक की राशि खर्च करने का फैसला किया है। इस क्रम में दूर-दराज के इलाकों में आठ लाख डीडी डायरेक्ट के मुफ्त डिश सेट टाप बाक्स भी बांटे जाएंगे। ● पेज 7

ग्रीन हाइड्रोजन के निर्माण को अलग-अलग प्रोत्साहन

केंद्रीय मंत्री ठाकुर ने बताया कि यह मिशन भारत में ग्रीन हाइड्रोजन की घरेलू मांग पैदा करने, उसका उत्पादन करने और उसके निर्यात को बढ़ावा देगा। इसके लिए घरेलू स्तर पर इलेक्ट्रोलाइसिस के निर्माण और ग्रीन हाइड्रोजन के निर्माण को अलग-अलग प्रोत्साहन दिया जाएगा। मिशन के तहत 17,490 करोड़ रुपये का आवंटन साइट प्रोग्राम के जरिये किया जाएगा, जबकि 1,466 करोड़ रुपये का इस्तेमाल प्रायोगिक परियोजनाओं के लिए, 400 करोड़ रुपये शोध व विकास के लिए और 388 करोड़ रुपये दूसरे कार्यों के लिए आरक्षित किए गए हैं। न्यू एवं रिन्यूवेबल एनर्जी मंत्रालय इसके लिए अलग से दिशानिर्देश तैयार करेगा।

दुनिया के कई देशों में भी बनी है नीति

ग्रीन हाइड्रोजन को पूरी दुनिया में रिन्यूवेबल ऊर्जा के सबसे अच्छे विकल्प के तौर पर देखा जा रहा है। हाल ही में अमेरिकी सरकार ने इस सेक्टर को बढ़ावा देने के लिए एक प्रोत्साहजन योजना की घोषणा की है। जर्मनी और जापान जैसे देशों में इसके लिए नीति लागू की गई है। हालांकि, कई विशेषज्ञ बताते हैं कि विशाल बाजार और तकनीक श्रम होने की वजह से भारत दूसरे देशों के मुकाबले ज्यादा बेहतर स्थिति में है। नीति आयोग ने भी इस बारे में एक विस्तृत रोडमैप बनाकर सरकार को भेजा है।

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पेट्रो उत्पादों पर टैक्स की दरों में बदलाव की संभावना

बजट उम्मीद

नई दिल्ली, विशेष संवाददाता। देश में आने वाले दिनों में एविएशन टरबाइन फ्यूल यानी एटीएफ और दूसरे पेट्रोलियम उत्पादों पर लगने वाले उत्पाद शुल्क और दूसरे टैक्स को तर्कसंगत बनाया जा सकता है।

उद्योग जगत ने सरकार को भेजे अपने सुझावों में मांग की है कि जब तक इन उत्पादों को जीएसटी के दायरे में नहीं लाया जाता तब तक इन पर केंद्र सरकार की तरफ से लगने वाले टैक्स घटाए जाएं।

भारतीय उद्योग परिसंघ ने वित्त मंत्रालय को भेजे अपने सुझावों में मांग की है कि एटीएफ पर केंद्रीय उत्पाद शुल्क 11 फीसदी से घटाकर पांच फीसदी कर दिया जाए। यह दर जब तक एटीएफ जीएसटी के दायरे में न आ जाए तब तक घटाई जाए। उल्लेखनीय है कि देश में मौजूदा दौर में दिल्ली, राजस्थान, बिहार और गोवा समेत 8 राज्यों में एटीएफ पर वैट की दरें पांच फीसदी से ज्यादा हैं।

उत्पाद शुल्क का रिफंड सहज मिले

ब्रांडेड और गैर ब्रांडेड डीजल के बीच उत्पाद शुल्क का अंतर भी खत्म करने का सुझाव दिया गया है। बजट में सरकार को कारोबारी मुश्किलें दूर करने से जुड़े भी सुझाव दिए गए हैं। सीआईआई ने कहा है कि उत्पाद शुल्क के रिफंड से जुड़े मामलों को आसान बनाए जाने की जरूरत है।