

World Hydrogen and Fuel Cell Day Celebrations highlight role of Hydrogen in building a Sustainable and Prosperous Future

Let us inspire our industries and communities to embrace hydrogen as a key player in the energy transition: Union Minister for New and Renewable Energy Shri R. K. Singh

Rs. 400 Crores R&D Roadmap for National Green Hydrogen Mission unveiled

On the eve of World Hydrogen and Fuel Cell Day, celebrated annually on October 8th, the Government of India held a half-day event to explore and leverage the boundless possibilities of hydrogen as a source of green and sustainable energy. The event, organized in New Delhi on October 7, 2023, by the Ministry of New & Renewable Energy, in association with [Solar Energy Corporation of India Limited](#), brought together hydrogen experts from the industry, academia and government.





On the occasion, the R&D Roadmap for the National Green Hydrogen Mission was unveiled by the Ministry of New & Renewable Energy. The roadmap, which provides for a budget of Rs. 400 crores, seeks to provide guidance for developing a vibrant research and development ecosystem which can help commercialize Green Hydrogen and contribute to India's ambitious climate and energy goals. It focuses on developing new materials, technologies, and infrastructure to improve the efficiency, reliability, and cost-effectiveness of green hydrogen production, storage, and transportation. The R&D program will also prioritize safety and address technical barriers and challenges in developing a hydrogen economy.



“Let us reiterate our commitment to research, development and deployment of hydrogen solutions”

The Union Minister for New and Renewable Energy, Shri R. K. Singh, conveyed through a video message, that World Hydrogen and Cell Day is a day when we celebrate a transformative element in the universe which holds the promise for a brighter and more sustainable future. “Hydrogen is the most abundant element and it has the potential to revolutionize our energy landscape, mitigate climate change, and power our economies with clean energy. On this World Hydrogen Day, let us reiterate our commitment to research, development and deployment of hydrogen solutions. Let us inspire our industries and communities to embrace hydrogen as a key player in the energy transition. Together, we can ensure that hydrogen becomes a cornerstone of a sustainable and prosperous future for our Planet Earth.”



“First priority is mission-mode projects which will yield results in 2–3 years”

Delivering the keynote speech, renowned scientist and **Principal Scientific Advisor to Government of India, Prof. Ajay Kumar Sood** opined that green hydrogen is the Swiss knife for decarbonization. Speaking about the R&D Roadmap, the PSA said that the goal in the first phase is to focus on mission mode projects which can yield results in 2 – 3 years. “The R&D budget announced in this Mission is Rs. 400 crores in just 2 – 3 years. If we are able to demonstrate that this R&D can make a difference at the ground level, then I am confident that more will come. Our first priority should be mission-mode projects which will yield results in 2 – 3 years; then, we can address grand challenges which will be rather long-term and also blue sky projects which will take disruptive pathways.”



The PSA underscored the need for augmenting domestic capacity for production of electrolyzers in a very short time scale. He said that this is one goal [the SIGHT programme addresses](#).

Prof. Sood emphasized the immediate need for coming out with standards for Type IV cylinders for storing hydrogen. “Our standards are for Type III cylinders. Around the world, it is Type IV cylinders. So India has to come out with standards for Type IV cylinders; with these cylinders, we can triple mileage and filling time is also one tenth or so.”

The Principal Scientific Advisor told the industry and other stakeholders that India is at a crossroads, presenting a golden opportunity to them to play leadership role in the green hydrogen ecosystem. “We are all committed to make this happen, we need to achieve Net Zero by 2070, I am sure all of you will work to make this a reality, and make India a cleaner India in terms of energy transition before 2070.”

“Research awarded under R&D Roadmap will allow India to be absolutely at the cutting edge in the field”

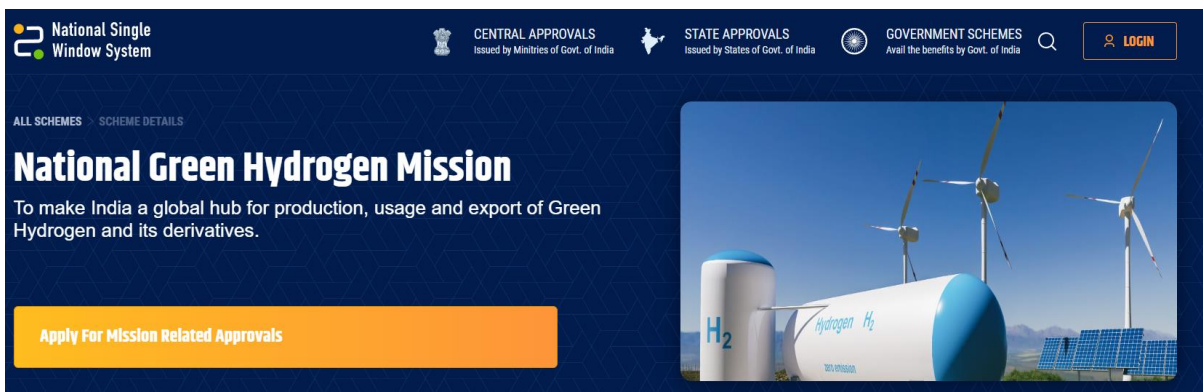
Addressing the stakeholders, **New and Renewable Energy Secretary, Shri Bhupinder Singh Bhalla**, said that India has entered the green hydrogen space at the right time and that the country is poised to become one of the leaders in the green hydrogen sector. The Secretary said that the R&D Roadmap aims to leverage research to ensure that India is at the cutting edge of the sector in the world. “If you really want to succeed, we need to produce green hydrogen at the least cost, in the best possible way. For this, we want to be the leader in technology as well, at par or ahead of the rest of the world. The R&D Roadmap for National Green Hydrogen Mission aims for all of this. It covers all aspects of production, transportation, storage and safety. We will issue call for proposals based on this roadmap and we will start awarding

specific projects under the Mission. The research awarded will allow India to be absolutely on par with the cutting edge in the field.”



Launch of National Single Window System page for Approvals under National Green Hydrogen Mission

Besides the R&D roadmap, the Green Hydrogen page on [The National Single Window System \(NSWS\) of Government of India](https://www.nsws.gov.in/portal/scheme/greenhydrogenpolicy) was unveiled, which will provide a single window to industry for obtaining all approvals related to projects under the National Green Hydrogen Mission. The page can be accessed here: <https://www.nsws.gov.in/portal/scheme/greenhydrogenpolicy>.



Speaking about the page, the Secretary said: “Under the portal, we have collated all approvals needed for production of green hydrogen and also for electrolyser plants. We will work with all Ministries and state governments to ensure that the approval process is expedited.”

Shri Bhalla said that we have to reach Net Zero by 2070, for which there is no option other than decarbonizing our major sectors fully. He shed light on India's hydrogen-powered future and said that hydrogen is not just a fuel, but a game changer and a key to a cleaner and more sustainable future. The Secretary urged everyone to embrace the versatility of hydrogen, ranging from fuelling vehicles to storing renewable energy. He acknowledged the potential of hydrogen and fuel cells in addressing the pressing challenges of climate change, energy security and environmental sustainability. He highlighted the objectives of the Mission leading to a cleaner, prosperous India powered by hydrogen.

Director General, Bureau of Energy Efficiency, Ministry of Power, Shri Abhay Bakre shared the details of the **Draft Accreditation Procedure and Eligibility for Accredited Carbon Verification Agencies**, which he said is being released for public and stakeholder comments. In his presentation on 'Carbon Credit Trading Scheme,' which has been announced by the government to address the issue of GHG emissions, the DG BEE underlined the necessary framework and the roles of diverse stakeholders for the development and functioning of the Indian Carbon Market.



Joint Secretary, Ministry of New & Renewable Energy, Shri Ajay Yadav, said that all schemes under the National Green Hydrogen Mission have been finalized and that the scheme for hydrogen hubs is ready to be rolled out. He said that pilot projects are being undertaken in steel, shipping and road transport sectors and that implementation of National Green Hydrogen Mission is steering the nation towards a hydrogen-powered future that promises to revolutionize the energy landscape.



CMD, Solar Energy Corporation of India, Shri R. P. Gupta said that storage cost of energy is a key issue which needs to be sorted out and that this is where hydrogen fits in. “Hydrogen along with green ammonia could be one solution for long-term storage. Challenges become opportunities. Cost of finance has to be reduced, technology should reduce cost and this has to be done at each stage of value chain.”



The winners of the National Hydrogen Maha Quiz were announced at the event.

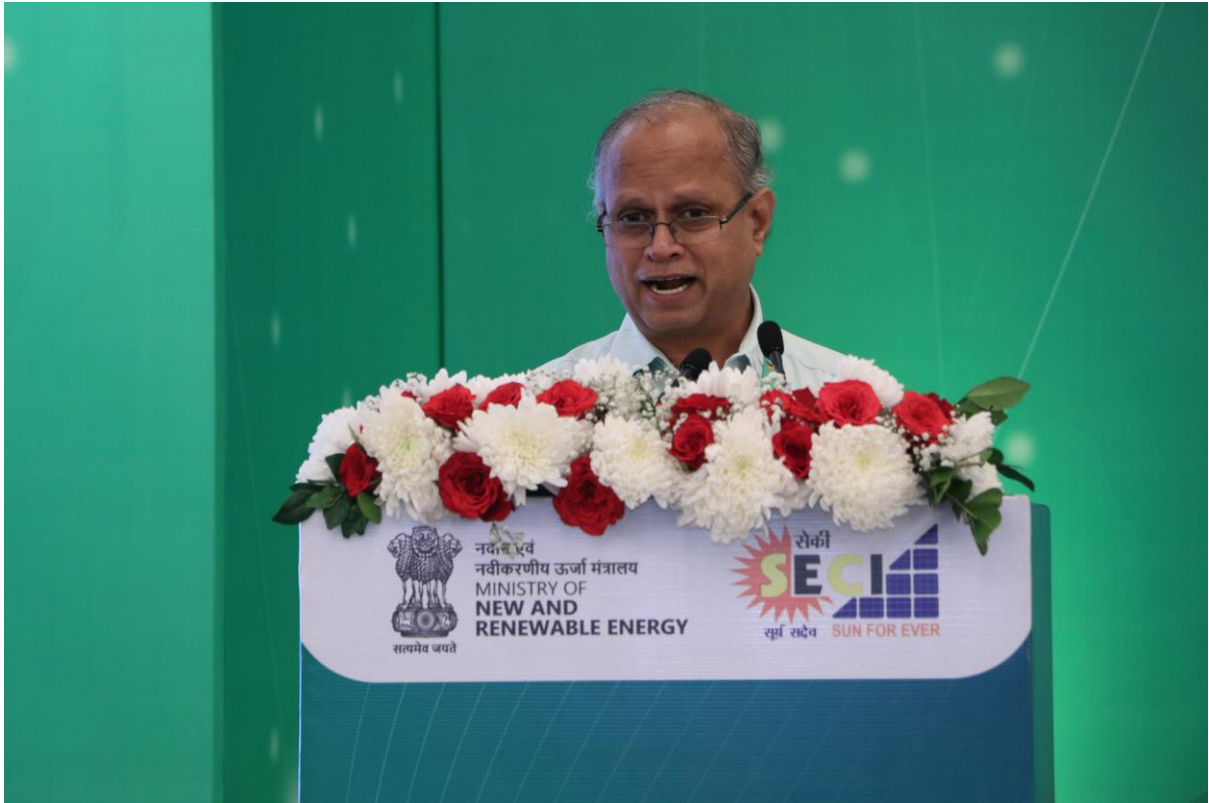
In the third and final session, President, Hydrogen Association of India, Shri R.K. Malhotra spoke on the latest status of green hydrogen development in the country.



Dr. Rochan Sinha of startup Newtrace spoke about the development of membrane-less electrolyzers for green hydrogen production.



Renowned scientist Dr. C. Gopinath from National Chemical Laboratory, Pune spoke on the latest scientific developments in the field of Artificial Photosynthesis and Negative Carbon Electrolysis.



Representative of Sustainable Projects Development Association, Shri Prashant spoke on the challenges being faced by green hydrogen developers.



To throw more light into the world of hydrogen, the event also witnessed the release of a podcast on hydrogen. This podcast features an in-depth conversation with Scientist F, MNRE, Shri Sujit Pillai, offering an in-depth exploration of the hydrogen revolution.

The event concluded with closing remarks by Shri Pillai, wherein he highlighted the progress made and the limitless potential of hydrogen in building a sustainable future for all.



Following this, a roundtable meeting was organised by the Ministry in association with Department of Financial Services (DFS), Ministry of Finance, to create synergy between banking system and green hydrogen developers in order to facilitate access to low-cost finance and thus to lower the cost of green hydrogen. The meeting was attended by officials of MNRE, DFS, SECI, IREDA, NITI Aayog, members of Indian Banks' Association, leading nationalised and private sector Banks, Financial Institutions and leading developers in green hydrogen sector, among others.



World Hydrogen and Fuel Cell Day is a global initiative aimed at promoting awareness and understanding of hydrogen as a clean and sustainable energy source, along with the versatile technology of fuel cells. This day serves as a platform to acknowledge the potential of hydrogen and fuel cells in addressing the pressing challenges of climate change, energy security, and environmental sustainability. We delve into the significance of World Hydrogen and Fuel Cell Day, the role of hydrogen in the energy transition, and the promising developments in fuel cell technology.