PHD CHAMBER
OF COMMERCE AND INDUSTRY
VOICE OF INDUSTRY AND TRADE

KEY TAKEAWAYS

3RD INTERNATIONAL CLIMATE SUMMIT

14 - 15 SEPT 2023 | VIGYAN BHAWAN, NEW DELHI

SUSTAINABILITY THROUGH GREEN GROWTH

GREEN HYDROGEN | BIOFUELS | RENEWABLES

LiFE
Lifestyle for Environment

A NEW PATHWAY TO CLIMATE CHANGE MITIGATION

ABOUT THE SUMMIT

Office of the Principal Scientific Adviser to the Government of India

Manthan

India has assumed the G-20 Presidency. Under the bold and visionary environmental leadership of **Hon'ble Prime Minister Shri Narendra Modi**, the country has unveiled a new pathway for Climate Change Mitigation, through mainstreaming of Lifestyle for Environment (Mission LiFE) - urging the world to adopt sustainable practices and climate friendly actions in everyday life.

When it comes to climate change mitigation, the importance of individual action and collective responsibility cannot be ignored; and the time to act is now.

India is also building significant capacity in areas of biofuels, renewables, and alternate energy solutions like Green Hydrogen, to define its long-term national energy strategies, accelerate its climate commitments, and put the country on a sustainable growth path.

The **International Climate Summit 2023**, organised by **PHD Chamber of Commerce and Industry** on **14 & 15 September 2023**, set the stage immediately after the 2023 G20 New Delhi Summit for a global dialogue and actionable outcomes on climate change mitigation from an Indian perspective, blending our repository of ancient wisdom, and circular economy to become the third largest economy in the world with a focus on Green Hydrogen, Biofuels and Renewables.

Only peace can lead to a shared purpose, so that our planet, its people and profits thrive collectively.

3RD INTERNATIONAL CLIMATE SUMMIT 2023

14 & 15 SEPTEMBER 2023
VIGYAN BHAWAN
NEW DELHI 110011

KEY TAKEAWAYS
3RD INTERNATIONAL CLIMATE SUMMIT 2023

1.0 Introduction

The 3rd INTERNATIONAL CLIMATE SUMMIT: 2023 was hosted by the PHD Chamber of Commerce and Industry with Greenstat Norway.

The objectives of the summit have been to explore the pathways during the green energy transition, charting a systematic approach, towards meeting the Global Goals for decarbonisation.

Apart from the domain-specific interactions on hydrogen production, storage, distribution, and downstream applications, the summit also discussed green financing, training, capacity building and innovations. The summit attracted international talents presenting the best practices to promote the Hydrogen economy. The event adopted a hybrid format, more than 60,000 participants from the globe joined virtually. Approximately 1700 to 2000 participants attended in person from India and abroad. Bureaucrats, Policy Makers, International Scientists, Technocrats, R&D Scientists, Academia, and Students made detailed presentations followed by interactive sessions.

The summit covered the following to achieve sustainable development:

- Green Fuels, Bio-fuels, and Green Energy
- India-centric R&D projects; Hydrogen Safety, Training, Capacity Building and Innovation
- Climate Finance
- Indo – Nordic session

2.0 Climate Change Mitigation

A unique and novel approach has been proposed by PHD Chamber of Commerce and Industry to mitigate climate change, based upon three foundational pillars that together create a framework, of Green Energy, Environmental Consciousness through lifestyle changes, Circular Economy, Regenerative leadership, and Global Peace.

- A comprehensive solution for the transition to green energy cannot be provided by any single company or nation. Collaboration and cooperation are essential prerequisites. It is the need of the hour to create a technology repository within the developed nations aimed at sharing green technologies with developing counterparts at a very competitive price. This exchange of technology will play a critical role in achieving cost-effective green Hydrogen production on a global scale.
- The technology sharing will be vital for affordable and accessible green Hydrogen production. Global Biofuel Alliance and International Solar Alliance are the way forward shown by our Hon'ble Prime Minister.
- India should not solely adopt the Western narrative of replacing fossil fuel with green Hydrogen, instead promote agro and bio-waste for Energy production.
- The government should provide maximum subsidies and incentives for the development of 1G, 2G and 3G pathways for ethanol production. India is an agricultural-based economy and there is ample availability of biowaste and agricultural waste. Also, India is well equipped with local technology for the production of 1G, 2G and 3G ethanols. Also, ethanol chemistry can provide petrochemicals, fuels and Hydrogen.
- India should continue to make investment and development of Fossil Fuels. Substitution of Fossil Fuels with Green Energy will take time. India is dependent on imports for its major energy requirements. It is a must for India to continue with the development of Fossil Fuels to ensure energy security.
- India has the 2nd largest deposits of coal, in the world. Given this, it is a must for India to develop technologies to produce synthetic gas, and methanol as fuel and also methanol-based fuels.
- India should develop technologies for carbon capture and its utilisation.
- India should remove the tag of green, blue and pink on hydrogen till 2030 to produce and achieve a target of 5 million tonnes of hydrogen by 2030. This will not only create an ecosystem for production and utilisation but will also lay a strong foundation to produce and utilize in various applications with safety and reliability.
- India should not insist on making in India till 2030 for Hydrogen production. Make in India is relevant for matured technologies, not for Green Hydrogen production as this pathway is still under development.
- India should accept International Standard till 2030 until Indian standards are developed for production and export;
- India should set up Centres of Excellence in each state to develop an ecosystem for learning, training, and

innovations in green energy.

- India should remove all taxes, including local, state, and central taxes, as well as import duties on electrolyzers and related equipments for all forms of hydrogen production (green, blue, pink) till 2030. This will promote the Hydrogen economy as well as make it competitive with other fuels.
- India should offer assurance for Hydrogen, similar to bio-ethanol.
- The government should guarantee Hydrogen off-take, similar to bio-ethanol.
- Hydrogen production should be shifted to priority landing.
- India should make it mandatory for the use of Hydrogen in their factories with 10% of total energy consumption, with Hydrogen increasing yearly.

3.0 A Novel Model Proposed by PHD Chamber of Commerce & Industry for Climate Change Mitigation

We all inhabit a single planet – Earth – and we all face a common challenge, which is climate change. But as a matter of grave concern, the one thing not on our side as we face this challenge is time.

PHD Chamber of Commerce & Industry has proposed a transformative model which can reshape the world for the better. This model relies on a profound logic deeply embedded in the principles of Mother Nature and is constructed upon three essential pillars that must be executed concurrently to attain our climate goals.

Pillar 1: Collaborative Technology Sharing,

Pillar 2: Lifestyle Changes, and

Pillar 3: Global Peace.

4.0 Lifestyle Change for the Environment (LiFE)

This concept was first initiated by our Hon'ble Prime Minister Shri. Narendra Modi. By taking one action at a time and making one positive change daily, we can change our lifestyle and inculcate long-term environment-friendly habits. This will start producing immediate benefits and empower each individual to take responsibility for their environment and contribute to reductions in global emissions. So, as of today, let us all rise to the occasion.

5.0 Global Peace

This very important pillar is overlooked, particularly considering the exacerbating effect of conflict on the climate crisis. Achieving and maintaining peace is a crucial component for effectively mitigating change. The vast amounts of energy and resources allocated to the development of sophisticated weaponry on a global scale, the participation

in environmentally devastating wars, and the subsequent necessity to rebuild cities are truly staggering. A reallocation, in the order of 10% of the defence budget, would offer substantial resources for facilitating the Green Transition, Fostering Adaptation, and Advancing Climate Change Mitigation. To be effective, this would need to be implemented on a worldwide basis.

Also, each country should have one ministry for peace, similar to the Ministry of Environment to work continuously for peace. All countries prepare for war, and how they can achieve peace.

The distinctive climate change model is for consideration and reflection by the countries of the United Nations. It is our aspiration that this concept will develop into a universally embraced framework for mitigating climate change.

May India become not only a Green superpower under the visionary leadership of our great prime minister – but a regenerative global leader!"

6.0 Climate Finance

A. Green Hydrogen & Renewable Energy: Mission 2030

- To reach a green Hydrogen production capacity of 5 MMT p.a.
- To triple India's Renewable Energy capacity by 2030 in line with a similar global commitment (further reinforced at G20 Summit 2023)

B. Financing Requirements

- The current global RE capacity is ~ 3,400 GW. In 2022, 295 GW of new capacity was added, the highest ever. India added 15.84 GW out of the same. To triple capacities, India shall essentially need to add at least 50 GW p.a. of RE capacity i.e. 350 GW by 2030. However, India remains committed to adding at least 115 to 125 GW of renewable energy capacity and 35 to 40 GW of Green Hydrogen electrolyzers.
- Thus, Indian Renewable Energy companies by 2030, will need INR 5.5 to 6 trillion to build 115 to 125 GW of renewable energy capacity; and INR 3 to 3.5 trillion to meet the demand for 35–40 GW of electrolyzers.
- Aggregating to INR 9 tn over the next 7 years or INR 1.28 tn p.a. till 2030.
- Assuming a Debt ratio of 75%, the required Debt shall be INR 6.7 tn till 2030 or INR 0.96 tn p.a.

C. Challenges of Financing Required

- The total renewable financing raised in India during the last 8 years is ~ US$ 70 bn or say INR 4.9 tn
- The aggregate Debt requirement over the next 7 years is quite stretched, compared to the available resources
- This is further challenged due to various parameters, unique to our financial markets :
  i. The weak financial health of public utilities that are key off-takers

ii. Shallow debt capital market and mainly floating-rate loans from the banking system

iii. Shallow market for forex swaps

iv. Non-availability of funding for emerging technologies

v. The absence of uniform taxonomy makes the system vulnerable to greenwashing

D. Creative Financing Suggestions / Takeaways

1. Credit Enhancement (CE): for INR financing

i. CE is an innovative financial tool which acts as a "first loss" guarantee; enabling enhancement of the issuer's (of Bonds) credit rating to a level acceptable to the investor (in these Bonds).

ii. "Non-funded options" remain a global preference for such CE; though "Funded option" like a subordinate loan (with lower repayment priority & less security) is also possible.

iii. Non-funded options include Guarantees; Insurance and an irrevocable Contingent Line of Credit ('IC LoC'); which provides the "first loss" piece; thereby enhancing the credit rating of the issued (credit enhanced) Bond.

iv. The Clean Energy / Green Hydrogen requirement till 2030 aggregating to ~ INR 6.7 tn (~ $ 80 bn) appears difficult to raise from Indian sources.

v. Additionally, with the inclusion of Indian Bonds in the Global Bond Indices, w.e.f. June 2024, a further fillip to a potential inflow of $ 20 to 30 bn, shall begin.

vi. With Credit Enhancement, the required funding of at least $ 40 bn to 80 bn appears possible.

2. National Clean Energy Fund (NCEF): for $ / foreign financing

i. A National Clean Energy Fund (NCEF) is proposed and may be considered by the Government of India to be set up with a seed capital of INR 10,000 Cr.

ii. NCEF Funds be kept secured in Long Term Deposits / with RBI (invested in $ / foreign currency).

iii. Use the money to provide a "Forex fluctuation Guarantee" to Clean Energy / Green Hydrogen Developers with their need to buy a Forex Hedge is dispensed with.

iv. The Developers opting for this scheme shall be obliged to create a Forex Reserve (Sinking Fund) of around 3% to 4% per annum against their Forex Borrowing, with the NCEF.

v. This NCEF guarantee is contingent; and made available over & above the Reserve – created above.

vi. NCEF shall catalyse & structure an insurance product to hedge the possible fluctuations in the dollar /

foreign currency.

vii. Assuming that NCEF works on a 4% contingency provision, then the Forex Liability of around INR 2.5tnshall be covered &at least projects of around INR 3.3tn (around US $ 40 billion) i.e. >70 GW of Clean Energy being added using cost-effective Forex Funds.

3. ESG and Sustainability

ESG disclosure requirement has been introduced softly for the top 1000 listed companies. There is a need to sensitize the industry towards environmental and social obligations by extending the disclosure requirement to cover more business entities.

i. Interest rate based on ESG rating – Banks should also consider ESG rating while working out the interest rate in addition to the current risk matrix and other parameters.

ii. ESG rating should be made mandatory for all corporates/firms with a turnover of more than 100 crores.

iii. ESG Disclosures – SEBI should consider expanding disclosure requirements to top 5000 companies with market capitalization, from the existing 1000 companies.

iv. ESG disclosure requirements should be more extensive for polluting Industries like Cement, Steel, and Chemical Processing Industries.

v. Carbon Tax should be imposed to promote products and services with less carbon emissions.

vi. In line with CBAM introduced by the EU to levy a carbon tax on imports of specific products based on carbon emissions, India should also consider a similar levy to discourage the import of products with high carbon emissions.

vii. Carbon credit eligibility and process needs a major overhaul to simplify it to enable the industry to avail its benefits.

7.0 Indo-Nordic Session

The summit proposed a unique opportunity for the Nordic countries to identify projects with technological as well as financial support. The following areas of the project have been identified for cooperation.

- Development of Alkaline electrolyzers with high-efficiency
- Storage vessels for Fibre-Reinforced Plastic with carbon fibre
- Carbon fibre technology

8.0 Initiatives by PHDCCI

- Proceedings of the summit will be published soon.

- Three Books on the Hydrogen Economy have been produced by PHD Chamber of Commerce & Industry.
- The Centre of Excellence in Green Hydrogen has been set up for learning, training, capacity building and innovation at PHD Chamber of Commerce & Industry, dedicated to the MSME sector.
- A Hydrogen portal has been set up at PHD Chamber of Commerce & Industry.

9.0 Conclusion

Climate change is a reality that humanity is facing now, not in future. So the action has to be taken now. The current international strategy for addressing climate change includes replacing Fossil Fuels with Green Energy and Green Fuels, in particular Hydrogen. However, despite the efforts to exchange fossil fuels for renewable and green energy sources, the scale of this shift will require several decades to reverse current trends. Addressing the targets of COP27 and 28, a national clean energy fund need to be created. International cooperation is essential to make progress in the green transition and for India to become a green Hydrogen hub. Indo-Nordic collaboration between government and private sectors exploring, Indian-centric projects for cooperation was one of the key highlights of

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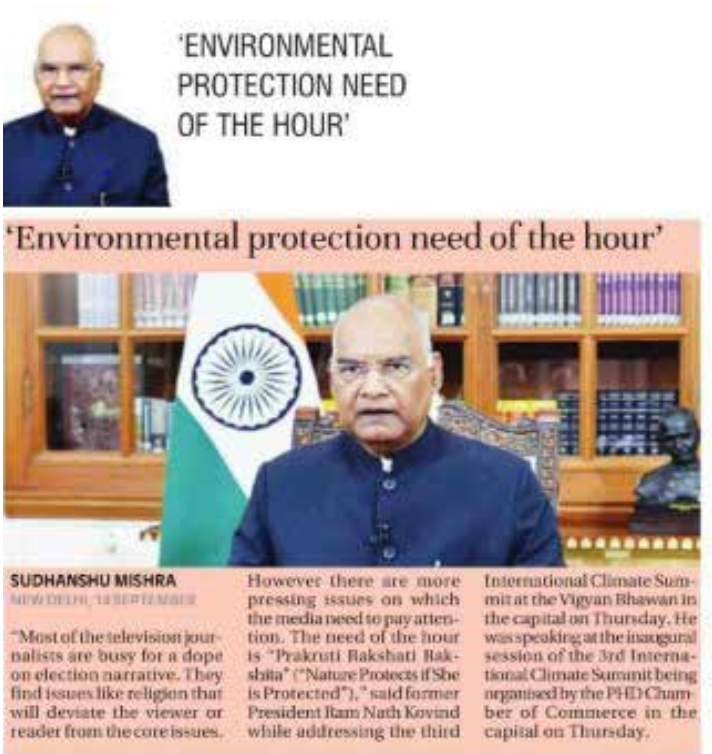

'ENVIRONMENTAL PROTECTION NEED OF THE HOUR'

'Environmental protection need of the hour'

SUDHANSHU MISHRA

"Most of the television journalists are busy for a dope on election narrative. They find issues like religion that will deviate the viewer or reader from the core issues. However there are more pressing issues on which the media need to pay attention. The need of the hour is "Prakruti Rakshati Rakshita" ("Nature Protects if She is Protected")," said former President Ram Nath Kovind while addressing the third International Climate Summit at the Vigyan Bhawan in the capital on Thursday. He was speaking at the inaugural session of the 3rd International Climate Summit being organised by the PHD Chamber of Commerce in the capital on Thursday.

Online Media

1) http://www.uniindia.com/3rd-international-climate-summit-2023-pioneering-climate-action-from-an-indian-perspective/prnewswire/news/3049214.html
2) https://www.ndtv.com/india-news/international-climate-summit-chairman-dr-jp-gupta-hails-pm-modi-climate-action-vision-4390324
3) https://www.latestly.com/agency-news/world-news-hope-to-conclude-trade-and-economic-partnership-agreement-soon-norway-envoy-5412899.html
4) https://www.scandinavianews.net/news/273966560/hope-to-conclude-trade-and-economic-partnership-agreement-soon-norway-envoy
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7) https://www.devdiscourse.c

PHDCCI
CENTRE OF EXCELLENCE
GREEN HYDROGEN

PHD Chamber of Commerce and Industry, in association with Knowledge Partners GREENSTAT Norway, Western Norway University of Applied Sciences (HVL University) Norway, CoE Process Safety & Risk Management at IIT Delhi, Shriram Institute for Industrial Research, has created an exclusive Centre of Excellence for Green Hydrogen to create Hydrogen Specialists to transform future of energy through the promotion of best practices and knowledge sharing within Hydrogen ecosystem, specifically for MSME sectors. It is a first-of-its-kind centre within Industry Chambers that seeks to facilitate government, academia, and industry interaction for creating a vibrant Hydrogen ecosystem to support Government developmental policies.

PHDCCI CoE-GH as the specialist knowledge centre for MSMEs, caters to top decision-makers, higher management and at senior technical level specialists with curated learning curriculums for companies, created in association with key knowledge partners and elite groups of senior experts from leading global universities, research centres and industry professionals, to augment industry transformational experts to facilitate Hydrogen economy.

PHDCCI CoE-GH Innovation Hub is the specialist centre for the facilitation and development of Hydrogen projects through sharing of internationally developed technologies and collaborations through its close association with various Hydrogen clusters and Hydrogen forums within Norway and Nordic countries, bringing up-to-date technological innovations for MSMEs and states.

PHDCCI CoE-GH LEAD AND SECRETARIAT

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Member, NITI Aayog
Patron-in-Chief

Dr J. P. Gupta
Mentor-in-Chief

Dr Ranjeet Mehta
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GREEN HYDROGEN

PHDCCI CENTRE OF EXCELLENCE IN GREEN HYDROGEN

EMPOWERING MSMES: UNLOCKING THE POTENTIAL OF GREEN HYDROGEN

Activities and Services

- Learning programs within the entire Hydrogen value chain, process safety and techno-commercial Courses
- Green Hydrogen Projects development advisory
- International Innovation Hub for MSMEs and states

- Associated COEs in Green Hydrogen with Chambers of neighbouring and developing countries
- Government-sponsored programme and policy advocacy for MSME in Green Hydrogen

- Carbon management, Carbon projects development - Decarbonization / Net zero advisory, Carbon assets evaluation
- Environment, Social and Governance (ESG) services

- Facilitating technology transfer and Hydrogen based Start-ups
- Organising events on renewable energy focusing on H_2
- CoE and Universities collaboration program

PHD CHAMBER
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VOICE OF INDUSTRY AND TRADE

About Us

PHD Chamber of Commerce and Industry (PHDCCI) has been working as a catalyst for the promotion of Indian industry, trade and entrepreneurship for the past 118 years. It is a forward looking, proactive and dynamic PAN-India apex organization. As a partner in progress with industry and government, PHDCCI works at the grass roots level with strong national and international linkages for propelling progress, harmony and integrated development of the Indian economy.

At the global level, we have been working with the Embassies and High Commissions in India and overseas to bring in the international best practices and business opportunities.

PHDCCI, acting as the "Voice of Industry & Trade" with a large membership base of 1,50,000 direct and indirect members consisting of large, medium and small industries, has forged ahead leveraging its legacy with the industry knowledge across multiple sectors to take Indian economy to the next level.

PHD Chamber has special focus on the following thrust areas

- **Economic & Business Policy Advocacy**
- **Industry**
- **Infrastructure**
- **Housing**
- **Health**
- **Education & Skill Development**
- **Agriculture & Agri-business**
- **ICT**
- **International Trade**
- **Defence & HLS**

PHD CHAMBER OF COMMERCE AND INDUSTRY

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