

# Workshop on Green Hydrogen Entrepreneurship & Skilling 'Opportunities and Challenges'



Jointly organized by

Parishkar College of Global Excellence  
(Autonomous), PIC

&

Rajasthan Solar Association

Friday, 27th Oct. 2023

A Workshop on Green Hydrogen Entrepreneurship & Skilling has been organized at Parishkar College of Global Excellence Autonomous (PCGEA) jointly with Rajasthan Solar Association (RSA) on October 27, 2023.

Speakers from various renowned institutions and industry such as Skill Council for Green Jobs, New Delhi, Rajasthan Renewable Energy Corporation Ltd., ReNew Power, Rajasthan Solar Association, Yes Bank & Parishkar College addressed the audience from industry, institutes, faculty members and students.



### Inaugural Session

**Dr. Raghava Prakash**, (Director, PCGEA) In his welcome address, shared the importance of Green Hydrogen & initiatives taken by the institute in introduction of courses on the subject apart from the other new courses such as nanotechnology, semiconductors, herbal science in line with The New Education Policy & urged the industry for sharing their needs for research and improvement in product/ process. It will also help in designing of syllabus and skilling as part of curriculum. He also emphasized on increasing the scale of production so that locally produced goods be provided at competitive prices along with opportunities to the youth for local employment.



**Mr. Arpit Sharma**, COO (SCGJ), New Delhi delivering the keynote address, congratulated Parishkar College for its initiative on developing and running skill courses on Solar Energy & organizing the first workshop in the state on Green Hydrogen skilling.

He gave a detailed presentation on Skill India Initiative by Govt. of India and shared various job roles, course design and initiative to fill skill gaps. He also added that the Govt. of India has initiated various measures to achieve net zero targets set for environmental protection and importance of renewable energy. He added that by 2047 majority of energy will be from renewables and globe is seeing India as a power capital. Mr. Sharma also informed that India's skill initiative will be playing major role in world skill development and Indian students will be participating in world skill competitions.



He asked Parishkar to play a major role in preparing and skilling the students for participation in world skill events. Coming to Green Hydrogen it was highlighted that National Green Hydrogen Mission will also create around 6 lakhs jobs and accordingly SCGJ is developing a no. of courses for skilling on Green Hydrogen where Parishkar should play a major role.

**Mr. Sunil Bansal**, (Chairman, Rajasthan Solar Association) shared the development aspects of renewable energy projects and industry in the state of Rajasthan. He also informed that Rajasthan is going to be solar capital of India with the ambitious targets and policy framework. He emphasized on the need of skilled human resources for the sector and also shared about the MOUs, RSA is having with GiZ and discussions with various other agencies. He also advised the students for site visits at the power plant developed by RRECL and importance of training at industry level.



## Technical Session

**Dr. Sukhjot Singh** (Asst. Professor, PCGEA)

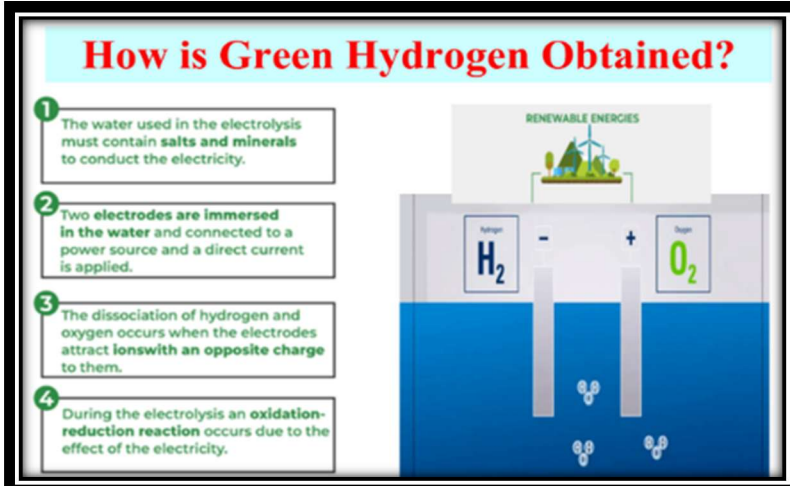
Dr. Sukhjot Singh explained the objectives behind establishing Center for Advance Energy Studies in Parishkar College including research, skill development, and studies on the area of concern for industry and sector as a whole.

He also shared the details about skill courses on Renewable Energy, Green Hydrogen and Mushroom Production. He briefly introduced other UG courses such as Semiconductor, Data Science, Nanotechnology, Applied Microbiology, Health Management, Sports Science, Herbal Science, and various Ph.D. programs offered by college. He also highlighted the purpose of certificate course developed by Parishkar, on **Green Hydrogen Fundamentals, Logistics & Entrepreneurship** in line with the objectives of the National Green Hydrogen Mission.



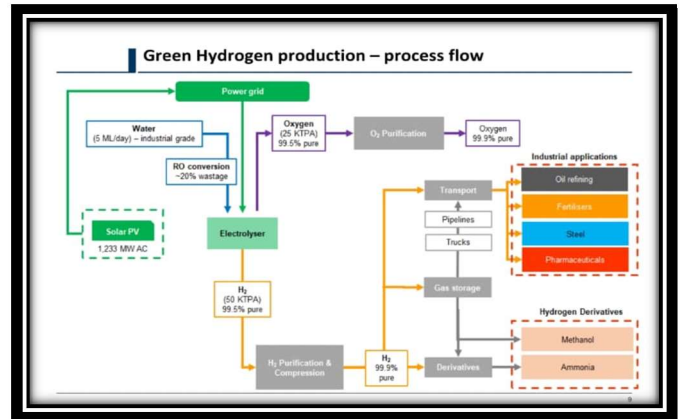
**Dr. Nisha Sharma** (Asst. Professor, PCGEA)

Dr. Nisha Sharma delivered a detailed presentation on the objectives and targets of National Green Hydrogen Mission. She explained various types of Hydrogen and importance of Green Hydrogen. She explained the methods of production of green hydrogen through various types of electrolysis such as Alkaline, Solid oxide, Proton Exchange Membrane (PEM) and Anion Exchange Membrane (AEM) with respective chemical reactions, technology involved and challenges such as low current density, operating pressure, and energy efficiency. She also shared the research areas and needs for production of green hydrogen within cost targets set under the mission. She further explained various types of storage techniques for green hydrogen including physical based as well as material based and explained the challenges and further areas of research in the segment.

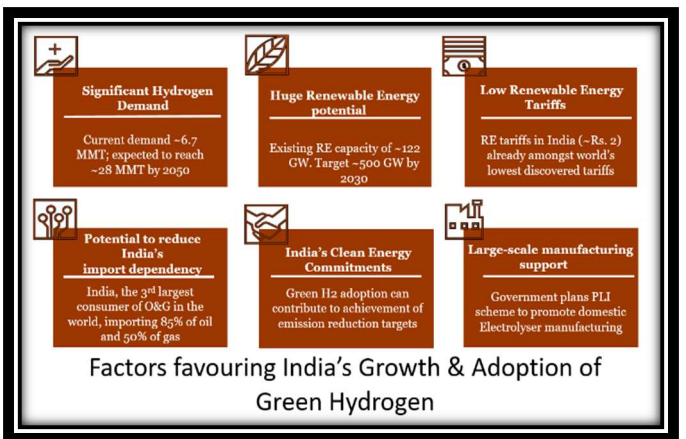


**Mr. Manoj Gupta** (Vice President, ReNew Power)  
 Mr. Manoj Gupta shared industry prospective on green hydrogen, starting the presentation the basics of green hydrogen and different categories of hydrogen such as Green H<sub>2</sub>, Pink H<sub>2</sub>, Yellow H<sub>2</sub>, Blue H<sub>2</sub>, Brown H<sub>2</sub> and Gray H<sub>2</sub> on the basis of spectrum of technology with varying emission profile.

He shared the market trends worldwide on consumption of hydrogen and informed that most of the demand is being met through gray and brown hydrogen which need to be shifted to GH. He explained the policy support available from Govt. of India and highlights of Rajasthan GH policy, 2023. He also shared the strategic benefits of GH eco-system and challenges pertaining to GH expansion in Rajasthan. He shared the cost of Hydrogen production component-wise and technology-wise along with the need of water and other infrastructure to support the projects.



**Ms. Shalini** (Technical Manager, RRECL)  
 Ms. Shalini covered aspects such as introduction of GH, Policy, and regulatory overview, GH<sub>2</sub> costing and state initiatives on green hydrogen. She shared various types of production methods for green hydrogen such as Steam-methane reforming, Electrolysis, Hydraulic fracturing Gasification of Coal and Pyrolysis. She also explained usages of green hydrogen in four segments namely industry, transportation, electricity production and grid balancing. Shared India's position to foster the growth and adoption of green hydrogen considering the factors i.e., Significant hydrogen demand, Huge renewable energy potential, Low renewable energy tariffs, Potential to reduce India's import dependency, India's clean energy commitments and large-scale manufacturing support. She also shared the cost estimates of various types of hydrogen and impact due to policy formation. She also quoted that "Green Hydrogen is costly, but not more than our environment".



**Mr. Nitin Bassi** (Sr. VP, Yes Bank)

Mr. Bassi discussed various financial options available for Renewable Energy projects and explained the benefits of selecting particular financial product for specific usages. He also informed that Yes Bank is having MoU with RSA for financing of solar projects.

## Conclusions:

The workshop organized on Green Hydrogen Entrepreneurship & Skilling 'Opportunities and Challenges' addressed by Eight eminent speakers and attended by approx. 200 delegates from industry, institutions, faculty members and students is first workshop on this subject in the state. Delegates could get deep insight about the green hydrogen technology, mission & upcoming challenges to achieve the massive targets from the point of view of entrepreneurship and skilling. The fact also emerged that lots of academic, research and skilling is needed in this area as much of the past experience and expertise are non-existing. Continual interaction between industry and academic institutions is need of the hour for smooth implementation of the mission targets and generating job opportunities for the youths.

