Indo-German Energy Forum Support Office

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Government of India Ministry of Power
Government of India Ministry of New and Renewable Energy
आर्थिक कार्य विभाग Department of Economic Affairs
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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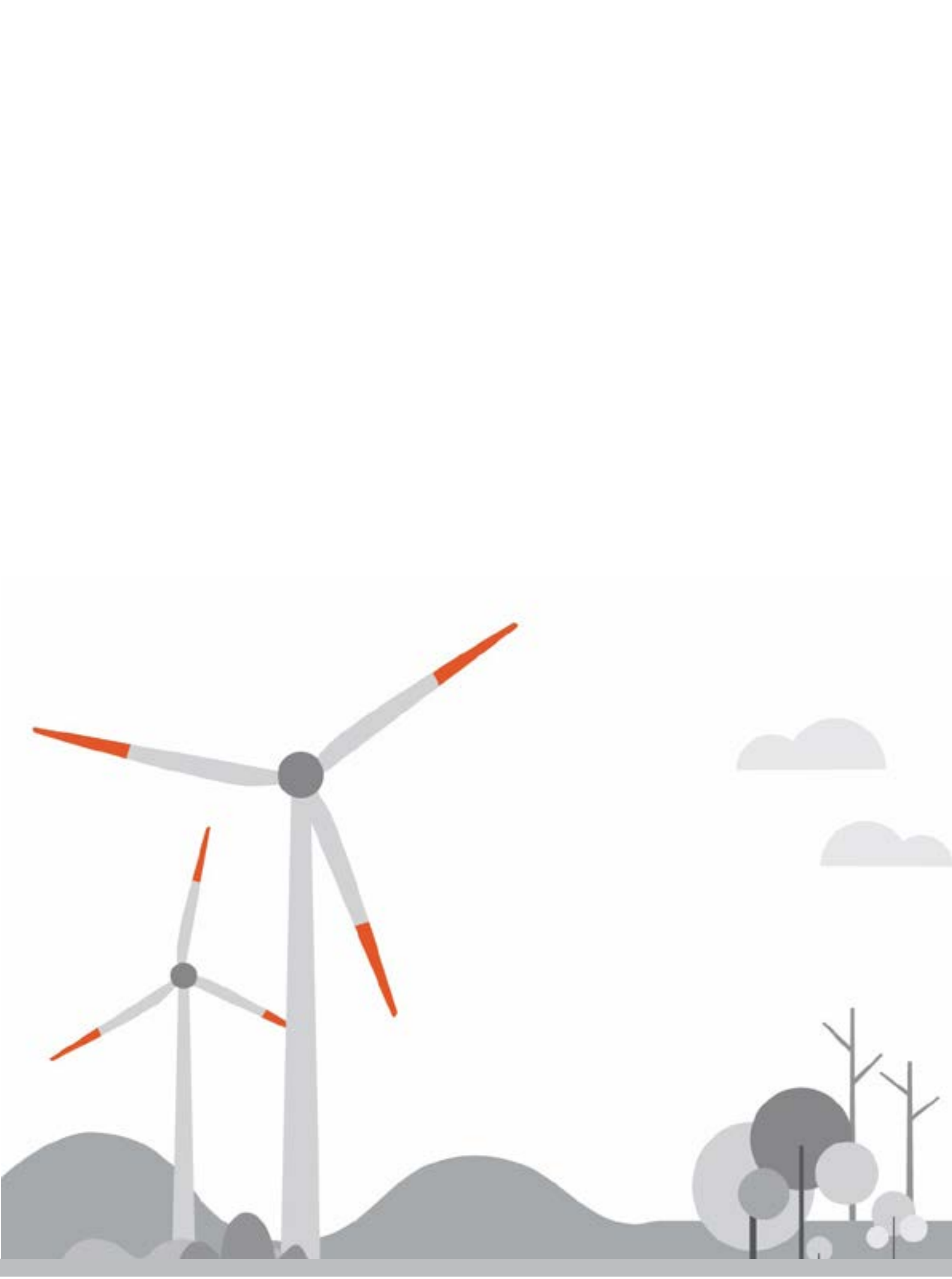


1 Introduction

Shri Ajay Yadav IAS

Joint Secretary (Hydrogen), Ministry of New and Renewable Energy (MNRE) and Co-Chair of Indo-German Green Hydrogen Task Force

> **"Through the collaborative efforts of the Indo-German Green Hydrogen Task Force, we aim to unlock the immense potential of green hydrogen as a catalyst for a sustainable energy transition"**

Shri Ajay Yadav is an Indian Administrative Service IAS officer currently serving as Joint Secretary in the Ministry of New and Renewable Energy (MNRE), Government of India. He is a Mechanical Engineer by profession and a 2005 batch Bihar cadre IAS officer who has held several important positions in the Government of India and State Governments. With around 20 years of experience in Indian bureaucracy, Shri Yadav is known for his deep understanding of public policy, governance and administration.

As Joint Secretary, MNRE, Shri Yadav is primarily responsible for Green Hydrogen & Regulatory Affairs. Under his leadership, MNRE has taken several initiatives to promote the use of clean and renewable energy sources in the country. Shri Yadav also is the Co-Chair of the high-profile Indo-German Green Hydrogen Task Force, established last year at the 6th India-Germany Inter-Governmental Consultations, and guides and mentors the work of the various subworking groups on Green Hydrogen.

He is known for his passion for sustainable development and his commitment to making a positive impact on the environment. He has been instrumental in driving the growth of the renewable energy sector in India, which has become one of the fastest growing sectors in the country.

2 Events and Activities

Roundtable on Energy Storage and Photovoltaics

24 July 2023 | New Delhi, India

During the visit of Parliamentary State Secretary Mr. Stefan Wenzel from the German Federal Ministry for Economic Affairs and Climate Action (BMWK) to India, the Indo-German Energy Forum (IGEF-SO) collaborated with the Indo-German Chamber of Commerce (IGCC) to organise a focused roundtable on energy storage and photovoltaics in Delhi on 24 July. Accompanied by the official BMWK delegation, Secretary Wenzel engaged with high-ranking officials from companies and associations such as Fluence, IBC Solar, and Fraunhofer India.

The roundtable aimed to discuss the development of value chains for photovoltaics (PV) systems and battery storage, addressing the opportunities and obstacles faced by German companies in India. As a result of the discussions, a dedicated task force will be set up to foster greater exchange between the two countries. This initiative will include both public and private sector representatives to ensure a comprehensive understanding of all relevant perspectives.

The discussion primarily focused on two key areas: increasing India's manufacturing capabilities and establishing new manufacturing facilities for PV and energy storage solutions.

Participants of the roundtable on energy storage and photovoltaics.

Networking Reception with State Secretary Mr. Stefan Wenzel (BMWK) and Representatives of Foundations and NGOs in India

24 July 2023 | Old-Delhi, India

During the visit of Parliamentary State Secretary Mr. Stefan Wenzel, German Federal Ministry for Economic Affairs and Climate Action (BMWK) to India, a networking reception was held with representatives from civil foundations and non-governmental organisations (NGOs) active in India on 24 July 2023, in Old-Delhi. The reception focused on the perspectives and opportunities for a socially just energy transition in India and discussed the crucial role of civil society in implementing such initiatives. Representatives from the Heinrich-Böll-Stiftung, the Friedrich-Ebert-Stiftung, the Clean Energy Access Network, Dharma Life, and IRADe, as well as representatives from the German Embassy in New Delhi and GIZ India, attended the reception.

The event provided a platform for active exchange, fostering international cooperation and gaining insights into the unique challenges and opportunities surrounding India's energy transition. It highlighted the significance of global partnerships in addressing shared environmental concerns and working towards a greener and more equitable future.

Parliamentary State Secretary Wenzel (BMWK) with representatives of foundations and NGOs active in India.

Global Policy Makers Dialogue on Agri-Renewables: Securing Water-Energy-Food Nexus for a Sustainable World

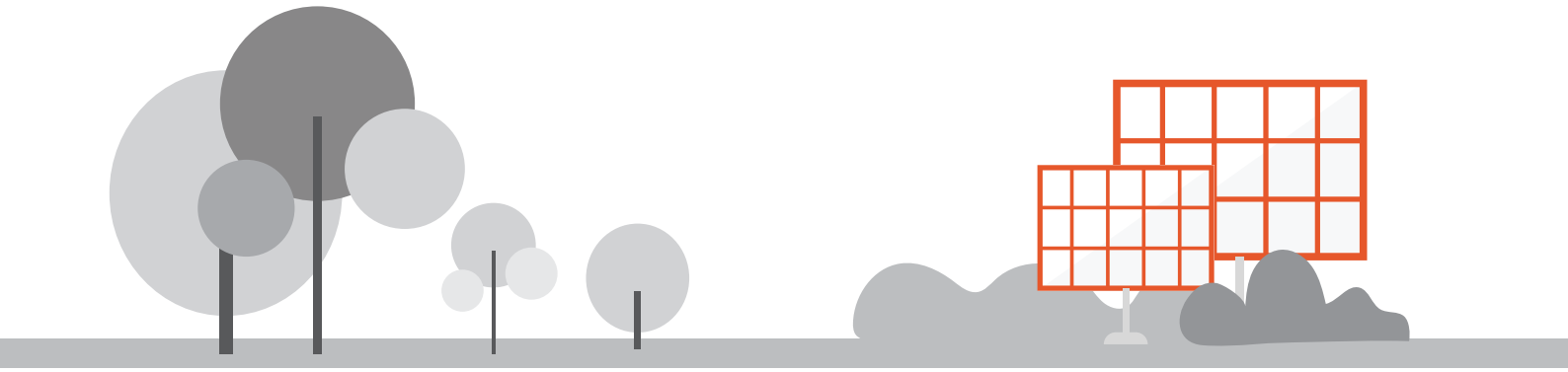
22 July 2023 | Goa, India

The National Solar Energy Federation of India (NSEFI), in collaboration with the International Renewable Energy Agency (IRENA), the Global Solar Council, and the Indo-German Energy Forum (IGEF-SO), organised a roundtable discussion on Agri-Renewables at the Clean Energy Ministerial Meeting (CEM-14) on 22 July. The event explored the potential of solar energy in the agricultural sector, highlighting its potential to promote sustainable agriculture and strengthen rural energy access. Discussions centered on the role of policy and regulatory frameworks in driving investment in renewable energy and fostering collaboration between stakeholders.

Mr. Deepak Gupta, Honorary Director General of NSEFI, emphasised the transformative potential of Agrivoltaics, projecting an installation of 1500 GW by 2050.

Mr. Tobias Winter, Director, IGEF-SO, highlighted the global surge in solar installations while pointing out the land-intensive nature of conventional solar installations. He endorsed Agrivoltaics as an innovative solution and encouraged solar companies to consider these projects as alternatives to current practices such as shade nets and greenhouses. Mr. Winter praised Germany's partnership with India on Agrivoltaics and its inclusion in the German Renewable Energy Act with a special tariff. He welcomed IRENA's collaboration with FAO to promote Agrivoltaics and stressed the importance of starting Agrivoltaics projects at different scales.

Mr. Sascha Krause-Tünker, CFO of NEXT2Sun, highlighted the practicality of using large agricultural machinery on vertical PV systems, streamlining tasks such as spraying, ploughing, and sowing. Mr. John Grimes, CEO of the Smart Energy Council, introduced the innovative concept of combining Agrivoltaics with an electrolyser to produce Green ammonia for fertiliser, optimising land utilisation. Mr. Tajima Makoto, Director of ISEP Japan, shared Japan's success with Agrivoltaics on tea plants and highlighted its effectiveness with 4000 systems covering 120 crops.



Mr. Kenji Kato, Senior Programme Officer at IRENA, envisioned Agrivoltaics as a catalyst for energy nexus enhancement and improved livelihoods. Prof. Eicke Weber, former Director of Fraunhofer ISE and Co-Chairman of the European Solar Manufacturing Council (ESMC), stressed the imperative of 30 to 60 TW of solar installations in the next 25 years, emphasising Agrivoltaics pivotal role in land's dual usage and water conservation.

The event marked the launch of the Agrivoltaics Alliance, aiming to foster collaboration among stakeholders in the Agrivoltaics ecosystem. The initiative seeks to accelerate the adoption of Agrivoltaics in India by advocating for robust policies, deliberating on standards and regulations, and ensuring the representation of marginalised groups.

The roundtable concluded with the release of an updated edition of the "Agrivoltaics in India" report, providing insights into operational projects and relevant policies.

The launch of the new edition of the "Agrivoltaics in India" report.

Indo-German Business Forum

20 July 2023 | New Delhi, India

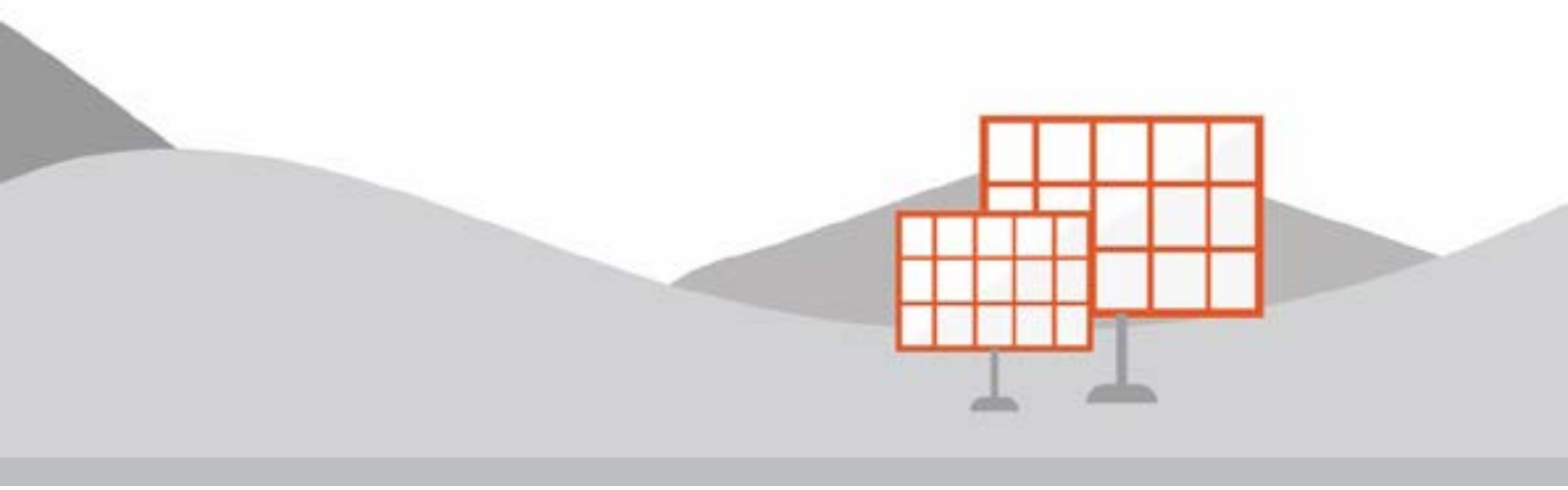
During the visit of Dr. Robert Habeck, Vice Chancellor and Federal Minister for Economic Affairs and Climate Action (BMWK), a significant Indo-German Business Forum was organised in New Delhi on 20 July 2023. The event, themed "Inviting Innovation: Transforming the economy for a shared sustainable future," was hosted by the Indo-German Chamber of Commerce (IGCC). Within the forum, the Indo-German Energy Forum (IGEF-SO), in collaboration with IGCC, led a panel discussion focused on the decarbonisation of supply chains.

The Kick-off Session, led by Ms. Sonia Prashar, Deputy Director General, IGCC, and Mr. Stefan Wenzel, State Secretary, BMWK, highlighted Germany's commitment to decarbonisation. The emphasis was on energy efficiency and the transition towards electricity-based processes, aligning with Germany's strategy to expand renewable energy utilisation for electrifying various sectors and moving away from fossil fuels.

Discussions between Secretary Wenzel and Ms. Prashar explored potential collaborative opportunities between India and Germany within the framework of Germany's National Hydrogen Strategy. The conversation acknowledged Germany's energy import status despite renewable efforts, emphasising the role of international partnerships in advancing decarbonisation goals.

The discussion also delved into the Climate Club, an initiative fostering global cooperation in climate protection and industrial decarbonisation. The European Union's (EU) Carbon Border Adjustment Mechanism (CBAM) was highlighted as a levelling mechanism beneficial to all participating countries. India's competitive green power prices were recognised as conferring trade advantages, facilitating affordable green products for the EU.

The subsequent panel discussion, titled "Decarbonisation of Supply Chains," was moderated by Mr. Tobias Winter, Director, IGEF-SO. The panel featured representatives from both India and German companies, offering insights into decarbonisation and energy efficiency.



Ms. Melanie Kreis, CFO at DHL, elaborated on the company's substantial climate-neutral logistics investments (7 billion EUR until 2030), including commitments to alternative aviation fuels and carbon-neutral buildings, with a clear objective of achieving net-zero emissions by 2050.

Ms. Mahua Acharya, Chief of Staff at C-Quest, drew from her experience leading the world's largest electric bus program during her tenure as CEO and Managing Director of state-owned Convergence Energy Services Ltd. She also touched upon India's electric vehicle fleet market and explored the potential of an Indian Carbon Market along with business models for commercial PV-rooftops.

Mr. Vikram Kapur, Chief Growth Officer and Member of the Management Board of ReNew Power, highlighted the company's green ammonia and H2Global tenders, along with significant renewable energy installations.

Mr. Ebel, President of the German solar association (BSW Solar), and Mr. Winter discussed the association's history and recent projects in India, including deliberations on PV rooftops versus ground installations.

Ms. Jyoti Gulia, founder of JMK Research and former leader of Bridge to India, contributed insights on business models for commercial PV rooftops and the transition of large companies to green power.

The panel discussion provided a platform for a constructive dialogue among Indian and German companies regarding ongoing decarbonisation efforts.

All panelists of the discussion "Decarbonisation of Supply Chains" with Secretary Stefan Wenzel.

Federal Ministry
for Economic Affairs
and Climate Action

German Government Delegation Explores Collaborative Renewable Energy Avenues during G20 Presidency in India

July 2023 | New Delhi, Goa, Pune and Chennai, India

In an important step to advance cooperation in the field of renewable energy, Mr. Stefan Wenzel, Parliamentary State Secretary, Federal Ministry of Economic Affairs and Climate Action (BMWK), Govt. of Germany, visited India recently on the occasion of India's G20 presidency. The delegation participated in several events organised in New Delhi, Goa, Pune, and Chennai, including the official G20 and Clean Energy Ministerial Meetings (CEM). The objective was to gain a better understanding of the Indian energy sector and explore opportunities for cooperation between both countries.

In Delhi, the capital city of India, the delegation held a series of engaging meetings to gain comprehensive insight into the country's energy landscape. The visit also included a business to government roundtable on PV and Energy Storage. During this session, pertinent topics like Indian aspirations to build robust PV and Battery Storage value chains, alongside opportunities and challenges for German counterparts, took centre stage. Industry players such as Bridge to India, Siemens Energy, Next2Sun, SMA, Fluence, IBC Solar, and Fraunhofer India actively engaged in these dialogues.

The delegation's stay in Delhi included a tapestry of interactions to gain a holistic view of India's energy landscape. Secretary Wenzel engaged with energy think tanks and NGOs and made a notable visit to BSES Rajdhani Power Limited (BRPL) Shivalik Grid Solar PV and battery installation. This installation, the result of cooperation between Government of Germany and the Government of India, symbolised the convergence of technical expertise and shared aspirations. This system has been installed with the joint efforts of GIZ and BRPL. The delegation also had a moment to connect with graduates of the Skill Council for Green Jobs (SCGJ), champions of renewable energy.

One of the highlights in Pune was a visit to the Saarloha, which is part of the Kalyani Group, and which produces green steel products using electricity produced from 100 % renewable energy sources. A business-to-government roundtable, co-hosted with the Indo-German Chamber of Commerce (IGCC), united industry

players at the frontier of green hydrogen and green ammonia. Discussions focused on German funding mechanisms for green hydrogen projects and the fertile ground for Indo-German collaboration across the value chain.

The delegation trip culminated in Chennai, where another G20 Ministerial on Climate and Environment occurred. Amidst the ministerial engagements, a visit to Flender, a leading wind energy company, demonstrated a market for high quality German engineering and manufacturing of wind turbine components made in India unveiled the intricate world of gear units for wind turbines. This immersive experience, led by CEO Mr. Vinod Shetty, provided a tangible connection to the industrial heartbeat of wind energy. In a dedicated roundtable on wind energy, German wind industry leaders stressed the need for a larger domestic wind market. The full value of wind power available, especially when the sun is not shining, was still underestimated in India. Chennai's itinerary also included a thought-provoking excursion to the Pallikaranai Wetlands, an ecological treasure embedded in the urban landscape. Here, Minister Stefanie Lemke of the German Federal Ministry for Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) joined the narrative, emphasising the multiple roles of wetlands in biodiversity conservation, flood control and livelihoods.

An exceptional thematic exchange, bridging German and Indian governments and fostering synergistic dialogues with the private sector, was epitomised by the visit of Parliamentary State Secretary Stefan Wenzel. The trip opened new avenues for joint progress in renewable energy and reaffirmed the mutual commitment to a sustainable and shared future.

Parliamentary State Secretary Mr. Stefan Wenzel.

Indo-German Energy Forum Subgroup IV Meeting on Green Energy Grid Integration

14 June 2023 | New Delhi, India

The Indo-German Energy Forum (IGEF-SO) held a Subgroup IV meeting on 14 June, 2023, in New Delhi, focusing on the topic of "Green Energy Grid Integration". In her welcome address, Mrs. Aparna Bhatia, Co-Chair of Subgroup IV from the Indian side and the Economic Adviser (BC & Admin) at the Department of Economic Affairs (DEA), highlighted the crucial role of the group in India's Green Energy Corridor (GEC) initiative. She emphasised the collaborative efforts of key stakeholders, including BMZ, DEA, MNRE, KfW, and IGEF-SO, commending their concerted work to advance GEC projects.

Co-Chair from the German side, Ms. Barbara Schäfer, Head of Division of South Asia at the German Federal Ministry for Economic Cooperation and Development (BMZ), commenced her opening remarks by asserting that "Green Energy Finance" and "Grid Integration" are important topics. She highlighted Germany's pioneering position in addressing the requirements for integrating renewable energy into the grid and expressed the commitment to ongoing cooperation with India and BMZ to support India in achieving its renewable energy targets.

During the meeting, representatives from KfW provided the update on the progress and upcoming activities of Subgroup IV. They outlined a holistic approach, focusing on transmission, distribution, storage, system integration with various renewable energy sources, and reforms in DISCOMs and energy markets. Additionally, KfW highlighted the need for specific financing aspects, innovative green financing mechanisms, and programmatic support at the state level. KfW also provided updates on different phases of GEC activities, including loan signings and utilisation for renewable energy evacuation infrastructure in various states. Discussions were held on potential projects like the Leh-Haryana energy transition and Maharashtra State Electricity Transmission Company Limited's interest in GEC-III.

The meeting addressed IGEF-supported studies and study tours, presenting findings and discussing their implications for future collaboration.

Concrete actions and a work plan were agreed upon, emphasising the development of roadmaps for green energy financing, strengthening grids, and exploring innovative financing mechanisms. The decision to accept the name change to "Green Energy Financing and Grid Integration" was also agreed upon by the Co-Chairs.

The meeting showcased the ongoing commitment and cooperation between India and Germany in advancing green energy initiatives, concluding with an acknowledgement that the current and proposed activities of SG IV align with the spirit of cooperation between the two countries.

Participants of the meeting of the Subgroup IV meeting.

Indo-German Energy Forum Subgroup I Meeting on Flexibilisation of Existing Thermal Power Plants

6 June 2023 | New Delhi, India

The Indo-German Energy Forum (IGEF-SO) convened a Subgroup I meeting on the subject of "Flexibilisation of Existing Thermal Power Plants" on 6 June 2023, in New Delhi. The meeting, chaired by Dr. Andreas Nicolin, Deputy Director General, Ministry for Economic Affairs and Climate Action (BMWK), and Shri Piyush Singh, Joint Secretary, Indian Ministry of Power (MoP), witnessed discussions and decisions addressing various aspects of enhancing the flexibility of thermal power plants.

Efficiency in low load operation was emphasised in one of the important choices taken during the meeting. The participants agreed that the flexibilization process needed a market mechanism to be effective. Additionally, it was decided to provide the report on Guidelines for Flexible Operation of Coal Fired Power Plants in India to the relevant stakeholders, with MoP offering to send it to GENCOs (power generation companies).

Shri Ramesh Babu, National Thermal Power Corporation (NTPC) offered two steps and advanced the idea that "seeing is believing" during the sessions. To begin with, it was advised that a flexibility simulator be implemented to continue assisting in better comprehension and decision-making. To learn from the experiences of power plant operators in Europe, the concept of fact-finding missions, delegations, or study tours was proposed.

During the meeting, storage options and carbon capture and utilisation (CCU) were also covered; additional discussion and investigation of these subjects are scheduled for further meetings. It was accepted that tests in supercritical units had already been carried out, and the need for additional tests to determine their benefits was acknowledged. NTPC has actively participated in adjusting its operations to meet flexibility measures, and its skills and experience have been cited as key resources.

Dr. Nicolin advised that the German and Indian sides increase their exchange of knowledge about efficiency in low load operations. IGEF was tasked with analysing European incentives other than electricity exchange and identifying analogous incentives in India to increase flexibility.

Participants emphasised the importance of studying market processes and reviewing successful flexibility measures already implemented in Europe to ensure economic viability. Additionally, the need for continuing conversations on storage options was emphasised, suggesting a desire to go deeper into this area.

The Indo-German Energy Forum Subgroup I meeting provided a forum for beneficial exchanges, decision-making, and future planning to improve the flexibility of thermal power plants in India.

Participants of the Subgroup I meeting.

Indo-German Green Hydrogen Task Force

6 June 2023 | New Delhi, India

The second meeting of the Indo-German Green Hydrogen Task Force was organised on behalf of the Indian Ministry of New & Renewable Energy (MNRE) and the German Federal Ministry for Economic Affairs and Climate Action (BMWK) by the Indo-German Energy Forum (IGEF-SO) on 6 June 2023 at Atal Akshay Urja Bhawan in New Delhi under the co-chairmanship of Shri Ajay Yadav, Joint Secretary, MNRE and Dr. Andreas Nicolin, Deputy Director General, BMWK.

Post the first meeting of the Task Force on 20 February 2022, the four Subworking Groups have met several times to identify challenges in the green hydrogen value chain and seek action accordingly.

The meeting kickstarted with welcome remarks from Sh. Yadav, MNRE, who offered an overview of the decisions agreed upon by the Task Force members after the first meeting. He then provided a background of India's National Green Hydrogen Mission and highlighted the important work to be carried out under the mission.

Dr. Nicolin, BMWK, in his welcome remarks thanked everyone for the second meeting of the Task Force and outlined the priorities from Germany's National Green Hydrogen Strategy. He emphasised on the need for partnerships between the two countries to establish an efficient green hydrogen ecosystem and touched upon the H_2Global tender which has been opened for Sustainable Aviation and Sustainable Maritime Fuel (SAF/SMF).

Dr. Phillipp Stammler, Head of National Hydrogen Strategy, BMWK, took over the floor then to provide inputs on Germany's National Green Hydrogen Strategy. As per the Green Hydrogen Strategy, Germany expects a demand of up to 100 TwH of hydrogen in 2030. Germany sees a high demand for hydrogen in the hard-to-abate sectors, such as steel and chemical industry but also the maritime sector. Currently, Germany has a demand of 55Twh of mainly grey hydrogen, mostly for the chemical sector, which means that there is a large carbon footprint. Hence, the strategy focuses on creating a demand of 95 - 100 Twh green hydrogen. The inputs provided by Dr. Stammler created a fruitful backdrop for the heads of the Subworking Groups under the Indo-German Green Hydrogen Task Force to inform the esteemed members about the work conducted in each of the subworking groups.

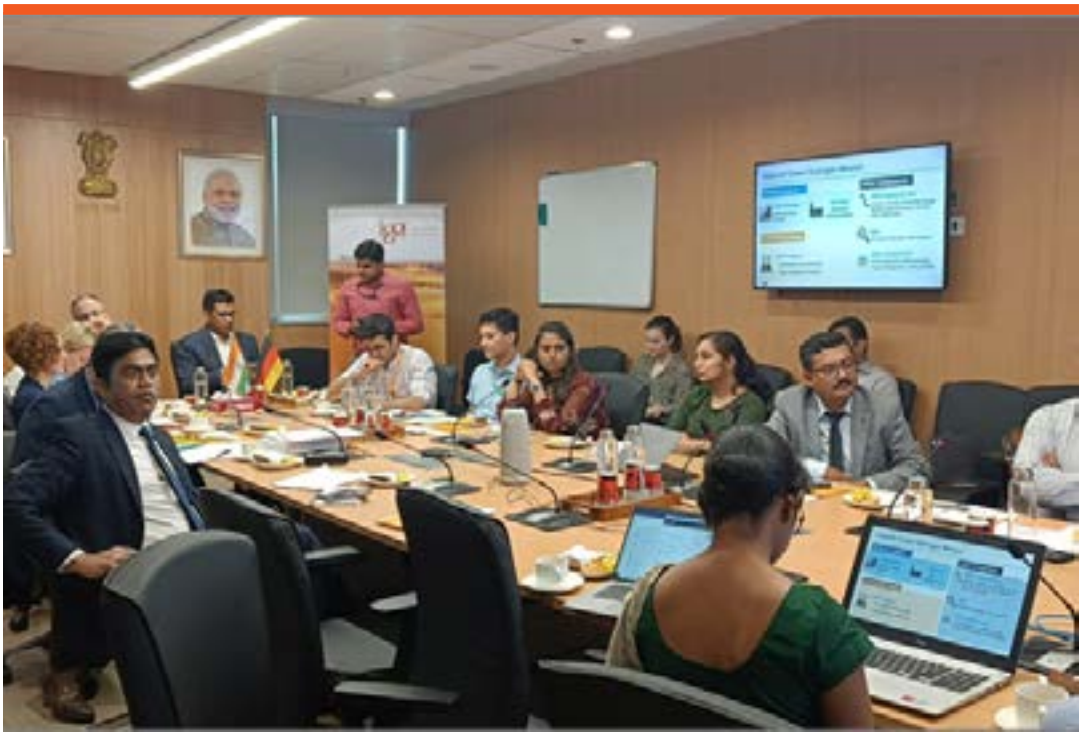
Mr. Vineet Goyal, Director, Steinbeis and Head of Subworking Group on Plant Engineering and Production, informed that there was a consensus among the members to learn about ongoing and upcoming GH2 projects in India and abroad which has been consistently shared with them. This subworking group had also highlighted the importance of learning about the production cost of green ammonia in India. Based on this, MEC+ Intelligence conducted a study and thereby produced a tool which calculates the cost of green ammonia and green fertilisers with configuration of renewable plants across India. Mr. Goyal said that in the future, the subworking group hopes to focus on identifying activities for cooperation and partnerships in the form of trade fairs, delegations and business roundtables.

The Head of Subworking Group 2 on Transport, Storage and Consumption, Mr. Tom Mikus, NOW GmbH, briefly took the participants through the knowledge sessions organised on decarbonising the shipping sector in India. He also informed that an efficient tool has been developed on identifying locations for hydrogen hubs in India. This tool analyses and maps logistics and storage infrastructure for GH2 derivatives in India. Under this subworking group, the tool is scheduled to be officially launched later in the year and a study on location assessment for green ammonia production will also be organised.

Mr. Tapas Kapadia, CEO, RWE Supply & Trading India, and Head of Subworking Group 3 on Finance, Insurance Industry and Trading, said that there was a keen interest among members to learn about carbon (CO_2) certificates as an additional revenue stream for GH2 projects. Hence, a webinar was organised on the same with Mr. Phillip Veh, Perspectives Climate Group. Further information dissemination was conducted on financing options for GH2 projects. Some of the financing tools identified have been H2UPPP, PtX Development Fund by KFW Development Bank, and the most important H2Global tender. In the future, this subworking group hopes to learn about the insurance sector for green hydrogen.

Finally, the Co-Head of Subworking Group 4 on Quality Infrastructure, Safety and Legal Framework, Mr. Markus Hoffmann von Wolffersdorff, KNPP, expanded on the reports and studies conducted. This subworking group has been presented with a report on green hydrogen certification for export to Europe with a special focus on bidding zones as per the Delegated Acts under RED II. Under this group, a study on gap analysis of green hydrogen related standards and norms in India needs to be finalised and further knowledge sessions need to be organised on certifications for building a green hydrogen ecosystem.

Having received the detailed overview on the Task Force, the Co-Chairs expressed their pleasure on the work conducted and highlighted the importance of cooperation for developing the Indo-German Green Hydrogen Roadmap.



Participants of the Indo-German Green Hydrogen Task Force Meeting.

Indo-German Energy Forum Subgroup II Meeting on Renewable Energies

7 June 2023 | New Delhi, India

The Indo-German Energy Forum (IGEF) held a Subgroup II meeting on 7 June, 2023, in New Delhi, focusing on the topic of "Renewable Energies." Chaired by Dr. Andreas Nicolin, Deputy Director General, Ministry for Economic Affairs and Climate Action (BMWK), and Shri Lalit Bohra, Joint Secretary of Solar, Ministry of New and Renewable Energy (MNRE), the meeting addressed productive discussions and decisions aimed at fostering the development and collaboration in renewable energy initiatives.

Recognising the importance of land permitting and land use in renewable energy projects, IGEF was entrusted with conducting a study to compare the land permitting processes and guidelines in Germany and India, aiming to incorporate best practices into bidding guidelines.

The initiative aimed to promote active participation by German companies in India's Production-Linked Incentive (PLI) scheme for battery manufacturing, encouraging collaboration and investment in the Indian market. Knowledge exchange on storage solutions and virtual power plants was encouraged between the German and Indian counterparts, facilitating the sharing of technological advancements and best practices.

IGEF was tasked with conducting a brief study on the latest developments in various battery technologies, contributing to the overall understanding and adoption of innovative energy storage solutions.

Considering the importance of sustainability and waste management, IGEF was assigned the responsibility to gather information and facilitate an information exchange on guidelines and policies pertaining to the disposal of photovoltaic (PV) waste, promoting a circular economy approach. IGEF reiterated its commitment to supporting the development of niche markets for solar photovoltaics (PV) and exploring potential future projects with India, fostering innovative and sustainable approaches in the solar PV sector.

The meeting stressed the importance of continued information collection and exchange on financing renewable energy projects, ensuring a well-informed approach to support RE growth.

Participants at the Indo-German Energy Forum Subgroup II meeting.

Indo-German Energy Forum Subgroup III Meeting on Energy Efficiency

7 June 2023 | New Delhi, India

The Indo-German Energy Forum (IGEF) organised a Subgroup III meeting on the topic of "Energy Efficiency" on 7 June 2023 in New Delhi. The meeting was chaired by Mr. Nicolin, Deputy Director General, German Federal Ministry for Economic Affairs and Climate Action (BMWK) and Shri Abhay Bakre, Director General, Bureau of Energy Efficiency (BEE) under the Indian Ministry of Power (MoP). Among other things, both discussed the decarbonisation of industry in India. A corresponding study is to be driven forward by the IGEF.

Co-Chair Shri Bakre welcomed all the participants from Germany and India and briefed his German Counterpart on recent updates regarding the energy sector in India. He also pointed out India's ambitious targets on energy efficiency and decarbonisation until 2030 and highlighted the honor of being this year's host of the G20. Co-Chair Mr. Nicolin also welcomed all the participants and briefed his Indian counterpart on developments in energy efficiency and electrification of different sectors in Germany.

Next, Mr. Tobias Winter, Director, IGEF-SO, gave a short overview on the decisions taken from the last Subgroup III Meeting in June 2022 and discussed the developments and current status of the activities under the subgroup. As cooling being one of the activities, the extension of the district cooling project and the set up of a competence and knowledge center on district cooling in India was announced. Ms. Anneli Stutz also gave some insight on the delegation on district cooling in Singapore.

During the thematic exchange on energy efficiency in industry, Mr. Himanshu Chaudhary, Sector Expert, BEE, gave a short presentation on the steel sector and its latest developments in India. Mr. Malte Bornkamm afterwards also updated everyone on the current state of steel in Germany. Both the experts also touched the topic of green steel and the needs in order to decarbonise the steel industry. A joint Indo-German Workshop on Green Steel was proposed.

Participants at the meeting of Subgroup III on Energy Efficiency.

Mr. Jayakrishnan Nair, PwC, gave a presentation on the outcomes of the study "Decarbonising India – Study on the potential for electrification across India's Economy & Assessment of electricity needs". The study explores the question how far the energy demand of India can be electrified by 2070 either directly or indirectly through technologies like electrolysis to produce green hydrogen. Additionally, the study quantifies the renewable capacity additions needed to decarbonise India with the technologies selected as the most viable options.

At the end, the preparation of the upcoming 10th Indo-German Energy Forum was discussed. It was agreed upon that the IGEF-SO will support the organisation of the event.

Both Co-Chairs appreciated the outcomes of the Subgroup III meeting. On behalf of the Indian Ministry of Power, Government of India, Shri Bakre thanked his Co-Chair and the participants for a meaningful meeting. Both Co-Chairs look forward to further fruitful cooperation.

Participants of the Indo-German Energy Forum Subgroup III meeting on Energy Efficiency.

Renewable Power-to-X Training in Kochi, Kerala

23 - 25 August 2023 | Kochi, India

The Indo-German Energy Forum (IGEF-SO) and the Power-to-X Hub jointly organised a three-day capacity-building Power-to-X training course on Green Hydrogen and its derivatives in India from 23 - 25 August 2023, in Kochi (Kerala). The training was attended by 34 participants from the government, private sector, and academia. The facilitators for the course were Ms. Kajol, Senior Manager (Energy) at the World Resources Institute India, and Mr. Vivek Jha, an energy expert and independent consultant.

Ms. Heena Mandloi, Ministry of New and Renewable Energy (MNRE) presented the highlights of the Mission document, emphasising the components under the Strategic Interventions for Green Hydrogen Transition (SIGHT) outlined in the mission document.

Ms. Priyam Srivastava and Mr. Deepak Choudhary, Central Electricity Authority (CEA) presented the National Electricity Plan (NEP) (Vol-I Generation) for the period of 2022-32. They highlighted that based on assumptions and adopted methodologies, the additional energy requirement for the country due to green hydrogen production is estimated to be 250 BU by the fiscal year 2031-32. The presentation also covered electricity demand projections, including captive power plants and solar rooftop installations.

Following the presentations, the floor was opened for a Q&A session. During this interactive segment, participants had the opportunity to seek clarification, share insights, and engage in discussions.

Participants at the Renewable PtX Training in 23-25 August 2023.

Renewable Power-to-X Training

12 - 14 July 2023 | New Delhi, India

Indo-German Energy Forum (IGEF-SO) and the Power-to-X Hub collaborated to conduct a comprehensive 3-day capacity-building Power-to-X training course on Green Hydrogen and its derivatives in India. The event took place from 12 - 14 July 2023 in New Delhi, attracting 21 participants from various sectors, including government, private, and academia. Notably, the training achieved a significant milestone with 52% female participation. The course was skillfully facilitated by Mr. Vivek Jha, an experienced energy expert and independent consultant.

During the training, Ms. Heena Mandloi from the Ministry of New and Renewable Energy (MNRE) highlighted the Mission document, emphasising the components under the Strategic Interventions for Green Hydrogen Transition (SIGHT) outlined in the mission document. Mr. Rishabh Patidar, representing the Council on Energy, Environment, and Water, provided detailed insights into the extensive benefits of the Mission. These advantages included the creation of export opportunities for Green Hydrogen and its derivatives, decarbonisation across industrial, mobility, and energy sectors, reduction in dependence on imported fossil fuels and feedstock, development of indigenous manufacturing capabilities, creation of employment opportunities, and the advancement of cutting-edge technologies.

International Conference on Green Hydrogen (ICGH) 2023

5 - 7 July 2023 | New Delhi, India

The International Conference on Green Hydrogen (ICGH-2023) took place from 5 to 7 July 2023 at Vigyan Bhawan, New Delhi, organized by the Ministry of New and Renewable Energy (MNRE) in collaboration with various partners. The conference, inaugurated by Union Minister Shri R. K. Singh, witnessed significant participation with over 2,700 registrations and contributions from more than 135 speakers.

During the event, a CEO roundtable chaired by Shri R. K Singh, Union Minister for Power and New & Renewable Energy, provided a platform to explore potential opportunities within India's green hydrogen ecosystem.

The Prime Minister of India Shri Narendra Modi conveyed a message emphasising the conference's role in fostering a green hydrogen ecosystem and addressing climate change challenges. The Prime Minister highlighted the crucial role of green hydrogen in sustainable growth and decarbonisation.

India's ambition to become a global green hydrogen hub was underscored in the Union budget of 2023, allocating 19,700 crores for the green hydrogen mission. The mission aims to produce at least 5 million metric tonnes (MMT) of Green Hydrogen annually by 2030, with potential growth to 10 MMT per annum through export markets. It also focuses on developing infrastructure for storage and delivery of green hydrogen and its derivatives.

Mr. Rolf Behrndt, Senior Hydrogen Advisor, GIZ Germany, presented three tools developed by GIZ India during the conference:

During the Green Financing session, panelists shared their insightful knowledge.

- Market Study and Location Assessment for Green Ammonia Production – This study assesses the commercial feasibility of a 1000 TPD green ammonia production plant in India, recognizing green ammonia production as one of the initial commercially viable applications of green hydrogen due to its various use cases.
- Tool for Identification of Locations for Hydrogen Hubs in India – This tool analyses and maps logistics and storage infrastructure for green hydrogen and its derivatives across India.
- Cost Modeling Tool for Production of Green Ammonia in India – The model calculates the cost of green ammonia and green fertilisers, considering the configuration of renewable plants across India.

The session on Green Financing, chaired by Mr. Tobias Winter, Director, IGEF-SO, addressed financial challenges and opportunities for green hydrogen projects in India. Panelists discussed potential financing mechanisms and investment models to accelerate the growth of the green hydrogen economy.

The 3-day mega event featured plenary talks, expert panel discussions, and technical deliberations, focusing on establishing a Green Hydrogen ecosystem and catalysing a systemic approach to meet global decarbonisation goals through Green Hydrogen.

Panelists sharing insightful knowledge during the session on Green Hydrogen Valleys at the ICGH 2023.

Indian Delegation Explores Green Hydrogen and Agrivoltaics in Munich

12 - 16 June 2023 | Munich, Germany

The Indo-German Chamber of Commerce (IGCC) and the Indo-German Energy Forum (IGEF-SO) organised a business delegation from India to Germany, in June. Comprising 18 participants, the delegation focused on Green Hydrogen and Agrivoltaics during their visit from 12 - 16 June 2023. The delegates visited Intersolar Europe, held as part of the Smarter E 2023, where delegates connected with German exhibitors, exploring collaboration opportunities and exchanging ideas for the Indian market.

The delegation also delved into the integration of agriculture and energy production through visits to two agrivoltaic installations. The first installations, operated by "DoppelErnte" ("DoubleHarvest") in Althegnenberg near Munich, utilised solar modules on approximately 2.2 hectares of farmland. These south-facing PV modules were mounted on a rotating shaft, optimizing electricity yields by following the sun's path.

The second AgriPV site, established by Krinner in Straßkirchen, featured a 300 kWp system covering 0.5 hectares of land with bifacial modules tracked in an east-west direction.

Additionally, the delegation visited SFC Energy in Brunnthal, near Munich, on the last day of the trip. SFC Energy specializes in supplying hydrogen and methanol fuel cells for stationary and mobile hybrid power solutions. The visit included a tour of the production site, providing insights into the company's product range, including decentralized hydrogen systems that can replace diesel generators for fire brigades and hydrogen-powered surveillance cameras for construction sites.

This visit offered participants a comprehensive understanding of various photovoltaic and green hydrogen projects in Europe, fostering knowledge exchange and potential collaborations between India and Germany.

Agrivoltaics facility at DoppelErnte, near Munich, Germany.

Indo-German Energy Dialogue on Solar Power and Green Hydrogen

15 June 2023 | Munich, Germany

The Indo-German Energy Forum (IGEF-SO) hosted the "Indo-German Energy Dialogue on Solar Power and Green Hydrogen" at Intersolar Europe 2023 in Munich on June 15, 2023. During the event, Mr. Vinay Rustagi, Managing Director of Bridge to India, delivered a presentation offering comprehensive insights into the current state of the Indian solar market and outlining the country's aspirations for establishing a green hydrogen economy. Mr. Rustagi acknowledged the significant growth in solar installations in India since 2021 but emphasized the ambitious targets set for 2030. He highlighted challenges related to land use conflicts and environmental regulations, leading to the government's focus on green hydrogen. However, he stressed that the future success of green hydrogen in India depends on improving its economic viability, necessitating stronger incentives and policy support. Following the presentation, a discussion ensued, addressing audience inquiries about knowledge exchange between India and Germany and potential avenues for improvement.

Before the dialogue, political and business representatives from various Indian delegations and participants engaged in informal networking during a networking lunch. This provided organizations and companies from Germany and India with the opportunity to introduce themselves and highlight potential areas for collaboration. The event underscored the importance of networking and knowledge sharing among participants.

In the morning, a Roundtable on Solar Energy, jointly organised by the Indian consulate in Munich, Solar Power Europe, and the Indo-German Energy Forum (IGEF-SO), set the stage for the day's events.

The presentation "India Renewable Sector Update" by Mr. Rustagi can be accessed here.

Participants of the Indo-German Energy Dialogue on Solar Power and Green Hydrogen.

Business Roundtable Meetings on Green Hydrogen

23 - 24 May 2023 | Pune and Mumbai, India

On 23rd and 24th of May, the Indo-German Chamber of Commerce (IGCC) along with the Indo-German Energy Forum (IGEF-SO) organised the sixth and seventh Business Roundtable on the topic of Green Hydrogen and German funding schemes for green hydrogen projects in Pune and Mumbai, respectively.

Mr. Achim Fabig, Consul General of the Federal Republic of Germany in Mumbai, gave the welcome remarks in Mumbai. He mentioned that the Government of Germany aims for climate neutrality by 2045. As per the National Green Hydrogen Strategy, the goal is to have 10 GW of electrolyser capacity in Germany until 2030. Another important goal of the national green hydrogen strategy is to promote an international hydrogen economy. This provides a great opportunity for Indo-German cooperation. This was followed with the welcome remarks by Mr. Stefan Halusa, Director General, IGCC. He mentioned that the German Industry estimates a requirement of 20 - 50 Gigawatt of Power-to-X Plants in Germany alone until 2030. In coming years, there will be demand by the German industry on energy imports also in the form of green hydrogen or green ammonia from abroad. It is an opportune time to access the opportunities provided by this industry.

At the Pune roundtable, the welcome remarks were given by IGCC representatives, Ms. Dipti Kanitkar and Ms. Shivani Chaturvedi. It was mentioned that in January 2023, the "National Green Hydrogen Mission" was officially adopted by the Indian government which supports the development of green hydrogen technologies to meet future energy needs in transport, industry and other sectors with an initial budget outlay of Rs.19,700 crore. Goal is to increase India's green hydrogen production capacity to at least 5 million tons per year by 2030.

The Centre is planning to develop hydrogen valley innovation clusters (HVIC) in the country – hydrogen flagship projects covering the whole hydrogen value chain and serving more than one sector in mobility, industry, and energy. Pune is strategically positioned to become a Hydrogen hub.

The sessions featured detailed presentations on Green Hydrogen Market Developments in India by Mr. Sidharth Jain, MEC Intelligence as well as a presentation on German Funding Schemes for Green Hydrogen Projects by Mr. Tobias Winter, Director, IGEF-SO. Following the presentations, in-depth discussions began with the moderation by Mr. Winter with the impressive 40+ attendees at each of the roundtables. This enabled participants to provide their valuable inputs on how to scale up Green Hydrogen production in India and to harness the opportunities for exports to Germany. Some of the key take-aways that came up during the discussion are that India already belongs to the main users of grey hydrogen as part of the fertilizer and petrochemical industries. This bears a great potential for shifting to Green Hydrogen in the short and medium term. Other sectors such as heavy-duty transport and steel production can follow at a later stage. Secondly, German companies and their Indian partners are already investing in the ramp-up of India's Green Hydrogen economy. German funding schemes offer financial support to these Indo-German Green Hydrogen Projects with grants of up to 2 million EUR.

We thank all the participants for their presence and for adding value to the discussions. For any further information, please contact Ms. Shivani Chaturvedi at shivani.chaturvedi(at)indo-german.com.

Green Hydrogen Conclave

25 May 2023 | Mumbai, India

The event on Green Hydrogen, officially supported by the Indo-German Energy Forum (IGEF-SO), served as a significant platform for investors, technology providers, and policymakers to deliberate on the implementation of the National Green Hydrogen Mission. Notable attendees included the Indian Transport Minister Gadkari, the German Consul General Achim Fabig, and representatives from esteemed institutions such as the World Bank, European Investment Bank, and KFW, all actively engaging in discussions during the event.

Green Hydrogen Conclave in Mumbai, India.

Webinar on Hydrogen Hub for Kerala

15 May 2023 | Virtual

In collaboration with Hamburg Port Authority (HPA) and Hamburg Port Consulting (HPC), the Indo-German Energy Forum (IGEF-SO) organised a webinar on 15 May 2023 regarding the development of a hydrogen hub for Kerala. This event has been a follow up to a first webinar on "Experiences and Lessons Learned for Cluster Development around Ports" held on 22 March 2023. Contrary to the first webinar, this time it was a closed event specifically for participants from Kerala. Nearly 30 people from industry and the public sector engaged in the webinar, which was designed to facilitate dialogue among the participants.

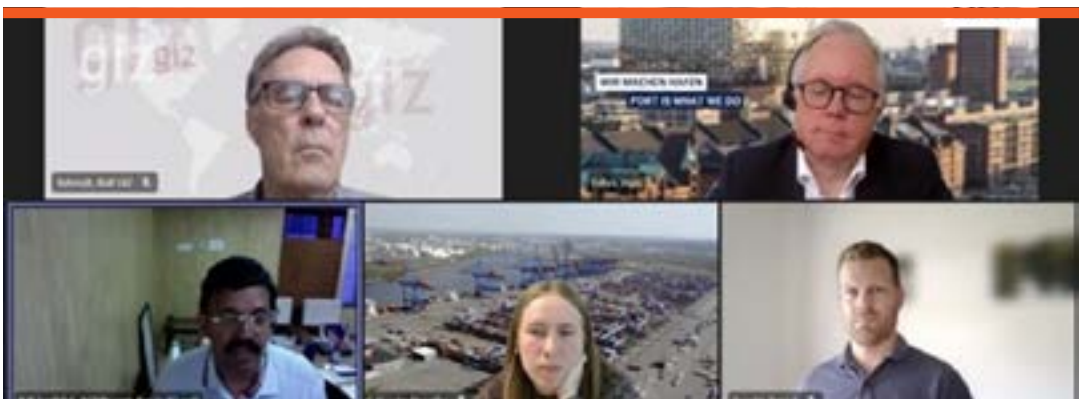
Ms. Dorothe Görtz, Senior Consultant at HPC, and Mr. Ingo Fehrs, Head of Environmental Strategy and Sustainability at HPA, delivered a presentation on the hydrogen initiatives taking place in Hamburg. Their collaborative goal was to elucidate the roles and objectives of various stakeholders, while also providing insights into alternative models of hub organisation.

To commence their presentation, the two speakers addressed the potential governance structures of green hydrogen hubs and different variations of green hydrogen valleys. Mr. Fehrs elaborated on five crucial factors that play a pivotal role during the preparatory phases of establishing a hydrogen hub. He then proceeded to discuss the challenges faced by hydrogen valleys. The speakers further delved into the critical elements for hydrogen projects, with a particular emphasis on the importance of public funding support.

Furthermore, the speakers expounded on the essential steps towards a prosperous hydrogen economy. These steps encompassed the establishment of a governance structure, stakeholder management, project administration, logistics planning, and a business plan. The speakers also shed light on a working group in Hamburg that has been established to facilitate the development of a framework for hydrogen operations in ports.

The subsequent discussion centred on questions regarding the various methods of hydrogen production (grey, blue and green hydrogen) as well as inquiries relating to the energy storage of hydrogen at the port in Hamburg. The open format of this meeting provided further inside on the topics that were discussed in the previous webinar and gave the participants the chance to discuss the experiences from the Hamburg port and apply it to the planned hub in Kerala.

Please find the presentation here.



Discussion with participants following the presentation.

Hydrogen and its Derivatives in Practice: German and Indian Perspectives on Opportunities and Challenges

11 May 2023 | Berlin, Germany

The Embassy of India in Berlin, the World Energy Council Germany, and thyssenkrupp Uhde organised an event on "Hydrogen and its Derivatives in Practice: German and Indian Perspectives on Opportunities and Challenges" on 11 May 2023 in Berlin. The event focused on India's potential to export green hydrogen and its derivatives. Further, participants discussed opportunities and challenges for importing hydrogen and its derivatives to Germany.

Welcome remarks were given by Gaurav Sharma, First Secretary, Embassy of India, Berlin and Dr. Carsten Rolle, Executive Director, World Energy Council Germany. H.E. Parvathaneni Harish, Ambassador of India to Germany then opened the event with giving an insight into the prospects of Indo-German cooperation. Participants from government, academia and the private sector took part in the event and were eager to learn about potential Indo-German hydrogen projects.

Further impulses were given by Dr. Andreas Nicolin, Deputy-Head of Directorate General V, German Federal Ministry of Economic Affairs and Climate Action (BMWK) and Dr. Cord Landsmann, CEO, thyssenkrupp Uhde GmbH, who presented on the topic of Green Ammonia and gave an insight into its production, costs and potential.

The presentations were followed by a pitching session, where German and Indian companies were asked to share their perspectives on green hydrogen and its derivatives with the audience. Later, the participants had the possibility to actively participate in the Q&A session with the aim of sharing individual views and improving the Indo-German green hydrogen cooperation.

A high-ranking Indian delegation took part in the event and was welcomed by H.E. Harish Parvathaneni, Ambassador of India to Germany, and Dr. Nicole Glanemann, BMWK.

Business Delegation on Green Hydrogen to Brussels, Rotterdam and Essen

7 - 13 May 2023 | Brussels, Belgium; Rotterdam, Netherlands; and Essen, Germany

The Indo-German Chamber of Commerce (IGCC) and the Indo-German Energy Forum (IGEF-SO) organised an Indian business delegation to Belgium, the Netherlands and Germany from 7 - 13 May 2023 on the topic of green hydrogen. The tour featured a visit to the World Hydrogen Summit & Exhibition, which took place from 9 - 11 May 2023 in Rotterdam.

The first day of the delegation in the city of Brussels focused on the EU's sustainability criteria for green hydrogen and what implications these have on India's green hydrogen strategy. Mr. Tobias Winter, Director, IGEF-SO and Mr. Frank Mischler, PtX-Hub, GIZ presented various aspects of sustainable green hydrogen production and consumption in Europe. Mr. Arthur Daemers, Policy Advisor, SolarPower Europe, gave an overview of European developments in green hydrogen from a solar industry perspective. The role of hydrogen in the European energy transition was discussed by Mr. Mauricio Belaunde, Project Manager EU Hydrogen Policy, Agora Energiewende. To gain a better insight into the European requirements and sustainability criteria, the Indian delegation had the possibility to meet and exchange with Mr. Ruud Kempener, Member of Cabinet of Commissioner for Energy Kadri Simson. With Mr. Jorgo Chatzimarkakis, CEO, Hydrogen Europe, the participants discussed the industry perspective on European market ramp-up and sustainability criteria.

In Rotterdam, the delegates were able to get a first-hand impression of green hydrogen developments in Europe. The tour around the Port of Rotterdam included a stop at ammonia terminals of Koole, OCI and Gunvor, the visit of an offshore-wind transformer station for green hydrogen production and a stop at the "Conversion Park" development site including electrolyser projects by Shell, BP and Air Liquide. Lastly, the tour ended with an impression of SIF Offshore wind foundation manufacturing and storage site with impression on GE Haliade-X 14 MW wind turbine.

On 10 May, a guided tour at the World Hydrogen Exhibition enabled the delegation to network with experts from companies with special interest in India who presented their activities and explored possibilities for future collaboration and exchange between the respective companies.

On the occasion of the visit of two Indian delegations with high-ranked representatives from the Government of India and green hydrogen companies, a networking lunch was organised by IGEF-SO in cooperation with IGCC, the Government of the Netherlands, the Embassy of India in the Netherlands and energiewächter. Participating companies and institutions expressed their interest in Indo-EU green hydrogen cooperation and gave insights into present project developments and future ideas. In the evening, participants had the chance to interact with each other and discuss further on green hydrogen project development in India.

After visiting the World Hydrogen Summit, part of the group travelled to Essen to visit the H2 Centre in Herten. The centre is a former coal mine where modern systems and components of the hydrogen infrastructure can be tested. Mr. Dieter Kwapis, Project Lead H2-Herten, led the tour and various technical experts gave insights into the ongoing projects.

Overall, the tour offered participants the opportunity to take a detailed look at various developments in the green hydrogen sector in Europe. The visit to the World Hydrogen Exhibition also allowed participants to network and explore new opportunities for further cooperation.

Delegates and organisers at the World Hydrogen Summit 2023.

Visit to Agrivoltaic plant in Maharashtra

7 - 9 May 2023 | Manwath, India

The delegation, with the support of the Indo-German Energy Forum (IGEF-SO) and the "Innovative Solar" project of GIZ, conducted a visit to a BMZ-funded Agrivoltaic plant in Maharashtra from May 7 to 9, 2023. Dr. A.K. Tripathi, Head of the Research and Development Department of Ministry of New and Renewable Energy (MNRE), attended the delegation trip. The destination was a pioneering 1.4 MW Agrivoltaic plant in Manwath, Parbhani district, Maharashtra. Implemented under the DeveloPPP by Sunseed APV, Kanoda, and GIZ with IGEF-SO support, this Agrivoltaic project aims to showcase the economic viability and ecological benefits of Agrivoltaics in India. Covering 4.25 hectares, the plant grows 14 different crops alongside and beneath PV panels, with scientific monitoring using various instruments to assess the impact on yield and microclimate. The visit concluded with a roundtable at Parbhani University, attended by the delegation comprising representatives from Indian ministries and associations.

Vivek Saraf, CEO of Sunseed APV explains the special features of managing an Agrivoltaic plant.

Participants in front of the Agrivoltaic plant in Manwath, Maharashtra.

German Pavilion at India Energy Storage Week (IESW)

1-5 May, 2023 | New Delhi, India

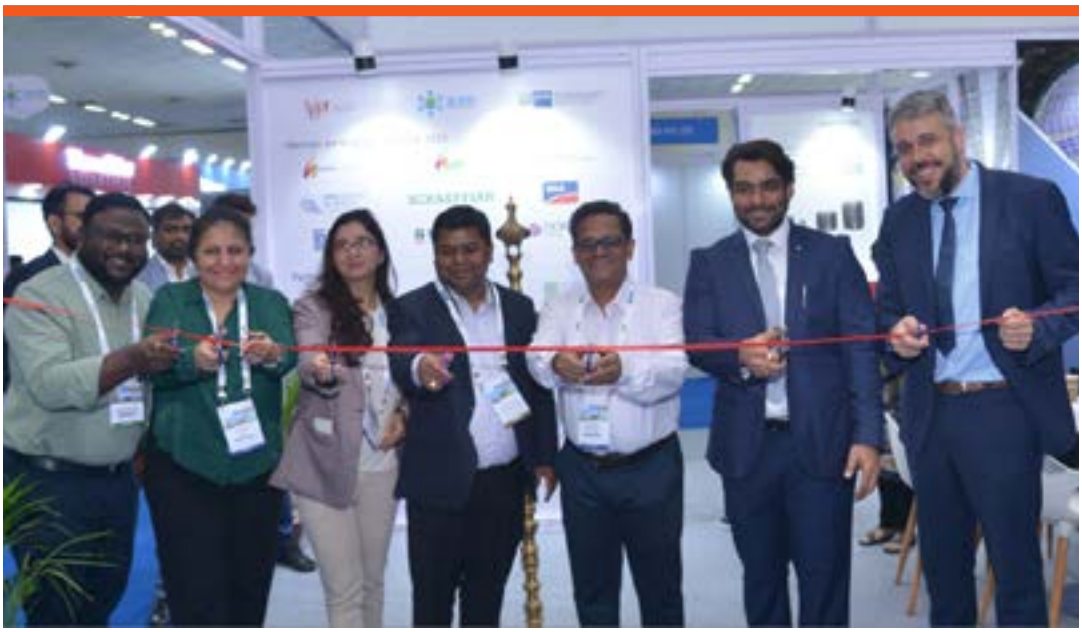
The 9th edition of the India Energy Storage Week (IESW) 2023 an international conference and exhibition on energy storage, advanced batteries, renewable integration, electric mobility, charging infrastructure, green hydrogen and microgrids in India was held from 1- 6 May 2023 at New Delhi. The expo was supported by the Ministry of Heavy Industries (MHI), Ministry of Electronics and Information Technology (MEITY) and Ministry of New and Renewable Energy (MNRE), Ministry of Chemicals and Fertilizers - Government of India. The event was organised by the India Energy Storage Alliance (IESA).

The expo witnessed participation from 20+ countries, 100+ regulators and policy makers, 150+ partners & exhibitors, 150+ Speakers, 1000+ Delegates and 5,000+ visitors.

Many German organisations demonstrated their commitment to the Indian market by participating as exhibitors or conference partners. The Indo-German Chamber of Commerce (IGCC) organised the German Pavilion in collaboration with the Indo-German Energy Forum (IGEF). The German pavilion was inaugurated on 3rd May by senior industry stakeholders. This was followed by a networking lunch at the pavilion. The German companies who participated had the opportunity to showcase their company products or services and felt that the forum was very useful to network with potential or existing customers.

In case you are interested in this topic, please send an email to Ms. Shivani Chaturvedi at shivani.chaturvedi(at)indo-german.com.

Inauguration of the German pavilion at IESW 2023.



Women in Energy Roundtable and Networking Reception

2 May 2023 | New Delhi, India

The Indo-German Energy Forum (IGEF-SO) and India Energy Storage Alliance (IESA) collaborated to successfully organize the Women in Energy Roundtable on Energy Storage, Electric Mobility, and Green Hydrogen on May 2nd at NDMC Convention Centre in New Delhi, as part of IESW 2023.

The roundtable saw active participation from over 60 women across various domains in the energy spectrum, including researchers, senior business heads, founders, and leaders. The discussion focused on the importance of women's participation in the energy sector, challenges faced by women, and initiatives promoting gender equality. Participants highlighted the benefits of diversity in fostering innovation and creativity, and the need to address gender stereotypes and biases.

A fireside chat featuring key speakers delved into empowering the women workforce in energy, transportation, and technology, offering solutions to leadership and employability issues, and addressing urgent matters in the energy transition. The event also recognized 50 influential women leaders in the energy space, emphasising the importance of empowering women for a sustainable and inclusive energy transition.

IESA and IGEF-SO expressed their commitment to promoting gender equality in the energy sector to drive innovation and ensure a resilient and equitable energy future.

Inauguration of PHD Chamber's CoE in Green Hydrogen

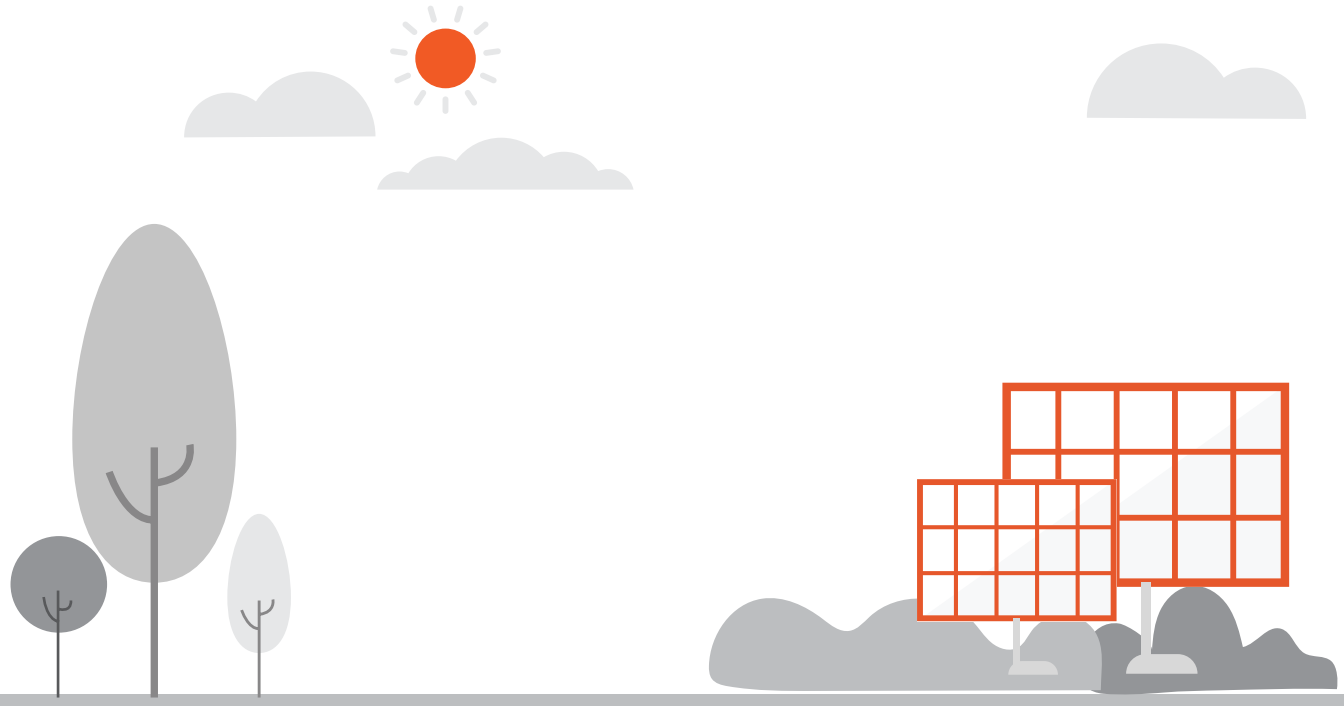
2 May 2023 | New Delhi, India

The Centre of Excellence in Green Hydrogen (CoE-GH) was inaugurated during a one-day seminar on "Opportunities for MSMEs in New Hydrogen Policy" on May 2, 2023, in New Delhi. The event was organized by the Environment Committee of the PHD Chamber of Commerce and Industry in collaboration with the Indo-German Energy Forum (IGEF), Steinbeis Foundation India, and Steinbeis New Energy Centre.

Honourable scientist Dr. V.K Saraswat, Member, NITI Aayog, delivered a presentation on developments in the sector, the National Green Hydrogen Mission, hydrogen valleys, and a roadmap for the country.

Mr. Saket Dalmia, President, PHDCCI, in his welcome remarks highlighted the significant role and opportunities for MSMEs in the green hydrogen industry. Thereafter, Dr. Ranjeet Mehta, Deputy Secretary General, PHDCCI, briefed the delegates about the activities and contribution of the Chamber while Dr. J.P Gupta, Chair, Environment Committee, presented the vision behind the CoE-GH. He said that the Centre aims to facilitate industries in adopting the best international standards and practices for handling green hydrogen. The Centre will not only train students but also offer capacity building through special courses for senior management as well as mid-level professionals and operators.

The seminar began with the guest of honour, Mr. Alok Sharma, Executive Director, Centre for High Technology, Ministry of Petroleum & Natural Gas (MoPNG), highlighting the need for industry-academia partnership and R&D for the acceleration of green hydrogen developments in India. The first session of the day kickstarted with distinguished speakers such as Mr. Jagabanta Ningthoujam, Principal, RMI India and Mr. Anuraag Nallapaneni, Manager in Hydrogen, WRI India appraising the delegates about the green hydrogen ecosystem in India, financing opportunities, risks, and operating models for project development.



In the technical session, eminent speakers from India and Germany offered insights on the work being done. During the session, Mr. Jayakrishnan P. Nair, Associate Director for Clean Energy, PwC, presented his study on the pathways for decarbonising industries, while Mr. Rahul Kulshreshta, Lead International, Office of Principal Scientific Adviser to the Government of India, introduced the Manthan platform and its benefits to the delegates.

As part of the standardisation session, Prof. Dr. Chitra Rajagopal, Centre of Excellence, IIT Delhi spoke about the importance of hydrogen safety and practices. Ms. Rimali Batra, Associate Partner, DSK Legal, shared her views on the green hydrogen policies and the challenges associated with it.

In the final technical session, Dr. G Ravichandran, Vice President (R&D), Reliance Industries Ltd., spoke about the relevance of hydrogen transition for India, technology readiness level and the efforts by Reliance in the sector. Mr. Abhinav Arora, Vice President of Business Development, HAL Offshore Ltd. stressed the implementation of hydrogen projects and the role of engineering, procurement and construction companies. Dr. Indrajit Shown, Consultant, Steinbeis India presented on the current electrolyser market. Ms. Jyotsna Chaturvedi, Head of Corporate practice, and Mr. Akhand Pratap Singh Chauhan, Advocate, Maheswari & Co. presented on the regulatory compliances for commissioning of green hydrogen projects. Dr. Bertram Lohmueller, Director, Steinbeis GmbH and Dr. Michael Schlick, Advisor for Green Hydrogen, Steinbeis India, spoke about the German markets and global technology.

The seminar witnessed participation from ministries, industry, academia, MSMEs, policy and research institutions, and other stakeholders in the green hydrogen sector.

Honourable scientist Dr. V K Saraswat, NITI Aayog, along with Dr. J P Gupta, Managing Director, Greenstat India inaugurated the Centre of Excellence in Green Hydrogen by lighting the holy lamp.

Green Hydrogen Business Roundtables in Chennai and Bangalore

26 - 27 April 2023 | Chennai and Bangalore, India

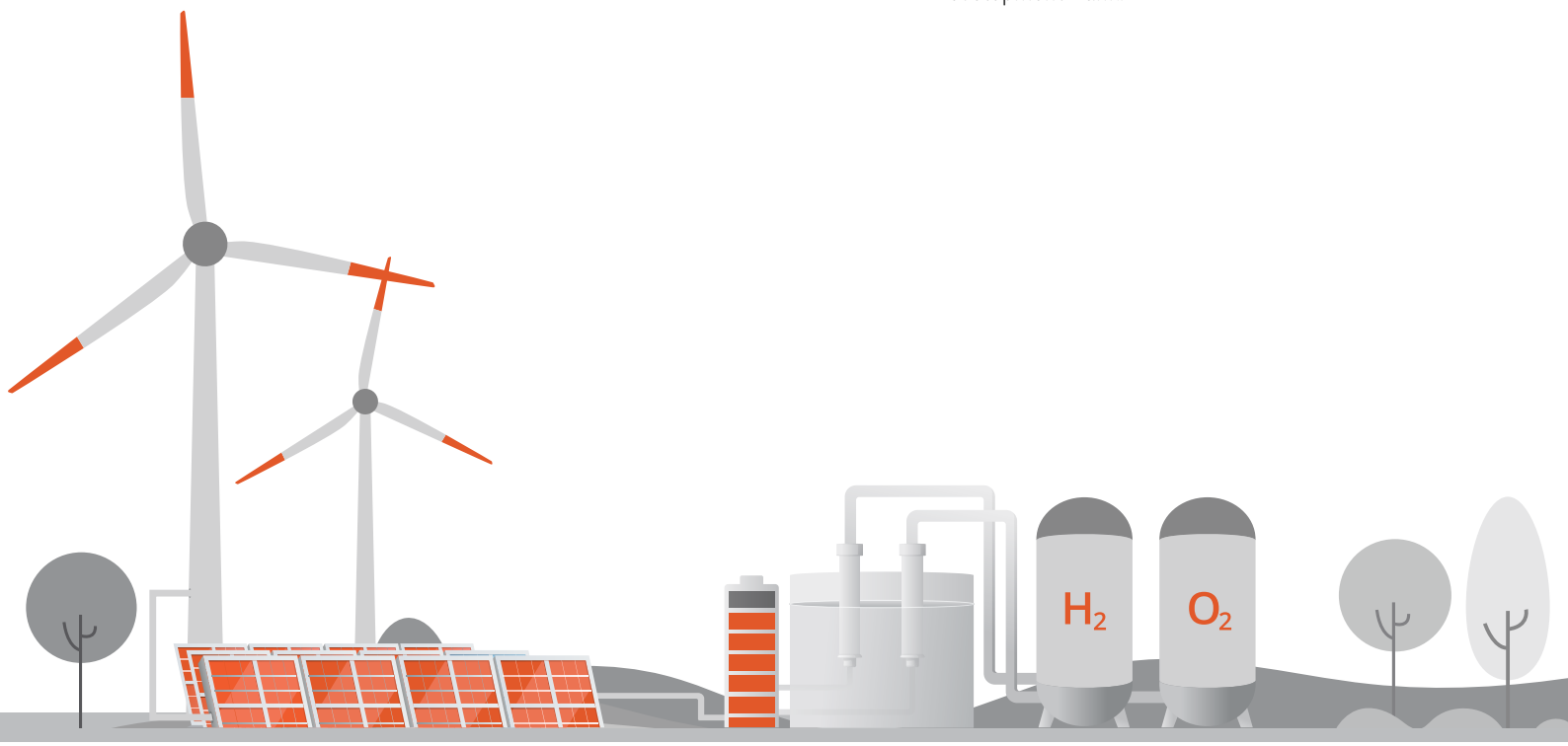
The Indo-German Chamber of Commerce (IGCC) in collaboration with the Indo-German Energy Forum (IGEF-SO) organised business roundtables on the topic of 'Green Hydrogen' in Chennai and Bangalore, on 26 - 27 April 2023, respectively.

Ms. Michaela Kuchler, Consul General of the Federal Republic of Germany in Chennai, welcomed the participants by emphasising on the need for collaboration between the policy makers and industry, and cooperation between India and Germany.

The roundtable in Bangalore was graced by Mr. Achim Burkart, Consul General of the Federal Republic of Germany, who said that the time was now for green hydrogen and for Europe to look towards India for the same. Ms. Sonia Prashar, Deputy Director General, IGCC also welcomed the participants at the Bengaluru roundtable and encouraged the discussions on this important topic. The regional directors of IGCC, Mr. Mallikarjuna S and Mr. Sumit Sharma, moderated the discussions respectively.

The meetings in both cities witnessed participants from academia and the private sector who were eager to learn about the green hydrogen market and the available funding instruments. A detailed presentation was delivered by Mr. Rolf Behrndt, Principal Senior Advisor, GIZ, on the German market for green hydrogen, what this means for India, costs and the viability gaps in the Indian markets.

The German Federal Ministry for Economic Affairs and Climate Action (BMWK) has commissioned the International Hydrogen Ramp-up Programme (H2UPPP), to kick start early stages of green hydrogen project development. The objective of this funding tool is to identify, prepare and accompany the implementation of projects to produce green hydrogen and power-to-X applications. The focus is on setting up formal public-private-partnerships. Mr. Behrndt also walked the participants through the other funding instruments offered from Germany, such as the PtX Growth Fund and PtX Development offered by KFW Development Bank.



Both the roundtables witnessed intensive discussion about how the Indian market is looking at offtake, fuel cells and other applications of green hydrogen. Several startups expressed their interest in manufacturing not only green hydrogen and ammonia but also electrolysers.

The sessions concluded with a networking high-tea and informal discussions about the next steps for India to take.

For any further information, please contact Ms. Shivani Chaturvedi at shivani.chaturvedi(at)indo-german.com.

The green hydrogen business roundtable in Bangalore was joined by the Consul General of the Federal Republic of Germany, Mr. Achim Burkart and delegates from Nuernberg Messe.

Roundtable on Gap Analysis: Hydrogen Standards

24 April 2023 | Virtual

The Indo-German Energy Forum (IGEF-SO) organised a virtual roundtable on "Gap Analysis: Hydrogen Standards" on April 24, 2023. This event was a deliverable agreed upon by the subworking group 4 on Quality Infrastructure, Safety, and Legal Framework of the Indo-German Green Hydrogen Task Force. The session aimed to raise awareness of potential gaps in safety standards for hydrogen production, storage, and transport, and develop a plan to address them.

The co-heads of the subworking group, Prof. Dr. Chitra Rajagopal, Director, Center of Excellence at IIT-Delhi and Mr. Markus Hoffmann von Wolffersdorff, Partner at KNPP welcomed the participants.

Mr. Dipesh Pherwani, Scientist, Ministry of New & Renewable Energy (MNRE) highlighted the National Green Hydrogen Mission's efforts to develop regulations and standards in line with industry requirements. The MNRE has constituted working groups to recommend a national framework of standards and regulations required for the green hydrogen ecosystem.

Mr. Prashant K. Banerjee, Executive Director, Society of Indian Automobile Manufacturers (SIAM), presented on "Gap Analysis: Hydrogen Standards". He discussed the challenges and desired actions regarding standards and regulations for hydrogen-fueled mobility applications. The presentation included over 150 regulations compliance and standards on green hydrogen identified and studied by Subgroup III.

Mr. Rahul Bagdia, Managing Director & Co-Founder of pManifold Business Solutions Pvt. Ltd., presented best practices in green hydrogen standards and regulations development.

Ms. Nikki Blankerts, Energy Transition Consultant at Royal Haskoning DHV (RHDHV), shared her insights on best practices in the European Union context and the current status of the Renewable Energy Directive. According to her, the right combination of directives, technical standards and certification is essential to create a market for green hydrogen. For India's green hydrogen export potential, it is essential that India complies with EU regulations on renewable hydrogen production

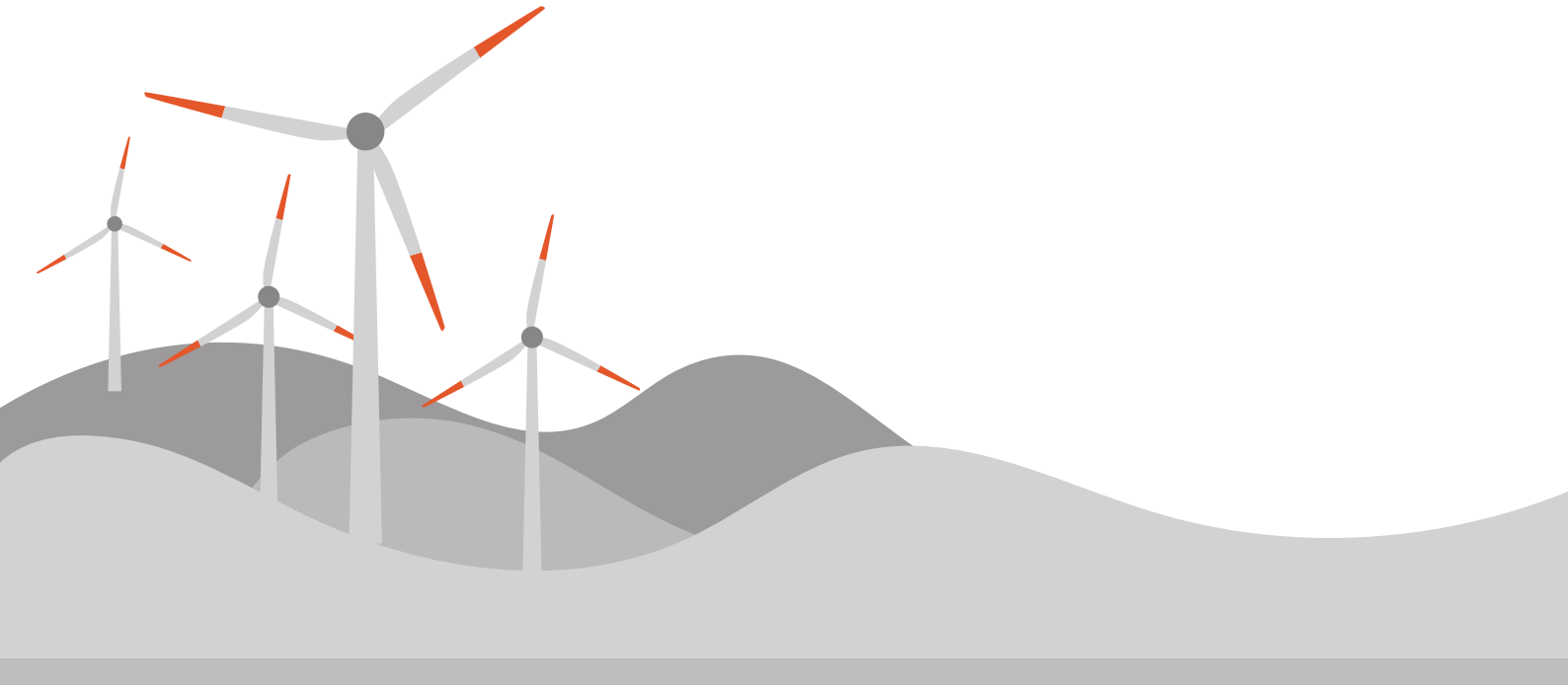
and that the transport and industrial sectors of Red II drive demand for green hydrogen in Europe. In addition to a clear regulatory framework, standardisation of electricity grids and power-to-x technologies, as well as gas quality issues, are needed to drive growth.

Dr. Aravind Kumar Chandiran, Associate Professor, Department of Chemical Engineering, IIT-Madras, spoke about the progress in developing green hydrogen standards in India. He explained the difference between international and Indian standards for different sub-elements of the value chain such as the electrolyser storage system. Dr. Chandiran concluded his presentation by suggesting that existing hydrogen standards should be used and adapted instead of developing everything from scratch.

The presentations were followed by an open Q&A session, which were moderated by the Co-Heads of the subworking group 4. A key outcome of the fruitful discussion was that the MNRE reports, due for publication,were highlighted as providing valuable information for German companies on the standards needed for their projects in India. Issues such as adaptation of standards and detailed standards for transport and storage were also addressed.

Mr. Tobias Winter, Director, IGEF-SO and Mr. Gaurav Sharma, Technical Advisor on Green Hydrogen, IGEF-SO, concluded the roundtable by recommending the full use of the work already done, emphasising synchronisation of efforts, and focusing on green hydrogen production, storage, basic safety considerations, and certification of greenhouse gas accounting across the value chain.

Please find the presentation here.



Webinar on "Decarbonising Shipping in India"

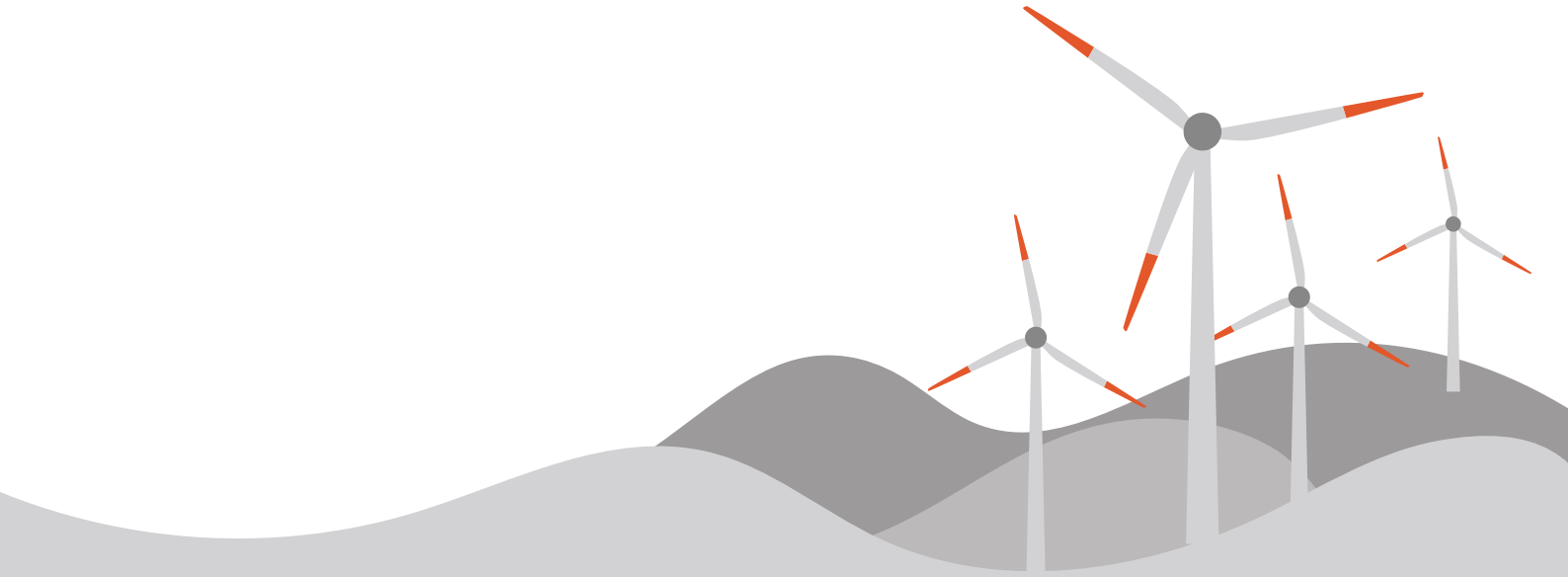
18 April 2023 | Virtual

The Indo-German Chamber of Commerce (IGCC) and the Indo-German Energy Forum (IGEF-SO) organised a webinar on "Decarbonising Shipping in India" on April 18, 2023. This event was a deliverable agreed upon by the subworking group on Transport, Storage, and Consumption of the Indo-German Green Hydrogen Task Force.

Ms. Ute Brockmann, Deputy Director General, Head of DE international Services, IGCC, welcomed over 120 participants from the industry, public sector, and research institutions. The head of the Subworking Group on Transport, Storage, and Consumption, Mr. Tom Mikus, Program Manager, NOW GmbH, discussed the challenges of the shipping industry, emphasising its diversity and status as one of the Hard-to-Abate sectors facing technological challenges for achieving climate neutrality.

The session kickstarted with an interactive poll on topics most relevant to this group. The Q&A gathered the overall understanding of the group members on the key drivers for decarbonising the shipping sector in India. Most people voted for "Directive policies from Government " as a key driver, followed by "Breakthroughs in Technologies". Mr. Rolf Behrndt, Hydrogen Expert, GIZ Germany led through the poll and moderated the presentations.

The Ministry of New and Renewable Energy (MNRE) is responsible for the overall coordination and implementation of the National Green Hydrogen Mission. Dr. Prasad Chaphekar, Deputy Secretary, MNRE, was invited to deliver his special address at the webinar. As highlighted in the Mission Document, Shipping and Port operations are among the key sectors likely to drive the future Green Hydrogen demand and trade. In this context, Dr. Chaphekar gave insight into the budget provisions for shipping and highlighted the focus within the funding schemes on generating green fuels and technologies to be used in shipping. He also mentioned that pilot projects will also be supported in areas including emerging technologies for Green Hydrogen production, large scale storage of Hydrogen, energy storage etc.



Following the special remarks from MNRE, Ms. Ingrid Sidenvall Jegou, Project Director-Getting to Zero Coalition, Global Maritime Forum shared her insights on accelerating maritime shipping's decarbonisation. Ms. Sidenvall introduced the Getting to Zero Coalition, which is an alliance of more than 200 organisations within the maritime, energy, infrastructure and finance sectors with the goal of getting commercially viable deep sea zero emission vessels powered by zero emission fuels into operation by 2030 towards full carbonisation by 2050. She underlined the potential of India as a leader in expanding green ports and producing green fuels due to its strong maritime connectivity and access to renewable energies. She mentioned that one of the key challenges in decarbonising shipping remains the closing of the price gap between traditional and zero emission fuels.

Ms. Sanne Henriksen, Head of Decarbonisation, Regulatory and Public Affairs, Maersk, discussed the upcoming technology landscape in shipping. She outlined Maersk's decarbonization commitments and initiatives, including designing carbon-neutral vessels, driving innovation in new fuels, building carbon-neutral products, and pushing for regulatory frameworks.

Dr. Vibha Dhawan, Director General, The Energy and Resources Institute (TERI), presented on decarbonizing shipping in India as a pathway for sustainable growth. Dr. Dhawan highlighted the significance of shipping in India's trade and proposed a potential roadmap for the decarbonization of the shipping industry.

The webinar concluded with an open Q&A session moderated by Mr. Rolf Behrndt, Hydrogen Expert, GIZ Germany. Participants discussed various aspects, and action points were identified to feed into the Indo-German Green Hydrogen Roadmap. The roadmap aims to be presented to the leaders, reflecting the outcomes of the deliberations during the webinar.

Please find the presentations here.

Dr. Chaphekar delivered his special address to the participants.

Indian Business Delegation at Hannover Messe 2023

15 - 20 April 2023 | Germany

Indo-German Chamber of Commerce (IGCC) and Indo-German Energy Forum (IGEF-SO) organised an Indian business delegation to Germany from 15 - 20 April 2023 on the topic of green hydrogen. The tour featured a visit to the HANNOVER MESSE 2023, where this year's lead theme "Industrial Transformation – Making the Difference" was all about showing how the industry can significantly reduce CO_2 emissions.

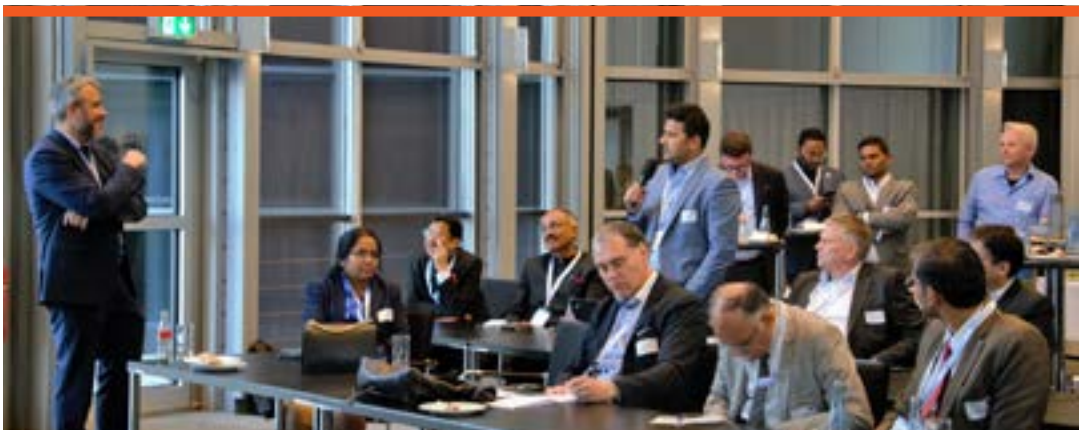
On April 17, an exclusive guided tour at the trade fair provided the delegation with insights into the latest developments in green hydrogen and fuel cells. International experts from companies with a special interest in India presented their activities, fostering possibilities for future collaboration and exchange. Two Indian business delegations, comprising more than 100 exhibitors, showcased their products and services at HANNOVER MESSE 2023.

On the occasion of the visit of the Indian Ambassador to Germany, H.E. Harish Parvathaneni to Hannover, the IGEF-SO in cooperation with the IGCC, the Embassy of India in Berlin, and energiewaechter, organised a dialogue event on "Decarbonisation of India's Industry – Green Hydrogen Project Development in India". H.E. Harish Parvathaneni presented India's National Green Hydrogen Mission, emphasising its significance for energy security and addressing the climate crisis. He highlighted the importance of diversifying international supply chains, especially in photovoltaics and green hydrogen.

Mr. Diwald, Chairman of the German Hydrogen and Fuel Cell Association / Deutscher Wasserstoff- und Brennstoffzellen-Verband (DWV), presented on "German Strategies and Ramp-Up of Hydrogen Technologies". He emphasised the DWV's focus on developing a climate-neutral hydrogen market economy and Germany's position as a net importer of energy even in a renewable energy and hydrogen-based economy.

Mr. Winter, Director, IGEF-SO, briefed attendees on the latest developments in the green hydrogen market in India. He highlighted India's global standing as the third-largest producer and consumer of grey hydrogen. A pitching session allowed participating companies and institutions to express their interest in Indo-German Green Hydrogen cooperation, providing insights into present project developments and future ideas.

The dialogue event on Indo-German Green Hydrogen project development saw active participation from more than 50 attendees.



Participants at the Business Dialogue on Green Hydrogen Project Development in India.

Webinar on "Update on EU Sustainability Criteria Certification for Green Hydrogen Projects"

11 April 2023 | Virtual

The Indo-German Chamber of Commerce (IGCC) and the Indo-German Energy Forum (IGEF-SO) organised a webinar on "Update on EU Sustainability Criteria Certification for Green Hydrogen Projects" on April 11, 2023. This webinar was part of the deliverables agreed upon by the subworking group on Quality Infrastructure, Safety, and Legal Framework of the Indo-German Green Hydrogen Task Force.

More than 140 participants from the industry, public sector, and research institutions joined the webinar. Ms. Sonia Prashar, Deputy Director-General, Indo-German Chamber of Commerce, welcomed the participants with her opening remarks. The focus of the webinar was on the recent delegated acts adopted by the European Commission, which set requirements for assessing Green House Gas (GHG) emission savings and sustainability criteria for the production of renewable hydrogen. These acts are expected to be published in April 2023.

Mr. Jan-Hendrik Scheyl, Sustainability & Certification, International PtX Hub Germany, provided insights into the status quo of EU requirements for renewable hydrogen and its certification setup. He outlined the two Delegated Acts defining product requirements for renewable hydrogen and renewable fuels of non-biological origin (RFNBOs) in the European market. Mr. Scheyl explained how and by whom these requirements are verified and the structure of certification in the European Union.

Following Mr. Scheyl's presentation, Mr. Simon Byrtus, Freelance Project Manager and Senior Consultant, representing conenergy consult and TÜV Rheinland, analysed the compatibility with aspects such as banking regulation and bidding zones. His presentation focused on the geographical correlation criterion, highlighting differences between the concept of bidding zones in the delegated act supplementing RED II and the Indian electricity system. Mr. Byrtus also provided recommendations for addressing uncertainties and investment risks for renewable hydrogen producers in India.

The presentations were followed by an open Q&A session, moderated by Prof. Dr. Chitra Rajagopal, Director, CoE Process Safety, Risk Management & Green Hydrogen, IIT-Delhi.

Please find the presentation and video here.

Prof. Dr. Chitra Rajagopal welcoming all the participants and introducing the speakers.

Federal Ministry for Economic Cooperation and Development

Federal Ministry for Economic Affairs and Climate Action

Berlin Energy Transition Dialogue (BETD)

28 - 29 March 2023 | Berlin, Germany

Around 10 representatives from various Indian institutions participated in the Berlin Energy Transition Dialogue (BETD) at the end of March 2023. As part of a side event jointly organized by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) and the Federal Ministry for Economic Cooperation and Development (BMZ) on opportunities and challenges for solar module production in South and Southeast Asian countries, the Ambassador of India, Mr. Parvathaneni Harish, emphasised the importance of international cooperation to accelerate the energy transition. Mr. Stefan Wenzel, Parliamentary State Secretary at the BMWK, welcomed the participants and actively participated in the event. As part of the BETD, Secretary Wenzel also held a discussion on the organisation of Indian solar experts in Germany.

Secretary Wenzel opens the event on the construction of PV production sites.

Secretary Wenzel and Indian Ambassador Parvathaneni discuss the deployment of Indian solar experts in Germany.

Webinar on "Experiences and Lessons Learned for Cluster Development around Ports – The Hamburg Hydrogen Hub"

22 March 2023 | Virtual

In collaboration with Hamburg Port Authority (HPA) and Hamburg Port Consulting (HPC), the Indo-German Energy Forum (IGEF-SO) organised a webinar on "Experiences and Lessons Learned for Cluster Development around Ports – The Hamburg Hydrogen Hub" on 22 March 2023. More than 50 participants from industry and the public sector discussed ways to decarbonise ports and develop hydrogen clusters.

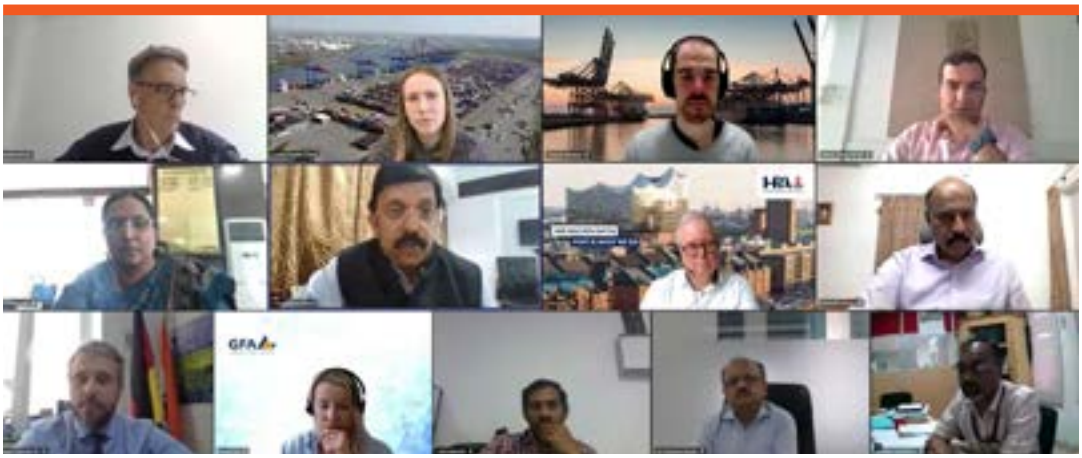
Speakers from HPA and HPC provided insights into the strategy of the Hamburg Hydrogen Hub and shared lessons learned relevant to the Indian context.

Mr. Ingo Fehrs, Head of Environmental Strategy and Sustainability at HPA, presented the status quo of hydrogen projects in the Port of Hamburg. The challenges in terms of available space and infrastructure, as well as the connectivity of the hydrogen hubs, were discussed. The Port of Hamburg has set itself the goal of becoming a hub for sustainable energy production and energy imports. In order to achieve this goal, a strong network of various stakeholders is fundamental. In the second presentation, Mr. Fehrs explained the cornerstones of the Renewable Energy Hamburg Cluster, which is an example of a strong network as it is bringing together all companies in the renewable energy sector.

Ms. Dorothe Görtz, Senior Consultant at HPC, outlined the upcoming plans such as the first large scale green energy import terminal of Germany in Hamburg or the Hamburg Hydrogen Industry Grid. Representing the private sector, she also highlighted the importance of industry alliances to reduce investment risk and the need to coordinate timelines within the value chain to enable market ramp-up.

The subsequent discussion centred on questions relating to the certification of green hydrogen where the speakers, as well as Mr. Johannes Schmidt, Senior Manager at HPA, engaged with the participants.

The presentation can be downloaded from here.



Participants of the webinar on "Experiences and Lessons Learned for Cluster Development around Ports – The Hamburg Hydrogen Hub".

Knowledge session on German Funding Schemes for Green Hydrogen Projects in India

22 March 2023 | Virtual

The Indo-German Energy Forum (IGEF-SO) conducted a knowledge-sharing session on German funding schemes for green hydrogen projects in India during the second meeting of the Subworking Group on Finance, Insurance Industry, and Trading under the Indo-German Green Hydrogen Task Force on March 22, 2023.

Opening the session, Mr. Tapas Kapadia, CEO of RWE Supply & Trading India, emphasized the importance of the topic identified by participants at the previous subworking group meeting. Dr. Martin Lux, Head of the Energy Team at KfW Delhi Office, delivered welcome remarks, providing a brief overview of the available green hydrogen funding instruments.

Mr. Tobias Winter, Director of IGEF-SO, presented on "German Funding for Green Hydrogen Projects in India," addressing the urgent need for an international hydrogen strategy, especially with 90% of Germany's hydrogen demand expected to be fulfilled by imports in 2030. The presentation covered various German funding options for Indian projects, including the HintCo. Tender, the funding guideline supported by the Federal Ministry for Economic Affairs and Climate Action (BMWK), and the H2UPPP Program.

KfW Development Bank offers different funding instruments for green hydrogen projects today via the PtX Platform PTX-Plattform | KfW Entwicklungsbank (kfw-entwicklungsbank.de). Mr. Karim ould Chih, Principal Portfolio Manager, KfW, presented on "PtX Development Fund and PtX Growth Fund". The PtX-Platform is a global KfW initiative consisting of the development and the growth fund which provides customised financing with the aim to close bankability gaps in industrial PtX projects in non-EU countries. Until now the grant funding (around 570 million Euro) has been provided by the Federal Ministry for Economic Cooperation and Development (BMZ) and BMWK. While the goal of the growth fund is to support companies with a branch office in Germany and to create diversified hydrogen partnerships globally, the development fund will support developing countries in creating local value chains, jobs in the hydrogen sector and a future source of income for the countries.

The session concluded with an open discussion on funding opportunities for specific industries and various finance options for green hydrogen projects in India, incorporating different KfW products. Participants expressed interest in learning about CO_2 certificates, and can refer to the session on CO_2 certificates, as an additional revenue stream here: Perspectives (Philipp Veh) - CO2 Certificates as Additional Revenue Stream for Green Hydrogen - YouTube.

A unanimous decision was reached among participants to organise another session with KfW, focusing on the processes involved in the application to disbursement for private sector projects, as the next deliverable of the meeting.

Participants of the webinar on "Experiences and Lessons Learned for Cluster Development around Ports – The Hamburg Hydrogen Hub".

Second edition of Plant Engineering & Production Subworking Group Meeting under Indo-German Green Hydrogen Task Force

20 March 2023 | Virtual

The second meeting of the Subworking Group on Plant Engineering and Production under the Indo-German Green Hydrogen Task Force was convened by the Indo-German Energy Forum (IGEF-SO) on March 20, 2023.

Dr. Prasad A. Chaphekar, Deputy Secretary at the Ministry of New & Renewable Energy (MNRE), provided insights into the Indian National Green Hydrogen Mission Document, emphasising its allocation of Rs. 17,490 crore for electrolyzer and green hydrogen manufacturing. Dr. Chaphekar also highlighted the inclusion of green hydrogen and green ammonia in the carbon trading mechanism under Article 6.2 of the National Designated Authority for the Implementation of the Paris Agreement (NDAIPA).

During the webinar organised by the Indo-German Chamber of Commerce (IGCC) and IGEF-SO on February 15, 2023, Mr. Philipp Veh from Perspectives Climate Group shared insights on carbon markets, aligning with the ongoing efforts of the subworking group.

Updates on the green ammonia, green methanol, and electricity-based sustainable aviation fuel tender by HintCo were provided by Mr. Tobias Winter, Director of IGEF-SO. The deadline for the green ammonia tender concluded on 28 February 2023, with the German Energy Agency (DENA) evaluating the results, while the deadlines for green methanol and e-SAF tender were extended to 11 April 2023.

Dr. Debasish Roy, Director of Steinbeis New Energy Centre, briefed the group on the Hydrogen Valley Project of DST, highlighting the grant opportunities for research institutions and Indian companies and startups.

The meeting discussions emphasised the need to understand the requirements of German companies considering India for hydrogen electrolyser and fuel cell technology manufacturing. IGEF-SO is poised to facilitate increased interaction between German and Indian stakeholders.

The presentation on the deliverables of this subworking group can be downloaded here.

6th Best Practices Study Tour and International Workshop on Agrivoltaic Plants, RE Grid Integration and Green Hydrogen

15 - 17 March 2023 | Jodhpur, India

The 6th Best Practices Study Tour and International Workshop on Agrivoltaic Plants, RE Grid Integration, and Green Hydrogen were collaboratively organised by the Indo-German Energy Forum (IGEF-SO) and the Central Board of Irrigation and Power (CBIP) from 15 - 17 March 2023, in Jodhpur. The event, attended by 82 delegates from diverse fields and regions, featured a visit to the 105 KWp Agrivoltaic installation at CAZRI and discussions on various pertinent topics.

The agenda included presentations on innovations in technology, the feasibility of Agrivoltaics and green hydrogen, global best practices, and outcomes from pilot plants. Experts deliberated on the regulatory framework, risks, and challenges associated with green hydrogen and Agrivoltaic plants. The event aimed to assess the role of these projects in the overall renewable energy (RE) growth in India.

Mr. Anil Kumar Bellary, Co-Director, IGEF-SO, outlined the study tour's objectives. The second day began with addresses from dignitaries, including Mr. A.K.Dinkar, Secretary, CBIP; Dr. Prof. Ajay Kumar Sharma, Vice Chancellor, MBM University, Govt. of Rajasthan, Shri Pramod Tak, Managing Director, Jodhpur Vidhyut Vitran Nigam Limited (JDVVNL), Govt. of Rajasthan and Dr. Martin Lux, Head of Energy Team, KFW Delhi office.

Key points from the event included the significance of an increased tariff export price for Agrivoltaic development, the role of solar generation in protected crop cultivation, and the importance of sustainability in projects. Presentations covered case studies, legal aspects, solar pump system requirements, and insights into green hydrogen scenarios and strategies in India.

Dr. Martin Lux emphasized sustainability as the primary goal, while Ms. Kajol from WRI India discussed the potential of green hydrogen in reviving the wind sector. Mr. Vivek Jha highlighted the role of green hydrogen in decarbonizing hard-to-abate industries like steelmaking, and Mr. Shardul Kulkarni shared investment opportunities in India's green hydrogen sector.

The event concluded with QnA session, memento distribution, and a vote of thanks. Kindly find the presentations here.

Participants of the 6th Best Practices Study Tour and International Workshop.

Participants of the 6th Best Practices Study Tour and International Workshop.

Webinar on Process to obtain public approvals for the setup of GH2 plants in India

6 March 2023 | Virtual

The Indo-German Energy Forum (IGEF-SO) organised the second meeting of the subworking group on Quality Infrastructure, Safety and Legal Framework under the Indo-German Green Hydrogen Task Force on 6 March 2023.

Dr. Prasad Arvind Chaphekar, Deputy Secretary of MNRE, opened the meeting by underlining the importance of the implementation of the green hydrogen mission to the ministry and affirming that the required approvals for any investor in this sector is of prime concern to them.

The welcome remarks were given by the Co-Heads of the group, Prof. Dr. Chitra Rajagopal, Director, Centre of Excellence, Indian Institute of Technology (IIT) Delhi and Mr. Markus Hoffmann-von Wolffersdorff, Partner-KNPP and Managing Director-KNPP Indigo. This was followed by a presentation on the "Process to obtain public approvals for the setup of Green H2-plants in India" by Ms. Jyotsna Chaturvedi and Mr. Akhand Pratap Singh Chauhan, Maheshwari & Co., which was agreed upon as a deliverable in the first meeting of the subworking group.

The session was concluded with a Q&A session, in which questions regarding the legal framework were addressed. Topics like the single window application process for green hydrogen projects or differences in the legal frameworks between green and grey hydrogen were discussed.

Decisions taken during this subworking group meeting were to organise a roundtable on gap analysis of the existing framework for safety standards in India and to suggest joint capacity building training programmes for various sectors. Last, it was agreed upon arranging a presentation on green certification schemes and sustainability criteria which is going to take place on April 11th 2023.

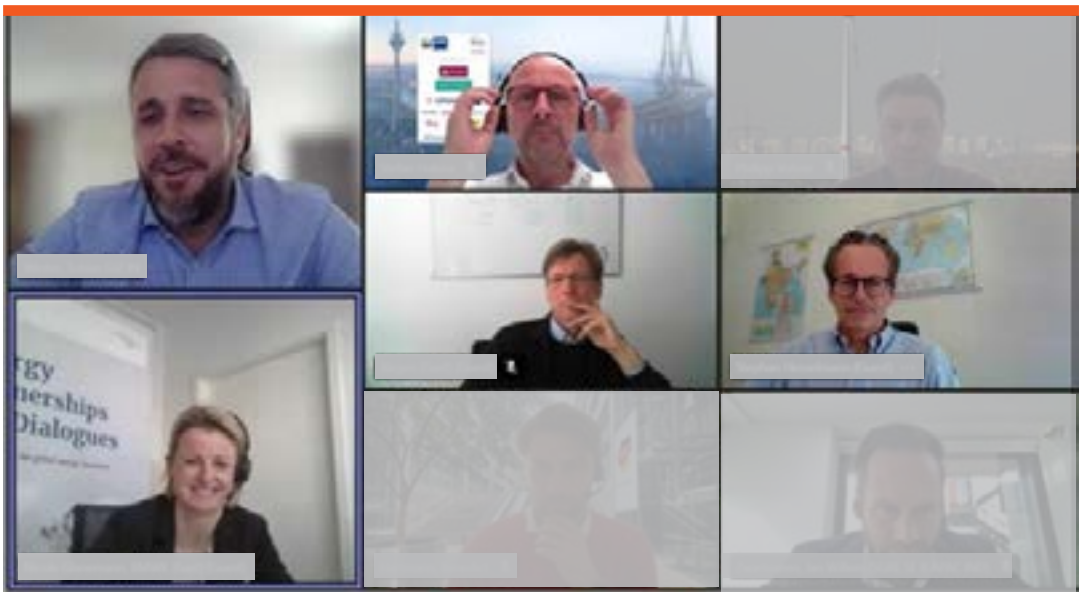
Find more information on the activities and events under the Indo-German Green Hydrogen Task Force here:

Participants of the webinar on process to obtain approvals for the setup of Green H2 -plants in India.

Local Business Advisory Council on Wind Energy in India

2 March 2023 | Virtual

On 27 March 2023, the local business advisory council convened to discuss challenges and opportunities for German companies operating in the wind energy sector in India. The meeting brought together esteemed representatives from German companies within the wind industry.
The distinguished panel of speakers featured Dr. Nicole Glanemann from the Federal Ministry for Economic Affairs and Climate Action (BMWK), Dr. Stephan Hesselmann from the German Embassy in New Delhi, Mr. Stefan Halusa from IGCC India, and Dr. Jürgen Welschof from KfW Development Bank. The deliberations encompassed various aspects pertinent to the collaboration and engagement of German businesses in India's wind energy landscape.



Dr. Nicole Glanemann, BMWK, welcomes the participants of the Local Economic Advisory Board.

Green Hydrogen Business Roundtable at ELECRAMA

20 February 2023 | Greater Noida, India

The Indo-German Chamber of Commerce (IGCC) together with the Indo-German Energy Forum (IGEF-SO) organised a business roundtable and networking lunch on the topic of 'Green Hydrogen' during ELECRAMA on 20 February 2023 at India Exposition Mart Limited, Greater Noida, Delhi-NCR.

The roundtable conference started with welcome remarks from Ms. Sonia Prashar, Deputy Director General, IGCC, wherein she emphasised on the need to explore possible synergies relating to the Indo-German Green Hydrogen projects among various stakeholders, in the context of various funding schemes being offered by Germany.

Mr. Siddharth Jain, Founder & CEO of MEC Intelligence took over with a presentation on an overview of the current market potential and statistics regarding green hydrogen. Some important facets presented by him included the industries currently interested or involved in green hydrogen or its derivatives along with the growth potential for each. A preliminary geographical split of current and future plants along with international trade potential was also showcased. He concluded his presentation with a summary of various private and public players currently involved in the industry.

Thereafter, Mr. Tobias Winter, Director of IGEF-SO, introduced the various German funding schemes available for green hydrogen projects. He laid out the objectives of Germany's 'National Hydrogen Strategy' and provided insights into the country's green hydrogen trading. The grant funding for Indo-German Green Hydrogen Projects was of great interest to the private sector participants. He concluded his presentation by elaborating on the tremendous potential for Indo-German cooperation in the field of green hydrogen.

This was followed by an insightful discussion with the participants, represented by the various private companies from diverse industry sectors.

For any further information, please contact Ms. Shivani Chaturvedi: shivani.chaturvedi(at)indo-german.com.

Participants of the business roundtable on Green Hydrogen.

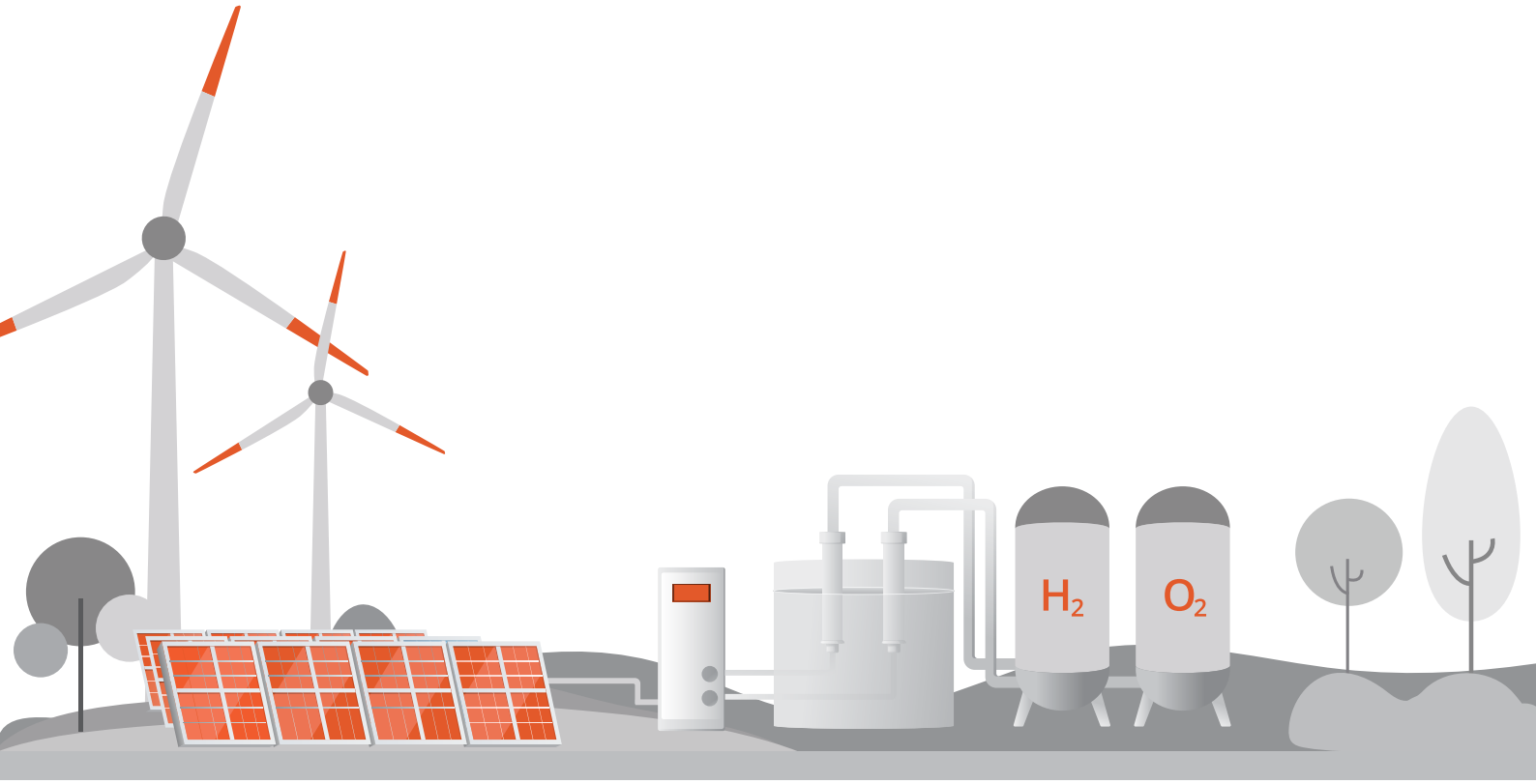
Webinar on "CO_2 Certificates as Additional Revenue Stream for Green Hydrogen Sales"

15 February 2023 | Virtual

The Indo-German Chamber of Commerce (IGCC) and the Indo-German Energy Forum (IGEF-SO) hosted a webinar on " CO_2 Certificates as Additional Revenue Stream for Green Hydrogen Sales" on 15 February 2023. More than 150 participants from industry, the public sector and research institutions joined the webinar. Mr. Stefan Halusa, Director General, Indo-German Chamber of Commerce, gave the opening remarks.

One of the main barriers to the production of green hydrogen is its cost as green hydrogen is still more expensive than conventional fossil fuels and grey hydrogen. To make it more economically attractive, it is essential to consider various instruments such as carbon pricing schemes (CBAM), subsidies and tax incentives (IRA), or carbon markets. In this webinar, Mr. Philipp Veh, Consultant for Hydrogen Projects, Perspectives Climate Group, provided insights into how carbon markets can help to make low-carbon hydrogen projects economically viable. Mr. Veh also presented the Hydrogen for Net Zero Initiative, which aims to unlock the potential of renewable and low-carbon hydrogen by providing a platform for stakeholders such as industry leaders, technology innovators, investors, NGOs and policy makers.

The discussion was followed by an open Q&A session, which was moderated by Mr. Tobias Winter, Director, IGEF-SO. All the presentations can be downloaded from here.



3

Developments in Indo-German Energy Cooperation

Inception workshop in TSECL

25 July 2023 | Agartala, Tripura

The event served as the inaugural ceremony for the collaborative effort between TSECL (Tripura State Electricity Corporation Limited) and GIZ with the launch of the "Distribution Network Efficiency Improvement Pilot Program." This initiative, led by GIZ, aims to boost the efficiency and effectiveness of Tripura's electricity distribution network. The program entails a comprehensive analysis of the existing operations and management of the DISCOM, followed by the proposal and implementation of changes within a designated pilot area.

During the event, the Khowai Circle Baseline Report was presented to officers from TSECL. This report offered a comprehensive overview of the current state of affairs within TSECL, shedding light on various operational aspects. The next phase of this collaborative effort will involve identifying areas for improvement and implementing strategies to enhance the distribution network's performance.

Inception Meeting at TSECL.

Kick-off event in APDCL

7 June 23 | Guwahati, Assam

The event marked a significant milestone in the partnership between APDCL (Assam Power Distribution Company Limited) and GIZ, inaugurating collaboration on essential topics that have been under discussion. These topics include EV (Electric Vehicle) charging station planning, disaster-resilient infrastructure, asset registration, IT policy development, and BESS (Battery Energy Storage System) location optimization. Importantly, the event served as the official launch for two of these critical activities– EV charging station planning and disaster-resilient infrastructure by marking the onboarding of consultants dedicated to these specific areas. During the event, consultants engaged in the collaboration outlined their proposed plans and strategies for addressing EV charging station planning and enhancing disaster resilience within APDCL.

Kick-off event with APDCL.

Advancing Agriculture, Dairy, and Fishery sectors with Decentralised Renewable Energy (DRE) powered Sustainable and Scalable Solutions

24 May 2023 | New Delhi, India

The draft policy framework circulated by the Ministry of New and Renewable Energy (MNRE) highlights the importance and relevance of Decentralised Renewable Energy (DRE) powered livelihoods in rejuvenating the rural economy. It is well known that DRE has the potential to reduce and eventually eliminate the reliance of energy linked livelihoods on diesel as well as supplement the conventional grid supply. The purpose of this in-person workshop on 'Advancing Agriculture, Dairy, and Fishery sectors with Decentralised Renewable Energy (DRE) powered Sustainable and Scalable Solutions' was organised by the Promotion of Solar Water Pumps project is to provide a comprehensive overview of 20 identified DRE applications across various stages of Agriculture, Dairy, and Fishery sectors which have the potential to be scaled in India. The study was carried out by the consortium of International Institute of Energy Conservation and SRIJAN. The workshop covered the technical aspects, operational mechanisms, financial numbers including estimated payback, and comparative analysis with fossil fuel-based models. The workshop helped to discuss and find ways to leverage the opportunities offered by DRE applications and address the challenges through collaborative efforts, unlocking the potential for sustainable growth, improved clean energy access, and enhanced productivity across the agriculture, dairy, and fishery sectors.

Key partners comprising of UNDP, Agriculture Skill Council of India, FWWB, Oorja Gram, PWC, Sammunati, Dey Haat Energy, SIDBI etc participated in the workshop and provided their valuable inputs.

The Technology, Financing and Market aspects were discussed. It was highlighted by the attendees that how the narratives around the DRE sector needs to be shifted from subsidies to incentives and how the connotations can be changed for the sector to be the focus areas of various other stakeholders and flourish an eco-systemic models around the sector. The

Mr. Nilanjan Ghosh project manager Indo German energy program – Promotion of solar water pumps, GIZ sharing the overall objective of the project.

participants also discussed the market readiness of the industry based on the calculated payback period of the DRE applications but questioned if enterprises would agree to adopt the identified applications. The emphasis was given on the importance of the entire value chain, from suppliers of DRE applications to financing bodies to end-users should be involved and considered for the project in terms of scalability and visibility.

The project is intended to disseminate communication materials to cater stakeholders at all levels from the agriculture, dairy and fishery value chain. The project team appreciated the participants for joining and sharing their views and suggestions on the project outcomes and expressed his gratitude for their valuable contributions. Their feedback would be carefully considered and incorporated into the final project deliverables.

For more information, please contact Mr. Anuj Hemant Xess, anuj.xess(at)giz.de

Mr. Amitosh Pandey, project manager from International Institute of Energy Conservation giving the brief of the study.

Roundtable on RE-powered Mini-grids for Strengthening Rural Livelihoods: Focus on Women Empowerment

6 April 2023 | New Delhi, India

On 6 April 2023, a roundtable was held at the India Habitat Centre in Delhi to discuss the potential of RE-powered mini-grids in strengthening rural livelihoods, with a focus on women empowerment. The event was attended by experts, practitioners, and policymakers who shared their knowledge and experiences to identify challenges and discuss opportunities for maximising the benefits of mini-grids.

The roundtable was graced by Mr. J K Jethani, Senior Director of MNRE, who was the chief guest. Other dignitaries present at the event included Mr. Manoj Gupta, CEO of TPRMG, and Ms. Shaila Lee, Global VP of Husk Power.

Discussions revolved around understanding the mini-grid landscape in India, identifying challenges and opportunities in scaling up RE-powered mini-grids, and formulating recommendations for policy, investment, and programmatic approaches to support the scaling up of mini-grids for rural livelihoods.

The participants delved into topics such as designing mini-grid projects to benefit women specifically in employment and entrepreneurship, integrating mini-grids with other rural development projects to maximise impact on livelihood and poverty reduction, and financing models and sustainable business models for mini-grids in India.

Overall, the event was successful in highlighting the potential of mini grids in transforming lives and bringing sustainable economic development to rural communities. The discussions and recommendations made during the roundtable will shape policy, investment, and programmatic approaches to support the scaling up of RE-powered mini grids for rural livelihoods.

Mr. J. K. Jethani (Senior Director, MNRE) Chairing the discussion.

Sessions on Sustainable Transformation of Utilities at World Utility Summit

20- 21 February 2023 | Noida, India

GIZ, as a country partner in the annual World Utility Summit (WUS), organised multiple sessions as part of its "Energy transition with distribution companies (DISCOMs)" project, which is funded by the Federal Ministry of Economic Cooperation and Development (BMZ), Germany and falls under the Indo-German Energy Programme. The WUS serves as a global platform for industry leaders, policymakers, and experts from the electricity sector to exchange knowledge and ideas on the latest trends and best practices in the energy industry.

At the inaugural session, Dr. Steffen Koch, Minister - Head of the Department for Economic & Global Affairs, emphasised the long-standing cooperation between India and Germany in the power sector and the role of utilities in promoting renewable energy and enhancing energy efficiency. The event also witnessed the launch of a white paper on the asset management roadmap by GIZ, which was in collaboration with DNV.

Asset management report launch.

Dr. Steffen Koch, Minister - Head of the Department for Economic & Global Affairs delivering the opening remarks.

GIZ conducted six thematic sessions, inviting speakers to cover a range of topics related to the electricity sector, including utility business transformation, digitalization, asset management, natural disaster-resilient infrastructure planning, and sustainable practices towards net-zero utilities. The speakers included Peter Hermans, Ex CTO of Stedin DSO, Netherlands, who spoke on accelerating the digital journey of energy ecosystems; Oliver Foerster, CEO of Meliorate GmbH, Germany, who discussed best practices in asset management from an international utility perspective; and Thorsten Koerner, Head of Electricity, Gas and Carbon Trading, Leipzig Utility, Germany, who presented on the business transformation of DISCOMs, empowering the consumer. Matthias Duempelmann, CEO of 8KU, spoke on enhancing the resiliency of utilities and empowering consumers through the business transformation of distribution companies, while Mr. Marcus Merkel, Strategy Manager from EWE, Germany, discussed ambitious corporate climate action in utilities with a focus on EWE's approach to tackling climate change.

The sessions showcased GIZ's commitment to promoting sustainable and innovative practices in the electricity sector. By facilitating important discussions and inviting experts to share their knowledge, GIZ helped utilities acquire the necessary skills to cope with transformative changes in the industry.

GIZ India (IGEN Access-II) Supports MNRE in Developing Standards for Densified Biomass

3 February 2023 | New Delhi, India

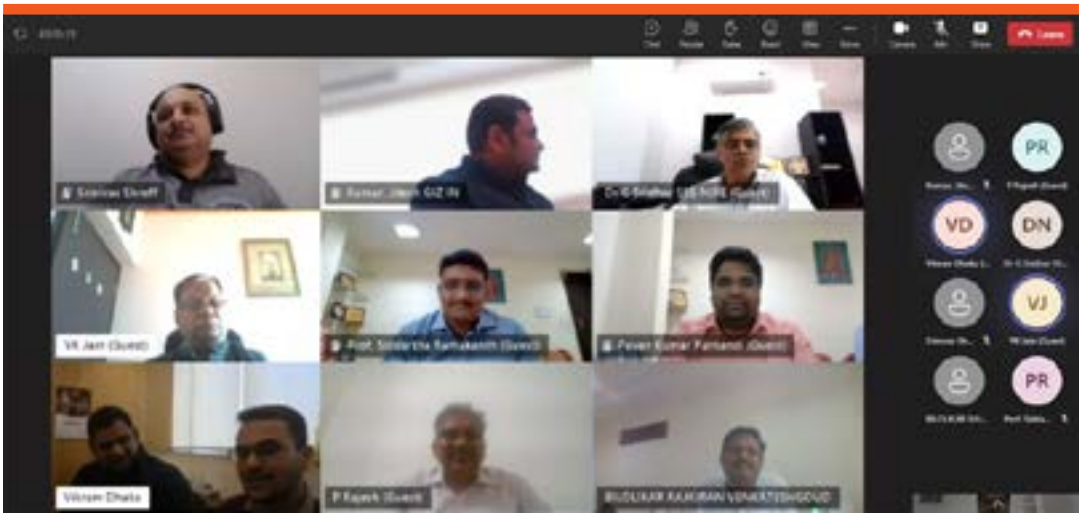
New Delhi, 3 February 2023 - The Ministry of New and Renewable Energy (MNRE) received the draft standards for densified biomass, developed by GIZ India under the TC project IGEN Access-II. GIZ India, with the support of Administrative Staff College of India (ASCI), has developed guidelines and draft standards for densified biomass under the guidance of MNRE and through the support of the National Institute of Bioenergy. The handover event took place in the presence of officials from MNRE, GIZ, ASCI, and SSS-NIBE. The development of standards for densified biomass is a crucial step towards promoting its use in India.

To ensure that the guidelines and draft standards are in line with international best practices, a study was also conducted by the German Biomass research firm DBFZ. The study provided a set of recommendations to develop the draft standards.

During the meeting, GIZ and ASCI presented the results of the study and handed over the draft standards to MNRE. The officials discussed the importance of these standards in promoting the use of densified biomass and appreciated the efforts made by GIZ and ASCI in developing them.

The handover event marks an essential milestone in the development of standards for densified biomass in India. MNRE will now review the draft standards and take necessary actions to ensure their implementation in the country.

For more information please contact Mr. Jitesh Kumar, jitesh.kumar(at)giz.de; Ms. Nidhi Sarin, nidhi.sarin(at)giz.de



Representatives of MNRE, GIZ, ASCI and SSS-NIBE during the Biomass standard submission event

Creating Bio-energy Digital Marketplace

9 - 10 January 2023 | Pune, Maharashtra

From 9- 10 2023, a two-day workshop on "Creating Bio-energy Digital Marketplace" was held at the BAIF campus in Warje, Pune. The objective of the workshop was to establish an effective and sustainable supply chain for bio-energy using digital marketplaces. The event was attended by government officials, industry leaders, financial institutions, and rural entrepreneurs. The workshop was part of the ongoing IGEN Access-II project by GIZ India, which seeks to strengthen and formalise the biomass supply chain in Maharashtra by utilising agricultural waste management.

The workshop commenced with a welcome address from BAIF and a keynote speech by Shri. Dinesh Jagdale, Joint Secretary at MNRE, Government of India, on the Indian Bio-energy Vision and the Concept of Biomass Exchange. The first day of the workshop included discussions on the bio-energy supply chain, capacity building for sustainable rural entrepreneurship, and the BiofuelCircle model. BAIF shared its experience in creating rural livelihoods through technology, and a panel discussion was held to deliberate on the supply chain challenges.

On the second day, participants including a representative from MNRE visited Ambegaon, Pune, and observed the live on-ground operation of the Project under IGEN Access-II, GIZ India. The field visit included a demonstration of assembling and baling sugarcane trash for easy transport.

Overall, the workshop offered an excellent opportunity for the participants to exchange their ideas and develop a roadmap for creating a sustainable and efficient supply chain for bio-energy in India and in turn aid in the development of a robust digital marketplace for bio-energy.

For more information please contact Mr. Jitesh Kumar, jitesh.kumar(at)giz.de; Ms. Nidhi Sarin, nidhi.sarin(at)giz.de.

Ms. Nidhi Sarin (Project Manager, IGEN Access-II, GIZ) setting the context of the workshop.

4 Quote of the Month from India and Germany

Quote of the Month from India

Shri Narendra Modi,
Prime Minister of India

"India is one of the strongest voices in the world for energy transition and for developing new resources of energy. Unprecedented possibilities are emerging in India that is moving with a resolution of a Viksit Bharat."

Source: PIB

Quote of the Month from Germany

Dr. Robert Habeck,
Federal Minister for Economic Affairs and Climate Action, Govt. of Germany

"Offshore wind energy plays a central role in the energy transition. Expanding it will provide enormous economic opportunities for Germany and the maritime industry."

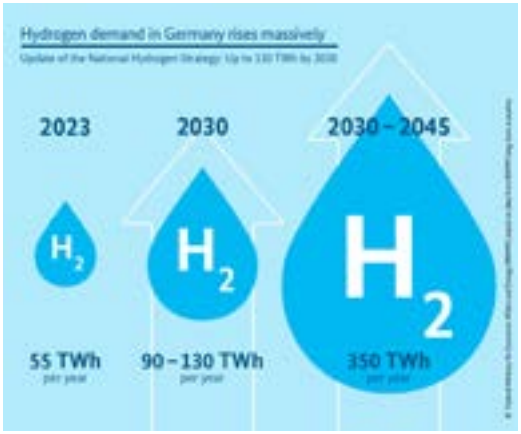
Source: BMWK

5 Energy Transition News

Demand for climate-friendly hydrogen increases significantly

In the 2023 update of the National Hydrogen Strategy, the target for hydrogen electrolysis capacities was raised from five gigawatts by 2030 to ten. The image below shows how much the Germanhydrogen demand will increase in the future.

In the future, demand for hydrogen produced in a climate-friendly way is now expected to increase more significantly than originally thought. This development is also at the basis of the updated National Hydrogen Strategy, adopted by the Federal Cabinet at the end of July 2023, in which the targets for hydrogen production capacities have been raised once again. For more information, please click here.



The 2023 National Hydrogen Strategy works on the premise that hydrogen demand in Germany will increase to 95-130 terawatt hours (TWh) by 2030. By comparison, the current figure is around 55 TWh. The Strategy also sets out how hydrogen demand is to become even greater between 2030 and 2045.

Global climate efforts increasing demand for hydrogen

Behind these predictions lie ambitious global climate efforts, which will cause the demand for hydrogen to skyrocket over the coming decades. According to the Federal Climate Change Act, Germany is to become climate neutral by 2045.

Hydrogen and its derivatives (gaseous or liquid energy carriers based on green hydrogen) will go on to play an important role in the transition to climate neutrality in the energy-intensive industry in particular.

Hydrogen is especially important for sector coupling

In future, green hydrogen will also become particularly important for sector coupling. If, for example, more electricity is produced from renewable energy than can be fed into the grid at any given time, it remains unused – otherwise the electricity grid would become overloaded. However, if this electricity is converted into hydrogen via electrolysis, it can either be used flexibly or stored in the areas of industry, transport and buildings.

End of July 2023, an important milestone for hydrogen use was reached when the European Commission approved a multi-billion euro subsidy for the decarbonisation of the steel industry in Germany. The plan is to build a large-scale plant for the production of "green steel", replacing a blast furnace that has been in operation previously. This will enable the operator, Thyssenkrupp Steel Europe, to save up to 3.5 million tonnes of carbon emissions each year.

Commenting on the plans for the new plant, Federal Minister for Economic Affairs and Climate Action Robert Habeck said: "This project will also give a fresh boost to the hydrogen economy in Germany and Europe. Salzgitter AG also received funding at the end of May 2023. Other steel industry projects are still within the State aid approval procedure at the European Commission."

6 Publications

Market Study & Location Assessment for Green Ammonia Production in India

The report aims to guide decision-makers and stakeholders in understanding the market dynamics and location-specific factors related to green ammonia production.

The full report is available for download here.

Identification of Evening Peak Optimised Wind Sites in India

The objective of the current study is to identify and describe "peak wind speed generation clusters", which are areas throughout India, both onshore and offshore. The study identifies ten potential sites for wind farms in India, eight of which are onshore and two offshore, and describes them in detail.

The full report is available for download here.

Modelling Time-of-Use Electricity Tariffs for Tamil Nadu

This report evaluates the impact of different time of use (ToU) tariff designs on key grid management parameters for the Tamil Nadu grid in the year 2024. The objective is to examine how the provision of static price signals in the form of ToU tariffs, prompts consumers to shift electricity demand to another time slot or reduce electricity usage and how this can facilitate the integration of a higher renewable energy share.

The full report is available for download here.

National Portal for PM-KUSUM

In most regions in the 'Global South', solar photovoltaic pumps can offer 1,400 – 2,200 peak-hours of reliable and affordable green energy for irrigation. The Indian government aims at supporting the installation of 3.5 million solar irrigation pumps under the PM-KUSUM scheme. Solar water pumps can help in significantly expand irrigated area; make irrigation more affordable and accessible for smallholders; reduce pressure on electricity utilities to supply subsidised electricity to farmers; eliminate pump irrigation's carbon footprint; and improve the overall returns from agriculture. Selection of optimally sized solar pumping systems is a challenging task, not least because farmers' demand for energy for irrigation is a complex, derived demand. Additionally, groundwater depletion is a risk when solar irrigation is not promoted in a sustainable way. The Solar Irrigation Pump (SIP) sizing tool is aimed at assisting farmers, researchers and technical person involved in adoption and promotion of solar pumping system across systems. The tool has universal applicability in the sense that it uses nationwide datasets on climate, soils and crops, wherein users can fetch the required data for the location of interest. It is a decision support tool to 'right-size' solar water pumps to customise to the farmer's need and avoid unintended negative effects on the environment. A newly designed web version of the tool is available on the website of the Ministry of New and Renewable Energy (MNRE).

Link to tool: National Portal for PM-KUSUM

Link to manual for the SIP tool: IWMI Solar Irrigation Report 2021 for Web

7 Upcoming Event

Solar Power Congress 2024

6 March 2024 | New Delhi, India

The Economic Times is organising the 3rd Annual edition of ETEnergyworld Solar Power Congress. The objective of this conference is to discuss and debate on key policy issues, business models, technological advancements, investment opportunities and a holistic understanding of India's energy transition journey and the key role played by the solar industry in it. .

India Smart Utility Week (ISUW)

12 - 16 March 2024 | New Delhi, India

The 10th edition of ISUW is scheduled from 12 – 16 March 2024 in New Delhi, India as an International Conference and Exhibition on Smart Energy and Smart Mobility. ISUW 2024 will include plenaries, bilateral workshops, keynotes, technical sessions, technical paper presentations, tutorials and technical tours. For more information click here.

Berlin Energy Transition Dialogue 2024

19 - 20 March 2024 | Berlin, Germany

The Federal Foreign Office and the Federal Ministry for Economic Affairs and Climate Action are pleased to announce that the 10th Berlin Energy Transition Dialogue (BETD.24) will be held on March 19-20, 2024 at the Federal Foreign Office in Berlin– celebrating a decade of driving the global energy transformation.

For more information please click here.

German Chancellor Fellowship for Tomorrow's Leaders at German Solar Association BSW in Berlin

The Alexander von Humboldt Foundation is searching for the Indian leaders of tomorrow. The German Chancellor Fellowship offers you an opportunity to take the next step in your career in Germany – irrespective of your field of work. In order to apply, develop your own project idea and find a host of your choice to mentor you. Once your host has confirmed, you can apply for a fellowship. German Solar Association BSW in Berlin has already offered to be a host for you. The Chancellor of the Federal Republic of Germany is the patron of this fellowship programme. The Foundation grants up to 50 German Chancellor Fellowships annually – up to ten for each country.

If you are interested in a fellowship with the German Solar Association BSW you should get in touch with Ms. Luz Alicia Aguilar via aguilar(at)bsw-solar.de.

Retired German Energy Experts Offering Their Support to Indian Institutions

You are a freshly retired German engineer with experience in Energy Efficiency and already familiar with India's rich culture? Become part of the largest retired expert's database of the world, a group of more than 10 000 experts offering their German know-how to the world free of cost.

You are an India-based company or institution looking for a German expert to lower your expenditures for Energy?

Senior Experten Service (SES) India is constantly matchmaking German experts and Indian institutions in several potentially supported fields and is also able to finance such expert visits. SES is the worldwide leading organisation for voluntary assignments carried out by retired specialists and executives.

For further information please click here or
contact Mrs. Sharon Mogose via sharon.mogose(at)indo-german.com.

Information about DeveloPPP

DeveloPPP.de is a mechanism by the German Federal Ministry for Economic Cooperation and Development (BMZ) to promote the involvement of the private sector in its development work. The BMZ provides financial and technical support to companies that want to become active in developing and emerging countries or already are, and whose investment has long-term benefits for the local population. The company bears at least half of the total project costs.

Interested companies cooperate with one of the two public partners that implement the program on behalf of the BMZ: Deutsche Investitions- und Entwicklungsgesellschaft (DEG) GmbH or Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The companies receive individual advice, benefit from regional market knowledge of the locations worldwide and gain access to local networks and political decision-makers.

Projects cover a wide range of sectors, such as training local skilled workers, piloting innovative technologies and demonstration plants, securing value chains and improving ecological and social standards in production plants.

Four times a year, companies can submit their project ideas to DEG or GIZ. The project should be developmentally effective and go beyond investments in the company's core business. To be eligible for funding, companies must have an annual turnover of at least 800,000 EUR, employ no less than 8 people and have a minimum of 2 audited annual financial statements. The duration is up to 3 years.

For further information please click here. .

Information about H2Uppp

The H2Uppp programme accompanies and supports efforts to ramp-up the market for green hydrogen (GH2) and Power-to-X (PtX) applications in India and other selected developing countries and emerging economies in cooperation with the private sector. Unlike other hydrogen support initiatives, H2Uppp focuses on the early stages of green hydrogen project development.

H2Uppp aims to identify, prepare and accompany the implementation of projects for the production and use of GH2 and PtX application, and to raise awareness and promote knowledge transfer for the development of projects relating to green hydrogen. Together with the partner countries, this approach enables GIZ to identify cost-effective production paths, pinpoint project opportunities along the value chain and develop business models.

To achieve the programme objectives, H2Uppp focuses on three fields of action: In the field of action 1 (Networking & Project Scouting), H2Uppp supports companies in identifying project ideas and building networks, for example with project partners or potential off-takers. Partners from the private and financial sectors are also offered training on green hydrogen, and public-private dialogue is strengthened through conferences and trade fairs. In the field of action 2 (PPP – Public-Private Partnerships), H2Uppp works with private companies to jointly implement pilot projects in the field of green hydrogen and power-to-X. Formal public-private-partnerships (PPPs) are set up for this purpose (see following section). In the field of action 3 (Know-How and Capacity Development), H2Uppp accompanies the various project ideas with in-depth studies and technical training. Through specialist conferences, the activities of local institutions are further strengthened and joint measures are developed to ensure a successful market launch.

The programme has been commissioned by the German Federal Ministry for Economic Affairs and Climate Action (BMWK). Support is provided for PPPs along the entire hydrogen value chain (production, storage, conversion, transportation and usage). It is important that the PPP project focuses on public-benefit activities and contributes to the promotion of sustainable development in the project country. To be eligible for funding, companies must contribute at least 50% of the volume of the PPP project and comply with sustainability standards during the project.

For further information on H2Uppp, support opportunities or to receive the PPP application form, please contact H2Uppp(at)giz.de.

All Upcoming Events in the Next Six Months – Save the Date!

Solar Power Congress 2024
6 March 2024 | New Delhi, India
https://energy.economictimes.indiatimes.com/solar-power-congress

India Smart Utility Week (ISUW) 2024
12- 16 March 2024 |New Delhi, India
www.isuw.in

Berlin Energy Transition Dialogue
19 - 20 March 2024 | Berlin, Germany
www.energydialogue.berlin

SET Tech Festival 2024
19 March 2024 | Berlin, Germany
https://www.startup-energy-transition.com/

European Hydrogen Conference
March 2024 | Vienna, Austria
https://energycouncil.com/event-events/european-hydrogen-conference/

HydrogenNow Europe 2024
9 - 10 April 2024 | Amsterdam, Netherlands
https://events.reutersevents.com/renewable-energy/hydrogen-europe

Green Hydrogen Summit Europe
17 - 18 April 2024 | Lisbon, Portugal
https://greenhydrogen.solarenergyevents.com/

Hannover Messe
22 - 26 April 2024 | Hannover, Germany
https://www.hannovermesse.de/en/

RenewX
26 - 27 April 2024 | Hyderabad, India
https://www.renewx.in/home

8 DISCLAIMER

The views expressed in this newsletter are solely those of the Indo-German Energy Forum (IGEF) Support Office team. The IGEF Support Office cannot assume any responsibility for the contents of other websites linked in this newsletter.

The Support Office of the Indo-German Energy Forum provides liaison services for all stakeholders. It serves as a first point of contact both to the Indian and German governments as well as companies seeking to get involved in the process. The Support Office answers queries regarding proposals for the IGEF dialogue or IGEF projects and any other subject relevant to the private sector.

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