

**THE EU-GCC COOPERATION ON
GREEN TRANSITION PROJECT**



Funded by
the European Union



IRENA

International Renewable Energy Agency



GREEN HYDROGEN WORKSHOP

SUMMARY REPORT



**WORLD FUTURE
ENERGY SUMMIT**

15 January 2025

Executive Summary

The EU-funded EU-GCC Cooperation on Green Transition project, in collaboration with the International Renewable Energy Agency (IRENA), hosted a “**Green Hydrogen Workshop**” on 15 January during the **World Future Energy Summit and IRENA General Assembly**. The workshop convened over 70 policymakers, industry leaders, and experts from the EU, GCC, and beyond to discuss advancing sustainable energy solutions and the development of green hydrogen.

Co-hosted under the Delegation of the European Union to the United Arab Emirates, the event examined regulatory frameworks, market opportunities, and investment strategies essential for unlocking the potential of green hydrogen. The discussions emphasised hydrogen’s pivotal role in decarbonizing hard-to-abate sectors such as heavy industry, shipping, and aviation, underscoring the shared commitment of the EU and GCC to fostering a sustainable and low-carbon energy future.

Key Highlights

- **Green Hydrogen as a Catalyst for Decarbonization and Economic Development**
 - Green hydrogen is a critical enabler for decarbonizing hard-to-abate industries such as steel, chemicals, and transport.
 - Beyond its environmental benefits, green hydrogen offers opportunities for green industrialisation, job creation, and economic diversification, particularly in regions with abundant renewable resources like the GCC.
 - Countries in the Global South are increasingly leveraging hydrogen strategies to attract foreign direct investment and establish competitive industrial capacities.
- **Strengthening Hydrogen Value Chains**
 - The hydrogen value chain remains fragmented, with gaps in areas such as production systems efficiency, intercontinental hydrogen transport, and ammonia reconversion technology.
 - Industry players are addressing these challenges through R&D, commercialisation efforts, and partnerships aimed at strengthening weak links across the value chain.
- **Driving Market Demand and Investment Frameworks**
 - A critical barrier to scaling green hydrogen is the lack of clear off-taker signals and market certainty.
 - Policy mechanisms, such as contracts for difference (CFDs), green procurement policies, and mandatory quotas for low-carbon hydrogen, are essential to incentivise investments and de-risk projects.
 - Partnerships between public and private sectors, along with international collaboration, are crucial for building the infrastructure and reducing the costs associated with hydrogen production and transport.
- **EU-GCC Collaboration Opportunities**
 - The GCC region, with its abundant renewable energy potential and expertise in large-scale energy infrastructure, is well-positioned to become a leading exporter of green hydrogen.
 - The EU, as a key demand center for green hydrogen and its derivatives, offers an ideal partner for GCC producers.
 - Alignment of regulatory frameworks, particularly on certification and standardisation, is necessary to facilitate seamless hydrogen trade and investment between the two regions.
- **Ensuring a Just Energy Transition**
 - Green hydrogen projects must prioritise energy and water security, economic development, and minimising environmental impacts to ensure they contribute to equitable and sustainable development.
 - Strategies for efficient water use, particularly in arid regions, and the integration of renewable energy into local grids are critical to achieving a just transition.

Executive Summary

Conclusions and Recommendations

The workshop underscored the urgency of scaling up green hydrogen projects to meet global climate goals and industrial decarbonization targets. Key recommendations include:

- **Policy Action:** Accelerate the implementation of regulatory frameworks, such as the EU's Renewable Energy Directive III, to provide clear demand signals and enable final investment decisions.
- **Collaboration:** Foster cross-border partnerships to enhance knowledge-sharing, align certification standards, and develop trade infrastructure for hydrogen and its derivatives.
- **Innovation:** Invest in R&D to address technological challenges, particularly in production systems efficiency, hydrogen carriers, and reconversion technologies.
- **Capacity Building:** Strengthen local capabilities in renewable energy manufacturing, hydrogen production, and industrial decarbonization to ensure inclusive economic growth.

This workshop highlighted the immense potential of green hydrogen to shape the future of energy systems and foster meaningful collaboration between the EU and GCC, paving the way for a cleaner and more sustainable global economy.

Speakers



H.E. Lucie Berger
Ambassador of the European Union
to the United Arab Emirates



**Mr Mohammad Abdelqader
El Ramahi**
Chief Green Hydrogen Officer,
Masdar



Eng. Nawal Yousif Alhanaee
Director of Future Energy Department,
UAE Ministry of Energy and
Infrastructure



Mr Spyros Kouvelis
Team Leader,
EU-GCC Cooperation
on Green Transition Project



Mr Gurbuz Gonul
Director of Country Engagement and
Partnership Division,
IRENA



Mr Laurent Antoni
Executive Director,
IPHE



Ms Norela Constantinescu
Deputy Director of IRENA's
Innovation and Technology Centre



Ms Ruta Baltause
International Energy Relations
and Enlargement Unit
Directorate-General for Energy
European Commission (online)



Ms Ann-Kathrin Lipponer
Associate Program Officer
IRENA



Mr Shashi Prakash
Head, Regulation, Policy
& Certification,
Masdar



Ms Pauline Raabe
Project Manager,
H2Global Foundation



Ms Daria Nochevnik
Hydrogen Council Head
for Policy and Advocacy,
Hydrogen Council (online)



Mr Tarig Ahmed
Regional Programme Officer,
MENA, IRENA



Mr Marcel Kooter
Co-founder,
Holland Hydrogen Hub



Ms Patricia Wild
Associate Program Officer,
IRENA



Mr Uwe Zwiefelhofer
Managing Director, Linde
Engineering Middle East,
Head of MENA Region



Mr Daniel Schwappach
Head of Sustainable Energy
Systems Middle East and Africa,
Siemens Energy

Agenda

12:45 - 13:00	Registration
13:00 - 13:20	<p>Welcome Remarks</p> <ul style="list-style-type: none"> • H.E. Ms. Lucie Berger, Ambassador of the European Union Delegation to the UAE • Eng. Nawal Yousif Alhanaee, Director of Future Energy Department, UAE Ministry of Energy and Infrastructure • Mr Gurbuz Gonul, Director of Country Engagement and Partnership Division, IRENA
13:20 - 14:00	<p>SESSION 1: REGULATION AND MARKETS</p> <p>1A: Enablers for International Green Hydrogen and Derivative Markets</p> <p>Presentations by:</p> <ul style="list-style-type: none"> • Ms Norela Constantinescu, Deputy Director of IRENA's Innovation and Technology Centre - "Overview International Green Hydrogen and Commodity Market" • Ms Ann-Kathrin Lippuner, Associate Program Officer, IRENA - "Deep Dive: Enabling Measures for International Green Hydrogen and Commodity Supply Chains" <p>Panel Discussion with Q&A:</p> <ul style="list-style-type: none"> • Ms Ann-Kathrin Lippuner, Associate Program Officer, IRENA • Mr Mohammad Abdelqader El Ramahi, Chief Green Hydrogen Officer, Masdar • Ms Pauline Raabe, Project Manager, H2Global Foundation <p><i>Moderator: Mr. Spyros Kouvelis, Team Leader, EU-GCC Cooperation on Green Transition Project</i></p>
14:00 - 14:40	<p>1B: Trends in Regulation, Standardization and Certification</p> <p>Panel Discussion with Q&A:</p> <ul style="list-style-type: none"> • Ms Ruta Baltause, International Energy Relations and Enlargement Unit Directorate-General for Energy European Commission (online) • Mr Laurent Antoni, Executive Director, IPHE (International Partnership for Hydrogen and Fuel Cells in the Economy) • Ms Daria Nochevnik, Hydrogen Council Head for Policy and Advocacy, Hydrogen Council (online) • Mr Shashi Prakash, Head, Regulation, Policy and Certification, Masdar <p><i>Moderator: Mr Spyros Kouvelis, Team Leader, EU-GCC Cooperation on Green Transition Project</i></p>
14:40 - 15:00	Coffee Break & Networking
15:00 - 16:00	<p>SESSION 2: TRADE & CROSS BORDER INVESTMENT BUSINESS OPPORTUNITIES</p> <p>Presentation by:</p> <p>Ms Patricia Sophia Wild, Associate Program Officer, IRENA "Decarbonization of Industry and the Role of the Hydrogen Pull Effect in Shaping Future International Industrial Development"</p> <p>Panel Discussion with Q&A:</p> <ul style="list-style-type: none"> • Ms Patricia Sophia Wild, Associate Program Officer, IRENA • Mr Marcel Kooter, Co-founder, Holland Hydrogen Hub • Mr Uwe Zwiefelhofer, Managing Director, Linde Engineering Middle East, Head of MENA Region • Mr Daniel Schwappach, Head of Sustainable Energy Systems Middle East and Africa, Siemens Energy <p><i>Moderator: Mr Tarig Ahmed, Regional Programme Officer, MENA, IRENA</i></p>
16:00 - 16:30	Reception & Networking

Opening Remarks



Welcome remarks by H.E. Lucie Berger, Ambassador of the European Union to the United Arab Emirates

H.E. Ms. Lucie Berger emphasized the critical role of green hydrogen in addressing global climate challenges and advancing the EU's vision of becoming the first climate-neutral continent by 2050. Highlighting the EU's leadership in green hydrogen development, she pointed to Europe's comprehensive regulatory framework, significant pipeline of hydrogen projects, and the European Hydrogen Bank's successful funding initiatives.

She underscored the importance of international cooperation, citing the North African hydrogen corridor and the Gulf region's shared commitment to sustainable energy, including the UAE's leadership through initiatives such as Masdar's green bond issuance.

The ambassador reflected on the recent historic first EU-GCC summit, where leaders reaffirmed their commitment to strategic trade, renewable energy collaboration, and hydrogen market development. She praised the workshop's collaborative spirit, thanking IRENA and the EU-GCC Cooperation on Green Transition Project for facilitating this critical dialogue.

H.E. Berger concluded by urging participants to leverage this platform to build bridges and drive sustainable solutions for a resilient future.



Opening Remarks



Welcome Remarks by Eng. Nawal Yousif Alhanaee, Director of Future Energy Department, UAE Ministry of Energy and Infrastructure

Eng. Nawal Yousif Alhanaee welcomed attendees to the UAE and highlighted the nation's commitment to advancing green hydrogen as part of its journey toward achieving net-zero emissions. She introduced the UAE's National Hydrogen Strategy, which includes ambitious short-term and long-term targets, such as producing 4.4 million tons per annum of low-carbon hydrogen by 2031 and 15 million tons of green hydrogen by 2050.

Eng. Alhanaee emphasized the establishment of two hydrogen valleys in the UAE for blue and green hydrogen production and the development of a Hydrogen Excellence Center to ensure cost-efficient production and position the UAE as a global leader.

She stressed the importance of international collaboration and partnerships, such as those fostered through the EU-GCC Cooperation on Green Transition Project and the International Hydrogen Partnership, to advance standardization, trade frameworks, and financial mechanisms. These efforts aim to accelerate decarbonization and drive the growth of green economies.

Concluding her remarks, Eng. Alhanaee encouraged participants to actively contribute their expertise and insights during the workshop to unlock new opportunities for sustainable investment and growth. She expressed optimism about the collective progress and inspiration that would emerge from the discussions.



Opening Remarks



Welcome Remarks by Mr. Gurbuz Gonul, Director of Country Engagement and Partnership Division, IRENA

Mr. Gurbuz Gonul emphasized the critical role of green hydrogen as a key component of the global energy transition, particularly in decarbonizing hard-to-abate sectors such as heavy industry and transport. He highlighted the potential for green hydrogen to create additional local value, employment, and technological development while accessing large international markets.

Despite its high potential, Mr. Gonul acknowledged the significant challenges to scaling up green hydrogen production, including high costs, weak regulatory frameworks, infrastructure investment gaps, and uncertainties in international transport and trade. He noted that only 10% of proposed hydrogen investments are currently directed towards infrastructure, with an estimated \$200 billion investment gap by 2040.

Mr. Gonul stressed the importance of private sector involvement, financial incentives, and skill development to overcome these barriers. He cautioned against viewing green hydrogen as a singular solution, advocating instead for its integration alongside other decarbonization technologies.

Referring to the GCC region, he highlighted its momentum in the energy transition, noting over 10.5 GW of renewable capacity as of 2023. He commended countries like the UAE and Oman for leveraging their abundant, low-cost solar resources to develop green hydrogen projects. He also emphasized the importance of balancing export opportunities with meeting local needs and reducing reliance on fossil fuels.

Mr. Gonul concluded by affirming IRENA's commitment to strengthening partnerships with regional and international organizations, including the EU, to support green hydrogen development and advance the global energy transition.

SESSION 1: REGULATION AND MARKETS

Presentation by:
Ms Norela Constantinescu,
Deputy Director of IRENA's
Innovation and Technology Centre



Topic: “Overview: International Green Hydrogen and Commodity Market”

- Highlighted the extensive green hydrogen value chain, including supply, demand, international markets, and cross-sector innovation.
- Explained green hydrogen's potential to cover 14% of total final energy consumption by 2050, requiring a sixfold increase in supply to 530 million tons annually.
- Identified regions with competitive production costs based on renewable energy availability, water resources, and infrastructure.
- Stressed hydrogen's critical role in decarbonizing industrial sectors like chemicals, steel, and heavy transport, where electrification is limited.
- Discussed the importance of hydrogen derivatives (e.g., ammonia, methanol) for facilitating international trade using existing infrastructure.
- Predicted 25% of global hydrogen demand will be traded internationally by 2050, with 50% transported via pipelines and the rest as derivatives.
- Emphasised the importance of diplomatic and multilateral cooperation to develop hydrogen trade ecosystems and align certification standards.

SESSION 1: REGULATION AND MARKETS

Presentation by:
Ms. Ann-Kathrin Lipponer,
Associate Program Officer, IRENA



Topic: “Deep Dive: Enabling Measures for International Green Hydrogen and Commodity Supply Chains”

- Discussed key enablers for hydrogen trade under three pillars: infrastructure, institutional frameworks, and social enablers.
- Highlighted the need for tailored infrastructure development along the value chain, including renewable energy, water, and carbon sourcing.
- Stressed aligning international standards and certification to ensure credible markets and consumer confidence in hydrogen derivatives.
- Identified gaps in trade data that hinder differentiation of green vs. non-green hydrogen and the need for streamlined tariffs.
- Advocated for building robust quality infrastructure (e.g., testing, inspection, certification) to support emerging hydrogen markets globally.
- Highlighted social impacts, including job creation, with hydrogen expected to generate 3.8 million jobs by 2030 and 6.5 million by 2050.
- Encouraged embedding workforce development and long-term employment strategies into national hydrogen planning to maximize socioeconomic benefits.

Presentations for Ms Norela Constantinescu and Ms Ann-Kathrin Lipponer can be downloaded [here](#).

SESSION I: REGULATION & MARKETS

Panel Discussion 1A: Enablers for International Green Hydrogen and Derivative Markets



Overview:

- Moderated by **Mr. Spyros Kouvelis**, Team Leader, EU-GCC Cooperation on Green Transition Project, this engaging panel discussion explored the key enablers required to advance green hydrogen markets globally.

Panelist Contributions:

Mr. Mohammad Abdelqader El Ramahi, Chief Green Hydrogen Officer, Masdar

- Highlighted Masdar's journey as a leader in green hydrogen, leveraging Abu Dhabi's policies, strategic partnerships, and global networks to develop a robust hydrogen ecosystem.
- Discussed the critical role of hydrogen in decarbonizing hard-to-abate sectors, such as maritime, steel, and heavy transport, while emphasizing the need for collaboration over competition to overcome current cost challenges.
- Called for enhanced regulatory enforcement, carbon trading mechanisms, and support from European frameworks such as RED II and RED III to unlock global hydrogen potential.

Ms. Pauline Raabe, Project Manager, H2Global Foundation

- Introduced H2Global as a pioneering market mechanism addressing the supply-demand gap through double-auction systems, backed by €5 billion from the German government.
- Highlighted the potential of bilateral agreements and international collaboration to develop sustainable hydrogen trade.
- Stressed the importance of creating transparent pricing and flexible funding mechanisms to accelerate investment and scale projects globally.



Ms. Ann-Kathrin Lipponer, Associate Program Officer, IRENA

- Identified the need for innovative companies and robust regulatory frameworks to foster emerging hydrogen markets.
- Emphasized the importance of global standardization, certification, and trade mechanisms to ensure sustainable and trustworthy hydrogen markets.
- Called for international cooperation to scale hydrogen projects globally and stressed the importance of translating scientific and industrial developments into actionable policy frameworks.

Closing Insights:

In a final round of remarks, panelists shared their vision for the next five years:

- Ms. Lipponer expressed the need for more geographically diverse hydrogen projects reaching Final Investment Decision (FID) stages to leverage global renewable energy opportunities.
- Ms. Raabe emphasised the importance of creating win-win scenarios through innovative mechanisms like H2Global, ensuring cost efficiency and equitable benefits for stakeholders.
- Mr. El Ramahi highlighted Europe's role in driving global demand for hydrogen, stressing the need for immediate implementation of regulatory frameworks and cash subsidy mechanisms to accelerate adoption.

The session concluded with a strong call for international collaboration, regulatory clarity, and financial mechanisms to overcome barriers and unlock the transformative potential of green hydrogen.



SESSION I: REGULATION & MARKETS

Panel Discussion 1B: Trends in Regulation, Standardization and Certification



Key Highlights and Insights

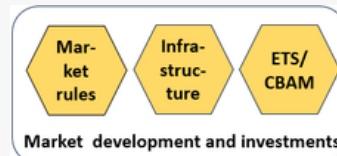
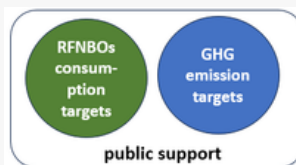
Opening Remarks by **Ms Ruta Baltause, International Energy Relations and Enlargement Unit Directorate-General for Energy European Commission (online)** highlighted the EU's leadership in hydrogen regulation, detailing the robust policy and regulatory framework developed to advance renewable and low-carbon hydrogen. Key elements included:

- **Production:** Renewable hydrogen production must occur without increasing emissions, directly or indirectly, ensuring alignment with EU sustainability goals.
- **Greenhouse Gas Emission Methodology:** The EU mandates a 70% reduction in GHG emissions compared to fossil-based hydrogen production, encompassing the full lifecycle from energy sourcing to consumption.
- **Certification and Verification:** Robust mechanisms ensure traceability, verifiability, and compliance, supported by ISO standards (e.g., ISO 14687 for hydrogen fuel quality). EU rules currently recognize three certification schemes under its regulatory framework.
- Ruta emphasized the importance of international cooperation, particularly the need for global alignment in certification schemes to ensure fungibility and mutual recognition across borders.

EU policy, regulation, certification for renewable hydrogen, international cooperation and standardisation

Policy priorities

Regulations



Requirements

CEN/CENELEC/ ISO standards supporting the implementation of the EU legislation

1. Production:

When and where renewable/ low-carbon source available, **without** increasing emissions – directly or indirectly

2. GHG emissions:

- 70% compared to 94 g CO₂ eq/ MJ
- Direct and indirect emissions- from energy sourcing to consumption
- Methodology - set by legislation

3. Verification and certification:

- Traceability, verifiability, reliability (legal requirements)
- Recognition – under EU rules (EU - 3 certification schemes recognised for RFNBOs)
- Enforcement – under EU jurisdiction (EU Member States)

ISO 17065 – requirements for certification bodies
ISO 19011 – audit management guidelines
ISO 14687 - hydrogen fuel quality

SESSION I: REGULATION & MARKETS

Panel Discussion 1B: Trends in Regulation, Standardization and Certification

Mr Laurent Antoni, Executive Director, IPHE (International Partnership for Hydrogen and Fuel Cells in the Economy). Laurent emphasized the critical role of government collaboration in advancing hydrogen standardization and certification. Key points included:

- The IPHE's work on creating a unified carbon methodology to measure emissions across the hydrogen value chain, enabling comparability between countries.
- Recent initiatives, such as the development of global certification frameworks and guidelines with IEA and ISO, aimed at promoting trade and reducing regulatory divergence.
- Successes in fostering government-to-government discussions to address common challenges and enhance global market accessibility for hydrogen and its derivatives.

Ms Daria Nochevnik, Hydrogen Council Head for Policy and Advocacy, Hydrogen Council (online). Daria provided a global perspective on the challenges and opportunities of aligning regional hydrogen certification systems. Key takeaways included:

- The significance of ISO methodologies in establishing consistency in emission measurements and certification practices globally.
- Progress made under the COP28 Declaration of Intent, where nearly 40 countries committed to mutual recognition of certification schemes to streamline global hydrogen trade.
- Barriers faced by project developers, particularly in navigating regulatory complexity, such as stringent compliance requirements for green hydrogen exports.
- Daria called for greater clarity and consistency in compliance frameworks to enable smooth project execution and unlock the potential of hydrogen markets worldwide.

Mr Shashi Prakash, Head, Regulation, Policy and Certification, Masdar. Shashi underscored Masdar's practical experience in navigating the evolving landscape of hydrogen certification. Highlights included:

- Masdar's proactive approach to trialing existing certification schemes, such as Certify and ISO standards, to assess their applicability in real-world scenarios.
- Insights into challenges in aligning certifications, particularly in defining "green" hydrogen based on production methods and renewable energy inputs.
- A call for global regulators to simplify and harmonise standards, emphasising that shared methodologies could significantly accelerate market development.

Closing Reflections: The session underscored the urgent need for regulatory and certification alignment to enable the global hydrogen economy. Panelists agreed that:

- Effective certification systems must ensure comparability, transparency, and trust in green hydrogen markets.
- Collaboration between governments, industry, and organisations like IPHE and IRENA is essential to overcoming challenges in standardisation and fostering international trade.
- Leveraging existing best practices and creating frameworks that address regional priorities can accelerate hydrogen's role in global decarbonization efforts.



SESSION II: TRADE & CROSS BORDER INVESTMENT BUSINESS OPPORTUNITIES

Presentation by:
Ms Patricia Sophia Wild,
Associate Program Officer, IRENA

“Decarbonization of Industry and the Role of the Hydrogen Pull Effect in Shaping Future International Industrial Development”



In her presentation, Ms. Wild emphasised the transformative potential of green hydrogen to decarbonize hard-to-abate industries while driving economic growth and fostering global industrial development. Below are the key points:

- **Global Hydrogen Strategies and Emerging Trends:**
 - Over 50 national green hydrogen strategies have been published globally as of May 2024, with increasing participation from Global South countries.
 - While many strategies target decarbonizing industries like steel and chemicals, others focus on leveraging hydrogen for broader green industrial development.
- **Drivers Behind Hydrogen Policies:**
 - Key motivations include meeting decarbonization targets, fostering local manufacturing, and building green industrial capabilities.
 - Hard-to-abate sectors such as steel and ammonia production present significant opportunities for adopting green hydrogen solutions.
- **Opportunities Across the Value Chain:**
 - Upstream: Creation of renewable energy generation facilities and manufacturing infrastructure.
 - Downstream: Development of sustainable industries, including green steel, fertilizers, and synthetic fuels.
 - Emerging trade routes prioritize hydrogen derivatives like ammonia and methanol, as they are easier and more cost-effective to transport compared to pure hydrogen.
- **Green Reindustrialisation and Trade Benefits:**
 - Green reindustrialisation focuses on establishing local manufacturing capacities in renewable-rich regions, allowing these areas to export green industrial products instead of raw materials.
 - This approach addresses hydrogen's transport challenges and encourages the relocation of energy-intensive industries to areas with abundant renewable resources.
- **The Renewables Pull Effect:**
 - This concept highlights the potential of renewable-rich regions to attract foreign investments and industries reliant on green hydrogen.
 - Benefits include increased deployment of renewable energy, job creation, industrial value addition, and enhanced competitiveness in producing green products like steel and chemicals.

SESSION II: TRADE & CROSS BORDER INVESTMENT BUSINESS OPPORTUNITIES

- **Win-Win Scenarios for Trade Partners:**

- Renewable-rich regions benefit from exporting processed green materials like ammonia and direct reduced iron (DRI), while renewable-scarce regions gain access to affordable green inputs, preserving downstream jobs and maintaining competitiveness.

- **Challenges and Enabling Factors:**

- Realizing these opportunities depends on factors like technological capabilities, geographic location, infrastructure, policy frameworks, and international collaboration.
- Institutional support, workforce development, and innovation ecosystems are vital for ensuring the long-term success of hydrogen economies.

Conclusion: Ms. Wild underscored that the integration of green hydrogen into global trade and industrial systems presents a transformative pathway for decarbonization and economic advancement. Cooperation between renewable-rich and renewable-scarce regions, along with effective policy measures, can enable a sustainable and inclusive transition to green hydrogen-driven industries.

Link to Ms Patricia Wild's presentation can be downloaded [here](#).



SESSION II: TRADE & CROSS BORDER INVESTMENT BUSINESS OPPORTUNITIES

Panel Discussion



Overview:

- Moderated by **Mr Tarig Ahmed**, Regional Programme Officer, MENA, IRENA, this panel discussion explored enhanced partnerships, regulatory alignment, and demand-driven approaches to scale up green hydrogen initiatives.

Key Topics Discussed

- **Green Hydrogen's Role in Decarbonization and Green Industrialization**
 - **Ms. Patricia Sophia Wild (IRENA):**
 - Highlighted green hydrogen as a catalyst for decarbonization and green industrialisation.
 - Emphasized the need for energy, water, and food security to ensure just energy transitions.
 - Stressed the importance of infrastructure planning, water recycling strategies, and stakeholder collaboration.
- **Private Sector Contribution and Industry Role in Strengthening the Hydrogen Value Chain**
 - **Mr. Uwe Zwiefelhofer (Linde Engineering):**
 - Identified weak links in the hydrogen value chain, such as electrolyzer efficiency and intercontinental transport.
 - Advocated for industrial collaboration to strengthen weak value chain elements through R&D and applied innovation.
- **Market Development and Scaling Projects**
 - **Mr. Daniel Schwappach (Siemens Energy):**
 - Highlighted that 95% of hydrogen projects in the Middle East and Africa remain in early development stages.
 - Pointed out challenges in the ammonia value chain, specifically reconversion technology.
 - Stressed the need for risk-sharing partnerships and scaling manufacturing to reduce costs.
- **Lessons from the Holland Hydrogen Hub and International Collaboration**
 - **Mr. Marcel Kooter (Holland Hydrogen Hub):**
 - Shared insights from the Netherlands' integrated approach to hydrogen value chains, including production, transport, and applications.
 - Highlighted the role of existing capabilities in oil and gas sectors, such as storage and trade expertise, for hydrogen transition.
 - Advocated for using hubs like the Port of Rotterdam as models for clean energy trade corridors.

SESSION II: TRADE & CROSS BORDER INVESTMENT BUSINESS OPPORTUNITIES

Panel Discussion

- **Key Challenges and Solutions for Scaling Green Hydrogen**
 - **Mr. Marcel Kooter:**
 - Emphasised the need to focus on cost reductions in hydrogen production and reconversion.
 - Advocated for integrated solutions, such as innovative hydrogen storage technologies, to optimise the value chain.
 - **Mr. Uwe Zwiefelhofer:**
 - Highlighted regulatory uncertainties, particularly in Europe, as a barrier to final investment decisions (FIDs).
 - Urged faster regulatory alignment and clarity to enable project development.
- **Driving Demand and Investment Frameworks for Hydrogen Development**
 - **Mr. Daniel Schwappach:**
 - Recommended policy mechanisms like quotas to create consistent demand for green hydrogen.
 - Suggested partnerships to reduce risks and accelerate investments in manufacturing and infrastructure.
 - **Ms. Patricia Sophia Wild:**
 - Highlighted green procurement by public sectors as a critical driver of demand for green hydrogen products, such as green steel.

EU-GCC Collaboration Opportunities

Panelists' Recommendations:

- Align regulatory frameworks to reduce barriers for hydrogen trade.
- Expand government support mechanisms, such as contracts for difference (CFDs), to bridge cost gaps in green hydrogen projects.
- Foster international partnerships and public-private collaboration to de-risk investments and scale the hydrogen ecosystem.

Key Takeaways

- The GCC region holds significant potential as a green hydrogen export hub due to its renewable energy resources and industrial expertise.
- Demand-side policies, such as quotas and green procurement, are critical to unlocking green hydrogen's potential.
- Strengthening weak links in the hydrogen value chain, particularly in reconversion technology, requires global cooperation and R&D investment.
- EU-GCC collaboration can leverage complementary strengths in hydrogen production and market demand to create a robust hydrogen economy.



Media Coverage

The "Green Hydrogen Workshop," held on 15 January 2025 during the World Future Energy Summit and IRENA General Assembly, garnered significant media attention. Notable press coverage includes:

- European External Action Service (EEAS): An article titled "Pioneering the Green Transition: EU and GCC Experts Conclude Green Hydrogen Workshop in Abu Dhabi" detailed the workshop's discussions on regulatory frameworks, market opportunities, and investment strategies for green hydrogen.
- Zawya: Covered the event with a focus on the collaboration between the EU and GCC in advancing sustainable energy solutions and green hydrogen development.
- ThePrint: Reported on the commencement of the Green Hydrogen Summit at Abu Dhabi Sustainability Week 2025, highlighting the participation of global industry leaders.
- The Tribune: Featured an article on the Green Hydrogen Summit, emphasising discussions aimed at accelerating the adoption of green hydrogen across various sectors.
- Al Khaleej Newspaper: An article titled "ورشة عمل «الهيدروجين الأخضر» تناقش خطط الاستثمار" ("Green Hydrogen Workshop Discusses Investment Plans") detailed the event's discussions on regulatory frameworks, market opportunities, and investment strategies for green hydrogen.

Link to photo album can be found [here](#).

Link to full workshop recording can be found [here](#).

About the project

THE EU-GCC COOPERATION ON GREEN TRANSITION PROJECT



Launched in August 2023, this project funded by the European Union marks a significant milestone in the long partnership between the European Union (EU) and the Gulf Cooperation Council (GCC). By addressing critical global challenges such as climate change and sustainable development, the project builds upon the EU-GCC Cooperation Agreement Document signed in 1989. The Joint Action Programme for 2022-2027 endorsed in February 2022 outlines the strategic framework for cooperation, emphasizing the need to join forces in addressing climate change and make progress on green transition. This project reflects the shared commitment to leveraging EU expertise to deepen cooperation and engagement, promote green policies and technologies, and create a conducive business environment for collaboration among energy-related and green tech companies in the Gulf.

KEY OBJECTIVES

The project aims to strengthen political and technical relationships at regional and bilateral levels by:

- Deepening engagement towards green transition and climate change mitigation and adaptation.
- Promoting the uptake of green transition policies and technologies by the GCC countries.
- Facilitating a conducive business environment between EU and GCC green tech companies in the Gulf region.

IMPACT

- Enhanced knowledge exchange on climate action and green transition.
- Raised awareness on climate change, sustainable practices and circular economy.
- Strengthened network for collaboration in green solutions and energy transition.
- Proactive EU Climate Diplomacy in the region.

STAKEHOLDERS

- State and non-state institutions, business community, & environmental NGOs.
- Researchers, academia, youth groups, & media outlets.
- EU and GCC businesses, particularly SMEs.
- EU Member States present in the GCC.

FOCUS AREAS



GREEN TRANSITION

Promote transformative change for green transition policies & practices within the GCC.



NET ZERO CARBON

Implement solutions for reducing carbon emissions in industrial & public sectors.



HYDROGEN MARKET

Support the development of a renewable hydrogen market in the Gulf region.



CLEAN-TECH SOLUTIONS

Foster innovations in renewable energy technologies & clean-tech industries.



CLIMATE CHANGE ADAPTATION

Strengthen resilience & adaptive capacities to climate-related hazards.



ENVIRONMENTAL PROTECTION

Launch initiatives to preserve biodiversity & natural habitats, including marine protection.



CIRCULAR ECONOMY

Encourage the adoption of sustainable waste management & resource efficiency.



SUSTAINABLE FINANCE

Engage financial institutions in channelling investment & finance in support of green transition.



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