Thematic Track 4:
Financing New and Innovative Clean Energy Solutions in Hard-to-Abate Sectors

Co-chairs:
• Peter Warren, United Nations Industrial Development Organization (UNIDO)
• Annika Seiler, Asian Development Bank (ADB)
Thematic Track 4:

The industrial sector accounts for about 37% of energy use and 25% of energy-related carbon dioxide emissions worldwide (ADB, 2024).

In Asia-Pacific, industrial energy demand is growing rapidly and the IEA indicates that to reach net-zero emissions, the sector will require investments in a range of solutions, such as hydrogen, CCUS, renewables electrification and energy efficiency, and advanced digital solutions.

These areas will be explored in the thematic track through four sessions:

• **Session 4.1:** Green Hydrogen for Industrial Decarbonization

• **Session 4.2:** Energy Efficiency and Renewable Energy in the Industrial Sector

• **Session 4.3:** Carbon Removal Financing and Technologies for the Industrial Sector

• **Session 4.4:** Advanced Digital Solutions for Industrial Decarbonization
Thematic Track Session 4.1: Green Hydrogen for Industrial Decarbonization

Tuesday, 4 June
2:00 PM - 3:30 PM (GMT+8)

Moderator: Peter Warren, United Nations Industrial Development Organization (UNIDO)
Session 4.1 Green Hydrogen for Industrial Decarbonization:

- Green hydrogen and low-carbon hydrogen (with CCUS) have potential to facilitate decarbonization in hard-to-abate sectors, such as cement, iron, steel, chemicals, aluminum and international shipping.

- Green hydrogen, ammonia, methanol and other synthetic fuels currently have competitive cost challenges: ranging from USD 4.5-12 per kg (depending on the region and cost of renewable electricity). According to Breakthrough Agenda (2023), the optimal target of USD 2 per kg is needed for larger uptake and commercialization.

- The session will explore experiences and perspectives on how to enhance investment, stimulate demand, accelerate adoption of innovative technologies and creating supportive enabling environments for green hydrogen in industry.
## Agenda:

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<th>Timeslots:</th>
<th>Item</th>
<th>Speaker</th>
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<td>2:00 - 2:10 pm</td>
<td>Welcome Remarks and Session Overview</td>
<td><strong>Moderator:</strong> Peter Warren, United Nations Industrial Development Organization (UNIDO)</td>
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<td>2:10 - 2:20 pm</td>
<td>Scene-Setting</td>
<td><strong>Presenter:</strong> Steve Peters, Asian Development Bank (ADB)</td>
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<td>2:20 - 2:50 pm</td>
<td>Panel Discussion</td>
<td><strong>Panelists:</strong> Dr. Mridula Bharadwaj (International Solar Alliance)</td>
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<td><strong>Panelists:</strong> Quynh Ngo Thuy (USAID's Vietnam Low Emission Energy Program II (V-LEEP II))</td>
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<td><strong>Panelists:</strong> Petra Christi (Climate Works Centre)</td>
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<td>2:50 - 3:10 pm</td>
<td>Audience Q&amp;A</td>
<td><strong>Panelists</strong></td>
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<td>3:10 - 3:20 pm</td>
<td>Summary Remarks</td>
<td><strong>Panelists</strong></td>
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<td>3:20 - 3:30 pm</td>
<td>Takeaways and Session Closure</td>
<td><strong>Moderator:</strong> Peter Warren, United Nations Industrial Development Organization (UNIDO)</td>
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## Panelists:

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<tr>
<td>Dr. Mridula Bharadwaj</td>
<td>Capacity Building Specialist</td>
<td>International Solar Alliance (ISA)</td>
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<td>Joseph Cordonnier</td>
<td>Industry Analyst</td>
<td>Organization for Economic Co-operation and Development (OECD)</td>
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<td>Project Manager, SteelZero</td>
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UNIDO’s Role in Advancing Clean Hydrogen

- UNIDO is the UN Agency for the promotion of inclusive and sustainable industrial development in developing countries.

- UNIDO has three main priorities:
  
  **Supporting sustainable supply chains** so that developing country producers get a fair deal and scarce resources are preserved.
  
  **Limiting climate breakdown** by using renewable energy and energy efficiency to reduce industrial greenhouse gas emissions.
  
  **Ending hunger** by cutting post-harvest losses and developing agribusiness value chains.
**Solutions:**

Clean hydrogen to decarbonize energy-intensive industries is one solution (amongst others) and a systemic approach across the value chain is important, integrating sources of clean hydrogen demand and supply with technology innovation, business models, market design, standards and regulatory support, innovative financing and system operations.

**UNIDO’s areas-of-focus and expertise:**

- Policy dialogues
- Technical assistance and capacity building
- Partnerships and collaboration
- Investment and innovation funding

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<th>Accelerate-to-Demonstrate (A2D) Facility</th>
<th>Global Programme for Hydrogen in Industry:</th>
<th>Industrial Deep Decarbonization Initiative:</th>
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<td><strong>Aims:</strong> To accelerate the commercialization of innovative clean energy solutions in developing countries by supporting “lighthouse” demonstration projects.</td>
<td><strong>Aims:</strong> to promote a just transition of industry in developing countries by fostering local production and application of clean hydrogen.</td>
<td><strong>Aims:</strong> IDDI is the largest and the most diverse coalition of governments and private sector working to decarbonize heavy industries, such as steel, cement and concrete.</td>
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| **Thematic areas-of-focus:**  
  - Clean hydrogen  
  - Industrial decarbonization  
  - Critical minerals  
  - Smart energy | **Currently supported countries:**  
  - **Asia:** Philippines, Malaysia, China.  
  - **RoW:** Costa Rica, Ecuador, Morocco, Tunisia, Algeria, Egypt, Nigeria, Namibia, South Africa. | **Current member countries:**  
  - **Asia:** India, Japan, Saudi Arabia, UAE  
  - **RoW:** Brazil, Canada, Germany, Sweden, UK, USA. |

**UNIDO’s Role in Advancing Clean Hydrogen**

**UNIDO’s areas of focus and expertise:**

- Policy dialogues
- Technical assistance and capacity building
- Partnerships and collaboration
- Investment and innovation funding
Audience Poll Question:

What do you perceive as the most critical driver for accelerating the development of green hydrogen technologies for industrial decarbonization in the Asia-Pacific region?

A. Technological advancement, demonstration and commercialization
B. Confirmed off-take and demand for green hydrogen
C. Policy and regulatory frameworks
D. Financial incentives

Link to results:
https://www.mentimeter.com/app/presentation/alsxz1db6bhzugzfvjq3w7ii8uoamd5f

Instructions:
1. Scan the QR code or go to menti.com and enter the code 4595 7816.
2. Read the question and select your answer.
3. Once everyone has responded, results will be displayed.
Thematic Track Session 4.1: Green Hydrogen for Industrial Decarbonization

Scene-Setting
Steve Peters, Asian Development Bank (ADB)
Panel Discussion:

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<td>International Solar Alliance (ISA)</td>
<td>A Roadmap for Developing and Scaling the Green Hydrogen Ecosystem</td>
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<td>Joseph Cordonnier</td>
<td>Industry Analyst</td>
<td>Organisation for Economic Co-operation and Development (OECD)</td>
<td>Learnings from country-level implementation of OECD Framework for industry’s net-zero transition</td>
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<td>Abhas Sinha</td>
<td>Project Manager, SteelZero</td>
<td>Climate Group</td>
<td>Accelerating Net-zero Steel Demand and Production to Boost Green Hydrogen in India</td>
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<td>Petra Christi</td>
<td>Senior Analyst</td>
<td>Climate Works Centre</td>
<td>The Rise of the Green Hydrogen Industrial Park: How to Maintain its Integrity</td>
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Summary Remarks from Panelists:

What is your top takeaway on what is required to accelerate the commercialization of green hydrogen, as opposed to fossil-fuel based alternatives, in the Asia-Pacific region?
Takeaways and Session Closure

**Participant feedback form:**

Feedback form - Session 4.1 Green Hydrogen for Industrial Decarbonization

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**Thematic Track Session 4.2:** Energy Efficiency and Renewable Energy in the Industrial Sector

Tuesday, 4 June
4:00 PM - 5:30 PM (GMT+8)

**Thematic Track Session 4.3:** Carbon Removal Financing and Technologies for the Industrial Sector

Thursday, 6 June
9:00 AM - 10:30 AM (GMT+8)

**Thematic Track Session 4.4:** Advanced Digital Solutions for Industrial Decarbonization

Thursday, 6 June
11:00 AM - 12:30 PM (GMT+8)