

UNEP CTCN Regional Capacity Building Program on Green Hydrogen: Asia and Pacific

Green Hydrogen Technology for System Transformation in Energy and Sustainable Mobility Sectors

23rd – 26th May 2023, Busan (Centum Premier Hotel), In-person

Background

Only a few Asia and Pacific (AP) countries consider green hydrogen as a climate technology solution for mitigation and adaptation. The retrospective analysis of 62 submitted National Determined Contributions (NDC) of AP countries found only 10 countries¹ had a brief plan on hydrogen technologies in energy systems and sustainable mobility sectoral transformation. For a technology to be best utilised as a solution for system transformation, the design and implementation of national plans supporting international cooperation in research and development are required. In this regard, in-depth understanding of the hydrogen technology mechanism, its application for potential GHG emission reduction measures and the ability to visualise the production of green hydrogen and ammonia fuels for use in power generation, industries, and transportation are the three most critical knowledge that the AP countries must be filled with.

Objectives

All types of hydrogen technologies available for future RD&D collaboration will be shared. The key objectives are:

1. Understand past, current, and the future of Hydrogen Technology in Energy and Sustainable Mobility sectors;
2. Peer-to-peer learning of existing national hydrogen policy plans;
3. Matchmaking with local technology providers to incorporate economy and social shift strategies for sustainability.

Hosting organisations

UN CTCN (Climate Technology Center & Network, www.ctc-n.org: The operational arm of Technology Mechanism of UNFCCC) and Green Energy Institute (www.gei.re.kr) in partnership with National Renewable Energy Laboratory (<https://www.nrel.gov/>)

Activities

- **Day 1:** Keynote speeches and presentations on hydrogen technologies
- **Day 2:** Peer-to-peer learning on existing national hydrogen policy plans
- **Day 3:** World Climate Industry Expo 2023 for collaborative RD&D
- **Day 4:** Networking with local Network members and potential strategic partners

¹ Australia, Bhutan, China, Jordan, Qatar, Republic of Korea, Saudi Arabia, Thailand, United Arab Emirates, Viet Nam

Program agenda

Day 1 (Tuesday, May 23rd)

Opening Ceremony and Introduction to the program MC: CTCN	
10:00~10:05	Opening Remarks <i>Mr. Rajiv Garg</i> <i>Head of CTCN PALO</i>
10:05~10:10	Welcome Remarks <i>Mr. Dongsik Joo</i> <i>President of Green Energy Institute</i>
10:10~10:15	Group photoshoot and the Introduction to the program <ul style="list-style-type: none"> - COVID-19 HYGIENE PROTOCOL - Toilet location - Food and drinks location - Expected general program activities
Session 1: Past, Current, and the future of Hydrogen Technology Moderator: CTCN	
10:15~10:45	Keynote Speech Technology Mechanism for Green Hydrogen and System Transformation <i>Speaker 1: CTCN</i>
10:45~11:00	Keynote Speech Financial Roadmap to Build the Green Hydrogen Economy <i>Speaker 2: GCF</i>
Lunch break (120 minutes)	
Session 2: Green Hydrogen: Production and storage Moderator: TBC	
12:30~13:10	Green Hydrogen Production: Technical Overview and Research Trends <i>Speaker 3: Hyun S. Park (Principal Research Scientist, Korea Institute of Science and Technology)</i>
13:10~13:40	Hydrogen Boil-Off Reduction Strategies for Safe and Efficient Transportation of Liquefied Hydrogen <i>Speaker 4: Hyunchul Oh (Professor at the Department of Chemistry, Ulsan National Institute of Science and Technology)</i>
13:40~14:00	Hydrogen Liquefaction for Storage and Transportation: Hyosung's Business <i>Speaker 6: Hyosung Yim (Vice President of Corporate Strategy Center Hyosung Corporation)</i>
14:00~14:20	Q&A session
Break-time (10 minutes)	

Session 3: Green Hydrogen: Conversion/Transport and End Uses

Moderator: TBC

14:30~15:00	Green Hydrogen Conversion/Transport Technology <i>Speaker 7: Jihyun Hwang (Prof. of Kentech)</i>
15:00~15:30	Green Hydrogen End Use Technology – Energy Systems (Industry) <i>Speaker 8: Sung oh Jang (Head of Department KEPRI)</i>
15:30~15:50	Green Hydrogen End Use Technology – Sustainable Mobility (Transportation) <i>Speaker 9: Joon-Hyoung Rhy (KRRI)</i>
15:50~16:10	Local Government-level action plans <i>Speaker 10: Young-Seok Bae (Jeollanamdo)</i>
16:10~16:30	Case study: Private and Knowledge Sector business model <i>Speaker 11: James Thornton Laybourn (Asia Pacific Regional Head of Sales, DNV)</i>
16:30~16:50	Q&A session

Day 2 (Wednesday, May 24th)

Session 1: Policies for System transformation by Countries

Moderator: CTCN

10:00~10:25	Keynote Speech Green Hydrogen and System Transformation <i>Speaker 1: Mark Ruth (Manager of NREL, Department of Energy, USA)</i>
10:25~10:50	Japan's Green Hydrogen Plan and Roadmap <i>Speaker 2: Japan NDE</i>
10:50~11:15	CTCN TA: Green Hydrogen Roadmap <i>Speaker 3: Thailand NDE</i>
11:15~11:35	<i>Q&A session</i>

Session 2: Calling from Future

Moderator: CTCN

11:35~12:00	Ideating the next TA on Green Hydrogen Technologies <i>All NDEs</i>
Lunch Break (90 mins)	
13:30~14:30	Drafting the CTCN TA concept note <i>All NDEs</i>

Session 3: Collaborative RD&D

Moderator: CTCN

14:30~15:00	Introduction to CTCN's collaborative RD&D <i>Speaker 4: CTCN</i>
15:00~15:20	Instructions for Bridge-building and Networking activities <i>Speaker 5: CTCN</i>

Day 3 (Thursday, May 25th)

World Climate Industry Expo (WCE 2023) for collaborative RD&D	
10:30~12:00	Opening ceremony of WCE2023 - Remark by President of Korea
12:00~13:00	Lunch
13:00~15:00	Bridge-building meetings with Korean RD&D institutions (*Pre-arranged) <i>1F Hall 4, Climate Technology Zone</i>
15:00~17:00	Climate Future forum 2023 (Technology-oriented) <i>1F Exhibition Center 2 Hall 4, Seminar room 121 – 123</i>

Day 4 (Friday, May 26th)

Networking with prospective strategic partners for RD&D collaboration	
10:00~11:00	Bridge-building meetings with Korean RD&D institutions (*Pre-arranged) <i>1F Hall 4, Climate Technology Zone</i>
11:00~12:00	Networking and Partner seeking activity <i>1F Exhibition Center 2 Hall 1~2, Future Mobility, Clean Energy Zone</i>
12:00~13:00	Lunch
13:00~15:00	Bilateral meeting with CTCN (*Upon request)