



Research and Development 20

for Clean Energy Technologies



The 6th RD20 Conference

Conference of leading research institutes from G20 members
focusing on clean energy technologies

Date: December 2–6, 2024

Venue: INDIA HABITAT CENTRE (Lodhi Road Near Airforce Bal Bharati School, Lodhi Rd, Lodhi Estate, New Delhi, Delhi 110003 India)

Organizer: The Energy and Resources Institute (TERI), India

Co-organizers:

National Institute of Advanced Industrial Science and Technology (AIST), Japan
Ministry of Economy, Trade and Industry (METI), Japan
Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan
Ministry of the Environment (MOE), Japan
New Energy and Industrial Technology Development Organization (NEDO), Japan
Ministry of New and Renewable Energy (MNRE), India

Launched in 2019, the RD20 is an initiative for international research and development aiming to strengthen international collaboration and promote innovation by leading research institutes in G20 countries and regions that develop the world’s most advanced technologies for achieving carbon neutrality. RD20 provides opportunities for participants to exchange R&D activities, experiences, and best practices related to clean energy technologies across countries and regions, as well as to explore the potential for international joint research. It also serves to deepen and develop new partnerships among relevant industry, academia, and government stakeholders.

The 6th RD20 conference will be held in Delhi, India. Several international actions, including summer school in Indonesia, RD20 Tokyo Symposium 2024 have been already launched. Leaders and experts of the institutes from G20 members will gather to accelerate collaboration and release the outcome all over the world.

Session	Date	Time (in India)	Attendance
Technical Session	Dec. 2	8:45 – 17:30	On-site and online
Leaders Session	Dec. 3	8:30 – 12:20	On-site and online
		13:30 – 17:30	*Invitation-only event
Workshop	Dec. 4–5	9:00 – 17:30	*Invitation-only event
Technical Tour Site Visit	Dec. 6	8:00 – 16:00	*Invitation-only event

Technical Session (Day 1: Dec. 2, 2024)

Time	Session	
8:30-8:45	Registration	
8:45-9:15	Inaugural Session <i>Venue: Silver Oak Hall</i>	
	Welcome Address: Dr. Vibha Dhawan (TERI, India) Dr. Haruhiko Obara (AIIST, Japan)	
	Opening Remarks: Dr. Bill Tumas (NREL, US) Dr. Christopher Hebling (Fraunhofer, Germany)	
	Address by Guest of Honor: Shri PK Singh (Ministry of New and Renewable Energy, India)	
9:15-13:00	Technical Sessions in the morning	
	Addressing Technical Barriers to Hydrogen Implementation Co-organizers: Mr. Pierre Sierre-Combe (CEA, France), and Mr. Mark Ruth (NREL, US) <i>Venue: Silver Oak Hall</i>	Sustainable Biofuels and Bio-chemicals Co-organizers: Dr. Sanjukta Subudhi (TERI, India), Dr. David Harris (CSIRO, Australia), and Dr. Randy Cortright (NREL, US) <i>Venue: Jacaranda Hall</i>
9:15-9:20	Session Welcome and Introduction: Mr. Mark Ruth (NREL, US)	Session Welcome and Introduction: Dr. Vibha Dhawan (TERI, India)
9:20-9:40	Overview/plenary speaker: Mr. Pierre Serre-Combe (CEA, France) <i>International Perspectives and Analysis on Implementation and Uptake of Hydrogen Technologies</i>	Overview/plenary speaker: Dr. Vibha Dhawan (TERI, India) <i>Decarbonisation of Transport Sector</i>
9:40-10:00	Overview/Plenary speaker: Dr. Alok Sharma (Indian Oil Corporation Ltd., India) <i>Various facets of Hydrogen-Challenges & Opportunities</i>	Plenary speaker: Dr. Sangita Kasture (Ministry of New and Renewable Energy, India) <i>Sustainable Bioenergy and Bio-refinery for Circular Economy</i>
10:00-10:20	Plenary speaker: Prof. Dr. Christopher Hebling (Fraunhofer, Germany) <i>International Perspective on the Challenges and Solutions in the Hydrogen Value Chain</i>	Dr. Mitsuharu Oguma (AIIST, Japan) <i>Assessment of biofuels: quality management and standardization</i>

10:20-10:35	Dr. Tetsuhiko MAEDA (AIST, Japan) <i>Hydrogen Production through Water Electrolysis Using Power from Renewables at NEDO Projects</i>	Dr. Vahid Shadravan and Dr. David Harris (CSIRO, Australia) <i>Potential for Sustainable Aviation Fuel (SAF) Production through from Sugarcane Residues in Australia</i>
10:35-10:50	Dr. Tara Hosseini (CSIRO, Australia) <i>Opportunities, technical barriers and challenges of implementing hydrogen in Australia</i>	Dr. Rachel Martins Henriques (EPE, Brazil) <i>Sustainable Biofuels and Bioproducts in Brazil</i>
10:50-11:05	Mr. Mark Ruth (NREL, US) <i>Demonstrating Performance and Analytical Support to Accelerate Hydrogen Technology Commercialization in the U.S.</i>	Prof. Sary Awad (CNRS-IMT, France) <i>Second and third generation biofuels production by combining thermochemical & biochemical processes towards a biorefinery concept</i>
11:05-11:20	Coffee break	
11:20-11:35	Mr. Sofiane CHERKAOUI MALKI (INERIS, France) <i>Decision analysis and support for the development and uptake of hydrogen technologies</i>	Dr. Randy Cortright (NREL, US) <i>Biomass Resources and Biomass Conversion Technologies in the USA</i>
11:35-11:50	Prof. Aoife Foley (University of Manchester, UK) <i>Hydrogen Integration in the UK for Net-Zero Transformation</i>	Dr. Novi Syaftika (BRIN, Indonesia) <i>The advancement of Biofuels in Indonesia: Status & Updates</i>
11:50-12:05	Mr. Thomas Roos (CSIR, South Africa) <i>Challenges in H₂ transportation, storage and end-use: The South African experience</i>	Mr. Ravi Gupta (Indian Oil Corporation Ltd., India) <i>Bio-energy Initiatives in India-Technology needs and enablers for sustainable biofuels</i>
12:05-12:45	Identification of Shared Challenges Discussion	Identification of Shared Challenges Discussion
12:45-13:00	Scoping and Volunteers for Task Force	Scoping and Volunteers for Task Force
13:00-14:00	Lunch	
14:00-17:30	Technical Session in the afternoon	
	Sustainability, Circularity and Resilience in R&D	
	Co-organizers: Prof. Myriam Merad (CNRS, France), and Dr. Liz Doris (NREL, US)	
	Venue: <i>Silver Oak Hall</i>	
14:00-14:20	Plenary speaker: Dr. Georges Lobo (European Commission, EU) <i>Revisiting the Technical Readiness Level: a public sector perspective</i>	



14:20-14:40	Plenary speaker: Dr. AK Tripathi (Ministry of New and Renewable Energy, India) <i>Sustainability through Green Energy Technologies</i>
14:40-15:00	Keynote 1: Prof. Myriam Merad (Chair) (CNRS, France) <i>Integrated approaches to sustainability and resilience: Philosophical and Operational Foundations in Energy Transition Research</i>
15:00-15:20	Keynote 2: Prof. Jason Chilvers (UKERC, UK) <i>Mapping public engagement with energy system transitions</i>
15:20-15:35	Prof. Shaibal Sarkar (IIT Bombay, India) <i>Solar cells & Circularity</i>
15:35-15:50	Nation Report: Mr. Alekhya Datta (TERI, India) <i>Navigating Solar and Battery End-of-Life: Opportunities in Reuse, Recycle and R&D – An Indian context</i>
15:50-16:05	Nation Report: Dr. Tara Hosseini (CSIRO, Australia) <i>The role of Sustainability and Circularity in Australia's Energy transition</i>
16:05-16:20	Coffee Break
16:20-16:35	Nation Report: Dr. Alberta Carpenter (NREL, US) <i>Incorporating Sustainability, Justice and Resilience into R&D Thinking</i>
16:35-16:50	Nation Report: Dr. Keiichiro Sakurai (AIST, Japan) <i>Barriers to decarbonize a rural snowy region: the case of Niseko</i>
16:50-17:05	Nation Report: Dr. Taahira Goga, Dr. Valentina Russo, Prof. William Stafford, and Ms. Luanita Snyman-Van der Walt (CSIR, South Africa) <i>Sustainable Power-to-X development in South Africa</i>
17:05-17:30	Identification of Shared Challenges Discussion Scoping and Volunteers for Task Force



Leaders Session (Day 2: Dec. 3, 2024)

Time	Session (<i>Venue: Silver Oak Hall</i>)
8:30-9:10	<p>Opening Ceremony Moderator: Dr. Vibha Dhawan (TERI, India), Dr. Haruhiko Obara (AIIST, Japan)</p> <p>Welcome Address: Dr. Vibha Dhawan (TERI, India) Opening Address: RD20 Chair: Mr. Kazuhiko Ishimura (AIIST, Japan)</p> <p>Leadership Welcome Address: Indian Government Special Address: Shri Sudeep Jain, Additional Secretary (MNRE, India)</p> <p>Opening Message: Japanese Government (METI, MOE, MEXT) Plenary Presentation: Mr. Takashi Naruse (NEDO, Japan)</p>
9:10-10:15	<p>Plenary lecture 1 Moderator: Dr. Alok Sharma (IOCL, India), Dr. Haruhiko Obara (AIIST, Japan)</p> <ul style="list-style-type: none"> • “Energy transformation in India” –Dr. AK Tripathi, Advisor (MNRE, India) <p>Plenary lecture 2 Moderator: Dr. Alok Sharma (IOCL, India), Dr. Haruhiko Obara (AIIST, Japan)</p> <ul style="list-style-type: none"> • “Role of clean hydrogen in India’s energy transition” – Opportunities and Challenges – Mr. Abhay Bakre, Mission Director (MNRE, India)
10:15-10:30	Break
10:30-11:15	<p>RD20 Status and Activities Dr. William Tumas (NREL, US), Dr. Haruhiko Obara (AIIST, Japan)</p> <p>Introduction/Status from Action Committee, Dr. William Tumas (NREL, US)</p> <ul style="list-style-type: none"> ○ Update from Action Committee ○ RD20 Summer Schools: Dr. William Tumas (NREL, US) <ul style="list-style-type: none"> ▪ 2024 Indonesia ▪ 2025 Golden CO, USA <p>Tokyo symposium, COP29 reports: Dr. Kiyotaka Tsunemi (AIIST, Japan) Outbrief from 2024 RD20 Technical Sessions by co-organizers or moderators including future plans/recommendations</p> <ul style="list-style-type: none"> ○ Sustainable Biofuels and Biochemicals; Dr. Sanjukta Subudhi (TERI, India) ○ Addressing Technical Barriers to Hydrogen Implementation; Mr. Mark Ruth (NREL, US) ○ Sustainability, Circularity and Resilience in R&D; Dr. William Tumas (NREL, US) <p>Technical working group updates and future workshops</p>
11:15-12:20	<p>Mission Innovation (Clean Energy Ministerial and G20) –opportunities for collaboration Moderator: Dr. Michio Kondo (AIIST, Japan)</p> <ul style="list-style-type: none"> • Interventions on Mission Innovation: India perspective; Dr. Vineet Saini (DST, India)

	<ul style="list-style-type: none"> • Introduction on Collaborative Opportunities between RD20 and Mission Innovation and Connection to G20; Dr Michio Kondo (AIST, Japan) • Overview of Mission Innovation; Ms. Helen Fairclough (Mission Innovation) • Clean Energy Ministerial and collaboration opportunities between MI and RD20 – Brazilian perspectives; Dr. Rachel Martins Henriques, Consultora Técnica (EPE, Brazil) • Discussion on collaborative opportunities
12:20-13:30	Lunch
13:30-17:30	Closed door leader’s session (Not open to public)

Expected participating countries and regions

