

# Research and Development 20

for Clean Energy Technologies



## The 8<sup>th</sup> RD20 Conference

### Accelerating Clean Energy Innovation: From Africa to the World

Date: Monday, October 19 - Friday, October 23, 2026

Venue: CSIR International Convention Center (ICC), Pretoria, South Africa

Organizer: Council for Scientific and Industrial Research (CSIR)

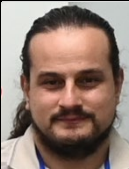
Co-organizers: National Institute of Advanced Industrial Science and Technology (AIST), Japan

Launched in 2019, the RD20 is a global research and development initiative designed to strengthen international collaboration and drive innovation among leading research institutes in G20 countries and regions. These institutions are at the forefront of developing advanced technologies that support the transition to carbon neutrality. The RD20 platform enables participants to share research activities, experiences, and best practices in clean energy technologies across countries and regions, while also exploring opportunities for international joint research. In addition, the initiative fosters stronger partnerships and encourages new collaborations among key stakeholders from industry, academia, and government.

The 8<sup>th</sup> RD20 Conference will be held on October 19- 23 October 2026 in Pretoria, South Africa and online. Leaders and experts of the institutes from G20 members will gather to accelerate collaboration and release the outcomes all over the world.

| Session                                                 | Date                              | Time (SAST)  | Attendance           |
|---------------------------------------------------------|-----------------------------------|--------------|----------------------|
| Workshop #1 (WS#1)                                      | Mon. afternoon, Oct. 19           | 13:00–16:00  | Invited members only |
| Technical Session (TS)                                  | Tue. morning & afternoon, Oct. 20 | 09:00–17:30  | Open to the public   |
|                                                         | Wed. morning, Oct. 21             | 09:00–11:40  |                      |
| Workshop #2 (WS#2)                                      | Wed. afternoon, Oct. 21           | 13:30–16:40  | Invited members only |
| Women in Green<br>Hydrogen Networking<br>Cocktail Event | Wed. evening, Oct. 21             | 17:30 –21:00 | Invited members only |
| Leaders Session                                         | Thu. morning, Oct. 22             | 09:00–12:30  | Open to the public   |
|                                                         | Thu. afternoon, Oct. 22           | 14:00–17:30  | Invited members only |
| Site Visit Tour                                         | Fri., Oct. 23                     | 09:00–14:30  | Invited members only |

## Day 1: Workshop (Mon. afternoon, Oct. 19, 2026)

| Time                 | Session (Invited members only)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12:00 - 12:55        | Arrival and Registration (International Convention Center)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 12:55 - 13:00        | Safety briefing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 13:00 - 16:00        | <div>   </div> <p><b>Workshop #1: AI for Energy:</b><br/> <i>Follow-up to the meeting held at KIER, Korea, in April 2026, with the aim of initiating concrete steps for cooperation among RD20 member institutions.</i><br/> <b>Moderator: Dr. Taha Selim Ustun (AIST, Japan)</b><br/> <b>Dr. Woonho Baek (KIER, Korea)</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 13:00 - 16:00        | <p>(Speakers and presentation titles are subject to change)</p> <p>Dr. Woonho Baek (KIER, Korea)<br/> <i>2026 AI for Energy Workshop</i></p> <p>Dr. Cho Mincheol (AIST, Japan)<br/> <i>AI Applications in Japanese Home Energy Big Data and Development of External Control Technology for Home Demand-Side Resources</i></p> <p>Dr. Aidan Rhodes (Imperial College London/UKERC, UK)<br/> <i>Risks and Regulation for AI in Energy Systems</i></p> <p><b>Coffee break (approximately 14:10-14:30)</b></p> <p>Dr. Amedeo Buonanno (ENEA, Italy) -online<br/> <i>Design and development of advanced optimization models that leverage Voice Recognition and Artificial Intelligence (AI) to enhance user engagement and active participation in energy systems</i></p> <p>Dr. Taha Selim Ustin (AIST, Japan)<br/> <i>AI Assisted Predictive Maintenance in Hydroelectric Power Plants</i></p> <p>Dr. Sherry Xu (CSIRO, Australia) - online<br/> <i>AI Infrastructure × Energy Infrastructure: An Architecture Perspective</i></p> <p>Dr. Joungho Park (KIER, Korea) - online<br/> <i>Reliable Surrogate-Assisted Multi-Objective Optimization for Complex Chemical Processes</i></p> <p>Discussion and wrap-up</p> |
| Estimated end: 16:00 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Day 2: Technical Session (Tue., Oct. 20, 2026)

| Time          | Session (Open to the public)                                                                                                                                                                                     |
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| 08:00 - 08:55 | Arrival and Registration (International Convention Center)                                                                                                                                                       |
| 08:55 - 09:00 | Safety briefing                                                                                                                                                                                                  |
| 9:00 - 10:50  |  <b>TS plenary: High Level Talks on Clean Energy Technologies</b><br><b>Moderator: Dr. Thembakazi Mali (CSIR, South Africa)</b> |
| 09:00 - 09:05 | Welcome address: Dr. Thulani Dlamini (CSIR)                                                                                                                                                                      |
| 09:05 - 09:20 | Opening remarks: Minister, Department of Science, Technology and Innovation (DSTI)                                                                                                                               |
| 09:20 - 09:40 | Ms. Mandy Mlilo (DSTI, South Africa)<br><i>DSTI Hydrogen &amp; Energy Research, Development and Innovation Initiatives</i>                                                                                       |
| 09:40 - 10:00 | Prof. Dr. Christopher Hebling (Fraunhofer-ISE, Germany)<br><i>Pathways to Climate Neutrality Through Renewables and Decarbonized Fossil Energy</i>                                                               |
| 10:00 - 10:20 | Dr. Pierre Serre-Combe (CEA, France)<br><i>Low Carbon Energy mix challenge and balance with RE for countries operating or considering Low-Carbon Energy Technologies</i>                                         |
| 10:20 - 10:40 | Prof. Philippe POGGI (University of Corsica/CEA, France)<br><i>Research, Businesses and Innovation in Overseas Territories: Smart Grids and Energy Transition</i>                                                |
| 10:40 - 10:00 | Discussion and wrap-up                                                                                                                                                                                           |
| 11:00 - 11:10 | <b>Coffee Break</b>                                                                                                                                                                                              |

| Time          | Session (Open to the public)                                                                                                                                                                                  |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:10 - 14:50 |  <b>TS #1: Energy Access – Innovative Solutions for Africa</b><br><b>Moderator: Dr. Kittessa Roro (CSIR, South Africa)</b> |
| 11:10 - 11:30 | Mr. Jay Bhagwan (Water Research Commission, South Africa)<br><i>Conduit hydropower – the invisible opportunity</i>                                                                                            |
| 11:30 - 11:50 | Dr. Tetra Yanuariadi (ITTO/BRIN, Indonesia)<br><i>Energy Access through Sustainable Forest Management: ITTO Projects and Lessons from Tropical Forest Landscapes</i>                                          |

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| 11:50 - 12:10 | Prof. Nico Fischer (University of Cape Town, South Africa)<br><i>Accelerating energy access through clean cooking - GreenQUEST Project</i>                          |
| 12:10 - 13:30 | <b>Lunch</b>                                                                                                                                                        |
| 13:30 - 13:50 | Dr. Christian Thiel (JRC, EU) - <i>online</i><br><i>JRC studies and tools related to Africa</i>                                                                     |
| 13:50 - 14:10 | Mr. Alekhya Datta (TERI, India) - <i>online</i><br><i>Decentralized Solar Applications - Lessons learned from India and replicability potential in Global South</i> |
| 14:10 - 14:30 | Prof. Mark Howells (UKERC)<br><i>Accelerating Clean Energy Access in Africa from Data-to-Deal: Insights and Tools from Climate Compatible Growth (CCG)</i>          |
| 14:30 - 14:50 | Discussion and wrap-up                                                                                                                                              |
| 14:50 - 15:10 | <b>Coffee Break</b>                                                                                                                                                 |

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| 15:10-17:30   |   <b>TS #2: Synthetic Fuels</b><br><b>Moderator:</b><br><i>Prof. Dr. Christopher Hebling (Fraunhofer-ISE, Germany)</i><br><i>Dr. Abdelilah Slaoui (CNRS, France)</i> |
| 15:10 - 15:30 | Dr. Lucero Cobos-Becerra (Helmholtz Zentrum Berlin, Germany)<br><i>Industrial Collaboration Meets Synchrotron Science: Catalysis for Sustainable Fuels</i>                                                                                                                                                                               |
| 15:30 - 15:50 | Dr. Prima Zuldian (BRIN, Indonesia) - <i>online</i><br><i>RD20 institution latest research on synthetic fuels</i>                                                                                                                                                                                                                        |
| 15:50 - 16:10 | Dr. Denzil Moodley (Sasol, South Africa)<br><i>From Science to Scale: How Strategic Partnerships Accelerate Sustainable Fuel Technologies</i>                                                                                                                                                                                            |
| 16:10 - 16:30 | Dr. Yuichi Manaka, AIST, Japan<br><i>International Collaborative Research on Ammonia Storage/Release under Severe Conditions</i>                                                                                                                                                                                                         |
| 16:30 - 16:50 | Mr. Robert Szolak (Fraunhofer-ISE, Germany)<br><i>Dimethyl Ether (DME)</i>                                                                                                                                                                                                                                                               |
| 16:50 - 17:10 | Dr. Sanjukta Subudhi (TERI, India) - <i>online</i><br><i>Sustainable Aviation Fuel through Alcohol to Jet pathway</i>                                                                                                                                                                                                                    |
| 17:10 - 17:30 | Discussion and wrap-up                                                                                                                                                                                                                                                                                                                   |

## Day 3: Technical Session (Wed., Oct. 21, 2026)

| Time          | Session (Open to the public)                                                                                                                                                   |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08:00 - 09:00 | Arrival and Registration (International Convention Center)                                                                                                                     |
| 08:55 - 09:00 | Safety briefing                                                                                                                                                                |
| 09:00 - 11:40 |  <b>TS #3: Critical Minerals for Energy</b><br><b>Moderator: Dr. Jamie Speirs (UKERC, UK)</b> |
| 09:00 - 09:20 | Dr. Angelique Janse van Rensburg (BMW, Germany)<br><i>Innovating for Impact: Collaborative R&amp;D for Sustainable, Competitive and Resilient Battery Value Chains</i>         |
| 09:20 - 09:40 | Mr. Shaun Pershad (Eskom)<br><i>Critical minerals with focus on Hydrogen ambitions</i>                                                                                         |
| 09:40 - 10:00 | Ms. Stéphanie Riché (CEA, France) - <i>online</i><br><i>Resilient Value Chains for the Energy Transition: A Circular Economy approach on Critical Battery Materials</i>        |
| 10:00 - 10:20 | <b>Coffee Break</b>                                                                                                                                                            |
| 10:20 - 10:40 | Mr. Souvik Bhattacharjya (TERI, India) - <i>online</i><br><i>Bridging India's Critical Mineral demand supply Gap: Challenges and Opportunities</i>                             |
| 10:40 - 11:00 | Dr. Fathan Bahfie (BRIN, Indonesia) - <i>online</i><br><i>New Developing Green Extraction of Critical Mineral for Energy Security</i>                                          |
| 11:00 - 11:20 | Dr. Emilie Janots (Université Grenoble Alpes, France) - <i>online</i><br><i>Rare Earth Elements: Rethinking Extraction — State of Knowledge and Perspectives</i>               |
| 11:20 - 11:40 | Discussion and wrap-up                                                                                                                                                         |
| 11:40 - 13:30 | <b>Lunch</b>                                                                                                                                                                   |

| Time          | Session (Invited members only)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| 13:30 - 16:40 |   <p><b>Workshop #2: Clean Hydrogen and its Derivatives</b><br/> <b>Moderator: Dr. Michio Kondo (AIST, Japan)</b><br/> <b>Dr. Thabo Hlalele (CSIR, South Africa)</b></p>                                                                                                                                                                                                                                                                                                                                                                         |
| 13:35 - 14:15 | <p>Dr. Hirokazu Kojima (AIST, Japan)<br/> <i>Evaluation Technologies for Large Scale Hydrogen Production by Water Electrolysis</i></p> <p>Dr. Sibimol Luke (UCL/UK-HyRES/UKERC, UK)<br/> <i>Hydrogen reality check: Hard truths and real pathways</i></p> <p>Dr. Abdelilah Slaoui (CNRS, France)<br/> <i>Water use &amp; quality for sustainable Hydrogen</i></p> <p>Dr. Hunmin Park (KIER, Korea)<br/> <i>Recent Progress in Next-Generation SOEC Technology toward Scalable Clean Hydrogen Production</i></p>                                                                                                                                                                                                    |
| 14:15 - 14:30 | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 14:30 - 15:20 | <p>Prof. Dmitri Bessarabov (NWU / DSTI HySA Infrastructure Center of Competence)<br/> <i>HySA Green Hydrogen Innovation and Value Chain Development Hub at NWU</i></p> <p>Dr. Abdul Hamid Budiman (BRIN, Indonesia) - <i>online</i><br/> <i>Status and implementation of clean hydrogen in Indonesia</i></p> <p>Dr. Joungho Park (KIER, Korea) - <i>online</i><br/> <i>Impact of model fidelity and data resolution on green hydrogen economics</i></p> <p>Dr. Liezl Schoeman (CSIRO, Australia)<br/> <i>Clean Hydrogen and derivatives: industrial applications</i></p> <p>Presenter from Mission Innovation (TBD)<br/> <i>(provisional title) Status update on Hydrogen valleys and technology readiness</i></p> |
| 15:20 - 15:35 | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 15:35 - 15:50 | Coffee Break                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 15:50 - 16:20 | Breakout Session                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 16:20 - 16:40 | Discussion and wrap-up                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Time           | Women in Green Hydrogen (WiGH) Networking Cocktail Event (Invited members only)                                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17: 30 - 21:00 | Women in research and development, industry professionals, developers, entrepreneurs, policymakers, funding partners and allies will exchange perspectives through a moderated panel and audience discussion, followed by a networking cocktail reception. |

## Day 4: Leaders Session (Thu., Oct. 22, 2026)

| Time          | Morning session (Open to the public)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| 08:00 - 08:55 | Arrival and Registration (International Convention Center)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 09:00 - 09:15 | Safety briefing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 09:15 - 10:20 | <p style="text-align: center;"><b>Opening Ceremony</b></p> <ul style="list-style-type: none"> <li>• Welcome address: Dr. Thulani Dlamini (CSIR)</li> <li>• Opening remarks: <ul style="list-style-type: none"> <li>Director General or Deputy Director-General, South African Government (TBD)</li> <li>Ministry of Economics, Trade, and Industry (METI), Japan - <i>video message</i></li> <li>Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan - <i>video message</i></li> <li>Ministry of Environment (MOE), Japan - <i>video message</i></li> <li>Mr. Takeshi YOSHIDA (NEDO), Japan</li> </ul> </li> <li>• Voices of Leadership: Streaming Global Cooperation through RD20: <ul style="list-style-type: none"> <li>Mr. Kazuhiko Ishimura (ASIT)</li> <li>Dr. Martin Keller (Helmholtz Association) - <i>video message</i></li> </ul> </li> </ul> |
| 10:20 - 10:50 | <b>Coffee Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 10:50 - 11:20 | <p style="text-align: center;"><b>RD20 status and activities (moderated by Action Committee members)</b></p> <ul style="list-style-type: none"> <li>• Report of Summer School 2026: Prof. Abdessamad FAIK (UM6P, Morocco)</li> <li>• Report of TF activities: Dr. Masahiro Yoshita (AIST), Dr. Thomas Roos (CSIR)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 11:20 - 12:10 | <p style="text-align: center;"><b>Open Discussion</b></p> <ul style="list-style-type: none"> <li>• Leading presentations: <ul style="list-style-type: none"> <li>Dr. Rebecca Maserumle (TBC) (Industrial Development Corporation of South Africa)<br/><i>The role of Green Hydrogen in Africa and Developments in South Africa</i></li> </ul> </li> <li>• Discussion: <ul style="list-style-type: none"> <li>Following the leading presentations, leaders of RD20 institutions will exchange views on opportunities for collaboration and future partnerships.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                             |
| 12:10 - 12:20 | <p style="text-align: center;"><b>Announcement</b></p> <ul style="list-style-type: none"> <li>• Announcement of the RD20 Summer School 2027: Dr. Jamie Speirs (UKERC)</li> <li>• Announcement of the 9th RD20 2027: Dr. Koichi Matsuoka (AIST)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 12:20         | <p style="text-align: center;"><b>Adjournment of morning session</b></p> <p>Closing Announcement: Dr. Mali</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| 12:30 - 12:40 | <b>Group Photo (Entrance of the International Convention Center)</b> |
| 12:40 - 13:00 | <b>Visit to the Exhibition Booths</b>                                |
| 13:00 - 14:00 | <b>Lunch</b>                                                         |

| Time          | Afternoon session (Members of RD20 Institution only)                                                                                                                     |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 - 14:05 | Introductory remarks from chairs:<br>Dr. Thulani Dlamini (CSIR, provisional), Mr. Kazuo Ishimura (AIST),<br>Dr. Christopher Hebling (Fh-ISE), as a presiding chair       |
| 14:05 - 14:20 | Overview of the LS afternoon session in the 8th RD20<br>Reviewing Leaders Recommendation 2025                                                                            |
| 14:20 - 15:00 | Moderated Discussion Theme 1<br>Engagement - Exploring ways to support active participation in RD20 activities                                                           |
| 15:00 - 15:30 | Moderated Discussion Theme 2<br>Resources for Collaboration Opportunity                                                                                                  |
| 15:30 - 15:50 | <b>Coffee Break</b>                                                                                                                                                      |
| 15:50 - 16:30 | Moderated Discussion Theme 3<br>Membership - Considering future principles related to RD20 membership                                                                    |
| 16:30 - 17:00 | Moderated Discussion Theme 4<br>Visibility - Improving RD20's visibility and outreach                                                                                    |
| 17:00 - 17:15 | Reviewing discussion for Leaders Recommendation 2026                                                                                                                     |
| 17:15 - 17:25 | Future conference approval of hosting institutes <ul style="list-style-type: none"> <li>• The 10th RD20 Conference in 2028</li> <li>• RD20 Summer School 2028</li> </ul> |
| 17:25 - 17:30 | Closing remarks: TBD                                                                                                                                                     |
| 17:30         | <b>Adjournment of afternoon session</b>                                                                                                                                  |

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| <b>18:00- 21:00</b> | <b><i>Conference Closing Dinner</i></b> |
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## Day 5: Site Visit Tour (Fri., Oct. 23, 2026)

### Site Visit (Invited members only)



The proposed visit of the RD20 delegates to Sasol Research & Technology (R&T) in Sasolburg on 23 October 2026 will showcase Sasol's sustainable aviation fuel (SAF) development journey based on Fischer-Tropsch technology. Delegates will gain insight into the end-to-end technology development pathway, spanning laboratory research, pilot plant testing, and semi-commercial scale demonstration. The visit will

include a comprehensive tour of Sasol's R&T facilities, highlighting innovation, scale-up capabilities, and the role of advanced research in enabling sustainable fuels. Subject to time availability, delegates will also participate in a bus tour of the Sasolburg Operations site.

|       |                                                                                             |
|-------|---------------------------------------------------------------------------------------------|
| 9:00  | Departure from CSIR ICC to Sasol or Eskom<br>(Participants will be divided into two groups) |
|       | Arrival at Sasol Ltd., Sasolburg, or Eskom                                                  |
|       | Departure from Sasol, or Eskom to CSIR ICC                                                  |
| 14:30 | Arrival at CSIR ICC/Close of Programme                                                      |

### Expected participating countries and regions

