

## **The 9th IEEJ/APERC International Energy Symposium** ***-Complexity of Achieving Energy Transition under Multiple Pathways-***

The G7 Hiroshima Leaders' Communique articulated "while acknowledging various pathways according to each country's energy situation, industrial and social structures, and geographical conditions, we highlight that these should lead to our common goal of net zero by 2050." This was reflected in the document as Japan, Chair of the G7 Hiroshima, led the other G7 leaders to agree with its belief that multiple pathways to energy transition must be fully reserved for each country along with its circumstances as a common understanding among all the G7 leaders.

No matter what pathway each state chooses to follow, however, no one will be able to make steady progress toward energy transition without technological innovations that dramatically change the way in which each society utilizes energy. In order for clean technologies, such as renewables, energy storage, electrolyser, supply of hydrogen, ammonia, and synthetic fuel, CCUS, and so forth, to achieve commercial proliferation, their efficiency, sustainability, safety, and other technological standards should be swiftly enhanced to another level.

On the other hand, there is a limit to how much decarbonized energy alone can meet massive increase in energy demand of emerging economies, especially Asia, which is expected to be a center of economic growth in the future. Therefore, fossil fuels, which have underpinned the current energy supply system, need to be considered for the way ahead to net zero by 2050. For the purpose of achieving carbon neutrality despite this dilemma, it is critical to build up an inclusive and integrated ecosystem for carbon circularity which enables reuse/recycle of carbon to be catalysed in parallel with not only negative emission technologies but also carbon offset schemes including nature-based solutions while energy-saving is still among the most important components.

Nevertheless, the very prerequisite for integration of clean technologies as well as the ecosystem for carbon circularity is a stable and resilient supply of critical materials and other raw materials indispensable for those technologies. But we witnessed many countries and regions struggle to secure fossil fuels during the First Oil Crisis that occurred about 50 years ago and recently again during Russia's invasion of Ukraine. As those lessons that we have learnt from the past struggling tell us, energy security cannot be ignored, even under energy transition.

In this symposium, APERC and IEEJ will offer viewpoints on tackling the challenges described above under multiple pathways to carbon neutrality goal through discussions among prominent experts from various nationalities and backgrounds regarding the following topics:

- Technology enablers for energy transition strategy
- Build-up of an ecosystem for carbon circularity
- Sustainable supplies and use of critical materials

1. Date/Time: April 19th, 2023 (Friday) 10:00-16:35 (in Japan Standard Time [JST])
2. Seminar type: Hybrid (In Person/Online (ZOOM) meeting)  
Venue: Grand Prince Hotel Takanawa Prince Room (3-13-1 Takanawa, Minato-ku, Tokyo, Japan)
3. Language: English/Japanese (Simultaneous interpretation)
4. Participant: Supporting Members only

**Program (in Japan Standard Time) <Japanese>**

10:00-10:05	Opening Remarks	<b>Mr. Tatsuya Terazawa</b> , Chairman and CEO, IEEJ
10:05-11:35	<b>Session 1 “Technology enablers for energy transition strategy”</b>	
	<ul style="list-style-type: none"> <li>➤ How should R&amp;D and scale-up investments of technology enablers for energy transition strategy be accelerated?</li> <li>➤ What roles should business entities, governments, and other players fulfill in promoting scalable technologies for energy transition?</li> </ul>	
	Moderator	<b>Mr. Toshiyuki Sakamoto</b> , Board Member, Director, IEEJ
	Presenter and Panelist	<b>Dr. Timur Gul</b> , Chief Energy Technology Officer, International Energy Agency (IEA)
		<b>Dr. Joseph Majkut</b> , Director, Energy Security and Climate Change Program, Center for Strategic and International Studies (CSIS), USA
<b>Mr. Tsutomu Nakamura</b> , Director General, Environment and Green Chemistry Unit, Technology Strategy Center, New Energy and Technology Development Organization (NEDO), Japan		
(10:05-10:50)	Presentation	<b>(15min/person × 3 people)</b>
(10:50-11:35)	Panel Discussion & Q&A <b>(45min)</b>	

11:35-13:00 Lunch Break

13:00-14:30	<b>Session 2 “Build-up of an ecosystem for carbon circularity”</b>	
	<ul style="list-style-type: none"> <li>➤ How can barriers for social acceptance of circular carbon economy be identified and addressed?</li> <li>➤ What are bottlenecks for development/rollout of negative emission technologies and carbon offset schemes including nature-based solutions?</li> </ul>	
	Moderator	<b>Mr. Yoshikazu Kobayashi</b> , Manager, Research Strategy Group, Research Strategy Unit, IEEJ
	Presenter and Panelist	<b>Dr. Axel Pierru</b> , Vice President for Knowledge and Analysis, King Abdullah Petroleum Studies and Research Center (KAPSARC), Saudi Arabia
		<b>Mr. Adam Baylin Stern</b> , Policy and Engagement Lead, Carbon Engineering
<b>Mr. Takashi Hongo</b> , Senior Research Fellow, Mitsui Bussan Institute for Strategic Studies, Japan		
(13:00-13:45)	Presentation	<b>(15min/person × 3 people)</b>
(13:45-14:30)	Panel Discussion & Q&A <b>(45min)</b>	

14:30-15:00 Coffee Break

15:00-16:30	<b>Session 3 “Sustainable supplies and use of critical materials”</b>	
	<ul style="list-style-type: none"> <li>➤ How can bolstering a supply chain of critical materials be attained?</li> <li>➤ What conditions can solidify a sustainable and efficient use of critical minerals under various pathways to carbon neutrality?</li> </ul>	
	Moderator	<b>Mr. Glen Sweetnam</b> , Senior Vice President, APERC
	Presenter and Panelist	<b>Mr. Tim Gould</b> , Chief Energy Economist, International Energy Agency (IEA) <b>Mr. Takeshi Harada</b> , Director, Research Division, Metals Strategy Department, Metals Unit, Japan Organization for Metals and Energy Security (JOGMEC), Japan <b>Mr. Kutani Ichiro</b> , Senior Research Director, Manager, Global Energy Group 1, Director, Energy Security Unit, IEEJ
(15:00-15:45)	Presentation <b>(15min/person × 3 people)</b>	
(15:45-16:30)	Panel Discussion & Q&A <b>(45min)</b>	
16:30-16:35	Closing Remarks	<b>Dr. Kazutomo Irie</b> , President, APERC

\* All the presenters (panelists) will attend the symposium in person.

\* The symposium is supported by Japan Organization for Metals and Energy Security (JOGMEC).

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