



JCOAL e-book 2025

Result of the September Symposiums with Message/Initiatives towards Carbon Neutrality

The 34th Clean Coal Day International Symposium

Thursday, 4th September, 2025, Tokyo & Zoom

Decarbonization and Just Energy Transitions

Organized by JCOAL

Co-Organized by METI, NEDO and JOGMEC

The Energy Security with Decarbonization Symposium 2025

Friday, 5th September, 2025, Tokyo & Zoom

Coal Strategy for a New Era - The Role of Coal in Energy Security

Organized by JCOAL

Co-Organized by JOGMEC

February 2026

Japan Carbon Frontier Organization (JCOAL)

Purpose of JCOAL e-book 2025

We would like to express our sincere appreciation for your long-standing participation in the Clean Coal Day International Symposium.

In 2025, we compiled the “JCOAL e-book” for the first time in order to share the outcomes of this symposium with a broader audience both in Japan and overseas, and to promote mutual understanding of each organization’s initiatives toward carbon neutrality (CN). We sincerely hope that this e-book will generate greater interest in your company’s efforts toward CN.

In 2026, we aim to further expand this initiative and look forward to welcoming even more organizations to participate.

Disclaimer

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means electronic or mechanical without prior written notice to and permission from JCOAL.

The findings, interpretations, conclusions, and views expressed in their respective chapters are entirely those of the authors and contributors and do not reflect the views and policies of JCOAL. Any error in content or citation in the respective chapters is the sole responsibility of the author. Material in this publication may be freely quoted or reprinted with proper acknowledgement.

CONTENTS

1. Background and Objectives.....	1
2. Theme and Concept of Symposium.....	2
3. Program	3
4. Speaker Information	5
5. Symposium Minutes	8
6. List of Special Support by Embassies, State Governments, Local Governments, etc.....	19
7. Special Messages from HE Ambassadors	20
8. List of endorsing Companies/Organizations	30
9. Company Page -> Initiative of Carbon Neutrality.....	31
① Babcock & Wilcox (B&W)	31
② China Coal Technology Engineering Group (CCTEG).....	32
③ Chugai Technos Corporation	34
④ Carbon Recycling Fund (CRF)	35
⑤ Central Research Institute of Electric Power Industry (CRIEPI)	37
⑥ Idemitsu Kosan Co.,Ltd.....	38
⑦ IHI Corporation	39
⑧ Japan CCS Co., Ltd. (JCCS).....	41
⑨ JERA Co., Inc.....	43
⑩ J-POWER (Electric Power Development Co., Ltd.).....	44
⑪ Kawasaki Heavy Industries, Ltd.....	46
⑫ Kyushu Electric Power Company, Incorporated	48
⑬ Low Emission Technology Australia (LETA).....	49
⑭ Sumitomo Heavy Industries, Ltd.....	51
⑮ Taiwan Power company.....	53

⑯ TOKYO ENERGY & SYSTEMS INC. 54

⑰ TOPPAN Holdings Inc. 55

10. Post Conference Webinar (PCW) in conjunction with Clean Coal Day International Symposium & Energy Security with Decarbonization Symposium with using Focus Group Discussion (FGD) organized with ASEAN Centre for Energy (ACE) 56

11. Attachments 60



1. Background and Objectives

About Clean Coal Day

In 1991, the then Ministry of Industry and Trade (MITI), now Ministry of Economy, Trade and Industry (METI) established 5th September as Clean Coal Day, which was deemed to be conducive to outreach activities for the sake of appropriate and well-informed recognition of coal as one of the crucial energy sources.

As such, the 1st Clean Coal Day International Symposium was held on the very day of 1991 involving a wide range of stakeholders from upstream to downstream of the coal value chain. Since then, the event was held annually to date.

Organization of the annual events to discuss and think about coal and its utilization

In 2023, in view of the recent global situation around energy transition, the Clean Coal Day International Symposium that used to cover both upstream and downstream was split into two conferences: one about downstream and the other about upstream. The former deals with clean and innovative utilization and conducive technology information, which are crucial for well-informed acknowledgement of values and roles of coal utilization as well as relevant technology, while the latter discusses sustainable supply with focus on energy security.

Since the early years of its history, Clean Coal Day involved not only the main conference but also publicity and educational events to make general public as well as researchers and students well understand the values and roles of coal as well as innovative technologies to develop and utilize coal in an environmentally compliant manner.

This part of the Clean Coal Day activities is deemed to be crucial, since without continued education and updates of people, we may not go on sustainable coal utilization that bolsters economic growth.

2. Theme and Concept of Symposium

The 34th Clean Coal Day International Symposium (2025)

Theme: Decarbonization and Just Energy Transitions

The 34th Clean Coal Day International Symposium explores how to balance coal utilization with the growing electricity demand fueled by advances in AI. After years of confrontation between those parties demanding radical climate actions including fossil fuel phasing out in a short time and those that do not agree in consideration of the desperate need for growth and development, it is time for pursuing afresh diversified transition pathways all of which will finally reach the global goal of carbon neutrality. That was why the theme of the 34th symposium this time was “Decarbonization and Just Energy Transitions.”

Energy Security with Decarbonization Symposium 2025

Theme: Coal Strategy for a New Era - The Role of Coal in Energy Security

Amid increasing global attention to energy security, the Energy Security with Decarbonization Symposium examined the strategic role of coal within the broader context of a sustainable and resilient energy supply. Building on the restructuring of the Clean Coal Day International Symposium in 2023—into separate upstream and downstream conferences—this discussion focuses on the upstream perspective, particularly the importance of ensuring a stable coal supply in an evolving global energy landscape. We discussed how coal, as part of a diversified energy mix, contributes to energy security while supporting sustainable economic development.

3. Program

The 34th Clean Coal Day International Symposium (2025)

09:30-10:00	Opening Session
09:30-09:35	Opening Remarks/ JCOAL Mr. WATANABE Toshifumi
09:35-09:40	Welcome Remarks I/ METI Mr. WAKUDA Hajime
09:40-09:45	Welcome Remarks II/ NEDO Dr. IIMURA Akiko
09:45-10:00	Keynote Address I / ERIA Dr. Nuki Agya Utama
10:00-10:15	<i>Break</i>
10:15-12:20	Session I Updated Policy Trends shaped by Changing Political Landscapes and Growing Electricity Demand
	Moderator The University of Toko Prof. Dr. ARIMA Jun
10:15-10:30	①US Department of Energy Ms. Tala Goudarzi
10:30-10:45	②ASEAN Center for Energy Mr. Suwanto
10:45-11:00	③Australian Embassy Tokyo Mr. Dan Glover
11:00-11:15	④China Electricity Council Mr. Ding Yongfu
11:15-11:30	⑤India, Central Electricity Authority Mr. Bikash Chandra Mallick
11:30-11:45	⑥CCUS Poland Association Dr. Paweł Gładysz
11:45-12:00	⑦VGBE Energy e.V. Dr. Oliver Then
12:00-12:20	Discussion
12:20-13:30	<i>Break</i>
13:30-13:45	Keynote Address II / FutureCoal Global Alliance Mr. Mike Teke
13:45-15:25	Session II Strategy Balancing Decarbonization Technologies and Coal Use
	Moderator Nagoya University Pro. Dr. NARUSE Ichiro
13:45-14:00	①J-POWER Dr. SASATSU Hiroshi
14:00-14:15	②Kawasaki Heavy Industries, Ltd. Dr. TANIGUCHI Shinichi
14:15-14:30	③The Chugoku Electric Power Co.,Inc. Mr. IKEDA Ryoji
14:30-14:45	④IHI Corporation Mr. MORIYA Nobuhiko
14:45-15:00	⑤Malaysia, PETRONAS Ms. NorA'in Md Salleh
15:00-15:25	Discussion
15:25-15:50	<i>Break</i>
15:50-16:05	Featured Speech I / The Institute of Energy Economics, Japan
	Mr. TERAZAWA Tatsuya
16:05-16:20	Featured Speech II / Premier and Minister for Veterans, The State
	Government of Queensland, Australia The Honourable David Crisafulli MP
16:20-17:50	Session III Panel Discussion
	Moderator International University of Japan Prof. Dr. KIKKAWA Takeo
	Panelist 1 IEA Mr. Carlos Fernández Alvarez
	Panelist 2 ASEAN Center for Energy Mr. Suwanto
	Panelist 3 The University of Toko Prof. Dr. ARIMA Jun
	Panelist 4 India, Central Electricity Authority Mr. Bikash Chandra Mallick
	Panelist 5 Nagoya University Pro. Dr. NARUSE Ichiro
17:50-17:55	Closing Remarks/ JCOAL Mr. TSUKAMOTO Osamu

Energy Security with Decarbonization Symposium 2025

09:30-10:55	Opening Session
09:30-09:35	Opening Remarks/ JCOAL Mr. WATANABE Toshifumi
09:35-09:40	Welcome Remarks/ JOGMEC Mr. TAKAHARA Ichiro
09:40-09:55	Keynote Address I / FutureCoal Global Alliance Mr. Paul Baruya
09:55-10:10	Featured Speech II / University of Wyoming, U.S. Prof. Dr. Holly Krutka
10:10-10:25	Featured Speech III / Alaska Department of Natural Resources, U.S. Mr. Ryan Fitzpatrick
10:25-10:40	Featured Speech IV / GCCSI Mr. Jarad Daniels
10:40-10:55	<i>Break</i>
10:55-11:10	Keynote Address II / JOGMEC Mr. KUBOTA Hiroshi
11:10-12:40	Session Energy Security as a Global Challenge ~Ensuring Stable Supply of Resources
	Moderator Kyushu University Dr. HORII Nobuhiro
11:10-11:25	①Minerals Council South Africa Mr. Mzila Mthenjane
11:25-11:40	②Whitehaven Coal Ltd. Mr. Jason Nunn
11:40-11:55	④Low Emission Technology Australia Mr. Benn Wheeler
11:55-12:10	⑤Idemitsu Kosan Co., Ltd. Mr. YOSHIDA Yuzo
12:10-12:25	⑥Nippon Steel Corporation Mr. YAMADA Kiichi
12:25-12:40	Discussion
12:40-12:45	Closing Remarks/ JCOAL Mr. TSUKAMOTO Osamu

4. Speaker Information

The 34th Clean Coal Day International Symposium (2025)

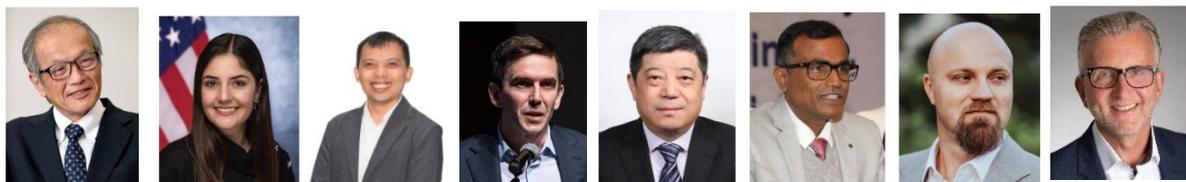
Opening Session



① ② ③ ④

- ① JCOAL /Chairperson Mr. WATANABE Toshifumi
- ② METI / Director-General of Natural Resources and Fuel, ANRE, Mr. WAKUDA Hajime
- ③ NEDO / Executive Director Dr. IIMURA Akiko
- ④ ERIA / Director for Energy Policy and Head of Asia Zero Emission Center Dr. Dr. Nuki Agya Utama

Session I



① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① The University of Tokyo & JOGMEC / Dr. ARIMA Jun
- ② US Department of Energy/ Ms. Tala Goudarzi
- ③ ASEAN Centre for Energy / Mr. Suwanto
- ④ Australian Embassy Tokyo / Mr. Dan Glover
- ⑤ China Electricity Council / Mr. Ding Yongfu
- ⑥ India, Central Electricity Authority / Mr. Bikash Chandra Mallick
- ⑦ CCUS Poland Association / Dr. Paweł Gładysz
- ⑧ VGBE Energy e.V. / Dr. Oliver Then

Keynote Address & Featured Speech



① ② ③ ④

- ① Keynote Address I / ERIA Dr. Nuki Agya Utama
- ② Keynote Address II / FutureCoal Global Alliance Mr. Mike Teke
- ③ Featured Speech I / The Institute of Energy Economics, Japan Mr. TERAZAWA Tatsuya
- ④ Featured Speech II / Premier and Minister for Veterans, The State Government of Queensland, Australia
The Honourable David Crisafulli MP

Session II



① ② ③ ④ ⑤

- ① Nagoya University Pro. Dr. NARUSE Ichiro
- ② J-POWER Dr. SASATSU Hiroshi
- ③ Kawasaki Heavy Industries, Ltd. Dr. TANIGUCHI Shinichi
- ④ The Chugoku Electric Power Co.,Inc. Mr. IKEDA Ryoji
- ⑤ Malaysia, PETRONAS Ms. NorA' in Md Salleh

Session III



① ② ③ ④ ⑤ ⑥

- ① International University of Japan Prof. Dr. KIKKAWA Takeo
- ② IEA Mr. Carlos Fernández Alvarez
- ③ ASEAN Center for Energy Mr. Suwanto
- ④ The University of Toko Prof. Dr. ARIMA Jun
- ⑤ India, Central Electricity Authority Mr. Bikash Chandra Mallick
- ⑥ Nagoya University Pro. Dr. NARUSE Ichiro

Closing Remarks



JCOAL / President Mr. TSUKAMOTO Osamu

Energy Security with Decarbonization Symposium 2025

Opening Session



①

②

- ① JCOAL /Chairperson Mr. WATANABE Toshifumi ② JOGMC / Chairman and CEO Mr. TAKAHARA Ichiro

Keynote Address & Featured Speech



①

②

③

④

⑤

- ① Keynote Address I / FutureCoal Globa Alliance Mr. Paul Baruya
② Featured Speech I / University of Wyoming, US Prof. Dr. Holly Krutka
③ Featured Speech II / Alaska Department of Natural Resources, US Mr. Ryan Fitzpatrick
④ Featured Speech III / GCCSI Mr. Jarad Daniels
⑤ Keynote Address II / JOGMEC Mr. KUBOTA Hiroshi

Session



①

②

③

④

⑤

⑥

- ① Kyushu University Dr. HORII Nobuhiro
② Minerals Council South Africa Mr. Mzila Mthenjane
③ Whitehaven Coal Ltd. Mr. Jason Nunn
④ Low Emission Technology Australia Mr. Benn Wheeler
⑤ Idemitsu Kosan Co., Ltd. Mr. YOSHIDA Yuzo
⑥ Nippon Steel Corporation Mr. YAMADA Kiichi

Closing Remarks



JCOAL / President Mr. TSUKAMOTO Osamu

5. Symposium Minutes

The 34th Clean Coal Day International Symposium (2025)

[VIP Address]

Opening Remarks by Chairperson WATANABE Toshifumi of JCOAL

Ladies and gentlemen,

Welcome to the 34th Clean Coal Day International Symposium.

First, I sincerely thank everyone who made this symposium possible, especially our co-organizers, as well as all the speakers and participants joining from around the world.

This year's theme is “Decarbonization and Just Energy Transition.”

Electricity demand is rising rapidly due to AI, data centers, and the semiconductor industry. Stable and affordable power is essential for society, and coal - when combined with diverse energy sources and low-CO₂ technologies - continues to play an important role.

Global challenges, including the situation in Ukraine, uncertainties in the Middle East, and policies supporting coal in the U.S., highlight the importance of energy security for many countries. Achieving decarbonization realistically requires flexibility, efficiency, and adoption of new technologies, tailored to each country's needs. JCOAL is actively addressing these challenges every day.

*At the end of the symposium, we will issue the **JCOAL Statement** and share the **JCOAL e-book 2025**, summarizing today's discussions and highlighting carbon-neutral initiatives from Japan and overseas.*

I hope today's discussions will provide valuable insights and guide us all toward a realistic and sustainable energy transition.

Thank you very much, and I wish you a productive and engaging symposium.



Welcome Remarks by DG WAKUDA Hajime of Natural Resources and Fuel Dept, ANRE, METI



Ladies and gentlemen,

I would like to start by warmly welcoming all of you joining us from around the world.

The Clean Coal Day International Symposium was established in 1992, when then Ministry of International Trade and Industry designated September 5 as “Clean Coal Day.” This year marks the 34th symposium, and I'm honored to join for the second time, following last year.

Today, the energy and resource environment is facing many uncertainties - geopolitical risks like the situation in Ukraine and tensions in the Middle East, rising electricity demand from AI and data centers, the need to strengthen supply chains, and the challenge of developing and deploying low-carbon technologies quickly.

In Japan, our 7th Basic Energy Plan, approved this February, emphasizes stable energy supply while expanding low-carbon power. Coal remains an important energy source because it is reliable, cost-effective, and easy to store. We aim to maintain a 60% self-sufficiency ratio by 2040 and are taking steps, such as securing mining rights and long-term supply contracts, to ensure stable coal supply.

At the same time, Japan is accelerating the shift to decarbonized coal-fired power using hydrogen, ammonia, and CCUS. For example, ammonia co-firing trials at HEKINAN Power Station reached 20%, and next-generation high-efficiency coal projects with CO₂ capture are underway at Osaki Cool Gen in Hiroshima. These efforts support both domestic and global energy stability and decarbonization.

At this symposium, I look forward to discussing how coal can be used responsibly to meet growing electricity demand while supporting the global transition to carbon neutrality. Decarbonization is a challenge that crosses borders, and I hope today's discussions open new perspectives for all of us.

Thank you very much.

Welcome Remarks by ED Dr. IIMURA Akiko of NEDO

Ladies and gentlemen,

I'd like to start by sincerely thanking Chairperson Watanabe, President Tsukamoto, and all the members of the Carbon Frontier Organization for their dedication. I also extend my gratitude to the international organizations, government representatives, and companies joining us today for your support and participation.

This year, our symposium theme is "Decarbonization and Just Energy Transition." It reflects Japan's ongoing efforts toward achieving carbon neutrality by 2050.

Last year, at COP29, Japan called for the simultaneous achievement of decarbonization, economic growth, and energy security, helping to build a common understanding among countries. At the 2nd AZEC Summit, we confirmed that partner countries would accelerate regional strategies for practical and realistic energy transition, contributing to global decarbonization.

In Japan, the 7th Basic Energy Plan, approved this February, highlights the important role of thermal power in meeting electricity demand and maintaining grid stability, while promoting next-generation high-efficiency technologies, such as ammonia co-firing and IGCC.

Under this plan, NEDO has been developing ammonia co-firing technology for existing coal-fired power plants. By last June, we successfully demonstrated 20% co-firing, and we are now working on technologies for even higher ratios, including over 50% and full ammonia firing.

At Osaki Cool Gen in Hiroshima, we successfully demonstrated coal and biomass gasification with CO₂ capture - the first project of its kind in the world—and this year we are improving IGCC flexibility to further support decarbonization.

We are also advancing carbon recycling technologies, capturing CO₂ from power plants and factories and turning it into new products like e-Fuels and chemicals. A R&D demonstration Base for Carbon Recycling at Osaki Cool Gen has been operational since September 2022.

Next month, NEDO will co-host the International Conference on Carbon Recycling in Osaka, alongside METI, and companies are showcasing carbon recycling initiatives at the Osaka-Kansai Expo. Climate change is a global challenge, and through technology development and demonstration, NEDO is contributing to solutions both in Japan and around the world.

Thank you very much.



Keynote Address by Dr. Nuki Agya Utama, Head of Asia Zero Emission Center, ERIA Collaborative Effort to Achieve an Affordable and Just Energy Transition in Southeast Asia



Ladies and gentlemen,

I would like to highlight the strategic research programs of our Center. These focus on three main areas: 1) developing decarbonization roadmaps, 2) conducting sector-specific studies, and 3) establishing and strengthening markets. Our activities are guided by the AZEC principles of the "Three Breakthroughs" - simultaneously achieving climate action, economic growth, and

energy security—and the concept of "one goal, diverse transitions."

Looking at Asia, particularly ASEAN, energy demand is expected to grow rapidly, rising 30% by 2030 and 170% by 2050 alongside economic growth. Meeting this demand with renewable energy alone will be extremely challenging. Coal demand, especially in the short to medium term, is expected to increase. To achieve a balanced approach between coal use and decarbonization, key strategies include co-firing with ammonia and biomass, implementing CCUS, ramping up coal-to-hydrogen/ammonia production after 2030, and improving coal-fired power efficiency. These three technologies are the highest priority. Currently, CCS and co-firing face early-stage challenges, making policy support essential. Financial

support and the establishment and strengthening of carbon markets are also critical. Our Center's main activities are carried out through four pillars: the Asia Transition Finance Study Group, the Technology List and Perspective, the ASEAN CCU Network (ACN), and the development of carbon markets.
Thank you.

Keynote Address by Mr. Mike Teke, Chair of FutureCoal Global Alliance Decarbonization Efforts in the Industry

Ladies and gentlemen,

The world population is expected to reach 8.5 billion by 2030 and 9.7 billion by 2050. As we consider the energy, food, and water needed to sustain the prosperity of an additional one billion people, we are gathered in an era of unprecedented challenges. Across every sector of the global economy—from AI to data centers—more electricity and greater resilience are required. Yet, somehow, coal has been left out of many energy discussions. Now is the time to focus on coal.



Last year, global coal consumption reached a record 8.77 billion tons, double the amount in 2004. Coal remains an essential foundation of the modern economy. The key question today is not whether we need coal, but how we can decarbonize it.

At FutureCoal, we have developed the Sustainable Coal Management (SCS) framework, structured around three pillars: before combustion, during combustion, and after combustion.

The 1st pillar, before combustion, focuses on innovation in mining. We are optimizing extraction, processing, and logistics using advanced technologies, including AI-driven precision mining—for example, autonomous vehicles and electric trucks from Komatsu in Japan.

The 2nd pillar, combustion technology, involves high-efficiency coal power generation. Japan operates some of the world's most efficient coal-fired power plants, achieving thermal efficiency of up to 45%. Around the world, examples include 20% ammonia co-firing at JERA in Japan, carbon capture in China, and the Kusile Power Station in South Africa.

The 3rd pillar, after combustion, focuses on utilizing coal and coal waste to produce high-value products, such as graphene, carbon fiber, and enhanced cement from fly ash. Coal and fly ash also contain critical minerals like lithium, cobalt, and rare earth elements, attracting strategic investment and creating new markets.

Coal is therefore becoming a foundation for advanced manufacturing, resource security, and industrial innovation. But these developments require funding. FutureCoal has launched a Fair and Equitable Fund campaign, reaching over 700 governments, financial institutions, and investors, supporting investments in both coking and thermal coal.

Over the past 30 years, Japan has faced some of the toughest energy security challenges among developed nations and has courageously pursued cleaner, more efficient, and flexible coal use. Going forward, Japan must lead the world in advancing coal transformation under the SCS framework. Thank you.

**Featured Speech by Mr. TERAZAWA, Chairman & CEO, The Institute of Energy Economics, Japan (IEEJ)
Coal's Strategic Role in the Energy Transition**



*Ladies and gentlemen,
Global electricity demand continues to grow, and by 2050, emerging and developing economies – EMDEs - are expected to account for about 70% of the world's demand. Coal-fired power will continue to play an important role in these regions, with 93% of coal power plants projected to be located in EMDEs by 2050.*

In Japan, electricity demand was declining until recently, but the return of data centers and semiconductor factories is reversing

this trend, driving structural changes in power demand. Meanwhile, coal power construction in China and India is remarkable: China's under-construction capacity exceeds Japan's total generation, and planned projects would more than double it. In India, current and planned coal plants exceed half of Japan's total generation capacity. These trends suggest rising coal demand and a growing share in global coal trade.

In the United States, recent policy changes are revitalizing the coal industry, emphasizing coal's role in ensuring stable supply for large-scale demand from AI and data centers. In Japan, the 7th Basic Energy Plan recognizes coal's importance for backup power and supply flexibility. Coal remains essential in sectors where electrification is difficult and CO₂ reduction is challenging, accounting for about 10% of primary energy supply even in 2040.

Looking ahead, uncertainties in supply and demand create risks. Cooperation between producing and consuming countries, long-term contracts, infrastructure maintenance, and coordination among users are all crucial.

Clean coal use is essential. SO_x, NO_x, and particulate emissions must be minimized. Japan's Isogo coal-fired power plant demonstrates near-zero emissions, and Japanese expertise can help emerging economies reduce emissions. Financial support, technology transfer, and education are all needed.

Decarbonization measures, such as biomass or ammonia co-firing, are effective, with fluidized bed boilers suited for biomass and pulverized coal boilers for ammonia. CCS is also a practical option, though cost remains a challenge.

Coal is not disappearing; it is evolving. It will continue to play a key role in meeting rising electricity demand globally, supporting sectors that are difficult to electrify, and enhancing energy security. By combining clean coal technologies, international cooperation, and long-term strategies, we can achieve both stable supply and environmentally responsible use.

Thank you.

Featured Speech by The Honourable David Crisafulli MP, Premier and Minister for Veterans, The State Government of Queensland, Australia

*Ladies and gentlemen,
Queensland is open for business, and this certainly includes the coal industry. We are committed to supporting coal, and we actively welcome investment. Today, we are honored to have the Chair of the Queensland Resources Council with us, highlighting that one-third of employment in the resources sector is related to coal—demonstrating the importance of our industry and our strong relationship with Japan.*

10 months ago, the people of Queensland voted for change,



and they chose a government that stands as a friend of the coal industry. We will not retreat from that commitment. Our state is rich in mineral resources, and Japanese investment has been central to making Queensland one of the world's leading coal producers.

Coal-fired power plays a vital role, particularly in emerging economies, in supporting growing economies and providing access to opportunities while energy transitions take place. Our senior public officials, including the state's top bureaucrats, are here to underscore that Queensland's coal supply is reliable and long-term.

Our new government has clearly demonstrated support for the coal industry, approving eleven new or renewed mining leases in a short period. While others may consider withdrawing from coal, we continue to embrace the challenge.

One of my first actions was to establish a Mining Advisory Committee as a Cabinet subcommittee, chaired by our Deputy Premier, who also oversees state development planning. The Minister for Mines serves on the committee, ensuring fast and transparent approval processes while addressing concerns about royalty arrangements and maintaining a stable investment environment.

We recognize the importance of maintaining environmental standards, responsible coal sourcing, and advancing decarbonization and new technologies. Coal will continue to play a role as part of a balanced energy mix.

Queensland has a diverse economy, including tourism, agriculture, education, and medical research, but mining remains a cornerstone. The people of Queensland have chosen a government that supports the mining sector and intend to continue investing in coal.

Finally, I want to express our gratitude to Japanese companies and ask for continued investment and collaboration. Our relationship with Japan is built on long-standing friendship, trust, and confidence, and we aim to take our partnership to the next level.

Thank you.

[Minutes of each Session]

Session 1 Minutes

In Session I, presentations were delivered by representatives from the US, ASEAN, China, Australia, India, Poland, and the EU on current perspectives toward coal. In emerging economies such as China, India, and ASEAN, demand continues to rise, and coal remains a key fuel in these regions.

Mr. Goudarzi from the U.S. DOE emphasized that coal-fired power remains a critical baseload, marking a shift from previous expectations. As Professor Kikkawa also noted, this contrasts with the COP vision of an early, phased reduction of coal and fossil fuels to achieve 1.5-degree carbon neutrality. Mr. Suwanto from ACE highlighted that immediate coal phase-out poses serious risks to mining, energy security, affordability, and economic growth, making rapid elimination extremely difficult.

As discussed in Session II, a fast, large-scale phase-out of coal-fired power is not realistic. Without alternatives to mitigate the impact of coal power, the introduction of low-carbon technologies becomes essential. Technically, coal-fired power could be carbon-neutral by 2050 if CCUS were fully implemented, but the challenge is the high cost of these decarbonization technologies.

The critical question is whether citizens and industry can bear the additional costs of implementation. Professor Kikkawa emphasized that innovation to reduce costs and maximizing the use of existing infrastructure are essential to make this transition feasible.

Session 2 Minutes

The participant suggested that viewing coal not just as a fuel but as a material can itself be a form of energy transition. For example, coal can be used to produce thin yet strong steel sheets, and this can improve fuel efficiency in various applications. This represents a tangible outcome and value of coal. Quantifying it precisely may be challenging, but the key is to look beyond individual cycles or single technologies.

Combining coal with other sectors and working together across fields could help optimize the system as

a whole. The important question is which reduces CO₂ more—improvements in isolated areas or improvements achieved through cross-sector integration. It was suggested that integrating multiple sectors often allows greater flexibility and leads to larger overall CO₂ reductions.

Focusing solely on power generation efficiency can limit options. A more flexible, holistic approach is itself a form of energy transition, and this is where coal truly demonstrates its value. It was also emphasized that communicating this message more strongly and show how coal contributes to broader, system-wide decarbonization.

Session 3 Minutes

The discussion focused on Decarbonization and Just energy transition policies. The participant stated that it is not always necessary to think solely by back casting from a carbon-neutral target; forecasting - including considerations of energy security - is equally important.

At the same time, an important nuance is often overlooked. Carbon neutrality does not mean reducing greenhouse gas emissions to zero. Japan's upcoming 7th Energy Plan, for example, clearly states that even after achieving carbon neutrality, natural gas will remain an important heat source. Previously, the power and gas industries assumed that after carbon neutrality, fossil fuels could no longer be used. However, a more practical approach is emerging, where carbon neutrality can coexist with some continued use of fossil fuels, provided that emissions are balanced by absorption or capture.

This does not make the challenge easier. On the contrary, it requires rigorous technological development. If fossil fuel use continues, emissions may rise, making it necessary to accelerate the adoption of low-carbon technologies - such as ammonia co-firing in coal, hydrogen conversion of gas plants, CCUS, and DAC - as well as develop robust offset mechanisms.

Energy Security with Decarbonization Symposium 2025

[VIP Address]

Opening Remarks by Chairperson WATANABE Toshifumi of JCOAL

Ladies and gentlemen,

It is my great pleasure to welcome you to the Energy Security with Decarbonization Symposium 2025.

First of all, I would like to express my sincere gratitude to our co-organizer, JOGMEC, as well as to the embassies, international organizations, and many other partners for their generous support in making this event possible.

Some of you may have also joined yesterday's Clean Coal Day International Symposium, where we discussed coal utilization and decarbonization measures. Today, on the second day, we will focus on the role of coal resources and their stable supply.

We are honored to have distinguished speakers from around the world joining us in person and online. I would like to extend my heartfelt thanks to all keynote speakers, session presenters, and participants for their valuable contributions.

This year's theme, "Coal Strategy for a New Era - The Role of Coal in Energy Security," reflects the growing global attention on energy security. As energy demand continues to rise, ensuring a stable and reliable international supply chain of critical resources - including coal, coking coal, and thermal coal - is becoming increasingly vital.

Today's discussions will focus particularly on upstream challenges, including new mine development and the sustainable supply of coal as part of a diverse energy mix that supports stable economic growth. We are also privileged to hear from distinguished guests, including Professor Krutka from the University of Wyoming, Mr. Fitzpatrick from the Alaska Department of Natural Resources, and Mr. Daniel from the Global CCS Institute, as well as keynote addresses from FutureCoal's Mr. Baruya and JOGMEC's Executive Vice President Mr. Kubota.

In the session titled "Energy Security as a Global Challenge ~ Ensuring Stable Supply of Resources," we will hear insights from representatives from South Africa, Australia, and Japanese industries. The discussion will go beyond thermal coal to include coking coal and the broader challenges of maintaining stable resource supply chains.

I hope today's symposium will serve as a platform for all participants to share valuable insights and perspectives on the essential role of coal and its stable supply in supporting our societies.

Thank you very much.



Welcome Remarks by Mr. TAKAHARA Ichiro, Chairman and CEO, JOGMEC

I would like to begin by expressing my sincere gratitude that we are once again able to hold this symposium, and that so many of you, including online participants, have joined us today.

This event was spun off from the Clean Coal Day International Symposium to focus specifically on upstream coal resource development. This year's theme, "Coal Strategy for a New Era - The Role of Coal in Energy Security," reflects the growing importance of discussing how coal should position itself in a changing global environment.

In Japan, the government approved the 7th Strategic Energy Plan this February, which outlines several possible energy mix scenarios toward carbon neutrality. Even within this framework, coal continues to



be recognized as an important resource for ensuring stable energy supply.

Globally, coal demand remains strong, particularly in Asia, where electricity needs continue to rise. Despite the global shift toward decarbonization, coal remains a vital energy source for many countries due to its reliability and economic efficiency.

While Japan is steadily phasing out inefficient coal-fired power plants, coal will, for the time being, remain essential for our energy security. At the same time, as producing countries adopt carbon-neutral policies, ensuring stable supply is becoming an increasing challenge.

I hope today's symposium will provide an opportunity for active discussion from multiple perspectives on how we can balance energy security and decarbonization - two goals that must advance hand in hand.

Thank you very much.

Keynote Address by Mr. Paul Baruya, Director Strategy & Sustainability, FutureCoal Global Alliance

Ensuring Stable Global Resource Supply: A Preliminary Exploration

As our new Chairman, Mike Teke, stated yesterday, the demand for resources is accelerating at an unprecedented pace. Resource security is no longer a peripheral issue - it is one of the defining challenges of the 21st century. Energy, minerals, food, and water form the foundation of every economy, yet all are increasingly threatened by geopolitical tensions, climate pressures, and fragile supply chains. Without securing these, there can be no growth, stability, or prosperity.



Ensuring stability requires international cooperation and a careful balance among security of supply, sustainability, and affordability. The path forward lies in diversifying supply sources and transport routes, leveraging innovation such as urban mining and digital monitoring, building long-term partnerships based on trust, and aligning policies to enable a balanced and predictable transition.

The COVID-19 pandemic exposed vulnerabilities in global supply chains, and the Russia-Ukraine conflict further destabilized resource flows. Since 2022, coal demand has rebounded sharply—especially in Asia—surpassing 9 billion tons in 2024, the highest level in history. Contrary to earlier forecasts, demand is expected to remain elevated at least through 2027.

Unlike oil and gas, coal's supply chain is diverse, decentralized, and flexible. Major suppliers such as Australia, Indonesia, the US, South Africa, Russia, and Colombia can complement each other when disruptions occur. There has never been a precedent of coal supply being cut off due to war. By contrast, renewable energy depends heavily on critical minerals like lithium and rare earths, whose extraction and refining are concentrated in only a few countries, making the system inherently fragile.

From this perspective, Japan's experience is instructive. Despite scarce domestic resources and dependence on imports for 90% of its primary energy, Japan has turned vulnerability into resilience. Rather than abandoning coal, Japan has pursued high-efficiency and low-emission technologies, ammonia co-firing, and hydrogen utilization. Even after the Fukushima crisis, Japan maintained stable energy supply through trusted international partnerships and strategic investments.

By contrast, when the UK phased out coal, it became more dependent on gas and faced soaring electricity prices, exposing its vulnerability. This demonstrates that losing balance undermines both energy security and economic stability.

In conclusion, global resource demand will inevitably expand. Resources are not something to eliminate, but something to manage wisely. FutureCoal will continue to promote global collaboration and innovation under sustainable coal utilization. Together, we can move from fragile dependency toward resilient and secure prosperity for the generations to come.

**Featured Speech by Prof. Dr. Holly Krutka Executive Director, School of Energy Resources, University of Wyoming, U.S.
U.S. CCS/CCUS Hubs: Trends and What Lies Ahead**

Wyoming is the largest coal-producing state in the US, and we are actively exploring ways to use coal not just as a fuel, but as a valuable resource. At our university, we are developing research in two main areas: pyrolysis and solvent extraction. We are constructing a demonstration plant in Gillette with a capacity of 10 to 11 tons per day, exploring applications such as asphalt, building materials, soil amendments, water treatment membranes, and graphite. In particular, soil amendments show great potential, as initial results indicate significant improvement in plant growth and overall yield when added to soil.



Wyoming is also fully prepared to advance CCUS hub initiatives. The state has extensive experience with CO₂ capture and utilization, including enhanced oil recovery at Exxon facilities. More recently, efforts have shifted toward dedicated CO₂ storage and expanded industrial use. Wyoming holds permitting authority for Class VI wells and is actively developing an investment environment for data center developers and other stakeholders.

With support from the US Department of Energy, the CarbonSAFE project is progressing at four key sites:

- *CO₂ storage investigations at the Dry Fork power plant, the newest facility in the U.S.*
- *Drilling tests at Williams' Echo Springs site*
- *Sweetwater Carbon Storage Hub, integrating industrial emissions and rail transport*
- *The Basalt project in Oregon, studying CO₂ mineralization in saline formations*

Collaboration between Wyoming and Japan has also been growing. Initial partnerships included CO₂ capture demonstrations with Kawasaki Heavy Industries and discussions led by Governor Gordon with various Japanese stakeholders. Wyoming is now well positioned as an ideal site for a CCUS hub, ready to support international cooperation and innovation.

**Featured Speech by Mr. Ryan Fitzpatrick, Commercial Manager, Division of Oil & Gas, Alaska Department of Natural Resources, U.S.
CCS in Alaska - Regulatory and Commercial Factors for Transoceanic CO₂ Transport**

In 2024, Alaska enacted a new CCUS law, HB50, establishing a framework for leasing subsurface pore space on state land and obtaining permitting authority from the federal government for Class VI wells for CO₂ storage.

The Cook Inlet Basin, a primary candidate site, contains both onshore and offshore oil fields and faces tidal waters, making it suitable for vessel access. This provides excellent conditions for transporting and storing CO₂ from overseas. Alaska is the only U.S. state seriously exploring the import of CO₂ from the Asia-Pacific region for subsurface storage.

International regulations such as the London Protocol (amended in 2009 to allow transboundary CO₂ transport) and the Basel Convention on hazardous waste are relevant. While the U.S. has signed the London Protocol, it has not ratified it, making a bilateral agreement with Japan necessary. Domestically, the Safe Drinking Water Act (SDWA) governs Class VI wells, requiring rigorous permitting including geological surveys and risk assessments. The Alaska Oil and Gas Conservation Commission (AOGCC) aims to secure this authority and plans to submit an application within the year.

Alaska owns about one-third of its land and retains mineral rights, including subsurface pore space, and federal lands as well as lands held by Alaska Native Corporations can also be used for CCS purposes. Key commercial considerations include geological conditions, distance from emission sources, land transport infrastructure, oil and gas activity, skilled workforce, and environmental regulations.

Three particularly important commercial factors stand out:

- *Enhanced profitability through CO₂ use for EOR (enhanced oil recovery).*
- *Port development in the Aleutian Islands for potential future transportation hubs supporting military and Arctic shipping routes.*
- *Multi-purpose tankers capable of transporting hydrogen or ammonia outbound and CO₂ inbound, reducing transportation costs.*

Japanese companies, including Sumitomo Corporation and Kalein Co., Ltd., are studying CO₂ export projects from Japan to Alaska, highlighting the state's strong interest in international collaboration.



**Featured Speech by Mr. Jarad Daniels, CEO, GCCSI
Global CCS Update: Progress, Challenges, and What Comes Next**

Worldwide, over 700 CCS projects are in development, with around 70 operational projects capturing 60 million tons of CO₂ annually. Another 48 under construction could raise capacity to 100 million tons, but this is still far below the gigaton scale needed for climate targets.

Applications are expanding beyond gas processing and fertilizer production to cement, power generation, LNG, hydrogen, bioenergy, and ethanol. Low-carbon hydrogen and BECCS are especially important for future decarbonization.

Infrastructure is growing, with more CO₂ pipelines and shipping, and large-scale storage is being developed globally. Regulatory and financial frameworks are advancing as well, including non-recourse project financing in the UK. North America and Europe remain leaders, China is scaling up cement and coal CCS, the Middle East is developing hubs, and Africa is beginning discussions through the CCUS Forum.

In Japan, nine projects supported by METI are progressing, with Japanese companies leading in CO₂ shipping and low-concentration capture technologies.



In short, CCS is essential for gigaton-scale CO₂ removal, and international cooperation on infrastructure, regulation, finance, and technology is critical to accelerate global deployment.

Keynote Address by Mr. KUBOTA Hiroshi, Executive Vice President, JOGMEC JOGMEC'S Role & Contribution to Coal Stable Supply for Energy security

JOGMEC is a government agency dedicated to ensuring Japan's stable energy and resource supply. While originally focused on oil and metal exploration, stockpiling, and risk financing, JOGMEC now also covers coal and geothermal development, as well as carbon-neutral areas such as hydrogen, ammonia, offshore wind, and CCS.



Coal operations are guided by Japan's Strategic Energy Plan, which recognizes coal as essential for energy security. JOGMEC aims to maintain 60% of its self-developed coal interests through 2040. However, with divestment from commercial coal projects progressing globally, stable supply has become a concern. To address this, JOGMEC supports securing long-term coal procurement contracts.

Japan faces several energy security risks. Supply-side challenges include the withdrawal of resource majors, reduced reserve access, higher development costs, and limited financing. On the demand side, Japan's power plants require high-quality coal, and growing renewable deployment shifts coal to a balancing role. Additionally, the rise of AI-driven data centers may significantly increase electricity demand, making future coal demand uncertain.

JOGMEC supports private companies across all stages of coal development, from exploration to production. Activities include overseas geological surveys, feasibility studies, joint investigations, training programs, financial support, and technical assistance. In Australia, for example, JOGMEC provides support in methane capture, mine-site power generation, green energy utilization, and smart mine development, improving operational efficiency while promoting decarbonization.

Through these efforts, JOGMEC ensures stable coal supply for Japan while supporting energy security and sustainable operations globally.

[Discussion Summary]

The participant emphasized the importance of cost and affordability in ensuring stable resource supply. Over the past two days, discussions highlighted the growing energy demand from data centers, semiconductors, and other energy-intensive sectors. This will directly affect future energy prices and a nation's competitiveness.

As an example, China imported 540 million tons of coal last year, 45% of which came from Indonesia. From 2006 to 2023, China invested heavily in Australian coal development, with 51% of its \$45 billion investment allocated to coal mines. While China restricts domestic coal development, investment has still grown about 30% between 2015 and 2024. Similar trends are observed in India.

Given these dynamics, it is essential to consider upstream investment and stable supply at competitive prices, not as a confrontation with China, but to ensure the continued sustainable use of coal globally. Historical price spikes, such as in 2021–2022, remind us of the strategic importance of price competitiveness.

Finally, the participant noted that as electricity demand from manufacturing and data centers continues to grow, national strategies must account for stable supply and cost efficiency. At the same time, the most important factor remains the efforts of individual companies to develop and use coal competitively.

6. List of Special Support by Embassies, State Governments, Local Governments, etc

特別協力・Special Support



大使館・Embassy



オーストラリア大使館
Australian Embassy Tokyo



コロンビア共和国大使館
Embassy of the Republic of Colombia



マレーシア大使館
Embassy of Malaysia in Tokyo



モザンビーク共和国大使館
Embassy of the Republic of Mozambique in
Japan



ポーランド共和国大使館
Embassy of the Republic of Poland in Japan



セルビア共和国大使館
Embassy of the Republic of Serbia in Japan



アメリカ合衆国大使館
Embassy of the United States of America in
Japan



中華人民共和国大使館
Embassy of the People's Republic of China in
Japan



チェコ共和国大使館
Embassy of the Czech Republic in Tokyo



フィリピン共和国大使館
Embassy of the Republic of the Philippines in
Japan



タイ王国大使館
Royal Thai Embassy Tokyo



南アフリカ共和国大使館
Embassy of the Republic of South Africa

州政府・State Governments



オーストラリア・ニューサウスウェールズ州政府
駐日事務所
New South Wales Government, Australia



オーストラリア・クィーンズランド州政府
Queensland Government, Australia



オーストラリア・ビクトリア州政府
Victorian Government Trade and Investment
Tokyo Office, Australia

7. Special Messages from HE Ambassadors

Australian Embassy Tokyo



AUSTRALIAN EMBASSY
TOKYO

24 July 2025

Mr Tsukamoto Osamu
President
Japan Carbon Frontier Organization
3F, Daiwa Nishi-Shimbashi Building, 3-2-1
Nishi-Shimbashi, Minato-ku
Tokyo 105-0003

**34th Clean Coal Day in Japan International Symposium (2025) and
Energy Security with Decarbonization Symposium 2025**

Dear Mr Tsukamoto,

I write to express my thanks to the Japan Carbon Frontier Organization and your partner organisations METI, NEDO and JOGMEC for organising the 34th Clean Coal Day in Japan International Symposium and the Energy Security with Decarbonization Symposium. It is remarkable to think this event has been running since 1991.

Japan has been a key investor and partner in Australia's coal sector over many decades. Traditional energy resources like coal remain a key component of the Australia-Japan resources trade, as both our countries work toward energy transition.

Our countries can cooperate closely to advance decarbonisation goals, including through low-emissions technologies, such as carbon capture, utilisation and storage

Australia is committed to working with the Japanese Government and private sector to support energy security and decarbonisation in Japan and our wider region.

Thank you again and I wish you and the participants in both events a fruitful discussion.

Yours sincerely



Dan Glover
Counsellor (Industry, Science and Resources)
Australian Embassy Tokyo

Embassy of the Republic of Colombia



S-EJPTK-25-147

Tokyo, July 22, 2025

Mr.
Osamu TSUKAMOTO
President
Japan Carbon Frontier Organization
Tokyo

Ref.: Nominal support for the 34th Clean Coal Day International Symposium
2025 and the Energy Security with Decarbonization Symposium 2025

Dear Mr. TSUKAMOTO,

I am honored to receive your letter requesting nominal support for the 34th Clean Coal Day International Symposium 2025 and the Energy Security with Decarbonization Symposium 2025. In this regard, I am pleased to grant the Embassy's nominal support for both symposia.

I would like to highlight that Colombia is firmly committed to a Just Energy Transition and achieving Net-Zero emissions by 2050, with an ambitious interim goal of a 51% reduction in greenhouse gas emissions by 2030. Our energy sector is actively pursuing diversification and decarbonization through significant investments in non-conventional renewable energy sources like solar and wind and promoting green and blue hydrogen.

We believe these symposiums offer valuable platforms for global collaboration towards a sustainable energy future.

Along with my sincere appreciation, please accept my best wishes for the success of the 34th Clean Coal Day International Symposium 2025 and the Energy Security with Decarbonization Symposium 2025.

Sincerely yours,



GUSTAVO MAKANAKY CÓRDOBA
Ambassador

EMBASSY OF THE REPUBLIC OF COLOMBIA
3-10-53 KAMIOSAKI SHINAGAWA-KU TOKYO 141-0021 JAPAN
TEL (81-3) 3440-6451 - FAX (81-3) 3440-6724
<https://japon.embajada.gov.co/> - ejapon@cancilleria.gov.co
Tokyo, Japan

Embassy of Malaysia in Tokyo



KEDUTAAN BESAR MALAYSIA
(EMBASSY OF MALAYSIA)
20-16 Nanpeidai-cho
Shibuya-ku
Tokyo 150-0036
JAPAN

Telephone: +813-3476 3840
Fax: +813-3476 4971
E-mail: mstokyo@kln.gov.my

SR(037)-35/5 (26)
18 July 2025

Mr. TSUKAMOTO Osamu
President
Japan Carbon Frontier Organization (JCOAL)
3F Daiwa Nishi-Shimbashi Building
3-2-1, Nishi-Shimbashi, Minato-ku, Tokyo
105-0003 JAPAN

Dear Mr. Tsukamoto,

REQUEST FOR NOMINAL SUPPORT TO THE 34th CLEAN COAL DAY IN JAPAN INTERNATIONAL SYMPOSIUM (2025) AND ENERGY SECURITY WITH DECARBONIZATION FORUM 2025

With reference to your letter addressed to H.E. Dato' Shahril Effendi Abd Ghany, Ambassador of Malaysia to Japan on the above matter, I have the honour to inform you that the Embassy of Malaysia in Japan is agreeable to extend its nominal support for the **34th Clean Coal Day in Japan International Symposium (2025) and Energy Security with Decarbonization Forum 2025** which will be held on 4 and 5 September 2025 at the Toranomon Hills Mori Tower, Tokyo.

2. The Government of Malaysia remains committed to advancing regional and international cooperation in the field of energy transition, with particular emphasis on balancing energy security, economic development, and environmental sustainability. Platforms such as the Clean Coal Day Symposium and the Decarbonization Forum serve as valuable avenues for dialogue, knowledge exchange, and collaborative efforts toward a low-carbon future.

3. On behalf of the Embassy, I would also like to take this opportunity to wish you and the organising committee the very best in this important undertaking.
Thank you.

Yours faithfully,


JEFFREY MEYER
First Secretary

for and on behalf of H.E. the Ambassador of Malaysia to Japan



CERTIFIED TO MS ISO 9001:2015
CERT. NO. : QMS 02596

Embassy of the Republic of Poland in Japan



Embassy
of the Republic of Poland
in Tokyo

Tokio, 4. 2025

04 August 2025

Mr. Osamu Tsukamoto
President, Japan Carbon Frontier
Organization

Dear President Tsukamoto,

Thank you very much for your letter seeking nominal support for the 34th *Clean Coal Day in Japan International Symposium 2025* and *Energy Security with Decarbonization Symposium 2025*. It is a great honor for the Embassy of the Republic of Poland in Japan to support such renowned events and to contribute to their successful organization.

Both European Union and Japan are aiming to achieve climate neutrality by 2050. In order to accomplish this goal, we must find synergies with like-minded partners and cooperate with them on implementing cutting-edge technologies. For Poland, Japan is the perfect candidate. We have just celebrated the 10th anniversary of elevating our bilateral relations to a Strategic Partnership in 2015, and we are both dedicated to a gradual energy transition, which involves diversifying the energy mix with a focus on renewables.

Although Poland has been historically heavily dependent on coal, we are making significant progress in replacing this energy source with sustainable alternatives. In 2024, coal's share in Poland's electricity production fell to a record low of 56.2%. At the same time, the share of renewable energy sources (RES) in electricity generation grew to 29.4%. Despite these successes and our dedication to phasing out coal, we are well aware that it will be a long, gradual process. That is why we believe that energy technologies developed by Japan, particularly Carbon Capture Technologies, can significantly contribute to further advancing our energy transition.

Energy cooperation with like-minded countries is important now more than ever. Since the beginning of Russia's brutal and unprovoked aggression against Ukraine, we are constantly reminded about the necessity to improve our energy security via diversifying energy sources, building resilient supply chains and enhancing domestic production capacity.

I sincerely hope that the approaching events will serve as a productive platform for dialogue on energy security and decarbonization among international stakeholders, as well as contribute to enhanced cooperation between countries sharing common challenges and goals in regards to energy transition.

I wish you a very successful conference and fruitful deliberations.

Respectfully yours,

Paweł Milewski
Ambassador

Embassy of the Republic of Serbia



Ambassador of the Republic of Serbia
駐日セルビア共和国大使

August 12, 2025

Mr. Osamu Tsukamoto
President, Japan Carbon Frontier Organization (JCOAL)

Dear Mr. Osamu Tsukamoto,

Let me express my gratitude for your kind letter and invitation for the „34rd Clean Coal Day International Symposium 2025“ to be held on September 4th, 2025 as well as „Energy Security with Decarbonization Symposium 2025“ on the following day, September 5th.

Energy security is very important goal of the Government of the Republic of Serbia. Serbia has very substantial lignite resources which are easily accessible for the exploration. Coal is main source of energy in country and Serbia is determined to accelerate the transition to clean technologies and work toward decarbonisation thus minimising the pollution created by fire plants.

In these challenging times, including process of energy transition, we have to work and cooperate jointly and the Government of the Republic of Serbia is committed to expand the partnership with Japan in the energy sector and to use new technologies and knowledge to accelerate the transition to clean energy and reduce emissions. We highly value efforts of Japanese experts in the protection of the environment, climate change issues and energy security. With the continuation of the cooperation in this field Japanese vast knowledge and know how would be hopefully transferred to our country.

Having that in mind, we consider this Symposium as an valuable opportunity to exchange views and opinions about the coal industry, and its new technologies. It is my great pleasure to confirm our acceptance of support for this significant event.

I would kindly ask Executive Committee for Clean Coal Day for the continuing contribution as this initiative would further contribute to the overall scientific and friendly exchanges between our two countries.

Let me wish you every success with this year's Clean Coal Day International Symposium.

Yours Sincerely,



Aleksandra Kovač
Ambassador

4-16-12 Takanawa, Minato-ku, 108-0074 Tokyo, JAPAN
Tel. +81 (3) 3447-3571, Fax. +81 (3) 3447-3573
Email: srb.emb.japan@mfa.rs Web site: www.tokyo.mfa.gov.rs

Embassy of the People's Republic of China in Japan



中 华 人 民 共 和 国 大 使 馆

August 2025

Mr. TSUKAMOTO Osamu
President
Japan Carbon Frontier Organization
Tokyo

Dear Mr. Tsukamoto,

On behalf of the Embassy of the People's Republic of China in Japan, I would like to extend support and congratulations to the upcoming *34th Clean Coal Day in Japan International Symposium (2025)* and *Energy Security with Decarbonization Symposium 2025*.

The global energy landscape is undergoing profound changes. The joint event, which focuses on decarbonization and pragmatic energy transitions as well as the role of coal in energy security, is of great significance for promoting exchanges and cooperation in the global energy sector, advancing clean and efficient coal utilization, and facilitating the global transition to carbon neutrality.

Xi Jinping Thought on Ecological Civilization identifies green, low-carbon economic and social development as a key component of achieving high-quality development. While making leapfrog progress in new energy, China has been committed to promoting the transformation and upgrading of its coal industry. We are ready to strengthen exchanges and cooperation with all countries including Japan in green energy transition and sustainable development.

I would like to extend gratitude to the organizers for their efforts in promoting global clean energy development, advancing energy security, and facilitating decarbonization process. I sincerely wish the joint event a resounding success!

Best wishes,

WU Jianghao
Ambassador Extraordinary and Plenipotentiary
of the People's Republic of China to Japan

Embassy of the Czech Republic in Tokyo



No. 1771-1/2025-MZV/TOKI



Embassy of the Czech Republic
in Tokyo

The Ambassador of the Czech Republic provides

auspices

for "The 34th 'Clean Coal Day in Japan' International Symposium (2025)" and
the "Energy Security with Decarbonization Symposium 2025" which will be held
from 4th September 2025 to 5th September 2025 in Tokyo.

Martin Klužar
Ambassador of the Czech Republic

Tokyo, 4 August 2025

Embassy of the Republic of South Africa



Embassy of the Republic of South Africa
南アフリカ共和国大使館

4th Floor, Hanzomon First Bldg., 1-4, Kojimachi, Chiyoda-ku, Tokyo 102-0083 Japan

Mr Osamu Tsukamoto
President
Japan Carbon Frontier Organisation.
Nish-Shimbashi Minato-ku
Tokyo
105-0003

Re: The 34th Clean Coal Day in Japan International Symposium (2025) and Energy Security with Decarbonisation Symposium 2025

The South African Embassy in Tokyo wishes to extend its heartfelt congratulations on hosting the Clean Coal Day International Symposium. Having enjoyed a long working relationship with yourself, your commitment to advancing energy policy dialogue is commended.

The carbon intensity of the South African economy remains high, with the power sector as the largest contributor. Fossil fuels make up approximately 80% of South Africa's energy mix, with the majority consisting of coal. In response to the need to decarbonise its energy mix, as coal will continue to be used in the foreseeable future, South Africa has established several national strategies to expand renewable energy by accelerating the decarbonisation of key sectors. Through the Just Transition Framework, the Government will oversee and facilitate a Just Transition to a low-emissions and climate resilient economy with a focus on financing for renewable energy and technological advancements. A Carbon Capture Utilisation project has been successfully demonstrated at two sites in South Africa.

As South Africa, we are fully aware that without enhanced international collaboration in support of our decarbonisation efforts, achieving net zero emissions could be delayed by decades. The need for collaboration, investment and innovation to transform the commitments made into actionable interventions, ultimately contributing to the establishment of an equitable and just net zero carbon emission scenario by 2050 is necessary.

Your bringing together experts and stakeholders to explore the future of clean technologies are sure to pave the way for innovative solutions and the strengthening of partnerships.

I wish to convey the Embassy's best wishes to you in hosting the 34th Clean Coal Day in Japan International Symposium (2025) and Energy Security with Decarbonisation Symposium 2025. We look forward to receiving the outcomes of this symposium.

Yours sincerely,



Annelize Schroeder
Charge d'Affaires a.i.

Date: 23 July 2025

Queensland Government, Australia



Premier and Minister for Veterans

DELIVERING
FOR QUEENSLAND



1 William Street Brisbane
PO Box 15185 City East
Queensland 4002 Australia
Telephone +61 7 3719 7000
Email ThePremier@premiers.qld.gov.au
Website www.thepremier.qld.gov.au

MESSAGE FROM THE PREMIER OF QUEENSLAND

Dear Mr Tsukamoto

Thank you very much for the invitation to speak at the 34th Clean Coal Day International Symposium 2025.

Queensland is a trusted supplier of high-quality coal, and the Queensland Government is proud to support our coal industry and the businesses, export partners, and global investors that rely on its continued success.

We are focused on expanding Queensland's coal infrastructure, resource exports, and driving efficiencies in the coal supply chain with private sector industry partners.

The Queensland Government values Japan's continued confidence in, and strong relationship with Queensland and its resources sector. We look forward to collaborating with this important sector into the future.

Yours sincerely

DAVID CRISAFULLI MP
PREMIER AND MINISTER FOR VETERANS

Victorian Government Trade and Investment Tokyo Office



State Government of Victoria, Australia

Victorian Government Trade and Investment
Tokyo Office
12F Fukoku Seimei Building
2-2-2 Uchisaiwai-cho
Chiyoda-ku, Tokyo 100-8011 JAPAN
Telephone: +81 3 3519 3371
global.vic.gov.au | invest.vic.gov.au

Mr TSUKAMOTO Osamu
President
Japan Carbon Frontier Organization
3-2-1 Nishi Shimbashi, Minato-ku
Tokyo 105-0003 Japan

22 July 2025

Dear Mr Tsukamoto,

The 34th Clean Coal Day International Symposium 2025 and the Energy Security with Decarbonisation Symposium 2025

On behalf of the State Government of Victoria, I am pleased to confirm our support for the 34th Clean Coal Day International Symposium 2025 and Energy Security with Decarbonisation Forum 2025 being held in Tokyo, Japan.

As both our governments aim for a target of net zero emissions by mid-century, we applaud Japan in bringing together senior officials in the public and private sectors from across the world to collaborate regarding clean coal utilisation and decarbonisation.

The State of Victoria has provided support since 2008 and greatly values the strong relationship and collaboration between our two jurisdictions - fostering trade, investment and strong people-to-people links. We are particularly interested in the development of new low emission coal technologies and carbon capture and storage, which will continue to provide decarbonisation opportunities and energy security to both Japan and Victoria into the future.

I congratulate the Clean Coal Day International Symposium Executive Committee on the past success of Clean Coal Day events in Japan and wish them every success for this year's planned itinerary.

Yours sincerely,

Adam Cunneen
Commissioner for Victoria to North Asia
Victorian Government Trade and Investment, Tokyo Office



8. List of endorsing Companies/Organizations

#	company name by alphabetical order	page #
1)	Babcock & Wilcox Company, Australia	31
2)	China Coal Technology Engineering Group (CCTEG), China	32
3)	Chugai Technos Corporation, Japan	34
4)	Carbon Recycling Fund Insitute (CRF), Japan	35
5)	Central Research Institute of Electric Power Industry (CRIEPI), Japan	37
6)	Idemitsu Kosan Co.,Ltd., Japan	38
7)	IHI Corporation, Japan	39
8)	Japan CCS Co., Ltd. (JCCS), Japan	41
9)	JERA Co., Inc., Japan	43
10)	J-POWER, Japan	44
11)	Kawasaki Heavy Industries, Ltd. (KHI), Japan	46
12)	Kyushu Electric Power Company, Incorporated, Japan	48
13)	Low Emission Technology Australia (LETA), Australia	49
14)	Sumitomo Heavy Industries, Ltd. (SHI), Japan	51
15)	Taiwan Power Company, Taiwan	53
16)	Tokyo Energy & Systems, Inc., Japan	54
17)	TOPPAN Holdings Inc. (TOPPAN), Japan	55

9. Company Page -> Initiative of Carbon Neutrality

① Babcock & Wilcox (B&W)

<p><i>Company Name</i></p> <p>Babcock & Wilcox (B&W)</p>
<p><i>Business/Activity Outline</i></p> <p>Established in 1867, Babcock & Wilcox (B&W) is a global leader in delivering innovative and reliable energy and environmental solutions for utility and industrial operations. Our proven technologies can be found in some of the world’s most efficient and longest-running facilities, including utilities, pulp & paper mills, petrochemical plants, refineries, cement and chemical processing plants, iron and steel mills, and other industrial facilities around the globe.</p>
<p><i>Message & PR Points (Initiatives towards Carbon Neutrality)</i></p> <p>Throughout our history, we have engineered and supplied steam generation systems that use coal and other readily available fuels safely, cleanly and reliably to meet rising energy demand and provide long-term operation. Our decarbonization technologies provide flexible options for CO₂ capture and clean energy production, including our proprietary BrightLoop™ chemical looping technology that produces steam, hydrogen or syngas from coal, natural gas, biomass, or waste with inherent carbon separation. We are committed to helping our customers power the world for today’s and future generations.</p>
<p><i>Company Profile</i></p> <ul style="list-style-type: none"> • <i>Head Office Location/Address:</i> <u>1200 E Market St, Suite 650; Akron, Ohio 44305 USA</u> • <i>Company/Organization Website Address:</i> <u>www.babcock.com</u> • <i>Contact Point</i> <i>Name (if available):</i> <u>babcock.com/contact-us</u> <i>Department/Division (if available):</i> _____ <i>Position (if available):</i> _____ <i>E-Mail:</i> _____ <i>Phone: (+81)-(0)</i> <u>+1-330-753-4511</u> • <i>Others (if any)</i> _____

② China Coal Technology Engineering Group (CCTEG)

Company Name

China Coal Technology Engineering Group (CCTEG)

Business/Activity Outline

CCTEG boasts a comprehensive scientific and technological innovation system covering all professional fields in the coal industry, and is committed to the safe, green, and intelligent mining of coal as well as its clean, efficient, and low-carbon utilization. The group directly manages over 30 subsidiary enterprises, including CCTEG Japan, which was founded in Tokyo in 2023, aims to foster international cooperation and exchanges with Japanese enterprises, universities, and research institutions, jointly promoting the development and technological innovation of efficient and clean energy with coal at its core.

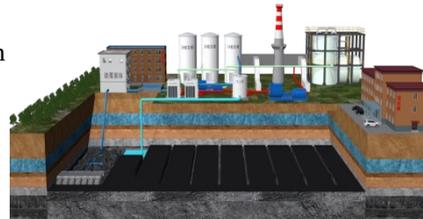
Message & PR Points (Initiatives towards Carbon Neutrality)

We developed a high-efficiency enrichment technology for low-concentration coalbed methane, along with selective adsorption separation technology for methane and nitrogen, we successfully increased the methane concentration in coalbed methane from 20% to over 90%. This effectively avoids the emission of non-CO₂ greenhouse gases, cumulatively reducing carbon dioxide equivalent emissions by over one million tons.



We pioneered fluidized-state rotary furnace combustion technology to address challenges such as the complex sources, variable compositions, and tendencies for ash deposition and slagging of raw biomass. The technology demonstrates excellent combustion adaptability for raw biomass particles not exceeding 20 cm. The combustion efficiency of materials can reach 99%, with atmospheric pollutants achieving ultra-low emissions.

By injecting CO₂ into a slurry mixture of mine water and fly ash and then introducing it into underground goafs of coal mines, we achieved an annual processing capacity of 500,000 tons of fly ash, sequestering approximately 30,000 tons of carbon.



Our zero-carbon factory solution, centered on "green energy supply + digital management," employs technologies such as integrated "photovoltaic-storage-charging" systems, green energy supply, product carbon footprint development, and an energy-carbon digital management platform to achieve precise carbon reduction. We also developed a system for waste heat in coal mines, converting low-grade waste heat into diverse heat sources for building heating and mine shaft freeze protection. At one coal mine, this system achieves reduction of about 15,000 t/yr of CO₂ emissions and saves about 6,000 tons of standard coal.



Company Profile

- **Head Office Location/Address:**

No. 5, Qingniangou Road, Hepingli, Chaoyang District, Beijing, China
Tokyo company: Room 411, 2-2-3 Uchisaiwaicho, Chiyoda-ku, Tokyo

- **Company/Organization Website Address:**

<http://www.ccteg.cn/>

Contact Point

Name (if available): Yang LIU

Department/Division (if available): General Administration Department

Position (if available): Director

E-Mail: liuyang@cctegjp.com

Phone: (+81)-(0) 6807-3991

- **Others (if any)**

Driving sustainable development through technological innovation to tackle global energy and environmental challenges together.

③ Chugai Technos Corporation

Company Name

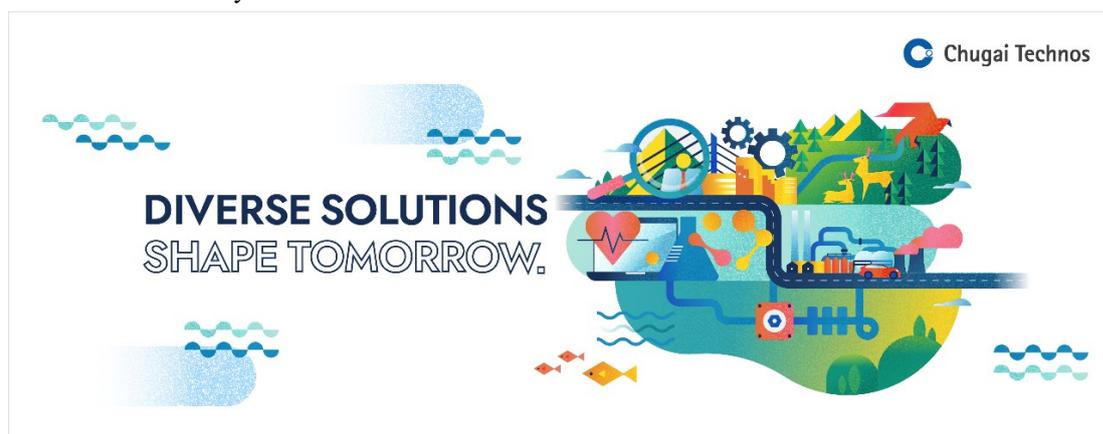
Chugai Technos Corporation

Business/Activity Outline

- Environmental Investigations / Analysis / Consulting / Solutions Resources
- Waste Treatment Consulting ● Construction Consulting ● Structural Surveys
- Material Strength Investigation ● CAE Analysis ● Control Systems Development
- Environmental Biotechnology Research and Development Support ● Non-Destructive Inspections
- Manufacturing/Sales/Services for Quality Inspection and Automation Systems
- Manufacturing/Sales/Services for Medical Facilities
- Maintenance Services for Measuring
- Instruments Equipment Sales (Information/Industry/Medical Fields)

Message & PR Points (Initiatives towards Carbon Neutrality)

We position addressing climate change as the highest priority within our environmental business domain and are committed to measurement, research, analysis, contract-based R&D, and consulting aimed at realizing a carbon-neutral society.



Company Profile

- **Head Office Location/Address:**
9-12 Yokokawa Shinmachi, Nishi-ku, Hiroshima City, 733-0013
- **Company/Organization Website Address:**
<https://www.chugai-tec.co.jp/>
- **Contact Point**
- **Name (if available):** Shigeki Kamada
- **Department/Division (if available):** Environmental Business Division
- **Position (if available):** Sales Dept. General Manager
- **E-Mail:** s.kamada@chugai-tec.co.jp
- **Phone: (+81)-(0)** +81-82-295-2237
- **Others (if any)** _____

④ Carbon Recycling Fund (CRF)

Company Name

Carbon Recycling Fund (CRF)

Business/Activity Outline

CRF is a cross-sector platform dedicated to advancing technologies and social systems that convert CO₂ from an environmental burden into a valuable resource. Our activities span four core areas:

- **Public relations & awareness-building on carbon recycling**
- **Research grants that support innovative CO₂ utilization technologies**
- **CO₂ sinks including forests, biomass, and marine ecosystems**
- **Business support & policy recommendations, enabling real-world implementation**

By connecting industry, academia, government, and local communities, CRF accelerates the transition toward a circular carbon economy.

Message & PR Points (Initiatives towards Carbon Neutrality)

The Carbon Recycling Fund (CRF) promotes the idea that CO₂ is not simply a waste product but a valuable resource that can drive both decarbonization and sustainable economic growth. Through research grants and public outreach, we support innovative technologies that convert CO₂ into fuels, chemicals, and construction materials—advancing practical pathways toward a circular carbon economy.

We foster collaboration across industry, academia, and government, and strengthen international partnerships to accelerate the global implementation of carbon-recycling solutions. In parallel, CRF contributes to natural climate solutions by engaging in initiatives related to CO₂ absorption sources, including forests, biomass, and marine ecosystems, helping to build a more resilient and sustainable society.

Our mission is to create a future in which CO₂ circulates as a resource that supports the next generation.

By working together with partners around the world, we aim to advance meaningful

progress toward carbon neutrality and a sustainable global economy.



Here's the official website 



<https://carbon-recycling-fund.com>



Thank you for your continued support.

➤ [Please click here for detailed information](#)



一般社団法人
カーボンリサイクルファンド



<https://carbon-recycling-fund.jp/>

Company Profile

- **Head Office Location/Address:**
3F Daiichi Misu Building 2-34-7 Nishi-shimbashi, Minato-ku, Tokyo 105-0003 Japan
- **Company/Organization Website Address:**
Info@carbon-recycling-fund.jp
- **Contact Point**
Name (if available): _____
Department/Division (if available): _____
Position (if available): _____
E-Mail: Info@carbon-recycling-fund.jp
Phone: (+81)-(0) +81 3 6432 0011 _____
- **Others (if any)**

⑤ **Central Research Institute of Electric Power Industry (CRIEPI)**

Company Name

Central Research Institute of Electric Power Industry (CRIEPI)

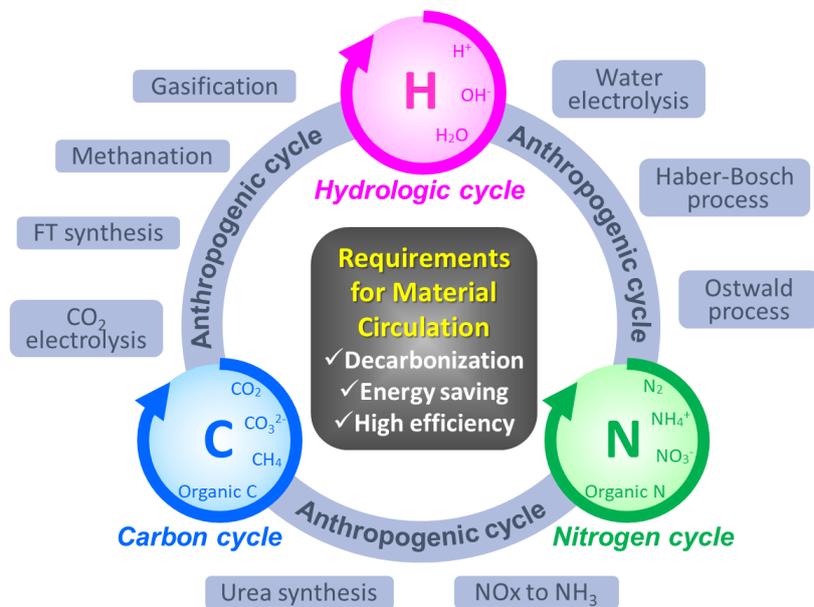
Business/Activity Outline

CRIEPI is a central and academic research institution for the electric power industry that supports the transformation of technology and systems pertaining to the supply and use of electric power and other forms of energy and thus leads technological innovation in the energy industry.

Message & PR Points (Initiatives towards Carbon Neutrality)

“Carbon”, “Nitrogen”, and “Hydrogen (Water)” circulate naturally in the environment and are also utilized in many ways through human activities.

CRIEPI contributes to achieving carbon neutrality by advancing the technologies and systems that support the sustainable circulation of these essential materials.



Company Profile

- **Head Office Location/Address:**
Otemachi Bldg. 7F, 1-6-1 Otemachi, Chiyoda-ku, Tokyo 100-8126
- **Company/Organization Website Address:**
<https://criepi.denken.or.jp/en/>
- **Contact Point**
Name (if available): Hiroyuki Akiho
Department/Division (if available): Energy Transformation Research Laboratory
Position (if available): R&D Strategist
E-Mail: https://criepi.denken.or.jp/cgi-bin/en/inquiry/inquiry_entry.cgi
Phone: (+81)-(0) _____

⑥ Idemitsu Kosan Co.,Ltd.

Company Name

Idemitsu Kosan Co.,Ltd.

Business/Activity Outline

Our mission is to provide a stable supply of energy, and we supply high-quality coal to customers, mainly in Japan. We are also promoting low-carbon solutions, such as the development and production of highly efficient combustion technology for coal boilers and "Idemitsu Green Energy Pellets (IGEP)" a biomass fuel that can be mixed with coal in existing boilers.

Message & PR Points (Initiatives towards Carbon Neutrality)

Idemitsu Kosan supports stable energy supply while accelerating decarbonization.

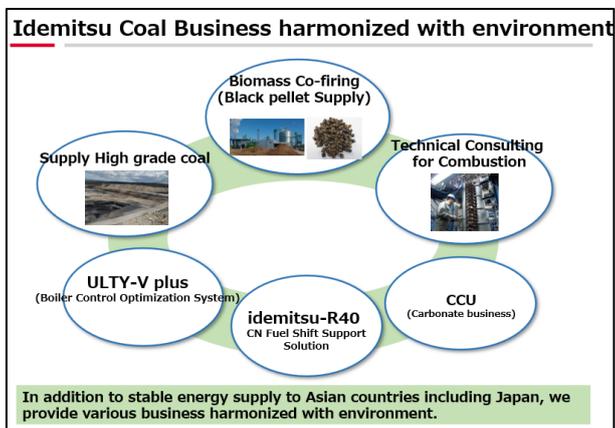
We run a coal supply chain from production to sales, anchored by Idemitsu Bulk Terminal (our Coal Center).

To reduce CO₂ from existing coal boilers, expand biomass co-firing using "IGEP". IGEP are torrefied biomass with coal-like quality, allowing use of existing coal infrastructure and bulk logistics. We manufacture them overseas near feedstock (woody materials and agricultural residues) sources and import them into Japan.

We provide technical consultation to improve combustion and increase co-firing

rates in existing boilers. Via cloud-based DX, idemitsu-R40 offers incoming fuel analysis, co-firing plan formulation, operation monitoring, and data sharing.

We also develop boiler control optimization (ULTY-V plus) and CCU-related carbonate businesses to lower environmental impact.



Company Profile

- **Head Office Location/Address:**

1-2-1 Otemachi, Chiyoda-ku, Tokyo, Japan

- **Company/Organization Website Address:**

<https://www.idemitsu.com/en/business/coal/index.html>

- **Contact Point**

Name (if available): Takao Niina

Department/Division (if available): Coal and Energy Solution Department

Position (if available): Manager

E-Mail: takao.niina.7390@idemitsu.com

Phone: (+81)-(0) -80-8017-3006

- **Others (if any)**

⑦ IHI Corporation

Company Name

IHI Corporation

Business/Activity Outline

4 Business Area: Resources, Energy & Environment / Social Infrastructure / Industrial Systems & General-Purpose Machinery / Aero Engines, Space & Defense

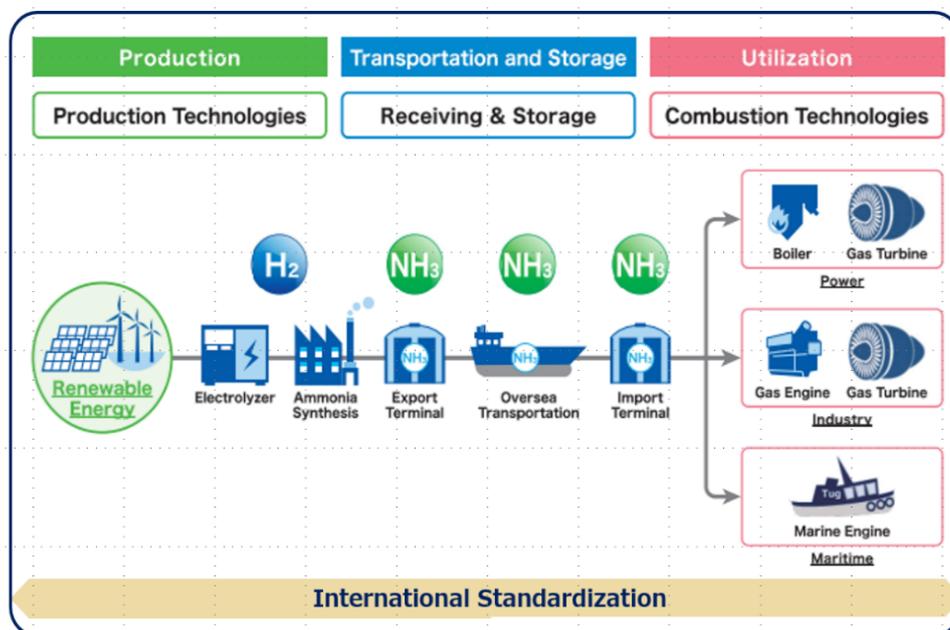
Message & PR Points (Initiatives towards Carbon Neutrality)

IHI Group is focusing on the clean energy sector to realize a carbon neutral society. Among its initiatives, a representative example of connecting, integrating, and strengthening technologies to create value chains is its Fuel Ammonia Value Chain business that covers the entire process from upstream "production" to downstream "utilization" of fuel ammonia.

Since 2024, significant technological advancements have been made in ammonia value chain-related technologies as below.

1. Successfully replaced 20% of coal with ammonia at a 1000MW power plant.
2. Achieved continuous operation of a gas turbine using 100% liquid ammonia.
3. Completed the world's first voyage of an ammonia-fueled tugboat.
4. Developed an ammonia production facility using green hydrogen.

Building on these achievements, IHI is also working towards international standardization and is steadily overcoming challenges towards social implementation, contributing to the realization of a decarbonized society.



Toward Building an Ammonia Value Chain

Company Profile

- ***Head Office Location/Address:***

TOYOSU IHI BUILDING., 1-1, Toyosu 3-chome, Koto-ku, Tokyo 135-8710, Japan

- ***Company/Organization Website Address:***

<https://www.ihico.jp/en/>

- ***Contact Point***

Please contact us via the following URL of the Technical Information Inquiry Web Form:

https://www.ihico.jp/en/contact/form/form_ghi_20703.html

- ***Others (if any)***

⑧ Japan CCS Co., Ltd. (JCCS)

Company Name

Japan CCS Co., Ltd. (JCCS)

Business/Activity Outline

Implementation of investigations, research and development, feasibility studies and demonstration projects pertaining to carbon dioxide capture, utilization, transportation and storage technologies.

Message & PR Points (Initiatives towards Carbon Neutrality)

From Japan to the World - with a view towards the commercialization of CCS –

There are high expectations for CCS as a measure to combat global warming. According to the “World Energy Outlook 2024” published by the IEA (International Energy Agency) in October 2024, the amount of CO₂ that will need to be captured globally through CCUS to achieve net zero by 2050 is estimated to be approximately 6 billion tons per year at that time.

In Japan, the Act on Carbon Dioxide Storage Business (CCS Business Act) was enacted in May 2024, with some provisions coming into effect by November of the same year. Additionally, steps towards the commercialization of CCS are steadily being taken, including the re-selection of nine projects in June 2024 as candidates for “Advanced CCS Projects” to receive prioritized government support.

Japan CCS Co., Ltd. was established in 2008 for the purpose of conducting the investigation and research and development of CCS technology. The company has been commissioned by the government and other entities to conduct four projects: “Tomakomai CCS Demonstration Project”, “Investigation of Potential CO₂ Storage Sites”, “R&D and Demonstration of CO₂ Ship Transportation Project” and “Project to Promote the Creation of Circular Carbon Society Model through CO₂ Recycling”, and has been implementing these projects. The Tomakomai CCS Demonstration Project was commenced in FY2012, and with the understanding and cooperation of the local community, the project successfully achieved the target of 300,000 tonnes cumulative sub seabed CO₂ injection in November 2019, confirming that “CCS is a safe and secure system”.

In the Investigation of Potential CO₂ Storage Sites, which was started in FY2014, it was estimated that there are geological formations suitable for storing a total of 16 billion tons of CO₂ at 11 sites, and the results have been reflected in Japan’s CCS Long-Term Roadmap. Furthermore, in the CO₂ ship transportation demonstration project launched in FY2021, we are conducting two-way liquefied CO₂ transport between the Maizuru and Tomakomai terminals. Aiming for carbon neutrality in 2050, we view as our mission the contribution towards the realization of the national policy to establish the social foundation for CCUS by 2030. To this end, harnessing the technology and know-how that we have nurtured on CCS, we will unite our efforts to continue our role in reaching out to the international community.

Company Profile

- *Head Office Location/Address:*

SAPIA TOWER 21F, 1-7-12 Marunouchi, Chiyoda-ku, Tokyo 100-0005 Japan

- *Company/Organization Website Address:*

<https://www.japanccs.com/en/>

- *Contact Point*

Name (if available): _____

Department/Division (if available): _____

International Affairs Department

Position (if available): _____

E-Mail: international@japanccs.com

Phone: (+81)-(0) _____

3-6268-7387

- *Others (if any)*

⑨ JERA Co., Inc.

Company Name

JERA Co., Inc.

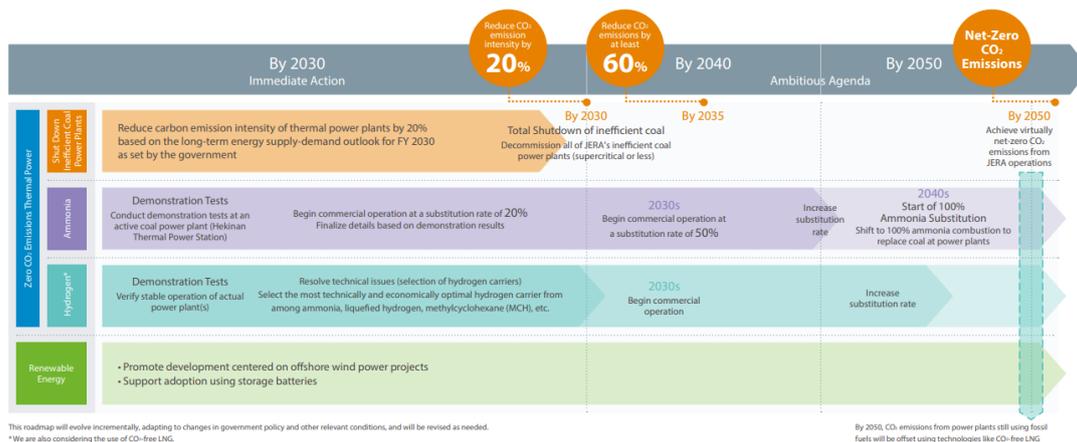
Business/Activity Outline

JERA is an energy company that participates in the entire value chain ranging from upstream development, fuel procurement and power generation to wholesale sales of electricity and gas. As a global company with the largest power generation capacity in Japan and one of the largest fuel handling capacities in the world, we will solve global energy issues and lead the way in realizing a decarbonized society.

Message & PR Points (Initiatives towards Carbon Neutrality)

To achieve decarbonization over the middle and long term while securing a stable electricity supply, JERA will, in addition to strengthening operations of the thermal power generation business it has cultivated over the years, establish a clean energy supply platform that utilizes digital technology to combine renewable energy and low greenhouse gas thermal power.

JERA Zero CO₂ Emissions 2050 Roadmap for Our Japan Business
Blueprint for Achieving Net-Zero CO₂ Emissions



[JERA_report2025_1031_EN](#)

Company Profile

• **Head Office Location/Address:**

Nihonbashi Takashimaya Mitsui Building 25th Floor 2-5-1 Nihonbashi, Chuo-ku, Tokyo

• **Company/Organization Website Address:**

JERA Co., Inc./ 株式会社 JERA

• **Contact Point**

Name (if available): Soichiro Niwa

Department/Division (if available): Platform Business Division

Position (if available): General Manager

E-Mail: Soichiro.Niwa@jera.co.jp

Phone: (+81)-(0) +817040137905

• **Others (if any)**

⑩ J-POWER (Electric Power Development Co., Ltd.)

Company/Organization Name

J-POWER (Electric Power Development Co., Ltd.)

Business/Activity Outline

J-POWER is one of Japan's largest power companies, supplying electricity domestically and operating globally. The Group's strategy, "BLUE MISSION 2050," targets a 46% CO₂ reduction by 2030 (vs. 2013) and net-zero emissions from its power generation business by 2050 while maintaining energy security.

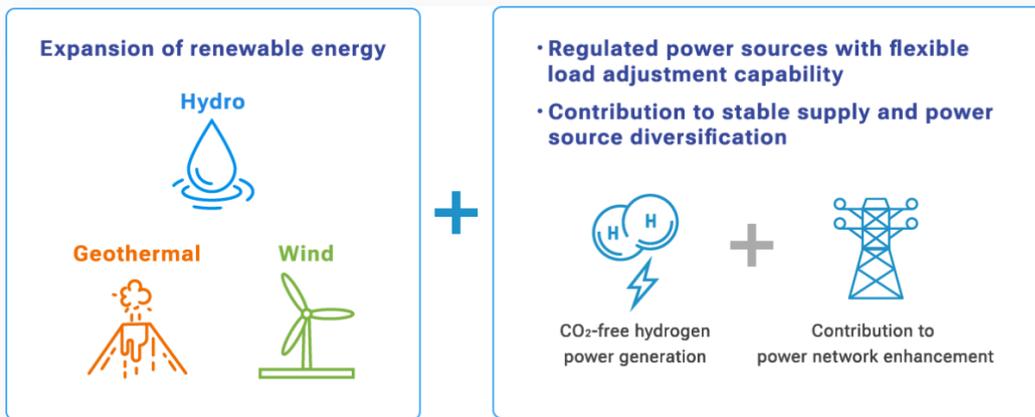
○Company Snapshot

- Founded: 1952; Head Office: Ginza, Tokyo; Employees: 1,889 (as of Mar 31, 2025).
- FY2024 consolidated operating revenue: ¥1.32 trillion; ordinary profit ¥140.0 billion; profit attributable to owners ¥92.4 billion.
- Domestic power generation capacity: 18,104 MW; overseas owned capacity: 7,577 MW across Asia, the US, UK, and Australia.

Message & PR Points (Initiatives towards Carbon Neutrality)

Renewables: ~51% of domestic capacity from renewable energy (hydro, wind, geothermal, solar). New onshore wind and geothermal projects commenced in FY2023; multiple offshore wind projects underway (e.g., Kitakyushu Hibikinada; participation in UK's Triton Knoll).

- Hydropower & Storage: Large hydro and pumped storage support grid flexibility (e.g., NEXUS Sakuma upgrades).
 - Thermal Transition: High-efficiency units (e.g., Takehara New Unit No.1 ~48% efficiency) with biomass co-firing; roadmap to ammonia/hydrogen co-firing.
 - Hydrogen/Ammonia: Osaki CoolGen demonstration produces high-purity hydrogen and captures >90% CO₂; large-scale green hydrogen/ammonia projects (e.g., Oman).
 - Nuclear: Ohma Nuclear Power Plant (ABWR, 1.383 GW) under construction; safety-first approach and NRA licensing in progress.
 - Transmission Networks & DX: ~2,400 km of lines and 9 converter/substations via J-POWER Transmission Network; projects to double Sakuma frequency converter capacity by FY2027; company-wide DX (drones/AI/digital twins).
 - Global Business: 60+ years abroad, ~7.6 GW owned capacity; mix of gas/coal, renewables, and consulting (JICA, governments, private sector).
- #### Community & Sustainability
- Material issues: secure energy supply, climate action, respect for people, local engagement, and business foundation enhancement; active local programs and international community support.
 - We hope that J-POWER's efforts will contribute in some small way to realizing a sustainable, affordable, resilient/durable energy transition.



BLUE MISSION 2050: Three Pillars

In Blue Mission 2050, we set out the three pillars (measures) of our approach to realizing a carbon-neutral society.

Company Profile

- **Head Office Location/Address:**
6-15-1, Ginza, Chuo-ku, Tokyo 104-8165, Japan _____
- **Company/Organization Website Address:**
<https://www.jpower.co.jp/english/> _____
- **Contact Point**
 - Name (if available):** _____
 - Department/Division (if available):** _____
 - Position (if available):** _____
 - E-Mail:** _____
 - Phone: (+81)-(0)** _____
- **Others (if any)** Inquiry Form _____

⑪ Kawasaki Heavy Industries, Ltd.

Company Name

Kawasaki Heavy Industries, Ltd.



Business/Activity Outline

Kawasaki aims to commercialize its energy-efficient CO₂ capture technology, KCC, through multi-site demonstrations across diverse emission sources, with post-combustion capture and direct air capture as its core solutions.

Message & PR Points (Initiatives towards Carbon Neutrality)

Kawasaki has developed an energy-efficient and scalable CO₂ capture technology, Kawasaki CO₂ Capture (KCC). We are advancing commercialization through multiple demonstration projects that verify CO₂ capture from diverse emission sources, including coal-fired power plants (Maizuru and Wyoming), gas-engine power generation (Kobe), waste incineration (Koriyama), and direct air capture (Kobe). These demonstrations provide essential operational data under a wide range of conditions, supporting continuous improvements in reliability, efficiency, scalability, and environmental safety.

In parallel, we are conducting feasibility studies for CCS in Malaysia, evaluating CO₂ capture from industrial sources as well as downstream transport and storage options, with the aim of enabling practical CCUS deployment in Asia.

Through these activities and ongoing R&D efforts, Kawasaki is accelerating the delivery of economically viable CO₂ capture technologies and contributing to a sustainable society in Japan and globally.



Our demonstration facilities in Maizuru, Wyoming, and Kobe (from left to right).

The Maizuru and Wyoming demonstration projects are supported by the New Energy and Industrial Technology Development Organization (NEDO) and Ministry of the Environment (MOE), respectively.

Photo courtesy of Kansai Electric Power Co., Inc. (Maizuru site).

Company Profile

- *Head Office Location/Address:*
1-14-5, Kaigan, Minato-ku, Tokyo 105-8315, Japan (Tokyo Head office)
- *Company/Organization Website Address:*
<https://global.kawasaki.com/en/>
- *Contact Point:* **Mr. Katsuki Yasuhara, Executive, Group Manager**
Thermal Cycle Group, Energy Solution Business Division and
CN Business Strategy Office, Hydrogen and Carbon-Neutral Business Division,
Energy Solution & Marine Engineering Company, Kawasaki Heavy Industries, Ltd.
E-Mail: Yasuhara_k@global.kawasaki.com
Phone: [\(+81\)-\(3\)-3435-2111](tel:+81334352111)
- *Others (if any):* <https://global.kawasaki.com/en/energy/equipment/co2sr/index.html>

⑫ **Kyushu Electric Power Company, Incorporated**

Company Name

Kyushu Electric Power Company, Incorporated

Business/Activity Outline

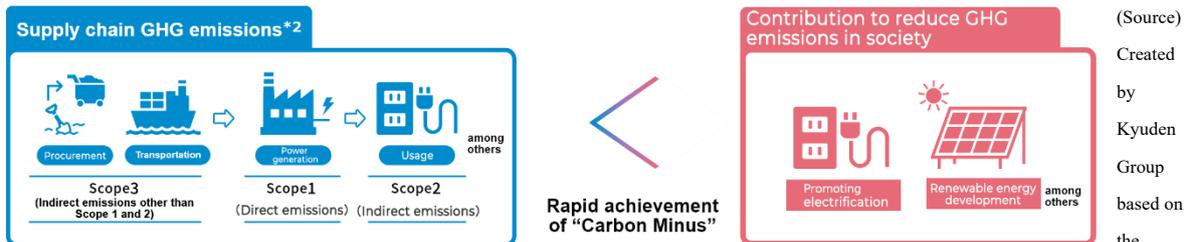
Powering communities and improving the lives of our customers by supplying stable and environment-friendly energy.

Message & PR Points (Initiatives towards Carbon Neutrality)

The Kyuden Group aims to achieve carbon neutrality by the year 2050 and “Carbon Minus”^{*1} as early as possible before 2050, by reducing GHG emissions in its supply chain and contributing to the reduction of emissions across society

- We will reduce greenhouse gas (GHG) emissions throughout our supply chain to net zero through our business activities.
- We will contribute to the reduction of GHG emissions in society by promoting the maximum possible electrification and ensuring the stable delivery of environmentally friendly energy.
- Through these efforts, the Kyuden Group will achieve “Carbon Minus”^{*1} as early as possible, before 2050.

^{*1} By promoting electrification and developing renewable energy, we aim to create a reduction effect that exceeds the GHG emissions of the Kyuden Group. This state called, “Carbon Minus”, we seek to offset supply chain emissions by reducing the overall GHG emissions of society through our business activities.



“Calculation of Supply Chain Emissions” from the Ministry of the Environment

^{*2} Following the GHG Protocol, which is the international standard for calculating and reporting GHG emissions, emissions are calculated for three different scopes (categories) of emission types.

Company Profile

- **Head Office Location/Address:**
2-1-82 Watanabe-dori, Chuo-ku, Fukuoka, 810-8720, Japan
- **Company/Organization Website Address:**
<https://www.kyuden.co.jp/english.html>
- **Contact Point**
Name (if available): _____
Department/Division (if available): _____
Position (if available): _____
E-Mail: _____
Phone: (+81)-(0) _____
- **Others (if any)**

13 Low Emission Technology Australia (LETA)

Company Name

Low Emission Technology Australia (LETA)

Business/Activity Outline

Low Emission Technology Australia (LETA) is a not-for-profit investment fund that accelerates the development and large-scale deployment of technology solutions to reduce and remove greenhouse gas emissions from hard-to-abate industries, including steel, cement and power generation.

Established in 2006 by Australia's black coal producers, LETA works with its members, international trading partners like Japan, governments, and research organisations, to enable practical, scalable pathways to carbon neutrality while supporting energy security and industrial competitiveness.

Message & PR Points (Initiatives towards Carbon Neutrality)

LETA adopts a 'carbon stewardship' approach, focused on reducing or removing emissions across the full life cycle of hard-to-abate industries in Australia and around the world, with a particular focus on the APAC region. Through targeted technology investment, research and international collaboration, LETA focuses on:

- Reducing emissions from mining and resource extraction
- Advancing near-zero-emission power generation and clean fuels
- Improving the efficiency and reducing the cost of carbon capture across industries
- Enabling CO₂ transport, utilisation and permanent onshore and offshore storage
- Supporting research, partnerships and advocacy to accelerate technology deployment and policy frameworks for carbon neutrality.

Japan Collaboration & International Engagement

As a key trading partner and customer of Australian coal, Japan is central to LETA's international engagement. LETA works closely with Japanese industry, government and research organisations to support the long-standing Australia–Japan energy partnership and accelerate practical pathways to carbon neutrality. This collaboration is delivered through targeted project funding, industry engagement, a dedicated strategic presence, and regular insights sharing. LETA's portfolio includes active investments and studies with Japanese organisations and technology providers, reflecting shared priorities around energy security and emissions reduction.

Current and recent initiatives and investments relevant to Japan include, but are not limited to:

- Furthering the development of carbon capture technologies
- Optimising Australian coal usage in IGCC for energy and clean fuel production
- CO₂ utilisation technology development, through investment in a Japanese organisation where LETA is the sole non-Japanese supporter
- CO₂ hub development, via participation in multi-organisation consortia advancing regional and international hub development

- CO₂ transport solutions, including cross-border research and development to enable large-scale carbon capture and storage.

A recent example of LETA's Japan-centric work is *Powering Japan's Hydrogen Future: Australia's Coal Advantage with CCS*, a study prepared by the Electric Power Research Institute (EPRI) for LETA. The study demonstrates that Australian coal-to-hydrogen with CCS can deliver cost-competitive, low-carbon hydrogen for Japan, meeting carbon-intensity requirements while supporting energy security. It also highlights the importance of bilateral cooperation on CO₂ transport and storage to enable deployment at scale.

Read more: <https://letaaustralia.com.au/reports/powering-japans-hydrogen-future-australias-coal-advantage-with-ccs/>

LETA's work in Japan is supported by a growing international membership base. Through LETA's Associate Membership program, Japanese organisations, *including technology providers, research bodies and project developers*, can engage with Australian industry, access project insights, participate in collaborative studies, and contribute to the development of scalable low-emission solutions across the APAC region. Find out more about LETA's members and partners here: <https://letaaustralia.com.au/members-partners/>

Company Profile

- ***Head Office Location/Address:***

Level 8, 12 Moore Street, Canberra, ACT, 2602

- ***Company/Organization Website Address:***

<https://letaaustralia.com.au/>

- ***Contact Points***

Name (if available): **Benn Wheeler**

Department/Division (if available): **Business Development**

Position (if available): **Director**

E-Mail: **benn.wheeler@letaaustralia.com.au**

Phone: **(+61)-(0406 998 082)**

- ***Others (if any)*** **Toshihiko Miyagawa**

- ***Position:*** **Japanese Representative**

- ***Email:*** **Mike.miyagawa@letaaustralia.com.au**

- ***Phone:*** **+81 90-6317-2634**

⑭ **Sumitomo Heavy Industries, Ltd.**

Company Name

Sumitomo Heavy Industries, Ltd.

Business/Activity Outline

Sumitomo Heavy Industries (SHI) Group is a comprehensive machinery maker that manufactures goods ranging from general machinery and advanced precision machinery to construction machinery, ships, and environmental plant facilities.

Message & PR Points (Initiatives towards Carbon Neutrality)

SHI provides carbon neutral power generation and heat supply facilities worldwide, delivering both new build biomass and waste-based fuel plants as well as fuel conversion solutions for existing fossil-fuel facilities, utilizing its industry leading fluidized bed boiler technology.

Furthermore, it is promoting the provision of carbon capture technology using Hot Potassium Carbonate (HPC) and Oxy combustion, biomass and waste gasification technology with the aim of realizing a carbon-neutral society. These technologies are extremely effective in industries where CO₂ emissions are unavoidable or cannot be addressed by electrification alone.



Photo: Reference of Gasifier plant

In addition to these technologies, SHI aims to introduce Liquid Air Energy Storage (LAES) technology to society to stabilize the power system with growing renewable energy and decreasing conventional thermal power generation, which will continue in the future.



Photo: Commercial demonstration plant of LAES

Company Profile

- *Head Office Location/Address:*

1-1, Nishishinagawa 1-chome, Shinagawa-ku, Tokyo 141-0033, Japan

- *Company/Organization Website Address:*

https://www.shi.co.jp

- *Contact Point*

Name (if available): Manabu Homareda

Department/Division (if available): Sales Division, Energy & Environment SBU

Position (if available): General Manager

E-Mail: manabu.homareda@shi-g.com

Phone: (+81)-(0) 80-8019-5279

- *Others (if any)* _____

⑮ Taiwan Power company

<p><i>Company Name</i></p> <p>Taiwan Power company</p>
<p><i>Business/Activity Outline</i></p> <p>Department of Generation</p>
<p><i>Message & PR Points (Initiatives towards Carbon Neutrality)</i></p> <p>台灣電力公司 https://www.taipower.com.tw/</p>
<p><i>Company Profile</i></p> <ul style="list-style-type: none"><i>Head Office Location/Address:</i> <u>18F, No. 242, Sec. 3, Roosevelt Rd., Taipei, 100208, Taiwan, R.O.C</u><i>Company/Organization Website Address:</i> <u>https://www.taipower.com.tw/</u><i>Contact Point</i> <i>Name (if available):</i> <u>Liao Chiu Hui</u> <i>Department/Division (if available):</i> <u>Department of Generation</u> <i>Position (if available):</i> <u>Head of planning section</u> <i>E-Mail:</i> <u>u273324@taipower.com.tw</u> <i>Phone: (+81)-(0)</i> _____<i>Others (if any)</i> _____

⑩ TOKYO ENERGY & SYSTEMS INC.

Company Name

TOKYO ENERGY & SYSTEMS INC.

Business/Activity Outline

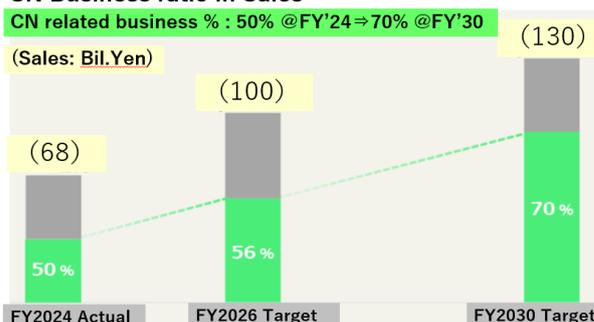
Infrastructure Business - Integrated construction of all kinds of power facilities, from design to construction and maintenance

Basic Philosophy - Building a more reliable foundation for living

Our Vision for 2030 :

- We at Q'd aim to be a vibrant organization that remains the partner of choice by delivering value that exceeds customer expectations. To realize a sustainable society by building a more reliable foundation for daily life, each of us is committed to every process—prioritizing safety while refining our quality and expertise.
- **A Quality-First Company Leading the Way to Carbon Neutrality Through Individual Technical Excellence.**

CN Business ratio in Sales



To contribute toward a carbon-neutral society, we remain committed to enhancing electric power infrastructure and systems. This includes preparing for nuclear power restarts, executing S&B projects for public hydroelectric plants, advancing biogas and other renewable energy initiatives, and strengthening the T&D network.

We have also endorsed TCFD recommendations in 2023. Furthermore, in alignment with the GX League led by the Ministry of Economy, Trade and Industry, we participate striving to reduce greenhouse gas emissions across Q'd Group based on our comprehensive transition strategy.



“Q'd” expresses our absolute commitment to being “Quality Oriented.”

“Q'd” also symbolizes our pledge to offer superior solutions, both for the benefit of our clients, and society as a whole.

Company Profile

- **Head Office Location/Address:**
1-3-1 Nihonbashi Kayabacho, Chuo-ku, Tokyo, Japan
- **Company/Organization Website Address:** <https://www.qtes.co.jp/en/> or www.qtes.co.jp/
- **Contact Point**
Name (if available):
Department/Division (if available):
E-Mail: po.webmaster@qtes.co.jp
Phone: (+81)-(0) 3-6371-1947

⑰ TOPPAN Holdings Inc.

Company Name

TOPPAN Holdings Inc.

Business/Activity Outline

- Based on proprietary "printing technologies," the TOPPAN Group engages in a wide range of businesses across its three main fields of Information & Communication, Living & Industry, and Electronics.

Message & PR Points (Initiatives towards Carbon Neutrality)

- With our broad range of businesses and supply chains, the TOPPAN Group recognizes the societal impact of our operations and positions contribution to decarbonization as a key management issue.
- TOPPAN Holdings has obtained Net-Zero Target validation from the Science Based Targets initiative (SBTi) for greenhouse gas emission (GHG) reduction targets across the TOPPAN Group's entire value chain.
- We have formulated a new transition plan for neutralizing Scope 1 & 2 and Scope 3 GHG emissions by 2050. Based on this, we will drive further adoption of energy-efficient/renewable energy facilities under an internal carbon pricing (ICP) system that intensifies our low-carbon investments and informs our decision-making on long-term carbon neutrality measures for Scope 1, 2, and 3 GHG emissions.
- The TOPPAN Group will create and expand business opportunities by linking carbon neutrality initiatives to portfolio transformation, a key element of the Group's corporate strategy. Specifically, we will focus on enhancing sustainable packaging that improves recyclability and reduces food loss.

TOPPAN Group Environmental Targets for 2050

To achieve the TOPPAN Group Environmental Vision 2050, we have set the following targets, with fiscal 2017 as the benchmark year and 2050 as the deadline for achieving the targets.

1. Contributing to decarbonization

Scope 1 & 2 greenhouse gas emissions: Net zero (90% reduction compared to fiscal 2017*; based on a 1.5° scenario)

Scope 3 greenhouse gas emissions: Net zero (90% reduction compared to fiscal 2017*)

*Offsetting residual emissions using internationally recognized methods

Company Profile

- **Head Office Location/Address:** 1-5-1, Taito, Taito-ku, Tokyo 110-8560, Japan

- **Company/Organization Website Address:** <https://www.holdings.toppan.com/en/>

- **Contact Point**

Name (if available): Fumie Ikeda

Department/Division (if available):

Public Relations Division, ESG Communications Department

Position (if available): Department Head

E-Mail: csr@toppan.co.jp

Phone: (+81)-(0) 3-3835-5111

10. Post Conference Webinar (PCW) in conjunction with Clean Coal Day International Symposium & Energy Security with Decarbonization Symposium with using Focus Group Discussion (FGD) organized with ASEAN Centre for Energy (ACE)

The Post Conference Webinar (PCW), featuring focus group discussion (FGD), is to facilitate ASEAN Member States actions & implementation toward just energy transition reflecting the outcomes of the preceding the September twin Symposiums. This time ASEAN has been chosen as the target of PCW, for the stance to coal as important energy source, as well as for its great potential with project opportunities, excellent specialists and forward-looking people.

For the PCW, major topics that are well relevant to ASEAN context will be selected out of the topics having been discussed at the preceding the symposiums, and the discussions at the PCW will be developed on the outcomes of the symposiums.

Participants are recommended to join the symposiums. However, it is not an absolute requirement. Information about the symposiums will be provided to PCW participants so that every participant can join the discussion in well-informed manner.

Focus Group 1: Policies for Simultaneous Decarbonization and Energy Security

Theme: Policy alignment between energy security and decarbonization goals

Summary: The following points were at the center of discussions at the CCD International Conference's "Decarbonization and Just Energy Transition" session 1, focusing on policy trends across ASEAN countries on addressing the common challenges of the growing demand for electricity and addressing the common challenges of fossil fuel reliability and policy alignment of decarbonization.

[Points of Discussion]

- How policymakers in Japan and ASEAN are developing long-term coal strategies
- How policymakers in Japan and ASEAN are incorporating the principles of a just energy transition into their coal-fired phase-out strategies
- How institutions/frameworks that could be regional cooperation platforms, such as AZEC and ACE, can support policy alignment, knowledge sharing and technical support, and planning and coordination of decarbonization pathways.

Focus Group 2: Dialogue between coal producers and users for decarbonization

Theme: Coal production, utilization, and decarbonization in the transition period based on global trends and market realities

Summary: Topics from the Symposium on Sustainable Resource Supply: "Coal Strategies for a New Era: The Role of Coal in Energy Security" discusses how coal markets are evolving dynamically and how countries are ensuring energy security through sustainable coal supply.

[Points of Discussion]

- How ASEAN countries ensure a stable supply of both coal and coking coal for power generation amid geopolitical risks, trade barriers and challenges

- How are producers ensuring the viability of their businesses while responding to increased demand and declining imports from other countries in Asia and new markets?
- What are the ways in which producers can work with users to make the process of coal production and use more low-carbon and meet the demands of investors?

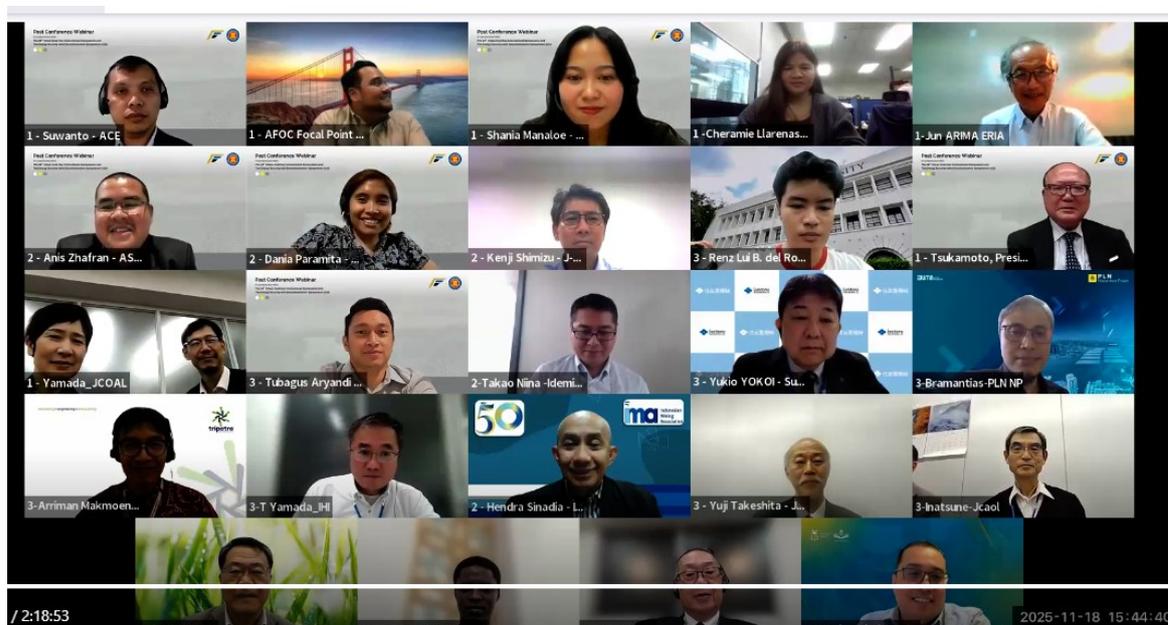
Focus Group 3: Promoting decarbonized CCTs to reduce emissions in the power and industrial sectors

Theme: New Technology Developments for Coal Utilization in ASEAN - Building Value Chains for Alternative Fuels and CCS

Summary: Examine the application of CCS/CCUS in the industrial and power sectors of both regions and the promotion of decarbonization efforts, as highlighted in the "Decarbonization and Just Energy Transition" session 2 of the CCD International Conference. Specifically, we will discuss the possibility of promoting the introduction of decarbonized CCT and CCS/CCUS for coal use in the power and industrial sectors as a whole.

[Points of Discussion]

- How to increase the feasibility of retrofitting existing power plants using HELE technology in ASEAN countries, and learning from Japan's experience (including financing requirements and potential technology transfer)
- Alternative fuels (biomass, ammonia), CCS
- Latest trends in CCS/CCUS in coal use and its potential for deployment (including current and future responses to costs, infrastructure, and regulations)
- Near-term potential for reducing emissions associated with coal use in the "hard-to-abate" sector



PROGRAM 18th November, 2025 by Zoom GMT+7

13:30-14:00 Plenary Session for Opening

Welcome Address/ Mr. TSUKAMOTO Osamu, President, JCOAL

Keynote Address/ Pusan Siti Safinah binti Salleh, Chair, ASEAN Forum on Coal (AFOC)

Opening Address/ Dato's Ir. Razib Dawood, Executive Director, ACE

Guidance of housekeeping rules/ ACE

Setting-scene presentation/ Mr. Suwanto, Head of the Fossil, Hydrocarbon and Minerals (FOM)Dept, ACE

14:05-15:05 Focus Group Discussion by parallel

- (1) Introduction by the Moderator
- (2) Remarks by speakers
- (3) Discussion (Moderator x Speakers)
- (4) Discussion (participants on the floor)
- (5) Wrap-up by the Moderator

Focus Group 1: Policies for Simultaneous Decarbonization and Energy Security

Moderator/ Ms. Shania Esmeralda Manaloe, ACE

Speaker / Mr. ODA Toshiyuki, Director General, JCOAL

Ms. Luingning G. Baltazar, Director, Energy Resources Development Bureau, Philippines Department of Energy

Mr. Suwanto, Head of FOM Department, ACE

PhD. ARIMA Jun, Visiting Professor, The University of Tokyo

Focus Group 2: Dialogue between coal producers and users for decarbonization

Moderator/ Ms. Dania Paramlta, ACE

Speaker / Mr. SHIMIZU Kenji, Director, Thermal Energy & Value, Creation Department, J-POWER

Mr. Hendra Sinadia, Executive Director, Indonesia Mining Association

Mr. NINA Takao, Manager, Strategic Planning Section,

Coal and Energy Solution Department, Idemitsu Kosan Co., Ltd.

Focus Group C: Promoting decarbonized CCTs to reduce emissions in the power and industrial sectors

Moderator/ Mr. Tubagus Aryandi, ACE

Speaker / Mr. Bramantias, VP Power Generation Reliability 1, PLN Nusntara Power

Mr. Tubagus Aryandi, Senior Research Analyst, ACE

Mr. Yikii Walter, Design of Technical Section, Tromso Co., Ltd.

Mr. YAMADA Toshihiko, General Manager, R&D Department,

Carbon Solution Business Unit,

Resources, Energy & Environment Business Area, IHI Corporation

Mr. YOKOI Yukio, Chief Representative, Jakarta Representative Office, Sumitomo Heavy Industries, Ltd.

15:10-15:40 Plenary Session for Joint Discussion & Wrap-up

Summary of Discussion and Wrap-Up

Focus Group Discussion 1: Summary

- ASEAN will continue to rely on coal (80% of the energy mix), especially for the power and industry sector, up until 2050. In Japan, coal in the energy mix has peaked- now at 30%, going to decrease to 22% in 2030.
- ASEAN acknowledges the continued role of coal, but has started to recognize the need to promote a more responsible coal value chain from mining to utilisation, as ruled out under the APAEC 2026-2030.
- ASEAN must adopt a *one-goal, diverse, and pragmatic* approach- indicating that we could not afford an immediate coal phase out.
- To facilitate a coal phase down and an inclusive and just energy transition (JET), the following must be amplified:
 - Transition technologies (co-combustion, biomass cofiring, ammonia, hydrogen, CCS/CCUS)
 - Transition finance (i.e. Japan's GX, carbon market, etc.)
 - Regulatory support (national and regional)
 - Roadmap on decarbonising hard-to-abate sectors
 - Bridge cross-ministerial coordination
 - Ensure grassroot activities are included

Focus Group Discussion 2: Summary

- In both Japan and Indonesia, coal production has been **declining** since 2024 and is expected to continue its downward trend. This is particularly evident in Indonesia, where the government plans to further reduce production starting in 2026. **In contrast**, its consumption in both countries has been rising, and is projected to keep increasing, driven largely by the expansion of **renewable energy deployment** and the **rapid growth of data centers**.
- Energy security and customer satisfaction remain core principles for Japanese coal users, however, addressing environmental challenges and advancing the transition to clean energy have become essential priorities. Furthermore, Indonesia's coal producers already starting to invest towards other minerals and develop the downstream mechanism
- The government's role in establishing favourable policies and regulations that support both producers and users is essential to ensure that no one, especially smaller entities, is left behind during this transformation.

Focus Group Discussion 3: Summary

- **OXY-CFB Technology & CCS/CCUS Feasibility**
Oxy-fuel combustion with biomass co-firing (OXY-CFB) is considered the most potential carbon capture technology for CFPPs, offering potential carbon credits. However, adoption remains limited, and efficient CO₂ transport/storage requires high concentration (90–99%).
- **Co-Firing & Alternative Fuels Challenges**
Ammonia co-firing is progressing up to 20% (Japan) and planning toward >50%, with plans for ammonia-fueled plants. SAF and green hydrogen show promise as low-carbon options but face cost and certification hurdles. Biomass co-firing in Indonesia (currently 5%) and ammonia co-firing (1%) adopted in 5 CFPPs. However, there are challenges with supply continuity, requiring sustainable sourcing strategies.
- **Hard-to-Abate Sectors & Policy Needs**
The short-term opportunity lies in improving energy efficiency as a low-hanging fruit, while hydrogen is expected to play a major role in the future. However, high CAPEX and the need for supportive policies on blending mechanisms and carbon pricing remain significant challenges. Across ASEAN, industries have begun pilot projects using ammonia in their processes, and interest in using ammonia for power generation is growing.

11. Attachments

JCOAL STATEMENT

Press Release

September 5th, 2025

“The 34th Clean Coal Day International Symposium” & “The Energy Security with Decarbonization Symposium 2025”

『Decarbonization and Just Energy Transitions』 & 『Coal Strategy for a New Era - The Role of Coal in Energy Security』

On Thursday of September 4, 2025, we Japan Carbon Frontier Organization (JCOAL), with co-organized by Ministry of Economy, Trade and Industry (METI), New Energy and Industrial Technology Development Organization (NEDO), Japan Organization for Metals and Energy Security (JOGMEC), held the 34th Clean Coal Day International Symposium as an in-person event, as supported by embassies of 12 countries located in Tokyo, including the 3 state of Australia, the Global CCS Institute (GCCSI), Ube City, and Kushiro City. On the following Friday, September 5th, 2025, we held the Energy Security with Decarbonization Symposium 2025 with co-organized by Japan Organization for Metals and Energy Security (JOGMEC).

A total of 2,700 participants from 24 countries representatives' industries, governments, and academia participated in the symposium. The symposium included presentations from the major coal-producing/consuming countries such as US, India, China, Australia, Poland, South Africa, Malaysia etc. as well as relevant institutions and companies, and the international Energy Agency (IEA), Global CCS Institute (GCCSI), Economic Research Institute for ASEAN and East Asia (ERIA), FutureCoal Global Alliance (FutureCoal), ASEAN Centre for Energy (ACE), VGBE Energy e.V. (VGBE), and the Ministry of Economy, Trade and Industry of Japan and academic societies participated. Many active and fruitful discussions were made with a variety of information and opinions. JCOAL has released JCOAL's Statement below.

JCOAL STATEMENT

📌 Redefinition of the Role of Coal Amid Surging Global Energy and Power Demand

- Amid global uncertainty around energy supply-demand incurred by international conflicts such as the conflict between Russia and Ukraine, the resurging conflict in the Middle East, and associating food and supplies shortages, the world has come to revisit the role of coal in the context of energy security. Also, the U.S. Trump administration's policy direction endorsing fossil fuels remind the global society of the importance and expected role of coal in addressing the surging energy demand. In the power sector, in addition, the rapid global expansion of AI and data centers is pushing up power demand, and further demand increase is expected globally.
- In view of the above situation, we believe it the optimal choice for countries to try keeping a diverse energy mix including coal based on availability and affordability, instead of eliminating the potential of coal-fired power generation that also offers decarbonization in combination with proven low-carbon and decarbonization technologies. Needless to say, decarbonization efforts by introducing more progressive technology as time proceeds for accelerated realistic energy transition is crucial. Ensuring supply chain of coal resources is a must, as coal is to play its role in energy transition.

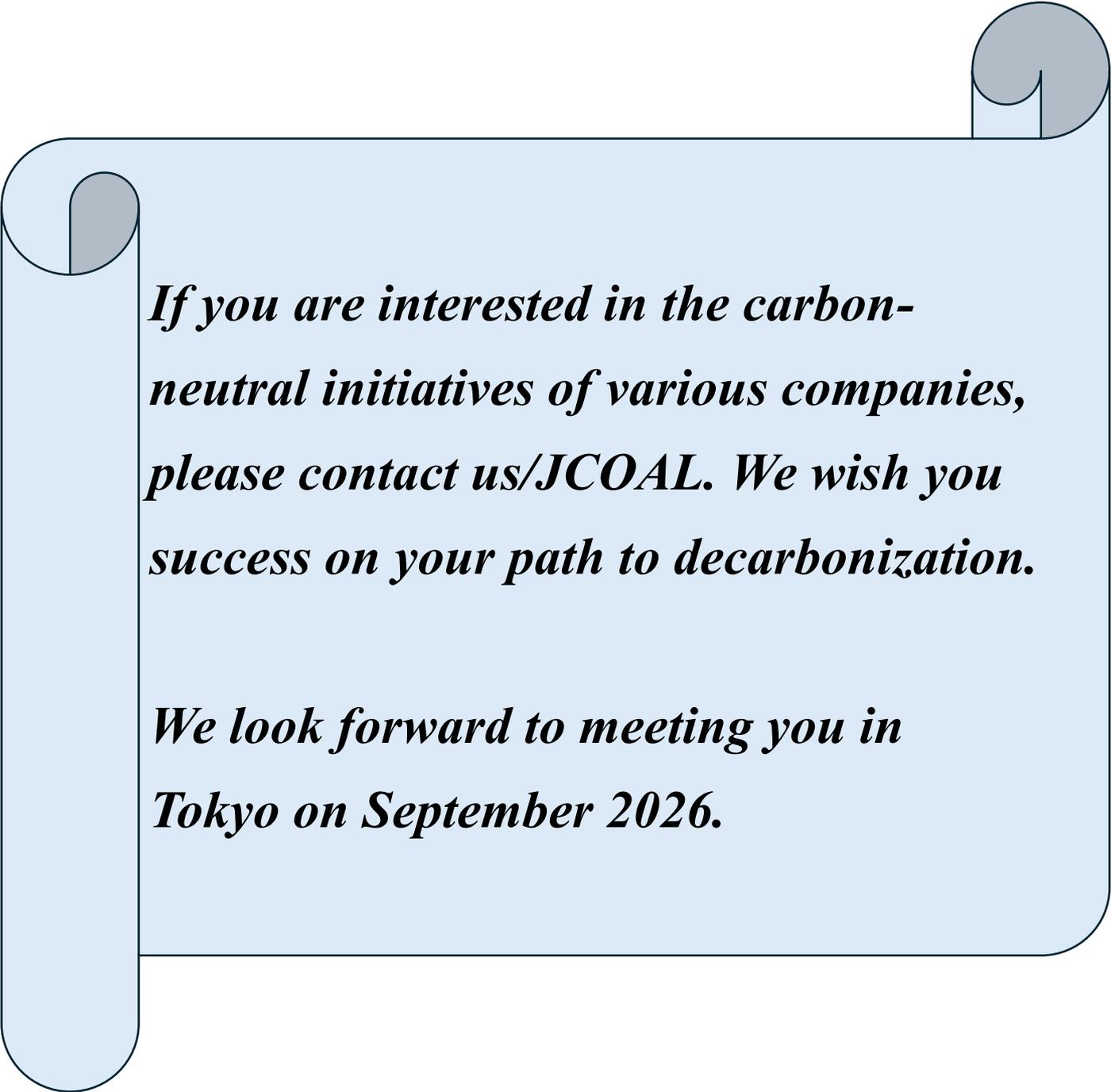
📌 Early Implementation of Innovative Decarbonization and Low-Carbon Technologies

- In order to accelerate decarbonization in realistic manner, countries are to make efforts in enhancing the power systems while ensuring efficiency and flexibility enhancement as well as environmental improvement of coal-fired power plants; reducing CO₂ emissions by co-firing or exclusive firing of biomass and/or ammonia as an alternative to coal; hydrogen reduction in the steelmaking field; capturing, and utilization of carbon into valuable products (carbon recycling/CCU); and carbon capture and storage (CCS). While many of relevant technologies are proven, further bilateral and/or multilateral efforts are important, for making more innovative low-carbon and decarbonization technologies affordable through supporting policies and policy instruments.

📌 Promotion of International Collaboration with Tangible Outcomes

- Since carbon neutrality must be targeted and achieved jointly on a global scale, countries and regions, governments, organizations and companies, and different sectors are to proceed energy transition pathways in well-coordinated collaboration.
- In emerging economies like ASEAN countries, coal-fired power plants are relatively new and are expected to continue to support their steady economic growth. Where applicable, upgrading existing power plants to be more efficient and environmentally compliant is required, in view of the potential of coal-fired power plants as balancing sources to ensure grid stability while massive introduction of variable renewable energy (VRE) proceeds and other balancing sources as well as batteries are not sufficient in terms of scale to address possible fluctuation.
- For such actions as part of the entire energy transitional efforts, international and inter-organizational collaboration for optimal utilization of existing infrastructure, as well as the establishment of financial frameworks such as transition finance schemes and national/regional carbon market, are quite important.
- In this regard, the roles of international frameworks such as the Asia CCUS Network and the Asia Zero Emissions Community (AZEC) are crucial and shall be further enhanced.
- JCOAL is determined to undertake its role as a part of the global community jointly working for carbon neutrality. Holding a post-conference webinar in collaboration with our long-standing partner ASEAN Centre for Energy (ACE) is one of the earliest actions after the symposiums. The webinar is intended for focused and intensive discussions with ASEAN stakeholders and Japanese organizations and companies with technologies, to further a few important issues identified as the most relevant to ASEAN context, for the sake of accelerated joint implementation of decarbonization projects in ASEAN countries.

- ▼ Presentation materials will be posted to the JCOAL website later. (<http://www.jcoal.or.jp/>) (<http://www.jcoal.or.jp/eng/>)
- ▼ 'JCOAL e-book 2025' will be circulated globally including companies'/organizations' strategy toward carbon neutrality on around January 2026. Please check the symposium website and apply for it. <https://ccd2025.jp/>
- ▼ Contact Points -> TEL: +81-3-6402-6104 Director/Oda (oda@jcoal.or.jp). Chief Specialist/FUJITA (fujita@jcoal.or.jp)



If you are interested in the carbon-neutral initiatives of various companies, please contact us/JCOAL. We wish you success on your path to decarbonization.

We look forward to meeting you in Tokyo on September 2026.

***Japan Carbon Frontier Organization (JCOAL)
International Collaboration Dept.
clean-coal-day_2025@jcoal.or.jp***

Ms. FUJITA Toshiko/ Ms. CHEN Weiping