Keidanren
Policy & Action

# Second Set of Recommendations for Advancing the AZEC Initiative

Targeting Steady Promotion of Decarbonization Projects

September 16, 2025
Keidanren

一般社団法人 日本経済団体連合会

## Table of Contents

## Introduction

The Asia Zero Emission Community (AZEC) initiative was proposed by the Japanese government in January 2022. Faced with a prominent EU-led movement to take a one-size-fits-all approach to decarbonization, the Japanese government proposed the AZEC initiative with the aim of achieving decarbonization, economic growth, and energy security simultaneously (a "triple breakthrough") in Asia through various pathways tailored to the circumstances of the respective countries. AZEC held its first Ministerial Meeting in March 2023, attended by its partner countries comprising nine Southeast Asian nations and Australia, which had all endorsed the initiative.

In July 2024, Keidanren published its Recommendations for Advancing the AZEC Initiative[1] (referred to hereinafter as the "first set of recommendations"), appealing to the partner countries to work on both AZEC-wide policy and institutional cooperation, and support for individual decarbonization projects (referred to hereinafter as "individual projects"), as two complementary approaches. At the second AZEC Leaders Meeting held in October 2024, the Action Plan for the Next Decade[2] was put together in a form that broadly reflected the content of Keidanren's first set of recommendations.

Turning to the international situation, energy costs remain persistently high as stable supplies of oil and gas are threatened by increased geopolitical risk stemming primarily from Russia's invasion of Ukraine and developments in the Middle East. Moreover, with population growth, economic development, and advancing electrification, demand for electricity is steadily on the rise and the importance of energy security is increasing globally. The EU, like Asia, is currently diversifying its energy supplies while also shifting to a pragmatic approach of pursuing decarbonization and improved industrial competitiveness in tandem. This new approach was driven by concern over deterioration in the EU's international competitiveness prompted by the Draghi report of September 2024. Thus, understanding of the need for the "various pathways" that Japan has been proposing now appears to have gained greater currency. Meanwhile, in the United States, despite having once again declared its withdrawal from the Paris Agreement, the federal government has continued to provide support aimed at bolstering the country's energy security, as well as its technologies including carbon capture and storage (CCS), and nuclear power. Likewise, individual companies and states have continued to pursue measures to address climate change.

Amid worsening climate change leading to increasingly intense natural disasters and rising temperatures, AZEC is gaining in importance as an organization that targets various pathways and a triple breakthrough. The AZEC initiative is beginning to show promising signs as its individual projects progress, with developments including the signing of a financing agreement for the Muara Laboh Geothermal Power Expansion Project, which was the first ever AZEC project to be undertaken.

AZEC partner countries are facing increasingly intense competition with other countries over energy-efficient products, decarbonization technologies, and the like. We therefore call on the government of Japan, the country that initially proposed AZEC, to steadily put the initiative into practice by continuing to demonstrate leadership and building up a track record of individual projects with a greater sense of urgency.

The Japanese business community has high hopes for AZEC. With these recommendations, Keidanren once more presents measures to promote both policy coordination and individual projects in preparation for the upcoming AZEC Leaders Meeting and Ministerial Meeting.

---

[1] https://www.keidanren.or.jp/en/policy/2024/052.html

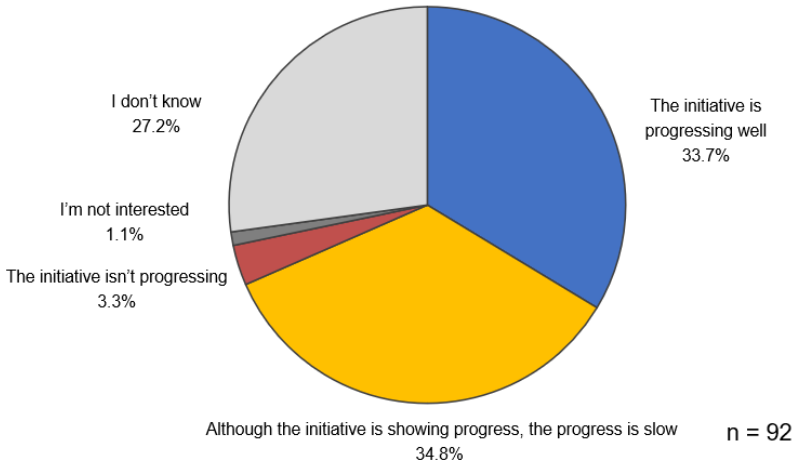
[2] https://www.mofa.go.jp/mofaj/files/100737977.pdf

## 1. Opinions and Issues Regarding AZEC

Before compiling these recommendations, Keidanren conducted a survey[3] to ascertain what the Japanese business community expects of AZEC and the issues it perceives. Around 100 companies responded.

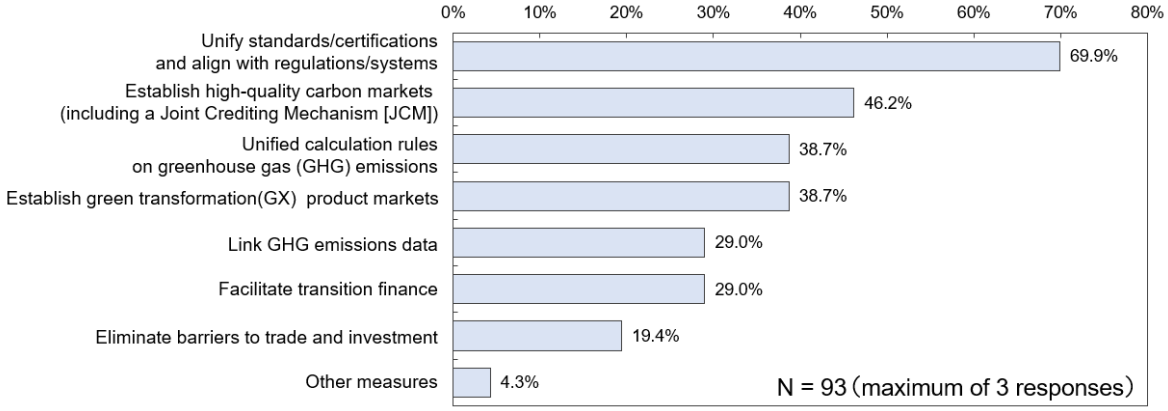
In terms of the AZEC initiative's progress, 34% of respondent companies replied that the initiative was progressing well, while 35% replied that although the initiative was showing progress, the progress was slow. Thus, the results indicated that companies perceive issues and have further expectations regarding prompt advancement of individual projects and implementation of effective measures to that end.

**Figure 1　Opinions of the AZEC initiative's progress**




Source: Keidanren's Survey on Advancing the AZEC Initiative (September 2025)

**Figure 2 Measures to be prioritized**



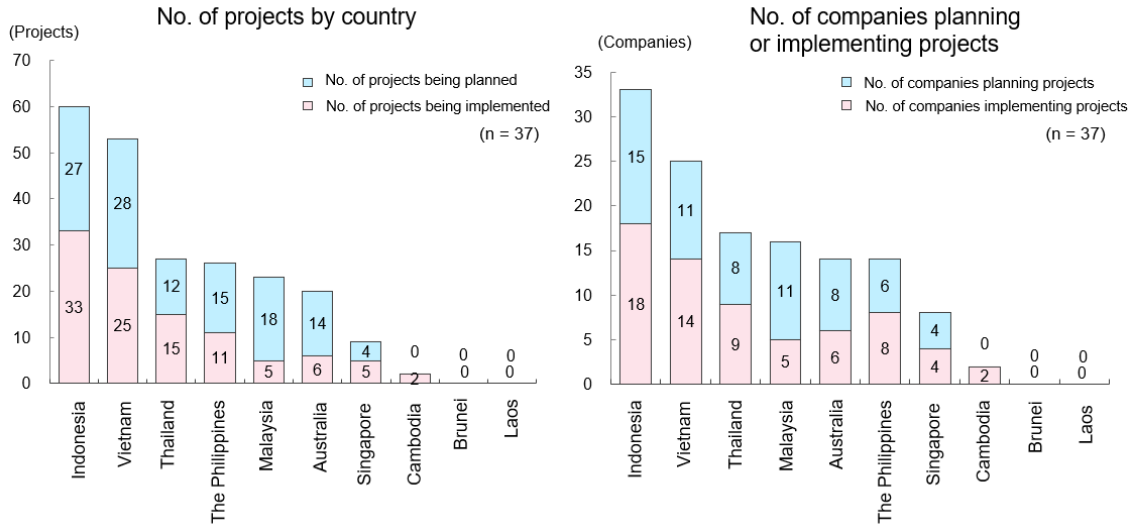

Source: Keidanren's Survey on Advancing the AZEC Initiative (September 2025)

[3] The Survey on Advancing the AZEC Initiative was conducted from April 25 to May 30, 2025. Surveys were sent to 414 companies that are members of the relevant Keidanren committees (the Committee on Environment, the Committee on Energy and Resources, and the Committee on Asia and Oceania), of which 97 companies responded, for a response rate of around 23%.

Regarding measures to be prioritized under the AZEC initiative, the most frequent response was "Unify standards/certifications and harmonize regulations/systems" (70%), followed by "Establish high-quality carbon markets (including a Joint Crediting Mechanism [JCM])" (46%), "Visualize greenhouse gas (GHG) emissions" (39%), and "Establish green transformation (GX) product markets" (39%).

When asked about the promotion of individual decarbonization-related projects at their own companies or group companies, around half of respondents (46%) replied that their company or a group company was planning or implementing a decarbonization-related project. Of these, many individual projects were taking place in Indonesia and Vietnam in particular, and in both these countries individual companies were planning or implementing multiple projects.

**Figure 3 Projects by country**




Source: Keidanren's Survey on Advancing the AZEC Initiative (September 2025)

Of the 220 decarbonization-related projects being planned or implemented at the time of the survey, respondents described specific issues for 79 projects[4] that had given rise to particularly significant problems or requests.

[4] The annex to these recommendations provides details regarding 18 of these 79 projects about which information can be disclosed publicly.

## 2. Promotion of AZEC-Wide Policy Coordination

The Japanese business community is generally very interested in promoting individual projects. Therefore, the governments of Japan and other AZEC partner countries should work on both the promotion of individual projects and the AZEC-wide policy coordination upon which it depends, as two complementary approaches. In doing so, it will be essential to clarify the timescales for achieving the objectives in each policy area, including the areas below, and to implement policy coordination in line with those timescales.

### (1) Unified calculation rules on GHG emissions and utilization of data

Unified calculation rules on GHG emissions provides the foundation for companies and governments to take emission reduction measures and is the first step toward decarbonization. For companies, visualization is important in addressing the internationally growing demand for Scope 3 disclosure and in complying with the standards governing disclosure of sustainability-related information set by the International Sustainability Standards Board (ISSB). Moreover, it plays a vital role in attracting to Asia various international investors that can identify the investment opportunities in decarbonization.

On a separate note, linking emissions data across national borders is expected to contribute to the efficiency of efforts to reduce emissions by enabling visualization of emission reductions in supply chains and ensuring traceability.

#### (i) Unified calculation rules on GHG emissions

In order to unify calculation rules on GHG emissions, AZEC partner countries (referred to hereinafter simply as "partner countries") should improve systems for calculating and reporting GHG emissions. Companies entering new markets are required to take differing approaches according to the laws and regulations in each country, which duplicates the burden for such companies. In future, therefore, calculation rules within the AZEC region should be unified, as recommended in last year's first set of recommendations.

When unifying the calculation rules, we consider it pragmatic to ensure compatibility with the GHG Protocol, which is widely employed internationally; however, outstanding issues within the GHG Protocol need to be resolved. These include the recognition of carbon credit offsets and the deduction of direct $CO_2$ emissions when waste is used as a fuel source. We think that discussions on establishing unified calculation rules should be started, taking these issues into account. At the same time, effective use should be made of various private-sector initiatives, as well as forums such as the AZEC International Conference to Develop Carbon Markets launched in May this year.

Given that most companies operating in Japan already face the need to perform two types of calculations[5]—according to both the SHK system[6] and the GHG Protocol—the system within Japan itself also requires improvement to reduce the burden associated with calculating emissions.

---

[5] The Green Transformation League (GX League) and the Green Transformation Emissions Trading Scheme (GX-ETS; which will be fully operational from fiscal 2026) are due to employ a calculation method based on the SHK system (see footnote 6). It will also be important to prevent the burden of calculation being duplicated between these systems and the SHK system.

[6] Japan's GHG emissions calculation, reporting, and publication system. Pursuant to the Act on Promotion of Global Warming Countermeasures, businesses that emit more than a certain volume of GHGs must calculate their emissions and report them to the national government, which publicizes the reported information.

### (ii) Expansion and deployment of data use cases

Industrial data spaces are a mechanism enabling a diverse range of trustworthy data to be linked among different countries, industries, and organizations and they are the focus of increasing international interest. Against this backdrop, Japan too is progressing with discussions involving both the public and private sectors on the creation of an internationally interoperable industrial data space. It is essential to move ahead urgently with creating this data space and establishing data use cases, then deploying the expertise acquired through the practical experience of Japanese companies and industries in partner countries.

In specific terms, the public and private sectors should cooperate on expanding and deploying use cases in areas of cooperation where industry associations are taking the lead,[7] as well as use cases selected for the Ouranos Ecosystem project, with a view to generating needs during deployment in partner countries and providing support. When doing so, it will be essential for partner countries to determine common rules regarding the storage of each other's data and cross-border data use.

Discussions should be started regarding linkage of GHG emissions data with a view to creating internationally interoperable industrial data spaces in partner countries in the future.

## (2) Promotion of green products, etc.

As part of efforts to achieve carbon neutrality, it is essential to promote outstanding energy-efficient products and decarbonization technologies (referred to hereinafter as "green products, etc.") throughout the AZEC region with a sense of urgency. Effective means of doing so include unifying decarbonization-related standards and certifications, and harmonizing associated regulations and systems, throughout the AZEC region as far as possible, and making use of indicators that effectively highlight the environmental value of green products, etc. First, under the framework of AZEC, efforts should be directed toward creating a green market in which environmental value is evaluated fairly and equitably, reflecting the diverse approaches of each country toward achieving carbon neutrality. Furthermore, consideration should be given to expanding this initiative to other countries and regions.

### (i) Unification of standards/certifications and alignment with regulations/systems

As indicated in the survey results above, Japanese companies are very interested in standards and certifications, as well as regulations and systems.

The Japanese government has devised its New Strategy for International Standards (June 2025), setting the environment and energy as one of eight strategic areas, and has stated that it will strengthen its international collaboration, particularly with ASEAN countries. In addition, the ASEAN Economic Community Strategic Plan 2026–2030 (May 2025) stated that the ASEAN Economic Community would promote the adoption of international standards and alignment with such standards to boost its industrial competitiveness.[8] The Japanese government should make use of international mutual approval systems and work to align with regulations and promote adoption of standards while closely monitoring initiatives in other countries and regions.

---

[7] For example, the Partnership for Carbon Transparency (PACT) of the World Business Council for Sustainable Development (WBCSD), the Green × Digital Consortium of the Japan Electronics and Information Technology Industries Association (JEITA), and the carbon footprint calculation initiative of the Battery Association for Supply Chain.

[8] See p. 8 "Objective 1.8. Advance the harmonisation of standards, technical regulations, and conformity assessment procedures" at https://asean.org/asean-economic-community-strategic-plan-2026-2030/.

### (a) Technological areas where Japan is leading the way

Where new technologies are concerned, various relevant standards may not yet have been developed because the technology is still at the R&D stage. For example, perovskite solar cells are a technology that originated in Japan and this is an area that has an advantage in terms of the raw material used.[9] However, there are few organizations with the technology to assess the performance of such solar cells and their methods are not standardized. Among new technologies, there are some cases in which Environmental Production Declaration (EPD) certification[10] has already been acquired through pioneering efforts on the part of Japan, such as in the case of carbon-recycled concrete. Using such examples of meeting international standards for reference, the Japanese government should encourage partner countries and other countries worldwide to adopt Japanese standards in areas where Japan is leading the way.

### (b) Automotive fuel

It is becoming increasingly important to implement pragmatic $CO_2$ reduction measures when pursuing decarbonization, and in this context, fuels with low $CO_2$ emission coefficients are attracting more attention. Biofuel is one such fuel that can be used even in vehicles with internal combustion engines, enabling immediate reduction of $CO_2$ emissions.

Promoting more widespread use of biofuel requires the utmost care, both to control impacts on food supply and the environment, and to ensure that such fuel can be supplied continuously. If it is possible to successfully link promotion of biofuel to agricultural policy and promote more widespread use of biofuel sustainably, this could not only provide an affordable option for reducing $CO_2$, but could also contribute to regional employment and economies, as well as to energy security. We therefore ask the Japanese government to take the leading role in designing and establishing systems for promoting more widespread use of biofuel through dialogue with the governments of partner countries and other nations. Initiatives could include promoting common calculation standards for low-carbon fuels including biofuel and developing an international certification system.

Furthermore, for automobiles especially, it is also very important to contribute to carbon neutrality and nature positivity through resource recycling. Partner countries should collaborate to jointly consider and implement measures to promote recycling of resources such as plastics and battery materials from scrapped automobiles.

### (c) Aviation fuel

GHG emissions in the international aviation sector are excluded from nationally determined contributions (NDCs); instead, private-sector airlines assume responsibility for reducing $CO_2$ emissions in accordance with the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) established by the International Civil Aviation Organization (ICAO). Meanwhile, in some cases, individual countries or regions introduce regulations or taxation to achieve their NDCs by curbing GHG emissions or promoting the transition to new forms of energy, and international private-sector airlines bear the costs of such measures.

---

[9] In Deploying a New Policy for Standards and Certification: Japanese-Style Standardization Acceleration Model 2025, compiled by the Basic Policy Board of the Ministry of Economy, Trade and Industry's Japanese Industrial Standards Committee (JISC) in June 2025, perovskite solar cells were designated as one of the five pilot fields for which Japan will aim to secure markets for technology at the commercialization stage.

[10] An ISO 14025-compliant international framework for companies to calculate and disclose environmental information about their products with a high degree of transparency.

In the EU, for example, the enforcement of the ReFuelEU Aviation regulation has made it compulsory for fuel suppliers to supply sustainable aviation fuel (SAF), and while international private-sector airlines registered outside the EU also bear the costs of SAF, they are not permitted to declare the environmental value of SAF under CORSIA. The International Air Transport Association (IATA) regards the way the cost burden is structured and the inability to transfer environmental value as problematic, while calling for the continuation and maintenance of CORSIA for international aviation.

Given that many countries in Asia and elsewhere are now planning to make the supply of SAF compulsory, the partner countries should pursue decarbonization in international aviation based on CORSIA. Initiatives to that end to be pursued under the AZEC framework should include engaging in technical cooperation and encouraging investment bearing in mind the utilization of Asia's abundant raw materials, as well as establishing an environmental value transfer scheme. In doing so, the partner countries should avoid a medley of separate regulations and systems for each country.

### (d) Shipping fuel

In international shipping, a proposal by the International Maritime Organization (IMO) to create new regulations on fuel by amending the International Convention for the Prevention of Pollution from Ships (MARPOL) achieved basic agreement (i.e., was approved) in April 2025. If the proposed amendments are adopted at the extraordinary session of the IMO Marine Environment Protection Committee to be held in October 2025, the amended convention is expected to go into effect in 2027 and will become applicable from January 2028. The proposed amendments include changing the regulation on GHG fuel intensity (GFI)[11] so that it would apply over the entire fuel life cycle (well-to-wake), targeting not only maritime emissions but also emissions during the fuel's production. Another proposed amendment stipulates that a list of certification systems for sustainable fuels should be published by March 1, 2027 and updated regularly thereafter.

Although Europe has institutionalized well-to-wake fuel regulations for oceangoing vessels calling at European ports, no unified international standards exist for calculating GHG emissions during the production of shipping fuel. It is desirable that globally unified regulations on GHG emissions in international shipping be established; however, if well-to-wake regulations are introduced, as in the proposed amendments to MARPOL, the scope of global regulations will encompass not only the maritime GHG emissions that should be overseen globally, but also the terrestrial GHG emissions that should normally be overseen by the individual fuel-producing countries.

It is likely that AZEC's discussions on calculating GHG emissions and the IMO's discussions on well-to-wake fuel regulation will proceed in parallel. The Japanese government should consult particularly with partner countries that have plans to produce shipping fuel on how to reconcile the two discussions.

### (e) Low-carbon hydrogen and ammonia

Regarding hydrogen, the Japan Hydrogen Association (JH2A) is working to obtain ISO certification for a carbon intensity calculation method that will be needed for low-carbon certification, while also participating in discussions on a low-carbon hydrogen certification system for which its calculation method will be used. Where ammonia is concerned, meanwhile, the Clean Fuel Ammonia Association (CFAA) is leading efforts toward international standardization of equipment such as combustion boilers. The

[11] The volume of GHG emissions produced by a vessel's fuel per unit of energy consumed over its life cycle.

Japanese government should acquire an overview of the relevant supply chains as a whole, then provide systematic, strategic support for these private-sector efforts toward international standardization,[12] in part to advance the use of low-carbon hydrogen and ammonia throughout the AZEC region, including the rollout of Japanese companies' technologies and products in various countries.

### (ii) Environmental value indicators

To successfully promote green products, etc., it is crucial for consumers, companies, and governments inside and outside Japan to understand their environmental value and actually pay to purchase them. However, decarbonization-related products in particular generally require high levels of investment for their development and production, while consumers and others may be unable to discern any performance-related advantages of using such products (e.g., cost reductions) in the way they can with energy-efficient products. Accordingly, it is difficult for companies to judge how predictable the return on their investment might be. Thus, a major challenge is devising and promoting widespread use of indicators that will enable consumers and others to determine the environmental value of green products, etc.

Currently, however, the reality is that the situation varies from one partner country or individual industry to another with regard to energy-related policymaking, progress on measures to address climate change, market environments, areas targeted for investment, marginal abatement costs, and other considerations. Consequently, the value of green products, etc. also varies. During the energy transition period, therefore, it is preferable to use not only the internationally well-known Carbon Footprint of Product (CFP) indicator, but also Allocated CFP—which accounts for appropriate allocation of the effects of emissions reduction—as well as Avoided Emissions[13] and other indicators.

In considering environmental value indicators, it is important to bear in mind that environmental value derives from emissions reductions throughout the entire product life cycle and includes efforts such as process and fuel conversion in raw material production, reduction of energy consumption at the product usage stage (energy efficiency), and reduction of GHG emissions through resource recycling when disposing of products. These decarbonization efforts by companies must be appropriately reflected in environmental value and it should also be borne in mind that the timescale over which the results of those efforts materialize may vary among countries, industries, and products. In addition, it is important to consider how environmental value should be employed in evaluations of companies by financial institutions and investors to link it to funding.

[12] In Deploying a New Policy for Standards and Certification: Japanese-Style Standardization Acceleration Model 2025, compiled by the Basic Policy Board of the Ministry of Economy, Trade and Industry's JISC in June 2025, hydrogen and ammonia were designated as one of the five pilot fields.

[13] Discussions are currently underway regarding regulations governing calculation methods and disclosure, focusing on the WBCSD's Guidance on Avoided Emissions and initiatives by industry associations and others.

## 3. Promotion of Individual Decarbonization Projects

### (1) Formulation and enhancement of roadmaps and establishment of frameworks

To make green investment by companies more predictable, it is essential for all the partner countries to formulate and enhance roadmaps including the timings for introduction of green products, etc., priority sectors for investment, and the country's expected energy mix. The Asia Zero Emission Center established within the Economic Research Institute for ASEAN and East Asia (ERIA) has been tasked with promoting energy transitions in partner countries and supporting their development of visions, roadmaps, or policies for decarbonization,[14] and we hope the center will fulfill this role. It is also essential to foster and strengthen experts to promote decarbonization. The Japanese government too should draw on its expertise and experience in areas such as investment strategies for specific sectors to assist the governments of partner countries.

Furthermore, when promoting individual projects, it is extremely beneficial to hold discussions with the public and private sectors in the countries in question. Japan has established frameworks for bilateral discussions involving both the public and private sectors with Vietnam, Indonesia, the Philippines, and Thailand. In Vietnam, a degree of progress is evident, the most notable example being the selection of the first set of pilot projects by the AZEC/GX Promotion Working Team set up under the Viet Nam-Japan Joint Initiative in a New Era. It is essential to continue making active use of such frameworks, and to extend them to other partner countries. The Japanese government's efforts should include establishing the appropriate business environments for formation and implementation of projects by progressing bilateral policy coordination, institutional improvements, and promotion of individual projects simultaneously to create models for success, and deploying these throughout AZEC.

### (2) Enhancement of the Japanese government's information provision and support system

When Japanese companies promote individual projects in partner countries, they require relevant information including the priority sectors for that country's government, the support measures it offers, and market trends. The Japanese government should therefore develop and subsequently enhance a support system to provide such information to companies along with advice. Furthermore, many public support programs are available—including subsidies under the Global South Future-Oriented Co-Creation Project (the Global South Budget), the Japan-ASEAN Integration Fund (JAIF), the international demonstration projects of Japan's New Energy and Industrial Technology Development Organization (NEDO), and the public-private partnerships of the Japan International Cooperation Agency (JICA). But given this abundance of options, some executives tell us that it is difficult to work out which program is right for their company. We therefore ask the Japanese government to summarize the information about these support programs and provide such information in a format that will be easily understandable for corporate executives.

In Japan, when a company applies for funding from the Global South Budget, an individual project that is recognized as an AZEC project may receive additional points in evaluation, but there is still no guarantee that the project will be approved for funding. This is one reason why it has been suggested that corporate executives may not feel the benefits of having an AZEC project. Accordingly, we recommend that a budget specifically for AZEC projects be set up within the Global South Budget, or alternatively the Global South Budget should seek applications for projects to be fully funded or operated as commissioned projects (i.e., funded entirely with public money).

---

[14] Asia Zero Emission Community (AZEC) Leaders' Joint Statement and its Action Plan for Next Decade (October 11, 2024)

Furthermore, the Japanese government should create a system of preferential support within schemes such as the public support programs described above for individual projects that utilize Japanese-made GX materials like green steel. Such preferential support could apply to loan interest rates and repayment periods, insurance coverage ratios, insurance premiums, or the amounts of subsidies granted. At the same time, the Japanese government should support partner countries in developing systems that facilitate use of such materials. Provision of incentives that exceed the increased costs of using GX materials can be expected to lead to the use of GX materials in individual projects and expand the GX products market inside Japan.

### (3) Finance

It has been estimated that green investment opportunities across ASEAN between 2016 and 2030 will reach a cumulative total value of $3 trillion. Currently, however, the barriers posed by instability in politics, exchange rates, and fulfillment of contracts, as well as low profitability and high levels of credit risk, mean that the pace of actual investment is such that it cannot possibly reach this estimated figure. Private-sector financial institutions face challenges in reliably predicting investment returns, determining projects' eligibility for loans, and ensuring the trustworthiness of companies. The advancement of energy transition projects in particular leads to increased financed emissions, so these projects also involve reputational risk.

In Asia, where funds are raised primarily through loans and bond markets remain small, it would be difficult to cater to the vigorous and diverse energy transition-related demand in the region solely using the approaches of organizations such as the International Capital Market Association (ICMA), which are currently becoming the norm internationally. The Japanese government should seek to develop capital markets in partner countries while viewing energy transition from a wider perspective than the ICMA-based approach, with a view to supporting transitions that reflect the circumstances in individual countries. At the same time, it should address concerns such as greenwashing and carbon lock-in appropriately.

In these respects, the public and private sectors in partner countries need to collaborate in clarifying which projects contributing to individual countries' NDCs and the achievement of long-term objectives will receive support through transition finance. They should then seek to enhance the projects' trustworthiness and investment predictability through policies and measures that increase their effectiveness. As one aspect of this, the Basic Guidelines on Climate Transition Finance and the sector-specific roadmaps drawn up and published by the Japanese government need to be amended appropriately as necessary for each sector in light of shifting circumstances including trends in technological development and changes in the policy environment.

When it comes to the actual provision of funds, needs vary according to the country and the project, and may include equity investment, loans, guarantees, grant-like funding, or subsidies. The Japanese government should look into a mechanism that would enable its various public support programs contributing to the promotion of individual projects in the AZEC region[15] and the funding it contributes to international organizations[16] to be used in a coordinated and strategic manner, as required for each country and project.[17] In this regard, even further expansion of minority equity investment, loan guarantees, and the like by public-sector organizations is especially required.

---

[15] Subsidies provided by the Japan Bank for International Cooperation (JBIC), Nippon Export and Investment Insurance (NEXI), JICA, the Japan Green Investment Corp. for Carbon Neutrality (JICN), the Development Bank of Japan (DBJ), the Japan Organization for Metals and Energy Security (JOGMEC), the Global South Future-Oriented Co-Creation Project, etc.

[16] Such as the Asian Development Bank (ADB).

[17] For example, robust public support should be provided by organizations such as JBIC, NEXI, and JICA for liquefied natural gas (LNG) supply chains.

One specific suggestion for moving forward immediately would be if these public-sector organizations and international organizations such as ERIA were to use the forums for discussions involving both the public and private sectors mentioned in 3. (1) above to engage in discussion. Companies could then make use of the support programs provided by these organizations and work toward collaboration on concrete issues. Over the medium- to long term, we hope that a financing framework will be devised that can financially support individual projects within the AZEC region while also attracting private funds, like the blended finance led by multilateral development banks (MDBs) such as the World Bank and the ADB. We also hope to see the creation of a mechanism for mobilizing funds not only from Japan and the international organizations, but also from partner countries, and to see efforts toward implementation of both this framework and the associated mechanism.

Within Japan, discussions about transition finance are taking place in the Asia Transition Finance Study Group (ATFSG), a private sector-led initiative, and the Asia GX Consortium, which is operated by Japan's Financial Services Agency and ASEAN financial authorities. The topics discussed as part of these initiatives and the content of discussions so far should be summarized and shared as an efficient means of furthering discussions regarding the definition of transition, as well as concrete means of support and the timescales for its provision.

### (4) Promotion of JCM use and expansion of counterpart countries

The Joint Crediting Mechanism (JCM) is a system that quantitatively evaluates the effects of GHG emissions reduction and removal in a counterpart country following widespread adoption of Japan's outstanding decarbonization technologies, products, services, systems, or infrastructure, and the implementation of Japanese decarbonization measures. The system shares the resulting carbon credits between Japan and the counterpart country, and both countries can use it to achieve their NDCs.

#### (i) Expansion of counterpart countries

To date, Japan has established JCM agreements with 31 countries and is implementing more than 270 projects. Government-to-government discussions are currently underway regarding a JCM agreement with Malaysia; this agreement should be established as soon as possible. In addition, we hope that agreements will be established with Australia and other AZEC partner countries.

#### (ii) Promotion of JCM use

The formation and promotion of JCM projects presents challenges in terms of developing common rules regarding procedures and ensuring that the credit approval and issuance process is straightforward and transparent.

Currently, considerable time is required for the series of procedures, which may require repeated approval by a bilateral joint committee, including for the Project Idea Note (PIN), the methodology, and the Project Design Document (PDD), or may require separate submissions for each individual counterpart country. There have been occasions when document formats were changed without warning or the joint committee did not undertake electronic approval because there were too few projects. Accordingly, the predictability of projects should be improved by, for instance, appropriately sharing information between the governments of Japan and the counterpart country, providing advance notification of rule changes, and guaranteeing continuing issuance of credits[18].

[18] For example, the continued issuance of credits from a JCM-registered projects, even if the JCM agreement were to be invalidated due to circumstances on the part of a partner country.

Every time a JCM application is made, it is necessary to obtain approval for the project methodology from the bilateral joint committee formed with each separate counterpart country, even if the project is the same as in a previous application. One suggestion, therefore, is to standardize methodologies and guidelines for all JCM counterpart countries, including AZEC partner countries. In addition, the Institute for Global Environmental Strategies (IGES) and some companies are currently supporting the drafting of methodologies, but efforts to increase the number of people drafting methodologies are also required.

To further enhance the formation and implementation of JCM projects going forward, improving and expanding the Japanese government's existing public support programs and promoting private-sector JCM initiatives is crucial. First, it is necessary to expand the budgets and scope of support for subsidy programs currently implemented by the relevant ministries and organizations such as those relating to equipment subsidies, feasibility studies, and demonstration projects. It is extremely important for ministries to work together in these efforts so that entire project cycles can be seamlessly supported without interruption.

In specific terms, efforts should include the following: clarifying the criteria for JCM approval and how credits are allocated; increasing the number of projects registered for JCM in sectors and technologies where Japanese companies are internationally competitive;[19] significantly expanding budgets (e.g., by increasing the amounts and rates of individual subsidies, as well as maximum subsidies); making requirements more flexible (e.g., by relaxing restrictions on the duration of projects and making the contracts of Japanese companies' overseas subsidiaries eligible for JCM); and alleviating the burden of monitoring.

It should also be noted that huge burdens are imposed on companies that are first to implement methodologies. The Japanese government should increase its support for companies when they are negotiating with the governments of counterpart countries on issues such as methodology and the allocation of credits. Additionally, it is necessary to promote private-sector JCM initiatives by visualizing the value of JCM credits to increase investment predictability and allowing credits to be acquired through involvement in an offtaking-only capacity that does not require either the use of Japanese technology or equity investment.

[19] For example, hydrogen; ammonia; synthetic fuels; biomass; cogeneration; waste-to-energy; boilers; gas turbines; fuel conversion; electricity storage; seawater desalination; manufacturing-related technologies for energy- and resource efficiency, etc.; smart cities; smart mobility; carbon dioxide capture, utilization, and storage (CCUS); forestry; and agriculture.

## Conclusion

Measures to address climate change are a challenge that the whole world must work together to tackle. Achieving carbon neutrality on a global scale requires the necessary measures to be implemented steadily while maintaining various pathways according to the actual circumstances of each country and region.

As an organization targeting various transition pathways and a triple breakthrough, AZEC could play a pioneering role in this endeavor and could also serve as an effective tool for further cementing the relationships between Japan and Asia that have been built up over many years.

Frameworks for putting the AZEC initiative into practice are coming together, including formulation of a medium- to long-term action plan and the launch of the AZEC International Conference to Develop Carbon Markets. Most important in terms of continuously raising the interest of the public and private sectors in partner countries including Japan will be to promptly implement individual projects and build up a track record. This will serve to deepen awareness and understanding of AZEC among more entities. We have high hopes of Japan and the other partner countries regarding their ability to deliver on the AZEC initiative.

## ANNEX Recommendations to Partner Countries Regarding Individual Decarbonization Projects

### (1) Indonesia

| Project Area | CCUS |
|---|---|
| **Project Overview:**<br>The project involves capturing and transporting $CO_2$ emitted by facilities such as power plants and steelworks, which is either stored in Tangguh, West Papua, Indonesia or effectively utilized in Indonesia and other countries. | |
| **Recommendations:**<br>As Japan and Indonesia have not established the bilateral agreement required under the London Protocol regarding international transportation of $CO_2$ for the purpose of offshore storage, the CCUS project's storage locations are limited to locations on land. Accordingly, this agreement should be established as soon as possible to enhance the predictability of the CCUS project in Indonesia. | |
| **Related Governing Laws and Regulations:**<br>・None | |

| Project Area | Renewable Energy |
|---|---|
| **Project Overview:**<br>The project involves a power purchase agreement (PPA) for rooftop solar power generation (onsite). | |
| **Recommendations:**<br>Although a quota system has been set up for connecting solar power to the grid, applications to do so are accepted only twice a year and the available grid connection capacity is not disclosed. In addition, there is a local rule that attributes all environmental value of solar-generated electricity to the State Electricity Company (PLN). These current circumstances are impeding the adoption of solar power.<br><br>Accordingly, Indonesia should increase the opportunities for applying to connect solar power to the grid and disclose the available grid connection capacity. In addition, it should develop a system that attributes the environmental value of solar-generated electricity to the power producer. | |
| **Related Governing Laws and Regulations:**<br>・Minister of Energy and Mineral Resources Regulation No. 2 of 2024 | |

| Project Area | Nuclear Power |
|---|---|

**Project Overview:**

The project involves evaluation of project feasibility, preliminary design and detailed design, procurement, and construction based on intergovernmental cooperation for a small nuclear power plant to supply power in Indonesia.

**Recommendations:**

This project is intended to start operation in West Kalimantan Province in 2034. Preparations for Front-End Engineering Design (FEED) are currently underway with PLN and others as candidates for operating the plant, and Japanese companies are also expected to become involved.

However, the lack of clarity in the Indonesian government's plans going forward—such as the configuration of the scheme (including the composition of operating companies) and expectations regarding the public call process—has become a barrier to the project's progress. Accordingly, we recommend that the Japanese government should seek to resolve these issues by engaging with the Indonesian government and local stakeholders, while also offering various forms of assistance according to the project's future progress, including coordination on local content requirements and technical, human resource, and financial assistance related primarily to equipment exports.

**Related Governing Laws and Regulations:**

・None

| Project Area | Hydrogen, Ammonia, and Synthetic Fuels |
|---|---|

**Project Overview:**

The project involves newly installing a complete water electrolysis system to produce green hydrogen and utilizing an existing ammonia plant to synthesize it into green ammonia.

**Recommendations:**

The surcharge levied on electricity from renewable energy sources procured from PLN is stipulated under the regulations of the Ministry of Energy and Mineral Resources, under whose purview it falls, but compared with other countries the price level is high, raising concerns over a potential impact on the profitability of this project.

Furthermore, given that this project is predicated on exporting the green ammonia produced, earnings from operations are denominated in a foreign currency (US dollar), while expenditure (especially for the electricity from renewable energy sources that would be a raw material) is denominated in the local currency (Indonesian rupiah). Consequently, potential deterioration in profitability due to this currency mismatch is another cause for concern.

Accordingly, we recommend that the Indonesian government should enable cheaper procurement of electricity from renewable energy sources within Indonesia, or grant subsidies for the production of green hydrogen (and ammonia). In conjunction with this, we recommend making the process of applying for special exemption from foreign exchange regulations governing transactions simpler and more flexible.

**Related Governing Laws and Regulations:**

・Minister of Energy and Mineral Resources Regulation No. 7 of 2024

・Law No. 7 of 2011 concerning Currency (as amended by the Omnibus Law)

| Project Area | Gas/LNG |
|---|---|

**Project Overview:**

The project involves developing a large offshore gas field in Maluku Province and producing and exporting LNG.

**Recommendations:**

Although the Indonesian government has established certain local content regulations regarding this project, it is in reality very difficult to procure local content within Indonesia of a quality that meets design specifications.

Meanwhile, stringent requirements exist for non-Indonesian workers seeking to obtain working visas, and given that this project's construction site is a remote island located far away from any urban areas, it is very difficult to recruit construction workers either on or off the island. Therefore, if procurement of labor is limited to workers of Indonesian nationality, there is an extremely high risk that labor shortages would cause delays in the construction process.

In addition, there is a government regulation requiring that a specified amount of foreign currency-denominated export earnings is retained within Indonesia for a certain period, posing the risk of a potential decline in operational profitability.

Furthermore, although the G7 Leaders' Communiqué ended new direct public support for the international unabated fossil-fuel energy sector, except in certain "limited circumstances," there have been cases in which other countries' public-sector organizations have classified certain projects as exceptions and provided them with support.

Accordingly, we recommend that the Indonesian government should minimize the percentage of local content it requires or abolish the penalties imposed when the required percentage is not achieved. In conjunction with this, we recommend reconsidering the high barriers to obtaining working visas for construction workers engaged in projects lasting a fixed period. We also recommend the relaxation or abolition of the government regulation relating to the retention of foreign currency-denominated export earnings.

From the perspective of public financial support, on the other hand, we recommend that the Japanese government should provide robust support, confirming alignment with the "limited circumstances" prerequisite as it does so, in order to avoid lagging behind the support provided for projects by companies in other countries based on other countries' decisions.

**Related Governing Laws and Regulations:**

- G7 Leaders' Communiqué (June 28, 2022)
- PTK-007/SKKIA0000/2023/S9 (Revision 5)
- Government Regulation No. 34 of 2021 (February 2, 2021)
- Minister of Manpower Regulation No. 8 of 2021 (March 31, 2021)
- Government Regulation No. 8 of 2025 (enforced on March 1, 2025)

  Note: This regulation amended Government Regulation No. 36 of 2023 regarding foreign currency-denominated export proceeds from natural resource operations, management, or processing, implementing a measure to increase Indonesia's foreign currency reserves.

### (2) Vietnam

| Project Area | Decarbonization |
|---|---|

**Project Overview:**

The project involves developing an ecosystem for recovering, recycling/reusing, and disposing of refrigerants, primarily targeting commercial air conditioners.

**Recommendations:**

Vietnam has established a law that makes it compulsory to recover refrigerants from air conditioners with a cooling capacity of 26.5 kilowatts or more. However, tangible development of the ecosystem to enable stakeholders to use it in practice, including setting concrete procedures for the necessary formalities, ensuring alignment with relevant laws and regulations, extending practical use of the system to local governments, and informing the users of air conditioners, has been inadequate.

Moreover, a lack of awareness regarding the additional cost burden the refrigerant recovery ecosystem imposes on users of air conditioners means that refrigerant recovery is not progressing.

Accordingly, the Vietnamese government should set concrete procedures for the necessary formalities and develop a mechanism for ensuring that those disposing of air conditioning equipment (the owners) take on the burden of refrigerant recovery costs.

In addition, we recommend the introduction of a mechanism for returning recycling costs to users when refrigerants are recovered so that when equipment is disposed of, it is not just the equipment that is recovered after the refrigerant has been discharged.

**Related Governing Laws and Regulations:**

・ Decree 119

| Project Area | Energy Efficiency |
|---|---|

**Project Overview:**

The project involves demonstration of an air conditioning system that prevents overcooling, and activities to raise awareness of the system. Market launch is being planned. It has been demonstrated that, even without the additional costs and technologies required for solar panels and insulated windows, a significant increase in energy efficiency of around 40% can be achieved by installing the full ventilation and air conditioning system rather than just an air conditioning unit. Awareness of the system is being raised among government officials by presenting it at international conferences such as the Cleaner Energy Future Initiative for ASEAN (CEFIA) Government-Private Forum.

**Recommendations:**

When proposing the installation of this system to building owners, whereas conventionally a system's specifications and initial outlay would have been highlighted, it is instead necessary to inform owners about energy efficiency value during operation and the need for an airtight building and a management service. It has therefore proved difficult to shift the project from the demonstration stage to the sales stage.

Accordingly, Vietnam should create a roadmap for converting commercial buildings into Net Zero Energy Buildings (ZEBs) and introduce policies promoting a change in values among building owners and members of the construction industry. It should also establish construction standards relating to the airtightness of buildings and make it compulsory to monitor indoor $CO_2$ concentration as a means of optimizing the amount of ventilation.

**Related Governing Laws and Regulations:**

・ None

| Project Area | Renewable Energy |
|---|---|

**Project Overview:**

The project involves a PPA for rooftop solar power generation (onsite).

**Recommendations:**

There are cases in which electricity companies serving industrial parks refuse to allow the installation of solar power generation equipment other than their own, and for Japanese-affiliated companies this poses a barrier to introducing renewable energy equipment. In addition, despite the enforcement of the Direct Power Purchase Agreement (DPPA) decree, onsite PPAs have not been permitted in some cases due to reasons such as the lack of detailed guidelines for each region.

Accordingly, the government of Vietnam should start operating its PPA system in such a way that all companies can conduct PPA operations in industrial parks on a fair basis, develop guidelines based on the DPPA decree, and create a uniform operational framework for the whole of Vietnam as soon as possible.

**Related Governing Laws and Regulations:**

- Electricity Law (No. 28/2004/QH14: Partially amended and supplemented by Law No. 24/2012/QH13 and Law No. 28/2018/QH14)
- Law on Planning (No. 21/2017/QH14)
- Law on Investment (No. 61/2020/QH14)
- Law on State Compensation Liability (No. 10/2017/QH14)
- Prime Minister's Decision No. 500/QD-TTg of May 15, 2023 (the Eighth National Power Development Plan)

### (3) Thailand

| Project Area | Energy Efficiency |
|---|---|

**Project Overview:**

The project involves demonstration of an air conditioning system that prevents overcooling, and activities to raise awareness of the system. Market launch is being planned. It has been demonstrated that, even without the additional costs and technologies required for solar panels and insulated windows, a significant increase in energy efficiency of around 40% can be achieved by installing the full ventilation and air conditioning system rather than just an air conditioning unit. Awareness of the system is being raised among government officials by presenting it at international conferences such as the CEFIA Government-Private Forum.

**Recommendations:**

When proposing the installation of this system to building owners, whereas conventionally a system's specifications and initial outlay would have been highlighted, it is instead necessary to inform owners about energy efficiency value during operation and the need for an airtight building and a management service. It has therefore proved difficult to shift the project from the demonstration stage to the sales stage.

Accordingly, Thailand should create a roadmap for converting commercial buildings into ZEBs and introduce policies promoting a change in values among building owners and members of the construction industry. It should also establish construction standards relating to the airtightness of buildings and make it compulsory to monitor indoor $CO_2$ concentration as a means of optimizing the amount of ventilation.

**Related Governing Laws and Regulations:**

・None

| Project Area | Renewable Energy |
|---|---|

**Project Overview:**

The project involves a PPA for rooftop solar power generation (onsite).

**Recommendations:**

There are cases in which electricity companies serving industrial parks refuse to allow the installation of solar power generation equipment other than their own, and for Japanese-affiliated companies this poses a barrier to introducing renewable energy equipment. In addition, Thailand imposes constraints that are excessive in light of international standards, such as restrictions on the load-bearing capacity of buildings and the obligation to install a rapid shutdown system.

Accordingly, the government of Thailand should start operating its PPA system in such a way that all companies can conduct PPA operations in industrial parks on a fair basis and relax constraints that are excessive in light of international standards as soon as possible.

**Related Governing Laws and Regulations:**

・Industrial Estate Authority of Thailand Act

・Firefighting legislation

・Building Control Act

### (4) The Philippines

| Project Area | Carbon Credits |
|---|---|

**Project Overview:**

The project involves curbing methane emissions by controlling the volume of water used when cultivating rice in the province of Batangas. The resulting carbon credits are shared between Japan and the Philippines in accordance with article 6, paragraph 2 of the Paris Agreement, and Japan uses its credits domestically.

**Recommendations:**

Approval for a JCM project between Japan and the Philippines relating to reduction of methane emissions in rice paddies is currently delayed.

Accordingly, we recommend that both countries' governments should push to achieve approval of this JCM project soon and, as a result, the prompt issuance of the world's first joint credits in the agricultural sector.

**Related Governing Laws and Regulations:**

・None

| Project Area | Gas/LNG |
|---|---|

**Project Overview:**

The project involves operating an LNG terminal.

**Recommendations:**

Due to the lack of a guaranteed minimum contract amount in the power supply bidding system, the power producers (purchasers of LNG) that use the LNG terminal cannot commit to long-term LNG sales and purchase agreements that have minimum purchase obligations. As a result, there is a risk that stable LNG imports to the terminal and stable operation of the terminal may not be possible.

Accordingly, it is essential to establish a guaranteed minimum contract amount in the power supply bidding system, thereby improving investment predictability for power producers.

**Related Governing Laws and Regulations:**

・None

### (5) Malaysia

| Project Area | Decarbonization |
|---|---|

**Project Overview:**

The project involves proactively developing and operating a recycling ecosystem from the manufacturers' standpoint that incorporates a mechanism for refrigerant recovery, thereby contributing to the early enactment of an electronic waste (e-waste) law in Malaysia and helping to ensure the effectiveness of the home electronics recycling system that will be developed as a result of the law.

**Recommendations:**

Although Malaysia is aiming to enact an e-waste law in 2025 with the support of JICA, the country still does not guarantee economic incentives sufficient to enable a recycling system to function. Consequently, when air conditioners are disposed of, only the valuable nonferrous metals are recovered as resources, while the refrigerants inside the units are discharged into the atmosphere (amounting in 2023 to 14.63 million tons-$CO_2$/year, or the equivalent of around 6% of Malaysia's annual GHG emissions).

Accordingly, we recommend that the Malaysian government should enact an e-waste law soon and create a system to provide subsidies and other forms of support with the aim of developing and operating a recycling ecosystem.

**Related Governing Laws and Regulations:**

・None

| Project Area | Renewable Energy |
|---|---|

**Project Overview:**

The project aims to produce high-quality carbon-neutral fuel in Johor State using oil palm residue (empty fruit bunch, or EFB) that is currently thrown away as agricultural residue. Although international nongovernmental organizations have highlighted problems in the palm industry from the perspectives of environmental integrity and sustainability, including forest exploitation, depletion of biodiversity, environmental pollution, and human rights issues among workers, this project would help return the palm industry to a sound footing by optimizing waste disposal and promoting the 3Rs (reducing, reusing, and recycling waste).

**Recommendations:**

Although the action plan on biomass utilization issued by the Malaysian government does refer to partnerships with Japanese companies, specific examples of financial cooperation between Japan and Malaysia are currently limited. Moreover, the development of laws and regulations relating to appropriate disposal of industrial waste and the financial support system to help implement the project remain inadequate, so little progress has been made in utilizing biomass resources.

Accordingly, Japan and Malaysia should establish the JCM as soon as possible and move ahead with project formation including capital expenditure.

**Related Governing Laws and Regulations:**

・National Biomass Action Plan 2023–2030, Ministry of Plantation and Commodities

| Project Area | Hydrogen and Ammonia |
|---|---|

**Project Overview:**

The project involves production of e-methane (methanation) in Sarawak State. $CO_2$ emitted by the Malaysia's state-operated oil and gas company is used to produce e-methane for export to Japan.

**Recommendations:**

Under international frameworks for calculating GHG emissions, $CO_2$—the raw material for e-methane—is recorded as an emission in the emitting country, which allows it to be excluded from GHG emissions in the country that uses the e-methane as a form of net zero emissions.

However, given that the development of Malaysia's $CO_2$ emissions reporting system is currently inadequate, there is a risk that reporting of GHG emissions could be duplicated.

Accordingly, the Malaysian government should develop an effective system to prevent this risk from materializing, for example by permitting duplicated reporting to be avoided through agreements between companies.

**Related Governing Laws and Regulations:**

・None

### (6) Australia

| Project Area | Hydrogen and Ammonia |
|---|---|

**Project Overview:**

The project involves the large-scale production of green hydrogen in the state of Queensland's Gladstone Region.

**Recommendations:**

Following the change of government in Queensland to the Liberal National Party, there are indications that the state government's stance on supporting green hydrogen production may change. We therefore call on the Japanese government to engage with the Queensland state government to urge its understanding and support for projects that address climate change. Meanwhile, Australia's federal government is maintaining a policy of supporting the production of green hydrogen. We ask the Australian government to continue collaborating with Japan through AZEC and supporting this project.

In addition, the Australian government should endeavor to expand the use of green hydrogen through initiatives including this project by improving investment predictability for companies. This could be achieved by creating a mechanism for sharing the decarbonization costs associated with the use of green hydrogen throughout the entire supply chain. Specifically, we would like the Australian government to consider creating the type of mechanism that could provide low-carbon products made using green hydrogen in Australia (such as green alumina and green aluminum) with incentives equivalent to their green value.

**Related Governing Laws and Regulations:**

・None

| Project Area | Synthetic Fuels |
|---|---|

**Project Overview:**

The project, located in Moomba in the Cooper Basin of east central Australia, involves synthesizing green hydrogen and $CO_2$ to manufacture e-methane, which is exported.

**Recommendations:**

No clear rules have been determined within Australia regarding the attribution of $CO_2$ emissions reduction value relating to the production and use of e-methane. As a consequence, even when companies have reached agreement regarding the assignment of emissions volumes, there is no guarantee that their agreement will be recognized as valid under the Australian system.

Accordingly, we recommend that rules should be put in place as soon as possible within Australia.

**Related Governing Laws and Regulations:**

・Future Made in Australia (Guarantee of Origin) Act 2024

### (7) Singapore

| Project Area | Hydrogen, Ammonia, and Decarbonization |
|---|---|

**Project Overview:**

The project involves using an ammonia bunkering vessel built in a Japanese shipyard to conduct an ammonia bunkering demonstration in Singapore.

**Recommendations:**

Japan published ammonia bunkering guidelines at the end of June 2025, but such guidelines are still being developed in Singapore. Considering that the vessel will be used as a Japanese ammonia bunkering vessel in future, it is essential for the two countries' guidelines to be aligned.

Singapore is the world's top bunkering nation and Japan possesses world-class shipbuilding and shipping industries. We recommend that the two nations expedite coordinated efforts to ensure the alignment of key requirements in their guidelines regarding the handling of ammonia, including requirements governing equipment on ammonia bunkering vessels.

**Related Governing Laws and Regulations:**

・None