ENERGY & INFRASTRUCTURE NEWSLETTER

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"Interim Summary Report" (*chuukan torimatome*) to introduce Hydrogen and Ammonia

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I. Introduction

1. Current Status and Issues Concerning Hydrogen and Ammonia in Japan

In 2017, Japan formulated the Basic Hydrogen Strategy, which is the world's first national hydrogen strategy, and accomplished several milestones under this strategy: the commercialization of fuel cell vehicles, the increase in the use of fuel cells by households, and the tremendous number of related patents. The current supply of hydrogen in Japan is estimated to be about 2 million ton per year.

Since then, there have been two major movements that have had a significant impact on the use of hydrogen and ammonia in Japan. The first is the 2050 Carbon Neutrality Declaration by former Prime Minister Naoto Suga in October 2020. Under Japan's sixth Strategic Energy Plan, which was prepared in line with this declaration, 1% of the energy mix in 2030, which is equivalent to around 95 billion kWh, should be from hydrogen and ammonia. The second is the Russian invasion of Ukraine in February 2022. This has made Japan more aware of the importance of energy security than ever before, and has emphasized the need for Japan, both domestically and internationally, to build a large and robust supply chain and infrastructure.

The current supply of hydrogen is insufficient to meet the goal of the Japanese government to achieve carbon neutrality by 2050, and most of the hydrogen is gray hydrogen. In addition, the production cost of hydrogen, which is approximately 100 yen/Nm3, is considerably expensive compared to fossil fuels, like oils and coals.

Under the circumstances, to facilitate the development of the hydrogen and ammonia sector in Japan, in June 2023, the Japanese government updated the Basic Hydrogen Strategy ("New Basic Hydrogen Strategy") for the first time in five years.[1]

2. Outline of the New Basic Hydrogen Strategy

The aim of the original Basic Hydrogen Strategy in 2017 was to develop hydrogen technology and encourage the domestic hydrogen market; it did not give much focus on the international supply chain. In contrast, the New Basic Hydrogen Strategy focuses, not only on the domestic market, but also on overseas markets, considering that the global hydrogen market is expected to generate $2.5 trillion per year in revenue and create 30 million jobs by 2050.

Furthermore, the Act on Promotion of a Smooth Transition to a Decarbonized Growth-Oriented Economic Structure (GX Promotion Act) was enacted in May 2023 to set out "Green Transformation"(GX) policies in Japan. Under the GX Promotion Act, a total of 150 trillion yen in public and private investment for GX-related development is expected to be carried out in the next 10 years, by providing upfront government investment support funded by the government's 20 trillion yen Climate Transition Bond. Out of the 150 trillion yen in total investment, 7 trillion yen will be allocated to the hydrogen and ammonia sector.

Using such investments, the goals of the New Basic Hydrogen Strategy are as follows:

Supply of hydrogen (including ammonia)	● Year 2030 : 300 million ton/year ● Year 2040 : 1,200 million ton/year ● Year 2050 : 2,000 million ton/year
Decrease in supply cost	● Year 2030 • Hydrogen : 30 yen/Nm^3 • Ammonia : in the higher 10-yen range ● Year 2050 : • Hydrogen : 20 yen/Nm^3 • Ammonia : None
Transition to low-carbonized hydrogen	Focusing on "carbon intensity", which is based on GHG emissions, the criteria for

[1] https://www.meti.go.jp/shingikai/enecho/shoene_shinene/suiso_seisaku/pdf/20230606_5.pdf

	low-carbonized hydrogen and low-carbonized ammonia are as follows: ● Low-carbonized hydrogen : 3.4kg-CO_2/kg (Well to Production Gate) ● Low-carbonized ammonia : 0.84kg-CO_2/kg-NH_3 (Gate to Gate)

In addition to these ambitious goals, this New Basic Hydrogen Strategy provides an overall picture of Japan's policy and strategy to stimulate both the supply and demand of hydrogen and ammonia for a wide range of sectors, including electricity, fuel cells, iron and steel, and chemistry (among others). Among several policies, the (i) CfD (Contract for Difference) program for supply chain development, and (ii) support for the establishment of the industrial hydrogen or ammonia cluster, play a particularly central role.

These policies have been discussed in the joint policy committee on hydrogen and ammonia (the "Committee") established under the Ministry of Economy, Trade and Industry. The Committee published an Interim Report (*chukan-seiri*)[2] on January 4, 2023 on the basic framework of these policies. On January 29, 2024, the Committee published an Interim Summary Report (*chukan-torimatome*)[3] with further information on these policies.

In the remaining portion of this newsletter, we discuss in detail the contents of this Interim Summary Report.

II. CfD program for the development of supply chain

First, the Interim Summary Report sets out the details of the CfD program for supply chain development, whose framework was outlined in the Interim Report.

It is worth noting that the Interim Summary Report clarifies that the support program is **for pilot projects.** In other words, the Interim Summary Report indicates that the CfD program will not be generally provided to commercial-scale projects, but will be limited to pilot supply chain projects, given that low-carbon hydrogen production in Japan will be small-scale and high-cost for the time being. It also mentions (i) that the environmental compatibility of hydrogen should be evaluated based on carbon intensity, rather than by production method (the so-called "green hydrogen" or "blue hydrogen")[4] , and (ii) that

[2] https://www.meti.go.jp/shingikai/enecho/shoene_shinene/suiso_seisaku/pdf/20230104_1.pdf
[3] https://www.meti.go.jp/shingikai/enecho/shoene_shinene/suiso_seisaku/pdf/20240129_1.pdf
[4] This government's position can be seen in the goal of the transition to low-carbonized hydrogen in the renewed Basic Hydrogen Strategy above, which focuses on the carbon intensity rather than the

reference values for ammonia should refer to ammonia from low-carbon hydrogen.

The following are details on selection and support under this program.

1. Selection Process

(1) Core conditions

First, the Interim Summary Report provides “core conditions”, which are mandatory for projects to receive CfD program support. The reason for these requirements is the source of funding of the CfD program – since the funds for the CfD program will come from the issuance of the Climate Transition Bonds, the CfD program needs to comply with the “Basic Principles of Investment Promotion Measures by the Government”, which are the conditions for the use of proceeds from the issuance of the Climate Transition Bonds.

<Summary of Core Conditions>

Energy Policy (S+3E)	Project must meet the S+3E factors: - Safety - Energy security - Environment - Economic efficiency
GX (Green Transformation)	i. Project **leads the conversion of materials and fuels in “hard-to-abate” sectors** ii. Considerable contribution to strengthening the international competitiveness of the hydrogen industry iii. Carbon intensity is expected to be below a certain value
Independent Supply Chain	i. Supply is expected to **begin by FY2030** ii. 10-year supply after 15 years of program support iii. Plans for other business that utilize the know-how

In terms of GX, the core conditions include the conversion of materials and fuels in “hard-to-abate” sectors: the project needs to plan for the utilization of hydrogen **not only in the electricity sector but also in the steel or chemical sector**. This is a key additional condition absent from the Interim

production method. Japan Hydrogen Association (JH2A) has set the criteria for low-carbon hydrogen at 3.4 kg-CO_2/kg-H2 as "a level that achieves an emission reduction of approximately 70% compared to a process that does not reduce CO_2," but the Interim Summary Report mentions that further study is still needed.

Report. Also, since the core conditions include conditions for users, the business plan of the project should be jointly prepared by the supplier and the user.

(2) Evaluation items

Second, the projects that will receive program support will be selected **based on a comprehensive evaluation of the projects that satisfy the core conditions in (1) above, rather than a simple price comparison**.[5] In other words, the government intends to select pilot projects strategically, taking into account various factors, rather than mechanically selecting projects through bidding based on a strict point allocation.

<Summary of Evaluation Items>

I. Strategic Importance in Policy	
Energy Policy (S+3E)	
(1) Safety	i. **Compliance with safety standards (mandatory)**
(2) Energy Security	i. **Minimum annual supply of 1,000 tons of low-carbon hydrogen (mandatory)** ii. Production of low-carbon hydrogen in Japan iii. Diversity of supply sources, production sites, technologies, and fuels iv. High participation ratio in upstream interests and price stability
(3) Environment	i. Relatively lower carbon intensity
(4) Economic Efficiency	i. Reduction of supply price to a level where the supplier can be independent after the support program ends ii. Use of decarbonized resources in a rational and efficient manner iii. Cost advantage/level, business efficiency and total support amount
GX	
(1) Industrial Competitiveness and Economic Growth	i. Large spillover effects and scalability in “hard-to-abate” sectors ii. Promotion of the establishment of a robust supply chain iii. Sectors where (i) the international regulations are not yet in place, and (ii) demand cultivation is difficult iv. Prompt investment decision and start of supply v. Production of low-carbon hydrogen in Japan vi. Contribution to local communities through the production of low-carbon hydrogen in Japan vii. Risk-bearing and devising for independence and support amount control

[5] However, compliance with safety standards and supply volume (1,000 tons or more per year) are mandatory requirements.

	viii. Technological innovation and competitive advantage
(2) Emission Reduction	i. Relatively lower carbon intensity
II. Project Completion	
(1) Business Plan Accuracy	i. Certainty and adequacy of securing off-takers ii. Design, construction, and operation plans, certainty and adequacy of financial plans, etc.
(2) Business Plan Adequacy	i. Strike price and reference price based on the basic concept ii. Adequacy of measures to geopolitical risks in manufacturing and sourcing countries

It is worth noting that the criteria includes (i) spillover effects and scalability in hard-to-abate sectors such as steel and chemicals in terms with respect to the GX policy, and (ii) the certainty of securing off-takers in relation to project completion.

2. Support

The CfD support is based on the framework presented in the Interim Report, which is 15 years of "Contract for Difference" support.

First, the support will be provided for (i) the cost of production of hydrogen in case of domestic production, and (ii) the cost of production and marine transportation of hydrogen in case of overseas production and transportation (for overseas projects, the cost corresponding to the portion to be supplied to Japan).[6]

The strike price and the reference price are to be determined separately for each project using the following basic approach:

<Summary of Basic Approach of Strike Price and Reference Price>

Strike Price	i. Supplier will offer the strike price in advance as a profitable price ii. Strike price will be basically fixed during the support period (15 years) iii. Partial price fluctuations, such as exchange rate fluctuations and material cost fluctuations, to be automatically reflected in the strike price (with an upper limit) iv. Review of strike price in exceptional cases, when a reduction in strike price is expected.
Reference	The higher of i to iii below;

[6] For domestic use of dehydrogenation equipment (MCH, NH_3), all or part of the cost, including operating costs, may be supported by the CfD program in exceptional cases, assuming that operating costs are expected to be reduced in the future.

Price	i. Price of existing materials/fuels to be replaced by hydrogen upon arrival in Japan, plus environmental value ii. Actual sales price of hydrogen upon arrival in Japan or in the area of production iii. Prices based on past transactions and sales prices (if used in existing hydrogen markets)

Under the Interim Report, the government planned to review the strike price at regular intervals (e.g., every 5 years), but the Interim Summary Report provides that the strike price is **basically fixed for 15 years** and allows price fluctuations due to cost factors over which the operator has no control, for stability in conducting business. In addition, regarding the Long-Term Decarbonization Power Supply Auction and other support programs, it was clarified that in case of overlapping support, subsidies will be added or subtracted accordingly.

3. Schedule

The selection of projects is expected to begin in the summer of 2024, with the aim of adopting projects from the end of 2024. In the actual implementation of the support, it is suggested that the expertise of JOGMEC (Japan Organization for Metals and Energy Security) be utilized, which means that the support program will be implemented in cooperation with JOGMEC.

III. Support for the Establishment of Hydrogen and Ammonia Clusters

The Interim Summary Report provides the selection criteria for support for the establishment of hydrogen and ammonia clusters, clarifying that the purpose of the support is to establish a **pilot chain**. The selection criteria, like those for CfD program, consist of two levels: (i) core conditions and (ii) items for the comprehensive evaluation. The (i) core conditions include quantitative numbers, such as the minimum usage volume at the site and the start and duration of supply. The selection schedule is the same as for the CfD program.

<Summary of Core Conditions>

Advantages of Companies	i. Presence of advanced companies and implementation of decarbonization technologies ii. Prospects for use by companies in “hard-to-abate” sectors iii. Projects that contribute to domestic emission reductions

Advantages of the entire Cluster	i. Minimum use of low-carbon hydrogen at **10,000 tons per year**[7] ii. Utilization of decarbonized resources and infrastructure development in a rational and efficient manner iii. Carbon intensity below a certain value iv. Contribution to the local economy
Medium to long-term development potential	i. Prospects for flexible introduction of new technologies and use in the surrounding area ii. Prospects for contribution to strengthening the competitiveness of the industry as a whole iii. Prospects for contribution to significant emission reductions in Japan
Feasibility	i. Participation of companies with clear vision and leadership ii. Development plan based on the agreement of stakeholders and local community iii. **Supply for a certain period (10 years)** after acquisition of the property iv. **Start of supply by 2030** and the stable supply

The Interim Summary Report mentions that the support program should focus on facilities that will lead to a large-scale expansion of the use of low-carbon hydrogen and benefit a wide range of business. It also announced that the program will provide partial support for the development of "facilities necessary for transporting low-carbon hydrogen from the receiving terminal where the hydrogen is unloaded to the point where it is actually used by the user.[8], These facilities are to be jointly used by several private business (e.g., shared pipelines or tanks)".

IV. Other Policies

1. Facilitate Transition from Gray Hydrogen

The support programs above are planned to support low-carbon hydrogen (so-called "green hydrogen" and "blue hydrogen"), but the majority of hydrogen currently produced in Japan is the so-called "gray hydrogen," which is derived

[7] Projects that do not meet the minimum 10,000 tons of low-carbon hydrogen use in Japan, such as small-scale low-carbon hydrogen production, may be eligible for support for the development of hubs, if they apply for a plan integrated with a hub as a spoke of a hub and the overall amount of low-carbon hydrogen use exceeds 10,000 tons. If the submitted plan is less than 10,000 tons, the project will not be eligible for hub development support, but may be eligible for support focusing on the price difference.

[8] In cases where the cluster and surrounding areas are connected as a hub and spoke by marine transportation, the secondary receiving base is also considered to be covered by the support progr am.

from fossil fuels.

If the supply of hydrogen is left to a market mechanism under these circumstances, the supply will be concentrated in gray hydrogen, which is superior in terms of cost. Therefore, the Interim Summary Report encourages that companies (i) set voluntary targets for promoting the supply of low-carbon hydrogen, (ii) formulate plans to achieve these targets, and (iii) actively publicize these plans.

2. Security Measures

Regarding the safety of hydrogen, "Hydrogen Safety Strategy" was announced in March 2023[9]. The Interim Summary Report mentions that, with the background of this Hydrogen Safety Strategy, a study will be conducted to establish a comprehensive hydrogen safety system with a view to a large-scale low-carbon hydrogen supply chain. In particular, the various permits and inspections under the High Pressure Gas Safety Act are currently handled by local governments (prefectures), but since the handling by the central government itself is effective to speed up the large-scale supply and use of low-carbon hydrogen, the government is considering a new system where the central government handles permits and inspections.

V. Outlook

In the Interim Summary Report, an outline of support program arrangements for the promotion of the introduction of hydrogen is decided based on the Interim Report in January 2023, the Hydrogen Safety Strategy in March 2023, the New Basic Hydrogen Strategy in June 2023, and subsequent GX-related developments. It is expected that the legislation of the support programs will proceed at a rapid pace toward the adoption of the projects to be supported by the end of 2024.

We will continue to follow developments in the legal system and assist the government in designing the system, and will provide our clients with the latest information.

[9] March 13, 2023 "Report of the Study Group on the Development of a Hydrogen Safety Strategy - Hydrogen Safety Strategy - (Interim Summary Report)" https://www.meti.go.jp/shingikai/safety_security/suiso_hoan/pdf/20230313_2.pdf

NEWS

- **Mori Hamada & Matsumoto ("MHM Group") and Tayag Ngochua & Chu ("TNC") establish strategic relationship**

MHM Group and TNC are pleased to announce a strategic relationship between the two Firms. This relationship will enable TNC to join as a member firm of the MHM Group to jointly provide ASEAN local law advice to both firms' global clients.

Components of this relationship include joint training, knowledge sharing, and capacity building in practice areas relevant to clients of both firms investing in, or doing business in the Philippines. To drive our strategic relationship, Mikio Sonoda and Atsushi Inoue will take the lead for MHM Group. They are both MHM Group partners experienced in corporate, M&A and compliance issues in ASEAN including the Philippines.

MHM Group has been involved in Philippine related matters for many years. This strategic relationship will allow it to take one step further. MHM Group believes this strategic relationship, covering MHM Group offices and networks in Japan, ASEAN, China, and New York will enhance its capability to serve its clients globally.

The Philippines is a growing market with a population of over 110 million, which is expected to increase until around 2050, with the average age being approximately 25 years and the GDP growth rate exceeding 7% in 2022. The Philippines is expected to attract more investments globally including from Japan and Asia. With a well-educated and English-speaking workforce, a developed and sophisticated private sector, and a trend of liberalizing foreign direct investments, the Philippines continues to be a preferred investment destination.

TNC is an independent Philippine law firm represented by Carlos Martin Tayag, Patricia Cristina Tan Ngochua and Allan Christopher Sy Chu, who have more than 40 years' combined experience as transaction lawyers, and are highly regarded in the Philippine legal market. TNC has substantial experience in mergers and acquisitions, joint ventures, corporate restructuring, foreign investments, banking and consumer lending, data privacy, information and communication technology, antitrust, regulatory, and general corporate matters for local and international clients.

Both MHM Group and TNC strongly believe that this relationship and their integrated capabilities will enable us to better contribute to the success of our clients' business.

➢ Top Rankings Received from The Legal 500 Asia Pacific 2024

Mori Hamada & Matsumoto has been ranked in the top tier of recommended law firms in Japan, Thailand (Chandler MHM Limited), Myanmar (Myanmar Legal MHM Limited) and Vietnam for several areas of practice in The Legal 500 Asia Pacific 2024. The following lawyers have been acknowledged as "Hall of Fame," "Leading Individuals," "Next Generation Partners" or "Rising Stars" in Projects and energy practice area.

Practice areas

JAPAN: Projects and energy (Tier 1)
THAILAND: Projects and energy (Tier 1)

Lawyers

JAPAN:
Leading Individuals: Takahiro Kobayashi and Shigeki Okatani
Next Generation Partners: Yusuke Murakami and Hironobu Noma
THAILAND:
Hall of Fame: Jessada Sawatdipong
Leading Individuals: Joseph Tisuthiwongse
Rising Stars: Tip-apa Limvichai

➢ Top Rankings Received from Chambers Asia-Pacific 2024

Mori Hamada & Matsumoto and our lawyers in the Projects & Energy practice area are recognized for Chambers Asia-Pacific 2024.

Practice areas

JAPAN: Projects & Energy (Band 1)
THAILAND: Projects & Energy (Band 1)

Lawyers

JAPAN: Takahiro Kobayashi, Shigeki Okatani and Yusuke Murakami
THAILAND: Jessada Sawatdipong, Joseph Tisuthiwongse and David Beckstead

➢ 17 New Partners and 17 New Counsels

As of January 1, 2024, 17 lawyers became partners of the firm.

Partners:
Mai Umemoto, Kanako Tajiri, Takanori Shinohara, Reiji Hosokawa, Yumi Kanamaru, Hiroshi Shirane, Saori Takekoshi, Wataru Ishida, Takaaki Kanayama, Yasutaka Tokuda, Seri Takahashi, Yu Takahashi, Masaki Kakimoto, Yuma Adachi, Julian Barendse, Tawatchai Boonmayapan and Tip-apa Limvichai,

Also, 17 lawyers became counsels as of January 1, 2024.

Counsels:
Aiko Mizuguchi, Kanta Suzuki, Kana Takeuchi, Shoichi Niwa, Hirohiko Tanaka, Seiko Yabe, Kaei Ro, Yoshito Yamamoto, Kenta Nishioka, Shuntaro Shirai, Shuhei Takaishi, Mitsuhiko Nakada, Hirokazu Hasegawa, Lexi Takamatsu, Rawi Meckvichai, Sooksun Popun-Ngarm and Supalerk Rugsarigorn

The firm appreciates your continued support.

➢ 60 New Lawyers Joined Mori Hamada & Matsumoto

60 lawyers who qualified in December 2023 joined Mori Hamada & Matsumoto.

Shuntaro Asaoka, Daiki Ando, Naoki Izumi, Rio Ichii, Taiga Ichinose, Katsuhiro Inoue, Hiroki Inomata, Kosei Usui, Ryotaro Umeda, Takuma Oyama, Yusuke Orui, Shota Ogata, Yusuke Okamoto, Tatsuaki Kagami, Soranosuke Kusakabe, Rikuto Kurosawa, Ryo Koda, Tsurugi Kokubo, Ikumi Komoda, Taishi Koyama, Rick Saito, Minami Sakata, Hiroyoshi Sanada, Masato Shimura, Haruhiko Shoji, Sho Shirasaki, Yutaro Suga, Haruto Suzuki, Kyoko Takakubo, Junna Tashiro, Ayano Tsuchida, Ryutaro Tokita, Junna Tonegawa, Shun Tobita, Takehiko Nakano, Jimmu Nakaya, Amato Nanjoh, Yuma Nishioka, Yukiho Negoro, Yuta Hamaguchi, Jin Hayakawa, Yusuke Hayamizu, Takuma Hikota, Keigo Hirashima, Mizuki Fukami, Toshiaki Fujii, Yudai Fujihira, Yukie Matsuoka, Keisuke Matsumura, Miui Matsumoto, Ryoka Matoba, Nanami Miura, Taisei Mitsunaga, Wakaha Minami, Yuki Yamaoka, Tadayoshi Yamaga, Yuto

Yokoyama, Kazuya Wakao, Keitaro Wakabayashi and Kiko Watanabe

➢ Notice of New York Office Relocation

With effective from 24 January, 2024, we relocated our New York Office to the address below.

Address / Contact
360 Madison Avenue, 24th Floor, New York, NY 10017, USA
TEL：+1-646-255-1148 / FAX：+1-646-255-1149

➢ Notice of Shanghai Office Relocation

With effect from December 25, 2023, we relocated our Shanghai Office from the 6th Floor to the 22nd Floor of the Hang Seng Bank Tower.

Address / Contact
22nd Floor, Hang Seng Bank Tower
1000 Lujiazui Ring Road, Pudong New Area, Shanghai 200120, The People's Republic of China
TEL：+86-21-6841-2500 / FAX：+86-21-6841-2811