



WEEKLY

AUGUST 4, 2025

ANALYSIS

OFFSHORE WIND IN CRISIS – BUT NEW AREAS AND FLOATING TECH OFFER HOPE

- The offshore wind sector is in turmoil. Mitsubishi Corp's potential withdrawal from major offshore wind projects could trigger a collapse of investor confidence, and future auctions.
- To regain momentum, METI designated areas off Hokkaido as "promotion zones". The offshore wind sector is in pain, but it's not terminal.

ENERGY JOBS IN JAPAN: BUILDING A WORKFORCE FOR THE HYDROGEN ECONOMY

- Japan's ¥3 trillion CfD subsidy program for clean hydrogen was oversubscribed: close to 30 bids.
- METI will soon begin selecting projects on a rolling basis. Human resources could face a massive bottleneck if hiring, training and growing the workforce isn't urgently addressed.

ASIA PACIFIC REVIEW

This column provides a brief overview of the region's main energy events from the past week

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- MoE seeks comments on GHG emissions reporting

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- JAPEX acquires stake in Norway oil and gas fields
- LNG stocks drop well below 5-year average

CARBON CAPTURE & SYNTHETIC FUELS

- OOOO starts CO2 capture demo at biomass plant
- ENEOS and TOPPAN to launch a pilot for wastepaper-based bioethanol
- Mitsubishi Chem invests in Australian biomass firm

EVENTS

- Aug 27-28 Asia-Pacific Economic Cooperation /
Energy Ministerial Meeting @ Busan,
South Korea
- Sept 9-12 Gastech 2025, Milan
- Sept 15-19 IAEA General Conference 2025
- Sept 16-18 APAC Wind Energy Summit @
Melbourne, Australia
- Sept 17-19 Smart Energy Week Autumn 2025 / EV-
HV-FCV Expo / Green Factory Expo / H2
& FC Expo / PV Expo / Battery Japan /
Smart Grid Expo / Wind Expo / CCUS
Expo / Decarbonization Expo / Circular
Economy Expo @ Makuhari Messe



JAPAN NRG WEEKLY

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OFTEN-USED ACRONYMS

METI	The Ministry of Economy, Trade and Industry	NRA	Nuclear Regulation Authority
MoE	Ministry of Environment	GX	Green Transformation
ANRE	Agency for Natural Resources and Energy	mmbtu	Million British Thermal Units
NEDO	New Energy and Industrial Technology Development Organization	mb/d	Million barrels per day
TEPCO	Tokyo Electric Power Company	mtoe	Million Tons of Oil Equivalent
KEPCO	Kansai Electric Power Company	kWh	Kilowatt hours (electricity generation volume)
EPCO	Electric Power Company	FIT	Feed-in Tariff
JCC	Japan Crude Cocktail	FIP	Feed-in Premium
JKM	Japan Korea Market, the Platt's LNG benchmark	SAF	Sustainable Aviation Fuel
CCUS	Carbon Capture, Utilization and Storage	NPP	Nuclear power plant
OCCTO	Organization for Cross-regional Coordination of Transmission Operators	JOGMEC	Japan Organization for Metals and Energy Security

NEWS: GENERAL OUTLOOK AND TRENDS

Financial results of 10 major EPCOs: 7 report profit declines or losses

(Nikkei, July 31)

- The consolidated financial results for Q1 2025 of the 10 major power utilities (EPCOs) were announced. Seven reported profit declines or losses.
- Excluding TEPCO, which faced a significant loss, the combined final profit of the other nine companies was ¥368.3 billion, down 11% YoY.
- Intensified competition for customer acquisition, particularly in the corporate sector, led to noticeable sales volume reductions for many companies.
- Tohoku Electric, which restarted Unit 2 of Onagawa NPP (Miyagi Pref) in October 2024, saw a 38% YoY decline in net profit to ¥37.7 billion. While the restart reduced fuel costs for thermal generation, a drop in electricity sales volume – especially to corporate clients – impacted results.
- Kansai Electric reported a 14% profit decline to ¥99.1 billion, as Unit 3 of Mihama NPP and Unit 3 of Takahama NPP underwent scheduled inspections.
- Chugoku Electric, which restarted Unit 2 of Shimane NPP, and Kyushu Electric reported profit increases.
- *CONTEXT: As the wholesale electricity market stabilizes compared to peak periods and new power retailers push to expand sales, competition for customers is intensifying. With rising electricity demand expected due to new data centers, companies must come up with strategies to boost profitability through power sales.*

TEPCO PG and Hitachi test grid-interactive energy management between DCs

(Company statement, July 28)

- TEPCO Power Grid and Hitachi held a field test on grid-interactive energy management to utilize data centers (DCs) as a source of power balancing capacity.
- As a result, the project successfully established and accelerated energy management technologies, including workload shifting across three or more DCs.
- By optimally shifting workloads between DCs, renewable energy in each area can be more effectively utilized.
- Additionally, leveraging high-capacity networks and storage batteries enables faster activation of balancing capacity, which can also be used for frequency regulation.
- *CONTEXT: TEPCO PG and Hitachi have been conducting the project since October 2022, aiming to optimize the supply-demand balance of the power grid through energy management utilizing DCs.*
- **TAKEAWAY:** The potential for DCs to play a greater role in grid balancing has been discussed globally for a number of years. Microsoft is among the companies that have conducted research (outside Japan) into deploying DC backup power systems, which also include batteries, into frequency control instruments. In Japan, there has been little movement in this direction so far, but TEPCO PG's test and international developments could change that in the second half of the decade.

MoE seeks comments on amendment for reporting GHG emissions

(Government statement, July 31)

- The MoE seeks public comments on a proposed amendment to the ordinance on the calculation of GHG emissions from designated emitters.

- The proposed 2025 Base-Year Revision Plan for the Consumer Price Index outlines the main changes and basic policies for the 17th revision, scheduled for 2026, transitioning from the current 2020 base year to a 2025 base year.
- The public is invited to submit opinions on the proposed changes [here](#) until Aug 29.
- *CONTEXT: Under Article 26 of the Act on Promotion of Global Warming Countermeasures, businesses are required to report calculated GHG emissions to the relevant authorities. The proposal refers to a review of the calculation methods conducted in a govt working group in June.*

Japan records its highest-ever temperature

(Asahi Shimbun, July 30)

- Japan recorded its highest-ever temperature of 41.2°C on July 30 in Tamba, Hyogo Pref. It surpassed the previous record of 41.1°C.
- A strong high-pressure system caused an intense heat wave across the country. It marked the first time this season temperatures exceeded 40°C.
- 33 locations issued heatstroke alerts. They include the Tokai, Kinki, Hokuriku, and Chugoku regions.
- Authorities suggest taking preventive measures. They include using air conditioning and staying hydrated, to avoid heat-related illnesses.
- **TAKEAWAY:** Heat waves increase demand for gas and coal, with inventories for LNG noticeably dropping in the past week.

• SIDE DEVELOPMENT:

[Near-term natural gas contracts see price recovery](#)

(Denki Shimbun, Aug 1)

- European natural gas and Asian LNG prices, subdued due to weak demand, showed slight recovery from the weekend, as both indices rose further.
- In the electricity futures market, settlement prices for near-term contracts turned upward. Weekly contracts rose 2.5% WoW, and August contracts rose 1.5%.
- Autumn-to-winter monthly contracts remained flat or slightly dropped.
- Despite spot prices rising during the peak summer period, concerns about supply-demand tightness have not emerged.

NEWS: ELECTRICITY MARKETS

OCCTO announces results of capacity market additional auction

(Agency statement, July 28)

- OCCTO announced results of the FY2025 capacity market additional auction (for supply in FY2026). Only four regions, Hokuriku, Kansai, Chugoku, and Shikoku met the standard supply reliability.
- Unlike the previous year that targeted limited areas, this time the nine major power utility regions participated. Total contracted capacity was about 8.3 GW. Area prices ranged from ¥8,213 to ¥8,749/ kW.
- Prior secured supply capacity was 181.63 GW, falling short of the target; which was due to some power sources exiting the market.
- Compared to the FY2022 main auction (for FY2026), prices increased in most regions, except for Kyushu, where it fell slightly. The total contracted value after adjustments was ¥58.2 billion.

- **CONTEXT:** *The additional auction in FY2024 (which relates to actual supply and demand in FY2025) was held only in Hokkaido, Tokyo, and Kyushu, as they were the areas where supply reliability was deemed insufficient. However, in FY2025, as the procurement volume fell short, the auction was held nationwide. Bidding took place in June.*
- **SIDE DEVELOPMENT:**
[OCCTO provides information for comprehensive review of capacity market](#)
 (Agency statement, July 25)
 - OCCTO provided updates on regulatory trends as part of the FY2025 comprehensive review of the capacity market.
 - The review focuses on clarifying the system's purpose, verifying current mechanisms, and improving market efficiency.
 - OCCTO noted an increasing registration of low-voltage demand-side resources, which are expected online from FY2026, suggesting further administrative load.
 - **CONTEXT:** *Internationally, many countries are shifting from decentralized to centralized capacity procurement systems, like Japan's. And capacity market clearing prices are rising in Europe and the U.S.*
- **TAKEAWAY:** [The FY2025 review of the capacity market will be led by OCCTO. The review aims to reflect on the system and gather insights and ideas from stakeholders, including market participants. Providing information in advance will help the market planners and regulators deepen their understanding of the practicalities of the market.](#)

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Govt discusses trading timing of intraday and day-ahead simultaneous market

(Government statement, July 29)

- ANRE and OCCTO discussed the timing of the intraday market and the day-ahead market within the simultaneous market.
- For the intraday market, they proposed conducting the clearing process – which determines the start / stop and output allocation of power sources – at 5pm on the day before actual supply; and at 9am and 3pm on the same day.
- Additionally, they envision a clearing process one hour before the real-time supply-demand point to determine power output.
- While aiming for a clearing process that determines power output, they are also considering mechanisms to reduce the burden on operators, such as building a system that automates and simplifies post-clearing procedures.
- Regarding the day-ahead market, one proposal is to hold bidding at 10am in line with the current system; but delaying it by about three hours is also under consideration.
- **CONTEXT:** *In the simultaneous market, the clearing process conducted once on the day before is called the "day-ahead simultaneous market"; while the process repeated multiple times up to real-time is referred to as the "intraday simultaneous market."*

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EPRX explains system changes: All products traded day-ahead, in 30-min intervals

(Denki Shimbun, Aug 1)

- The Electricity Power Reserve Exchange (EPRX) explained the system transition for the 2026 supply-demand adjustment (i.e. balancing) market launch.
- Weekly trading of Primary to Tertiary Adjustment Capacity will shift to daily, day-ahead trading in 2026, with trading units shortened from 3 hours to 30 mins.
- Starting in 2026, all products in the balancing market will be traded day-ahead in 30-minute units.

J-Power sets up new unit to advance digital power trading

(Denki Shimbun, Aug 1)

- J-Power established a specialized taskforce in July to optimize and digitize its power generation and trading operations, aiming for fully automated market transactions by fiscal 2029.
- The new unit, named "Smart Trading Promotion Task," will utilize AI for improved dam inflow forecasts, advanced power-generation scheduling, and algorithm-based market trading. The goal is to optimize plans for the medium-term (about one year) and short-term (closer to actual supply-demand).
- Initial demonstration projects on optimizing power-generation plans have begun for one hydro system, with full-scale adoption across all hydro systems and thermal power sites planned progressively from fiscal 2026 onward.
- The initiative is expected to streamline operations, improve trading profitability, and enable more flexible responses to upcoming market rule changes, including a planned "simultaneous market" for both power supply and balancing capacity after 2030.
- **CONTEXT:** *Dam inflow forecasts refer to predictions about the amount of water that will flow into a hydroelectric dam over a certain period, typically based on weather forecasts, historical rainfall data, snowmelt patterns, and upstream river conditions.*
- **TAKEAWAY:** While J-Power has previously worked on market trading, dam inflow forecasting, and generation plan optimization, aligning plans made a year in advance with real-time supply-demand changes has been challenging. The new efforts aim to streamline complex operations amid regulatory changes and enable flexible work practices. With ongoing reforms in the balancing market and plans for a "simultaneous market" combining supply and adjustment capacity by 2030, J-Power is turning to smart trading to help navigate the complexities.

Hokkaido power prices spiked on July 28 amid outages

(Denki Shimbun, July 29)

- Spot electricity prices for Hokkaido surged to ¥50/ kWh on July 28 between 6:30-7:30 p.m., the highest since Sept 2023.
- This was due to unscheduled outages at power plants and reduced transmission capacity from Honshu.
- The 250 MW Tomakomai oil-fired power plant experienced an unexpected outage late July 25, and the 350 MW coal-fired Tomato-Atsuma No.1 plant halted for mid-term inspection on July 26.
- Transmission capacity from Honshu to Hokkaido was severely limited (below 50 MW) from July 18 to August 3 due to construction work on the interconnection system, intensifying supply constraints.
- Nationwide, spot prices also rose on July 29, hitting an annual peak of ¥37.51/ kWh in all regions from Hokkaido to Kansai, driven by severe heat forecasts and increased electricity demand.

Shizuoka to add two gas units at Fuji Power Plant

(Company statement, July 29)

- Shizuoka Gas & Power will add two new gas engine power generation units at its Fuji Power Plant in Fuji City. Construction begins in late 2025; operations to start in 2027.
- The plant's total capacity will increase from 32.6 MW to 48.2 MW. The extra units will enhance the company's self-generation ratio and stabilize power supply.
- **CONTEXT:** *Shizuoka Gas & Power is a subsidiary of Shizuoka Gas.*

NEWS: HYDROGEN

NYK targets LNG, ammonia fuels for fleet decarbonization

(Platts Insight, July 30)

- Shipper NYK Group plans to transition its marine fuels from LNG to ammonia by the end of the decade, as part of a phased decarbonization strategy, executive Yokoyama Tsutomu said in an interview.
- *CONTEXT: NYK operates over 800 vessels and has set itself the goal of cutting GHG by 45% from 2021 levels by 2030, and achieve net-zero by 2050.*
- NYK currently consumes 3.3 million metric tons/ year of conventional bunker fuels; the company will gradually shift to vessels capable of using alternative fuels through its regular fleet renewal process.
- Yokoyama emphasized that immediate fuel changes are unrealistic due to ships' typical 20-year lifespan, necessitating incremental introduction of cleaner fuels.

Resonac to continue hydrogen plant after end of operation with KHI

(Company statement, July 29)

- Resonac will independently continue operation of its hydrogen plant in Kawasaki after KHI ended the two firms' joint development framework.
- The project, which aimed for 100 MW of capacity by 2030, ended due to KHI's problems in securing hydrogen supply infrastructure.

NEWS: SOLAR AND BATTERIES

India surpasses Japan to be world's third-largest solar power producer

(Economic times, July 31)

- India has officially overtaken Japan to become the world's third-largest solar energy generator, producing about 108,494 GWh of solar power in FY2024–25, according to data from the International Renewable Energy Agency.
- This is a landmark in India's ambitious clean energy journey to build 500 GW of non-fossil fuel power capacity by 2030.
- According to govt data, the state of Rajasthan alone now houses more than 33 GW of solar capacity, more than most nations.
- *CONTEXT: India's Production Linked Incentive scheme for solar manufacturing has spurred domestic production, reducing dependency on imports and strengthening the supply chain. Solar power now represents nearly 5.8% of India's total electricity, with renewables overall constituting more than 17%.*

Shizen launches AI-driven battery system for solar projects

(Company statement, July 23)

- Shizen Energy launched an AI-driven battery control system for solar power firms and aggregators. Developed by its subsidiary Shizen Connect, the system uses AI to automate charge/ discharge timings to align with peak demand, maximizing profits.
- The service's first deployment will be at Green Growth solar plant in Oita Pref, to launch in January 2026.
- *CONTEXT: AI-driven battery systems enhance solar power projects by optimizing energy storage and distribution. They aim to predict solar generation and demand patterns using real-time data, ensuring efficient battery charging and discharging. AI algorithms also extend battery lifespan by managing charge cycles and preventing overstress. This improves grid stability, reduces reliance on fossil fuels, and lowers costs, seeking to make solar projects more reliable and sustainable.*

Manoa Energy connects its new BESS to Hokkaido grid

(Company statement, July 31)

- Manoa Energy, an operator of high voltage battery energy storage systems in Japan, has successfully connected its 50MW/ 100 MWh BESS to Hokkaido's 66 kV grid.
- "Helios" is one of the largest-scale BESS in Japan and uses Lithium Iron Phosphate (LFP), 2 hour standalone batteries. COD is expected by the end of this year.
- *CONTEXT: The firm has a pipeline of around 1 GW of projects across the development cycle. Manoa's parent company, Brawn Capital, is a Hong Kong-based fund focused on energy transition infrastructure. Founded in 2015, Brawn develops and manages grid-scale battery storage projects in Japan and decarbonized data centers across APAC. It has previously delivered 180 MW of solar in Japan and 60 MW across the broader region.*

PowerX and Nishimu Electronics deliver first solar power plant-integrated BESS

(Company statement, July 24)

- PowerX and Nishimu Electronics Industries delivered their first solar power plant-integrated BESS, installed at the Aoyagi Solar Park.
- The battery has an installed capacity of 1.75 MW and a storage capacity of 8.22 MWh, and is housed in three container units.
- *CONTEXT: The project received state support under the FY2023 subsidy program, covering half the installation costs.*



Banpu Japan and Global Engineering's JV starts grid-scale BESS

(Company statement, July 24)

- J&A Energy, a JV set up by Banpu Japan and Global Engineering, began operating a grid-scale battery storage system in Tono City, Iwate Pref.
- The system has a capacity of 14.5 MW/ 58 MWh. The battery, manufactured by Tesla, was installed with state subsidies.
- *CONTEXT: The project aims to stabilize the power grid, balance electricity supply and demand, and respond to fluctuations in renewables output through participation in the electricity markets.*
- **SIDE DEVELOPMENT:**
[4Cs and PATH partner to develop grid battery projects](#)

(Company statement, July 28)

- 4Cs Holdings and PATH inked a partnership to fully develop grid-scale BESS projects across Japan, aiming for a total output of 100 MW and 200 MWh.
- Both companies originally operated in the beauty and cosmetics industry. Their partnership highlights the growing trend of non-traditional players entering the renewables and battery sector.

Itochu and EDF launch East Timor's first utility-scale solar and storage IPP

(Company statement, July 25)

- Itochu Corp and EDF Power inked a 25-year PPA with East Timor's national utility for a 75 MW solar and 36 MW / 36 MWh battery hybrid power project.
- This marks the first large-scale renewable IPP in the country, which is highly dependent on diesel imports.

Kyushu Electric and Taiwan's ProLogium to cooperate on solid-state batteries

(Company statement, July 30)

- Kyushu Electric and ProLogium Technology, a Taiwanese firm focused on lithium ceramic battery research and manufacturing, will develop solid-state batteries for industrial machinery and energy storage.
- Mass production and sales are targeted for FY2027. The two firms plan to showcase the module at the CES tech expo in January 2026.
- ProLogium will supply the battery cells; Kyuden will develop battery modules optimized for industrial machinery using its control tech.

PowerX and KEPCO to test battery-based ultra-fast charging services

(Company statement, July 25)

- PowerX and KEPCO will explore using battery-based, ultra-fast EV charging systems for public charging services and energy management at installation sites.
- In H1 of FY2026, the Hypercharger Pro, a battery-integrated ultra-fast EV charging system, will be installed in Wakasa, Fukui Pref.
- The project will also test energy management features like peak shaving and assess use of the system's battery capacity for participating in electricity markets as a Virtual Power Plant.
- *CONTEXT: Both firms aim to accelerate development of EV charging infrastructure in Japan, which lags behind China, the U.S. and Europe. The biggest challenges include low number of public fast chargers*

relative to EV adoption potential, slow deployment of ultra-fast chargers that can meet modern EV needs, heavy focus on hybrids resulting in delayed full EV adoption, and limited private investment in large-scale EV infrastructure projects compared to China or the EU. Japan wants 150,000 public chargers by 2030 (up from about 30,000 in 2023).

- **SIDE DEVELOPMENT:**

[Toyota Tsusho, Asahi Kasei ink U.S. EV battery separator deal](#)

(Company statement, July 30)

- Asahi Kasei's U.S. subsidiary, AKBSA, and Toyota Tsusho's American unit, TAI, signed a capacity rights agreement for the supply of Li-ion battery separators for EVs.
- Under this deal, starting mid-2027, AKBSA will prioritize supplying separators from its new Charlotte, North Carolina factory to TAI.
- The agreement helps Asahi Kasei ensure a stable supply, while Toyota Tsusho will use the separators to strengthen the EV battery supply chain in North America.

NEWS: WIND POWER AND OTHER RENEWABLES

Japan designates two new zones off Hokkaido for upcoming wind auctions

(Government statement, July 30)

- METI and MLIT designated Matsumae (250–310 MW) and Hiyama (910 MW–1.14 GW), areas off the northern island of Hokkaido, as “promotion zones” for upcoming offshore wind power auctions.
- The govt will now develop guidelines and launch a public tender to choose operators for energy projects in those areas.
- **CONTEXT:** *With the upgrade, Japan now has 12 auction-ready promotion zones, seven promising zones and 16 preparation zones, with 10 suitable for floating tech.*
- **TAKEAWAY:** *Although no specific timeline for the next auction has been set, industry players anticipate the next round to take place this autumn. For more information on recent developments in the offshore wind sector, see this week's Analysis section.*

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Mitsui & Co to buy UK's strategic offshore wind maintenance port

(Company statement, July 31)

- Mitsui & Co and Mitsui O.S.K. Lines will acquire full control of Nigg Port, a strategic maintenance hub for energy operation in Inverness, (north Scotland), along with its related manufacturing and service businesses.
- The purchase price has not been disclosed but investment is expected to be in the tens of billions of yen.
- The port is owned by the UK's Global Energy Group (GEG). Under the deal, Mitsui & Co will hold a 51% stake, with Mitsui O.S.K. 49%. Mitsui first acquired a 25.5% stake in GEG in 2012.
- The port handles fixed-bottom offshore wind turbines, but the Japanese firms are seeking an upgrade to accommodate floating turbines by the mid-2030s.
- **CONTEXT:** *With offshore wind power development progressing in the UK, the two Japanese firms aim to strengthen their offshore wind power business. The port handles unloading components including wind turbine blades and foundations, and provides equipment maintenance, assembly space and storage for replacement parts.*

Amazon starts operations at first wind project in Japan, boosts renewable push

(Company statement, July 25)

- Amazon began operating its first onshore wind project in Japan, located in Rokkasho Village, Aomori Prefecture, built by Cosmo Eco Power.
- The facility has eight wind turbines, each 85 meters high with a rotor diameter of 120 meters, and a combined capacity of 33 MW, enough to power about 19,000 Japanese households.
- *CONTEXT: Amazon's global renewable energy initiative has led to more than 600 wind and solar investments worldwide as it seeks to hit net-zero by 2040.*
- Amazon also announced plans to open a fulfillment center in Nagoya featuring Japan's largest geothermal cooling system and the company's first-ever building-integrated solar wall. It aims to become the first facility in Japan certified as zero-carbon by Living Future.

JOGMEC launches first overseas geothermal project in Indonesia

(Company statement, July 29)

- JOGMEC launched its first overseas geothermal project through a joint research agreement with Indonesia's state-owned GDE to field test a method for identifying acidic geothermal fluid reservoirs and geological survey.
- The project will take place in Patuha, West Java, and aims to develop further acidic geothermal fluid exploration technology for use in Japan.
- *CONTEXT: Indonesia is a global leader in geothermal energy, with an estimated potential of 24 GW, the world's largest. To date, the country has installed over 2.3 GW, third globally. Geothermal contributes about 5% to the national power mix, supporting Indonesia's goal of 23% renewable energy by 2025. Govt incentives and international partnerships drive growth.*

METI and Nippon Steel ink MoU with Vestas on domestic turbine production

(Nikkei, July 29)

- METI and Nippon Steel will each sign MoUs with Denmark-based Vestas to explore domestic production of wind turbine blades and components, imports of which Japan is highly dependent on.
- METI will support Vestas with subsidies for offshore wind projects, while Nippon Steel agreed to explore manufacturing the tower portions of wind turbines.

Consortium selected for Cabinet's offshore wind maintenance project

(Company statement, July 17)

- A consortium of Toyo Engineering, Nippon Steel Engineering, FullDepth, and OKI was tapped for the Cabinet Office's field test to develop unmanned inspection technologies for offshore wind turbines with both surface and underwater vehicles.
- The test will simulate inspections off of Shizuoka Pref, and aims to create a roadmap and business model for fully autonomous underwater vehicles.

Ocean Power Grid to use electric ships to deliver hydro power to islands

(Company statement, July 30)

- Ocean Power Grid, a PowerX subsidiary, plans to deliver hydroelectric power from Yakushima to nearby islands using battery-equipped electric ships.
- The project, in partnership with Yakushima Denko, aims to start operations around 2028. The transported power would replace diesel-generated electricity on islands like Tanegashima, helping to reduce carbon emissions.

NEWS: NUCLEAR ENERGY

¥900 billion needed for debris removal at Fukushima

(Nikkei, July 30)

- TEPCO will need about ¥900 billion to prepare for large-scale removal of melted nuclear fuel (debris) from Fukushima Daiichi Unit 3. The cost covers construction of new equipment and facilities ahead of debris removal, planned to start from FY2037.
- TEPCO will book part of the cost as a loss in its FY2025 results. TEPCO funds decommissioning costs from annual profits.
- The ¥900 billion figure, part of the overall estimated ¥8 trillion Fukushima decommissioning budget, covers constructing new facilities atop reactor buildings and dismantling waste storage facilities nearby.
- *CONTEXT: Debris removal, an estimated 880 tons in Units 1–3, is a key hurdle. TEPCO began trial removal at Unit 2 in 2024 and has collected only 0.9 g so far. The govt and TEPCO aim to complete decommissioning of all six Fukushima reactors by 2051. Full-scale debris removal from Unit 3 should begin in FY2037.*
- *CONTEXT: The ¥8 trillion estimate is a rough figure, based on past cases like Three Mile Island. If costs exceed this amount, TEPCO will need to further strengthen its earnings. As of late FY2024, TEPCO has accumulated ¥700 billion in a special decommissioning reserve. The company contributes ¥260 billion each year to the reserve.*
- **SIDE DEVELOPMENT:**
[TEPCO to post loss due to Fukushima decommissioning](#)
 (Nikkei, July 31)
 - TEPCO will likely post a net loss of around ¥850 billion for Q1 2025, due to costs related to preparations for removing debris from Fukushima Daiichi NPP.
 - This is TEPCO's second-largest quarterly loss since the 2011 earthquake. In contrast, the same quarter last year saw a net profit of ¥79.2 billion.

Tohoku Electric gains approval for spent fuel dry storage at Onagawa

(Company statement, July 29)

- Tohoku Electric got prior approval from Miyagi Pref for a spent fuel dry storage facility at Onagawa NPP Unit 2.
- The facility will consist of a dry storage building and robust metal containers to store cooled spent fuel from the Unit 2 pool.

- **CONTEXT:** *The company is aiming to start operations in March 2028 for the first unit and June 2032 for the second. Unit 2 fuel pool can hold up to 1,680 assemblies. The reactor resumed operation in Dec 2024. There are around 1,335 assemblies stored. The pool could reach full capacity in four years.*
- **TAKEAWAY:** *The approval is conditional on the fact that the facility will be temporary storage. After that, the utility should send the spent fuel to the reprocessing plant under construction in Aomori Pref. But, the lack of a workable plan for spent nuclear fuel, due to repeated delays in facilities completion, remains a weak point in the nuclear sector.*

Hamamatsu Photonics and EX-Fusion conduct demo test for laser fusion

(Company statement, July 31)

- Hamamatsu Photonics and EX-Fusion held a demo test of a key technology for laser fusion research – irradiating high-power pulsed lasers onto simulated fuel targets.
- Currently, most laser fusion experiments use single-shot laser irradiation. Yet, future research could shift toward continuous laser irradiation, enabling more efficient and stable energy generation.
- If they manage to scale the technology up to kilojoule-class lasers, it could lead to a new approach to laser fusion.
- **CONTEXT:** *EX-Fusion plans to conduct a demo by late 2026 to achieve one hour of continuous nuclear fusion reaction. Success would mark a step toward power generation demos in the 2030s.*

Kyushu Electric spots possible drones over Genkai NPP

(Company statement, July 27)

- Kyushu Electric made comments about how it observed three lights believed to be drones flying over Genkai NPP on July 26.
- Kyushu Electric confirmed no impact on plant equipment and no safety issues. The utility has not confirmed the objects as drones.
- **CONTEXT:** *Fukuoka Pref asked Kyushu Electric to boost safety measures. The Vice Governor visited Kyushu Electric, requesting information sharing. Kyushu Electric is discussing responses with the police, Self-Defense Forces, and Coast Guard.*

NEWS: TRADITIONAL FUELS

JERA signs 20-year LNG deal with Sempra LNG

(Company statement, Aug 1)

- Sempra Infrastructure and JERA signed a 20-year agreement for supply of 1.5 Mtpa of LNG from the planned Port Arthur LNG Phase 2 project in Texas. Delivery will be on a free-on-board basis.
- This deal follows a non-binding heads of agreement signed in June 2025.
- **CONTEXT:** *Port Arthur LNG Phase 2 will include two liquefaction trains with a combined capacity of about 13 Mtpa. This will double the facility's total capacity to 26 Mtpa when added to Phase 1. The project has obtained permits from the Federal Energy Regulatory Commission and U.S. Department of Energy. Phase 1 is under construction and expected to start commercial operations in 2027–2028. Phase 2 still requires end of commercial agreements, financing, and a final investment decision.*

- **TAKEAWAY:** JERA is expanding its U.S. LNG procurement, planning to triple imports to 10 Mtpa by the early 2030s. Other recently closed deals include: 2 Mtpa from NextDecade's Rio Grande LNG (binding); 1 Mtpa from Commonwealth LNG (binding); and up to 1 Mtpa from Cheniere Energy (non-binding). Thanks to these contracts, JERA could handle up to 35 Mtpa of LNG by 2035.

JAPEX acquires stake in oil and gas fields in Norway

(Company statement, July 29)

- JAPEX agreed with Aker BP to buy a 10% stake in the Alve Nord development and a 3.5% stake in the Verdande Unit in Norway. For its part of the deal, JAPEX will transfer stakes in several other licenses and pay \$14 million.
- Verdande should start production in autumn, and Alve Nord in early 2027. The deal is subject to Norwegian regulatory approval.
- *CONTEXT: Aker BP is one of Norway's main oil & gas companies. JAPEX entered the Norway market in 2023 and this year made a discovery at Kjøttkake. This follows last week's agreement by INPEX to buy stakes in several Norwegian oil & gas fields from Pandion Energy.*
- *CONTEXT: Alve Nord is an oil & gas development project in the Norwegian Sea, operated by Aker BP and expected to start production in early 2027. It is a lower-risk asset, already approved and moving toward output. Kjøttkake, in the Northern North Sea, is still in the exploration phase. While Kjøttkake has future potential, it requires further evaluation before development can begin.*

KHI wins order for two LNG storage tanks from Formosa Petrochemical

(Nikkei, July 31)

- KHI won an order from Formosa Petrochemical for two LNG storage tanks. The deal is valued at ¥62 billion.
- The two tanks have a capacity of 160,000 kiloliters. Building will take place at an industrial complex in southern Taiwan with completion in mid-2029.
- *CONTEXT: Taiwan is expanding LNG import infrastructure to meet rising demand. This is also due to the island's nuclear phase out policy.*

LNG stocks down from previous week, down YoY

(Government data, July 30)

- As of July 27, the LNG stocks of 10 power utilities were 1.79 Mt, down 6.8% from the previous week (1.92 Mt), down 7.7% from end July 2024 (1.94 Mt), and 16.7% down from the 5-year average of 2.15 Mt.

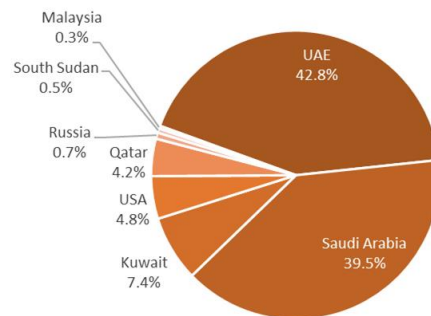
June Oil/ Gas/ Coal trade statistics

(Government data, July 30)

Imports	Volume	YoY	Value (Yen)	YoY
Crude oil	10.2 million kiloliters (64.3 million barrels)	12.3%	650 billion	-17.6%
LNG	4.4 Mt	-2.8%	379.5 billion	-10.7%
Thermal coal	6 Mt	-10.8%	102.4 billion	-36.8%

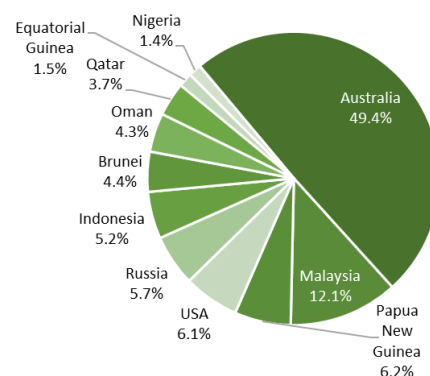
- Japan imported 10.2 million kiloliters of crude oil in June, down 7.6% over May, but 12.3% more YoY. Nearly 94% came from the Middle East. In H1 2025, 44% of crude oil came from UAE and 40% from Saudi Arabia, which may mean UAE is likely to be the top supplier to Japan, as in 2024. The first shipment from Russia in 2025 has arrived, but it was less than 0.1 mil kiloliters.

Crude Oil Import in June 2025
(Total 10.2 mil kiloliters)



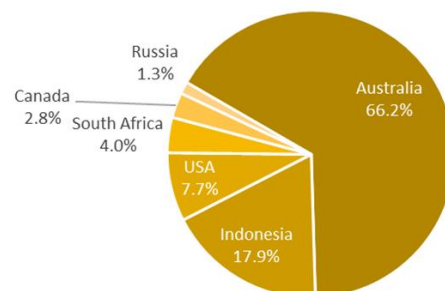
- LNG imports in June totaled 4.4 Mt, down 4.8% over May (4.7 Mt) and down 2.8% YoY. Nearly 50% of LNG came from Australia, and another 30% came from the Asia Pacific region, meaning nearly 80% of LNG was supplied by nearby countries. In February, Japan agreed to import LNG from Canada. LNG from Canada can reach Japan within 10 days. The first Canadian shipment arrived in July.

LNG Import in June 2025
(Total 4.4 mil tons)



- Thermal coal imports in June were 6 Mt, up 4.2% from May. Australia and Indonesia were the top two suppliers, accounting for over 80% of total imports. Imports from Canada decreased by almost 40%, those from the U.S. rose nearly 60%. Japan's power companies are taking all possible measures to secure and stabilize electricity supplies during the hot summer, and coal is a trusted backup.

Thermal Coal Import in June 2025
(Total 6.0 mil tons)



NEWS: CARBON CAPTURE & SYNTHETIC FUELS

OOYOO starts CO₂ capture demo at biomass power plant

(Company statement, July 31)

- OOOO began a CO₂ capture demo at the Sakaiminato Biomass Power Plant.
- The project uses OOOO's separation membrane to capture about 10 tons of CO₂ per year from the plant's flue gas.
- While biomass power is carbon-neutral, adding CO₂ capture can make it "carbon-negative." Thus, it reduces atmospheric CO₂.

- *CONTEXT: OOOO is a start-up based in Kyoto, and claims its membrane system consumes less energy than conventional amine absorption. It can be modularized for small to medium plants while scalable for larger industrial facilities.*

—

ENEOS and TOPPAN to launch a pilot for wastepaper-based bioethanol

(Company statement, July 24)

- ENEOS and TOPPAN will begin building a pilot plant for their wastepaper-based bioethanol demo project at Nippon Paper Industries in Fuji City, Shizuoka Pref.
- The plant is expected to process about 1–3 tons of wastepaper per day and produce some 300 liters of bioethanol daily. Operations are set to begin in early 2027.
- *CONTEXT: Bioethanol is gaining attention as a raw material for vehicle fuels, chemicals, and SAF. Since 2021, ENEOS and TOPPAN are exploring use of hard-to-recycle domestic wastepaper for bioethanol production.*

—

Mitsubishi Chemical invests in Australian biomass-to-biofuels firm

(Company statement, July 18)

- Mitsubishi Chemical Group has invested in Australia's Licella to support the rollout of the firm's Catalytic Hydrothermal Reactor technology, which converts waste plastics and biomass into oil used in chemical feedstocks and SAF.

ANALYSIS

BY MAGDALENA OSUMI

Offshore Wind in Crisis – But New Areas and Floating Tech Offer Hope

The offshore wind sector, touted as a cornerstone of Japan's 2050 decarbonization strategy, is in turmoil. At the center of the crisis is Mitsubishi Corp's potential withdrawal from three flagship offshore wind projects, a move that could trigger a wider collapse of investor confidence, supply chain momentum, and future auctions.

In a significant move to regain momentum, on July 30, METI and MLIT designated the areas of Matsumae and Hiyama, located off the coast of Hokkaido, as "promotion zones". This is the first such designation in the waters off Hokkaido, a region known for strong winds. The two areas are expected to feature in a public tender as early as this fall.

Officials hope the announcement will excite project-starved developers, given the parameters at stake. The Matsumae area has been expanded to 3,710 hectares and is expected to offer 250–310 MW of capacity. The Hiyama plot is one of Japan's largest offshore wind allocations and is projected to accommodate capacities of 910 MW to 1.14 GW.

Designation of the new areas does not come a minute too soon. Mitsubishi has set the end of summer as its deadline for resolving talks with METI and other state entities over how – or whether – it continues to develop offshore wind farms. The discussions have grown complicated, with other wind players sensitive to any signs of favoritism or rule changes. The outcome is seen impacting projects in other auction rounds.

With the mercury level in talks and on the streets rising, authorities are determined to salvage their renewables strategies, and the national CO2 reductions associated with them. Hokkaido areas, a new EEZ Law, and advances in floating wind are just some positive steps that officials believe support their stance.

The offshore wind sector is in pain, but it's not terminal.

Mitsubishi's exit threatens stability

In 2021, Mitsubishi, in partnership with Chubu Electric, stunned the industry by winning all three sites in Japan's first-ever public auction (Round 1), offering rock-bottom bids that many viewed as unsustainable.

Four years on, global and local macro factors have whipped up the necessary outlays by at least 20-30% due to rising construction and labor costs, a weak yen, and surging inflation.

In February 2025, Mitsubishi could not hide the pain any longer, booking a ¥52.4 billion impairment on the projects; Chubu Electric posted an ¥18.6 billion loss of its own.

Among its many missteps, Mitsubishi had failed to lock in its turbine supply before the cost tsunami arrived. The trading house listed GE's Haliade-X turbines for all three projects – a total of 134 units, covering 1.7 GW of capacity.

But with the preliminary steps around area preparation delayed by additional surveys, it's understood that the Japanese developer was not ready to place the turbine order. In 2024, GE Vernova (as the company is now known) paused all new orders for wind turbines citing difficult market conditions.

Mitsubishi had banked on 2021 prices, but faced 2024 costs that the U.S. turbine maker was in no position to absorb.

Globally, the cost of turbines and their installation accounts for as much as half of the CAPEX of an offshore wind project. Mitsubishi had reportedly arranged for Kajima Corp to be its general contractor for all three Round 1 projects. It's still unclear how much of that work cost has been locked in, with the developer yet to proceed to the construction stage.

With internal budgets for its three offshore wind projects no longer making economic sense, Mitsubishi shocked observers earlier this year by floating the idea of a complete exit from the sector before softening its stance and promising to reassess its position by end of summer.

Yet the uncertainty has already stalled the broader market. Round 4 of the public auctions is delayed. Equipment vendors have paused investments. METI's offshore wind strategy, which envisioned as much as 45 GW of capacity online by 2040, faced the threat of a domino effect.

FIP rule change: help or hindrance?

In an effort to salvage Round 1 projects, METI considered a controversial plan to shift them from the original Fixed Feed-in Tariff (FIT) system to a Feed-in Premium (FIP) model. All R1 bids were made under the more predictable FIT, while R2 and R3 were conducted under the auspices of FIP.

The FIT is more predictable, locking in the sale of electricity under a government-backed scheme. The buyers are EPCOs, the major power utilities that pay a fixed price for 20 years. The revenue is guaranteed but doesn't allow operators to pick their electricity buyers.

Under the FIP, on the other hand, sellers have leeway on production volumes and use spot power prices or bilateral transactions to make money. The government only commits to an FIP "premium": a small subsidy paid on top of the spot electricity price to pare market risks with some predictable income, thus supporting the rollout of renewables.

As Japan was still in the process of switching from FIT to FIP during the first offshore wind auctions, Mitsubishi benefited from the more stable FIT scheme. However, it aimed to build on its FIT fees with power purchase agreements (PPAs). The developer attracted potential future offtakers such as Amazon and Kirin as "partners" in its R1 projects, but with the wind farms not due online until the end of this decade it was too early to sign the PPAs.

Allowing Mitsubishi to convert its R1 projects to FIP would help to support the projects' economics – even if it may not plug all the gaps. It would also help attract offtakers at a more elevated price point aligned with market electricity rates. However, it would also potentially put R2 and R3 projects at a disadvantage.

Amid fierce competition in the ensuing rounds, nearly all developers put in "zero premium" bids, which means they agreed to forego the top-up payment from the government above the market electricity price. So, when these projects go to market their electricity to offtakers, they could face competition with Mitsubishi's capacity – which is exactly one of the reasons some developers pushed back on METI's initial suggestion.

Mitsubishi and other firms have explored other means of bringing down costs, such as sounding out METI's willingness to accept Chinese-made wind turbines – significantly cheaper than Western counterparts.

But Japanese officials firmly rejected the idea over national security and industrial policy concerns. METI still hopes that Japan can develop a domestic or allied supply chain, even at a higher short-term cost. Meanwhile, turbines carry a multitude of sensors that can be operated remotely.

In the end, with few options to reduce the main cost item – turbines – and frustration over the discrepancy between R1 and other projects, industry discussions stalled this summer.

Some are calling for Mitsubishi to exit and its projects re-auctioned. Others see the trading house keeping one or two of the projects, and handing the government back the rest. Potential outside investment into Mitsubishi's consortium or individual projects has not been ruled out, although it's clear to all sides that financial injections alone would not resolve all the issues.

Industry stalls; Investors retreat

Meanwhile, the furore has backed METI into a corner. As bureaucrats, METI and the Ministry of Transport officials are not allowed to favor one side or another. But helping Mitsubishi in some form risks being seen as doing just that, which would damage the credibility of the Japanese government as a fair market regulator.

Few expect that a brokered solution over R1 projects would be enough. Similar adjustments are sought by R2 and R3 related parties.

Foreign developers and suppliers, once bullish on Japan, are growing both wary and impatient. Denmark's Copenhagen Infrastructure Partners (CIP) has openly criticized Japan's market structure, citing high seabed lease fees, underdeveloped supply chains, and an unpredictable regulatory environment. At least one of the current project developers is rumored pondering an exit if an opportunity arises.

GE Vernova's original plans to build nacelles in Japan with Toshiba, as early as 2026, seem to be in a frozen state. The appetite of supply chain companies has also been tested amid poor visibility on future project developments and concern about the scale of the local market.

Compounding these concerns, Mitsubishi in December 2024 pledged to sell all of its UK subsea power transmission businesses despite stable earnings, thus reducing Japan's ability to secure key infrastructure in-house.

Still, many industry insiders say this is the dip before the sector's recovery.

Pivot to floating wind

Despite temporary stagnation in the fixed-bottom part of the wind market, there's been quiet progress in floating offshore wind. With only narrow continental shelves, much of Japan's coastline is unsuitable for fixed-bottom installations. However, it is ideal for floating turbines.

Recent signs point to growing momentum:

- **June 2025:** the Diet passed the 'EEZ Law' that allows for the installation of offshore wind farms in Japan's exclusive economic zone (EEZ), which covers areas further than 12 nautical miles from the baseline

- What's more, unlike current offshore wind development that has to go through local government and stakeholders, the EEX lies entirely in the jurisdiction of the national government
- **July 2025:** METI signed an MoU with Siemens Gamesa and GE Vernova to jointly develop domestic wind supply chains, including key components like permanent magnets sourced from Japanese electronics firm TDK.
- **June 2025:** METI newly designated five floating wind sites off Tokyo Bay sparking a burst of activity with the first floating demo project in the area.
- METI is working to diversify wind technologies under its Green Innovation Fund and hinted that it may prioritize floating wind in upcoming auctions.
- **July 2025:** The recently announced Matsumae and Hiyama promotion zones, while capable of hosting fixed-bottom turbines, could become test grounds for floating platforms due to their water depths. METI has also indicated that it will include specific measures in these zones to ease development, such as alleviating talks with fisheries stakeholders.

Industry watchers suggest that Japan's floating wind segment is where the UK's offshore wind was 20 years ago: small, high-risk, but full of long-term strategic potential.

What happens next?

The government is expected to make key announcements by the end of summer 2025. Among the possibilities are:

- Final approval for the FIT-to-FIP switch for Mitsubishi's Round 1 projects
- Support measures or policy relief for Round 2 and 3 developers (*likely, before year-end*)
- Updates to area lease durations, port fee structures, and renewables surcharge exemptions (*the former looks more palatable than the others given the budget implications of the latter*)
- A roadmap for floating wind deployment and a concrete timeline for Round 4 auctions.

If Mitsubishi gives up on some of its R2 projects, it most likely would salvage the Choshi project off Chiba Prefecture, which has the highest FIT rate and is the most commercially viable. This would free up Akita sites for re-auction, which while delaying capacity rollout by a further 2-3 years, could attract new players with more realistic expectations.

Either way, Japan's offshore wind market faces the dual challenge of rebuilding trust while repositioning itself around floating technology. All the stakeholders involved – not least the officials at METI, MLIT, and MoE – realize that failure to find a compromise will alienate some industry players and, in a worst case scenario, endanger the entire offshore wind sector.

The situation is tense, but those with the longer-term lens are already discussing the next market iterations and the new sea areas that have yet to appear in official announcements. The groundwork for that is already under way. The sector may now seem to be at its deepest ebb, but the tide might again soon change, to see better days ahead.

ANALYSIS

BY ANDREW STATTER

Energy Jobs in Japan: Building a Workforce for the Hydrogen Economy

Japan's ¥3 trillion Contracts for Difference (CfD) subsidy program for clean hydrogen has been heavily oversubscribed, with applications far exceeding the budget according to METI reports.

Launched by METI in December 2024 and closed in March, the 15-year scheme received close to 30 applications. METI plans to begin selecting projects on a rolling basis later this fiscal year, according to Shinichi Kihara, director general for international carbon neutrality policy.

This reflects a broader global trend, with the IEA predicting a 10x growth in all forms of hydrogen by 2040, with an increase in green hydrogen estimated to be between 100x to 150x current production.

This is not a linear growth curve; for a hockey-stick curve to be realized, human resources will face a massive bottleneck if hiring, training and growing the workforce isn't urgently addressed.

Secure vs borrowed talent

McKinsey & Co. predicts 2 million hydrogen jobs will be needed by 2030, with 30 to 40% located in Asia-Pacific. This contrasts to a current global direct workforce of about 250,000.

To hit this target, the hydrogen industry needs to secure talent. Let's look at the word 'secure' – it suggests long-term committed professionals who are trained and specialized. These are 'hydrogen people'. Today, few exist and the industry relies on borrowed talent, professionals with transferable skills. They are trained in another area and working on hydrogen projects, but may be quickly rotated and shifted out of these.

The think-tank people, economists, bankers and lawyers involved in hydrogen will do whatever shows promise. Large companies such as major EPCs, trading firms, etc, will commit talent to hydrogen and related initiatives for as long as they see commercial success; yet they'll rotate talent out as soon as they feel they won't win projects, or those projects lack the required profitability. Thus, much of the borrowed talent working on hydrogen projects today may not be working in the sector tomorrow.

For the hydrogen economy to take off, talent must see, feel and believe in the industry's future. This will be shown by individual talent investing in their own education, training and reskilling to become hydrogen professionals; as well as by talent proactively moving to companies that win projects or are otherwise committed to continuing to pursue hydrogen opportunities. Bottom line – if talent is working in hydrogen based on their employer's command, rather than their own initiative, the industry will not secure sufficient workforce.

The real cliff - Execution

In any infrastructure project, the workforce required in the planning and investment stage is around 10% needed for execution and operations. With the borrowed vs secured talent argument above, we are focusing primarily on the highly educated talent pool required for planning and investment. Once projects are approved en masse, we need people to build them, a lot of people!

- **White collar talent:** Clear policy, bankability, offtake demand, etc, will create commercial viability that will shift this talent pool to commit to hydrogen.
- **Innovation talent:** Technological innovation is happening in academia, start-ups and industrial players already. As with the white collar talent, commercial viability and demand at scale will drive the innovation industry and related talent.
- **Blue collar talent:** Hundreds of thousands of engineers, fitters, maintenance professionals will need to be identified, trained and employed to execute. Unless building this workforce is addressed prior to establishment of commercial viability, the need for talent will fall off a cliff.

Why does top talent hesitate?

Recently, at the World Hydrogen Asia event in Tokyo, a constant recurring theme was the challenge of securing two key factors necessary for clean hydrogen projects to take off: Project finance, and long-term offtake.

Simply, the challenges in securing these two critical factors demonstrates that major parts of the industry still have hesitations over the long-term viability of clean hydrogen and its various downstream use cases that are still largely unproven at commercial scale.

If those in charge of other people's money are not ready to commit long term, how can we expect people to stake their own careers and livelihoods long term? I'm not the first to say this, but those smarter than I need to sort out the economic and thermodynamic challenges the industry faces before we see a commitment from bankers, offtakers and workers.

Looking at the mindset of intelligent talent who value their career path, it's clear they'll choose industries, companies and positions that foster achievements to list on their CV and add value to professional profiles. This was a frustration for many in offshore wind, dedicating years to develop a project and preparing a bid, only to lose or worse –for their company not to bid right before the submission deadline.

Putting the spotlight on one talent segment in high demand right now – Offtake – we can see hesitation toward hydrogen and its derivatives. An offtake agreement is not signed in a day. It starts with education, work to get to an LOI, further work and negotiations to move to MoU. And it takes a lot more to get the talks to term sheet stage and definitive signed long-term agreements.

In two years in hydrogen, an offtake professional may sign multiple MoUs, however they are unlikely to close deals. Conversely, had that same professional opted to work in BESS and renewables space, during that time they would likely have multiple CPPA deals and a couple of tolling agreements under their belt. You could argue that hydrogen deals are more complex, but at the end of the day, results and wins on the board matter.

High barriers to entry and challenges for startups

Unlike simpler segments of the energy industry, hydrogen will require a more highly skilled, well trained workforce due to safety concerns and technological challenges.

Many of the major/ core players in hydrogen have hired and trained large groups of young talent. Many investors and developers are large trading houses such as Mitsui, Sumitomo, and Marubeni that have large pools of talent with plenty of power and infrastructure experience. Large engineering firms, such as Chiyoda and IHI, are leading in new technologies and also have large talent pools.

In the mobility and fuel cell sector, players such as Toyota, Honda, and Idemitsu are long-term supporters of hydrogen technologies. All of these areas, as well as Japanese EPC firms with extensive experience in LNG infrastructure, are well staffed, trained and experienced in working on projects both in and outside Japan. Once they are satisfied with the commercial viability and demand for their projects and technologies, these firms have the ability to develop internal 'Centers of Excellence' and train their workforce in bulk.

Unlike the solar or even BESS booms, it seems challenging for small to mid-size players to enter. With already limited talent mobility in Japan for loyalty and cultural reasons, compounded by a desire to stay with the company that has won projects and invested in their reskilling, Japanese talent is highly unlikely to move to smaller firms.

Conclusion: Chicken must come before the egg

Japan is betting big on hydrogen and isn't the only country. While projects sit in the offices of politicians and corporate boardrooms, it can seem progress is made at an encouraging pace. Once bricks and mortar get involved at scale though, a talent cliff is looming.

Whether at a company or individual level, if you are bullish about hydrogen, you may need to invest heavily in talent before it is a sure thing.

Andrew Statter is a Partner at Titan GreenTech, an executive recruitment agency focused on the clean energy space.

ASIA ENERGY REVIEW

BY JOHN VAROLI

A brief overview of the region's main energy events from the past week

Australia / BESS

Grid-scale battery energy storage system (BESS) discharges hit an all-time quarterly high in the National Electricity Market, with an average of 162 MW in Q2 of 2025.

China / Clean fuels

Clariant Catalysts and Shanghai Electric have inked a partnership to develop SAF, green methanol and other renewable energy projects in China.

China / Diesel

China's exports of key refined fuels are on track to jump to the highest in 16 months as refiners take advantage of rising profit margins, said commodity analysts Kpler.

India / Refinery

Nayara Energy is reducing run rates at its Vadinar refinery as some buyers spurn the refinery after the EU imposed sanctions. The 400,000 bpd refinery is operating at 80% capacity.

India / Wind power

India has introduced stringent norms for wind turbine equipment makers, requiring them to source key components domestically and comply with strict data localisation rules.

Indonesia / Nuclear power

Indonesia seeks to launch a nuclear power plant by 2034, and is now drafting and issuing relevant regulations, and seeking foreign investors.

Malaysia / Nuclear power

Malaysia wants to include nuclear energy in its transition strategy; and the govt completed a pre-feasibility study on nuclear power, says the Science and Tech ministry.

South Korea / Batteries

LG Energy Solution signed a \$4.3 billion contract for supplying batteries to a major corporation, without naming the customer

Taiwan / Energy security

A Chinese blockade could cut Taiwan's electrical generating capacity such that the island is unable to function, said CSIS. "Energy is the weakest element in Taiwan's resilience against coercion," says the American think tank.

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