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JERA's CO2 Zero-Emission Challenge for Ammonia-fueled Generation and Building Fuel Ammonia Supply Chain

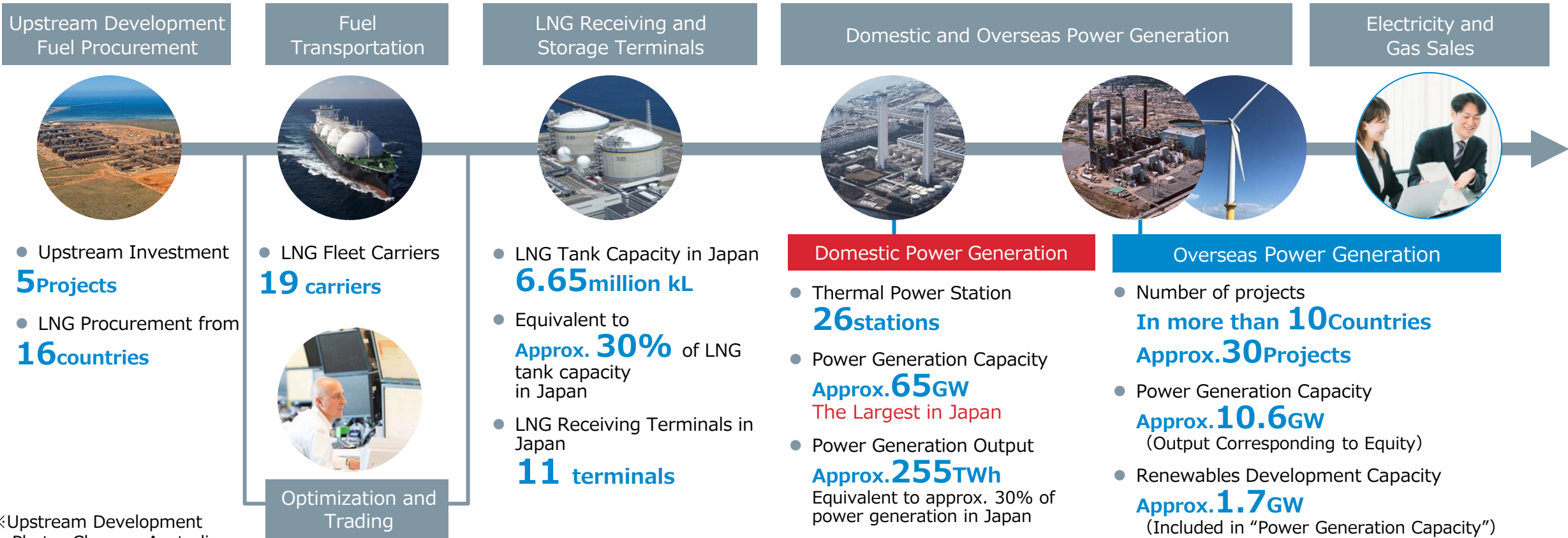
JERA's Value Chain covers from Upstream to Downstream

LNG Transaction Volume

Approx. **37** MTPA
Among the largest in the world

Total Assets
Approx. JPY
8.7 trillion

Sales
Approx. JPY
4.4 trillion^{※1}



※Upstream Development
Photo: Chevron Australia

New Corporate Vision for 2035

Mission

To provide cutting edge solutions to the world's energy issues

New Corporate Vision for 2035 (Newly established)

To scale up its clean energy platform of renewables and low greenhouse gas thermal power, sparking sustainable development in Asia and around the world

JERA Environmental Target 2035 in Japan

JERA aims to reduce CO₂ emissions from domestic operations by at least 60% (relative to FY 2013) by FY 2035 through the following:

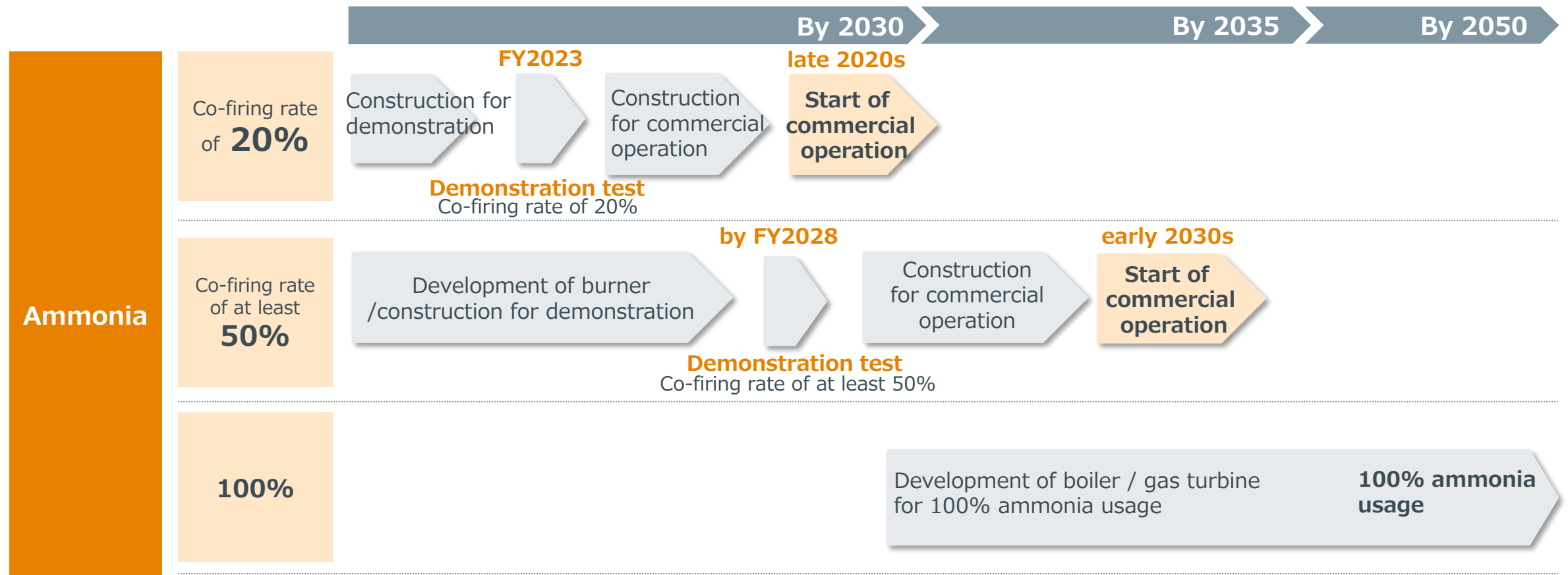
- Given the expanded adoption of renewable energy based on the national government's 2050 carbon neutral policy, JERA will strive to develop and adopt renewable energy in Japan.
- JERA will work to reduce carbon emission intensity from thermal power generation by promoting hydrogen and ammonia co-firing.



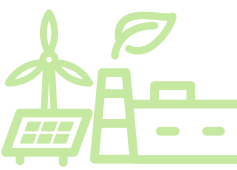
Specific Initiatives for Decarbonization

To achieve the JERA Environmental Target, JERA aims to develop decarbonization technologies :

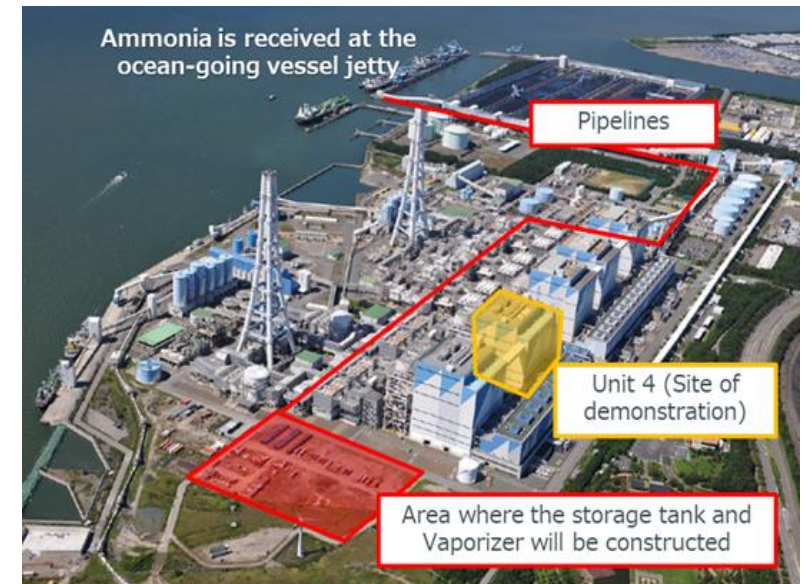
- A demonstration test with an ammonia 20% co-firing rate will start at Hekinan Thermal Power Plant Unit 4 in FY2023, and a demonstration test with at least 50% co-firing rate will be conducted at Unit 5 by FY2028.



The Demonstration Test for Ammonia Generation (FY 2021-FY 2024)

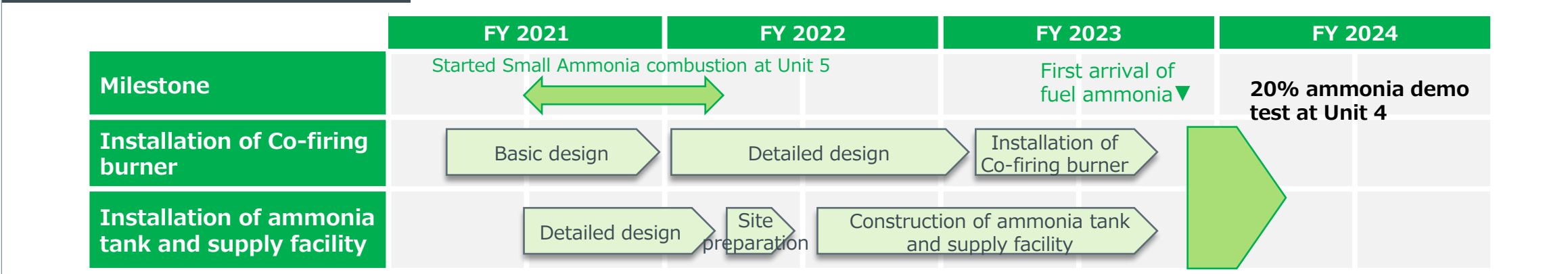


NEDO "R&D and Demonstration of Technologies for Ammonia Co-Firing Thermal Power Generation"	
Companies	JERA, IHI
Place	Hekinan Thermal Power Station (1,000MW) in Aichi prefecture, Japan
Contents	- Installation of Co-firing burner & ammonia supply facility - 20% of coal will be replaced by ammonia.
Ammonia Consumption during test	30,000 to 40,000 tons of Ammonia



NEDO: New Energy and Industrial Technology Development Organization

Schedule of the demonstration





Building an Ammonia Supply Chain

■ An international competitive bidding for the procurement of fuel ammonia was started in February 2022.

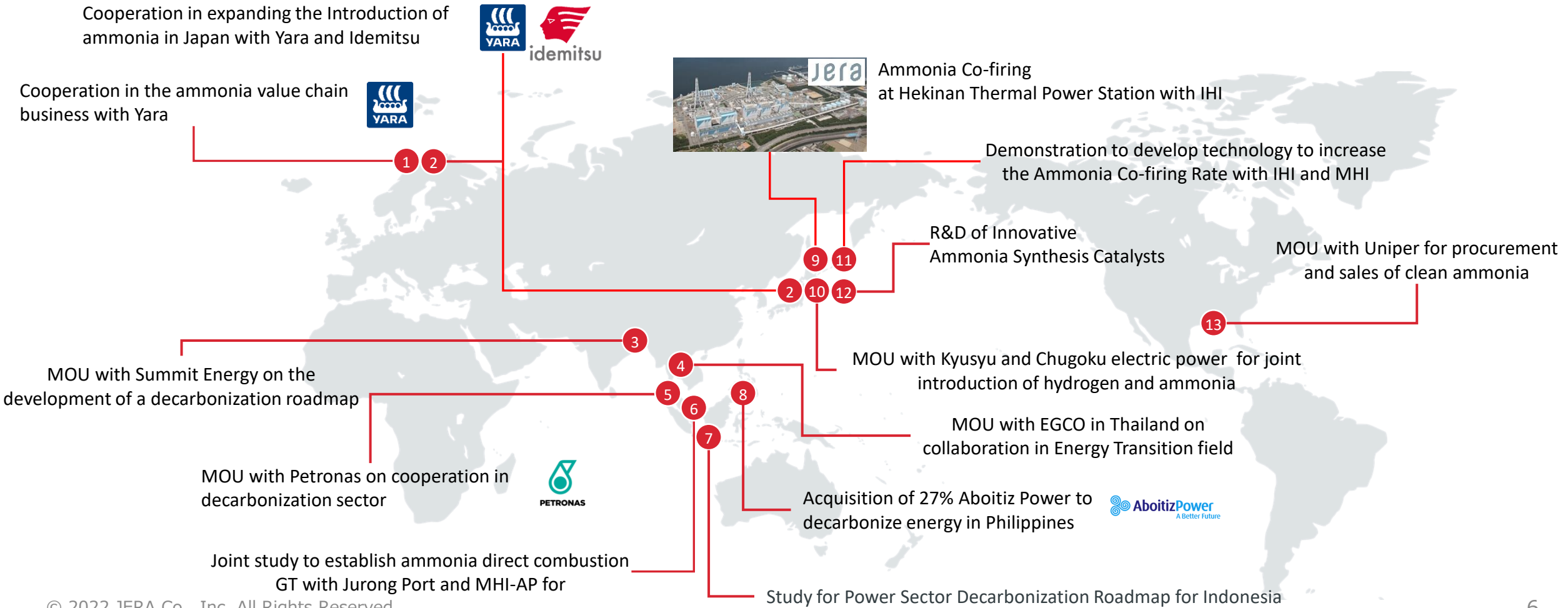
Main terms & conditions	Number of RFP sent	Approx. 30 companies
	Contract duration	FY2027~2040's Long term
	Quantity	Max. 500,000 metric ton/year
	Delivery	FOB
	Others	<ul style="list-style-type: none">• In principle, CO2 is not generated during ammonia production, or is collected and stored.• JERA's opportunity to participate in ammonia production projects

Initiatives to Establish Fuel Ammonia Supply Chain

(As of September 2022)



■ “JERA Zero CO₂ Emissions 2050” was announced in October 2020, and within about 2 years, various efforts were made to build supply chains for fuel ammonia.



Energy Transition in Asia



- JERA contributes to both economic growth and decarbonization in Asia through the realization of the Zero-emission Thermal Power.



【Bangladesh】

- Acquired 22% of outstanding shares of Summit Power, the largest IPP in the country
- Signed Memorandum of Understanding for Cooperation on Decarbonization Roadmap (2022.4)



【Indonesia】

- JERA concluded an agreement with JICA regarding a "Data Collection Survey on Power Sector in Indonesia for Decarbonization." (2021.11)



Courtesy of Aboitiz Power Corporation

【Philippines】

- Acquired 27% of outstanding shares of major electricity utility, Aboitiz Power (2021.9)
- Working in conjunction with Aboitiz Power, JERA will advance the expansion of clean and renewable energy significantly in the country.

Jera

Energy for a New Era