

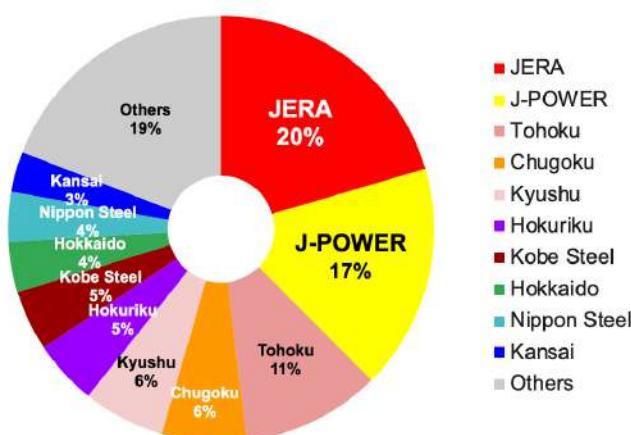
About JERA: Background

- JERA is a Japanese electric power company as a 50/50 joint venture between TEPCO Fuel & Power, Inc. and Chubu Electric Power Co., which combines the thermal power generation businesses of the two companies. JERA is involved in a wide range of businesses, from engineering and consulting in the thermal power sector to renewable energy, gas and LNG businesses.
- In October 2020, the company made its "JERA Zero CO₂ Emissions 2050" announcement. JERA is a member of the Public-Private Council on Fuel Ammonia Introduction and is promoting the introduction of ammonia and hydrogen as so-called "zero emission fuels."¹

JERA and the coal power business

- JERA is the largest electric power producer in Japan, with generating capacity of 70 GW,² of which coal power generation makes up 12.4 GW, or 17.7%.³
- Coal power generation in Japan amounts to 58.94 GW, of which JERA's coal power generation has the largest share at 20.4%.
- The company is also involved in power generation overseas, at a total generation capacity of 9.40 GW (consolidated output),⁴ of which coal accounts for 3.34 GW.⁵

Top 10 Coal Power Companies (By Capacity)



Source: Japan Beyond Coal (as of October 2021)

¹ METI, "List of members of the Public-Private Council on Fuel Ammonia Introduction" (in Japanese) https://www.meti.go.jp/shingikai/energy_environment/heiryō_ammonia/pdf/001_03_00.pdf

² JERA "At a glance" (in Japanese, last accessed 26th Oct 2021) <https://www.jera.co.jp/corporate/infographics>

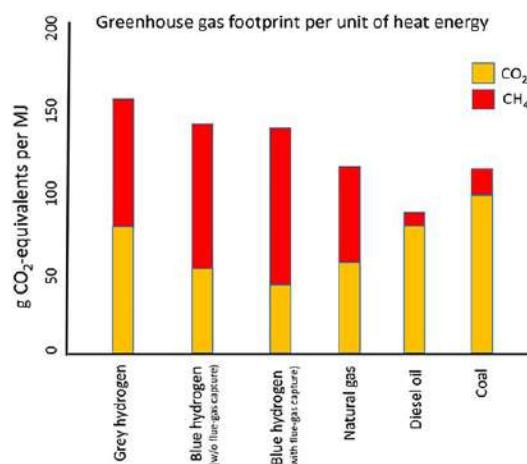
³ Japan Beyond Coal "Map and Data" (in Japanese, last accessed 26th Oct 2021) https://beyond-coal.jp/map-and-data/#tab2_tab-data3

⁴ JERA "At a glance" (in Japanese, last accessed 26th Oct 2021) <https://www.jera.co.jp/corporate/infographics>

⁵ From the JERA website.

JERA Zero Emissions 2050

- On October 13, 2020, the company announced a "JERA Zero CO₂ Emissions 2050 Roadmap for Business in Japan."⁶ The roadmap states that thermal power generation with "zero emission fuels" including hydrogen and ammonia, as well as renewable energies, will be used with the aim of reaching zero CO₂ emissions in 2050. In addition, CO₂ emissions from power plants that cannot operate with 100% zero emission fuels in 2050 will be handled with offset technologies and CO₂-free LNG, etc.
- As for coal-fired power plants owned by JERA, the company says it will shut down and decommission all inefficient (below supercritical) coal-fired power plants by 2030, and aim to start 20% co-firing with ammonia in 2030, and 100% ammonia-fired by 2040. However, as of September 2021, JERA does not own any coal power plants that use below supercritical technology. In addition, starting 20% ammonia co-firing in 2030 means that coal will continue to be used as fuel after 2030, which is inconsistent with international requirements (see the next section). Furthermore, regarding the Yokosuka Thermal Power Station Units 1 and 2, which are currently under construction and are scheduled to start operation after 2023, despite inquiries from local residents, the path to zero-emission thermal power generation has not been shown.
- Fuel ammonia is assumed to be imported from Australia and Saudi Arabia. Hydrogen, which is the raw material for ammonia, is produced by reforming natural gas. Hydrogen is planned to be "blue hydrogen" by using CO₂ emitted during natural gas mining and reforming to promote crude oil recovery (CO₂ EOR). However, the carbon footprint of blue hydrogen is higher than coal (see the figure on the right), and it can be said that blue ammonia produced from "blue hydrogen" is not suitable as a solution for climate change.⁷
- As for renewable energy, the company says that it will mainly promote the development of offshore wind energy but at present, projects (including those at a planning stage) in which JERA is participating domestically amount to 1.12 GW or less than 10% of the company's coal power holdings.⁸ JERA has not announced any future generation targets for renewable energy.



⁶ JERA "JERA Net zero emission" (last accessed 26th Oct 2021) <https://www.jera.co.jp/english/corporate/zeroemission>

⁷ Robert W. Howarth, Mark Z. Jacobson, 12 August 2021, "How green is blue hydrogen?", *Energy Science and Engineering*, <https://onlinelibrary.wiley.com/doi/full/10.1002/ese3.956>

⁸ JERA, "Submission and Public Review of the Primary Environmental Impact Consideration Document for the Southern Tsugaru Offshore Wind Power Generation Project", March 8, 2021

https://www.jera.co.jp/english/information/20210308_645; "Submission and Public Review of the Planning Phase Environmental Impact Statement for the Ishikari Bay Offshore Wind Farm Construction Project.", August 24, 2021, https://www.jera.co.jp/english/information/20200824_524

JERA's predicament

- As serious damage from climate change intensifies, the world does not have the luxury of allowing GHGs emissions to increase any further. To prevent further damage from climate change and to achieve the 1.5C target under the Paris Agreement, JERA needs policies that will lead to a rapid and credible reduction in GHG emissions.
- At their meeting in June 2021, G7 leaders recognized that coal power is the largest emitter of GHG emissions, and committed their countries to large-scale decarbonization of their domestic power systems, and [promised to take concrete steps toward an absolute end to new direct government support for unabated international thermal coal power generation.
- Upon publication of the Working Group 1 contribution to the IPCC's Sixth Assessment Report (The Physical Scientific Basis) released in August 2021, UN Secretary General António Guterres made an appeal for the following.⁹
 - No new coal-fired power plants are to be constructed after 2021.
 - OECD countries must phase out existing coal power plants by 2030, and all other countries by 2040.
 - All countries should end all new fossil fuel exploration and production, and shift fossil fuel subsidies into renewable energy.

Financial industry trends relating to coal

- As a part of climate initiatives by financial institutions, a growing wave of investors are conducting engagement or divestment targeting companies that continue to invest in and finance coal power.
- For example the Asia Investor Group on Climate Change (AIGCC) is targeting numerous power utilities in Asia for engagement to promote decarbonization, including Chubu Electric Power Co and J-POWER.¹⁰
- Urgewald, a German environmental NGO, publishes the *Global Coal Exit List* of the world's top companies in the coal business. The list has been used as a tool for divestment actions, and Chubu Electric Power Co and TEPCO are both on the list.¹¹

⁹ UN "Secretary-General's statement on the IPCC Working Group 1 Report on the Physical Science Basis of the Sixth Assessment" Aug 9th 2021
<https://www.un.org/sg/en/content/secretary-generals-statement-the-ipcc-working-group-1-report-the-physical-science-basis-of-the-sixth-assessment>

¹⁰AIGCC "New investor-led engagement program launched to drive net zero emissions transition in Asian electric utilities" n.d.
[https://www.aigcc.net/new-investor-led-engagement-program-launched-to-drive-netzero-emissions-transition-in-asian-electric-utilities/](https://www.aigcc.net/new-investor-led-engagement-program-launched-to-drive-net-zero-emissions-transition-in-asian-electric-utilities/)

¹¹ Urgewald, Global Coal Exit List 2021 (last accessed 26th Oct 2021) <https://coalexit.org/>

- Norway's sovereign wealth fund is increasingly divesting from companies that get their revenues from coal-related businesses. In 2017, Japanese companies affected included J-POWER, Chugoku Electric Power, and Hokkaido Electric Power.^{12,13}

The required role of JERA as a “global leader that supports our energy future”

- To achieve the 1.5°C target of the Paris Agreement, we need measures that lead to rapid and credible GHG emission reductions. JERA's Zero Emissions 2050 plan relies on supposedly zero-emissions thermal power that requires the new exploration and production of fossil fuels. This is exactly what people could call “zero emissions washing.”
- JERA should actually be moving toward a complete phase out of the coal power in its portfolio by 2030. As a first step, JERA is urged to stop building the Yokosuka coal-fired power plant that is currently under construction.
- Rather than chasing an illusion of “zero emission” thermal power by relying on hydrogen and ammonia produced through more exploration and production of fossil fuels, JERA should be aiming for true CO₂ zero emissions by 2050 by relying on renewable energy.



Yokosuka power plant under construction (Kanagawa Prefecture, Japan, photo Sept. 24, 2021)

¹² Nikkei “Norway Pension fund divest Japanese companies” March 3 2017,
<https://www.nikkei.com/article/DGXZO13593800S7A300C1X93000/> (in Japanese)

¹³ NBIM, “Observation and exclusion of companies” (Last accessed 26th Oct 2021)
<https://www.nbim.no/en/the-fund/responsible-investment/exclusion-of-companies/>