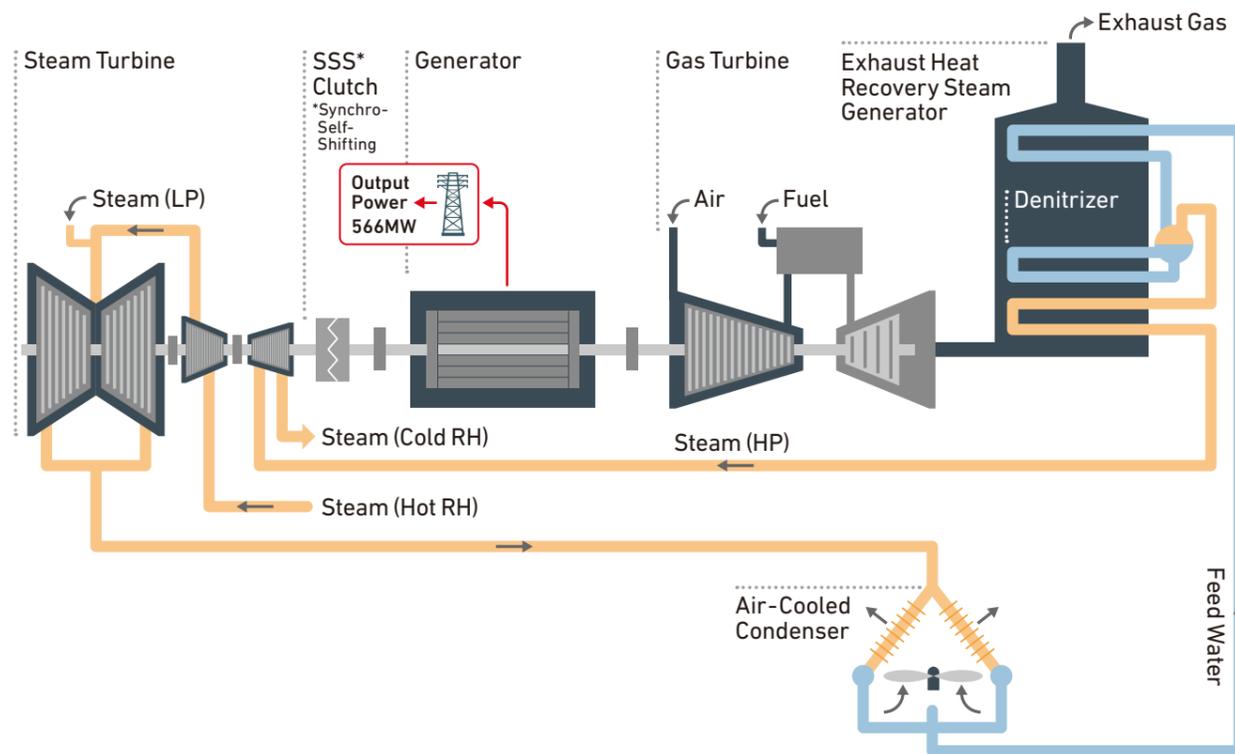


- Power output of over 566 MW (60 Hz), with 64% efficiency and a world-first turbine inlet temperature of 1650°C – raising industry standards for gas turbine combined cycle performance globally.
- This improved performance is possible due to the advanced engineering of the upgraded Air-Cooled version of J-Series (JAC), which is the first gas turbine being validated at T-Point.
- Triple-casing steam turbine, augmenting overall system efficiency through a multiplier effect with the JAC gas turbine. This greater efficiency reduces carbon emissions and heat losses, significantly reducing the environmental impact.

Item	Specification
Gross Output	566 MW (Combined Cycle)
Power Train	Single Shaft GTCC with SSS-Clutch
Gas Turbine Type	M501JAC
Turbine Inlet Temp.	1,650°C
Combustor	Enhanced Air Cooling
Steam Turbine Type	Triple Casing (TC2F-33.7")
Heat Recovery Steam Generator	Vertical Triple Press. (with Re-heater)
Stack Height	100m
Condenser	20 Cell Air Cooled -709 mmHg (-94.5 kPag) @15°C
Fuel	Natural Gas/Paraffin



# T-POINT 2

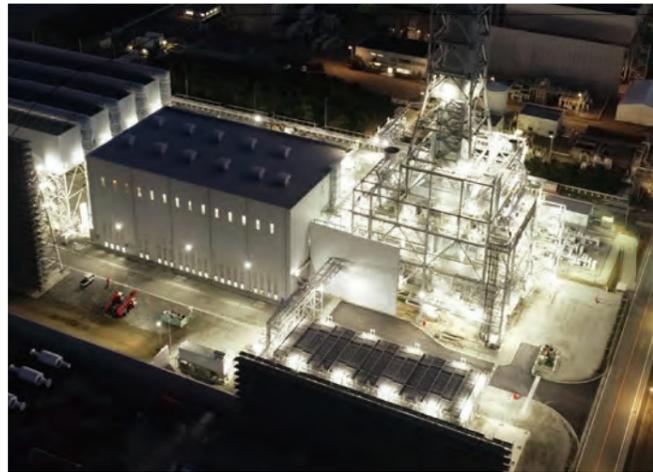
## Proving Ground for Gas Turbine Advancements



## T-Point 2

### Overview

- T-Point 2 is located at Takasago Machinery Works in Hyogo Prefecture, Japan.
- It is the only commercially operating power plant in the world that was specifically built for validation of power solutions.
- Its uniqueness is the robust long-term validation process that minimizes risk for customers and gives assurance of product performance and durability for subsequent units of the same frame.



### One-stop facility at Takasago Works

- One-stop facility co-locating Research & Development, Design, Manufacturing, Validation Plant to enhance Mitsubishi Power speed and efficiency toward technology advancement.
- Validation of technologies newly introduced for higher temperatures, higher efficiency gas turbines and lower NOx and other pollutant emissions.
- Validation of reliability of combined cycle power generation with high efficiency and low environmental impacts through long-term commercial operation.



### Development of T-Point

- The original T-Point demonstration facility began operation in 1997 with M501G (60 Hz), which was upgraded to M501J in 2010 and M501JAC in 2015 with response to the power industry's demand for large-scale, high-efficiency power generation.
- Since the original T-Point can not satisfy the further requirement for larger capacity and higher efficiency, we made a decision to build T-Point 2.
- T-Point 2 entered full commercial operation with an enhanced JAC gas turbine from July 2020.



## Validation

### Proving on Load Demand Operation

- The most common sources of gas turbines failures involve operation beyond 1,000 hours in the field.
- The insurance industry favors at least 8,000 hours of operation as a key criterion for fleet reliability.
- Mitsubishi Power unique long-term validation under commercial operation minimizes risk and provides assurance of product performance and durability.
- The original as well as modified gas turbine designs are operated under load demand for at least 8,000 hours, which is closed to one year of operation.



### Laying the foundation for Autonomous Power Plant

- The plant leverages Machine Learning, AI, smart sensors, data management systems, pattern recognition software, and AI-assisted maintenance through its TOMONI® suite of intelligent solutions, including Remote Operation.
- Now with the integration of TOMONI digital solutions, T-Point 2 has added flexibility and performance enhancements that form the building blocks for the smart, autonomous power plant of the future.



### TOMONI, a suite of intelligent solutions



TOMONI use advanced analytics and are driven by customer collaboration to deliver powerful financial and environmental advantages including decarbonization. TOMONI, a Japanese word meaning "together with," reflects the emphasis Mitsubishi Power places on collaborating with customers to solve their unique challenges. Mitsubishi Power works together with customers, partners and society to deploy solutions that support the decarbonization of energy and deliver reliable power everywhere.

### PR room for T-Point 2

T-Point 2 is equipped with a presentation room that includes a touch screen display, sample blades, combustors and good view of T-Point 2 overall.

