

Jera



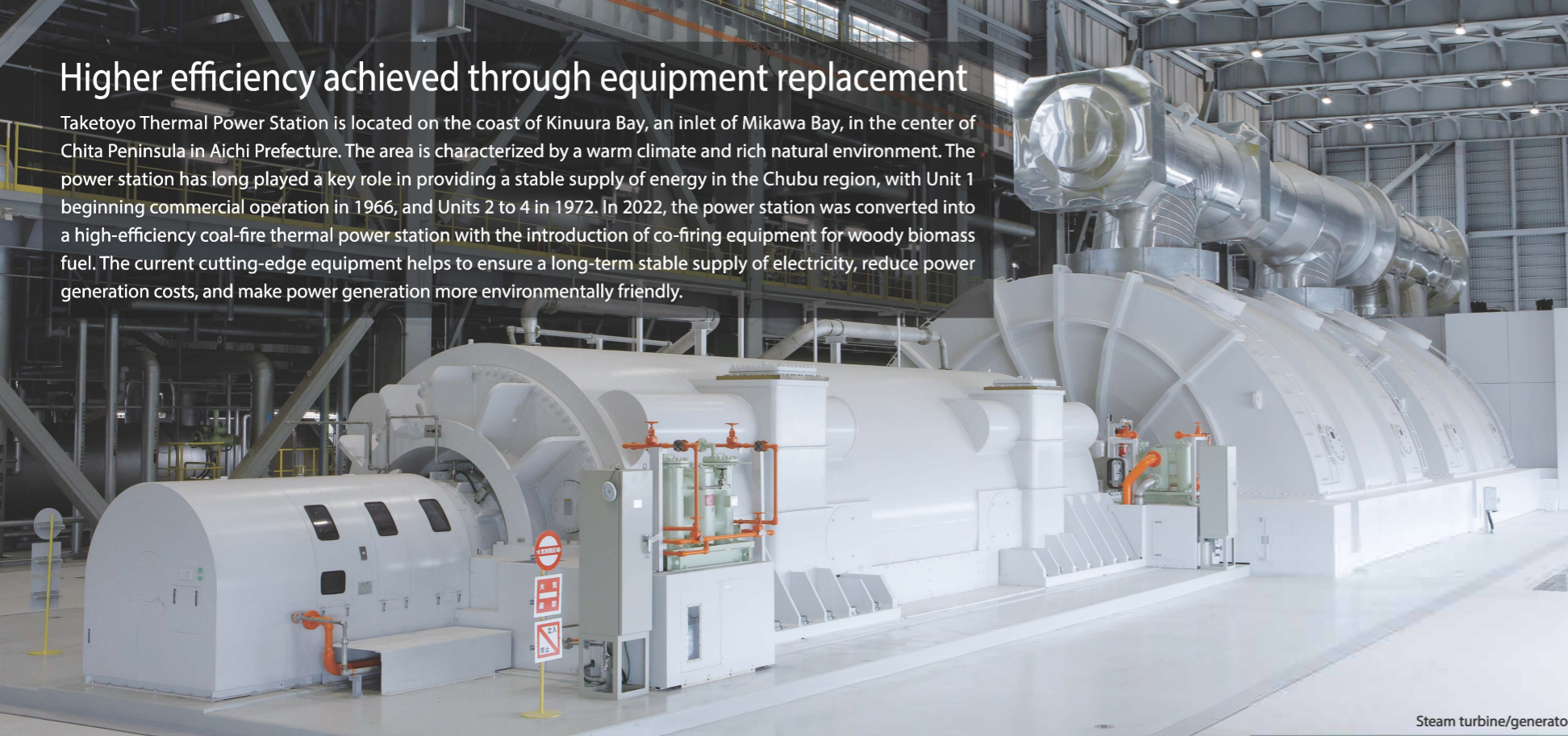
TAKETOYO

THERMAL POWER STATION

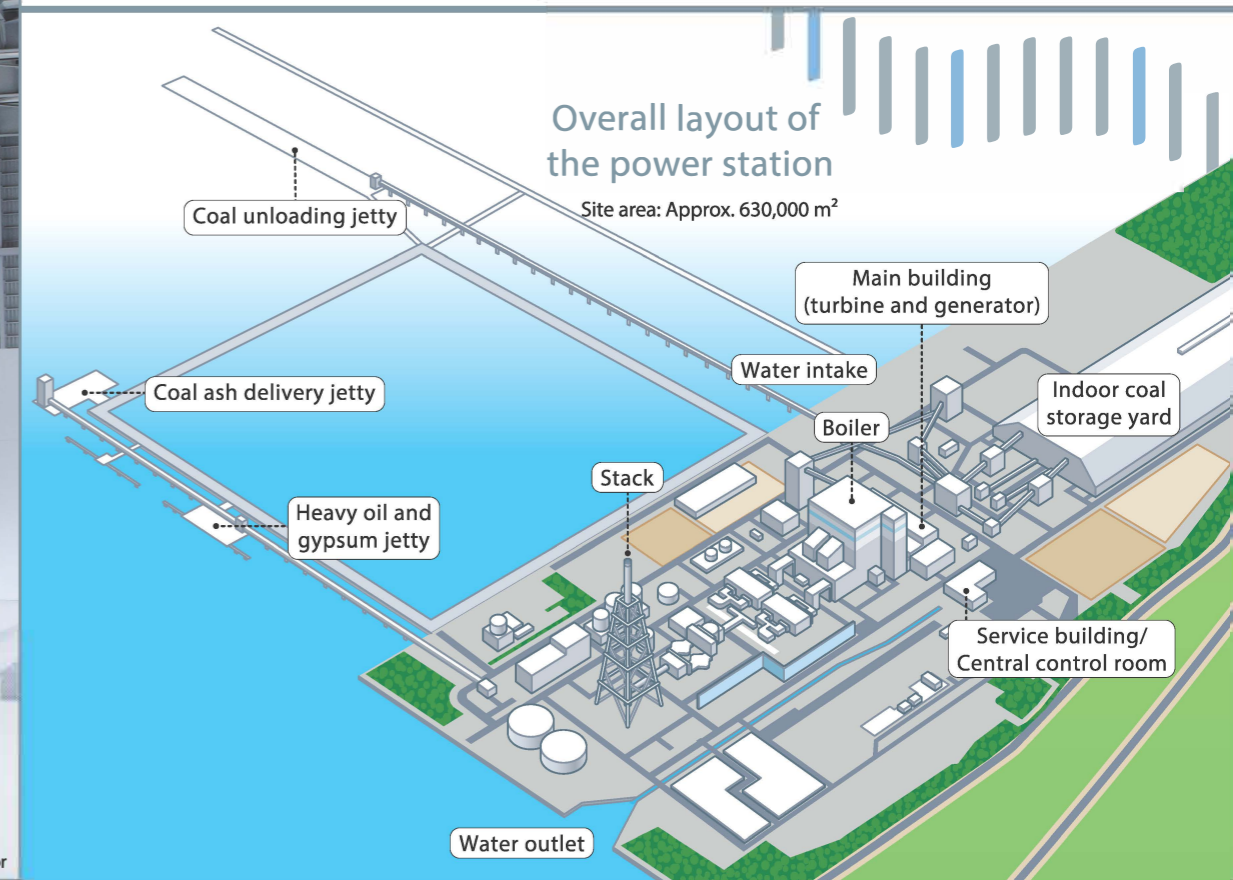
An economical and environmentally friendly power station using highly efficient equipment and a combination of coal and woody biomass fuel

Higher efficiency achieved through equipment replacement

Taketoyo Thermal Power Station is located on the coast of Kinuura Bay, an inlet of Mikawa Bay, in the center of Chita Peninsula in Aichi Prefecture. The area is characterized by a warm climate and rich natural environment. The power station has long played a key role in providing a stable supply of energy in the Chubu region, with Unit 1 beginning commercial operation in 1966, and Units 2 to 4 in 1972. In 2022, the power station was converted into a high-efficiency coal-fire thermal power station with the introduction of co-firing equipment for woody biomass fuel. The current cutting-edge equipment helps to ensure a long-term stable supply of electricity, reduce power generation costs, and make power generation more environmentally friendly.



Steam turbine/generator



Learn more!

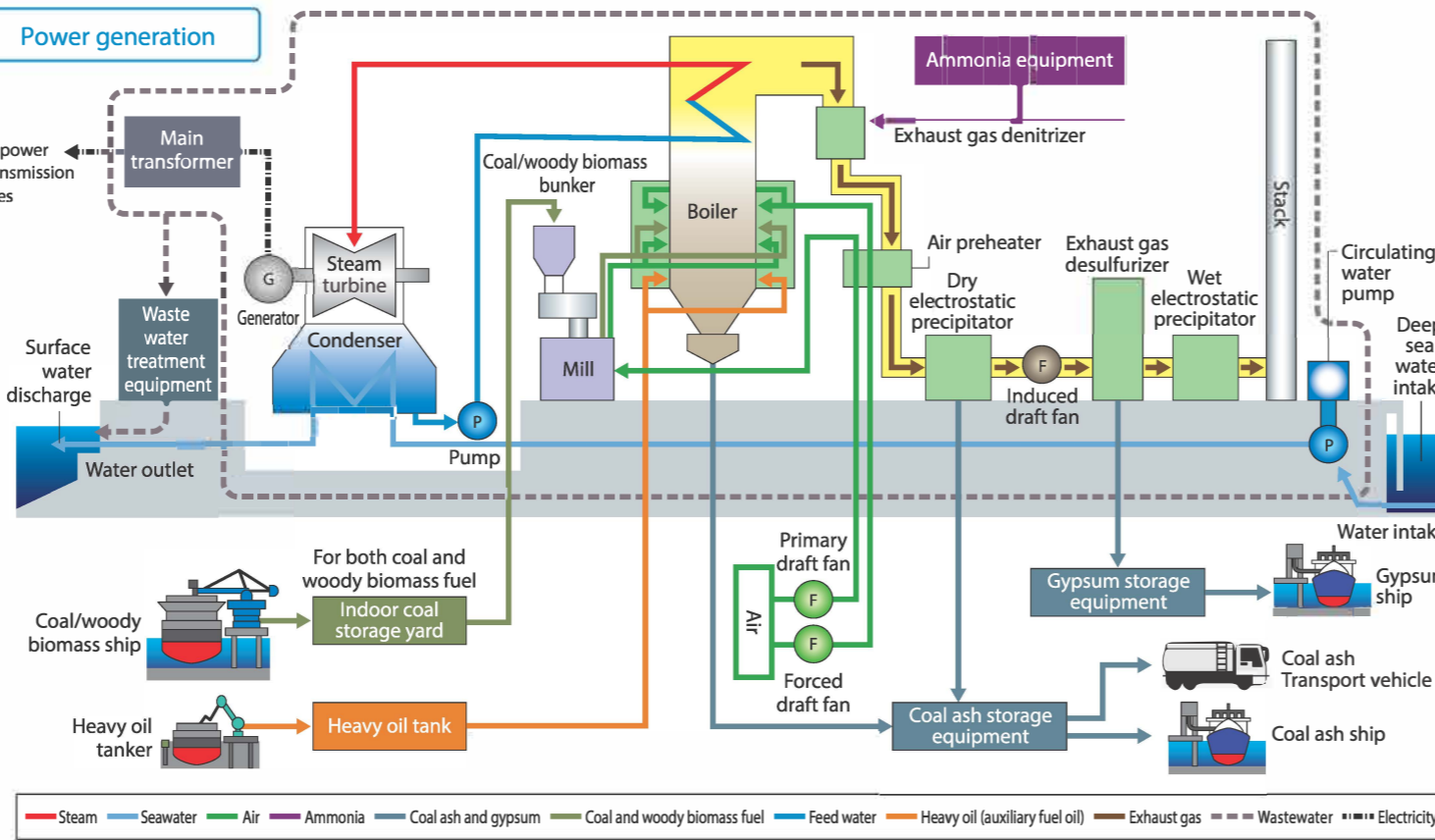
One of the most efficient power generation systems in Japan

The power station uses ultra-supercritical (USC) power generation equipment, which is the most efficient coal-fired power generation equipment available. It boasts a power generation capacity of 1,070 MW—the highest output from a single unit in Japan.



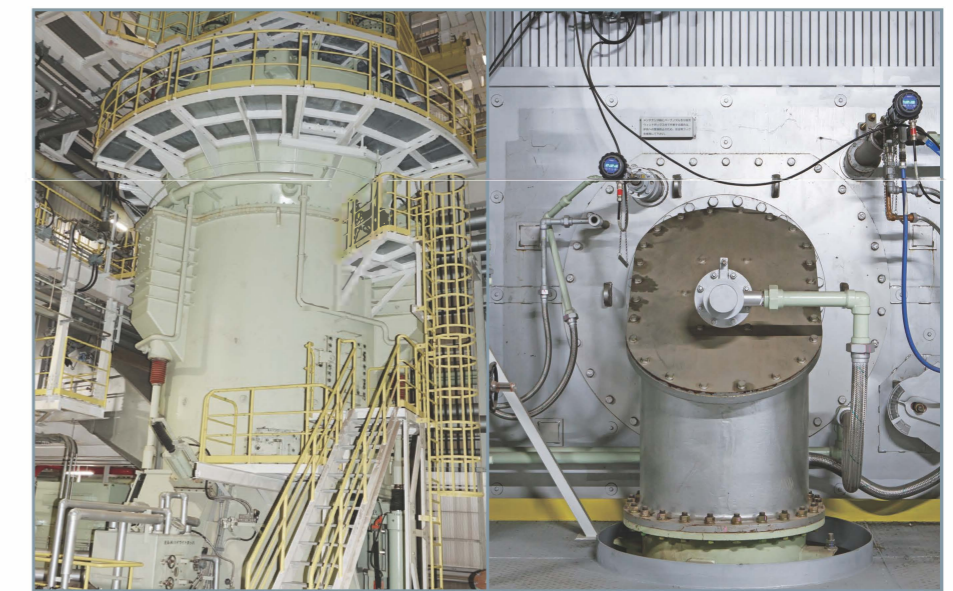
Central control room

The central control room manages the monitoring and operations of all equipment in the power station—including power generation equipment; coal unloading, storage, and transport equipment; ash processing equipment; and water treatment equipment—in a single location. Our system uses the latest digital technologies to enable advanced operation and minimize the number of operators.



Overview of the facilities

Unit	Output (MW)	Fuel	Start of operations	Power generation type
5	1,070	Coal and woody biomass	August 2022	Steam



Dedicated mill

Dedicated burner

Woody biomass fuel

Woody biomass fuel is an environmentally friendly, carbon-neutral fuel created from waste wood (wood that cannot be used for construction or furniture) generated during lumber production. Our indoor coal storage yard can store about 70,000 tons of woody biomass fuel.



Woody pellets

Pellets stored in the indoor coal storage yard

Dedicated equipment for woody biomass fuel

The use of dedicated mills, burners, and other equipment only for woody biomass fuel helps ensure a high co-firing ratio and contribute to the reduction of CO₂ emissions.

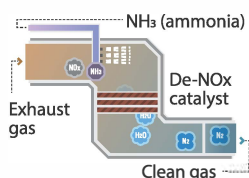


Environmental initiatives

Preventing air pollution

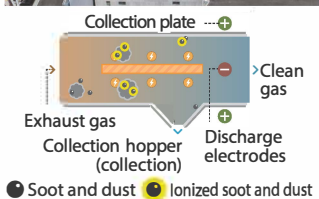
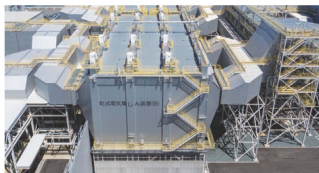
At Taketoyo Thermal Power Station, we take a variety of measures to protect the local environment. Burning coal generates air pollutants such as nitrogen oxides (NOx), soot, and sulfur oxides (SOx); to prevent these from being released into the local environment, we use denitrizers, electrostatic precipitators, and desulfurizers to treat all exhaust gas from the plant before releasing it from the stack.

Exhaust gas denitration equipment (removal of NOx)



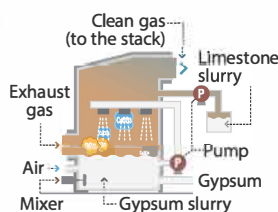
Ammonia is injected into the exhaust gas. The de-NOx catalyst stimulates a chemical reaction that turns NOx into harmless nitrogen and water.

Electrostatic precipitator (removal of soot and dust)



A high negative voltage is passed between the discharge electrodes and the collection plate. This ionizes the particles of soot and dust in the exhaust gas, which are then diverted to the grounded plates to reduce their concentration in the gas.

Exhaust gas desulfurizer (removal of SOx)



SOx in the exhaust gas react with a mixture of limestone and water (limestone slurry) and are removed in the form of gypsum.

Keeping the oceans clean

All water discharged from the power station undergoes pre-processing such as oil separation and neutralization, undergoes condensation, sedimentation, filtration and neutralization, and the water quality is checked before it is discharged.

Protecting the global environment

Coal, like other fossil fuels, is a limited natural resource. To conserve this valuable resource and preserve the environment, we ensure a high level of thermal efficiency in our power generation operations. Improving efficiency also means decreasing carbon dioxide emissions, which can help to mitigate climate change. At Taketoyo Thermal Power Station, we also co-fire woody biomass fuel, resulting in lower CO₂ emissions than coal alone.

Protecting the surrounding environment - Measures against scattering of dust -

To prevent the scattering of coal dust, we store our coal in an indoor storage yard with minimal openings and use enclosed conveyors.



(Center) Enclosed conveyor belts (Right) Indoor coal storage yard

Effective utilization of limited resources - Reuse of coal ash and gypsum -

Coal ash (cinder, soot and dust), which is generated during the combustion of coal, and gypsum, which is generated in the exhaust gas desulfurizers, are recycled as cement raw materials, building boards, and soil improvers.



Coal ash storage equipment

Noise control measures

Acoustic barrier walls around the boilers, low-noise equipment, and silencers help control noise pollution to the surrounding area.



Soundproof walls

