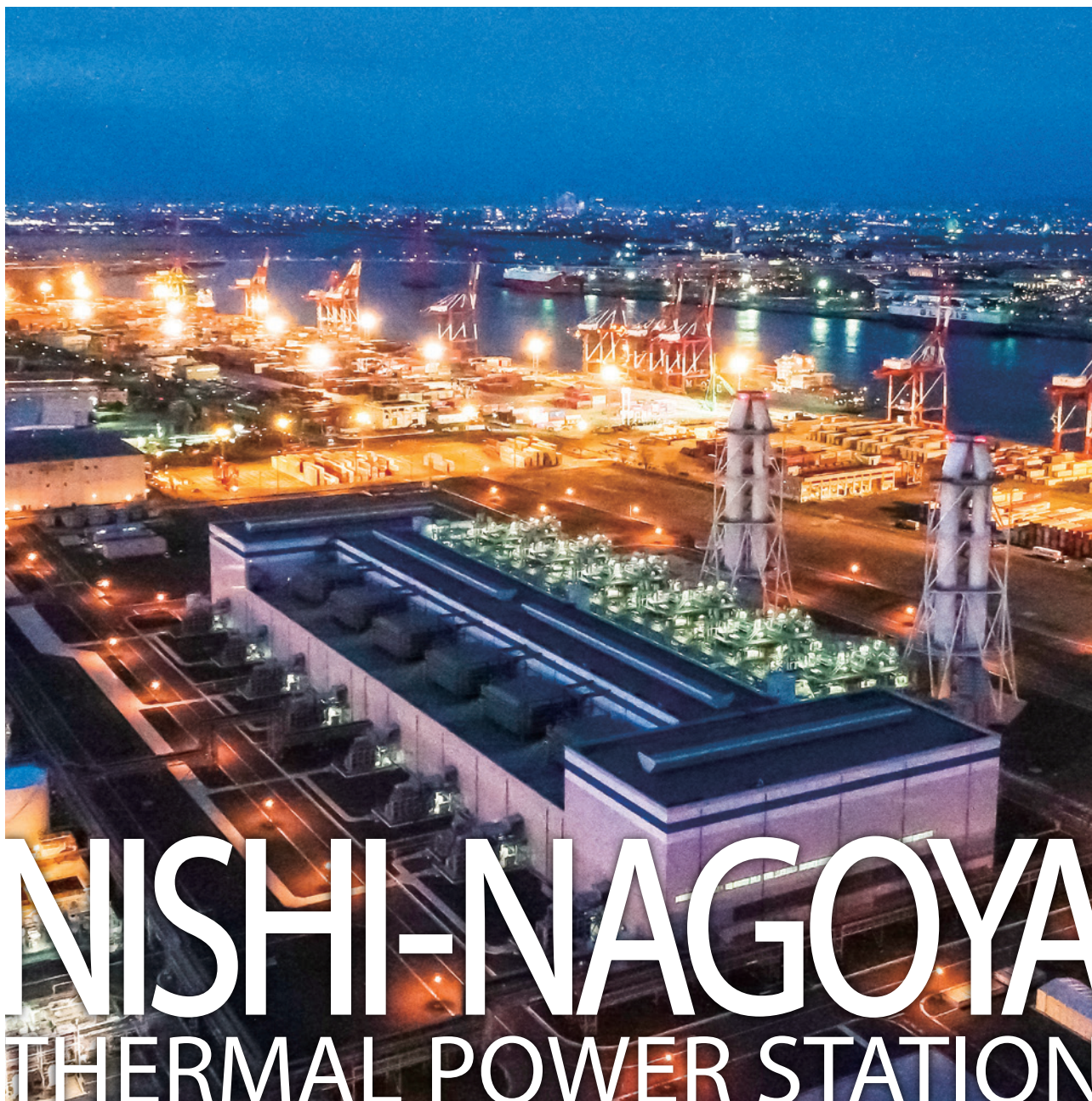


Jera



# NISHI-NAGOYA THERMAL POWER STATION

WELCOME TO NISHI-NAGOYA THERMAL POWER STATION!

## Features and key points of the Nishi-Nagoya Thermal Power Station

This combined-cycle power station features the highest thermal efficiency in the world.\* It provides a stable supply of electricity with high economic efficiency and environmental performance.

\* Thermal efficiency: as of March 27, 2018

# LNG combined-cycle power station refurbished from an oil-fired thermal power station

The Nishi-Nagoya Thermal Power Station is located on Tobishima Pier of the Port of Nagoya. In 1970, it commenced operation as an oil-fired thermal power station, and has played a key role in providing a stable supply of electricity in and around Nagoya City for more than 40 years, including the period of Japan's high economic growth. In 2018, it was relaunched as a highly efficient combined-cycle power station fueled by liquefied natural gas (LNG) with superb economic efficiency and environmental performance.



CHECK!  
Feature

## Selected as one of the Good Design Best 100 in FY2018

Inside space of the plant is bright, featured a spaceship-like design, held together by ocean blue, bright orange and lemon yellow, unified with the base color of bright white.



### Gas turbine

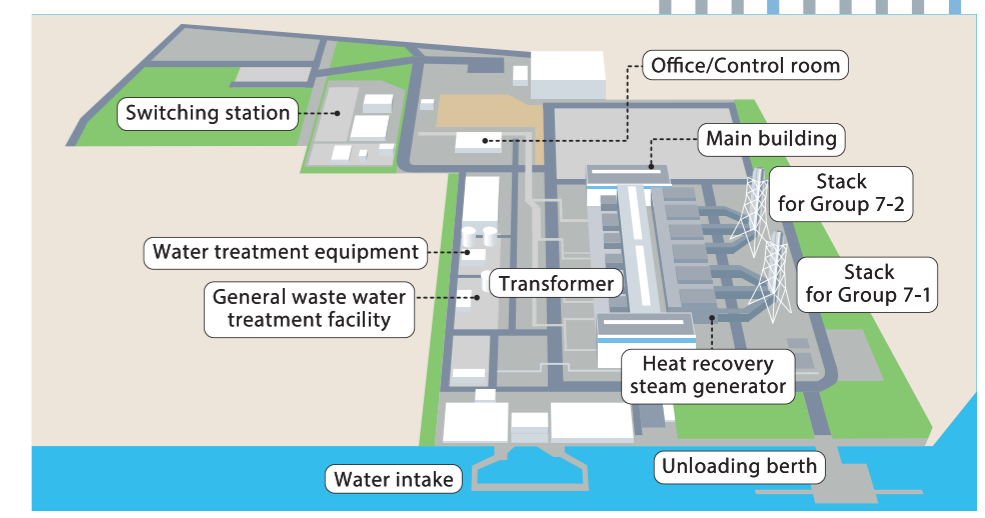
Compressed air and fuel are mixed for combustion. The high-temperature combustion gas drives a gas turbine, and a generator that is directly connected to the gas turbine generates electricity.



### Control room

The control room centrally monitors and controls the power generation equipment. Advanced automation has been attained by cutting-edge digital technology and systems. This has helped reduce the size of the control room and enabled operation by fewer operators.

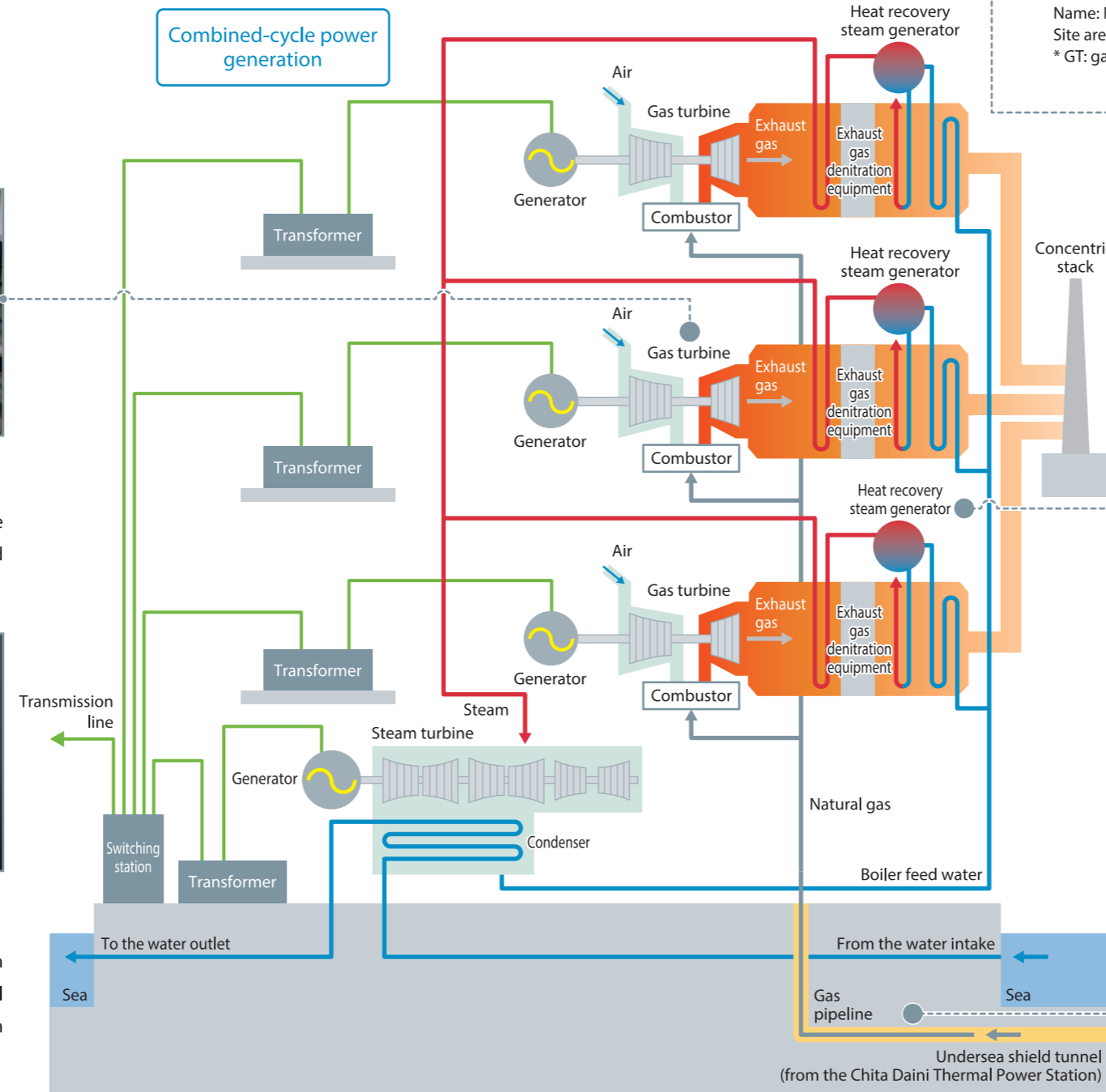
## Overall layout of the power station



## Outline of facilities

Unit No.	Output (MW)	Fuel	Start of Operation	GT combustion temperature (°C)	Power generation type
Group 7-1	1188	LNG	September 2017	1,600	Combined cycle
Group 7-2	1188	LNG	March 2018	1,600	Combined cycle

Name: Nishi-Nagoya Thermal Power Station Location: Tobishima-mura, Ama-gun, Aichi Prefecture  
Site area: Approx. 380,000m<sup>2</sup>  
\* GT: gas turbine



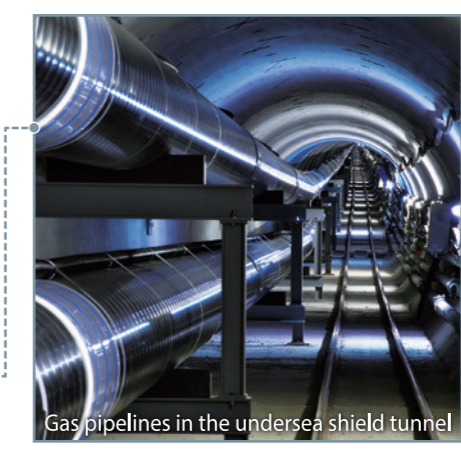
### Steam turbine

The steam turbine is powered operated by the high-temperature, high-pressure steam from the heat recovery steam generator. The efficiency has been increased by using longer turbine blades.



### Heat recovery steam generator

A heat recovery steam generator produces steam from water by using the heat of the high-temperature exhaust gas generated in the gas turbine, and sends the steam to the steam turbine. And an exhaust gas denitration equipment was built inside the generator to reduce nitrogen oxides in the exhaust gas.



### Gas pipelines

The natural gas fuel for the power station is sent through the gas pipeline. This gas pipeline branches at the Chita Daini Thermal Power Station on the opposite shore of the Port of Nagoya and is buried in an undersea shield tunnel (30 m under the seabed, approximately 5 km long) that crosses the Port of Nagoya.

# Environmental Initiatives

## Preventing air pollution

The power station is fueled with LNG and therefore does not discharge the sulfur oxides which are the cause of particulate matter and acid rain. The use of low-NOx burners and exhaust gas denitration equipment has also reduced the discharge of nitrogen oxides. The white smoke rising from the plant stacks on cool days is steam.

## Keeping the oceans clean

The waste water generated at the power station undergoes purification processes including condensation, sedimentation, filtration, neutralization, and oil separation, and the water quality is checked before it is discharged.

## Protecting the global environment

Since power stations make use of the earth's enriched resources, it is important to achieve high level of thermal efficiency when generating electricity due to preservation of the global environment. In addition, greater generating efficiency means that less carbon dioxide, which causes global warming, is produced. We are committed to conserve the earth's finite resources and curb global warming by leveraging the technical capabilities we have accumulated over the years and by introducing highly efficient power generating equipment.

The Nishi-Nagoya Thermal Power Station employs a multi-shaft combined cycle power generation system that consists of three gas turbines and one steam turbine. It has the highest thermal efficiency in the world (63.08% based on the lower heating value [LHV] as of March 27, 2018), reducing fuel consumption and CO<sub>2</sub> emissions.



## Prevention of human error

Identification colors are designated for the power generation facilities: ocean blue for Group 7-1 and bright orange for Group 7-2. Blank patterns and blank characters are indicated on the three gas turbines (A, B, and C) to enhance visibility and to reduce misidentification and misoperation.

Identification color and signboard design

Unit	Steam turbine	Gas turbine		
		A	B	C
Group 7-1	7-1	7-1-A	7-1-B	7-1-C
Group 7-2	7-2	7-2-A	7-2-B	7-2-C



## JERA Co., Inc. Nishi-Nagoya Thermal Power Station

3-5-1 Higashihama, Tobishima-mura, Ama-gun, Aichi Prefecture 490-1446, Japan

Tel: +81-567-55-1531

Use of the contents of this document for purposes other than those intended, and their unauthorized reproduction or duplication, are strictly prohibited. Compiled October 2024.

