JERA

SODEGAURA
THERMAL POWER STATION

WELCOME TO SODEGAURA THERMAL POWER STATION!

Operating stably on LNG and
expanding our gas supply business

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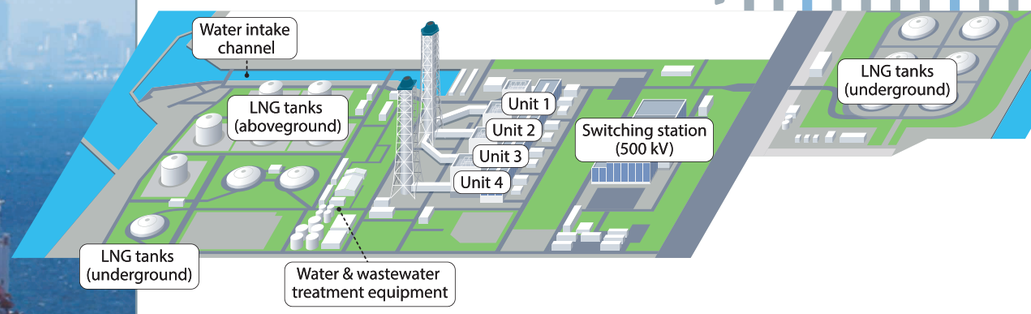
The Sodegaura Power Station is located in part of the Keiyo Industrial Area, which faces onto Tokyo Bay. Unit 1 went into operation on August 1, 1974. Units 2 and 4 contain Japan's first 1,000 MW generators, and since Unit 4 began operations in August 1979 the station has been a high-capacity power plant that provides not only Chiba Prefecture but also other parts of the Tokyo metropolitan area with a stable supply of electricity. The station also boasts the world's largest LNG storage facility (34 tanks: eight aboveground and 26 underground), which is operated in partnership with Tokyo Gas Co., Ltd. and ensures that LNG is always available. The station uses LNG, which is environmentally friendly, as its fuel. It is literally a green power plant, with 220,000 trees growing in its vast grounds. The trees are home to 40 species of wild birds.

Overall layout of the power station



Outline of facilities

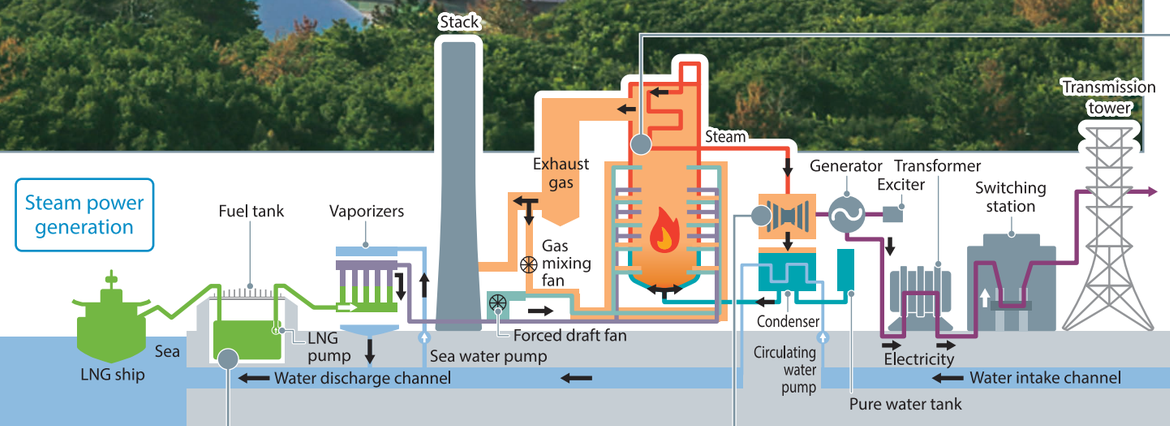
Unit No.	Output (MW)	Fuel	COD	Power generation type
Unit 1	600	LNG	August 1974	Steam
Unit 2	1000		September 1975	
Unit 3	1000		February 1977	
Unit 4	1000		August 1979	

Name: Sodegaura Thermal Power Station Location: Sodegaura City, Chiba Prefecture
Site area: Approx. 1,120,000 m²

CHECK! Features

A power station with abundant greenery

More than a third of the site is covered with greenery. The Sodegaura Power Station adopted the "ecogreening" approach of selecting trees that are native to the region and transplanting saplings to create green zones. It is creating woodlands by densely transplanting the seedlings and leaving them to compete naturally. The power station received the Prime Minister's Grand Prize in the Greenery Promotion Awards in June 1995.



LNG tanks

The LNG tanks receive LNG regularly and store it until the liquefied gas is re-gasified for supply. There are two types of tanks: aboveground and underground.

Steam turbine

A steam turbine converts the energy of high-temperature, high-pressure steam into mechanical energy. The blades are processed to attain a special asymmetrical curved surface with torsion based on hydromechanics to maximize the performance.

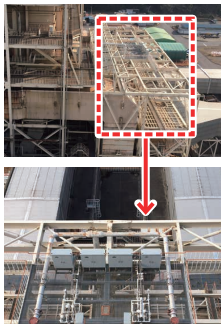
Boiler

A boiler is a huge box-shaped structure. The energy produced by the combustion of fuel is used to heat water to generate the required steam. The internal walls consist of water tubes. Boiler combustion turns the water in the water tubes into high-temperature, high-pressure steam, which is sent to the turbine generator.

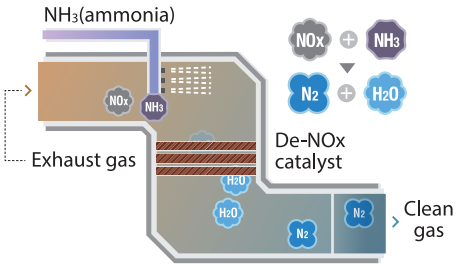
Environmental Initiatives

Preventing air pollution

The power station is fueled with LNG and therefore does not discharge SOx 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.



Exhaust gas denitration equipment
(removal of NOx)



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

Keeping the oceans clean

The equipment cleaning water and general waste water generated at the power station undergoes pre-processing such as oil separation and neutralization. It is then purified by means of condensation, sedimentation, filtration and neutralization, 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.

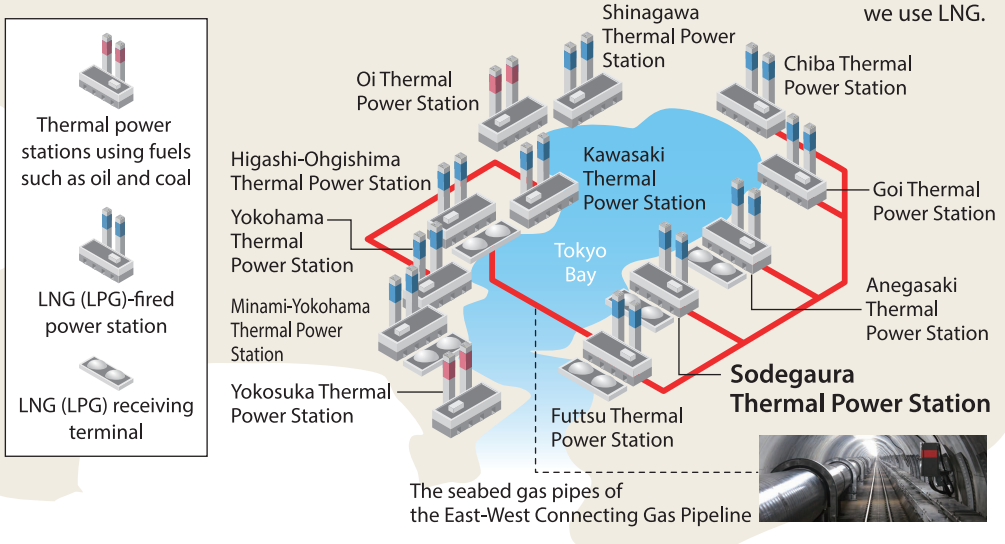
We are committed to conserve the earth's finite resources and curb global warming by leveraging the technical capabilities we have accumulated over the years and by introducing highly efficient power generating equipment.

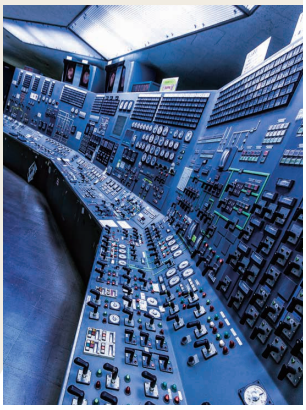
What is LNG?

LNG stands for Liquefied Natural Gas (predominantly methane), that has been cooled to around -162°C to be liquefied. Cooling and liquefaction reduce the volume of natural gas to approximately 1/600th, allowing it to be transported and stored in large quantities. So the gas is converted into LNG in the countries where it is produced before being transported to Japan. During the process of liquefaction, dust, moisture, sulfur are removed. Moreover, SOx is not generated during combustion, so LNG is a clean form of energy. Another advantage is that it produces less carbon dioxide, which is a cause of global warming, when it is burned than oil and coal do.

Gas pipelines

The LNG facility at the power station supplies gas to power stations in Chiba Prefecture via a gas pipeline. The East-West Connecting Gas Pipeline, which is buried under the seabed of Tokyo Bay, links the power station with the Higashi-Ohgishima Power Station on the other side of the bay. This means that gas can be supplied from the eastern side to the western side, which gives us flexibility in how we use LNG.





BTG operation panels in the central control room of Units 1 and 2

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