



### Development Fund for the Community around NBCC

The development fund was established by the approval of the Cabinet under the resolution of National Commission on Energy Policy in order to improve the quality of life of people living within 5 km-radius distance from the power plants with the capacity of 5,000 million kWh. Part of the income from electricity sale is collected to the fund to support local activities regarding occupational development, provision of scholarship, religion, culture, sports, music, health care, and environmental conservation.

### Corporate Social Responsibility

Since NBCC is situated in the middle of communities, numbers of activities and projects are initiated in order to retain good relationship with community members. For example, Community Development Voluntary Project in which the youth, community members, and EGAT officers altogether volunteer to develop the community areas with the focus on schools, including painting sport fields and playground equipment. Moreover, projects for the youth are created in order to gain more of their participation, such as community learning project in which the youth learn the old way of life and wisdom from local gurus, such as organic farming and local handicraft. Another one is “youth of the river” project, which encourages students to implement science project with the aim to raise awareness of environmental protection.



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# North Bangkok Power Plant

# EGAT





## History

North Bangkok Power Plant (NBCC) is the first modern thermal power plant in Thailand. The history of the power plant dates back to the origin of the Electricity Generating Authority of Thailand (EGAT). At the time of the construction of Bhumibol Dam or Yanhee Dam, Yanhee Electricity Authority (YEA) was established to supervise the dam construction and the dam management after the construction was completed. During the dam construction, Yanhee Steam Turbine Power Plant alternatively known as North Bangkok Power Plant was constructed by YEA in 1959 to cope with the electricity demand, and it was officially operated on May 17, 1961.

The former NBCC was regarded as “the role model” of modern power plants in Thailand, which had supplied electricity for Thailand for 40 years. In 2001, the power plant was decommissioned from the system and removed. Later, the present NBCC was constructed in the same area to cope with the increasing demand of electricity and to stabilize the reliability.

The present NBCC is a combined cycle power plant fuelled by natural gas from Myanmar (West coast) and the Gulf of Thailand (East coast). Commenced in December 2006, NBCC was officially operated in September 2010. Later, NBCC Block 2 was built in accordance with the National Power Development Plan of 2004–2015 in response to the demand growth. The project was approved by the Cabinet on July 10, 2012, and the commercial operation date was January 15, 2016.

## Location

NBCC is located at 53 Moo 2 Bang Kruai sub-district, Bang Kruai district, Nonthaburi province alongside EGAT Head Office. It covers an area of 50 acres, out of which 28 acres are occupied by the power plant including generation building, substation, building of water supply system, and cooling tower, and other 22 acres are the green area.

## Characteristics and Capacity

**NBCC Block 1** has the generating capacity of 704 MW. It works as a Multi Shaft Combine Cycle consisting of two gas turbines and one steam turbine. The production process consumes 125 million cubic feet of natural gas per day.

**NBCC Block 2** has the generating capacity of 848.3 MW. It works as Single Shaft Combine Cycle consisting of two gas turbines and one steam turbine. The production process consumes 144 million cubic feet of natural gas per day.

The heat from the gas combustion in the gas turbine connected to the power generator is used as the energy. The hot air released from the gas turbine is used to produce steam in the heat recovery steam generator (HRSG) to drive the steam turbine to generate the electricity. Afterwards, the used steam from the steam turbine will be converted into water through the condenser for the steam production process again. Additionally, the water from the Chao Phraya River is used as the coolant before it is transferred through the cooling tower to reduce the temperature.

## Environmental Management

### Water Quality

The waste water from the generation process, which is not used as the coolant, will be stored in the effluent pond after the treatment. The water will be inspected to meet the standard criteria before using it to water NBCC garden, so this water will not be released into the Chao Phraya River. On the other hand, the drained water from the cooling tower will be released to the river, while its temperature is controlled not to exceed 2 degrees Celsius compared to the Chao Phraya River's temperature.

### Air Quality

The Dry Low NO<sub>x</sub> Burner System is installed to limit Nitrogen Oxide under the average of 96 PPM, as well as the Emission Monitoring System (CEMs) used for NO<sub>x</sub> and SO<sub>2</sub> monitoring continuously. Finally, the findings will be obligatorily reported to the Pollution Control Department. In case if the emission appears to exceed the limit or tend to, it will be examined and eliminated immediately. Moreover, the monitoring results are shown on LED screen situated at the entrance of NBCC and on Bang Kruai-Sainoi Road.

### Noise Control

The soundproof wall was installed to reduce the noise created by gas turbine and steam turbine, as well as the silencer installed to reduce the noise of the steam, and the warning signs “EAR PROTECTOR MUST BE WORN IN THIS AREA”. Besides, the noise in the power plant area is rechecked continuously.

### Waste Management

The waste from the electricity generating process such as an air filter, deteriorated lubricant, and used resin from water demineralizing process will be eliminated by the waste disposal authorized company. The contaminant transportation report is submitted to the Department of Industrial Works via its website. The regular garbage is collected and deposited by the General Services Division, EGAT Head Office, to be disposed at the dumb site of Bang Kruai Municipality.

