

THE GRAND OPENING OF

Mungcharoen Green Power



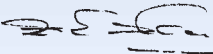
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As we celebrate the grand opening of Mungcharoen Green Power, I wish to convey my heartfelt gratitude to everyone who has made today's celebration a reality.

Mungcharoen Green Power is the first rice husk – fired power plant in Surin, accounting for approximately 10 per cent of the electricity required by the town. The plant's power purchase agreement with the Electricity Generating Authority of Thailand will stipulate the sale of 8 MW under the Small Power Producer scheme for a period of 21 years. The remaining 1.1 MW will be consumed by Mungcharoen's rice mills.

On this auspicious occasion, I would like to, once again, thank all who have contributed to realising the inauguration of the plant. Please accept my best wishes for further success and prosperity in the years to come.


Siriwat Mungcharoenporn
Managing Director



General Information

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Plant Technical Details

Boiler: 55 tonnes/hr Steam Boiler
Turbine: 9.9 MW Fully Condensing Steam Turbine Generator
Type of Fuel: Rice Husk of Lower Heating Value, 12,560 kJ/kg
Combustion Grate: Reciprocating Step Grate
Fuel Consumption: Approx. 200 tonnes of rice husk per day

Rice Husk Fuel Supply

Reliable supply of rice husk from the owner's rice mills and neighbouring rice mills will provide fuel for the 9.9 MW power plant.

Power Requirements

Export to Grid:	8,000 kW
Plant's Internal Consumption:	800 kW
Buffer (for future use):	1,100 kW
Total Power Required:	9,900 kW

The First Rice Husk Fired Power Plant in Surin

Mungcharoen Green Power Plant (MGPP), opened in Surin on 18 March 2007, is owned by the Mungcharoen Group. The project started in 2005 with 600 million baht in capital, financial support from BankThai Plc and Board of Investment privileges. Husk-fired power implements clean technology that is virtually free from dust or air pollution. It is also a highly effective way to generate electricity, so stabilising power supplies in Surin.



Environmental Protection and Safety

MGPP places great emphasis on pollution prevention. Most water used by the plant is recycled. New water is only added to compensate for evaporation and to dilute minerals in the water so as to prevent clogging.

Used water is stored in a well before passing through the on-site wastewater treatment system. The water is then suspended for two days in another well before being passed to another well from which the water is drawn for watering plants.

Generators are driven by husk fuel containing less than 0.05% sulphur, so preventing air pollution. As well, two advanced dust-collection systems will soon be installed. A whirlwind system will achieve over 60% dust extraction and a static electricity system will bring dust extraction to 99.6%. A 40-metre high chimney will soon finely disperse the remaining dust into the air.

MGPP's safety first policy includes full-time safety officers who ensure all staff are fully-equipped. The officers also regularly teach and drill safety procedures.

Multiple Benefits

MGPP benefits Thailand as follows:

- Reduces need for import fuel.
- Stabilises the electricity generating system.
- Effectively utilises local resources.
- Provides income to farmers.
- Reduces pollution.

Main Operating Units and Components

Fuel Handling and Feeding: Rice husk is transported into a silo, then to a service silo, then to a boiler furnace.

Combustion Grate: Thermal decomposition and combustion of rice husk with a step grate mechanism moves the fuel through the furnace.

Boiler: High pressure, and high temperature steam from the boiler drives a turbine. The boiler comprises a drum, wall tubes, headers and downcomers that form the combustion chamber and flue gas passages. Fast start-up and reliable circulation are assured.

Fully Condensing Steam Turbine: High pressure, and high temperature steam enters fully a condensing turbine unit that turns blades connected to a generator.

Multi-cyclone: Fine ash and particles from flue gas are collected and removed via conveyors.

Electrostatic Precipitator (EP): Very fine ash and particles are electrically charged and attach to anodes and cathodes before being removed by conveyor.

Condenser, Cooling Tower and Cooling System: Steam exiting the turbine undergoes heat exchange in a condenser and is water cooled.

Ash Handling System: Combustion of rice husk produces two kinds of ash – "furnace bottom ash", which falls to the bottom of the combustion grate and "fly ash" which elutriates from the furnace and is removed by a multi-cyclone and an electrostatic precipitator. The ash is then conveyed away and binned.

Monitoring and Controlling: Plant data, including temperature, pressure, and concentrations, is logged into Control System (DCS). Analysis is performed before every shift and necessary adjustments made to avoid plant stoppage or injury.

