Tuas South Incineration Plant is the fourth and largest refuse incineration plant in Singapore. Built at a cost of S$890 million and completed in June 2000, it was designed to incinerate 3,000 tonnes of refuse daily. The Plant is sited on 10.5 ha of reclaimed land and enables all incinerable waste generated in Singapore to be disposed of by incineration. The Plant was built with state-of-the-art technology. The various processes are highly automated and controlled via a digital control system. Modern equipment incorporating advanced technology is used in the Plant to ensure a high level of efficiency and reliability.

Incineration achieves about 90% reduction in volume of the refuse. Hence, all incinerable refuse are disposed of at the incineration plants while non incinerable refuse and ash from the incineration plants are disposed of at the Semakau Landfill. This helps to conserve the use of scarce land in Singapore. Tuas South Incineration Plant, together with the other incineration plants and the Semakau Landfill, will meet the refuse disposal needs of Singapore and help in achieving a clean living environment for all Singaporeans.
The heat from combustion is used to generate steam in boilers. The steam drives two steam turbines coupled to generators to produce electricity. The Plant consumes about 20% of the electricity it produces and the excess 80% is sold.

Modern equipment utilising advanced technologies are used in the various processes in the Plant. The control and monitoring of these processes are done using an advanced Digital Control System (DCS) in the Central Control Room. The DCS not only increases the efficiency of operations through a higher degree of automation but also allows more equipment to be operated and monitored simultaneously. The Central Control Room is manned round the clock every day by a lean force of trained operators working on rotating shifts.

The pressure in the two refuse bunkers is kept below atmospheric pressure to prevent odours from escaping. The refuse in the bunker is fed by refuse cranes into the six incinerators.

The Plant has four high capacity rotary bulky waste crushers integrated in the refuse reception hall so that refuse trucks are able to discharge their loads directly into the crushers. A bulky waste pit, which is a temporary storage facility, allows peak intake of bulky waste to be stored and crushed during off-peak hours.

A catalytic fabric filter system is installed after a 2-zone electrostatic precipitator to clean the flue gas. The cleaned flue gas then passes through the two 150m tall chimneys that maximise the flue gas dispersion into the atmosphere.

Advanced combustion control systems regulate the refuse feeding and combustion rate to achieve a complete burnout of the refuse.