

Alstom's KA26 combined cycle technology to provide clean, reliable and flexible power to meet Singapore's needs today and in the future.

TUAS CCP5

Singapore

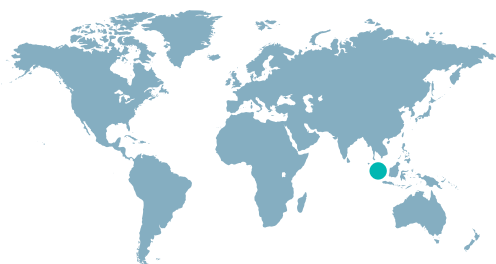
Tuas Power Generation Pte. Ltd. (TPG) is owned by NYSE-listed Huaneng Power International. This is one of Singapore's largest power generation companies, which already operates four combined cycle power plants and two oil-fired steam power plants. Upon building CCP5, TPG will retire an existing 600 MW steam turbine block, thus improving their overall electricity generating efficiency.

Tuas CCP5 will be built alongside the existing Tuas power station on the west coast of Singapore.

This contract underlines Alstom's KA26 combined cycle products' competitiveness in Asia. This, Alstom's first contract with TPG, is proof of the KA26's reputation for performance, flexibility, reliability and quality to suit the toughest power markets.

- Customer:** Tuas Power Generation Pte. Ltd. (TPG)
- Scope of supply:** **Full turnkey EPC* contract for a 1 x KA26-1 single-shaft power plant** including:
 - Overall plant engineering
 - Global procurement and logistics
 - Civil, electrical and mechanical construction
 - Comprehensive commissioning of the power plant**A 6-year operation and maintenance contract for the GT and its ancillary equipment.**
- Fuel:**..... Natural gas; diesel oil as backup fuel
- Cooling System:**..... Direct cooling
- Application:**..... Power generation

*EPC = Engineering, Procurement, Construction





ADVANTAGES

- Outstanding operational flexibility
- High fuel flexibility
- Superior partial load performance
- Low NOx emissions over a wide load range

Alstom's Plant Integrator™ approach offers more value for customers

The Plant Integrator™ concept is Alstom's unique way of creating more value for customers, combining outstanding expertise at component and plant level with world-class Engineering, Procurement and Construction (EPC) capabilities, with proven worldwide references. Through close collaboration, Alstom guarantees that customers meet their business objectives and serve their markets more effectively. There are six Plant Integrator™ factors, which help increase the **Net Present Value** for our customers.

PLANT INTEGRATOR FACTORS	CUSTOMER BENEFITS
INVESTMENT	Optimized capital investment
LEAD TIME	Shorter lead times to produce electricity faster
PERFORMANCE	Higher power plant efficiency over a wide range of operational modes Low emissions to meet environmental responsibility Optimised Operation & Maintenance (O&M) costs
AVAILABILITY & FLEXIBILITY	High reliability, availability and flexibility
LIFE EXTENSION	Extended power plant life options

PROJECT FEATURES

The Tuas CCP5 project benefits from superior integration through Alstom's project management skills, EPC capabilities and state-of-the-art key components:

- 1 GT26 gas turbine equipped with the sequential dry low NOx combustion system, for clean high efficiency operation
- 1 horizontal, triple-pressure reheat, drum-type heat recovery steam generator
- 1 compact, STF15C steam turbine with axial exhaust for flexible, highly efficient operation
- 1 high efficiency TOPGAS turbo-generator, an advanced hydrogen-cooled technology for generators
- Sea water direct cooling.

Arrangement

