

MACAO REFUSE INCINERATION PLANT (operation and maintenance)



- Client / Employer** Government of the Macao Special Administrative Region
Environmental Protection Bureau
- Service** Provision of Operation and Maintenance Services provided by SINOGAL, LDA.
(company share held by CONSULASIA, LDA)
- Contract Price** MOP 280 Million in refuse treatment, plus 320 Million in power generation
- Time Schedule** July 2009 to June 2019
- Description of the Project** Commissioned in 1992, the Macao Refuse Incineration Plant ("MRIP") is designed for the burning of non-hazardous municipal waste.
- The original plant has a capacity of 864 metric tons per day (TPD), being composed of three Boiler Process Units of 288 TPD each. The heat released from the waste burning can nominally generate 84 metric tons of steam per hour, which in turn can be used to generate up to 12 MW-hr/hr of electricity from an installed steam-driven turbine generator.
- In 2003, the quantity of solid waste generated reached 249,255 tons, corresponding to 1.52 kg/day per capita.
- However, the total Plant's nominal capacity was doubled after the completion of the facility's expansion in 2009 as the rapid economic development and population growth in Macao have resulted in a large increase in refuse generated over the past decade.

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Description of the Project (cont.)

In order to deal with such rapid growth, the Government of Macao through the management of the Office for Infra-Structure Development (GDI), the cooperation of the Operator (CGS), and the Specialized Consultancy of FICHTNER Engineering and CONSULASIA Ltd., designed and built a new plant adjacent to the existing one with an incineration capacity of 3x288 tons per day and a capacity of producing electrical power rating of 14 MW. Then, the original plant's capability was doubled-up and the environmental protection standards were significantly enhanced by means of the improved sophisticated technologies added to the system.

Following an International Public Tender, the Macao Government awarded to the Consortium formed by CONSUGAL/ CONSULASIA and two Taiwanese companies CTCI and Sino Environmental Services Corporation (leaders on environmental protection in Taiwan), the contract to provide the Operation and Maintenance Services of both plants for ten years, starting on 1st July 2009. The Consortium is bound to perform the O&M services with a vision of improving operational procedures, and escalating the productivity and efficiency of the plant in order to meet the needs and expectations of Macao SAR and harnessing the environment protection.