



# ANDRITZ PROVIDES THE POWER

FOR THE WORLD'S LARGEST SEWAGE  
SLUDGE TREATMENT PLANT IN HONG KONG

The world's largest sewage sludge treatment plant was built by the Veolia Water-Leighton-John Holland joint venture in Hong Kong's Tuen Mun district, and is operated for a period of 15 years by VW-VES (HK) Ltd, a subsidiary of Veolia Water/Veolia Environmental Services.

Four EcoFluid AC Bubbling Fluidized Bed (BFB) boilers form the heart of the power plant. These units are designed and manufactured by ANDRITZ. The sludge to be treated comes from 11 regional sewage treatment plants, above all from the Stonecutters Island Sewage

Treatment Works, the largest in Hong Kong. In addition to adding this new treatment plant at Tuen Mun, Hong Kong is modernizing several existing plants. The sludge volume that Hong Kong generates will increase from the former level of 800 t/day to a maximum capacity of 2,000 t/day.

## ANDRITZ

ENGINEERED SUCCESS

# Energy from sewage sludge EcoFluid AC boilers

At maximum capacity, the new plant in Tuen Mun can treat 2,000 t/d. This volume of "fuel" will help the EcoFluid AC boilers generate more than 20 MW of electricity – lowering greenhouse gas emissions by up to 260,000 t/a, and reducing the volume of sludge going to landfill by 90%. Good pre-dewatering of the sludge, which has an average of over 30% DS when delivered, makes self-sustaining

combustion possible without having to add fossil fuels or dry the sludge thermally beforehand.

## ENVIRONMENTAL PROTECTION

The flue gas cleaning plants must meet the highest environmental protection requirements and strictest emission standards. In the center of Tuen Mun, a monitoring station is set up to measure and analyze the air quality continuously. The plant is not

only energy self-sufficient, it also exports substantial amounts of electricity and provides drinking- and process water with its own seawater desalination. Rain water is collected and used as industrial water. All of the waste water produced by the plant itself is treated there and recycled. Planned as a new architectural, technological and cultural landmark for Hong Kong, the wave-like shape of the building harmonizes with the landscape, blending in with the sea and the mountains.

## TECHNICAL DATA OF THE STEAM BOILERS

Type of construction	Bubbling fluidized bed boiler, EcoFluid AC
Number	4
Fuel	Sewage sludge
Heating value range LHV	3.0–5.8 MJ/kg
Self-sustained incineration	As from approx. 3.5 MJ/kg, depending on load
Fuel heating capacity ea.	27.5 MW max.
Sludge throughput ea.	23 t/h max.
Steam output ea.	31.3 t/h max.
Steam temperature	383°C
Steam pressure	42 bar
Feed water temperature	130°C
Flue gas temperature	200°C

## SUSTAINABLE WASTE MANAGEMENT

A unique aspect of the Tuen Mun facility is its concept of sustainable waste management: sludge treatment with the latest technology combined with ecological education and leisure space for the public. Visitors are able to see the plant machinery from an enclosed visitors' gallery, and learn about sustainable waste management through interactive multi-media presentations. An auditorium, conference center, exhibition space, indoor swimming pool, coffee house, shops, and ecologically arranged gardens provide attractions for the public. The plant went into operation in 2013.

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