

The World's Largest Energy from Waste Facility to be Built in Dubai

Dubai Municipality has selected the renowned Swiss clean tech company Hitachi Zosen Inova in a joint venture with the largest Belgian general contracting company BESIX Group to build the world's largest energy-from-waste plant. The facility will treat 1,825,000 tons of municipal solid waste per year, 5,000 tons per day, and is part of Dubai's long-term sustainability strategy.



As part of its strategic plan to become one of the world's most sustainable and smart cities, Dubai Municipality has launched an Energy-from-Waste project that will achieve several strategic goals and pillars including environmental preservation, reduced carbon emissions, diverting waste from landfills, rehabilitating lands for investment and achieving Dubai's clean energy strategy. This project will be a global first in terms of treated waste capacity, which will be designed, engineered and constructed in a single batch whilst adopting the latest and most-advanced global technologies in the field.

Waste is an inevitable product of society, and one of the greatest challenges for future generations is to understand how to manage large quantities of waste in a sustainable way. The waste management sector faces a problem that cannot be solved on its own. The energy sector, however, is considered to be a perfect match, because of its need to continuously meet a growing energy demand. Waste is now not only an undesired product of society, but a valuable energy resource as well.

The Emirate of Dubai has become a leading example for modern urban development. Iconic architecture attracts tourists from all over the world and a strong local industry has been established. Combining Dubai's population growth and dramatic climate creates the urgency to develop a more sustainable city of the future to improve the quality of life and to protect the environment. Dubai is one of the fastest growing metropolis and one of the most sustainable cities in the world, continuously occupying leading positions within the global rankings of economic development, investment, tourism, science & technology and healthcare.

Dubai is making great strides in the field of sustainability in line with the Dubai Strategic Plan 2021, the UAE National Agenda 2021, the Dubai Integrated Energy Strategy 2030 and the Dubai Clean Energy Strategy 2050. These strategic plans aim to protect the environment and ensure sustainable development through various projects and initiatives

for the conservation of natural resources, rationalised consumption, and the inclusion of alternative and renewable energy resources in Dubai's energy mix. The UAE's overarching goal is to have the smallest carbon footprint in the world by 2050, and will encourage individuals and corporations to raise their consumption efficiency by 40 per cent.

In accordance with the objectives envisaged in these plans, Dubai Municipality is keen to strengthen efforts nationally and across the UAE to achieve the targets for minimizing the volume of municipal waste disposed of in landfills, and for developing alternative energy sources through the speedy implementation of projects for the sustainable management of waste, energy, and the environment. The Dubai Resource Recovery Facility will mark a big step towards achieving these lofty goals, and will contribute to sustainable and ecologically friendly waste management in the Emirate of Dubai.

The state-of-the-art response to this challenge of modern societies is an integrated waste management. A major pillar of it is being a highly developed Energy-from-Waste solution in terms of the thermal treatment of waste and the recovery of the energy content for the production of electricity.

Energy-from-Waste plants are designed to incinerate unrecyclable Municipal Solid Waste as well as other accepted industrial or commercial waste. They also simultaneously recover the energy and clean the gases generated by the combustion. The grate transports the waste through the combustion chamber. The waste is thus also mixed and burned out completely. Incombustible material is left as bottom ash at the end of the grate. Metals can be recovered and construction materials produced from this bottom ash and returned to the material cycle, thereby saving other raw materials. This highly sophisticated process assures that all pollutants contained in the waste and transferred into the flue gas through the combustion are eliminated in an efficient, sustainable and reliable manner.

The world's largest energy-from-waste (EfW) facility is to be built in the Emirate of Dubai. Located at the waste landfill site in Warsan, Dubai, the facility will treat 5,000 tons of municipal solid waste per day from the Dubai area, making a total of 1,825,000 tons a year that will be converted into renewable energy. The 171 MW of electricity generated will be fed into the local grid as baseload energy, and will power around 120,000 homes in the region.

This innovative and prestigious project is to be developed by an international joint venture formed by Hitachi Zosen Inova (Switzerland) and BESIX Group (Belgium), a truly unique partnership, to build, operate and transfer over 30 years a first class Energy from Waste plant for the Emirate of Dubai.