Keppel Seghers

Keppel Seghers is a leading provider of comprehensive environmental solutions, and provides consultancy, design and engineering, technology development, construction, operation and maintenance of plants and facilities, as well as investments in large scale environmental projects.

Keppel Seghers’ advanced technology solutions address a wide spectrum of environmental issues for both solid waste and water.

To date, Keppel Seghers has executed more than 100 waste-to-energy projects and more than 350 water and wastewater projects in more than 25 countries worldwide.

Keppel Seghers is a whole-owned subsidiary of the Keppel Infrastructure group, which is a division of Keppel Corporation Limited, a leading company listed on the Singapore Exchange.

Greater Manchester Energy-from-Waste Plant
Providing a Waste Management Solution for Greater Manchester

Process flow diagram

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Waste is delivered by rail to the Greater Manchester EfW plant and transferred to trucks for tipping. Gas, methane, produced during waste decomposition from organic matter in landfills. With a well-regulated flue gas treatment system, emissions from EfW plants do not pose a threat to public health and the environment.

Compared to landfills, EfW plants are also a “greener” way of waste disposal, as they reduce the production and emission of the greenhouse gas, methane, produced during waste decomposition from organic matter in landfills. With a well-regulated flue gas treatment system, emissions from EfW plants do not pose a threat to public health and the environment.

The plant can divert more than 75% of Greater Manchester’s waste from landfill. EfW plants help battle climate change by reducing greenhouse gas emissions by landfills.

Keppel Seghers, the environmental engineering arm of Keppel Infrastructures, is the preferred partner for the Engineering, Procurement and Construction (EPC) of the Greater Manchester EfW Combined Heat and Power (CHP) Plant. Keppel Seghers secures the contracts for Phase I and Phase II of the integrated EfW project, worth about GBP 300 million in total, in 2009 and 2010 respectively.

Keppel Seghers’ proprietary EfW technologies integrated into its Prism technology, with hundreds of fabric filter bags that clean the air of soot, smoke and metal.

Waste management solution for the future

Across the globe, growing volumes of waste, shortfalls of landfill areas and soaring energy prices are making Energy-from-Waste (EfW) a leading solution for a cleaner future. EfW plants not only help in landfill diversion through as much as 50% reduction in the volume of waste disposed; using proven technology, the plant releases the energy embedded in materials such as plastics, paper, wood scraps and food scraps, and uses that energy to generate electricity and steam, thereby replacing substantial amounts of fossil fuel.

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Proven technologies for sustainable solutions

Keppel Seghers’ EfW installations and technologies effectively convert waste into valuable energy and remove pollutants from emissions. In-house technologies by Keppel Seghers that can be found in the Greater Manchester EfW plant include the:

- Keppel Seghers Water-cooled Multi-Stage Grate which can withstand high temperature abrasion, as well as ensure thorough mixing and even burning of the waste.
- Boiler with Keppel Seghers Prism Technology which provides an optimal secondary air injection, thereby increasing plant availability and prolonging operation times between planned maintenance.
- Double Dry Flue Gas Treatment System which effectively removes harmful and acidic gases, dust and particulates so that only clean air, compliant with the EU standards, is emitted.

Preferred EPC partner

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Modern EfW plants that are well managed and regulated do not pose any threat to public health. At the Greater Manchester EfW Plant, special attention is given to flue gas cleaning through the application of a dual ‘all dry’ scrubbing system.

Typically, an EfW plant uses the following methods to remove pollutants from its emissions:

- A selective non-catalytic reduction process converts nitrogen oxides and water to harmless nitrogen by spraying ammonia or urea into the hot furnace.
- A scrubber sprays a mixture of dry hydrated lime and active carbon into the exhaust gas to absorb mercury. Carbon injection also reduces emissions of trace organics such as dioxins.
- A baghouse works like a giant vacuum cleaner with hundreds of fabric filter bags that clean the air of soot, smoke and metal.

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