

## Environmental Services

Effective management of water resources and waste is a constant challenge for all countries. Singapore's integrated water and waste management programme ensures access to basic sanitation and safe drinking water for the population. Singapore is honoured that its water management model has been internationally recognised as one of the most efficient in the world.

The **Public Utilities Board (PUB)** is responsible for managing Singapore's entire water cycle. Its concept of "Four National Taps", consisting of local catchment water, imported water, NEWater and desalinated water, ensures that the country will have a diversified and sustainable supply of water to meet our needs.

In 2002, Singapore received the Award of Excellence from the National Water Research Institute, USA, for our water recycling project. The NEWater project demonstrates Singapore's constant innovation in adopting advanced technologies to improve the quality, quantity, sustainability, and reliability of our water supply.

Our three NEWater factories have a total capacity of 92,000 m<sup>3</sup>/day (20 mgd). The NEWater produced by these plants will be used primarily for non-potable purposes. The switch to NEWater by the industrial and commercial sectors for non-potable purposes will also free up more reservoir water for potable use.

Besides supplying to industries, NEWater is also available for indirect potable use (IPU). This involves pumping NEWater into our reservoirs to be mixed and blended with raw water. PUB's aim is to have, by 2011, up to 2.5% of our total daily water consumption introduced as NEWater into our reservoirs.

In August 2007, Singapore was awarded the Stockholm Industry Water Award. This recognition further reaffirmed our expertise in municipal water management.

Equally important is to have an effective solid waste management programme. Singapore's total recycling rate has increased from 48% in 2004 to 56% in 2008. Waste recycling has made good headway and Singapore is on target to meet its goal of 60% overall waste recycling rate by 2012, as set out in the Singapore Green Plan 2012. High recycling rates have been achieved for a number of waste streams such as construction and demolition waste, used slag and ferrous metal. To further encourage Singaporeans to recycle, centralised recycling bins have also been installed in many public areas.

Through these efforts in handling solid waste, Singapore has been recognised as being one of the cleanest and greenest cities in the region.

In order to meet Singapore's waste disposal needs, the Semakau Landfill began its operation in April 1999. The Semakau Landfill, managed by the **Ministry of the Environment and Water Resources**, along with the **National Environment Agency**, is Singapore's first and only landfill situated offshore among the southern islands of Singapore. It covers a total land area of 350 hectares and has a capacity of 64 million cubic metres. Since its operation, the Semakau Landfill has been playing a major role in meeting Singapore's waste disposal needs up to 2040 and beyond. To date, 12% of the landfill has already been filled.

The Semakau Landfill is filled mainly with ash produced by Singapore's four incineration plants. Contrary to popular belief that Semakau Landfill would be another dirty and smelly landfill, the ingenious design and prudent operation at the landfill has ensured that the site is clean, free of smell and scenic. Mitigation steps taken during the landfill's construction to

protect the marine environment and other biological ecosystems on and around the landfill have ensured that the landfill remained vibrant, with an impressive variety of more than 780 species of flora and fauna.

Coupled with the scenic natural environment, Semakau Landfill is today renowned as the world's first-of-its-kind, offshore landfill co-functioning as a recreational destination for nature lovers.

*All information is accurate as of December 2009*

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