

CHAPTER 3

Statement of Need



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Since 1996, Medivest Sdn Bhd (MSB) has operated two units of incinerators, for clinical waste treatment. However the treatment of clinical wastes using incinerators have been replaced with a microwave machine (Microwave AMB Ecosteryl 250) in 2016. A second microwave machine (Microwave MDS 2481) has been installed and licensed in May 2018.

MSB planned to upgrade its centre of healthcare waste treatment plant based on the following considerations:

i. Increase of Clinical Waste Volume

Projection of future clinical waste volume against current capacity of the existing centre of healthcare facilities is shown in **Figure 3.1.1**. Volume of clinical wastes is anticipated to increase approximately 5% annually. MSB currently receives 11.0 MT/day (on average). By operating two units of the microwave machines, MSB treatment capacity is 15.0 MT/day. By year 2025, MSB is expecting to receive 14.4 MT/day which is 96% of the total treatment capacity. Due to this projection on clinical waste load annual increment, MSB shall prepare the facility earlier, to ensure treatment capacity is always more than volume of the waste being generated. This is significant as to avoid the clinical waste backlog incident which occurred around 2014-2015. Replacing the old incinerator with this new incinerator, with 20.0 MT/ day treatment capacity, MSB will secure treatment capacity which ensure backlog incident not repeating in future.

ii. Best treatment for Clinical Waste

Incineration process is the best treatment for clinical waste. Treating clinical waste through incineration process is also recommended by Department of Environment (DOE) Malaysia whereby it ensures almost complete destruction of the clinical waste and volume of the by-product produced from this process is significantly small, less than 10% volume of the waste treated.



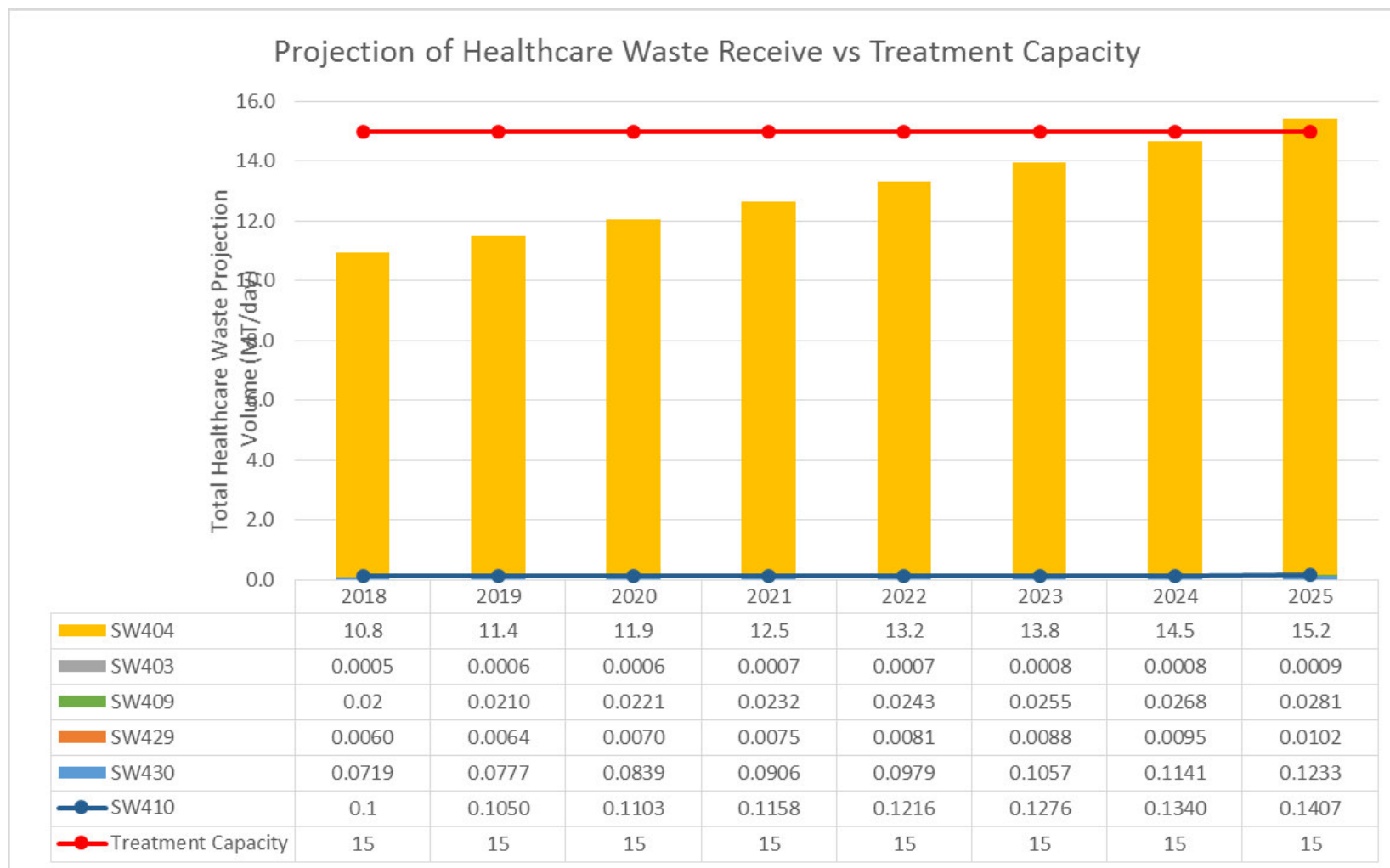


Figure 3.1.1: Projection of Healthcare Wastes Received Against Treatment Capacity



iii. **Treatment Centre for Healthcare Waste**

New concessionaire agreement with Ministry of Health (MOH), Malaysia in 2016 requires MSB not to manage clinical waste only but also other scheduled wastes arise from healthcare practices. The other scheduled wastes are SW 403 (discarded drugs containing psychotropic substances or containing substances that are toxic, harmful, carcinogenic, mutagenic or teratogenic); SW 409 (disposed containers, bags or equipment contaminated with chemicals, pesticides, mineral oil or scheduled wastes); SW 429 (chemicals that are discarded or off-specification), SW 430 (obsolete laboratory chemicals) and SW 410 (rags, plastics, paper or filters contaminated with scheduled wastes). By replacing with new, modern and advance technology incinerator, it is capable to treat various type of healthcare wastes, not only treating clinical waste.

iv. **Environmental-friendly Technology**

Previous incinerator used by MSB is stepped hearth-type incinerator which technology origin from Australia. MSB has conducted technical and commercial evaluation on which technology suit the best with the company's requirement. Based on the evaluations, technology offered by BIC Systems Asia Pacific Pte Ltd (BIC) is chosen as the best technology. BIC offers rotary kiln-type incinerator with counter-current design.

Advantages of the technology to the environmental basis are:

- Low consumption of fuel.

The incinerator will be using counter-flow process which allow very minimum or even non-consumption of fuel during ideal operation. The fuel only consumed during start-up process which takes less than 24 hours.

- Better air emission.

The incinerator system is well accepted with 55 units has been operated all around Europe, Africa, Middle East and Asia. Main factor of this acceptance due to application of modern and highly efficient air pollutant control system which treats the combustion effectively before being emitted to environment. The system proven to be able to comply with stringent emission standard worldwide.

- Low production of by-product.

No effluent produced from the incinerator. During the incineration process, the ash produced is only 8% from the original load.

v. **Collection of Clinical Waste from Private Sectors**

MSB intends to collect and treat clinical waste from private sectors. The private sectors include private hospitals, haemodialysis centres and clinics.