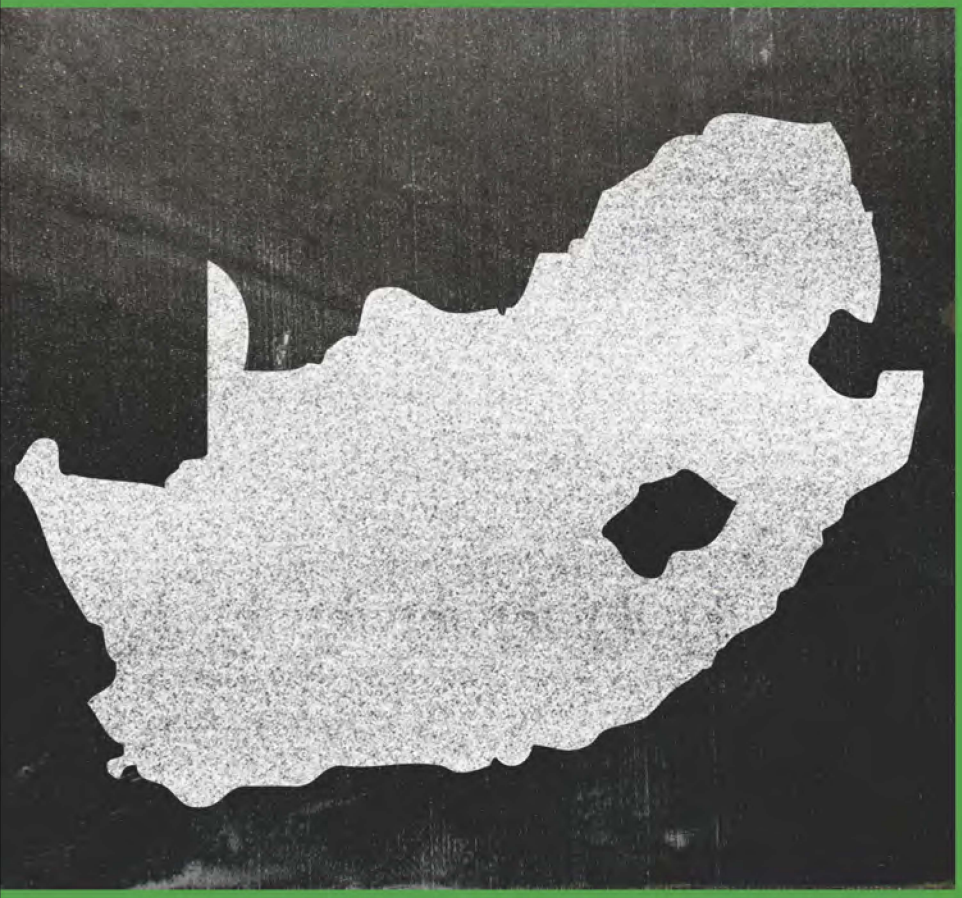

APPROPRIATE TECHNOLOGY FOR ADVANCED WASTE TREATMENT-GUIDELINE

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Chapter 1

OVERVIEW OF THIS DOCUMENT

1.1 Overview of this document

This document is aimed at senior municipal waste service managers and operators with grounding in waste management issues who want to expand their knowledge on technical components of different waste treatment processes. **More introductory level information on municipal solid waste management relating to the scope of this program can be found in the 'Introductory Guide to Advanced Waste Treatment'.**

Building on Knowledge Product 1: An Introduction to Advanced Waste Treatment; this document identifies and discusses a range of alternative technology options for handling municipal solid waste streams. While the main focus is on municipal wastes, several of the technologies included are suitable for treating a wide range of waste types. Where there are instances of municipal wastes and non - municipal waste treated together (co-treated), some examples have been included within this document to illustrate where technologies have been applied to several waste streams. The relationship between this document and the other elements of this programme are shown in the diagram below.

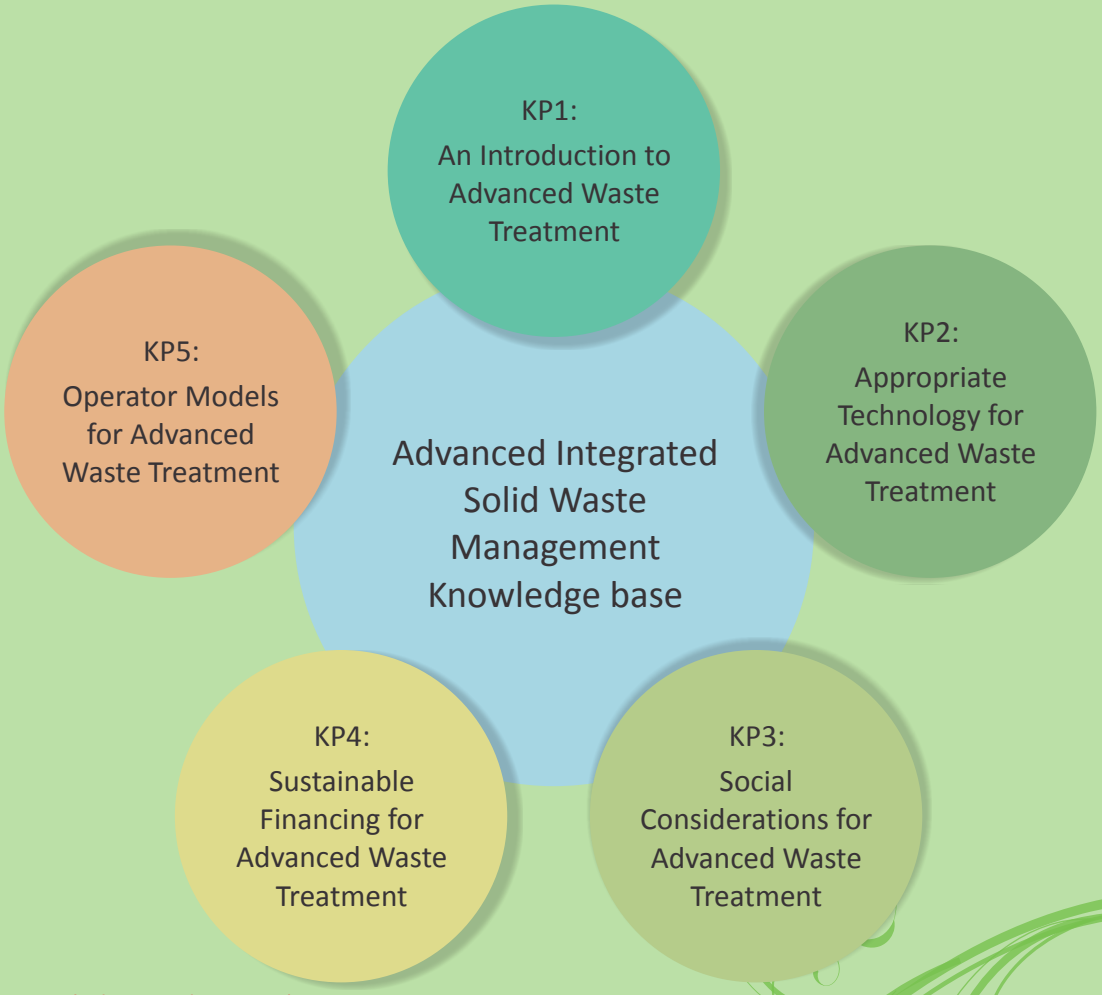

Figure 1: Knowledge products in this series

The types of technologies that can treat municipal solid wastes to reduce the amount left for disposal are wide-ranging; this document provides information on these technologies available. It **includes technologies suited to mixed residual wastes streams, as well as those for the treatment of source segregated waste, such as recyclables, food waste and green / garden waste**. Treatment technologies include mechanical, biological and thermal processes, and frequently hybrids of each.

The treatment processes are described in detail, with focus on the suitability for elements of the municipal waste stream. Flexibility, constraints and plant sensitivities are identified, as are the various outputs, products and residues. Commentary is also included on the markets and outlets for the outputs on a local, national and international level.

1.2 The Management of waste

There is a hierarchy or 'preferred order' for managing waste termed the Waste Hierarchy. This is illustrated below. Waste prevention (i.e. avoiding the production of waste in the first place) lies at the top of the waste hierarchy, followed by waste reuse. Reuse means providing another usable life to a product which has become redundant / waste (e.g. repairing a bicycle that would otherwise be discarded). Prevention and reuse offer significant benefits to reducing the amount of waste remaining for subsequent handling, recycling, recovery or disposal, and are a key aspect of any comprehensive waste management scheme.

Figure 2: The waste hierarchy

This booklet **focuses on the recycling and recovery elements of the waste hierarchy**; waste prevention and reuse are not discussed in this document as these elements are primarily related to behavioural change and product design rather than technological treatment of the resulting waste. Similarly, **landfill is not included** within this document as it is not considered to be an example of advanced waste treatment. However, landfill is still likely to be required for the disposal of certain difficult low value process outputs arising from advanced waste treatment processes.

Advanced Integrated Solid Waste Management (AISWM) is a term used in this booklet and throughout this program, broadly meaning the use of waste management practices and/or technologies that promote movement up the waste hierarchy. The term 'AISWM' and its implications are discussed and presented in Knowledge Product 1: An Introduction to Advanced Waste Treatment.

Department of Environmental Affairs
Private Bag X447
Pretoria
Tel: +27 12 399 9000
Fax:+27 12 359 3625

Call Centre: 086 111 2468
callcentre@environment.gov.za
www.environment.gov.za

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