

National Policy on Thermal Treatment of General and Hazardous Waste

Department of Environmental Affairs

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Objective

DEA was to develop a policy on the following:

- The acceptability of the use of high temperature thermal treatment as part of a hazardous waste management strategy for the country; and
- The use of selected hazardous and general wastes as a fuel substitute in cement kilns as part of a hazardous waste management strategy for the country.

The policy development process also aimed to inform draft emission standards as per the Air Quality Act listed activity and emission standards project.

Background and Context

The National Waste Management Strategy, the Integrated Pollution and Waste Management Policy (IP&WM) the Minimum Requirements for wastes disposal to landfill and more recently the Waste Act have all indicated the intention of South Africa to support the waste management hierarchy. This hierarchy is based on the concept of waste prevention, minimization, recycling (including re-use, recovery and composting), treatment (including physical, chemical and destruction) and then only disposal by landfill. However, notwithstanding the significant support for alternative waste management measures found in the waste management policy documents, South Africa has a long tradition of disposing both hazardous and domestic waste streams to landfill. This practice will continue into the foreseeable future as very little progress is being made in supporting a move away from the landfill option in implementation guidelines and tools.

Internationally, for many years the cement industry has been substituting traditional coal energy sources with waste of high calorific value, reducing energy costs as well as providing a viable waste management solution for these waste streams. The cement industry in South Africa have similarly identified potential financial savings in substituting a percentage of the traditional coal based energy source in their cement kilns with high calorific value waste, both hazardous and general and has been attempting to pursue this replacement fuel strategy with little success. However the lack of a decisive policy on incineration of waste or the utilization of waste as an energy source, hampered the ability for these technologies to gain support in the country. Even though this technology has been extensively used internationally for many years, the cement industry has met with significant opposition from the NGO sector in the country who are opposed to incineration of waste in any form. From government there were conflicting messages, and provincial government departments who were faced with making decisions on the acceptability of this technology were reluctant to make any decision in the absence of a national policy. DEA was mandated by all provincial heads of department to draft a national policy on the use of these alternative technologies in South Africa.

As any decision taken by government needs to be well founded in science, the Department proposed to use the best available experts to assist with the development of a policy. A team of international and local consultants were employed to assist the Department with the drafting of the policy.

Process

A decision was taken at the MinMec meeting held on 7 December 2006 that the erstwhile Department of Environmental Affairs and Tourism (DEAT) should develop a policy statement on the destruction/treatment of hazardous waste through high temperature thermal technology as well as a specific policy on the use of selected hazardous and general waste in cement kilns as a fuel replacement. The Department also was also to undertake the development of all the necessary guidelines and management requirements to support such a policy. Work began in May 2007 with the

appointment of the consultants. At this time, a public and stakeholder participation process was also initiated, which continued throughout the policy development process.

The policy was developed by:

- Reviewing international best practice for the management of specific waste types;
- reviewing international legislation, standards and guidelines which govern the use of selected hazardous and general wastes in cement kilns;
- scoping and addressing public concern with regard to the technology and the proposed policy statements;
- comparing kilns and the cement making process in South Africa in relation to international countries; and
- being informed by the review of the various EIA's that have been submitted by the cement and waste industry to provincial departments responsible for the environment.

Several specialist review studies were undertaken to provide the scientific information, which the development of the policy was based on, and included:

- A detailed literature review on high temperature incineration of waste;
- An overview of cement production technology;
- A detailed literature review on the co-processing of alternative fuels, raw materials and hazardous wastes in cement kilns;
- An assessment of cement production technology in South Africa and an evaluation of their ability to co-process alternative fuels and raw materials, and treat hazardous waste; and
- A review of the South African waste profile.

Having determined that the thermal treatment of waste through incineration or co-processing as AFR in cement production could be undertaken in a manner that was protective of human health and the environment, the department developed a policy direction which supported the further consideration of both technologies. This policy direction was discussed with MinTech in November 2007. All Provincial Head of Department's present at the meeting gave their full support to the policy direction and mandate was provided to continue to develop the policy in line with the findings.

Work then began to determine an appropriate management framework within which these technologies could be implemented in the South African context in an environmentally sound manner. The air emission standards of several different countries were studied together with various operating guidelines developed by several technical organisations and the Basel Secretariat.

An extensive stakeholder consultation process was undertaken throughout the policy development process to solicit comment from relevant stakeholders, and to improve the documents and information produced to support the policy by discussion and dialogue. The process began in May 2007 with the advertising of the policy development process in all the national newspapers. In August 2008, focus group meetings were held with the NGO sector, industry and the provincial government departments responsible for the environment. After these meetings three further stakeholder meetings and four provincial government department meetings were held. In addition, three community meetings were held in areas where cement kilns were located, as a direct result of the comments made to the Portfolio Committee during the Waste Bill Parliamentary hearings.

Challenges, lessons learnt, experience

Challenges of the project

- The transfer of the review of all applications dealing with the use of selected hazardous and general wastes in cement kilns as well as the associated activities already submitted to provinces to DEA to finalize the review and to make a decision on the acceptability of the proposed activities.
- A key NGO stakeholder was found to be fundamentally opposed to incineration in any form, and it was therefore not possible to find common ground with respect to their objection to the treatment of waste through the two technologies.
- Concern by industry over the feasibility of adopting EU standards by the country.

Lessons learnt:

- The political endorsement on the formulation of the policy was vital to ensure successful completion of the project.

- The willingness of the Heads of the relevant Provincial Environmental Departments to support DEA in this policy development process facilitated the project.
- Appointment of suitably qualified and experienced consultants was necessary to assist the Department with the drafting of the policy.
- Stakeholder engagement from the start of the process, including, among others, government departments, NGOs and industry was vital to ensure successful drafting of a policy.

Experience

- The policy is considered to fulfil its purpose in line with government co-operation and priority, industry needs and existing and future environmental legislation.
- The process was strengthened by the rigorous review and critical eye of the NGO movement

Outcome

The policy states government's position on thermal waste treatment in general, and provides the framework within which specifically incineration and cement kiln co-processing shall be implemented in the country, which will guide provinces on policy level in their decision-making. This policy provides a management framework, guidelines and minimum requirements which must be met if such a technology were to be implemented. It will ensure that equal standards will be applied across the country and that applications will not be dealt with by a piecemeal approach. Furthermore, in terms of implementation and enforcement, through the Constitution's co-operative governance provisions, provinces specifically, but also other government departments will consider the policy in their decision-making on matters pertaining to the thermal treatment of waste. Relevant provisions and the minimum standards set in schedules to the policy would form conditions of different approvals required in terms of South African environmental legislation as appropriate.

Specific outcomes:

- A national policy on the thermal treatment of general and hazardous waste.
- Air emission standards for incinerators and cement kilns co-processing AFRs.
- Proposed conditions of approval for co-processing of waste as an AFR and for incineration of waste.
- Overview of cement production technology
- Cement production technology in South Africa and an evaluation of their ability to co-process AFRs and treat hazardous waste
- An EIA review document for co-processing of AFRs in cement production
- Guidelines for hazardous waste incineration
- Guidelines for the treatment of hazardous wastes and co-processing of AFRs in cement kilns
- South African hazardous waste profile

These documents can be downloaded from www.environment.gov.za

Scorecards Criteria for assessment of activities, rank 1 to 5 as follows:

- 1 - inadequate, 2 – needs improvement, 3 – adequate, 4 – good, 5 – excellent

INPUT	1	2	3	4	5
1. Did you have adequate internal resources to implement your project?				X	
2. Did you have adequate funding for your project?					X
3. Did you have adequate technical expertise to implement your project?					X

Total 14

UEMP VISION & GOALS	1	2	3	4	5

1. To what degree did your project have a focus on poverty reduction?	X				
2. To what extent was this project relevant to the targeted beneficiaries?				X	
3. To what extent will this project be replicated sustainably in the future?				X	

Total **9**

EXTERNAL	1	2	3	4	5
1. To what extent did the project impact on vertical national - provincial - municipal linkages?				X	
2. To what extent did this project improve linkages (horizontal) with similar UEMP partners?				X	
3. Did the project have a higher than expected impact on stakeholders?				X	

Total **12**

INTERNAL	1	2	3	4	5
1. Did you have adequate support from management to implement this project?				X	
2. To what extent did the project link with other priorities of the organisation?				X	
3. Did the project have a higher than expected impact in your organisation?			X		

Total **11**

OUTPUT	1	2	3	4	5
1. To what extent did your project have tangible benefits?				X	
2. To what extent did your project fulfil its aims?				X	
3. Was this project a cost effective response to the problem addressed?				X	

Total **12**