

The Development of Industry Waste Management Plans within the Consumer-Formulated Chemicals Sector: An Overview of Practical Experiences in the Western Cape, South Africa

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ABSTRACT

Household Hazardous Waste (HHW) was identified as one of seven priority hazardous waste streams requiring intervention in the Western Cape Provincial Hazardous Waste Management Plan drafted in 2006. In order to drive HHW management in the Western Cape the Department of Environmental Affairs and Development Planning (DEADP), hereafter referred to as “the Department”, conducted a Status Quo of waste management in the Consumer-Formulated Chemicals Sector (CFCS) and drafted a generic Integrated Waste Management Planning Guideline in 2007 to assist industry with waste management planning. The six sub-sectors within the CFCS, namely Paint, Ink, Adhesive, Cosmetic, Pharmaceutical and Cleaning Chemical manufacturers, were selected as a result of the health and environmental impacts associated with the disposal of their products from households as part of the general waste stream. Assistance and technical advice were provided to these six subsectors in the following years through workshops, facility audits and the drafting of Industry Waste Management Plans (Industry WMPs).

The initial engagement with the CFCS was focused on compliance promotion and the voluntary preparation of Industry WMPs. This approach did not succeed in bringing many industries on board to draft and submit voluntary plans and the Department therefore decided to adopt a more stringent approach.

In 2013 the Member of the Executive Council (MEC) for Local Government, Environmental Affairs and Development Planning gazetted a notice in the Government Gazette, in terms of Part 7 of the National Environmental Management: Waste Act (NEM: WA), Act No. 59 of 2008, requesting manufacturing companies within the six subsectors who generate on average more than 20kg of hazardous waste per day, to prepare and submit Industry WMPs for approval by the department.

KEYWORDS

Hazardous Waste Management Plan, Consumer-Formulated Chemical Sector, Household Hazardous Waste, Landfill airspace, Industry Waste Management Plans, National Waste Management Strategy, Waste Management Facilities, Integrated Waste Management Planning Cyclical Approach, Waste Management Hierarchy

1. INTRODUCTION

The Department of Environmental Affairs (DEA) estimates that 19 million tons of municipal waste was generated in South Africa in 2011 and according to the draft Western Cape Integrated Waste Management Plan (IWMP, 2011), 2.9 million tons of municipal waste was estimated to have been disposed at landfill sites in 2010. The availability of landfill airspace has increasingly become a major concern for municipalities as the public is still not aware of the need to avoid and minimise the generation of waste.

The Western Cape Hazardous Waste Management Plan (HWMP) was drafted in 2006 in response to the objectives of the National Waste Management Strategy (NWMS), which was published in 1999 as a guiding document to an integrated waste management approach (that would focus on cradle-to-grave management of waste products). In the HWMP, certain hazardous waste streams were identified through baseline information studies and the HWMP public participation workshops as requiring urgent attention to minimise their impacts on the environment and the disadvantaged communities residing adjacent landfill disposal facilities. HHW was one of the identified streams for which the objective for the department was to reduce the amount of HHW waste being disposed of at general waste management facilities since municipalities do not have the capacity to provide services for the separate collection and disposal of HHW.

The Department then conducted a Status Quo of Waste Management within the Consumer-Formulated Chemical Sector (CFCS) in 2007, which was considered to be inclusive of industries which are closest to the consumer in terms of the value chain and therefore contribute to the generation of HHW. A survey was done to obtain information regarding the handling of chemicals and hazardous waste disposal from a number of companies within the CFCS. This led to the drafting of a Generic Integrated Waste Management Planning Guideline in 2007, which aimed to promote integrated waste management within the CFCS. In addition to the status quo and the guideline, the department piloted a HHW collection day in one municipality as part of the implementation of the HWMP. The HHW collection day was conducted in collaboration with the Stellenbosch municipality and it was considered a success, which involved a host of stakeholders from different government departments as well as the private sector.

In March 2009, the National Environmental Management: Waste Act (Act No. 59 of 2008) (Waste Act) was published, which introduced holistic approach to waste management. Part 7 of the Waste Act includes a provision for the Minister or MEC to, by written notice require a person, or by notice in the Gazette require a category of persons or an industry that generates waste to prepare and submit an Industry Waste Management Plan (Industry WMP) to the Minister or MEC for approval. In response to this provision, the Department embarked on a voluntary programme to assist companies from the six sub-sectors that fall within the CFCS to develop Industry WMPs. The six sub-sectors included the Paint, Ink, Adhesive, Cosmetic, Pharmaceutical and Cleaning chemical manufacturers, which were selected due to their products forming part of the HHW stream that is co-disposed with general waste at disposal facilities and could have negative impacts on the environment and communities living adjacent to these waste disposal facilities.

A new NWMS was drafted with the introduction of the Waste Act and one of the goals in the strategy is to promote waste minimisation, re-use, recycling and the recovery of waste. This means that all metropolitan municipalities, secondary cities and large towns have to initiate separation at source programmes to ensure that all South African households separate their own waste into recyclable and non-recyclable material by 2016. The Department's Integrated Waste Management Plan is aligned with the national target to ensure the proper and safe management of HHW by promoting cleaner production processes and Extended Producer Responsibility (EPR) within the six sub-sectors and this was done by engaging companies through capacity building workshops, facility audits and audit reports.

2. METHODOLOGY

2.1 Pilot Study

The Department with the assistance of a service provider conducted a pilot study involving 16 companies that fall within the six industry sub-sectors situated in the Cape Town Metropolitan area to draft voluntary Industry WMPs as stipulated in section 28(7) of the Waste Act. The companies were audited to identify gaps within their existing waste management systems using a facility audit checklist. During the facility audits, companies were given advice regarding compliance issues with respect to environmental legislative requirements as well as proper management of hazardous chemicals and any poor waste management practices that were observed. The companies were also provided with technical advice to improve their waste management systems through audit assessment reports. Once all the companies involved in the study were audited, it became a necessity to review the Generic Integrated Waste Management Planning Guideline (2007) in order to provide industry with proper assistance and guidance in the development of their Industry WMPs as well as to ensure alignment with the Waste Act. The outputs of the pilot study were workshopped to capacitate companies in preparation to draft voluntary Industry WMPs between February 2010 and 2012.

2.2 Stakeholder Engagement

Legal advice was obtained regarding the drafting of the notice to request the six sub-sectors to draft mandatory Industry WMPs. A number of meetings were held to ensure that the requirements of Part 7 of the Waste Act were thoroughly examined before the notice could be drafted. Consultation was held with the Department of Economic Development on the request for mandatory industry WMPs. A letter of intent was drafted to inform the companies regarding the Department's intention to request the companies to draft Industry WMPs. An advert was also placed in newspapers requesting companies that fall within the six sub-sectors to register on the DEADP database, to inform more broadly the companies of our intent for them to develop Industry WMPs and in order to comply with section 28(5) of the Waste Act.

Although responses to the letter of intent and the adverts were very limited; the department continued to engage companies through workshops and association meetings. Workshops were conducted in the Eden District municipal area, City of Cape Town and Drakenstein municipality, which mainly focused on the type of plan that should be drafted, i.e. whether a facility plan or sector plan; the contents of the plan as stipulated in the Waste Act as well as the benefits or barriers to companies in drafting Industry WMPs. Workshop attendance was poor in the Eden District municipal area and as a result thereof, the Department conducted site visits to inform thirteen (13) companies regarding the publication of the notice to further comply with section 28(5) of the Waste Act. Municipalities were also consulted during the consultation process.

In the advertised and Gazette notice companies/ facilities generating more than 20kg of hazardous waste per day were requested to draft mandatory Industry WMPs. This threshold was informed by the National Environmental Management: Waste Act: National Waste Information Regulations (January, 2013). Companies/ facilities that fall below the threshold were still encouraged to draft Industry WMPs although this would be a voluntary process. The stakeholders were informed that drafting a plan would still be advantageous for the environment and the company which would focus on waste avoidance and minimisation thereby saving on disposal costs. Companies were given 18 months to draft and submit their mandatory Industry WMPs.

2.3 Development of Industry WMPs

The integrated waste management planning cyclical approach was used to outline the steps involved in the development of an Industry WMP (see Figure 1). To assist companies within the six sub-sectors in drafting their Industry WMPs, presentations on the requirements of the Waste Act were conducted by departmental staff to explain the legal jargon and to avoid any misinterpretation of the legislative requirements. Case studies were given to stakeholders at the workshops, which focused on scenarios based on realistic waste management issues faced by these companies. During the case studies, companies were grouped according to the sub-sectors and they had to highlight the status quo of the scenario including any legislative violations and with DEADP assistance had to identify the best practical environmental options (BPEO) as per the waste management hierarchy (Figure 2) and indicate the gaps in the scenario based on the BPEO.

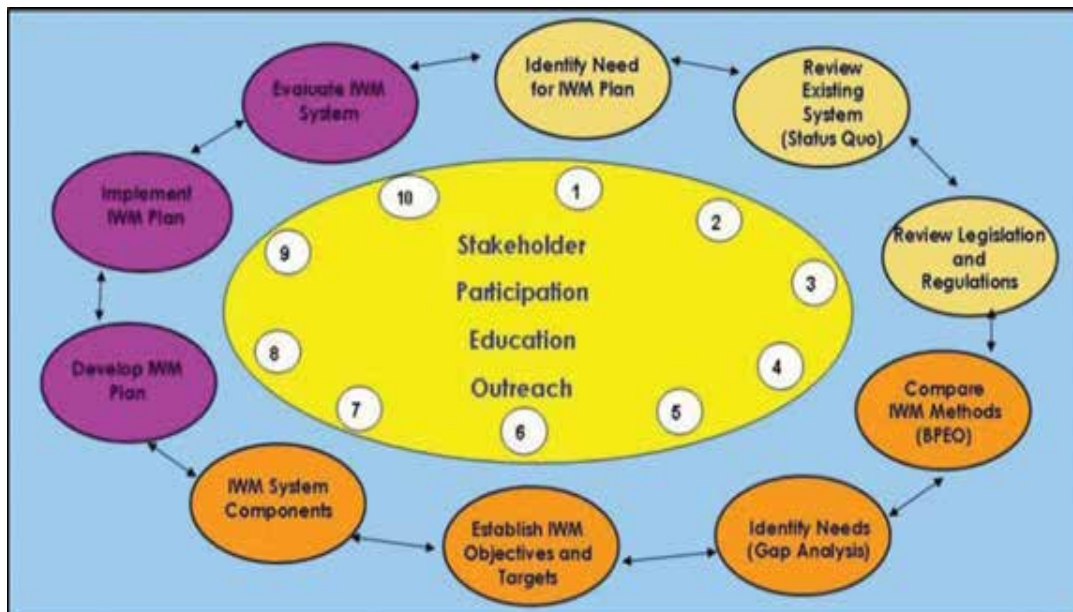


Figure 1. Shows the Integrated Waste Management Planning Cyclical Approach

Once the stakeholders identified the gaps in the waste management system of the company in the case study, they had to develop Specific, Measurable, Achievable, Realistic and Time bound (SMART) objectives to deal with the gaps. The stakeholders then developed their objectives, targets and activities on the Industry WMP template. The companies had to populate an implementation plan for the case study which would prepare them for the drafting of their companies' Industry WMPs. A representative of each stakeholder group provided feedback on the analysis of the case study and the development of their Industry WMP.

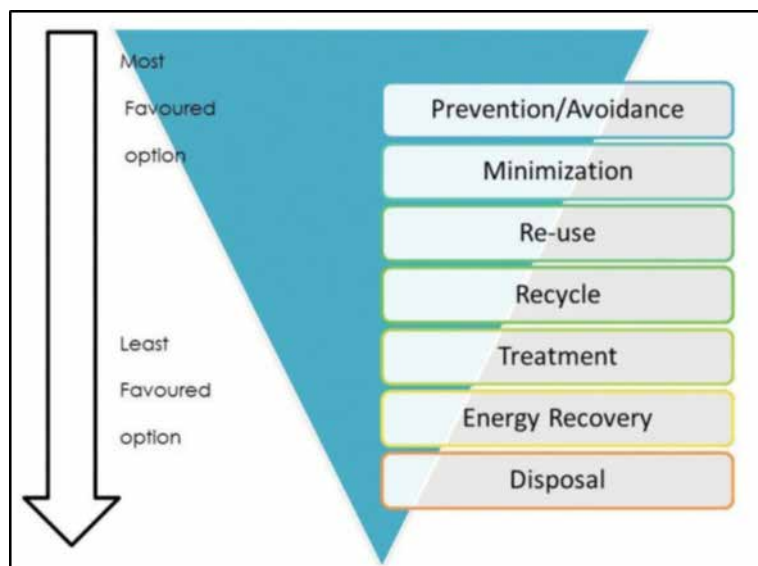


Figure 2. Waste Management Hierarchy

2.4 Assessment of Industry WMPs

The DEADP used an assessment checklist to assess and evaluate the submitted Industry WMPs which focuses on the Integrated Waste Management Cyclical Approach that companies need to follow when developing their industry WMPs to ensure compliance with the minimum content requirements of the Waste Act.

3. RESULTS

3.1 Pilot Study

The outputs of the pilot study included the Industry Waste Management Planning Guideline, Industry WMP template and an Industry WMP Assessment Checklist to capacitate the companies in preparation for them to draft voluntary Industry WMPs. As a result of only two companies submitting Industry WMPs by the end of the 2011/2012 financial year, the department then elected to use section 28(2) of the Waste Act, which stipulates that the MEC may request individual companies or industry to draft mandatory Industry WMPs via a written notice or a notice in the Gazette.

3.2 Stakeholder Engagement

Very few stakeholders responded to the letter of intent sent by the Department and there were no responses to the published adverts requesting companies to register on the database. The Department of Economic Development did not oppose the process. The workshops conducted in the Eden District municipal area, the City of Cape Town and the Drakenstein municipality, resulted in a decision by most companies to draft facility plans, however, the companies belonging to associations also made it clear that they would prefer a sector plan if their associations would be willing to draft the plan.

The companies also indicated which content requirements as per the Waste Act, they could manage to implement and which ones would be difficult mainly due to final product requirements and financial constraints. The companies were made aware of the benefits to better waste management through the use of the waste hierarchy and some provided realistic examples of what they already were doing to divert waste from landfill sites and how this has decreased their waste disposal costs. The response by companies was generally positive during the workshops and this was also evident in the evaluation sheets completed by the stakeholders at each workshop. The consultation workshops provided a platform for industry and the public sector to share information and knowledge. Companies shared information and knowledge regarding production processes and the department informed the companies regarding legislative requirements that affect them currently or will in the future. The major concerns from the workshops included the financial implications of drafting Industry WMPs, involvement by company management, finding the right person to draft the plan and to run with the implementation of the plan. Most of the companies indicated that they

generally use the production manager as the Health and Safety Officer who would also be required to draft and oversee the implementation of the Industry WMP.

3.3 Development of Industry WMPs

The department's continued engagements with the companies through workshops and association meetings have resulted with the submission of six (6) Industry WMPs before the deadline of the notice.

3.4 Assessment of Industry WMPs

Once an Industry WMP has been submitted, a letter to acknowledge receipt by the department is sent to the company, which is then informed that feedback from assessment process of their plan will be provided after 45 days.

4. DISCUSSION

The pilot study may have only produced two Industry WMPs; however the outputs of the study are pivotal in the development of Industry WMPs. Companies can use the audit checklist to determine the status quo of their existing waste management system and then use the waste management hierarchy (and assistance from the department) to compare with best practice (BPEO). This then enables the company to identify gaps and the needs within the company. SMART objectives and achievable targets can be set for the specific needs of the company with timeframes, human and any financial resources that might be required to achieve the objectives. The department developed an Industry WMP template for companies to use to draft their Industry WMPs. The department will then assess the Industry WMP's received using the Industry WMP Assessment checklist.

It was evident during the consultation engagements that companies would like to reduce their ecological footprint on the environment and some indicated that they are already on this path though not all have formal programmes in place. The department emphasised that drafting an Industry WMP would assist them to formalise their environmental management programmes.

Although not all the stakeholders within the CFCS could be engaged through workshops, companies were informed that the department would provide assistance through emails, telephonically or by meetings at the company offices or the department's offices. During the consultation engagements it was evident that some of the companies were aware that they need to align their Industry WMPs with municipal Integrated Waste Management Plans (IWMPs). The department informed the companies that although most municipalities do have their second generation IWMPs, however, some of these do not make any reference to industry waste or Industry WMPs.

5. CONCLUSIONS

Although this process is new for the Department, the engagement with this sector has assisted and provided the department with a better understanding of what needs to be in place before another sector is considered as well as the best ways to engage industry sectors. What has also been highlighted is that while industry aims to save on waste disposal costs, they are also aware of the need to protect the environment as well as their social responsibility obligations as per government policies. Municipalities have to play their part because ultimately the diversion of HHW and any recyclable waste from landfill sites will make available required landfill airspace savings thereby extending the lifespan of waste disposal facilities and reducing the need to expand or construct new landfill sites. The entire value chain and municipalities have a role to play in the implementation of Industry Waste Management Plans. The public needs to be made aware of the environmental and health impacts of improper handling of HHW and the enormous cost of disposal. Municipalities also need to educate and create awareness regarding the waste management hierarchy to business and the public. However the principle of EPR places the onus on business to avoid and minimise the generation of waste and the impact of their products throughout the value-chain.

During audits and the workshops companies were also informed about other environmental issues or violations that could affect them including water management, in particular, discharging of effluent in line with municipal by-laws and well as energy efficiency and pollution and air quality management issues. Companies have to ensure that their Industry WMPs are implementable in the short-, medium- and long-term and that there are mechanisms in place within the company to monitor implementation of the plan as reports on the implementation of the plan will have to be submitted to the Department.

Industry Waste Management Planning remains a valuable tool for industry to use and manage the impacts of its products.

ACKNOWLEDGEMENTS

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