



City of Windhoek

SOLID WASTE MANAGEMENT POLICY





THE CITY OF WINDHOEK

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ACRONYMS & ABBREVIATIONS

BPEO	Best Practicable Environmental Options
CP	Cleaner Production
HCRW	Health Care Risk Waste
IWMP	Integrated Waste Management Plan
EA	Environmental Assessment
EIA	Environmental Impact Assessment
SWM	Solid Waste Management
WIS	Waste Information System
WM	Waste Management

DEFINITIONS¹

Bag	means any bag stipulated or approved by the Council from time to time, whether supplied by the Council or not, made of plastic or any other suitable material for the storage, depositing, collection and disposal of waste;
Builder's waste	means any waste generated during the building, construction, repair, alteration, renovation, excavation or demolition of any road, surface, structure, building or premises, and includes builders rubble, earth, vegetation and rock displaced during such building, construction, repair, alteration, renovation, excavation or demolition;
Bulky waste	means any waste which by virtue of its mass, volume, shape, size, quantity or temporary extraordinary generation cannot be conveniently stored in a refuse container stipulated or approved by the Council or which cannot be conveniently removed or disposed of during the ordinary municipal service;
Business waste	means any waste generated on any premises used for non-residential purposes, but excluding agricultural properties and small holdings, and does not include general waste, household hazardous waste, garden waste, bulky waste, builder's waste, industrial waste, hazardous waste and health care risk waste;
Composting facility	means a facility for the purposes of receiving, processing or composting of garden waste, other organic materials or otherwise compostable waste authorised by the Council, but does not include a satellite centre;
Council	means the Municipal Council of Windhoek and includes any authorised committee, functionary or official;
Council site	means any waste management, collection, processing, satellite or disposal site operated and/or owned by the Council;
Disposal	means the discharge, depositing, dumping, spilling, leaking, placing of waste on or at any premises or place set aside by the Council for such purposes, and "dispose" shall have a similar meaning;
Dump	means to dispose of waste in any manner other than a manner permitted by law and includes, without derogating from the generality of the foregoing, to deposit, discharge, spill or release waste, whether or not the waste is in a container or receptacle, in or at any place whatsoever, whether publicly or privately owned, including but not limited to vacant land, rivers, waterways, catchments and sewage and stormwater systems. The act of "littering", which retains its ordinary meaning, is excluded from the definition of "dump";
Garden waste	means any waste generated as a result of normal gardening activities and includes plants, leaves, grass cuttings, flowers, weeds, hedges, other small and light organic matter, but does not include branches, stems, trunks or roots having a diameter or length in excess of that stipulated by the Council from time to time;
General waste	means any waste generated on or at any premises used - (a) for residential purposes, and includes agricultural properties and small holdings; or (b) as public and/or private facilities and institutions but does not include garden waste (unless specifically determined or authorised by the Council subject to any conditions or limitations the Council may impose), bulky waste, business waste, builder's waste, industrial waste, hazardous waste and health care risk waste;

¹ For a comprehensive set of definitions please read in conjunction with the Draft Solid Waste Management Regulations. The definitions have been kept brief in the Policy document.

Hazardous waste

means -

- (a) any waste containing, or contaminated by, poison;
- (b) any corrosive agent;
- (c) any flammable substance having an open flash-point of less than 90 degrees Celsius;
- (d) an explosive or radioactive material and substance;
- (e) any chemical or any other waste that has the potential even in low concentrations to have a significant adverse effect on public health or the environment because of its inherent toxicological, chemical, ignitable, corrosive, carcinogenic, injurious and physical characteristics;
- (f) any waste consisting of a liquid, sludge or solid substance, resulting from any manufacturing process, industrial treatment or the pre-treatment for disposal purposes of any industrial or mining liquid waste, which in terms of any law, order or directive relating to drainage and plumbing may not be discharged into any drain or sewer;
- (g) the carcass of a dead animal; and
- (h) any other waste which may be declared as such by Council or in terms of any other applicable law

but excludes household hazardous waste;

Health care risk waste

includes –

- (a) any waste, whether infected or not, resulting from a medical, surgical, veterinary or laboratory procedure on humans or animals, such as blood, body fluids, tissue, organs, body parts, extracted teeth, corpses (excluding corpses intended for burial);
- (b) used medical equipment and other medical material which is capable or is reasonably likely to be capable of causing or spreading disease or causing or spreading infection, such as used surgical dressings, swabs, blood bags, laboratory waste, blood collection tubes, colostomy- and catheter-bags; gloves, drip bags, administration lines and tongue depressers;
- (c) contaminated and uncontaminated sharps, including clinical items which can cause a cut or puncture or injection, such as needles, syringes, blades and microscope slides;
- (d) pharmaceutical products which have become outdated or contaminated or have been stored improperly or are no longer required, such as human and animal vaccines, medicines and drugs;
- (e) genotoxic chemical waste and radio isotopes from experimental or diagnostic work or any other source;
- (f) radioactive material or substances generated at health care facilities provided these are not governed by other applicable legislation;

Household hazardous waste	<p>means any waste, excluding garden or bulky waste, generated as a result of housekeeping, maintenance or repair activities on or at any premises, or accumulated, stored or deposited on such premises, used –</p> <ul style="list-style-type: none"> (a) for residential purposes, and includes agricultural properties and small holdings; or (b) as public and/or private facilities and institutions. <p>which by reason of its nature, composition, toxicity, type, quality, quantity or volume causes or may cause a nuisance, public health risk or pollution;</p>
Industrial waste	<p>means any waste generated as a result of business, commerce, trade, wholesale, retail, professional, manufacturing, maintenance, repair, fabricating, processing or dismantling activities, but does not include general waste, garden or bulky waste, builder's waste, business waste, hazardous waste or health care risk waste;</p>
Integrated resource management	<p>means the manner and efficiency in which resources such as raw materials, or any other product or material, energy, and water are consumed or used;</p>
Integrated waste management	<p>means an holistic and integrated system and process for the generation, storage, sorting, recovering, reuse, recycling, reprocessing, collection, transport, treatment, and disposal of all wastes, aimed at –</p> <ul style="list-style-type: none"> (a) compliance with national legislation, policies and guidelines; (b) waste elimination, prevention and waste minimisation at source; (c) achieving the objectives of the waste management hierarchy set out in regulation 5; (d) managing the impact of waste on the receiving environment and remediating damaged environment; (e) safeguarding principles of public health, economics, engineering, conservation, aesthetics, and other environmental considerations; and (f) ensuring sustainable development;
Litter	<p>means any object or matter which is discarded by a person in any place except in an approved refuse container provided for that purpose or at any place or site approved by the Council;</p>
Policies	<p>includes any policy, plan, guideline or strategy adopted by the Council from time to time in connection with any municipal service rendered or offered by the Council;</p>
Pollution	<p>means any change in the environment caused by –</p> <ul style="list-style-type: none"> (a) any waste, substance or matter; or (b) noise, odour, dust or heat, emitted from or caused by any activity, including the storage or treatment of any waste, substance or matter, building and construction, and the provision of any service, whether engaged in by any person or an organ of state <p>if that change has an adverse effect on public health or well-being or on the composition, resilience and productivity of a natural or managed ecosystem (both short term and long term), or on material useful to people, or will have such an adverse effect in the future;</p>
Recovery	<p>means the process or act of reclaiming or diverting from waste any materials, products or by-products for the purposes of being reused, or collected, processed and used as a raw or other material in the manufacture of a new, recycled or any other product, but excluding the use for purposes of energy generation;</p>

Recyclable waste	means waste which has been separated from the waste stream, and set aside for purposes of recovery, reuse or recycling;
Recycling	means the process or act of subjecting used or recovered waste materials, products or by-products to a process or treatment of making them suitable for beneficial use and for other purposes, and includes any process or treatment by which waste materials are transformed into new products or base materials in such a manner that the original waste materials, products or by-products may lose their identity, and which may be used as raw materials for the production of other goods or materials, but excluding the use for purposes of energy generation, and “recycle” shall have a similar meaning;
Recycling facility	means a facility which receives any waste, materials, products or by-products for the purposes of recovery, reuse or recycling, and includes a buy-back centre;
Reduction	means the process or act of reducing the nature, type, quality, quantity, volume or toxicity of any waste generated, and “reduce” shall have a similar meaning;
Refuse container	means any receptacle or other container, including a skip, stipulated or approved by the Council from time to time, whether supplied by the Council or not, for the storage, depositing and disposal of waste;
Reuse	means the process or act of recovering waste materials intended for the same or different purposes without the alteration of physical and chemical characteristics;
Satellite site	means a facility which receives and temporarily stores – garden waste, but does not include a composting facility; specified general waste already separated at source which has the potential for recovery, reuse or recycling; and/or (c) any other waste authorised by Council for the purposes of recovery, reuse, recycling, composting or final disposal, and which is transported to the satellite centre in a vehicle not exceeding one ton payload, but does not include a transfer station unless the satellite centre is situated on the same premises or land as the transfer station;
Separation	means the process or act of sorting and separating, at the point of origin, different materials found in any waste in order to promote and facilitate recovery, reuse and recycling of materials and resources, and “separate” shall have a similar meaning;
Storage	means the temporary storage or containment of any waste for a period of less than 90 days after its generation and prior to its collection for recovery, reuse, recycling, treatment or disposal;
Tariff	means the tariff, charges, fees or any other monies payable to the Council for the collection, removal and disposal of any waste, or any other aspect of rendering the municipal service, as determined by the Council from time to time;
Transfer station	means a permitted facility which – (a) receives and temporarily stores any waste, and which may include or house separate facilities on the same premises for the sorting, separation, recovery, reuse or recycling of waste; (b) transfers waste into any other container or receptacle, or into or onto any vehicle or any other means of transport prior to its final disposal; (c) unless permitted by any other authority, does not include the operations or premises of a waste contractor who receives, temporarily stores, sorts, separates, converts, treats, transfers, handles or otherwise processes waste prior to its final disposal as an activity directly or indirectly related to his business; and (d) may include a satellite site;

Waste	<p>means any substance or matter whether solid, liquid or any combination thereof, irrespective of whether it or any constituents thereof may have value or other use, and includes –</p> <ul style="list-style-type: none"> (a) any undesirable, rejected, abandoned or superfluous matter, material, residue of any process or activity, product, by-product; (b) any matter which is deemed useless and unwanted; (c) any matter which has been discarded, abandoned, accumulated or stored for the purposes of discarding, abandoning, processing, recovery, reuse, recycling or extracting a usable product from such matter; or (d) products that may contain or generate a gaseous component <p>which may originate from residential, gardening, business, commercial, trade, industrial, educational, agricultural, medical, building and demolition activities, and any other activities, and further includes industrial waste, hazardous waste and health care risk waste;</p>
Waste contractor	<p>means any person, excluding the Council, required to be licenced in terms of Chapter 6 of the Regulations who collects, stores, transports, deposits, disposes, treats, handles or cleans up any waste generated by any other person, but does not include any person who -</p> <ul style="list-style-type: none"> (a) collects, deposits or disposes any garden, bulky, household hazardous and builder’s waste, unless such person does so for commercial gain or as core business (b) subject to the provisions of these Regulations collects, deposits or disposes any waste for the purposes of recovery for reuse or recycling, unless such person does so for commercial gain or as core business (c) is exempted by Council from obtaining a licence;
Waste disposal site	<p>means any facility or site which receives waste for treatment or disposal, and which is authorised to accept such waste, or if such a facility is an incinerator, subject to the provisions of regulation 20, and any possible registration or other permission as may be required by any other applicable law;</p>
Waste generator	<p>means any person whose activities produce any waste and, if that person is not known the person who is in possession and/or control of that waste;</p>
Waste information system	<p>means an information system that records the manner in which waste is generated, managed, treated and disposed of within the municipal area;</p>
Waste inspector	<p>means any official appointed and authorised by the Council in terms of Chapter 7 of the Regulations to administer, implement and enforce the provisions of the Regulations and any other waste management related regulations promulgated by the Council;</p>
Waste management hierarchy	<p>means the theoretical framework that acts as a guide and orders the preferred waste management options which should be considered when assessing the Best Practical Environmental Option;</p>
Waste management plan	<p>means a structured document that sets out to record/eliminate/reduce/reuse/recycle the amounts and the types of all waste that is generated in an area or facility;</p>
Waste minimisation	<p>means any activity, process or act involving the prevention, elimination or reduction of the amount, nature, type, quality, quantity, volume or toxicity of waste that is generated, and in the event where waste is generated, the reduction of the amount, nature, type, quality, quantity, volume or toxicity of waste that is disposed of.</p>

ACKNOWLEDGEMENTS

The need to formulate a solid waste management Policy was birthed as far back as 2005 and originated from a desire to streamline waste management operations and guarantee an integrated approach towards all waste management activities within the city. The realisation of this venture was made possible in 2009 by the contribution and support from various individuals and institutions.

The City of Windhoek would like to thank the following organisations that were instrumental in facilitating the development and compilation of the Policy:

- The team from Jeffares & Green Consulting Engineers
- Mark Dittke Environmental Attorneys
- Integrated Resource and Waste Management Specialist, EnviroSense

Sincere appreciation and gratitude goes to all participants of the workshops held during the compilation of the Policy and the contributions made by representatives from the following sectors:

- Manufacturing
- Retail and Distribution
- Recycling
- Waste management service providers
- Medical and veterinary facilities
- Non-governmental organisations
- Educational Institutions
- Government ministries
- Regional Council

Special thanks also go to the City of Windhoek Councillors and employees in their various capacities for their relentless support in making this Policy a reality.

Lastly, the City would like to thank you, the community of Windhoek, for your support and continued efforts and involvement in solid waste management initiatives.

The City of Windhoek trusts that the participatory approach taken in the development of the Policy will be the spirit in which the Policy is implemented and that it will be used by all as a strategic tool to guide waste management activities in all sectors.

FOREWORD

The city of Windhoek being the capital of Namibia is not only known as the hub of economic activity in Namibia but also as a tourist city which boasts of beautiful infrastructure, people and a clean environment. Windhoek is worldly renowned as one of the cleanest cities in Africa if not the world, a status which the residents of Windhoek carry proudly and seek to protect.

This level of cleanliness has been achieved through cooperative efforts between various tiers of Government, through the support of political leaders and willingness by the residents to maintain the city of Windhoek clean. It does however come at a costs and the City of Windhoek is continually looking at ways to minimise such costs through the optimisation of systems and resources.

Environmental management is fast becoming a central discipline worldwide and concepts such as sustainable development, cleaner production and pollution prevention are continually brought to the attention of us all, over the last few years. The government of Namibia has embraced the importance of environmental conservation through the inclusion of environmental aspects in our legislation, policies and vision 20/30, a decision which will benefit the entire country. The City of Windhoek equally supports all efforts towards environmental conservation and is equally committed towards ensuring that Windhoek be considered not only a clean city, but ultimately a “green” city.

As part of the commitment towards ensuring increased sustainability of the services rendered, the City of Windhoek saw it fit to compile a Solid Waste Management Policy which will provide the foundation for all waste management activities in Windhoek. A regulatory framework in the form of Solid Waste Management regulations will serve to enforce, promote and support the principles within the Policy.

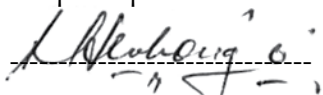
At the heart of this SWM Policy is the Waste Management hierarchy whose principles will direct future waste management activities. The SWM Policy introduces a mind-shift from the conventional pollution control approach to that of waste prevention and minimisation first, followed by reducing, reusing and recycling of waste and disposal only as a last resort. Any waste management activity will henceforth have to implement principles of the waste management hierarchy and any waste generator be it household, industry or institution will similarly have to implement measures to ensure waste prevention and minimisation.

The Policy also recognises the nutrient and market value of waste and how the proper management thereof can produce opportunities for job creation and community empowerment. The City of Windhoek will continually strive towards finding markets and providing streams to allow for the reuse and recycling of recyclable material thus ensuring that, the waste which is generated is harnessed before considered for final disposal. Through the SWM Policy and Regulations, integrated waste management plans and strategies, the City of Windhoek envisages a situation where waste is minimised at source, re-used, recycled and only disposed as a last resort.

The City of Windhoek has since realised that it will not win the war on waste solely by picking up waste and has thus put measures in place to ensure sustainability of all waste management efforts through education and awareness raising.

The City of Windhoek is confident that through the implementation of the SWM Policy, enforcement of regulations, education and awareness raising the mind-shift from pollution control to pollution prevention and minimization will be successfully bridged and foresees a future where waste is seen as a resource rather than a nuisance.

I would hereby appeal to all residents for their continued support in maintaining a clean city and in embracing the principles of the SWM Policy in order to improve the cleanliness of the city.



Councillor M. Shikongo

Mayor: City of Windhoek

1. INTRODUCTION

Namibia, like any developing country, and in particular the city of Windhoek, is characterised by a rapid growth in its population, accelerating urbanisation, increased economic activity, rising living standards and a constant demand for improved services. As a consequence of increased economic growth there is a marked and directly corresponding increase in the amounts and types of waste generated. The City of Windhoek has the responsibility of ensuring that all development that takes place is sustainable and does not negatively affect the environment and human health and well being.

The City of Windhoek is taking a proactive approach to waste management in the development of a Solid Waste Management (SWM) Policy and Regulations. Current waste management practices are well run and organised, however the City of Windhoek has realised that the current system which is mostly focussed on delivering end-of pipe treatment and pollution mitigation services; cannot continue. An alternative, more sustainable and hence resource efficient approach must be adopted in line with the principles of the Integrated Waste Management Hierarchy.

The main objective of this Policy is to provide a framework through which the management of waste, irrespective of the nature, toxicity and quantity, shall be governed in Windhoek. The Policy further aims to ensure that the management of waste is done in such a manner that the risk of the impacts of waste on the residents and the environment is minimised. Through the Policy, strategic objectives have been developed to ensure that there is a paradigm shift from waste generation and disposal to waste minimisation in terms of prevention and increased re-use and recycling.

The objectives contained within the SWM Policy are focussed on decreasing the amount of waste generated per capita in the first place as well as decreasing the amount of waste and its toxicity

that is subsequently treated and landfilled. Waste minimisation intervention focussing on preventive measures is required at the industry level through cleaner and more efficient production, and also from the public through more waste-wise product choices. This is also called the combined resource management strategy of Sustainable Consumption and Cleaner Production (SCCP).

This Policy will form the foundation for all SWM activities within the city of Windhoek. The Solid Waste Management Regulations will promote and support the principles within the Policy whilst establishing the necessary regulations on which strategies can be developed.

2. VISION

The vision of the SWM Policy encompasses the concepts of integrating all required waste management activities based on the minimisation of pollution and waste across various sectors, as well as the management of waste activities in accordance with the Principles of the Integrated Waste Management Hierarchy. Through the SWM Policy, the City of Windhoek aims to maintain control over all waste management activities within its area of jurisdiction, including industrial, business, institutional and household levels.

Through education and awareness raising activities sustainable waste management practices will be upheld at all times (including waste minimisation, re-use, recycling and alternative treatment methods) by all relevant public and private stakeholders.

The Policy recognises that sound waste management relies on having efficient and effective organisational structures and must ensure the active participation of all stakeholders throughout the community.

The importance of community participation cannot be overlooked in the successful implementation of any Policy and the exchange of information in particular concerning current identified gaps and empowerment opportunities, through the sharing

of knowledge is encouraged. The Policy calls not only on the utilisation of regulatory tools but also encourages the development of specialised financial regulatory instruments such as powerful economic waste minimisation incentives (or where required penalties and other financial disincentives to curb unnecessary waste generation). This is done in order to better implement the principles that govern it and create a natural drive to readily follow its requirements without the need of extensive enforcement. The Policy therefore encourages an approach of consultation, partnerships and co-operation amongst industry, the public and government.

3. PRINCIPLES GOVERNING THE SWM POLICY

The City of Windhoek is committed to continue providing an efficient waste management service and in order to achieve this, the City of Windhoek has adopted the following principles governing the SWM Policy as stipulated below:

- Integrated Waste Management Hierarchy
- Sustainable Development
- Sustainable Consumption & Cleaner Production (SCCP)
- Polluter Pays Principle
- Duty of Care
- Best Practical Environmental Option (BPEO)

3.1 Integrated Waste Management Hierarchy

The integrated waste management hierarchy is a concept that promotes waste avoidance through prevention and general minimisation ahead of any reuse, recycling, treatment and disposal. Waste avoidance and reduction should be the first option, if waste cannot be avoided, then efforts should be made to minimise the quantities generated. Once all avoidance and minimisation options have been explored then on-site recovery, reuse and recycling should be considered. Only as a last resort should treatment and disposal be considered and accepted in accordance with the ultimate objective of this Policy.

The hierarchy will serve as an important corner stone guiding the formulation of further waste related policies, strategies and programs. The emphasis will be placed on gearing all waste management activities in line with the principles of the waste management hierarchy.

Figure 1 provides a graphic illustration of the principles that will be used to promote more sustainable waste management systems within the city of Windhoek.



Figure 1: Principles of the Waste Management Hierarchy

3.2 Sustainable Development

Sustainable development is defined as “development that meets the needs of the current generation without compromising the ability of future generation to meet their needs”². Industrial operations should be more efficient in resource use, generate less and less toxic waste/pollution and where possible make use of renewable resources and minimise effects on human health and the environment. Waste management practices should be such that their impact does not deny future generations their right to a clean and healthy environment.

Sustainable development is a holistic view of development, which can be further divided into more manageable aspects, including cleaner production and sustainable consumption. These two concepts provide a means to achieving the overall aim of sustainable development.

² Bruntland, 1987. <http://www.un-documents.net/wced-ocf.htm>

3.3 Cleaner Production & Sustainable Consumption

3.3.1 Cleaner Production

Cleaner Production is a concept based on the continuous improvement of processes; housekeeping, raw material input and products to increase efficiency, whilst reducing the potential impact to the environment and human health.

The essence of this approach is characterized by a need to avoid, eliminate, prevent or significantly reduce the causes of environmental problems as opposed to managing the impacts, wastes and emissions arising downstream of the product or service life cycle. Cleaner production is encouraged in every industry in terms of the triple bottom line approach; i.e. financial, environmental and social benefits.

Waste minimization is one aspect of cleaner production that involves the avoidance of generating waste in the first instance, and where waste cannot be avoided, it refers to minimizing waste to landfill through alternative methodologies, e.g. recovery, re-use and recycling.

The City of Windhoek embraces the principles of cleaner production and waste minimisation and may require all industrial and manufacturing companies presently and in the future to follow these principles through the SWM Policy and Regulations.

Waste prevention through cleaner production intervention can take place for any process at the levels as shown below in Figure 2:

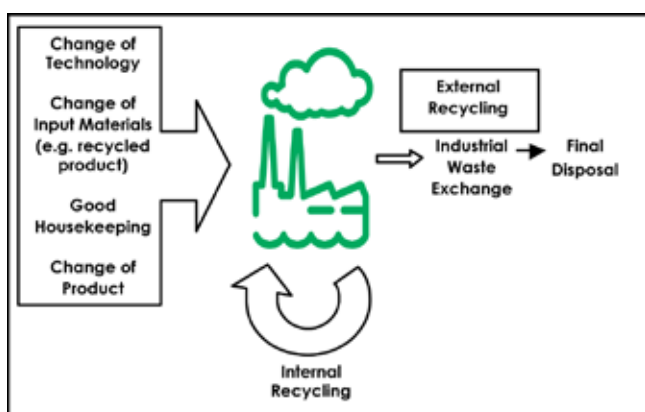


Figure 2: CP Techniques

3.3.2 Sustainable Consumption

Sustainable consumption is a further principle that the City of Windhoek embraces in terms of the holistic approach to waste management.

Sustainable consumption is based on less resource intensive consumption by the public, business & industry that would lead to waste prevention and a dramatic reduction of waste going to landfill. While there is no clear definition found globally on “sustainable consumption” the key features are to:

- Purchase and use only what is required to satisfy human need favouring a good quality of life through decent but not decadent standards of living
- Looking at the “cradle to grave” cycle of a product in terms of performance when purchasing in order to make more “waste-wise” choices

The City of Windhoek will endeavour to raise awareness of both the residents of Windhoek and other tiers of government on the principle of sustainable consumption, whilst not endangering the economic policies of the City of Windhoek, the Region or that of Namibia.

3.4 Polluter Pays Principle

The polluter pays principle transfers the burden of the cost for integrated and therefore environmentally and socially responsible waste management to the polluter in terms of costs associated with the rehabilitation of the natural environment and human health caused by the pollution. Through the polluter-pays principle, waste generators will be encouraged to exercise *duty of care* regarding their operations, products and services.

The Polluter Pays Principle requires the producer to take responsibility for their product from product inception to final disposal, i.e. Cradle to Grave. It requires the producer to approach the development of new products differently in order to take into account the externalities including final disposal that are usually forgotten. Therefore, product designs need to be assessed as part of the whole life-cycle and should be based on environmental integrity and intelligence exploiting the maximum waste prevention, reuse and recycling potential.

The City of Windhoek will enforce the polluter pays principle by means of incentives for polluters. The SWM Regulations will provide the legal framework necessary to enforce this principle.

3.5 Duty of Care

The duty of care principle requires every generator of waste to be responsible for the fate of their waste as soon as it has been generated. It is therefore only an “end-of-pipe” oriented Policy tool and should be used in conjunction with the waste minimisation initiatives.

The duty of care principle requires that the generator prevents any waste polluting the environment or affecting human health. This requires the generator to have proper planning in place to ensure that the waste is stored safely on site, transported by a responsible, licensed waste contractor, and that waste is well secured and packaged during the transportation; and lastly that its final disposal is done at a licensed waste disposal facility.

The duty of care principle is emphasised for all waste types but especially in terms of Health Care Risk Waste (HCRW) and the management of other hazardous/toxic waste materials.

The City of Windhoek recognises the potential risk involved with the unsafe storage, transportation, treatment and final disposal of hazardous waste, and will enforce the duty of care principle on waste generators and contractors in terms of the SWM Policy and Regulations.

3.6 Best Practical Environmental Option

All waste management activities are to include the Best Practical Environmental Options (BPEO) that provide the most benefit for the least damage to the environment at an acceptable cost both in the long and short term. BPEO can be used as a tool to assist decision makers in terms of choosing appropriate technology in line with legislation, cost implications, human health and the environmental considerations.

The City of Windhoek realises that there are many alternative technologies for the management of the different waste types. However, cognisance must be taken of the site specific nature of the city and the needs and requirements that this presents. Technologies must be assessed in terms of the above requirements as well as:

- Appropriateness of the technology for the city (including local expertise to operate equipment; availability of spare parts etc)
- Future waste management requirements
- Whether a combination of alternative technologies would be more appropriate

The City of Windhoek will take the BPEO into account when assessing any new potential alternative waste management technologies.

4. PRIORITIES

The SWM Policy identified the following priority areas:

- Establish and implement an Integrated SWM System based on the principles of the Integrated Waste Management Hierarchy
- Compile Waste Management Plans and Strategies for priority wastes that include (but are not limited to) HCRW; hazardous waste including electronic waste (e-Waste), waste tyres, and recyclables
- The implementation of a Waste Management Registration and Licensing System based on the 80/20 principle with emphasis on capturing data regarding the largest, most expensive, most toxic waste streams from the main local waste generators
- Improved control and possibly prevention of illegal dumping and littering
- Ongoing education & awareness programmes towards waste minimisation within government, industry, institutions and the public
- Ring-fencing the Solid Waste Management account in order to cost the exact expenditure for waste management (and in particular waste minimisation measures) and hence develop strategies to align financial expenditure with the principles of the Policy

- Provision of infrastructure that is geared at achieving the goals of the integrated waste management hierarchy
- Research and Investigation into new and existing cleaner production and integrated waste management technologies in order to remain innovative and abreast of latest developments in the waste management discipline

5. OBJECTIVES

The overall objective of the Policy is to provide a framework within which waste can be managed effectively to minimise and avoid adverse impacts brought about by unnecessary waste generated and improper waste management practices, while simultaneously continuing to improve the quality of life for all residents of Windhoek in terms of economic development as envisaged by Vision 2030.

In order to achieve the goal of reducing the amount of waste generated and consequently land filled, and adopting a more sustainable approach, the City of Windhoek has set the following specific objectives to be achieved through the SWM Policy:

- Objective 1: Legislative Framework, Political Will & Cooperative Governance
- Objective 2: Waste Minimisation, Cleaner Production and Sustainable Consumption
- Objective 3: Optimisation of Resources
- Objective 4: Integrated Waste Management Planning
- Objective 5: Integrated Waste Information System (IWIS)
- Objective 6: Health Care Risk Waste Management Strategy & Plan
- Objective 7: Priority Waste
- Objective 8: Capacity Building through Education and Awareness Raising
- Objective 9: Community Participation in Waste management activities
- Objective 10: Research & Development
- Objective 11: Best Practice Guidelines & Standards

5.1 Objective 1: Legislative Framework, Political Will & Cooperative Governance

The City of Windhoek understands that an Integrated Waste Management Plan cannot be implemented without the co-operation of all stakeholders. Thus, the City of Windhoek recognises the need to mobilise political will within all government tiers and to work together in order to ensure that the Best Practicable Environmental Options (BPEO) are implemented.

The City of Windhoek also recognises that for the successful realisation of the vision of this Policy, stringent environmental legislation has to be in place to govern future minimisation based waste management activities. The SWM Regulations will be integrated with existing environmental protection legislation to ensure consistency. The SWM Regulations will provide for controls and where necessary allow for enforcement to avoid or minimise environmental degradation.

The City of Windhoek is therefore committed to developing SWM Regulations within the framework of National Legislation to enable and facilitate cooperative governance. The goals to achieve this are as follows:

- Develop SWM Regulations that will support the SWM Policy and that are in line with the provision of Vision 2030 and the National Development Plans
- Develop guidelines for waste management facilities in terms of operation & monitoring
- Develop SWM Regulations for the establishment of a Waste Information System, licensing and registration systems for both industry, manufacturers as well as those operating within the city as waste management service providers
- Develop regulations for the safe storage, containment, transportation, treatment and disposal of all waste types
- Revise the strategy and develop an Implementation Plan for the effective management of Health Care Risk Waste (HCRW) and other priority waste types identified

- Identify and implement instruments (both legal and economic) as incentives towards waste minimisation (and in particular for prevention) and the systematic reduction of waste to landfill e.g. introducing industrial waste exchange systems, waste re-use and waste recycling activities
- Encourage and promote Public Private Partnerships (PPP's) in a controlled environment and to the benefit of the City of Windhoek, the residents and the environment
- Engage National and Regional government in dialogue and discussion pertaining to measures to ensure the implementation of the integrated waste management hierarchy principles across all levels of government and ultimately beyond the jurisdiction boundaries of Windhoek
- Foster cooperation with other municipalities both locally and internationally on the development of waste management systems at local level
- Ensure cooperation among various departments within the City of Windhoek in order to harmonise information dissemination to and from clients and avoid duplication of systems and functions
- Development of a marketing strategy aimed at waste minimisation and awareness raising regarding the concept of waste as a resource rather than a nuisance
- Development of an information sharing forum for industry to access information pertaining to cleaner production and waste minimisation measures
- Call for industry waste management plans to encourage industry to implement cleaner production and waste minimisation measures
- Devise incentives to encourage cleaner production and waste minimisation among various sectors and introduce waste separation at source as an integral part of implementing the waste management hierarchy
- Conduct a resource assessment in order to identify markets for the recyclable products derived from implementing waste separation principles

5.2 Objective 2: Waste Minimisation & Cleaner Production

Waste minimisation and cleaner production principles will be promoted by the City of Windhoek through the implementation of the SWM Regulations and Policy. Ongoing education and awareness campaigns will re-emphasise the need for an alternative approach to traditional end-of-pipe treatment methodologies in line with the principles of waste minimisation and cleaner production.

The City of Windhoek commits to implement measures to promote waste minimisation and cleaner production in all sectors and spheres and to assist other stakeholders in achieving such through education and awareness raising. The following goals have been identified to achieve this objective:

5.3 Objective 3: Optimisation of Resources

The City of Windhoek realises that the implementation of a new approach to waste management, from end-of-pipe treatment to waste minimisation and cleaner production, may require restructuring and potentially additional resources. Resources that may need to be reviewed include:

- The existing organisational structure of the SWM Division
- The existing fleet of vehicles and equipment
- Financial resources in terms of allocated budgets

5.3.1 Human Resources

The implementation of an integrated waste management system will require the re-organisation of the existing structure in order to achieve the objectives of the Policy. The City of Windhoek recognises that implementation of an integrated waste management system is a process that strives for continual improvement, hence the process should be dynamic and flexible enough to adapt to the City of Windhoek's changing needs. This would not necessarily require an increased resource base rather a restructuring of the existing resource base.

5.3.2 Vehicles and Equipment

The implementation of an integrated waste management system will require an assessment of the fleet currently in operation in order to establish whether the current fleet meets the requirements needed by the implementation of the Policy.

The City of Windhoek will conduct a fleet assessment in collaboration with the future waste planning requirements in order to assess whether the current fleet is suitable or whether alternatives need to be sought.

5.3.3 Finance

The financial resources within the SWM Division will need to be revised in order to meet the demands of the implementation of a waste minimisation approach as opposed to the traditional end-of-pipe methodology.

Additional financial resources will need to be provided for ongoing education and awareness in terms of waste minimisation and cleaner production.

The City of Windhoek acknowledges that waste management activities are costly and form a substantial amount of the City of Windhoek's expenditure budget. All waste management activities shall be run at cost recovery basis except where services are subsidised.

Waste removal and disposal services shall be classified into either remunerative or non-remunerative accounts. The remunerative services shall be recovered through the establishment of tariffs for various types of waste and quantities generated hence ensuring that the polluter pays principle applies.

The costs incurred in the provision of non-remunerative services shall be recovered through a SWM charge to every registered stand/erf.

The City of Windhoek therefore commits itself to:

- Supporting a dynamic organisational structure responsible for solid waste management and

the establishment of new positions that are aimed at achieving the objectives of the SWM Policy

- Supporting the concept of continual assessment of vehicles and equipment utilised in the management of waste and the drafting of replacement strategies
- Avail the required funding for the implementation of the waste management hierarchy and the provisions of this Policy
- As part of ring-fencing, the establishment of a SWM development fund contributing to the ongoing development of the integrated waste management discipline
- Assign a financial value to landfill airspace in terms of cost per cubic meter in order to ensure that the tariffs are a reflection of the actual amount of landfill airspace required
- Implement measures to ensure optimisation of all resources used in the management of waste

5.4 Objective 4: Integrated Waste Management Planning

The City of Windhoek has embarked on a journey to develop an Integrated Waste Management Plan (IWMP) in order to facilitate the shift away from end-of-pipe treatment methodologies and prolific landfilling to more progressive approaches including waste minimisation and cleaner production.

The City of Windhoek is committed to, and will implement the following goals to achieve the set objective:

- Registration and licensing of industry, requesting IWMPs from identified industrial activities based on the 80/20 principle. The SWM Division will identify certain industries, businesses or commercial enterprises that will in terms of the SWM Regulations need to compile IWMPs. Information regarding waste types, volumes, storage, transportation, treatment and disposal methods undertaken will also need to be submitted on an agreed timeframe to the City of Windhoek. This information will then be captured on a Waste Information System (WIS) for use in strategic planning of SWM projects and funding

- Implementation of a WIS to ensure ongoing measurement and monitoring of waste management activities
- Revision of the divisional structure to ensure that it supports the implementation of the requirements of an IWMP

5.5 Objective 5: Implementation of a Waste Information System

As commonly known, one cannot manage what has yet to be measured. As part of the improved management of waste activities within the city of Windhoek, a Waste information System (WIS) shall be developed and established.

The SWM Regulations will outline the requirements of the WIS and all identified industries, businesses or commercial enterprises that have approved IWMPs will be required to submit information to the City of Windhoek to be captured in the WIS.

This will place the City of Windhoek in a better position to be able to monitor progress of the waste minimisation and cleaner production approaches required by the SWM Regulations and Policy.

This information will be vital in future planning requirements for integrated waste management in the City of Windhoek. It will also assist the City of Windhoek in identifying priority waste streams as and when new streams present themselves and to address these issues timeously.

The City of Windhoek commits itself to and will embark on the following goals to achieve the set objective:

- Establish, operate, maintain and regularly review the WIS database
- Ensure the provision of appropriate software and equipment and ensure properly trained staff to manage the system
- Enforce the timely submission of information and assess / verify all submitted data
- Disseminate relevant information to various users and provide access to such information for the purposes of waste management development, education and awareness raising and planning

5.6 Objective 6: Health Care Risk Waste Management Strategy & Plan

The City of Windhoek recognises HCRW as a priority waste and takes cognisance of the potential for pollution in the event this waste is not managed optimally.

The development of a HCRW management strategy is vital to the efficient management of this waste stream and shall be developed and implemented. Equally important is ensuring the empowerment of all stakeholders involved; ranging from the original source generators (e.g. clinics) to the transport and disposal service providers, through training and awareness raising. The duty of care principle will apply and all aspects of segregation at source, storage, packaging and safe handling will be emphasised and enforced.

The City of Windhoek commits itself to the development and implementation of a HCRW strategy & plan and will embark on the following goals to achieve the set objective:

- Revision of the existing HCRW Strategy as well as the development of an Implementation Plan in line with the SWM Policy and Regulations
- Investigation into improved treatment and disposal options bearing the BPEO principles in mind
- Provision of a properly functional HCRW treatment and disposal facility
- Registration and licensing of waste generators, transporters and the operators of treatment and disposal facilities
- Establishment of a waste tracking system in line with other established standards in order to minimise any illegal treatment and disposal of HCRW
- Putting measures in place to ensure that in the event where illegal disposal occurs, the polluter pays for any damage to the environment or public health and any required remediation measures

5.7 **Objective 7: Priority Wastes**

The City of Windhoek will continually identify priority waste types that pose a detrimental risk to public health and wellbeing or the environment due to the quantity or composition of the waste type as well as to any waste with a high re-use and/or recycling potential. Priority waste includes (but is not limited to): waste tyres, HCRW, builders' rubble, electronic waste and hazardous waste. The intention of the SWM Regulations is to provide the City of Windhoek with the authoritative power to regulate priority waste streams.

Separate strategies and guidelines shall be drafted by the City of Windhoek for the various priority wastes identified.

The City of Windhoek commits itself to achieving this objective by:

- Developing strategies and guidelines for each priority waste identified
- Maintaining the WIS in order to proactively identify and manage priority waste types as when and where they arise
- Putting measures in place to curb the illegal disposal and dumping of priority waste and where the priority waste has re-use and/or recycling potential, implement measures to harness such

5.8 **Objective 8: Capacity Building – Ongoing Education and Awareness**

The City of Windhoek is aware and proud of the positive benefits of continual education and awareness campaigns. The City of Windhoek recognises that the current education and awareness raising efforts regarding waste management are a step in the right direction and aims to continually reinforce this concept albeit with a shift towards waste minimisation, re-use and recycling concepts at various points of waste generation.

The concept of educating especially the youngest members of our society aka “catch them young” has been effective and at the heart of waste management education and awareness raising

campaigns. This arrangement shall continue as a catalyst for enhanced waste minimisation, re-use and recycling practices.

The implementation of a waste prevention and minimisation approach within the integrated waste management plan will require a revised educational and awareness raising approach in order to assist the residents' of Windhoek to change behaviour from a consumer driven 'throw away' society to a society that is more aware of sustainable consumption.

The City of Windhoek will strive to inform the public, industry and business about the positive benefits of sustainable consumption including the financial and environmental benefits.

The City of Windhoek is committed to training those in its employment to enable them to become specialists in the field of waste management thus improving the human capital of the country.

The City of Windhoek commits itself to ongoing education and awareness raising and will embark on the following goals to achieve the set objective:

- Continued education and awareness raising at educational institutions through the inclusion of waste management education in the school curriculum
- Continued education and awareness raising at the community level
- Education and awareness raising amongst various industries and fostering an interest and regard for the value of waste
- Education and awareness raising among various tiers of both national and local government
- Capacity building through training of waste management officials to enable them to carry out the requirements of the Policy and regulations
- Establishment of a consultative forum for the industry and the City of Windhoek to openly discuss waste management and related matters

5.9 Objective 9: Community Participation

The City of Windhoek commits itself to ongoing community participation and recognises the value of involving the local community in the development and implementation on various waste management systems.

The City of Windhoek will embark on the following goals to achieve the set objective:

- Encourage community participation in waste management through various projects in order to ensure ownership of waste management projects that are implemented at community level
- Initiate community structures to support local waste management programmes
- Provide communities with access to information through various channels to educate and inform of waste management programmes
- Encourage communities to view waste as a resource and so encourage entrepreneurial activities utilising recyclable or re-usable waste products

5.10 Objective 10: Research and Development

The City of Windhoek is committed to ongoing research and development with regards to the principles of the integrated waste management hierarchy and alternative waste management methodologies and treatment systems.

The City of Windhoek commits itself to ongoing research and development and will embark on the following goals to achieve the set objective:

- Research and investigation of new and existing technologies in terms of the BPEO principle
- Study new and improved ways of managing priority wastes and using case studies from other countries as models, implement initiatives that are specific to the Namibian context
- Ongoing research and development in terms of waste minimisation and cleaner production mechanisms

5.11 Objective 11: Best Practice Guidelines & Standards

In the absence of a National standard in terms of minimum requirements to operate waste management facilities; the City of Windhoek will use the South African Department of Water Affairs and Forestry Waste Management Series: Minimum Requirements for Waste Disposal by landfill (1998); Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste (1998) and subsequent updates of these documents.

6. CONCLUSION & WAY FORWARD

The objective of the SWM Policy is to provide an overall strategic direction for the management of waste within the city of Windhoek. The City of Windhoek recognises that a clean environment is vital to the wellbeing of its residents as well as to the attraction of economic activity towards Windhoek in the form of visitors and investors and hence is regarded as a priority.

The City of Windhoek has identified certain principles which will govern waste management within the city as well as objectives which will direct waste management activities. The SWM regulations will provide the legal framework to enable the realisation of the objectives within the Policy.

Central to the SWM Policy is the shift from pollution control and end-of-pipe treatment methods towards the implementation of the waste management hierarchy which has waste elimination and prevention first, waste reduction and reuse second and treatment and waste disposal as a last resort. All waste management activities henceforth will be geared towards the principles of the waste management hierarchy.

The City of Windhoek recognises the importance of various stakeholders (both public and private) in the success of any waste management programme initiated and has included these in the compilation of both the Policy and Regulations and aims to continue with a consultative approach with all interested and affected parties.

Subsequent to the Policy, an Integrated Waste Management Plan will be drafted and will contain all the activities and strategies for implementation in order to achieve the objectives of the Policy. Targets and outcomes will be set within the Plan and based on continual improvement will be reviewed annually.

The outcome of the implementation of the SWM Regulations, Policy and gradual implementation of the Plan will result in a City of Windhoek that has shifted from end-of-pipe treatment methodologies to a culture of waste minimisation, local businesses embracing cleaner production technologies and improved housekeeping and communities that are “waste wise” and practice actively sustainable consumerism.



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