National Waste Management Strategy

Summary of key strategic issues to inform NWMS

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List of Acronyms

DEA	Department of Environmental Affairs
DTI	Department of Trade and Industry
EPR	Extended Producer Responsibility
IWMP	Integrated Waste Management Plan
MEAs	Multilateral Environmental Agreements
NEAS	National Environmental Authorisation System
NEMA	National Environmental Management Act
NWMS	National Waste Management Strategy
POPs	Persistent Organic Pollutants
SAWIS	South African Waste Information System
SMME	Small, Medium and Micro Enterprise
WMO	Waste Management Officer

1 Background

In devising more coherent and responsive environmental approaches, legislative and policy processes in the waste sector over the last decade have culminated in the NEMA Waste Act (No 59. of 2008) (the Waste Act). The 1999 National Waste Management Strategy identified the need for a comprehensive legislative framework for dealing with the management of waste, which the Waste Act now provides. The Act includes a variety of instruments to advance the waste management agenda, many of which are complex and require coordinated action by a variety of stakeholders. In order to apply these instruments within a coherent policy framework and strategy, the Act requires the development of a National Waste Management Strategy (NWMS) as the main policy instrument to bring into effect the objects of the Act and direct its implementation.

The Department of Environmental Affairs (DEA) has commenced with the process for development of the strategy. A framework for the strategy has been prepared, stakeholders have been consulted on the framework, and the framework has been amended to reflect stakeholder views and comments. Baseline research on the main themes identified in the framework has been commissioned to inform the drafting process, and the findings of the research have been debated by government and stakeholders at a research workshop. These inputs have been used to inform this synthesis paper, which highlights the key issues and policy options for the NWMS. On the basis of comments received from stakeholders to date, and comments on this summary of the strategic issues, the strategic issues paper has been amended. This has laid a very solid basis for the actual drafting of the NWMS to proceed. It is envisaged that a first draft of the NWMS will released for stakeholder comment and consultation early in 2010 .

2 Setting the context

The following section sets the context for the issues discussed in this document, and the wider process of producing the NWMS. South Africa has a specific socio-economic and demographic make-up, characterised by a carbon intensive economy and rapid development and urbanisation spurred on by a unique period of economic growth in recent years. These factors could have profoundly negative impacts on the environment if not managed well. This section discusses these factors from a socio-economic and demographic context. The section then examines the Constitutional and legal context and South Africa's international obligations, and provides an outline of the strategic challenges and key considerations in relation to the main producer categories of waste.

2.1 Socio-economic and demographic context

Socio-economic and demographic factors such as urbanisation, unemployment and population growth impact on future waste trends and service provision, and, in the context of South Africa's growth and development goals, provide a backdrop against which the NWMS should be developed. While 65% of South African households had access to domestic waste collection services in 2007, access to waste services remains highly skewed in favour of more affluent and urban communities.

In South Africa, growth in waste volumes is projected to rise to nearly 67 million cubic metres by the year 2010. Household waste generation varies considerably by settlement type and income, with wealthier consumers in urban areas generating much higher volumes of waste. Urban residents typically also generate more non-organic waste, which is less conducive to on-site disposal, but creates economies of scale for recycling.

While the growth in the volume of general waste produced underlines the importance of waste minimisation strategies, it also highlights the economic potential of the waste management sector, which has an estimated total expenditure of approximately R10 billion per annum. Both waste collection and the recycling industry make a meaningful contribution to job creation and GDP, and there is potential to expand this further.

The 1999 National Waste Management Strategy defines the development objective of the waste sector as the *"Reduced generation and environmental impact of all forms of waste, so that the socio-economic development of South Africa, the health of its people, and the quality of its environmental resources are no longer adversely affected by uncontrolled and uncoordinated waste management".*

Research has clearly indicated that well-considered, effective solid waste systems can make critical contributions to public health, environmental sustainability, economic development and poverty alleviation by:

1. improving public health outcomes (through reduced opportunities for disease);
2. enhancing environmental quality (through protecting watercourses and preventing degradation of public open spaces);
3. reducing waste quantity that can clog up public storm water and sanitation networks (thereby reducing flooding, service failures and the need for maintenance);
4. supporting higher levels of economic activity (through stimulating growth in waste sector);
5. contributing directly to poverty alleviation (through offering opportunities for employment, SMME development, and empowerment).

Effective waste strategies can clearly make a profound contribution to the achievement of the South Africa's broader economic and social objectives. The NWMS will therefore aim to integrate South Africa's social and economic development objectives with environmental sustainability through adopting a systematic, hierarchical .approach to waste management.

2.2 Constitutional and Legal Framework

The Constitution of South Africa, 1996 (Act 108 of 1996) (the *Constitution*) provides the foundation for environmental regulation and policy in South Africa. The right to environmental protection and to live in an environment that is not harmful to health or well-being is set out in the Bill of Rights (Section 24 of Chapter 2). This is the fundamental principle that underpins environmental policy (such as the White Papers on *Environmental Management* and *Integrated Pollution and Waste Management*) and law (principally the *National Water Act*; and *National Environmental Management Act (NEMA)*). NEMA states that: "the State must respect, protect, promote and fulfill the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities; inequality in the distribution of wealth and resources, and the

resultant poverty, are among the important causes as well as the results of environmentally harmful practices." The Waste Act forms an integral part of this overarching legal and policy framework, providing specifically for the management of the waste sector and regulation of waste management activities.

The Waste Act adheres to the Constitutional assignment of legislative and executive powers between spheres of government. The Constitution assigns concurrent legislative competence to national and provincial government in respect of the *environment* and *pollution control* (Section 146 of the Constitution) and exclusive provincial legislative competence to the local government matters of *cleansing* and *refuse removal, refuse dumps* and *solid waste disposal.* The Constitution allows national legislation to provide for national norms and standards relating to these matters where national uniformity is required to deal effectively with an issue. Accordingly, the development of norms and standards is the foundation of the regulatory system established in terms of the Waste Act.

National government is obliged to develop norms and standards on certain matters, while provinces and municipalities are permitted to develop standards provided they are not in conflict with national standards. Norms and standards for the treatment and disposal of waste in terms of the Waste Act will need to take cognisance of related legislation, such as the NEMA: Air Quality Act 39 of 2004 and the Health Act, 2004 (No. 61 of 2003).

National and provincial government departments are also Constitutionally obliged to support municipalities in the execution of their functions. The Waste Act accordingly establishes cooperative governance mechanisms for dealing with matters such as waste planning, appointment of waste management officers and performance reporting. The Waste Act also needs to be read in conjunction with the body of legislation dealing with local government, and there a number of supportive and at times overlapping provisions. For example, the Municipal Systems Act 2000 (No. 32 of 2000) section 94 (e) (ii) states that the Minister can make regulations or issue guidelines for incentives and penalties to encourage the recycling of waste. According to section 74 (1) (h) of the Municipal Systems Act a municipal council must adopt and implement policy on the levying of fees for municipal services provided by the municipality itself or by way of service delivery agreements, and this includes encouraging the economical, efficient and effective use of resources, the recycling of waste and other appropriate environmental objectives.

The Waste Act also needs to be read in conjunction with other sectoral legislation, including the Minerals and Petroleum Resources Act, 2002, section 39 (3) (iii) of which states that Environmental Management Plans must comply with any prescribed waste standard or management standards or practices

The White Paper on Environmental Management introduced the concept of the waste hierarchy, in South Africa policy and the concept was subsequently given legal expression in NEMA. The waste hierarchy approach establishes a systematic and hierarchical approach to Integrated Waste Management, addressing waste avoidance, reduction, re-use, recycling, treatment, and disposal as a last resort. NEMA introduced a number of additional guiding principles into South African environmental legislation, including the life-cycle approach to waste management, producer responsibility, the precautionary principle and the polluter pays principle. Chapter 5 of NEMA promotes the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities, and provides instruments for co-ordination and co-operation for integrated waste management. NEMA also places a duty of care on any person who causes significant

pollution or degradation of the environment, requiring them to institute measures to prevent pollution from occurring, or to minimise and rectify the pollution or degradation where it cannot reasonably be avoided. The Waste Act echoes the duty of care provision by obliging holders of waste to take reasonable measures to implement the waste hierarchy whilst protecting the environment and public health.

Subsequent amendments to and regulations issued in terms of NEMA have provided a detailed regulatory framework for the performance of Environmental Impact Assessments, which need to be closely aligned with the provisions for licensing of waste management activities. Environmental Management Inspectors (EMIs) are also designated and appointed in terms of NEMA, and these provisions form the backbone of the compliance and enforcement system that is required to support implementation of the Waste Act.

The Waste Act necessarily introduced a definition of waste, which has major implications for those activities that have traditionally not been treated or regarded as waste. Importantly for industry, the waste products and activities that fall outside the definition of waste are able to avoid the provisions of the Act. In order to clarify some of the definitional issues, a technical guideline is being developed by DEA as a basis for interpreting and applying the definition by both government and industry. This interpretation will be integrated into the National Waste Management Strategy.

2.3 International Obligations

The Waste Act specifies that the NWMS should give effect to South Africa's international obligations in terms of waste management. The evolving system of international declarations, agreements and treaties has provided an important context for the evolution of South African environmental policy in general, and waste management policy in particular.

The modern system of global environmental governance is to a large degree a consequence of the **Rio Earth Summit** and **Agenda 21**, which amongst others, advocated four major waste-related programmes: minimizing wastes; maximizing environmentally sound waste reuse and recycling; promoting *environmentally sound waste disposal and treatment*; and extending waste service coverage. The Summit set in motion a series of multilateral environmental agreements (MEAs) dealing with land-based sources of marine pollution, water quality, regional trans-boundary movement of hazardous waste, the management of toxic chemicals, and the trans-boundary movement of radioactive waste, amongst others.

In relation to *hazardous products and waste*, there are four principal conventions that apply. The **Rotterdam Convention's** procedure for Prior Informed Consent became legally binding in 2004, and it promotes and enforces transparency in the importation of hazardous chemicals; the **Basel Convention,** adopted in 1989, addresses the need to control the transboundary movement of hazardous wastes and their disposal, setting out the categorisation of hazardous waste and the policies between member countries; the **Stockholm Convention on Persistent Organic Pollutants (POPs)**, which entered into force in 2004, requires that member countries phase these out and prevent their import or export.

The Strategic Approach to International Chemicals Management is a voluntary instrument that was adopted at the International Conference on Chemicals Management in 2006. It supports the goals agreed to at the World Summit on Sustainable Development held in 2002 in Johannesburg.

At the 2009 annual meeting of the UNEP governing council it was decided to establish an Intergovernmental Negotiating Committee to draw up a multilateral treaty to reduce the global supply of mercury and mercury emissions, address mercury contamination, and enhance management and storage capacity. Once it comes into force, such a treaty will have important implications for the management of mercury containing wastes.

In relation to *pollution of water*, South Africa has acceded to a number of conventions which address dumping at sea and prescribe measures to prevent waste on land contaminating the seas and waterways. These wastes include oil, solid waste, nuclear waste and debris from landfill sites.

Several obligations exist around measures to *protect the ozone layer.* South Africa is a signatory to the Kyoto protocol and although we do not yet have obligations to reduce carbon emissions to mitigate climate change, South Africa does have opportunities to participate in the Flexible Development Mechanisms, particularly in terms of waste to energy projects such as landfill gas capture.

The South African government is required to put measures in place to give effect to the provisions of the MEAs to which the country has acceded. The NWMS must integrate international obligations into the implementation of the norms and standards, listing and licensing arrangements, and priority waste measure that are provided for in the Waste Act.

2.4 Waste flows and strategic challenges

Reliable data quantifying the different waste streams is not readily available, which constrains government and industry's ability to devise responsive measures to waste management challenges. This highlights the importance of establishing a functioning waste information system to which all stakeholders have access.

The NWMS research has compiled available waste information for the main producer categories of waste, and Table 1.1 below summarises the estimated quantities generated per annum for the key categories and types of waste, as well as highlights some of the strategic challenges for each category.

Table 1: Key waste streams, estimated quantities and strategic challenges

Category/Type	Quantity	Strategic Challenges and Key Considerations
Domestic and Commercial General Waste	24.1 million tons	• Waste minimization is not adequately incentivised • A high percentage of landfills are unlicensed and don't meet minimum requirements • Inadequate managerial and financial capacity, especially in smaller municipalities • Need to boost recycling, and encourage separation at source

Category/Type	Quantity	Strategic Challenges and Key Considerations
Industrial and Mining Hazardous Waste	710,000 tons	• Development of a new classification system is currently underway • Shortage of some categories of hazardous waste disposal facilities in some provinces • Regulation of temporary storage of hazardous waste required • Regulation of PCBs and other POPs as priority waste • Cleaner production needs greater emphasis
Construction and Demolition Waste	5-8 million tons	• Separation of waste into recyclable components (e.g. timber) and beneficiation of waste stream • Safe disposal of hazardous waste components needs to be addressed e.g. asbestos • Large amount of illegal dumping
Mining Waste	510 million tons (approx)	• Accurate quantification of waste is difficult • Categorisation of waste is critical (e.g. slag in relation to the Waste Act) • Limited application and enforcement of environmental legislation • Alignment of Waste Act Requirements with Minerals and Petroleum Resources Act requirements e.g. in relation to tailings
Health Care Risk Waste	42, 200 tons	• Uneven implementation of standards • Lack of awareness of risks in some instances • Shortage of disposal facilities in certain areas
Agricultural Waste – stockpiled obsolete pesticides	Approx. 750 tons	• Development of a new classification system has been undertaken • Guidelines needed for treatment, destruction and disposal • POPs should be considered as candidates for priority waste declarations
Coal combustion and gasification residues (ash)	34 million tons	• Low reuse rate (only 6%) • Use in brick-making and cement needs to be extended • Norms and standards for acceptable use and grading are needed
Tyres	Approx. 50,000 new tyres produced per day	• Processing and recycling needs to be promoted as preferred option • Policy on the thermal treatment of waste and regulations in terms of co-processing in cement kilns need to be implemented • Illegal dumping and burning needs to be ended • Lack of compliance with air emission standards
eWaste	Approx. 136,000 tons of electronic/IT products distributed annually	• Lack of accurate quantification of waste stream and recycling • Informal processing unregulated • Incorrect handling and disposal of hazardous components in some instances • Business opportunities for refurbishment and recycling needs further evaluation • Imports not adequately regulated

Category/Type	Quantity	Strategic Challenges and Key Considerations
Batteries	2,500 tons	• Dumping of batteries containing hazardous components, especially mercury • Promotion of rechargeable batteries
Fluorescent lamps containing mercury	137 million units	• Possible application of EPR measures, including labeling requirements, to address the issue of safe disposal and correct handling.
Lubricating Oil	270 million litres new oil sold annually	• Improving collection rate for used oil (currently 40 – 45% collection rate) and benchmark against global practice • Illegal dumping and indiscriminate use as industrial fuel

The NWMS needs to put forward an integrated strategy and set of mechanisms for responding to these challenges. At the same time the NWMS must respond to the broader socio-economic and demographic factors highlighted above, while meeting international and domestic legislative requirements shaping the current policy process. Environmental measures devised through the NWMS process must provide appropriate and responsive solutions to the issues raised.

3 Overall strategy - implementing the waste hierarchy

The Polokwane Declaration at the National Waste Management Summit in 2002 set targets for waste generation to decrease by 50% by 2012, and waste disposal to decrease by 25% by 2012, with the ultimate aim of developing a plan for zero waste by 2022. While these ambitious targets have not been formally accepted as government policy they do draw attention to the commitment of all South African stakeholders to integrated waste management, and emphasize waste minimisation as an environmental policy priority.

The waste hierarchy is a conceptual model that looks at the progression of waste from the production or generation stage to its ultimate disposal. The waste hierarchy approach seeks to ensure, in descending order of priority, that waste is avoided, reduced, re-used, recycled, treated, and as a last resort, safely disposed There is general consensus regarding the waste hierarchy as a policy framework, which informs the overall approach adopted for waste management in South Africa. The waste hierarchy model is the strategic foundation for the NWMS.

The waste industry plays an instrumental role in the progression of waste through each stage of the hierarchy. The main components of the waste industry include collection, transportation, disposal and recycling (including both formal and informal components). Waste minimisation will inevitably impact on the volume of waste that enters the waste industry, as well as affect the flow of waste once it enters the industry. This in turn will have an impact on environmental objectives, sustainable development, socio-economic factors and broader macro-economic goals. Given the economic significance of the waste industry, it is important to understand the consequences which stem from the implementation of the waste hierarchy.

This section outlines how the NWMS will go about implementing the waste hierarchy, by outlining the overall approach which will be used in the implementation of the NWMS, and the tools and strategies to be applied to the management of waste.

3.1 Overall goals, approach and regulatory model

The primary goal of the NWMS is to bring into effect the objects of the Waste Act, which are:

a) *to protect health, well-being and the environment by providing reasonable measures for—*

   i. *minimising the consumption of natural resources;*

   ii. *avoiding and minimising the generation of waste;*

   iii. *reducing, re-using, recycling and recovering waste;*

   iv. *treating and safely disposing of waste as a last resort;*

   v. *preventing pollution and ecological degradation;*

   vi. *securing ecologically sustainable development while promoting justifiable economic and social development;*

   vii. *promoting and ensuring the effective delivery of waste services;*

   viii. *remediating land where contamination presents, or may present, a significant risk of harm to health or the environment: and*

   ix. *achieving integrated waste management reporting and planning;*

b) *to ensure that people are aware of the impact of waste on their health, wellbeing and the environment;*

c) *to provide for compliance with the measures set out in paragraph (a)\ and*

d) *generally, to give effect to section 24 of the Constitution in order to secure an environment that is not harmful to health and well-being.*

In order to achieve these objectives a **tiered and consensual model**, which seeks to optimally combine government regulation and compliance actions with the application of economic incentives, co- and self-regulatory components, fiscal mechanisms, and voluntary initiatives, has been accepted. This model aims to establish a level of baseline regulation for the waste sector, as a foundation for a co-regulatory system that relies on industry initiative and voluntary compliance. Only in instances where industry response proves insufficient for dealing with market failure will more interventionist regulatory tools be utilised. In line with this model the various mechanisms and measures set out in the Waste Act are viewed as a "tool box" of instruments to be used systematically and strategically in addressing specific issues.

The foundation of the tiered and consensual model is the development of a system of **national norms and standards,** which creates a common national platform for waste management activities to be undertaken by both public and private sectors. The Waste Act

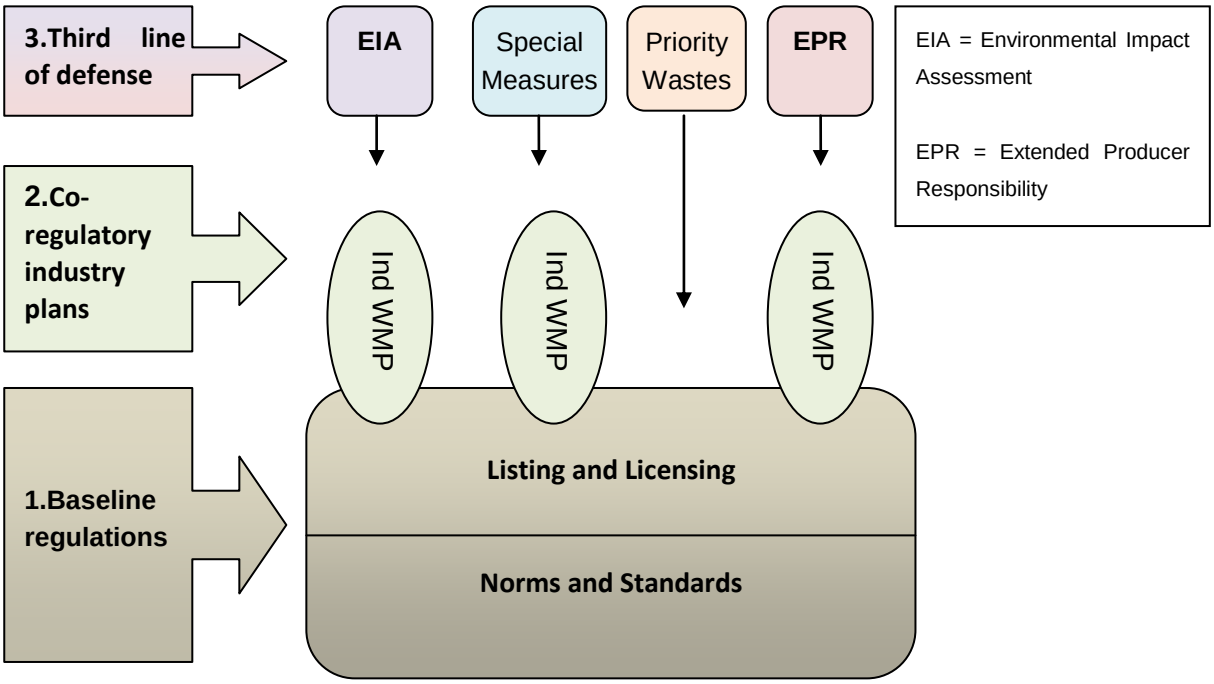
also provides for the development of provincial norms and standards as well as local waste services delivery standards, provided they do not contradict the national standards. The consequences of jurisdictional variation in norms and standards will have economic and administrative implications which need to be carefully evaluated.

In addition to norms and standards, the Waste Act creates a system for **listing and licensing** of waste management activities, which is the other key element of the baseline regulatory system. Waste management activities above certain thresholds are subject to a process of impact assessments and licensing, or a requirement to comply with certain additional standards. This provides a primary level of regulatory control over activities along the waste management value chain. It is envisaged that industries that proactively adopt waste management plans and effectively self regulate their sectors will be able to motivate for exemptions from licensing of their activities.

The Waste Act places a large emphasis on **Industry Waste Management Plans**, which are the central element in the co-regulatory system. These plans may either be prepared on a voluntary basis, or the Minister and MEC may require industries and sectors to develop them. To avoid “free riders”, such plans should apply to all players in the specific industry. The Industry Waste Management Plans set out the targets that the industry will aim to achieve, how these will be cascaded down to company level, and the main measures that are required to achieve these. It is envisaged that industries which proactively prepare and submit Industry Waste Management Plans, and effectively regulate the industry on a voluntary basis, are likely to avoid the imposition of more stringent regulatory provisions provided by the Act (e.g. declaration of a priority waste or being required to develop an EPR programme).

The Waste Act also contains a suite of more **interventionist regulatory measures** that form the last tier of the regulatory model. These include provisions for declaration of priority wastes and extended producer responsibility, which are interventionist regulatory tools which will be invoked in instances where specific regulatory gaps needs to be addressed, if necessitated by the accession to MEAs, or where there is persistent non-compliance or failure by a sector or industry to address waste management issues. These measures will also be backed up by economic incentives and penalties.

Figure 1: Regulatory model for the NWMS



In developing an overall strategy for the NWMS, the different elements and tiers of this regulatory model will be applied to each phase of the waste hierarchy.

3.2 Waste Avoidance & Reduction

Waste avoidance and reduction is the foundation of the waste hierarchy. While waste minimisation is sometimes hard to quantify, current available figures indicate that waste quantities (as a proxy for waste minimisation) are on the increase.

Waste minimisation occurs largely through producer responsibility initiatives implemented by industry on a voluntary basis and as a result of competitive pressures and economic incentives. At municipal level there has been very limited progress in implementing measures for waste reduction at household level. This is largely as a result of competing priorities for municipal services, and the broader capacity challenges faced by municipalities.

The NWMS will elaborate a programme of measures to accelerate waste minimisation, which will be consolidated into a national waste minimisation programme. These measures will include, but will not be limited to:

- Setting **norms and standards** for waste minimisation. The Waste Act includes a discretionary provision for national norms and standards relating to waste minimisation. The NWMS will explore the applicability of norms and standards for waste minimisation as well as the precise products, activities or services to which these should apply.
- Including targets and measures for waste minimisation in **Industry Waste Management Plans** where feasible, and developing the analytical basis for measures and targets where these may be necessary.

- **Incorporating waste reduction principles into the design and packaging of products at the point of manufacture.** This is considered to be more efficient than focussing on post-consumption responses. A balance must be found between encouraging design and packaging changes at the point of manufacture, whilst maintaining the momentum of current post-consumer initiatives.
- **Encouraging and incentivising municipalities to implement waste reduction measures and campaigns.** Performance targets for waste reduction need to be developed for municipalities in terms of their integrated waste management plans, based on the specific capacity of each municipality. In order to incentivise municipalities, it is proposed that DEA expand the **"Cleanest Towns" Campaign** to further encourage waste reduction at a municipal level, and draw on lessons from the DWA "blue drop" initiative.
- **Reconsidering the current pricing of waste disposal so as to build in incentives for waste minimisation by consumers.** Current tariff structures of municipalities fail to incentivize waste reduction. As a first step, prices need to reflect the cost of waste services provision.
- **Implementing public awareness campaigns around waste minimisation** including education and awareness campaigns for households and consumers.
- **Improved enforcement of waste minimisation measures –** Where norms and standards for waste minimisation are developed, these need to be reported against and monitoring and enforcement measures put in place

Each of the measures will be further elaborated upon in Section 4.

3.3 Recovery, Re-use and Recycling

Recovery, re-use and recycling comprise the second step in the waste hierarchy. Section 17 of the Waste Act provides a framework for recovery, reuse and recycling and describes a range of discretionary measures available to the Minister in this respect. The Waste Act also specifies that the NMWS must include objectives, plans guidelines, systems and procedures relating to amongst others, reuse, recycling and recovery. The NWMS must accordingly set out a programme of measures for waste recovery, re-use and recycling, which will be consolidated into a national recycling programme. These measures will include, but will not be limited to:

- Setting **norms and standards** for recovery, reuse and recycling of waste. The Waste Act includes a discretionary provision for national norms and standards relating to recovery, reuse and recycling of waste. In addition to the provisions set out in the Waste Act itself, it is recommended that DEA develops such norms and standards and identifies the activities to which these should apply in conjunction with stakeholders as part of the implementation of the national strategy.
- Including realistic and defendable targets and measures for recovery, reuse and recycling of waste in **Industry Waste Management Plans**. Targets for recovery, reuse and recycling of waste for all the main industrial sectors will be developed progressively over five years, in line with the development and implementation of Industry Waste Management Plans.
- **Voluntary industry led initiatives** for recovery, reuse and recycling of waste must be promoted. Most initiatives related to recovery, re-use and recycling are voluntary and industry-led. In some sectors, such as oil (ROSA) and cans (Collect-a-Can), non-profit

section 21 companies have been created to promote and co-ordinate recycling. These industry-led and coordinated voluntary initiatives have largely proved successful. Sectors where there is considerable scope for expansion of the recycling industry and the improvement of recovery, re-use and recycling need to be identified and prioritised.

- The Waste Act requires that all activities relating to waste recovery, reuse and recycling **use less natural resources** and are **less harmful to the environment** that disposal of the waste. The extent to which existing activities comply with this provision needs to be assessed, and norms and standards for recycling need to be aligned with these requirements.
- The Waste Act allows the Minister, after consultation with the Minister of Trade and Industry, to require the recovery, reuse and recycling of **products or components**, and to determine a **percentage of recycled material in products**. It is recommended that these provisions are used to reinforce Industry Waste Management Plans, and to address market failures. Guidelines for the application of these provisions need to be developed in consultation with all stakeholders to ensure desirable outcomes.
- Sustainable **job creation** in relation to recovery, reuse and recycling of waste must be promoted. The recycling industry is currently making a significant contribution to job creation and the NWMS must harness and build on the job creation potential of the industry. Employment opportunities (including informal recycling activity such as 'waste-picking' on landfills) are concentrated within the collection and sorting phases of recycling. The national strategy should seek to promote formal employment higher in the value chain , although the livelihoods of existing waste-pickers should be protected in the process.
- At the same time **health and safety standards** within the sector need attention. While it is acknowledged that waste-picking on landfills contributes to the livelihoods of those involved, the health and safety hazards related to informal waste-picking on landfills are of grave concern to both government and industry. The NWMS will devise measures to accommodate the informal sector within the recycling industry, including the promotion of waste collectives.
- **Separation at-source** has been promoted as a means to both improve the quantity of recyclates, and reduce waste sent to landfill. The NWMS needs to provide guidelines for implementing separation at-source to ensure the net impact on employment within the informal recycling sector is positive rather than negative.
- **Education and awareness** on the benefits associated with recovery, re-use and recycling are important to ensure public participation in re-use and recycling initiatives, and in facilitating mutually beneficial initiatives between government and industry. The NWMS will consider the practicalities associated with education and awareness and will devise measures which will best achieve this.
- Inclusion of **'green requirements' in procurement policies** are considered to have the potential for a positive economic impact on the recycling sector. The feasibility and practicality of this will be considered in the NWMS.

It is proposed that these measures are consolidated into a recovery, reuse and recycling programme. Each of the proposed measures will be further elaborated upon in the chapters in Section 4.

3.4 Storage, Collection and Transportation of waste

Waste services delivery, including the storage, collection and transportation of waste, is the main point of interface between the public and waste service providers. The extent and form of provision of waste services to households and businesses also impacts directly on all stages of the waste hierarchy. The Waste Act requires municipalities to ensure access to and sustainability of waste services, to provide waste services at affordable prices, and to keep separate financial statements for waste services provided, amongst other. Key considerations for the development of an overall strategy for waste services delivery include setting standards for *universal provision* of waste services, the negative impact of current *tariff policies* on waste minimization, the limited use of external mechanisms of service provision and its low job creation impact and the impact of *regionalisation* of waste management services.

In presenting a new vision for improved waste services delivery, the NWMS must elaborate a programme of measures for the storage, collection and transportation of waste that includes, but will not be limited to:

- Setting **norms and standards for the planning and provision of waste management services**. The Waste Act obliges DEA to set norms and standards for waste management services, and DEA has already initiated the process to prepare these. The Waste Act also provides for provincial norms and standards to be set in relation to waste management services, although differing provincial standards will raise issues in terms of the administrative capacity to monitor and enforce them.
- Municipalities may further set **waste services standards** for the separation, compacting and storage of solid waste, the management and directing of solid waste, and in respect of the control of litter. The Waste Act requires that waste service standards are aligned with provincial and national norms and standards, and further allows for the regionalisation of waste management services.
- Provisions for the **storage of waste and hazardous waste**, including temporary storage, are contained in the Waste Act. Storage facilities receiving in excess of 30 tons of waste per day or with a through put capacity of 20 cubic metres of waste per day require a waste management license, and will be subject to a basic EIA assessment process as part of the license process.
- **Targets for waste services delivery** need to be set in municipal and provincial integrated waste management plans, with the objective of ensuring universal coverage of waste services within a realistic timeframe. While a general consensus on the objective of universal access to services exists, the understandings of ‘universal access’ and specifically the application of this term in urban vs rural contexts vary greatly. Within the NWMS, waste services delivery will gain its impetus from a refined definition of ‘service’/ ‘universal access’/ ‘universal provision’ of waste services, particularly as this has direct implications for the sequenced introduction of different targets and the development of guidelines for this purpose. In setting waste service delivery targets, government will take cognisance of the right of access to basic services and will ensure appropriate differentiation of targets.
- **Waste service tariffs** need to be reviewed, and guidelines issued in this regard. Current tariff policies create no incentive for waste minimization, and under-pricing of waste services over the years has led to an average 15% operating deficit in municipalities. Lessons should be learnt from the use of the current property-based and service-based

tariff structures in the assessment of volumetric charging as a viable tariff charging policy which has the potential to stimulate waste minimisation.

- **Full cost accounting**, which includes taking account of the full capital replacement, operating and environmental costs of delivering services is considered to be the best mechanism to ensure proper pricing of waste services. The fundamental step that is required is to understand the true costs of the waste service. The NWMS will provide guidance to municipalities regarding the need for full cost accounting, and will steer away from artificially influencing pricing to support recycling objectives only.
- **Labour intensive and community based mechanisms for waste service delivery** should be promoted. Despite the potential for external mechanisms for waste services delivery to contribute to job creation; only 13% of authorised municipalities have outsourced or commercialised service provision activities in 2007. The use of community-based service delivery mechanisms has also been limited. Community based waste service models should to be piloted in both the private and government waste services provision in municipalities to maximize job creation and to explore various collection options. In evaluating models for waste services delivery, a key criterion should be job creation potential. Labour intensive approaches in waste service delivery are currently being piloted by national government and the NWMS will examine how best employment creation pilot projects such as these can be brought to scale. Models for waste services delivery will be underpinned by industrial policy objectives of SMME development, employment creation and added value for beneficiaries.
- Provisions for the **registration of transporters of waste with the relevant municipality** need to be elaborated, with appropriate thresholds set for transporters, so that the regulatory burden on government and industry is minimised.
- The **regionalisation of waste services** needs to be carefully evaluated. While regionalisation holds the prospect of reducing unit overhead costs (e.g. through shared disposal facilities, and reduced management costs), this is however offset by the significant rise in transport costs associated with regional disposal. The potential for reduced local accountability for service delivery due to the greater scale at which decisions are taken is also a concern. Given the cost implications of increased transport distances associated with regional disposal, the NWMS will need to give careful consideration to the costs and benefits of regionalisation.

Each of the measures will be further elaborated upon in Section 4.

3.5 Treatment, Processing and Disposal

The key logic underlying the waste hierarchy and waste minimisation is that smaller quantities of waste will be involved in the treatment, processing and disposal phases. Naturally, this will be achieved progressively over time. In the interim, the three key considerations in relation to the treatment, processing and disposal of waste involves the:

- Challenges associated with the effective management and regulation of landfills
- Challenges associated with the appropriate handling of hazardous waste
- Opening up new disposal technologies to facilitate waste to energy conversion.

Landfills are currently thought to be the primary disposal mechanism for waste for the foreseeable future. The vast majority of general waste disposal from all waste streams takes place in over 540 landfills. These landfills are owned and operated by local authorities and

only 350 are properly permitted. Landfills are in the main not operated in accordance with their permit conditions and generally do not meet the standards of the DWAF Minimum requirements for the management of landfill sites.

A programme of measures is required to address the issues relating to treatment, processing and disposal of waste. This should include, but not be limited to, the following:

- Establishing **norms and standards** for the storage, treatment and disposal of waste, including the planning and operation of waste treatment and waste disposal facilities. Such norms and standards are obligatory in terms of the Waste Act, and are vital to lay a common platform for the operation of both public and private disposal facilities.
- Regulations to determine **how waste is classified** as well as measures to be taken to **treat, process or dispose waste** are currently being developed by DEA in a consultative process that will take into account complementary legislation, such as the Air Quality Act, Water Act, and Health Act.
- The lack of reliable data on the quantities and types of hazardous waste that are generated pose a challenge for effective treatment, processing and disposal of hazardous waste. The **implementation of SAWIS** will go a long way to address the challenge of data.
- The large number of **unlicensed and non-compliant landfills** across the country needs to be regularised. Key challenges associated with landfills are ensuring that all landfills in use are licensed and ensuring that landfills are being operated in accordance with sound waste management principles. A programme of supportive measures, including access to MIG funding, should be combined with penalties and enforcement actions against operators of illegal sites.
- In addition, the NWMS will promote measures to **reduce the disposal burden on landfills** such as encouraging clean production, appropriate product design, reuse and recycling through Industry Waste Management Plans, and thermal treatment of waste in terms of the National Policy on Thermal Treatment of General and Hazardous Waste.
- A **national audit of hazardous waste treatment and disposal facilities** is required to indentify and prioritise regional shortfalls in capacity. The underlying causes resulting in the shortage of hazardous waste disposal facilities needs to be explored to inform the formulation of measures in this regard.
- **Industry Waste Management Plans** have an important role to play in facilitating sound waste management practices in relation to waste minimisation and disposal, including hazardous waste. This should address hazardous waste generated during production and manufacture and should be extended to proper disposal of products containing hazardous waste components, including EPR measures such as take-back schemes and economic instruments.
- The Waste Act makes provision for the use of special measures to regulate particular wastes as a **priority waste,** which can be invoked in instances where industry fails to develop or adequately implement appropriate plans.
- Proven "**Energy from Waste**" technologies exist for both methane captured from landfills and waste incineration, including cement kiln co-processing. However the capital costs, particularly of clean incineration technologies, as well as the transaction costs and capacity requirements for CDM are constraints that need to be further considered and addressed in the NWMS. The NWMS should set out a conducive regulatory environment for waste to energy initiatives that encompasses regulation of air emissions standards in terms of the South African Air Quality Governance framework and the application of feed-in tariffs by NERSA. The White Paper on Renewable Energy is

currently being reviewed by the Department of Energy and it is envisaged that medium and long term targets for waste to energy production will be set in the revised White Paper.

The measures set out above will be further elaborated upon in Section 4.

3.6 Remediation

Remediation of the effects of waste and pollution is the last resort in implementing the waste hierarchy. There is a large number of contaminated sites spread across the country, making this is an extremely important but highly under-regulated area.

The Waste Act provides for the declaration of contaminated land and its remediation. If land is found to be contaminated, the Minister can order urgent remediation measures, stipulate a time-frame within which remediation must be accomplished, or only require that monitoring and risk management be undertaken. Land may still be transferred after being declared an investigation site, but the disclosure of its status and the notification of the Registrar of Deeds is required. The provisions for contaminated land in the Waste Act are retrospective and this is likely to be tested in court.

Several prerequisites need to be met in order to give practical effect to the Act's provisions, including:

- The **register of contaminated lands** needs to be established and linked to the deeds register before investigation of suspected contaminated lands can take place in terms of the Waste Act. In the interim, existing provisions in NEMA will apply. Standards for due diligence with respect to land transfers need to take these provisions into account.
- **Definitions, technical requirements and standards** for both the identification and remediation of contaminated lands need to be developed – remediation standards are schedule to be finalized by April 2010. In the absence of local standards, international standards should be used as a reference point.
- Potential issues of **jurisdictional conflict** will need to be resolved (both NEMA and the National Water Act contain provisions to address contaminated land).
- An evaluation of the available **airspace for the disposal of contaminated land** needs to be conducted, to inform the application of remediation measures.
- The NWMS must address the need to develop the **specialist capacities in government** required to manage complex decisions and monitor all the steps in the remediation process.

A risk-based approach to implementation of the provisions that is sufficiently flexible to accommodate a wide range of scenarios is required. Remediation requirements must be guided by the intended land use after remediation and the potential impact on health of the surrounding population. It is recommended that exemptions from liability for remediation be considered for:

- government bodies involuntarily acquiring ownership
- persons who "innocently" acquired the land
- sites contaminated only by migration from another site
- consultants assisting developers in remediation of sites, provided there is no negligence
- contractors and transporters who cause no additional contamination
- secured creditors who act only to protect their financial interest

Where liability cannot be apportioned, financial, legislative and institutional arrangements must be made to establish a land remediation fund to cover the costs of state initiated remediation must be created. Where liability is identified, the consequences for the polluter of failure to remediate need to be defined.

In relation to remediation of derelict and ownerless mines, DME has contracted the Council for Geosciences to develop a national strategy for their management. The national strategy will look at the development and maintenance of a national data base of these mines, and will regularly update this database. The second aim of the strategy will be to rank the mines in order of their potential impact on the health and safety of the surrounding communities, as well as the environmental implications.

4 Instruments for implementing strategy

The Waste Act provides a range of mandatory and discretionary regulatory instruments that can be used to achieve the objectives of the Act. There are in addition a suite of economic and fiscal measures that can play a complementary role to the regulatory instruments. Lastly there are the voluntary initiatives that can be taken by industry and citizens, which constitute the mainstay of the strategy. Drawing on the above approach to implementing the waste hierarchy, this section describes the main instruments that will be used as elements of the overall strategy. These will form the building blocks for implementing the waste hierarchy described above.

4.1 Norms and standards

National norms and standards provide the foundation of the regulatory system. The Waste Act allows for an integrated system of norms and standards across the three spheres of government. Certain norms and standards at a national level are mandatory, while others are discretionary. In addition provinces may set norms and standards that are not in conflict with national norms and standards. Municipalities may also set local waste service standards. The system of norms and standards will be developed in stages, with the immediate focus being on the development of mandatory standards, which include:

- the classification of waste;
- planning and delivery of waste management services; and
- the storage, treatment and disposal of waste (including the planning and operation of waste treatment and waste disposal facilities).

The department is developing a revised hazardous waste classification system, including prescriptions in relation to the storage, treatment and disposal of waste.

Two sets of standards for the delivery of waste services are being developed and are due to be finalised in March 2010. The first set of standards provides a basis for the delivery of free basic waste services, and the level of service that will be provided. The second set of standards revolve around the collection of waste, and includes recommendations regarding the frequency of collection, separation of waste at source, and measures to promote recycling.

In terms of the discretionary national norms and standards, the development of technical standards for the remediation of contaminated land and soil quality has been identified as a priority and these will be available in September 2010.

Other discretionary norms and standards will be identified using the following criteria:

- the contribution to achievement of the waste hierarchy;
- the extent of the environmental impact and health risks;
- the impact on availability of landfill space;
- the relationship to other priority sectors (such as waste-to-energy and its contribution as a climate change mitigation strategy);
- the existence of proactive, well regulated industries which have prepared Industry Waste Management Plans and which qualify for the use of norms and standards as an alternative to licensing in terms of section 19 of the Act ;
- elements of the waste transportation sector that have not been properly regulated.

These criteria will be developed further and set out more fully in the NWMS.

To prevent a proliferation of norms and standards, discretionary provisions for provincial and local government norms and standards should only be invoked where national implementation is unable to effectively address provincial or local waste management issues due to regional variation. Instances where possible regional variation might be required should be identified and discussed in the appropriate inter-governmental forums.

Where norms and standards involve a technical specification, as opposed to an administrative procedure, it is recommended that they be implemented in terms of the Standards, Quality Assurance, Accreditation and Metrology infrastructure, or more simply the South African Technical Infrastructure. The South African Technical Infrastructure is housed under the Department of Trade and Industry (DTI), and provides industry-wide systems for determining standards for products and services, and ensuring their measurement and certification. Apart from mainstreaming the Waste Act provisions within the mainstream standard setting mechanism, this will allow for some of the fiscal and economic measures set out in the NWMS to be linked to existing national codes and standards.

To ensure that the South African Technical Infrastructure is able to support the implementation of the required norms and standards, the DTI will be required to identify waste management as a lead sector requiring priority attention. Institutional arrangements will require the establishment of a bilateral committee with DEA to co-ordinate the development and implementation of standards for waste management.

The utilisation of the South African Technical Infrastructure for developing norms and standards in terms of the Waste Act needs to be informed by a critical assessment of the implementation of air quality standards developed though SATI in terms of the Air Quality Act. In addition, the availability and cost of requiring SANAS accredited professionals to evaluate compliance with norms and standards needs to be considered, as well as recognition of credible international standards to which companies already subscribe.

The national strategy provides for the use of norms and standards as an alternative to licensing in terms of section 19 of the Act. DEA will consult with industry on an approach to identifying waste activities that would be better managed in this way.

4.2 Categorisation and classification

In order to integrate and align waste information, it is essential that a consistent and coherent system for classifying and categorising waste is developed. The current hazardous waste classification system, based on the DWAF Minimum Requirements for the Handling, Treatment, and Disposal of Waste, is in the process of being revised by the Directorate: Waste Stream Management within DEA. The outcomes of this process are vital to the implementation of the strategy.

The document, "Draft Framework for Discussion: Revised Waste Classification and Management System" distinguishes between:

- *Waste Classification*: assigning hazardous waste to a hazard class and category based on properties, characteristics, and components;
- *Waste Characterisation*: description of the non-hazardous physical and chemical properties of waste;
- *Waste Categorisation*: Defining groups of waste for the purposes of monitoring and reporting.

The Waste Classification and Management System will include guidelines for implementing the hierarchy of waste management measures with respect to each class and category of waste.

An initial draft waste categorisation system, based on the definitions in the Waste Act, has been proposed and was discussed at the research conference. The proposal categorises waste in terms of:

- General and Hazardous waste
- Inert and Non-Inert waste
- The origin of particular waste streams i.e. domestic, health care, commercial, industrial, construction and demolition, power stations, mining, and eWaste.

While the categorisation was broadly supported, there are practical difficulties in distinguishing between waste streams, particularly **commercial and domestic general waste**. In terms of mining waste; it is not clear whether or not **slag** is defined as a residue stockpile (which is excluded from the Waste Act).

Issues of jurisdiction between DWA and DEA in relation to the categorisation and characterisation of **sewage sludge** and guidelines for its reuse and disposal need to be addressed to ensure a harmonised regulatory framework. Properly treated, sewage sludge with a purely domestic origin can be considered a general waste. However, when it is mixed with industrial effluent it becomes unsuitable for certain purposes, including use as fertiliser. . .

4.3 Waste Information System

The lack of reliable data on the waste sector highlights the importance of the South African Waste Information System (SAWIS) as a key instrument for implementing the Waste Act and NWMS. SAWIS is intended to provide a mechanism for obtaining accurate waste balance information through on line submission of data by waste facilities and companies, as well as vertical integration of information systems between national and provincial Waste

Information Systems (WISs), and horizontal integration with other waste regulation and information systems.

In the interim, data supplied by Industry associations will be used to inform waste management planning.

The SAWIS is currently in the first phase of rollout, and is grappling with the challenges of integration with provincial WISs, such as the Western Cape WIS. The goal is for data to update automatically and seamlessly from provincial WISs to the SAWIS. On a practical level, the NWMS will develop a comprehensive set of criteria required for national planning for inclusion in the provincial WISs.

Horizontal integration of SAWIS with other waste regulation and information systems is required for licensing procedures (which are captured on the National Environmental Authorisation System (NEAS)). An integrated procedure for licensing and registration on NEAS is desirable, but this does not exempt licensees from registration with SAWIS. Facilities that fail to meet licensing requirements, or are granted exemption from licensing requirements, will still be required to register with SAWIS.

As a key element of such integration, a standard categorisation system is required for waste information submitted to SAWIS, NEAS and other systems. The categorisation system currently used by SAWIS is rudimentary, and an interim measure. It is envisaged that the categorisation system for SAWIS will be informed by the national classification system, which is scheduled to be finalised by the end of 2010.

The development and maintenance of the required categorisation system is seen as an integral part of the NWMS. As categorisation systems change, data needs to be updated on the SAWIS database in order to clear the old categorisation system

The initial focus of SAWIS is on end-of-pipe waste data i.e. data from facilities associated with waste disposal, recycling, recovery, and import and export of waste. In relation to thresholds for requiring recycling activity to be recorded, it is recommended that the thresholds gazetted for listed activities be used. Data on waste generators is only anticipated to be included in SAWIS in phase 4. To fully implement all the requirements of the Waste Act, SAWIS is envisaged to ultimately perform waste tracking and compliance reporting functionalities.

It is recommended that the National Waste Management Officer play the role of the Waste Information Authority as required by the Waste Act. In terms of the integrity of information on the SAWIS, it is proposed that SANAS accredited bodies certify WIS submissions by industry. Access by the public and industry to information stored on SAWIS is considered vital and is the *quid pro quo* for industry submitting information onto the database. It is also a statutory requirement in terms of the Waste Act. The NWMS will therefore need to spell out conditions and procedures for access to information.

4.4 Industry Waste Management Plans

Industry waste management plans have been identified as the central instrument of a co-regulatory waste management system. The Waste Act contains provisions for both voluntary and mandatory Industry Waste Management Plans, but the more interventionist regulatory provisions are envisaged as a second line of interventions, which may be avoided by the completion of voluntary Industry Waste Management Plans, developed by proactive industries in agreement with DEA. A tiered approach to the use of these regulatory provisions is proposed, as follows:

- Voluntary submission of an Industry Waste Management Plan is preferable for both industry and the DEA, and aligns with the concept of general duty of care.
- Where industries have not developed plans, the Minister may require certain industries to produce Industry Waste Management Plans. Before doing so, the Minister must consider various matters, including the environmental impact of the waste streams, and the ability of the envisaged plan to address such impact.
- Under certain circumstances the Minister may appoint certain persons to develop Industry Waste Management Plans on behalf of industry.
- As a last resort, the Minister can appoint an organ of state to develop Industry Waste Management Plans on behalf of industry.

DEA is in the process of consulting on guidelines to assist industry in the development of Industry Waste Management Plans, and to assist DEA in the review and approval of Industry Waste Management Plans. These guidelines have been circulated for comment and are in the process of refinement. The finalisation of these guidelines and the promotion of voluntary submission of industry plans are important steps in building a consensual approach to the implementation of the Act. However, there have been widely divergent views regarding the content and readiness of these guidelines, with industry requesting further consultation before the guidelines are published for comment.

DEA has identified four priority industries which are to produce the first round of Industry Waste Management Plans on a voluntary basis:

- Tyres;
- Paper and packaging;
- Light fittings with mercury such as CFLs; and
- Pesticides (agriculture and veterinary).

The process for developing the plans for these priority sectors is viewed as a pilot in that it will provide an opportunity to inform and guide the process for developing future Industry Waste Management Plans. It is anticipated that the initial listing will encourage other industries to pre-empt listing by voluntarily developing Industry Waste Management Plans. The NWMS will provide guidance on the second round of industries suitable for Industry Waste Management Plans, as well as set out the implications of both voluntary and mandatory plans.

The process suggested for developing Industry Waste Management Plans is therefore:

- Develop and finalise the guidelines for Industry Waste Management Plans;
- Industry waste management plans produced by the four listed industries will be submitted in consultation with DEA; and

- Identification of and discussions with target industries regarding the preparation and submission of Industry Waste Management Plans.

Where voluntary measures prove ineffective, the Minister or MEC may require waste management plans from industries or, as a last resort, appoint persons or organs of state to prepare these. The Waste Act establishes criteria that the Minister must consider before requiring industries to prepare plans. The NWMS needs to develop these criteria further.

In order to support the proposals and initiatives that emerge from industry plans, it is envisaged that economic instruments and special regulatory measures will be developed and utilised within a consensual regulatory approach. The use of special regulatory measures outside of a consensual approach will typically be invoked only in instances of non-cooperation or market failure where an accepted Industry Waste Management Plan is in place.

There are overlaps between the regulatory provisions for Industry Waste Management Plans, extended producer responsibility and priority wastes. The NWMS needs to clarify how these overlapping relationships and interfaces will be addressed. The NWMS also needs to examine and make recommendations on how compliance with an Industry Waste Management Plan can be interpreted as compliance with requirements for other environmental management plans (or vice versa).

4.5 Listing and licensing of waste management activities

The listing and licensing of waste management activities forms an essential part of the baseline regulatory system for waste management, in conjunction with the system of norms and standards. The listing of an activity establishes either a particular licensing regime, or a set of standards that need to be adhered to.

Listed waste management activities are provided in Schedule 1 of the Act, which may be amended by government gazette. A notice of listed activities was issued on 3rd July 2009, which replaces Schedule 1, and has added new activities, particularly in Category A. Category A lists activities for which a *basic assessment* is required as part of the waste management license application (as stipulated in the environmental impact assessment regulation made under section 24(5) of NEMA). Category B lists activities for which a *full environmental impact assessment* is required as part of the waste management license application. Significantly, the listing of these activities has effectively integrated the license application process with the EIA provisions, by delisting the activities from the EIA regulations published in terms of NEMA.

It is estimated that there are over 5000 facilities in South Africa that would qualify under the Category A and Category B provisions. While this potentially imposes a large administrative burden on both industry and government, it has been at least temporarily dealt with through a transitional arrangement which does not require new licence applications by current Section 20 permit holders until such time as they are notified to do so by DEA.

The Waste Act also includes a provision for certain categories of listed activities that fall below the thresholds required for licensing to adhere to certain additional standards. DEA

has not elected to utilise this provision in the recently published list. It is proposed that the NWMS set out criteria for identifying activities which fall into this second category which is exempted from licensing requirements. Compliance standards for activities that fall below the thresholds for licensing will need to be developed, as well as mechanisms for determining whether the activities are complying with the set standards.

Industries that proactively adopt waste management plans and effectively self regulate their sectors may potentially be primary candidates for exemptions from licensing requirements. This will be unpacked in the NWMS.

The integration of licensing applications with monitoring and reporting systems is a key consideration. Currently waste activity license applicants and license holders have to be listed on three databases:

- the NEAS (due to the requirements for the basic and full EIA assessments in respect to licensing applications);
- the SAWIS; and
- the National Compliance Monitoring System (in relation to compliance monitoring).

Information is replicated across these systems and it creates an unnecessary burden for both applicants and the department; especially because there is a tendency to work in hard copy. There is confusion between the process of registering with SAWIS and the license application process, with some applicants mistaking the SAWIS registration certificate for a license. The NWMS will reinforce the principle and approach of efficient administration of the licensing process as a basis for ensuring effective regulation of listed waste management activities.

4.6 Special Measures

The Waste Act provides for specific regulatory measures to be taken with respect to wastes that are declared to be “priority wastes”. Considerations that need to be taken into account when identifying a priority waste include the nature and extent of risks to health and the environment, relevant international obligations, and the economic impact of the measures.

The initial priority in terms of priority wastes will be to consider hazardous wastes which are subject to international obligations, including wastes containing mercury and Persistent Organic Pollutants (POPs) such as Polychlorinated Biphenyls (PCBs).

Potential consequences of a waste being declared a priority waste include the requirement for compilation of Industry Waste Management Plans for the waste, and regulatory controls on the minimization, handling, treatment, and disposal of the waste. DEA will develop a transparent process for declaring priority wastes, and, in the first instance, industry will be encouraged to develop voluntarily measures with respect to priority wastes.

In terms of S.14(1)(b) of the Waste Act, priority wastes can be declared where:
“… the imposition of specific waste management measures in respect of the waste may improve reduction, re-use, recycling and recovery rates or reduce health and environmental impacts.”

The criteria for priority waste declarations need not only be formulated in terms of the threat to the environment, but also in terms of the opportunities for the application of waste management measures other than disposal. In this sense, priority waste declarations may be used to positively reinforce reduction, re-use, recycling and recovery measures in Industry Waste Management Plans.

The Waste Act provides for the registration of private sector transporters of waste with Waste Management Officers at either a national, provincial, or local level. Some municipalities already have registration and licensing systems. Appropriate threshold requirements, particularly with respect to the transport of recyclables will need to be developed.

Section 17 of the Waste Act stipulates that reduction, re-use, recovery and recycling of waste should consume less natural resources than the standard disposal of such waste. It is not clear how many existing operations will actually comply with this provision, and the consequences of implementing this part of the Waste Act need to be carefully assessed. A regulatory impact assessment and options analysis is proposed to address some of the knowledge gaps and to identify feasible approaches to implement these provisions.

Additional measures contemplated in section 17 include mandatory recycling of particular products or components, or the requirement for products to contain a specified percentage of recyclates. The NWMS should set out criteria for the application of these provisions.

Section 14 requires the Minister for Water and Environmental Affairs to consult with the Minister for Trade and Industry before declaring a priority waste in order to evaluate the economic impact of the measure. The economic impact of special measures in terms of a priority waste declaration will not necessarily be negative, particularly where these measures involve requirements for recycling, re-use and recovery. The establishment of an interdepartmental committee comprising DEA, DTI and the National Treasury has been proposed to consider priority waste legislation and regulations and to apply criteria for the utilisation of special measures.

4.7 Producer responsibility

The Waste Act establishes Extended Producer Responsibility (EPR) as a regulatory mechanism for achieving waste reduction through minimisation, reuse and recycling of waste. Currently, most producer responsibility schemes in South Africa that concern waste are voluntary, industry-led and based on post consumer, industrial and commercial waste streams. Government initiatives include the mandatory point of sale levy on plastic bags.

Before implementing provisions for EPR, it is important that existing initiatives are reviewed and mechanisms put in place to support and further develop them where appropriate. As a general rule, regulation should be used to strengthen and support voluntary EPR initiatives by industry, and only as a last resort to intervene and address intractable problems.

The agreed approach to the achievement of waste reduction and increased recycling through EPR includes the following possible steps and mechanisms:

- In consultation with DEA, industry will set realistic targets based on their knowledge of their sector in Industry Waste Management Plans.

- Industry will work towards achieving these targets through a variety of mechanisms, including education and awareness programmes, recycling, and product and materials levies.
- Industry will report on these targets annually to DEA, and provide reasons when targets are not met. Should an industry repeatedly fail to meet agreed targets without justifiable cause, DEA will implement relevant regulatory measures, penalties and / or disincentives.
- Targets will be reviewed at regular intervals, as agreed by industry and DEA.

It is recommended that DEA create formal structures and a communications protocol with the DTI, in order to obtain advice on the impact and feasibility of EPR measures. The Minister of DEA will be required to consult the Minister of DTI and Minister of Finance on any requirements for financial arrangements.

It is also proposed that pilot EPR initiatives should be implemented to test the feasibility of EPR measures, and it is suggested that non-complex industries such as the compact fluorescent light bulb industry, where a levy has already been gazetted, be considered for pilot applications. Industry specific approaches are recommended for EPR initiatives rather than blanket methodologies, and risk analysis should form part of this exercise.

There are some areas of EPR which require clarity or further discussion. These are:

- The role of both voluntary and mandatory Industry Waste Management Plans in achieving EPR.
- The relationship between provisions for declaration of priority wastes and EPR. For example, it is important to determine at what point waste from an industry failing to meet EPR agreements should be considered for listing as a priority waste, based on the impact on the environment.
- Funding of EPR. While government has a role to play in EPR, it is not the state's obligation to fund it. Where industry raises the funds for EPR, industry representatives have argued for control over how and where funds are used. The failure to ring-fence and re-invest funds derived from the plastic bag levy is cited as a concern by industry.

The economic consequences and mechanisms to protect poor communities from the financial and regulatory impacts of EPR need to be considered. Whilst some buy-back centres were established for plastic bags in an attempt to reduce the impact of the plastic bag levy on the poor, this initiative is felt to have been relatively unsuccessful, and alternative mechanisms will need to be explored.

4.8 Consumer protection

Consumer protection is dealt with principally by the Consumer Protection Act, 2008, which exists to promote and advance the social and economic welfare of consumers. In addition to implementing the concept of producer responsibility, the NWMS must give effect to the principle of duty of care, which amongst other encompasses consumer protection. In doing this the relevant requirements of the Consumer Protection Act and the Competition Act will be considered.

The Consumer Protection Act provides support for the implementation of EPR through obliging industries in applicable instances and subject to an Industry Waste Management Plan to provide the facilities and information required to give effect to EPR.

In terms of waste management, section 59 (2) of the Consumer Protection Act requires suppliers, distributors, importers or producers to take responsibility for the disposal of certain products and items subject to an Industry Waste Management Plan. This means that when required to, the industry must provide take-back facilities or collection facilities for the receipt of the product at the end of its life, without additional charge to the consumer, or provide deposit refunds for containers.

A further provision of the Consumer Protection Act is the requirement for product labelling for:

- categories of goods that are required to have a trade description applied to them, or
- goods which have been reconditioned, rebuilt or remade and bear the original producer's trade mark.

This requirement should also be adhered to when reuse or recycling practices fall within these conditions.

It is important to clarify that these measures will apply equally to Industry Waste Management Plans that have been prepared and submitted mandatorily and voluntarily, in order to avoid disincentives for industries that produce voluntary Industry Waste Management Plans.

A further issue is the requirement that returned goods and packaging must be accepted without charge to the consumer (section 59 a), which may have implications for the use of taxes and levies, especially the legality of adding a tax or levy to the product price. This may also have implications for deposit return schemes for containers. This will be further explored and clarified in the NWMS.

A broader concern is the degree to which the recycling sector is dominated by one or two large organisations, either funded by industry or state-owned. While these initiatives have been undertaken in order to take advantage of economies of scale, they may serve as a barrier to entry in the sector especially for SMMEs, and risk introducing pricing inefficiencies that run counter to the interests of consumers. Ensuring fair opportunities for new market entrants needs to be investigated further in the NWMS.

4.9 Economic instruments

Economic instruments provide a potentially important influence on the effective and efficient regulation of the solid waste sector. Economic instruments achieve behaviour changes indirectly by creating a set of incentives and/or disincentives through pricing. Economic instruments can offer a more cost-effective and dynamic form of regulation than the traditional command and control approach. It has been argued that the main benefit of economic instruments is that they may allow for the meeting of a target at a lower overall cost than traditional command mechanisms.

In addition to the mainstream taxation system, the Waste Act provides certain additional legislative measures for the use of such economic instruments.

A key economic principle in terms of waste management is that 'the polluter pays'. According to this principle all generators of waste (including businesses and households) are responsible for covering the costs of waste generated. Government can make use of a number of options to ensure that both private and social costs are covered. However the lack of full cost accounting of the costs of service delivery and tariff policies prevent full costs from being passed on to households and commercial enterprises, which undermines the polluter pays principle.

It should be noted that application of these economic instruments are not seen as an alternative to regulatory measures, but rather as further mechanisms to support "command and control" regulation. A specific area of concern for the application of economic instruments is a precondition for a well functioning market and governance institutions with sufficient capacity to ensure implementation.

Pricing is a significant concern within the waste sector, where there is a tendency to under price for the waste service in terms of collection and disposal. There is a clear need for price increases in order to redress this, however the economic downtown has spurred a drive to keep prices low, and it is important to acknowledge the economic context in which the NWMS must operate. The risks of over-inflation may include an increase in illegal dumping for example. While a general adjustment in pricing is necessary, it should be appropriately phased in so as to avoid over-inflating costs. Opportunities for efficiency gains should be explored to off-set price increases where possible.

Full cost accounting for waste services is necessary in order to ensure that waste services are appropriately priced. This includes taking account of the full capital replacement, operating and environmental costs of delivering the waste service. It is important to drive efficiency improvements in service delivery. A fundamental step is therefore to understand the true costs of the waste service. Municipalities especially need assistance in this regard and the NWMS should aim to provide guidance to municipalities in addressing the need for full cost accounting.

Pricing policy will be universally applicable, but a graduated approach to implementation will take account of the differential contexts of municipalities.

The NWMS should steer away from artificially influencing pricing to support recycling and other objectives.

In examining economic instruments, it is important to avoid unintended consequences (for example an increase in illegal dumping as a result of increased disposal tariffs). It is therefore essential to have a suite of mechanisms in place, for example increasing enforcement capacity and establishing community based initiatives to curb illegal dumping which is at risk of increasing in response to fee increases.

Possible economic instruments include Deposit Refund Schemes, Minerals extraction taxes, Waste disposal taxes, Enforcement fines, Product Taxes and Local government incentives. The research has not supported any broad application of economic instruments at this stage, since it is important to get the fundamentals right first. Specific instruments may be warranted for consideration in relation to specific waste streams. However any economic instruments to be considered should be carefully evaluated against a set of criteria. In this

regard it is proposed that National Treasury's Environmental Fiscal Reform criteria should be used in evaluating use of economic instruments.

Within the context of the NWMS, economic instruments are seen as part of a multi-pronged strategy to achieve the objectives of waste reduction, re-use and recycling. It is envisaged that once enforcement capacity of current laws and regulations is improved, the use of economic instruments will be phased in gradually, starting with simpler mechanisms and moving towards more complex ones as the institutional capacity grows over time.

Particular caution should be taken to ensure that only the real costs of any economic instruments (for example a levy) should be internalized so as to ensure protection of the consumer. In addition, while industries may be best placed to implement certain economic instruments there should be oversight by government to ensure appropriate and fair practices.

4.10 Fiscal mechanisms for Waste Management

The efficacy and sustainability of delivery of solid waste services is constrained by severe fiscal challenges. Capital and operating expenditures are much lower than the required levels, and operating deficits continue to balloon. The structure of capital financing for waste services is not optimal, with reliance on grant financing, subsidy leakage to non-poor consumers, and user charge revenues that are too low. The waste services sector appears to be heading towards a fiscal crunch, with operating deficits ballooning to the point at which the sustainability of service delivery will be threatened.

In this context, the need to expand delivery solid waste services sector will require greater efficiency of fiscal mechanisms and a clear strategy to improve operating efficiencies, secure financial sustainability of waste services delivery, and boost municipal revenues.

Careful subsidy management to reduce subsidy leakage to non-poor households needs to be part of this strategy, and will involve:

- Developing guidelines for intra-sector cross-subsidies and/or external subsidies to assist municipalities in determine appropriate subsidy levels;
- Distinguishing between consumer types to guide equitable share allocations from external subsidies;
- Ring-fencing guidelines for budgeting and accounting practices to facilitate a greater degree of transparency in subsidy levels relative to the cost of service delivery, and assist regulators in exercising greater oversight in this area.

To secure financial sustainability and improve operational efficiency, an incremental approach to tariff restructuring is recommended that includes:

- In the short term, tariff levels and subsidy costs need to be reviewed in the context of the development of policies on the provision of free basic services. Clear guidelines and support to assist municipalities in evaluating their current tariff structures are required.
- In the medium term, devising and introducing tariff structures that encourage waste minimisation and implementing full cost accounting .

- In the long term, above-inflation increases in user charge rates will be required, both within national and local government, and with consumers.

In order to encourage waste minimisation, the impacts and implications of the introduction of *volumetric tariffs* in the City of Tshwane need to be evaluated.

To support the requirement for increased capital investment in the waste sector it is recommended that a solid waste project development fund be developed, with two windows:

- *Universal service:* this window would be used to assist municipalities to make greater use of MIG for financing solid waste infrastructure to support labour intensive projects that expand services to poor households. The efficacy of the window can be measured by the proportion of total MIG funding allocated to solid waste infrastructure. The rules of the MIG programme need to be amended to allow financing of all solid waste assets funded on the capital budgets of municipalities, including trucks.
- *Private financing:* this window would support municipalities to develop projects that would be financed through development contributions, carbon credits, private equity or borrowing.

The objective of the fund would be to ensure that capital expenditures in the sector increase, that a robust pipeline of municipal projects is created, and that an appropriate capital financing mix is developed. There is potential for this fund to be financed by the private sector (perhaps with seed funding from government), and for it to be managed through an autonomous public / private entity, subject to regular performance evaluation.

Municipal revenues can be boosted by:

- Levying development charges on property developers during intensification of land use.
- Generating revenue sales and carbon credits from energy generation from waste incineration and incentivising waste to energy schemes by municipalities.

The above mechanisms form part of an overarching fiscal framework for implementation of the NWMS and the waste hierarchy. It is important that DEA, in conjunction with National Treasury and COGTA, develops the necessary policy and regulatory tools to give effect to the fiscal framework for the NWMS.

5 Implementation Mechanisms for Waste Strategy

The implementation of the various mandatory and discretionary provisions of the Waste Act is the combined responsibility of all three spheres of government, each with its own distinct set of responsibilities. This section will consider the allocation of responsibilities within government as set out in the Waste Act, the main public sector implementation mechanisms, the provisions for integrated waste management planning, compliance and enforcement mechanisms, and mechanisms to give effect to international obligations. Cross-cutting issues such as the role of advocacy, education and awareness, and capacity-building will also be described. This section concludes with a discussion on the co-operative governance arrangements required in terms of the Waste Act.

5.1 Roles and Responsibilities

An important issue for the implementation of the Waste Act and the NWMS is role clarification and the separation of roles. This is important to ensure that there is no role confusion, and that each role is adequately fulfilled by each role player. In the process of compiling the NWMS, three distinct roles have been identified, namely policy-making[1] regulation, and service delivery roles. The different spheres of government are responsible for varying combinations of these roles. The research has raised concerns regarding the potential blurring of these roles, and has put forward proposals for the regulatory role, which includes compliance monitoring and enforcement, to retain as much independence as possible. This is particularly important in instances in which the same government department or agency is directly responsible for delivery of waste management services which need to be regulated as part of the overall waste management sector. The application of norms and standards, and the regulation of waste management activities, needs to be applied across both public and private sector providers equitably. Without clear role separation, it will not be possible to ensure unfettered and meaningful regulation of waste management activities, and the successful implementation of the Waste Act is likely to be heavily compromised.

In addition to those three distinct roles, there are issues relating to the vertical division of roles and responsibilities between spheres of government, and the horizontal division of roles and responsibilities between different government departments and agencies. These will be considered in further detail below.

5.1.1 Vertical division of responsibilities

Informed by Constitutional provisions on intergovernmental roles and powers, the Waste Act assigns clear responsibilities to each sphere of government in relation to waste management activities.

Local government is responsible for the provision of waste management services, which includes waste removal, waste storage and waste disposal services, as per Schedule 5b of the Constitution. Municipalities are obliged to designate a waste management officer from their administration to co-ordinate matters pertaining to waste management. They must also submit an integrated waste management (IWMP) plan to the MEC for approval. The IWMP needs to be integrated into municipal integrated development plans (IDP), and the municipal annual performance report must include information on the implementation of the IWMP. At their discretion, municipalities may set local waste service standards for waste separation, compacting of waste, management and disposal of solid waste, amongst others. Local standards must be aligned with any provincial and national norms and standards where these exist. Municipalities may also require transporters of waste to register on a listing of waste transporters.

Provincial government is obliged to promote and ensure the implementation of the NWMS and national norms and standards. Similarly to local government, it must designate a provincial waste management officer responsible for co-ordinating matters pertaining to

[1] Policy making functions encompass both the establishment of norms, standards and targets, the system of planning for service expansion and improvement, as well as coordination and policy activities.

waste management in the province. It must also prepare an IWMP and prepare an annual performance report on its implementation, both of which must be submitted to the Minister for approval. The provincial government is also deemed the primary licensing authority for waste activities, including all activities for which the Minister is not deemed the licensing authority. Provinces have a number of discretionary powers, some of which may only be exercised in consultation with the Minister. These powers include the setting of provincial norms and standards; declaring a priority waste; listing waste management activities deemed detrimental for the province's environment; registering waste transporters; requesting the preparation of an Industry Waste Management Plans; identification of contaminated land; and establishing a provincial waste information system.

National government and in particular the DEA is ultimately responsible for ensuring that the Waste Act is implemented and that the various provisions are harnessed in the most appropriate and effective ways. The Waste Act specifies various mandatory and discretionary provisions that DEA is required to address. In terms of mandatory provisions, the DEA is responsible for establishing the national waste management strategy and setting national norms and standards, which must be implemented by all spheres of government. As is with provincial and local government, the Minister must designate a waste management officer from the DEA administration to co-ordinate matters pertaining to waste management. DEA must prepare an integrated waste management plan, similar to its provincial and local counterparts, and submit an annual performance report to the Minister on its implementation. It must establish and maintain a national contaminated land register as well as a national waste information system. Finally, the Minister is the licensing authority in respect to hazardous waste, international obligations, activities performed by a provincial environmental authority or statutory body other than a municipality, or an activity that takes place in more than one authority or transverses international boundaries.

DEA has numerous discretionary responsibilities that it may invoke if required. These include national norms and standards for waste minimisation, re-use, recycling and waste recovery and tariffs for waste standards, amongst others. The declaration of priority waste is a discretionary element as is the identification of products for the application of extended producer responsibility. The DEA may also publish a list of waste management activities that it considers detrimental for the environment, and request the preparation of Industry Waste Management Plans. As with its provincial and local counterparts, it may require the registration of transporters of waste. Lastly, the DEA may identify land that may be contaminated for investigation.

The above summary provides an overview of the main responsibilities directly required and provided for in the Waste Act. It is evident that the allocated roles and responsibilities need to be seen as elements within an integrated system, with a cascading of roles according to the level at which they are most logically performed. The NWMS will set out a framework for aligning and integrating the responsibilities of the different spheres of government, and addressing potential overlapping areas.

The Waste Act also makes provision for institutional arrangements for the coordinated implementation of its provisions. In order to properly coordinate implementation, the NWMS needs to consider the practicalities of the different roles and how each of these will manifest at a local, provincial and national sphere of government. The NWMS will give consideration

to how the integrated system of WMOs can be best positioned to perform this integrated coordination function.

5.1.2 Horizontal assignment of responsibilities

In considering the horizontal assignment of roles, it is important to understand how the provisions of the Waste Act interface with and build on the regulatory provisions of other pieces of related legislation. This policy harmonisation exercise also needs to draw on the Inter-governmental Relations Framework.

Department of Trade and Industry: The DTI has a crucial role to play in relation to the overall system of industry regulation, and the utilisation of various mechanisms and capacities within DTI for implementing the Waste Act. The implementation of the system of norms and standards will require the support of the Technical Infrastructure under DTI, as described in Section 3.1. Utilisation of this system will enable the determination of standards for products and services, and ensure their measurement and certification within a broader South African standards context. In order to achieve this, the waste management sector will need to be identified as a lead sector by the DTI.

Other issues that require the involvement of the DTI include the declaration of priority wastes and EPR schemes; the implications of the Consumer Protection Act; recycling schemes and the implications for competition policy.

National Treasury: National Treasury has a crucial role to play in managing the overall system of taxation, and in implementing taxation measures that can support implementation of the NWMS. National Treasury must also be consulted where the economic implications of measures with respect to a priority waste are potentially significant. National Treasury plays an important role in determining budget allocations for waste management functions at national level, and in addressing the fiscal mechanisms required for implementation of waste services and accessing of grants.

South African Revenue Services: In terms of the prohibition and restrictions on the import, export and selling of priority wastes, it is important that the alignment of priority wastes with the product codes maintained by SARS in the Schedules to the Customs and Excise Acts takes place.

Department of Co-operative Governance and Traditional Affairs: National and provincial government must provide support to municipalities with respect to their executive responsibilities, including delivery of services. This support needs to be co-ordinated with the Department of Co-operative Governance and Traditional Affairs. The Department also has an important role to play in ensuring that the Municipal Infrastructure Grant can be accessed for the development and upgrading of municipal landfill sites, many of which are not compliant or licensed.

There are a number of government departments with important additional functions, including:

- The Department of International Relations must lead South Africa's engagement in multilateral forums that address sustainable development and waste management issues.

- The Department of Minerals plays a key role in regulating the mining sector, and addressing waste management issues where these fall outside the ambit of the Waste Act.t
- The Department of Health has an important role to play in addressing health care risk waste, and in advising DEA and provincial departments on the appropriate standards and measures to be applied to the sector.
- The Department of Water Affairs is crucially concerned with water quality issues, and the measures required to minimise and mitigate the effects of groundwater contamination.

The role of these and other departments in implementing the NWMS needs to be set out in more detail in the NWMS.

5.2 System of Waste Management Officers

The Waste Act has created a specialized system of officers charged with coordinating waste management matters at each level of government. The Waste Act provides for Waste Management Officers (WMOs) to be designated at national, provincial and municipal level. The Waste Act primarily envisages a coordination function for WMOs, although it leaves the precise determination of their functions to the NWMS and regulations to be issued by the Minister. The Waste Act states that WMOs must co-ordinate their activities with other waste management activities in the manner set out in the NWMS, or in terms of a notice published by the Minister in the Gazette.

The Department has developed a guideline for the appointment of WMOs, to further define the role, powers, profile and rank of the WMOs. At a national and provincial level, where actual delivery of services does not take place, the role of the WMOs is essentially regulatory and policy-making. The Waste Act does make provision for support to municipalities in respect of the execution of its delivery mandate. WMOs at provincial level are anticipated to play a proactive role in ensuring that municipalities have the capacity to deliver the services that they are required to deliver.

At local level, where municipalities bear responsibility for direct waste service delivery, it is important to create a distinction between service delivery on the one hand and policy-making and regulatory functions on the other. It is proposed that the local WMOs should not be involved in the waste service delivery function, and that their role should be to ensure that norms and standards are adhered to by the municipality. Thus the designated WMO should ideally not be based in the division responsible for waste services, and may be best placed in the Municipal Manager's office.

The rationale is to establish an 'independent' system of WMOs at each level of government charged with the responsibility of making sure that the standards are implemented. This regulatory role can be further clarified in terms of regulations issues in terms of the Waste Act. In particular, the regulations should specify the authority and powers of these officers, the requirement to firewall them from policy-making and service provision activities, and the provisions for communication and management arrangements that will enable these officers to establish an effective regulatory system at local government level across the country.

Other regulatory roles anticipated by the Waste Act include a provision assigning the National WMO and Provincial WMOs the right to request the appointment of waste

management control officers by holders of waste management licenses (Section 58 (1)) and to require the preparation of waste impact reports when the waste management licenses are being reviewed in terms of (Section 66(2)).

The co-ordination of the activities of the system of WMOs is further described in Section 4.8 on Co-operative Governance.

5.4 Compliance and enforcement

Compliance and enforcement matters are dealt with in Chapter 7 of the Waste Act, which describes the compliance powers of the Minister of Water Affairs and Forestry, waste impact reports, offenses and penalties.

The primary arrangements for compliance monitoring and enforcement of the Waste Act are not covered by the Waste Act, but by an amendment to the National Environmental Management Act, 107 of 1998 (NEMA), which came into effect on 1 May 2005. Chapter 7 of NEMA provides for Environmental Management Inspectors (EMIs) to be designated by the Minister and MECs. The Waste Act assigns specific functions to the EMIs, including the power to request waste impact reports and seek information from waste management license holders in respect of their licenses. Currently, the majority of the EMIs are located within SANParks but there are plans to boost the local contingency in line with the promulgation of the Waste Act and its compliance and enforcement requirements.

There has been some debate about the respective roles and responsibilities of WMOs and EMIs, and there is the potential for WMOs to play a more proactive role in seeking compliance with the provisions of the Waste Act as opposed to a more “reactive” compliance approach adopted by EMIs. This approach supports the principle that national and provincial government support municipalities in the execution of its functions. The same supportive role could be played within municipalities, with WMOs identifying and addressing capacity constraints. This role clarification needs to be further addressed in the NWMS.

Given the extensive responsibilities created by the Waste Act, it is recommended that a full assessment of the number and capacity of the EMIs required to enforce the Waste Act is undertaken, and a strategy developed to build this capacity in an incremental manner.

5.5 Mechanisms to give effect to international obligations

Section 6.(1)(b) of the Waste Act requires that the NWMS establish “mechanisms, systems and procedures for giving effect to the Republic's obligations in terms of relevant international agreements”. The most important international agreements that relate to the issue of waste management, and to which South Africa has acceded, are summarised in the table below.

Table 2: Summary of international agreements

Agreement	Description
Basel Convention, 1989	Controls and limits the movement of *hazardous wastes* across national borders on the basis of informed consent and provides stringent tracking requirements.
Montreal Protocol, 1989	Provides for the progressive phasing out of *gaseous emissions* found to deplete the ozone layer. The NEMA: Air Quality Act and the National Framework for Air Quality Management provide an additional regulatory framework with respect this protocol.
Rotterdam Convention, 1998	Controls the *cross border movement of hazardous chemicals* by defining a procedure for informed consent which includes standards for labelling and documentation. The DEA is to be the designated national authority in terms of the convention.
Stockholm Convention, 2004	Provides measures for limiting *Persistent Organic Pollutants (POPs)* - a category of harmful chemical compounds that accumulate in the food chain and damage the integrity of ecological systems.
Various Maritime Conventions	Although under the control of the Department of Transport rather than DEA, several Maritime conventions deal with *disposal of waste at sea*, with varying levels of international ratification.

South Africa is also a signatory to the Johannesburg Plan of Implementation that was adopted at the World Summit on Sustainable Development in 2002, and which contains a number of references to waste. The Strategic Approach to International Management of Chemicals (SAIMC) is the main vehicle through which the undertakings for hazardous waste are being implemented internationally. At the first review of the SAICM, extended producer responsibility emerged as a key focus.

The declaration of priority wastes in terms of Section 14 of the Waste Act provides an important mechanism for giving effect to our international obligations, particularly those involving hazardous wastes, wastes potentially causing ozone depletion, or wastes that include hazardous chemicals and POPs as a component. DEA and DTI have created an Interdepartmental Committee for the Sound Management of Chemicals, which co-ordinates the alignment of national legislation with international agreements, and the Waste Act is one of the key instruments at the disposal of the committee.

Systems for permitting and controlling the import and export of chemicals and hazardous waste are being integrated with the provisions of the International Trade Administration Act (Act 71 of 2003), the implementation of which falls under a dedicated directorate within DTI, the International Trade Agreement Commission (ITAC). These systems use international tariff codes identified in Multilateral Export Agreements (MEAs) and utilised by the Customs and Excise division of SARS, which implements the prohibitions or restrictions associated with a particular tariff code.

In terms of controlling the dumping of waste at sea, a key recommendation is the inclusion of the cost of port waste reception facilities in general harbour dues, thereby removing a disincentive for unloading waste in port.

5.6 Education, Advocacy and Awareness

There is a need for advocacy, education and awareness amongst all stakeholders including the public at large, the three spheres of government, and the private sector. Different role-players will fulfil different functions in respect to the respective target audience.

The effectiveness of many waste measures, particularly those aimed at waste reduction and recycling, depends to a significant extent on public and consumer awareness. Awareness of and responses to waste issues are very uneven across different South African communities, and a there is a clear need for high-profile state-led public awareness campaigns to support initiatives in relation to littering, as well as to promote a general awareness of waste issues. The content of such campaigns and their alignment with possible waste delivery measures such as separation at source needs careful consideration.

There is also a lack of awareness of the importance of waste management amongst elected representatives and government officials, particularly at local government level. This has negative consequences for planning, personnel and budget allocations. Amongst other measures, there is a need for training of councillors in waste management issues, and it is anticipated that SALGA will play an important role in implementing this.

The increased involvement of citizens in oversight of waste delivery services provides an important avenue for raising public awareness of waste management issues. Similarly, the "Cleanest town" competition has potentially an important role to play in advocacy and awareness. Consideration should be given to extending this programme and developing detailed criteria for awards, as has been done with the DWA's "Blue Drop" campaign for water resource management by local water authorities.

Schools have a particularly important role to play in advocacy and awareness around waste issues. Existing recycling initiatives in schools need to be supported and extended, although the fund-raising potential of these initiatives needs be realistically framed. DEA needs to assist the Department of Basic Education in ensuring that waste management is integrated into school curricula and management. There are existing initiatives in this respect that have been implemented in the Western and Southern Cape that provide useful models.

Industry associations and business bodies will have an important role to play in raising the awareness of their members with respect to the provisions of the Act that impact on them, and in promoting the use of discretionary instruments provided by the Act, such as recognition programmes.

Money spent on effective awareness and education programmes is likely to lead to savings in terms of more effective collection and recycling of waste in the long run, and it is therefore important that such programmes are suitably funded and resourced.

The NWMS will outline the key messages that need to be developed as well as how best and by whom these will be taken forward. A comprehensive communication plan is envisaged in this regard.

5.7 Capacity-building

It is important that the compliance and monitoring capacity that will be required by EMIs with respect to their regulatory functions assigned by the Waste Act be properly assessed. In addition, an assessment is needed of whether their current training equips them to fulfil the functions ascribed in the Waste Act. Capacity building initiatives for members South African Police Services (SAPS), who play a crucial role in enforcing environmental legislation, also need to be considered. To facilitate prosecution of environmental crimes, capacity building initiatives for the NPA also need to be developed.

In terms of the WMOs, guidance is required with respect to their training requirements and to what extent the existing training for EMIs addresses some of their skills requirements.

With respect to municipal support, both national and provincial government are obliged to support and strengthen the municipalities' ability to perform its functions in relation to waste management. A comprehensive programme of support needs to be developed and rolled out at local government level over the next five years. The NWMS will need to provide guidance regarding the main elements of such a programme.

At a national level, the NWMS should also address DEA's capacity requirements as it takes on the overall responsibility to ensure the incremental implementation of the provisions of the Act.

5.8 Co-operative Governance

5.8.1 Environmental Management Co-ordination

The existing intergovernmental systems for coordinating environmental management provide the basis for cooperative governance in relation to waste management. These structures consist of the following:

MINMEC: Environment is a standing intergovernmental body consisting of the Minister of Environmental Affairs, members of the provincial Executive Councils (MECs) responsible for environmental management functions and SALGA. MINMEC meets quarterly.

MINTEC: Environment is a standing intergovernmental body that provides technical input into the MINMEC. The MINTEC consists of the Director General of the DEA, the heads of the provincial departments responsible for environmental management functions, and SALGA. MINTEC also meets quarterly.

Committee for Environmental Co-ordination was established in terms of Section 7 of the NEMA. The object of the Committee is to promote the integration of environmental functions of the relevant organs of state, and in particular to promote the achievement of the purpose and objectives of environmental implementation plans and environmental management plans. This will be the appropriate forum to align the activities of DEA with other government departments, and integrate the IWMP into the department's strategic plans.

5.8.2 Compliance monitoring and enforcement

MINTECH Working Group 4 deals with compliance and enforcement issues, and it is working on clarifying the respective roles and responsibilities between national, provincial and local levels. It will be important for the Working Group to also establish the respective roles of the EMIs and the envisaged WMOs.

EMIs also coordinate their activities closely with the South African Police Services (SAPS), who play a crucial role in enforcing environmental legislation. EMIs work closely with police officials in the investigation of environmental crimes. In terms of NEMA, all police officers also have the powers of an EMI.

Coordination with the National Prosecuting Authority is extremely important for the prosecution of environmental crimes. EMIs are not empowered to prosecute cases in court, and the results of their investigations are handed over to prosecutors of the NPA to prosecute. The Department of Environmental Affairs and the NPA are collaborating to ensure the successful prosecution of environmental crimes.

5.8.3 Co-ordination of the WMOs

The DEA has already given consideration to the institutional arrangements for the co-ordination of the WMOs, and it has planned for a three tiered co-ordination body, in the form of:

- a **National Waste Forum** (responsible for the annual work plan giving effect to legislation and policy, capacity building, waste management strategies, waste information management, provincial reports and the annual waste indaba);
- **Provincial Waste Fora** (responsible for addressing challenges, gaps and achievements with respect to the Waste Act, as well as policy, capacity building, provision of waste services, waste minimization and recycling, pollution, waste information special projects, municipal reports) and
- **District Waste Fora** (same as provincial role).

It is evident that the mandates of these fora are very broad; especially the provincial and district waste fora, and further guidance will be required regarding the mandate of each forum. There may also be a need to consider the membership of the fora, as the provincial and district fora appear not to make provision for industries' involvement. The latter are only included at a national level as non-standing members. The issues for further consideration therefore include the mandates of the fora and consideration of the need for standing-membership for industry. The levels at which industry should be presented should also be considered.

5.8.4 DEA-DTI co-ordination

With respect to intergovernmental relations, it has been proposed that a co-ordinating committee be established between DEA and the DTI to address the application of the South African Technical Infrastructure; the declaration of priority wastes and EPR schemes; the implications of the Consumer Protection Act; recycling schemes and the implications for competition policy; and incentives for cleaner production, to mention a few. The NWMS will

situate the role of waste management in the context of industrial policy and how it can support the economic growth development objectives of the country in an environmentally sensitive way.

In relation to priority wastes, it is recommended that the interdepartmental consultation is accomplished through the creation of an inter-departmental committee involving DEA, DTI, and National Treasury. The committee would evaluate proposals for the promotion of reduction, re-use, recycling or recovery of priority wastes, as well as their economic impact, in order to guide their further implementation. This committee could also be utilised for the purposes of dealing with the EPR measures outlined above.

6 Conclusion

This paper has aimed to summarise the key issues and debates that have emerged from the preceding phases of preparation for the NWMS. In particular the research papers have explored five key areas of concern for the NWMS, and laid a very solid factual and analytical foundation for moving into the next phase of drafting the NWMS. At the same time stakeholders have engaged actively with the process of drafting the NWMS, and made their views known in relation to the framework for the NWMS, as well as the research paper findings. Based on stakeholder comments on this paper, this final version has been amended and updated. The collective commitment shown by all stakeholders to the process is greatly appreciated by DEA, and this paper reflects the results of stakeholder engagement in the process.

This updated and amended strategic issues paper will lay the foundation for the hard work of actually drafting the NWMS. It is anticipated that a first draft of the NWMS will be released for public comment and consultation early in 2010.