

# **A SOLID WASTE MANAGEMENT STRATEGY FOR THE MALTESE ISLANDS**

FIRST UPDATE

DECEMBER 2010



Parliamentary Secretariat for Tourism,  
the Environment and Culture

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Current waste management policies reflect those set out in Malta's first ever strategy document entitled "A Solid Waste Management Strategy for the Maltese Islands" published by Government in October 2001.

This first update to the 2001 Strategy must be seen in the context of the numerous developments that have occurred in this sector including:

- the setting up of WasteServ Malta Limited to provide facilities and services in relation to waste management
- the closure of the Maghtab and Qortin landfills;
- the establishment of engineered landfill facilities at Ta' Zwejra and Ghallis;
- the introduction of bring-in centres;
- the introduction of civic amenity sites;
- the design of the upgrading of the existing Sant' Antnin composting facility;
- the introduction of cooking oil collection systems for its conversion to biodiesel;
- the introduction of construction and demolition (C&D) landfills and the halting of the dumping of C&D waste to the engineered landfill;
- the closure of the non-compliant incinerators; and
- the evaluation of the potential for the introduction of waste to energy facilities as has been intended in the new thermal facility at Marsa and the upgraded plant at Sant' Antnin.

This update must not be interpreted as a singular updating effort. The updating of this Strategy has been a process that commenced in early 2005 when the Strategy Team entrusted with the first updating was appointed to put forward recommendations to Government.

The first updated document was drafted by the Strategy Team appointed by the then Ministry for Resources and Infrastructure, the lead Ministry for this Strategy, and which consisted of:

- o Perit Kevin Gatt , Management Efficiency Unit (Chair)
- o Dr Ing. Christopher Ciantar, Ministry for Resources and Rural Affairs
- o Mr Kevin Mercieca, Malta Environment and Planning Authority
- o Professor Alfred Vella, University of Malta.

The Ministry and the Strategy Team are indebted to all those organisations and persons who have contributed to this document. This update is not intended to represent a new direction, but one which acts as a continuation of the 2001 Strategy and whilst adhering to all provisions and targets established by European Union (EU) legislation, seeks to fine tune the scenarios put forward in 2001.

The Waste Management Strategy is intended to serve as a policy document, that is, a statement of the direction intended to be pursued by Government. Consequently, the initiatives proposed are kept at a high level and specific actions will be detailed and pursued during the lifetime of this revised Waste Management Strategy.

It is Government's intention to ensure that the measures being proposed are equally applicable to both Malta and Gozo. The island of Gozo is seen to have a strategic dimension not only because of its geographical characteristics but also because of its importance as a tourism destination. Government will give Gozo self-sufficiency from a waste management perspective by offering state of the art facilities and projects of excellence, thereby reducing the amount of waste transferred to Malta. The eco-Gozo initiative will also link with the concepts of sustainable waste management practices.

Sustainable waste management is the responsibility of everyone including Government, public bodies, private firms and households. This strategy has been prepared by the Ministry for Resources and Rural Affairs (MRRA) and sets out the roles and responsibilities of Government, businesses, households, and various organisations to ensure that waste is managed in a sustainable manner.

## 1.1 - Revised Strategy following consultation

The strategy sets out 9 high level Principles to guide the sustainable management of waste in Malta between 2010 and 2015. These are backed up by 9 Policy Objectives, all of which are based on a combination of:

- International & national policy drivers;
- Malta's legal obligations and targets; and
- Recycling experience in Malta and best practice in the field.

Targets and actions are identified where they are a legal requirement, for example under the Landfill Directive. Other targets and actions have been included where they will help to achieve the Strategy's objectives.

The first consultation draft was issued in January 2009<sup>1</sup>. A total of 100 responses to the draft were received from 16 individuals and organisations. The draft was also subject to independent Strategic Environmental Assessment (SEA) to ensure the Strategy reflects national environmental priorities including those set out in the draft National Sustainable Development Strategy (2004) and the State of the Environment Report (2005).

This document takes into account various factors including:

- Consultation responses to the Draft Waste Management Strategy;
- National Legislation;
- On-going review of technology options; and
- The recommendations of the SEA.

The consultation and SEA processes have resulted in an increased policy emphasis in favour of waste minimisation and the pursuit of measures to manage inert / construction and demolition waste. Background documents provide the rationale and justification for the content and scope of this Waste Management Strategy and the changes made to the Draft Waste Management Strategy<sup>2</sup>. Other Background Documents provide the evidence base for the preferred technologies identified in the Waste Management Strategy. Background Documents that support the Waste Management Strategy have been uploaded to the MRRA's website (go to [www.mrra.gov.mt/wastestrategy](http://www.mrra.gov.mt/wastestrategy)) and are listed below:

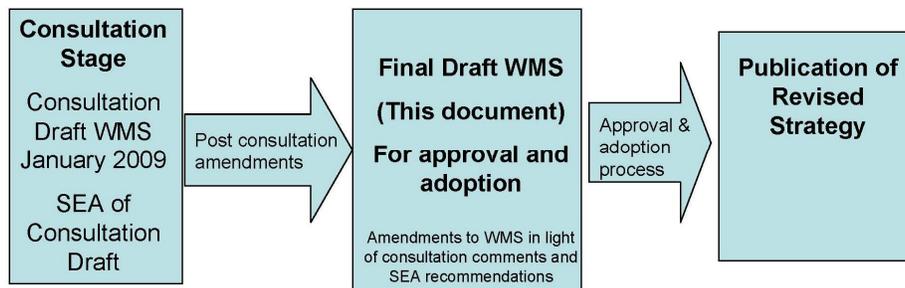
Title	Date	Purpose of the Document
A Solid Waste Management Strategy for the Maltese Islands (First Update) – Summary of Responses and Proposed Revisions to the Strategy	February 2010	To set out how the draft Waste Management Strategy was changed in light of consultation responses.
Waste Management Plan for the Maltese Islands	July 2009	To set out specific implementation measures for the Waste Management Strategy
Environment Report: Strategic Environmental Assessment on the Solid Waste Strategy for the Maltese Islands	September 2009	To assess whether the draft Waste Management Strategy meets national sustainability objectives and if any changes are required to the strategy on sustainability grounds.
Dealing with Construction and Demolition Waste - Proposals for Action	March 2009	Submitted to MRRA as part of the Waste Management Strategy consultation process by the Building Industry Consultative Committee (BICC)
Recycling of Construction and Demolition Waste in Malta: Strategy for Short-Term implementation	June 2008	Report prepared by Umweltbundsamt GmbH Austria as part of the Malta-EU Twinning Project to consider the potential for recycling of C&D waste.

<sup>1</sup> A Solid Waste Management Strategy for the Maltese Islands (First Update) - Consultation Document, January 2009.

<sup>2</sup> See Background Document 'Summary of Responses and Proposed Revisions to the Strategy' – February 2010 and Strategic Environmental Assessment on the Solid Waste Strategy for the Maltese Islands – September 2009.

Environment Report: Strategic Environmental Assessment on the Solid Waste Strategy for the Maltese Islands: Revised Scoping Report	March 2009	Identifies key legislation and policy considerations for the Waste Management Strategy and the SEA Environment Report to consider.
A Solid Waste Management Strategy for the Maltese Islands (First Update) - Consultation Document,	January 2009	Draft Waste Management Strategy issued for consultation.
National Strategy for Policy and Abatement Measures Relating to the Reduction of Greenhouse Gas Emissions Climate Change Committee, Malta	Consultation Report January 2009	Sets out a draft policy direction to tackle climate change. Covers all sectors including waste.
Agricultural Waste Management Plan for the Maltese Islands, Final Report	June 2008	Sets out options and recommendations for the treatment of manure.
Component 2 - Documentation and Recommendation for C&D waste Recycling and Disposal in Malta	October 2007	Report prepared through the Malta / Austria Twinning Project to look at options for dealing with C&D waste.
Assessing the Feasibility of Waste to Energy Technologies in Malta Waste to Energy Working Group Ministry for Rural Affairs and the Environment	May 2006	Assesses potential waste to energy technologies in the Maltese Islands as a means of treatment for solid waste. Report considers most suitable technologies in the context of existing waste streams.
Situation Audit of the Solid Waste Management Strategy for the Maltese Islands	January 2005	Provides a progress review of the 2001 Waste Management Strategy
Report into Construction and Demolition waste, conducted by the Management Efficiency Unit, (MEU)	September 2003	Sector based review of C&D waste.
A Solid Waste Management Strategy for the Maltese Islands	September 2001	First Waste Management Strategy for the Maltese Islands

The approval process of the Waste Management Strategy is set out below.



## 1.2 - Definitions

Various references are made to different types of waste and processes for dealing with waste. The table below provides a set of definitions that place some of the terminology used in this Strategy into context.

<p>•<b>Biodegradable Waste</b> – Sometimes referred to as ‘organic waste’. Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard.</p>
<p>•<b>Construction and Demolition Waste</b> – Material resulting from constructing and demolishing buildings, roads, bridges and other built infrastructure.</p>
<p>•<b>Material Recovery Facility</b> - A MRF is a facility at which components of a mixed waste stream, in this case co-mingled dry recyclables are extracted by the use of mechanical separation techniques.</p>

<p>•<b>Mechanical Biological Treatment (MBT)</b> – Mechanical Biological Treatment - an interim treatment process dealing with residual waste after most recyclable materials have been removed (often at a MRF or through kerbside separation). The residual waste is mechanically sorted and treated to produce separated main fractions. Often the organic waste components (from Municipal Waste) are separated for anaerobic digestion (AD) and energy from biogas. This process can be supplemented with organic animal husbandry waste / agricultural sewage sludge.</p>
<p>•<b>Recovery</b> – The recovery of 'value' from mixed residual waste, either resulting in energy or lower quality materials.</p>
<p>•<b>Reduction</b> – Means less waste collected and managed by local councils, WasteServ and other licensed waste carriers. This can include reduced waste through consumer purchase decisions and recycling material within the household – eg composting.</p>
<p>•<b>Recycling</b> – Collection, sorting and storage of material ready for consignment to a recycling contractor.</p>
<p>•<b>Residual waste</b> – Waste remaining after reduction.</p>
<p>•<b>Waste</b> – This strategy relates to the management of solid waste including Municipal Solid Waste (Household and Business Waste including waste brought to recycling centres and bring-in sites), Construction &amp; Demolition Waste, hazardous wastes, marine waste and agricultural solid waste.</p>
<p>•<b>Waste Hierarchy</b> – The promotion of (i) Waste reduction first followed by (ii) Re-use, (iii) Recycling, (iv) Recovery, (v) Disposal. The aim of the hierarchy is to promote waste reduction and ensure as little waste as possible is disposed of without gaining some benefit in terms of re-use or recovery of materials / energy.</p>
<p>•<b>Waste Transfer Station</b> - A facility to which waste is taken for onward transfer for treatment, recycling or landfill elsewhere.</p>

This Strategy document is not meant in any way to be a standalone document but one that fits within the priorities of Government at a national level.

It is opportune to recall that Government's five year plan, as cited in the President's address on the occasion of the opening of Malta's eleventh Parliament, foresees an increased commitment to waste management. However, more importantly, Government's five year plan is to be underpinned by its commitment towards sustainable development as a keystone of its entire decision making. Sustainable development brings with it the integration of the economic, social and environmental pillars into decision making with a view towards ensuring that whilst our resource utilisation pattern satisfies the needs of today, it does not in anyway compromise those of tomorrow. Government is inviting all towards entering into a sustainable development pact. Government needs to be at the forefront of such initiatives and therefore this Strategy will aim to embrace this vision.

One issue that has risen to the forefront of the international agenda is the fight against climate change. This debate has dominated the world's centre stage and has been recognised as an international priority both by the United Nations as well as by the European Union which has entrenched climate change as an integral part of its Lisbon objectives. The Inter Governmental Panel on Climate Change (IPCC) Fourth Assessment Report 2007 puts forward some bleak projections in terms of the climatological patterns that are likely to prevail. The reduction of greenhouse gases is a must and not an option. Hence, waste management must, to the extent possible, lend itself towards the reduction of Green House Gases (GHG) by exploiting the energy embedded in waste and to recover this with a view to contribute towards Malta's reduction of its dependency on fossil fuels.

Malta's Operational Programme I, aimed at charting out Government's intended priorities for the disbursement of EU structural funds, clearly recognises that there is more to achieve in the waste management sector. The specific development objective of Priority Axis 5 is to continue with the upgrading process of the country's environment infrastructure, particularly in the areas of solid waste management and risk prevention. Minimising landfilling of waste, the rehabilitation of disused landfills, as well as the increase in the capacity for waste treatment for energy recovery and recycling purposes feature amongst the operational objectives of this Priority Axis.

Waste minimisation remains a critical strategic objective. There is a need to minimise the effects of waste on the environment and society and to fully comply with EU Regulations. Extensive awareness campaigns play an invaluable role in this regard and will continue to do so in the years to come. Malta's strategic vision also encompasses the possibility of exploiting the potential energy embedded in waste. The overall aim is to reduce the amount of waste and divert the remaining residues for recycling, the recovery of resources and the efficient utilisation of waste for energy production. Priority Axis 5 not only foresees the continuation of investment in infrastructures for sound waste management practices, but builds upon the latter by enhancing through interventions to promote waste prevention. On a National level, Government will continue exploring the possibility of introducing Producer Responsibility schemes. A first attempt to collect packaging waste through a kerb-side collection system, and to be eventually financed by the private sector, has already commenced.

Land use constraints in Malta and Gozo make the use of landfills a far less desirable option. Government has set itself the target of commissioning the establishment of two mechanical biological treatment plants, one for Gozo and another one for Malta. This Priority Axis will co-finance the establishment of mechanical biological treatment plants and will also co-finance measures for the rehabilitation and restoration of former landfills.

Apart from all this, waste management can also contribute towards Malta's targets to reduce its dependency on fossil fuels, and hence emission levels.

## 3.0 Policy Dimension

Since accession to the European Union, waste management legislation in Malta has grown significantly. The Environment Protection Act (Cap 435) today acts as an enabling legislative instrument for a suite of other regulations that result from the transposition of Directives into national law.

The legislation that sets the framework for waste management in Malta applies across the European Union. The main driver for Malta has, in recent years, been the EU Landfill Directive (1999/31/EC). This Directive establishes targets to decrease the amount of untreated waste that is deposited to landfill. Malta has been increasingly working towards these targets. Since 2001, this legislation has influenced the structure of the waste sector in Malta.

Other Directives deal with specific waste streams such as hazardous waste and the control and reduction of packaging and other forms of waste (waste minimisation). Some of the more pertinent Directives that influence the Waste Management Strategy are:

- The Packaging and Packaging Waste Directive (94/62/EC);
- The Landfill Directive (1999/31/EC);
- The Waste Electrical and Electronic Equipment Directive (WEEE) (2002/96/EC);
- The Batteries and Accumulators Directive (2006/66/EC);
- The Waste Framework Directive (2008/98/EC), which includes provisions on hazardous waste and waste oils;
- The End of Life Vehicles (2000/53/EC); and
- Waste Shipments Regulation.

This Strategy does not identify all legislative requirements and transposed regulations. A comprehensive list of legislation and regulations has been identified in background papers<sup>3</sup>. Instead the Strategy focuses on the main areas of legislative responsibilities and ensures resources and priorities are directed towards meeting these at the Strategic level. Responsibilities for meeting legislative requirements fall on many entities, including Government and competent authorities such as MEPA.

Equally important is the Eco-Contribution Act (Cap 473) which was aimed to play a decisive role in the management of waste, or end-of-life products, by levying an eco-contribution on a selected number of products which generate such waste.

Legislation reflects Government's policy and direction towards achieving specific objectives. Legislation which is not properly enforced not only becomes defunct but will pose an increased challenge towards retaining its credibility and will be difficult to revive.

It is therefore pertinent to take stock of the existing legislation in place with a view to determining its scope and targets, where applicable, and to determine whether these objectives are being met and whether there is the need for revisiting any portion in order to positively contribute towards Government's goals in the waste management sector.

### 3.1 - Technical Standards / Codes of Practice

Technical standards / codes of practice are aimed at establishing minimum technical requirements for the quality of certain goods or resources, and /or the operation and performance of specified activities. The standards currently being used in Malta are those adopted in the United Kingdom. Malta needs to establish its own national standards that would have a strong legal backing. These standards / codes

<sup>3</sup> Environment Report: Strategic Environmental Assessment on the Solid Waste Strategy for the Maltese Islands: Revised Scoping Report, March 2009 and Environment Report: Strategic Environmental Assessment on the Solid Waste Strategy for the Maltese Islands, September 2009.

of practice are to be tailored to suit Malta's particular needs and circumstances in the waste management sector. These standards must be made official through the Malta Standards Authority.

Priority will be given to developing and implementing technical standards and related codes of practice with respect to:

- the management of wastes that pose a potential risk to public health and environment and therefore require special methods of handling treatment e.g. used batteries, used oils, healthcare and other potentially hazardous wastes;
- the landfilling / final disposal of wastes (including thermal treatment); and
- the management of waste within the Public Sector to complement the efforts of the Green Leaders appointed within all Government Ministries.

With respect to hazardous waste, immediate action has to be taken so that the current practice of storing such wastes, where they arise, would be terminated.

The relative competent authorities are therefore being instructed to develop the necessary Codes of Practice, whether through the adoption of foreign equivalents or through the development of specifically tailored documents that are made legally binding through the legal provisions vested in the Malta Standards Authority. Moreover, such authorities should ensure that a suitable communications and information campaign is designed in order to ensure the dissemination of such standards after having ensured an adequate consultation process amongst key stakeholders and interested parties.

## 3.2 - Compliance

Government has embarked upon a housekeeping process with a view towards ensuring that its waste management facilities are compliant with the various legislative provisions. Although this has taken some time to achieve, due to circumstances which could not be avoided, it is now appropriate to place compliance to existing waste management legislation at the forefront of Government's agenda with a view to securing a level playing field in the sector and to work towards the goals and objectives of sound waste management governance.

To this effect Government will be taking stock of all current waste management facilities with a view towards ensuring that the appropriate level of compliance is being achieved.

# 4.0

## Institutional Frameworks

The implementation of the Strategy requires communication and close cooperation between the Office of the Prime Minister, who is responsible for Waste Policy, the Ministry for Resources and Rural Affairs, who is responsible for the implementation of this strategy, other Ministries and Government institutions. A strong mandate from Cabinet is being requested for the provisions of this strategy to be given priority and for line Ministries to give these proposals their due urgency.

Moreover, this same mandate needs to include an escalation mechanism that will ensure that non compliant Ministries will be sanctioned by Cabinet.

### 4.1 - Ownership

The Waste Management Strategy shall be owned by the Office of the Prime Minister (OPM). The implementation of the Strategy will continue to be carried out by the Ministry for Resources and Rural Affairs which through its implementation arm would be empowered and responsible to ensure that all stakeholders are adhering to the proposed timeframes and that it is kept informed of all steps being taken to ensure the achievement of the Strategy defined policy goals.

Furthermore it is important that each and every stakeholder appoints its own Executive with whom the Ministry for Resources and Rural Affairs can dialogue on the implementation of the Strategy. Such Executives need to be conversant with their Ministry's plans and need to be empowered to take decisions that may be required from time to time. One element that has been certainly missing is the project management aspect. The Strategy needs to be considered as one project, which is managed in a professional manner.

It is Government's intention to commission periodical independent reviews of the progress of the Strategy as a means to benchmark the level of progress achieved with the policy direction set by Government.

### 4.2 - Malta Environment and Planning Authority

The Malta Environment and Planning Authority (MEPA) was established following the merger between the former Planning Authority and the Environment Protection Department, on 1<sup>st</sup> March 2002. This was a departure from the original plan contemplated by the Strategy that seemed to indicate the creation of a separate Authority; however, in operational terms the creation of MEPA still serves to fully implement the creation of an autonomous entity responsible for regulating environmental matters as outlined in action B2 of the 2001 Strategy.

The functions of the Authority are drawn out in the Environment Protection Act, which states that:

*'The Authority shall be the principal means whereby the Government shall implement its duties under this Act. The Authority shall advise the Minister in the formulation and implementation of policies relating to the promotion of sustainable development, protection and management of the environment and the sustainable management of natural resources, and on such other matters as may be necessary for the better carrying out of the provisions of this Act.'*

The primary tasks of the Authority are intended to be:

- the issuing of licenses or permits for waste management facilities and activities;
- monitoring and inspection to ensure that the license or permit conditions are being adhered to;
- taking enforcement action where applicable;
- providing input to the OPM in the formulation and implementation of plans and policies relating to waste management; and
- advising the OPM on Malta's position on pipeline waste management EU Acquis.

This Strategy recognises that MEPA therefore has a crucial role to play in the implementation of this Strategy, cognisance of which shall be taken accordingly. However, MEPA is being directed to provide Government with timely and practical advice in conformity to current regulations, every time it is called upon to do so in terms of waste management.

The functions of the inspectorate section within the former Environment Protection Department were taken up by MEPA. Inspectors have been delegated full enforcement and inspection powers as provided for by the Environment Protection Act.

MEPA is being directed to ensure that its Waste Management Inspectorate has a plan of action which is aimed at monitoring compliance of existing waste management facilities and initiatives. MEPA is being directed to provide a plan of action for its Waste Management Inspectorate and to present this to the Ministry for Resources and Rural Affairs within 6 months of the publication of this strategy document.

### 4.3 - WasteServ Malta Limited

WasteServ Malta Limited was established in November 2002 as a limited liability company responsible for organising, managing and operating integrated systems for waste management including integrated systems for minimisation, collection, transport, sorting, re-use, utilisation, recycling, treatment and disposal of solid non-hazardous and hazardous waste.

The establishment of WasteServ and MEPA has managed to achieve a clear institutional separation of the Government's powers and functions as a legislator, as a regulator and as a provider of waste management facilities and services. WasteServ was established to:

- provide Waste Management facilities and services;
- finance as much as possible Waste Management facilities and services;
- retain ultimate responsibility; and
- serve as an operator of last resort.

WasteServ has been instrumental in the setting up of a number of waste management facilities and services. The closure of the former dump sites, the establishment of the Ghallis engineered landfill, the provision of permitted sites for the depositing/storage of Inert Waste, the ongoing upgrading of the Sant' Antnin solid waste treatment facility, the takeover and upgrading of the Marsa abattoir incinerator, the network of bring-in sites and civic amenity sites and the educational campaigns undertaken are just a flavour of the evolution that WasteServ has brought within the sector.

In line with Government's declared intention not to use WasteServ as a barrier to private enterprise involvement in waste management services, an evaluation of this agency needs to be carried out in order to assess its effectiveness of service and cost as well as the strategic direction that is to be adopted with a view to planning for facility devolution. This is not a process which is anticipated to be completed overnight but one which needs to be set in motion in order to determine the ideal strategic direction to be adopted.

At this point in time Government wishes to reiterate that it does not intend to involve WasteServ in activities that compete with or impinge upon the services that could be offered by the private sector. Notwithstanding, in line with WasteServ's mandate to act as an operator of last resort, Government will be forced to ask WasteServ to enter into additional services should the private sector not fill in the demands that are being created.

# 5.0

## Principles & Policy Objectives

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It is Government's intention to base the Strategy on the waste management principles.

From a hierarchical perspective waste reduction will remain Government's overall objective. To this effect, and in conformity with the polluter pays principle, every generator of waste has a responsibility to work towards this objective. In the absence of voluntary compliance, Government will look into other mechanisms which could provide incentives and disincentives to secure this goal.

Due consideration will be given to initiatives that are aimed at achieving the re-use or recycling of waste as well as the recovery of energy or material from waste.

The responsibility for waste management can no longer be seen to be solely as the responsibility of Government and all actors, small and large, are to be called to honour their obligations.

### 5.0.1 - Policy Principles

Based on Malta's legislative responsibilities and national commitments to manage waste in a sustainable way, this Strategy highlights a number of Policy Principles that guide the Waste Management Strategy and its proposed Actions. These are:

#### POLICY PRINCIPLES

**(1) Sustainability** – Waste will be managed in a way that does not compromise the ability of future generations to meet their own needs.

**(2) Proximity** – Waste should be treated or disposed of as close as possible to the point where it arises.

**(3) Precautionary** – Taking precautions now to avoid possible environmental damage or harm to human health in the future.

**(4) Polluter Pays** – Polluters and producers should bear the full responsibility and cost of the consequences of their actions.

**(5) Waste Hierarchy** – The Strategy will be implemented on the basis of the following preferences: (i) Waste prevention / reduction; (ii) Re-use, (iii) Recycling, (iv) Recovery, (v) Disposal.

**(6) Achieve Best Practicable Environmental Option (BPEO)** - Greatest benefits for the least damage to the environment as a whole.

**(7) Climate Change** – To explore opportunities for energy from waste and managing waste in a way that reduces green house gas (GHG) emissions.

**(8) Waste as a Resource** – Saving fossil fuels and new materials. For example, reuse of excavation and demolition waste for new structures.

**(9) A Collective Strategy** – Government will encourage partnership with all stakeholders.

Principles 1 to 6 have evolved from the 2001 Waste Management Strategy and provide the basis for sustainable management of waste in the context of waste management legislation and best practice. Principles 7, 8 and 9 have been incorporated following consultation on the Strategy that was

conducted in January 2009 and Strategic Environmental Assessment (SEA). The SEA identified renewable energy as an important consideration for the Waste Management Strategy, particularly in light of Malta's NRP targets to maximise energy from waste.

## 5.0.2 - Policy Objectives

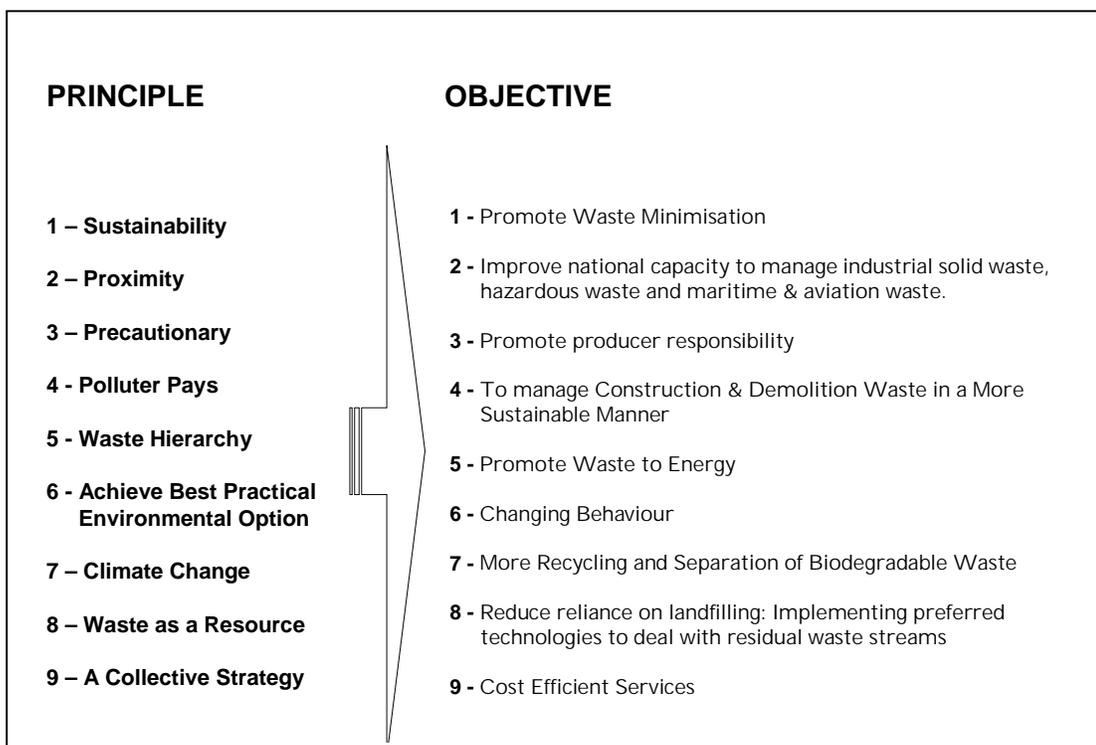
The strategic approach for dealing with solid waste in Malta and Gozo can be summarised as:

- Promoting further waste reduction;
- Achieving high levels of recycling, including construction & demolition waste;
- Treating residual waste in order to maximise energy recovery and reduce Green House Gas Emissions; and
- Further reducing reliance on landfill.

This approach can be implemented in many different ways. Preferred solutions need to be realistic and capable of implementation, have the least impact on the environment and be financially deliverable. Emphasis is placed on further measures to promote waste reduction to reduce processing costs, but also ensure resource efficiency. It is recognised, however, that realistically waste reduction measures alone will not reduce reliance on landfill significantly and further facilities for the treatment of residual waste, in addition to Sant' Antrnin Waste Treatment Plant, are required. Preferred technologies are identified through **Objective 8**.

Nine high level policy objectives have been included to guide the strategy and its actions. Further details on how each policy objective will be achieved are considered in this chapter.

The figure below summarises the Strategy and shows how the 9 Policy Objectives relate to the principles that underpin the Waste Management Strategy. A summary of Actions, Responsibilities and Targets for each Policy Objective is set out in Appendix A.



## 5.1 - Policy Objective 1 – Waste Minimisation

The Waste Management Strategy aims for zero net growth in waste generated per annum in the long term. In the short to medium term (2010 to 2015) the target is to reduce the underlying annual waste growth to less than 1.5% per annum. This target has been set by taking a realistic view of the trends in waste growth and acknowledging that education, awareness and community participation must be intensified, but can have long lead-in times in terms of changing attitudes and behaviour across the whole population

Historically a major obstacle to prevention and minimisation of wastes in Malta has been the very low charge for disposal of wastes to landfill. Prior to October 2009 the 'gate fee' for waste disposal to landfill was €0.77 for mixed waste, providing no incentives for minimising the production of waste in the first place. This has now been increased to €20 per tonne for mixed Municipal Solid Waste collected by Local Councils and €0.50 per tonne for separated wastes presented at Sant Antnin for recycling by Local Councils. These changes shall be introduced for waste delivered by other entities during 2010. Government will continue to monitor the effects of relatively higher disposal charges for waste in order to determine the impacts of higher gate fees on minimising waste and limiting the overall amount of waste presented for recycling and disposal to landfill.

Government is in the process of handing over the responsibility for managing the bring-in sites to Local Councils; this should help them to improve their respective waste collection services and motivate residents to make more use of them, ultimately creating a situation where Local Councils will have more funds in hand that can be better invested in other projects for the benefit of the community.

Given the significance of Waste Framework Directive Targets for the minimisation and recycling of C&D waste, the Waste Management Strategy provides specific targets and measures to deal with this waste stream. These are set out through **Policy Objective 4**.

Government, NGOs and other organisations will be encouraged to share best practice and continually review experiences and developments in the EU to see whether these experiences / best practice can be applied in Malta. Government will use research and information shared on best practice to develop clear messages to feed back to consumers and businesses through **Policy Objective 6** (Promote good waste management practices through Education and Communication). This experience will also be used to promote specific achievements in waste reduction through **Policy Objective 6**.

Other priorities for Government include reviewing current regulatory regimes (such as those relating to packaging waste) and current household waste collection practices. The latter will include a review to see whether reduced collection days or 'one bag only' policies<sup>4</sup> could start to give rise to waste reduction habits. This will only be done following a comprehensive investigation into the household concerns and/or suggested solutions.

Between 2010 and 2015 Government will promote a range of regulatory and fiscal measures to reduce C&D waste generation and promote the recycling of building materials and excavation waste. Further details are set out through **Policy Objective 4**.

### **Policy Objective 1 – Promote Waste Minimisation**

**To implement measures aimed at reducing the growth in the generation of Municipal Solid Waste, with a long term aim of zero net growth in waste generation per capita.**

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<sup>4</sup> Whereby carriers of household waste carry a maximum amount of waste per collection in order to encourage prudence in terms of consumer decisions on purchasing items with high packing content, disposing excessive food waste, etc.

## 5.2 - Policy Objective 2 – Improve Capacity to Manage Industrial Solid Waste and Hazardous Waste

The Ghallis complex includes a facility for the disposal of certain hazardous wastes. This is a small facility suitable only for receiving and disposing of a limited range of solid hazardous waste with a capacity of 100,000 cubic metres. It is Government's intention to develop a hazardous waste treatment facility in close proximity to the main landfill facility at Ghallis, using Co-Financing from the European Union<sup>5</sup>. The hazardous waste that is received at the facility will be divided into two waste streams: (i) those that can be treated and disposed of safely and cost-effectively in Malta; and (ii) those that will need to be accumulated, bulked-up, stored and either treated locally and exported for disposal overseas or subsequently exported for treatment and disposal overseas. The facility at Ghallis will substantially increase Malta's capacity to safely manage a broad range of hazardous waste streams, in the context of the Proximity Principle.

Given the lack of reliable data on hazardous waste arisings, this project component will, to some extent, have to evolve in response to actual needs and experience. However, at this stage, it is envisaged that this component will include *inter alia*:

- a reception area and facility for inspecting, weighing and recording vehicles and wastes arriving at, and leaving, the facility;
- a laboratory for sampling, analysing and determining the basic characteristics of hazardous wastes received at the facility (as other tests will be carried out in accredited laboratories);
- a facility for pre-treating mainly inorganic hazardous waste using conventional (and relatively simple and low-cost) physical and / or chemical treatment processes;
- storage for radio active waste generated in the Maltese Islands; and
- a facility for bulking, packing or re-packing and temporarily storing mainly organic hazardous waste prior to local further treatment or to export for treatment / disposal overseas of:
  - potentially hazardous wastes;
  - spent batteries and accumulators;
  - asbestos;
  - oily sludges; and
  - consumer durable and electronic goods.

The primary objective of this waste management strategy is to maintain a high level of independence for waste treatment. However, the export of waste may of course prove to be viable and efficient as a result of economies of scale.

### 5.2.1 - National System for Hazardous Waste Management

MEPA has a hazardous waste consignment procedure in place. A consignment note must accompany every movement of hazardous waste. All persons wishing to transfer hazardous wastes within the Maltese Islands should first apply for a permit on an appropriate form (CP form). Following the issue of the CP permit, all subsequent waste movements authorised under this permit need to be notified to the Authority on the CN form. Detailed guidance on the consignment note system is available from MEPA offices and on the MEPA website.

Cognisant of the small amounts of hazardous waste that may be generated by a significant number of operators in Malta, and the need to facilitate its interim storage prior to disposal, Government remains committed to provide interim storage and pre-treatment facilities prior to export at the hazardous waste landfill at Ghallis and/or local treatment at the Marsa abattoir of hazardous waste generated in the Maltese Islands.

There is the need for a national characterization and implementation plan for hazardous waste. This should take into account:

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<sup>5</sup> The project is being proposed for financing through the 2007-2013 Cohesion Funds allocated by the European Union.

- the establishment of final destination points where export of such waste is accepted; and
- negotiations with the major commercial banks to provide guarantees to shippers exporting such waste.

Government, through MEPA and WasteServ, has benefited from a Twinning Light project entitled "Hazardous waste inventory and technical assistance in regulatory aspects of hazardous waste management". The overall objective of the project is to further strengthen Malta's capacity to comply with the EU Environmental *Acquis* in the field of waste management. Its purpose is to enhance the ability of the Malta Environment and Planning Authority and WasteServ Malta to manage hazardous wastes and provide Malta with the capacity to comply with monitoring and inventory obligations pursuant to the relevant EU Directives and Regulations. Government will be embarking on the setting up of an Action Plan for the implementation of this report.

## 5.2.2 - Clinical and Abattoir Waste

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The Working Group on the Treatment of Clinical Waste was jointly appointed in 2006 by the then Ministries for Rural Affairs and the Environment and that for Health and Care for the Elderly with a view to determining the options that are available for the management of clinical waste as well as to determine the feasibility of utilising the abattoir thermal treatment facility for the treatment of clinical waste.

Malta did not have any authorized facilities for the treatment of clinical waste. Healthcare waste from St. Luke's hospital was being incinerated in an on-site incinerator. With certain modifications, the new plant, situated at the civil abattoir in Marsa, gave rise to an opportunity to consider the treatment of clinical waste at this facility. It was proposed by Government to consider upgrading this facility so as to permit the co-incineration of clinical and industrial waste according to EU standards related to environmental emissions in particular in a manner that will be safe for the neighbouring community.

The Working Group recommended that there could be a strong potential to treat healthcare waste at the new abattoir facility for the following reasons:

- Incineration of clinical waste at the abattoir is a solution that can be immediately implemented and also seems to provide a viable solution for the long-term. The upgraded abattoir facility provides the quickest solution to terminate the temporary solution and to shut down the non compliant St. Luke's incinerator and that at the Gozo hospital;
- It fulfils Government's obligation to provide a proper facility for the treatment of clinical waste;
- The new abattoir incinerator conforms to national and international regulations;
- The treatment of clinical waste will not jeopardize compliance of the facility;
- It is the least costly environmentally-acceptable option available at present time;
- Clinical waste, in addition to abattoir waste, would assist the new incinerator to be able to achieve the thermal capacity for which it was designed. This will contribute to making the facility operate efficiently with fixed overheads being absorbed by higher waste volumes and waste with higher calorific values;
- The treatment of clinical waste at the upgrade facility will not induce additional capital cost over and above those foreseen for the required upgrade.

At the same time it would also make sense to attempt to quantify the total potential generation of pharmaceutical waste in order to ensure that the abattoir facility has the sufficient capacity to treat all clinical waste and for its management to assess the amount of industrial waste that can be accommodated within this facility.

As a result, Government has commissioned a permanent waste treatment facility at the Civil Abattoir at Marsa originally intended for the thermal processing and destruction of waste arising from public and private slaughterhouses, certain food-processing industry, port and airport risk wastes. A separate report assessing the potential of any spare capacity at this facility to be used for the treatment of clinical and certain hazardous waste had concluded that, with some modifications to the existing facility, this potential could be achieved.

In fact the abattoir incinerator was upgraded to be able to treat hazardous waste and is now in operation. It is envisaged that this facility will go a long way to provide for the local treatment of hazardous waste which will prove to be a benefit, both administratively as well as financially, for local industry.

### 5.2.3 - Port and Airport Waste

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Most vessels deliver their solid waste at ports chosen by their owner. A survey carried out in 2003 identified that over 93% of the vessels visiting Maltese waters requested the separate collection of waste from ashore (land side). None of this waste was delivered separate to public licensed facilities.

All port or terminal operators were required to prepare a waste management plan with respect to the provision and use of port reception facilities in consultation with all stakeholders by the 14 November 2004. The waste management plan is to comply with all the requirements of Schedule 1 of legal notice 278 of 2004 Port reception facilities for ship-generated wastes and cargo residues regulations. These regulations further require that the Master or the agent of a ship notify the Malta Maritime Authority about the waste on board and the arrangements needed.

Waste separation is carried out in a number of sea vessels. In fact, inspections carried out during 2008 showed that all vessels ranging from cargo to passenger ships had a waste separation system in place. Recent communications with the entities of concern has shown that at the Maltese terminals waste being handed over to the waste carriers was being mixed in the process and the resultant waste was being landfilled at the Ghallis non hazardous waste landfill.

In order to rectify the situation and divert the recyclable waste to the appropriate recycling facility, the Malta Environment and Planning Authority, the Malta Maritime Authority and WasteServ Malta Ltd. have decided to take on different procedures to ensure a good common practice. WasteServ Malta Ltd. introduced a differential pricing mechanism whereby through different prices, waste recycling is preferred other than disposal. Acceptance of the different waste streams at facilities operated by WasteServ shall be subject to a notification procedure. A waste transfer note will be issued by WasteServ upon request by the waste carrier or ship agent at least 3 working days prior to the delivery of the waste. A copy of the waste transfer note sent to the waste carrier or ship agent shall also be made available to the Malta Maritime Authority, who may conduct inspections on the records that should be retained by waste carriers. Consignments not accompanied by a waste transfer note shall be refused entry into the relevant facility. As from the 1st of September 2008, waste carriers entering the different terminals have to be registered with MEPA as part of its new waste carrier registration according to Legal Notice 106 of 2007. This will ensure that all vehicles/vessels that carry waste are up to standard and that waste is delivered to the appropriate facility.

A similar waste marshalling area should be made available at the airport. This will receive, process and store all recyclables off-loaded from aircraft as well as from duty free stores. Other waste, including hazardous waste from aircraft maintenance, should also be stored prior to it being transported for treatment to a local licensed facility.

### 5.2.4 - Asbestos

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Some 2000m<sup>3</sup> of asbestos is estimated to be in storage awaiting disposal. Additionally, it is estimated that some 5000m<sup>3</sup> of this same material remains installed and will eventually be dismantled as refurbishment works on the older building stock are gradually carried out. Failure by the private sector to export this waste material has led Government to undertake a feasibility study in order to determine the best and most practicable waste management option available for this waste.

### 5.2.5 - Other developments

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A Twinning Light assignment between Austria and Malta entitled "Hazardous waste inventory and technical assistance in regulatory aspects of hazardous waste management" has been undertaken and is intended to underpin Government's direction in the management of hazardous waste. The

hazardous waste streams identified included Waste Oils, WEEE (Waste Electrical and Electronic Equipment), End of Life Vehicles and Batteries and Accumulators. Specific comments on some of these waste streams are set out below:

### **5.2.6 - Waste Electrical and Electronic Equipment (WEEE)**

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The WEEE Directive aims to prevent such products from entering municipal waste collection systems through reuse, recycling and recovery of substances. The Directive has now been transposed into local legislation and the implementation of the WEEE initiative is prioritised through the Waste Management Strategy (WMS). Government will undertake an urgent review of existing facilities for WEEE and consider whether legislative, promotional and/or fiscal barriers are preventing Malta from fulfilling its target obligations under the WEEE Directive.

### **5.2.7 - End-of-life vehicles (ELVs)**

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The ELV Directive encourages the responsible management of waste from vehicles that have reached the end of their useful life. Malta introduced regulations to oversee the implementation of this Directive in 2003. It requires that waste operators dealing with ELVs prioritise the safe management of potentially hazardous materials and ensures maximum rates of re-use and recycling.

Particular circumstances have made the implementation of this strategy challenging. A lack of available sites for ELV processing and delayed permitting has resulted in a slow upgrading of private sector capacity to implement ELV legislation.

### **5.2.8 - Lead (Pb)-Accumulators**

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The Batteries and Accumulators Directive (2006/66/EC) promotes the collection, safe storage and treatment of batteries. Infrastructure for the collection of used batteries is becoming well established and WasteServ Malta Ltd has led a number of successful educational campaigns to encourage the separate disposal of used batteries.

During the period of the revised Waste Management Strategy (2010 to 2015) further measures will be implemented to maximise used battery collections and increase collection and recycling rates and promote best practice and participation. The completion of the Ghallis hazardous waste storage facility will improve capacity for storage. Malta is geographically small and provides relatively small quantities of hazardous waste when compared to other EU member states. Because Malta is an Island, it is not possible to share facilities with other countries or municipal Governments and economies of scale are unlikely to provide the economic feasibility for certain treatment facilities in Malta. Due to these unique economic and locational circumstances, this waste stream is likely to be exported for treatment.

## **Policy Objective 2 – Improve capacity to manage industrial solid waste and hazardous waste.**

**Government will prioritise the development and implementation of best available technical standards to guide the design and management of facilities for hazardous wastes and other industrial solid wastes.**

**Priority will be placed on the development and operation of a hazardous waste storage and treatment facility.**

### 5.3 - Policy Objective 3 – Promoting Producer Responsibility

The principle is to ensure that all producers are responsible for the treatment of products they place on the market when they become waste. Whether it is industry or the private household (represented by the local council) the nature of the waste and the volumes generated remain the responsibility of the waste producer until this is accepted for treatment at an authorised facility. Government must ensure that its facilities are receiving permitted waste, recovering all costs incurred and that there is no cross subsidisation between operations.

It is therefore of utmost importance for Producer Responsibility schemes, with the full cooperation of local councils, to be set up in a rational manner that permits economies of scale to be achieved.

Waste prevention on an industrial level encompasses the repeated use of a product / material, increased product life as well as changing a product's design in such a way that production of waste and its polluting potential is reduced. Above all, the long-term reduction in volume of solid waste produced is only possible by implementing measures that enable the re-introduction of materials into the production cycle and thus reduce the quantity of primary raw materials used. Source segregation and the separate collection of industrial waste facilitates this process since waste originating from one entity might well be the feedstock of another.

Waste prevention entails immediate benefits to industry only if handled at a management (as opposed to an individual) level and the packaging regulations should help the commercial sector understand better its obligations as well as the need to re-use packaging wherever possible.

To further complement the Civic Amenity sites that have been developed (three of which are close to industrial estates), all major industries will be obliged to formulate a waste management plan and set up the necessary storage facilities so that all solid waste generated on these estates is handled / stored separately and transported separately for treatment. A notification procedure will also be enforced. Industry will be encouraged to team up on this effort since in many cases one waste marshalling area per estate will suffice.

Effective recovery exchanges of waste require a sufficient supply of information on what is available in the field, otherwise they remain largely unused. The difficulty stems from the fact that there still exists a lack of reference and consulting activities as well as the need to overcome communication barriers.

Help could be established by Government organising a national clearing house (which may be virtual). This entity should manage information of what waste is available and where, on the Maltese Islands, so that this may be put to good use. Such waste could include construction and demolition waste, solvents, waste oils, etc.

To simplify matters of inter-company recovery, Government will consider issuing legislation not to characterise certain clearly defined waste fractions as waste so that the use of secondary materials will be facilitated. Experiences of other Member States in this regard will be sought.

In any event, a certain quality standardisation for waste generated in relevant quantities would surely facilitate recovery irrespective of any legislation suspending the classification of waste. The need for such a facility is likely to increase further with the introduction of new recovery schemes of specific waste fractions.

The catering sector offers a tremendous potential for providing excellent quality organic waste from its food preparation area. Collected separately from all other waste provides a very good feedstock to digesters. Consequently, Government should actively consider legislating in favour of the separate collection of the organic fraction from all licensed catering establishments at the latter's cost with a view to directing this waste to digestion plants.

### 5.3.1 - Eco-Contribution

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The Eco-contribution Act introduced in 2004, aimed to encourage the recovery of potentially hazardous and recyclable products. Government acknowledges that this objective will not be achieved solely through the current fiscal structure of the eco-contribution since:

- the contributions stipulated in the Act are too low and are based on price relativity;
- the current system allows for partial refunds to be applicable;
- the range of products covered is too narrow; and
- payment is effected on the first sale of the product subject to eco-contribution.

Government remains fully committed towards the producer responsibility and polluter pays principles and until the development and growth of fully fledged private sector based schemes, Government will retain responsibility for producer induced waste and its eco-contribution. As producers start to subscribe to schemes they will become exempted from Eco-Contribution charges as per regulations that will be published from time to time. Provisions for those who opt for self compliance will be based on refunds subject to compliance audits.

Government will consider revising the Eco-Contribution Act if the producer fails to shoulder part or all of its waste management responsibility. The major changes proposed envisage:

- a wider range of products subject to eco-contribution to minimise potential cross-subsidisation;
- the revision of contribution rates, on existent and new products to be covered by the Act, to reflect the actual cost of disposal of a product; and
- the eco-contribution payment will have to be effected upon importation or local manufacture.

The introduction of a rebate system would ensure that those producers who take up full responsibility for the disposal of their product are refunded the contribution paid upon proof of recovery. The rebate system coupled by a fiscal regime would also provide an incentive for producers to invest in cleaner technologies. Demanding payment on importation or manufacture will reduce the possibility of under-declaration. Partial payment should be considered as a measure to mitigate against producers' cash flow problems.

A competent body has been set up to manage and monitor eco-contribution. This body acts as a reference point on matters relating to eco-contribution in order to reduce the number of free-riders.

Producers must be provided with alternatives prior to the revision of the eco-contribution and the increase in enforcement and penalties. For selected waste streams, Government intends to provide for, through legislation, the establishment of licensed schemes. Consideration will also be given to legislating in favour of one mandatory scheme per sector where economies of scale are an issue. These licensed schemes need to be encouraged, through the provision of adequate incentives. MEPA consequently has a determining role to play for it is believed that such schemes will actually "take off" once MEPA communicates its intention to commence the enforcement of Regulations pertaining to this aspect. An intention by MEPA to enforce such regulations should stimulate the industry to react within a reasonable timeframe.

These licensed schemes would be responsible for the collection and final disposal. If Government had to allow for one mandatory licensed scheme per sector, sound justification would be demanded to concede such an arrangement. Justification would be granted if pre-determined criteria are met.

The establishment of licensed schemes would be consonant with promoting producer responsibility and the recovery of resources. These licensed schemes would induce a change in behaviour and would encourage waste producers to shoulder responsibility for the treatment and disposal of the waste generated.

### 5.3.2 - Compliance Schemes

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Several categories of waste have been identified (through the relevant Producer Responsibility directives) for which the producers / manufacturers of the products giving rise to such wastes should

bear responsibility for arranging and paying for their management and disposal in accordance with relevant legislation. These include:

- used packaging materials;
- used batteries and accumulators;
- used mineral oils;
- end-of-life electrical and electronic goods; and
- end-of-life vehicles.

The Eco-Contribution Act puts greater emphasis on producers / importers to either develop recovery schemes or pay for the costs incurred by Government when the specific product ends in the general waste stream. In the case of the former, producers will have control over the cost structure of their own recovery scheme as opposed to paying for a central public service for which they do not have direct cost control. Recommended recovery schemes are to be analysed on various aspects. For example, Government needs to determine whether eco-contribution will be charged in full or in part depending on the firm commitment of the 'take back' scheme to recover products from the market. Apart from meeting the obligations, such schemes translate in an enhanced waste separation initiative thereby improving the overall quality of Municipal Solid Waste (MSW).

MEPA has formulated guidelines of how schemes are to be licensed with recommendations on how to waive the eco-contribution charge if responsibilities for waste are shared. The policy document "Authorisation/Registration of Schemes – Eco Contribution Exemption/Refund Mechanism" provides incentive schemes that play a determining role in the achievement of Malta's waste management targets in conjunction with possible amendments to the Eco-Contribution Act to offer additional incentives to such schemes.

To further facilitate implementation, Government appointed an Eco-Contribution Commission to advise on the implementation and enforcement of the Eco-Contribution Act as well as to recommend recovery schemes. This Commission submitted its report to Government in February 2005. This Commission should be reactivated with a view to taking stock of the current situation, in order to determine any further amendments that merit consideration in the light of the current reality.

MEPA is to ensure, possibly even through stronger enforcement regimes, that the targets negotiated with the EU for the recycling and recovery of packaging and packaging waste are reached within the agreed transitional periods in accordance with the 'Polluter Pays' principle.

### 5.3.3 - Responsibilising All Actors

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Whether corporate or individual, all actors have a social responsibility in the generation and management of their waste arisings. The consequence of their behaviour is undoubtedly translated into actions required centrally, and the expenditure that is required to counter such behaviours. There is no doubt that waste generation forms part of our daily activity. However, managed appropriately rather than indiscriminately, waste can be harnessed in order to be treated in the most cost effective manner, recovering as much of its embedded energy as possible.

The choice on the cost and extent of waste management operations depends on each and every individual. Egoism will result in the loading of burdens on fellow citizens!

### 5.3.4 - Civic Responsibility

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As individuals, Government and the private sector have given two main options for the separation of Municipal Solid Waste – bring in sites and the kerbside collection of dry recyclables. Volumes, albeit on the increase, are still low. Households need to become more aware of their responsibility towards the management of their waste with a view to assisting the waste management process at a national level.

The figure of approximately 28% referred to in Section 5.7.3 in terms of what is currently being collected through the Recycle Tuesdays initiative with respect to the total potential that can be

collected is very worrying. It is our duty to realise that by not separating waste we are contributing to higher operational costs of our collection and treatment infrastructure as well as limiting the potential for the generation of energy from waste, both of which will have to come out of the taxpayer's contributions. Our behaviour must change, not for legislative compliance, but for the sustainability of our social and economic environment.

Efforts should be made to promote the aforementioned initiatives as well as other initiatives such as the separate collection of cooking oil and the deposit of such oil at central depots for recycling by industry. To this effect, Government should consider incentivising the private sector to contribute towards such initiatives.

### **Objective 3 – Promote Producer Responsibility**

**Continue to implement fiscal incentives to ensure producers take responsibility for waste.**

## 5.4 - Policy Objective 4 – Managing Construction and Demolition Waste

Construction and demolition waste comprises an average of 84% of the total waste arisings in the Maltese Islands. It is therefore a good strategic decision to treat this type of waste on its own and to have a strategy which is directed at the management of this type of waste. Moreover the Thematic Strategy on the prevention and recycling of waste (COM-2005-666) will serve as a beacon to complement Malta's strategy in this regard.

Since the implementation of the 2001 Waste Management Strategy, considerable research has been undertaken into the possible measures and methods that could be applied to deal with increasing quantities of Construction and Demolition (C&D) waste. The Building Consultative Committee and other stakeholders have provided a tangible list of ideas to create a market for the re-use and recycling of C&D waste (and other forms of inert waste). The Waste Directive has recently been amended and there are now challenging targets for the minimisation and recycling of C&D waste. This provides further impetus to implement measures to limit C&D waste.

As from January 2005, the subsidy on the disposal fee of construction waste has been removed and therefore the waste generator now pays the true cost for the disposal of the waste generated which is in line with the Polluter Pays Principle. Although a drop in the amount of C&D waste handled was observed between 2004 and 2005, this amount has crept up slightly between 2005 and 2006. The amount of C&D handled by WasteServ in 2007 still continued to show a rise although a reversal in this trend is anticipated for 2008. Government remains committed to:

- increase the observance of waste-avoiding measures in the construction planning phase;
- explore ways how the useful life of buildings and parts thereof may be prolonged;
- provide assistance on the use of recycled materials in the construction of new buildings; and
- advise on toxicity of construction materials before licensing.

The 'Recycled Building Materials Working Party' as proposed in the 2001 Strategy was set up under the auspices of the Building Industry Consultative Council (BICC) together with other representatives from relevant entities e.g. Malta Environment and Planning Authority, Malta Resources Authority, Malta Standards Authority, together with a Producer Responsibility Group representing the main waste producers and producers and suppliers of construction materials.

The proposed aims of the Working Party were primarily to propose ways to recover and recycle materials from excavation, construction and demolition wastes.

During the consultation of this strategy, BICC made a number of recommendations for proper management of C&D waste. Most of the recommendations focused specifically on practical guidelines for action, applying the three R's (Reduction, Re-use and Recycle), strategy to waste management, emphasising on the impact of C&D waste and its long-term impact on the building construction industry at large.

Government shall ensure that the recommendations made by BICC are taken up in order to establish the feasibility and scheduling of their implementation.

In addition, a Twinning Agreement with an Austrian Environment agency (MT-05-IB-EN-01) dealt with the options available for the management of construction and demolition waste and this is envisaged to assist the Recycled Building Materials Working Party in designing a C&D management strategy with, amongst others, the following terms of reference:

- determine the structural feasibility of using demolished and newly-dressed stone in new buildings;
- identify financial incentives for the use of such recycled products;
- examine existing financial provisions in respect of C&D waste and propose any amendments thereto;
- quantify existing space for disposal of C&D waste;

- consider the disposal of C&D waste at sea as an emergency solution when C&D landfill space is not available;
- develop guidelines for the quarrying of large sites earmarked for development and allowing the export of extracted stone blocks;
- examining the potential for reclamation as well as converting what is today deemed as waste into a resource for the embellishment of Product Malta; and
- identify other possible alternatives that could positively contribute towards the management of C&D waste.

Twinning Project MT05-IB-EN-01 - Recycling of Construction and Demolition Waste in Malta: Strategy for Short-Term Implementation – between Malta and the Austrian Umweltbundesamt provides a number of recommendations for the management of C&D waste. The recommendations put forward to introduce recycling in the construction industry in the final document focus around the following:

#### **1. Full implementation and enforcement of EU Legislation**

- Inert landfills;
- Waste acceptance (incl. chemical analysis where necessary);
- Waste documentation;
- Construction products.

#### **2. New National Legislation for:**

- Separation of C & D waste (incl. collection centres for large construction sites);
- Disposal levy;
- Levy on resources ("landscaping levy");
- Documentation of waste streams;
- Enforcement of Permit Conditions for Quarries (refilling, restoration).

#### **3. Standards and Guidelines for**

- Recycled materials from civil works;
- Recycled building materials;
- Deconstruction works.

#### **4. Develop basic economic conditions for a market of recycled products:**

- No illegal dumping;
- Product standards/requirements;
- Establishing a market under ecological conditions.

#### **5. Allocation of storage areas for**

- Mineral C & D waste;
- Recycling products.

#### **6. Introduction of Separation & Collection, that means:**

- Separation at the site (demolition, new construction);
- Collection Centres (large construction sites).

#### **7. Installation of a sorting plant (hand sorting)**

#### **8. Installation of a Mobile Plant or a Stationary Plant for Recycling of mineral C & D waste**

#### **9. Initiatives on Re-use & Recovery; this could be:**

- Re-use of recycled Concrete for Aggregates (batching, blocks, pre-casting) or road construction;
- Re-use of recycled Asphalt for fresh asphalt and/or road construction;
- Soft stone recovery on industrial level for reconstituted stone ("Eco block");
- Re-use of Building elements (e.g. shaping of used blocks for new purposes), incl. installation of a computer based exchange market;
- Refurbishment of non-used buildings.

**10. Development of Disposal Strategies and allocation of the necessary facilities:**

- Quarries for clean excavation material and quarrying residuals;
- Inert waste landfill (if the material is really “inert”);
- Non hazardous waste landfill for mineral waste;
- Non hazardous waste landfill for residuals;
- Hazardous waste landfill;
- Land reclamation at sea (for clean excavation material), if technically, economically and environmentally feasible.

**11. Initiatives on Public Procurement with focus on:**

- Public tenders (Provision of alternatives for recycled materials);
- Preference for recycled materials in certain public construction activities (sidewalks, landscaping etc.);
- Elaboration of standardized documents for public procurement, where recycled products are included.

**12. Information and Public Awareness Raising:**

- Teaching waste management & recycling technologies (schools, University);
- Promoting the use of recycled products in general and specified technical media;
- Organize instruction courses on the use of standards and guidelines (e.g. modular training on deconstruction, proper use of recycled materials, waste acceptance at landfills etc.).

**13. Improvement of the Data Management with regards to:**

- Quarrying activities;
- Construction activities;
- Building materials;
- C & D waste production;
- Prices.

**14. Encourage and support research activities (Pilot Projects, Task Forces) for**

- Reconstituted stone ("Eco Block");
- Organised stripping of a building and separate collection;
- Collection centre for a large construction site;
- Processing of C&D waste in a test recycling facility & re-use of recycled material at a test site (roads, buildings);
- Elaborating Standards/Guidelines & modular training system;
- Possible testing of the “diamond-wire-cutting-technique” for soft stone excavations.

### 5.4.1 - Managing excavation, construction and demolition wastes

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In order to achieve Malta’s targets for reducing and recovering excavation and construction and demolition wastes and to limit the use of landfills for this type of waste, Government intends to enforce the current system of development permits granted by MEPA, in which planning permits oblige construction and demolition waste to be disposed of at authorised C&D landfill facilities and, as far as possible, try to channel excavation waste for recycling. This will assist Malta in achieving European targets for preparing for re-use, recycling and other material recovery (a minimum of overall 70% by weight by 2020). Enforcement is envisaged to increase in order to improve compliance rates so that all the developers of major projects submit a Construction Management Plan, waste management, demolition and dismantling arrangements, for MEPA to review.

A five-year contract had been awarded to a private entity to acquire and manage on behalf of WasteServ a number of licensed sites, usually quarries, for the disposal of construction and demolition waste. Subsequently, WasteServ had introduced a scheme which permits quarry owners to enter into a joint venture with WasteServ with a view towards ensuring that the latter manages the quarry as a construction and demolition landfill. However, Malta must not become overconfident that it has unlimited disposal volumes available and a study on the true potential of other C&D sites as well as in respect of future C&D related strategies needs to be undertaken. This should include the use of disposal of C&D waste at sea as a temporary measure when no facilities for disposal on land are

available as well as allowing developers of large projects to move from excavation to quarrying techniques for the purposes of space creation below ground, with the resulting stone blocks being authorised for export purposes.

This situation needs to be tackled from a sustainability point of view and due consideration should be given to the introduction of fiscal initiatives, such as the abolition of VAT on the sale of recycled building materials, in order to potentially serve as an incentive to trade in this resource.

The use of such materials to create assets that are in the national interest will also be considered. It is important to open the debate on the potential of reclamation as well as that of the creation of islands, initially as an embellishment feature for our beaches, in order to transform what is now considered as waste into a resource.

Should unsustainable trends prevail Government will consider further raising the cost of disposal to C&D landfills to disincentivise the excessive generation of C&D waste.

## **Objective 4 – To manage Construction & Demolition Waste in a more sustainable manner**

**Government will continue to promote fiscal and other reforms deemed necessary to work towards recycling 70% of all C&D waste by 2020.**

**The Austrian Twinning Study of June 2008<sup>6</sup> will be used to promote the minimisation and recycling of C&D waste.**

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<sup>6</sup> Recycling of Construction and Demolition Waste in Malta: Strategy for Short-Term implementation. Umweltbundsamt GmbH. June 2008

## 5.5 - Policy Objective 5 – Promoting Waste to Energy

Government is committed to increase the capacity to deal with residual waste fractions. Processing technologies for waste management have advanced. Increasingly waste is viewed as a resource and can help to further reduce reliance on fossil fuels thereby reducing the generation of greenhouse gas emissions through the production of energy from waste.

The existing MBT plant at Sant Antnin has insufficient capacity to process all waste arisings following implementation of minimisation and recycling measures set out through Policy Objectives 1, 6 and 7. If disposal to landfill is to be minimised, further infrastructure to treat waste is required. In considering the nature and type of future infrastructure, the Waste Management Strategy prioritises recovery of energy from waste and preferred treatment options are set out in Policy Objective 8. This is in line with the waste hierarchy (minimise, reuse/recycle, recover and disposal).

Promotion of waste to energy technologies will help to meet national commitments regarding the promotion of renewable energy generation. The National Reform Programme for Malta sets a target for Malta to meet at least 10% of its energy requirements from renewable sources by 2020. The NRP recognises that a significant proportion of Malta's potential will come from waste. This is an objective that the Waste Management Strategy supports and is reflected in the choice and emphasis of technologies for managing waste.

Further detail on the preferred mix of facilities is set out through **Policy Objective 8** and is based on background research carried out in preparation for this Waste Management Strategy and the Agricultural Waste Management Plan. It is inappropriate for the Waste Management Strategy to prejudge the exact processing or energy generating capacities of new facilities until the technical specifications are drawn up. A higher target for energy from waste will be incorporated into the Waste Management Strategy following the next review.

Government will undertake any environmental studies that will be required by MEPA during the permitting procedures for new waste management facilities (as set out through **Policy Objective 8**) and ensure waste to energy requirements are embedded to project proposals. As part of this, Government will undertake studies to determine what fractions will go to existing facilities and what additional treatment capacity will be required to recover embedded energy prior to disposal.

### **Policy Objective 5- Promote waste to energy**

**The strategy will promote waste management technologies that maximise the potential for energy from waste. The favoured technologies include Mechanical & Biological Treatment (MBT) and the use of Biogas and RDF (Refuse Derived Fuel) for incineration / heat recovery.**

## 5.6 - Policy Objective 6 - Changing Behaviour

Since 2001, a number of successful public awareness campaigns have been launched in relation to waste and waste management. Campaigns by WasteServ as well as awareness efforts from private organisations have helped to start to change attitudes towards waste. Campaigns to encourage separation of specific wastes such as batteries and waste management initiatives within schools have also been successful. It is important that further resources are targeted at communications to encourage further civic responsibility and changes in attitudes towards waste.

### 5.6.1 - Education

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Education is an important foundation to the process as it provides a more learned workforce that can undertake the challenges required as Malta continues to upgrade its waste management infrastructure.

Targeting educational institutions is an effective long term way to ensure generational changes in attitude towards waste. It can also exert considerable influence over the attitudes and behaviour of parents and other members of society.

Resources will be specifically targeted towards improvements to the environmental components of primary, secondary and tertiary educational curricula. Specific vocational training will also be targeted. Government will continue to work with the competent authorities to review curricula and ensure that waste management learning remains prominent. Particular priority will be given to **Policy Objective 1** (Waste Minimisation) although broader awareness of the waste hierarchy and importance of recycling will continue.

Education should not be limited only to the formal type. Non-formal education, aimed at the various strata of society, outside formal learning institutions is another crucial aspect of educating society. Outreach programmes by different actors will be encouraged with a view towards securing a positive interaction with learners that should translate into a better understanding of what goals, objectives and process are all about and the importance of a participatory approach towards successful implementation.

A number of projects have already been undertaken in this respect departing from the well known character of Xummiemu to the promotion of home composting, a European Social Fund (ESF) project to improve the employability of 28 trainees who visited 50,000 households as part of the programme in order to educate citizens on waste management and another project under the EQUAL programme to conduct small scale recycling activities.

### 5.6.2 - Communications

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Communication is equally important as it ensures that unilateral approaches are avoided and that all interested stakeholders have a real and true opportunity to participate in a process. Waste management is no exception to this and it is clear that the number of stakeholders involved is wide and varied. Government recognises the need to allay any fears as well as to rope in all those who are willing to contribute concrete and tangible proposals that enhance our waste management capabilities.

It is recognised that the Waste Management Strategy will be implemented collectively. Its implementation depends on effective communication between citizens, Government, the Waste Sector and NGOs in order to engender ownership and shared responsibilities for waste management. Particular communication priorities include:

- Obtaining information and feedback on key issues from stakeholders (such as households and businesses) during implementation of the Waste Management Strategy;
- Addressing concerns and objections and proactively involving local communities who consider themselves affected by planned new waste management facilities; and

- Developing an understanding amongst the target groups of economic realities and practical constraints of waste management, and the importance of cost recovery for waste management.

### 5.6.3 - Public Sector Leadership

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Government will undertake a detailed review of the human resources and training needs within institutions including, Waste Managers within Joint Committees, Malta Maritime Authority, Malta International Airport, Ministry for Resources and Rural Affairs, Ministry for Gozo, Ministry for Social Policy, Enemalta Corporation, Malta Tourism Authority, Malta Resources Authority, BICC, WasteServ and Malta Environment and Planning Authority. This review will focus on their waste management responsibilities and functions.

Public sector institutions require a small nucleus of people who are entrusted with the responsibility of waste management within their organisation. The introduction of Green leaders is a step in the right direction and could represent the necessary seed to stem this initiative further. To date no progress has been made in assessing the human resource capacity and training required. Government is committed to carrying out a detailed review and assessment of the human resource and training needs of the aforementioned entities with respect to their waste management responsibilities and functions. Following such review, these institutions should take the necessary actions to comply with this initiative. Notwithstanding, a review of the human resource availability and competencies within WasteServ is also required.

### 5.6.4 - Preferential Public Sector Procurement Policies

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In October 2006, Government published a draft Green Public Procurement Action Plan for consultation. The thrust of the plan is that in future the government will give added weight to environmental considerations when it purchases goods and services. Government is a major purchaser of public goods and services with around €90 million worth of contracts being awarded annually over the past three years and hence its influence on the environment and health of a properly-directed "green" procurement policy is considerable. A preliminary draft for General Conditions of Contract on the Environmental Performance of Public Procurement has also been drafted. These conditions place a duty on the Contractor to ensure the safeguard of the environment at all times and in every aspect related to the project.

The introduction of "green" purchasing could also bring the wider benefit of setting an example in reducing the use of natural resources and reducing pollution. It influences the market place in those areas where public purchases are particularly significant, such as computers, energy-efficient buildings, public transport, packaging, transportation of products, electricity consumption and how a product is disposed of at the end of its use.

The new "green" procurement policy will include criteria, as part of the tender bidding process, affecting not only the quality of a product or service but also minimum environmental requirements. Moreover, in establishing a "green" procurement policy, Government will lead by example and provide the impetus to industry to adopt "green" technologies.

Government is to be a prime supporter of the local market promoting waste recovery by giving preference to recycled products manufactured locally in its procurement policies. The Strategy suggests that this initiative initially attempts to focus upon:

- products and materials recovered from excavation and construction and demolition wastes, recycled oils and waste-derived compost products;
- consumables such as paper, toners and other stationery items; and
- furniture and fittings produced from recycled materials.

Government intends to publish guidelines for departments to refer to in order to ensure adherence within both the public sector and public service. Moreover Green Leaders are being given an annual budget in order to 'green' the public sector/service.

### 5.6.5 - Enforcement

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The need for effective monitoring and enforcement will also be a central theme of the educational and communications programme. The enforcement of environmental regulations and standards has been neglected in the past, and the importance of effective enforcement has not yet been fully recognised and accepted by all sections of our society.

A focus on education and communication is a proactive way to reduce the incidence of fly-tipping and breaches of waste management regulations in the long run. Unfortunately some forms of abusive waste disposal are likely to continue. It is therefore important that resources remain dedicated to the enforcement of waste management regulations. Proactive learning and engagement in waste management will therefore be supported by firm enforcement procedures.

Laws and regulations governing waste management are not in themselves sufficient to ensure their success. To be effective, such measures must be administered and enforced, which in turn requires that adequate systems, procedures and resources be deployed to fulfil these tasks. In order to specify and quantify these requirements more precisely, Government shall be:

- carrying out a systematic assessment of the resources required for establishing and maintaining a monitoring and enforcement regime sufficient to ensure a continuing high level of compliance;
- specifying and then providing or acquiring sufficient human and technical resources based on the results of the assessment;
- developing and implementing integrated systems and procedures for monitoring, inspection and enforcement; and
- periodically reviewing the adequacy of resources, systems and procedures, and adjusting these in the light of experience and changing circumstances.

Government is conscious of the financial situation of the country and is therefore determined to ensure that:

- existing resources are being deployed in an effective and efficient manner;
- any competent resources within the public service/sector who are not being utilised to their full potential will be detailed to the Environment Protection Department (EPD) within MEPA; and
- recruitment is the last yet inevitable option.

Government will work with MEPA to ensure that the Waste Management Strategy is implemented to minimise the incidence of abusive waste disposal. For example planned increases in gate fees for municipal waste will be coordinated with MEPA's enforcement section to ensure extra resources are dedicated to manage incidences of fly-tipping. In order to ensure that adequate systems, procedures, and resources are deployed to fulfil these tasks a review of existing enforcement resources will be undertaken. Government will ensure that MEPA is properly resourced to fulfil the entrusted tasks particularly those regarding the enforcement component which is critical to ensuring adherence to permits, legislation and other provisions. Notwithstanding, Government is directing the Malta Environment and Planning Authority to prove its cost effectiveness and to put forward proposals to ensure that its current and future operations become as financially independent from Government as possible.

### 5.6.6 - The Need for Data

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Communications and information is not a one way process. The main actors need to contribute data to central authorities with a view to enabling the assessment of the national picture, whilst central authorities need to make data available to researchers, the general public and interested parties in order to stimulate the necessary interest and to instil an independent controlling mechanism within the sector. Consequently, there is a need for a data sharing platform to be established.

Data and information on wastes and waste management activities needs to be collected, processed and analysed for a variety of reasons, including:

- to provide essential input to the planning, development, management and control of waste management facilities and services;
- to provide the necessary data and information for effective monitoring, inspection and enforcement;
- to fulfil the reporting obligations concerning waste management required by EU legislation; and
- to inform and facilitate communications with stakeholders, in particular producers and transporters of wastes, operators of waste management facilities and the general public.

The scope and quality of data and information about wastes and waste management activities have improved to some extent in recent years, but there are still some major gaps and weaknesses, notably:

- insufficient or inadequate data and information about some waste streams e.g. the quantities and types of hazardous wastes; the composition of Municipal Solid Waste;
- insufficient or inadequate data and information about some waste producers, transporters and facilities; and
- the lack of a comprehensive system and procedures for classifying, collecting, processing, analysing and disseminating data and information on wastes and waste management activities in a consistent and standardised format.

The European Commission has issued a number of decisions and clarifications relating to the collection and reporting of information on waste management.

The Malta Environment and Planning Authority is responsible for developing and managing a national waste management information system. This entails a high level of cooperation and input from the National Statistics Office (NSO), being the Competent Authority responsible for the Waste Statistics Regulation. Implementation requires the establishment of a national computerised database for data storage, processing and retrieval, supported by integrated systems and procedures for data gathering, verification and reporting. This information system should also cater for dissemination to the public of waste management information and data. MEPA shall also compile a Waste Management Register, which would provide the public with information about all permitted waste facilities and activities. This register shall be made available online on the MEPA website.

The setting up of such systems, that in any case are essentially required for reporting purposes to the European Commission, would require MEPA to dedicate more trained human resources towards this scope. To date, MEPA's main priorities in this area were on the transposition of the EU's waste management *Acquis*. Little progress has been registered on actually developing waste management data and information systems. This issue needs to be given higher priority during the lifetime of the revised strategy.

The NSO has a major role to play in advising on the methodologies that need to be employed for data collection as well as to identify the best way in which the data can be collected. The NSO also has a determining role in transmitting and making that data available to all interested parties.

### 5.6.7 - Research

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Research is key in order to address potential solutions to intrinsic waste management problems. The Strategy recognises the importance of research with a view to providing innovative solutions to the needs of the central authorities and the private sector. It is therefore important for Government to encourage such research through a variety of instruments that would make this sector more attractive to researchers.

Government recognises the potential that waste management offers towards achieving Malta's goals and objectives in various areas – energy recovery, re-use of construction and demolition waste and land maximisation being but a few target areas.

Government intends to support research initiatives in this area. To this effect Government is considering the following initiatives:

- establishing formal working groups with local and foreign research institutions with a view to establishing a research interest in the field of waste management;
- creating a Fund which from time to time will support research initiatives in this area; and
- work towards providing fiscal incentives for those undertaking research in waste management.

## **Objective 6 – Changing Behaviour**

**Education and communication will be key to the long term implementation of the Waste Management Strategy and changing social attitudes and behaviour. Education and communication will be prioritised to ensure a sense of collective responsibility for sustainable waste management. Government Ministries, Local Councils and other public sector bodies will be expected to demonstrate leadership in their own waste management practices and internal policies in line with this strategy.**

**Government will also promote waste management related research (such as the management of C&D waste, energy recovery and land maximisation).**

**Enforcement will continue to ensure changing behaviours, where necessary.**

## 5.7 - Policy Objective 7 – More Recycling and Separation of Biodegradable Waste

### 5.7.1 - Municipal Solid Waste (MSW)

The yearly average increase since 2001 for this stream amounted to around 2.4% per annum (NSO, 2008). Efforts to minimise waste going to landfill must continue to be implemented to counter balance efforts to increase the qualitative growth of the national economy. By default this increase in economic activity entails greater flow of goods. The increase in single households, the change in consumer's consumption habits to packaged products as well as the wider range of disposable products continue to push the generation of Municipal Solid Waste up. The availability of more electronic equipment per household basis has also resulted in more specialised waste fractions being produced. The growing success towards the separate collection and recovery of recyclables must continue to be re-enforced. This underlines the importance of measures being taken so far. These measures also form an important condition for the success of waste prevention and hence must be further intensified. One aspect must always be borne in mind, waste prevention and recovery measures are not boundless. Measures require significant funding and must be affordable, comprehensive, viable and attractive for the consumer to participate.

Since 2003, the total volume of separated waste collected from Bring in Sites has risen from 157.88 tonnes to 2255.24 in 2006 (NSO, 2008). Notwithstanding, taking 2006 figures only, the amount of waste collected from Bring in Sites amounted to 1.35% of total municipal solid. During its initial period the Recycle Tuesdays' Initiative has managed to collect 140 tonnes per week of separated waste which if projected over a 52-week period would increase separated waste by 7280 tonnes. Hence this system together with that for bring in-sites might yield 5.71% of all total Municipal Solid Waste arisings assuming there is no migration from those who used bring in sites to the kerb side system. The quantity of recyclable waste collected via the Recycle Tuesdays initiative from 5<sup>th</sup> May 2008 until December 2008 was 4,248 tonnes. The maximum collected per week was 140.98 tonnes which translates to 0.35 kgs per week per capita based on a population of 407,810 inhabitants. This means that efforts are still required to ensure desired penetration levels of separation.

The Ghallis engineered landfill has a total capacity of 1.7 million cubic metres. On the basis of total waste arisings going to landfills in 2006 which amounted to 247,256 tonnes, a further 278,501 tonnes in 2007 and 283,960 tonnes in 2008 and taking into account the annual 71,000 tonnes capacity at Sant' Antnin including the potential recovery of 36,000 tonnes of separated waste, the total amount of waste which would go to landfill would render its lifespan very short. It is clear that annual landfill volumes are still on the rise!

The size of Malta is one of its main limitations and hence the choice of new landfill sites is not an easy task. Hence the current scenario is questionable in terms of sustainability.

Industry too is an important player in the success of household waste prevention. The need to minimise use of materials and energy during production, the use of low-waste products and packaging design, the introduction of incentive-based and education-based initiatives for the recovery of packaging and products as well as the marketing of ecologically preferable products should continue to be prioritised. Substituting the type of materials that are put in circulation, more so if the hazardous content of such material is high, is also a step in the right direction. Anything short of this, Government will explore ways to penalise the non-conformers as the Eco-Contribution Act highlights.

Further potential for separate collection and subsequent recovery of up to 36,000 tonnes of recyclables and 35,000 tonnes of clean organic fraction exists. The recyclable fraction is actually expected to increase further through the participation of private schemes. One must keep in mind that there exists a threshold when greater tonnages of both the recyclable and the clean organic fraction are no longer environmentally or economically feasible to recover. This happens due to the increased effort needed to recover smaller fractions of material.

The residual waste (approximately 150,000 tonnes) must be treated to reduce waste going to landfill. Mechanical biological treatment processes separate the high calorific waste from the organic matter,

inerts and metals with the ensuing fraction requiring landfilling being drastically reduced. The high calorific fraction may be used for energy recovery whilst the organic fraction may be stabilised for use as landfill cover by means of a digester from which energy may also be recovered. One needs to highlight potential implications namely, that if an authorised Refuse Derived Fuel (RDF) incineration facility is not provided in the same time as the RDF is being produced the RDF may have to be “stored” in a landfill. Although this material could potentially be mined in the future for use as RDF, in the short term Malta would still be faced with potential infringement proceedings due to failure to meet Malta’s obligations with respect to the landfill directive targets.

The hazardous household waste must start to be extracted from the residual waste. This is being encouraged through the development of Civic Amenity Sites. The Maghtab, Hal-Far, Mriehel, Luqa and Tal-Kus Civic Amenity Sites are open for use from Monday to Sunday, 7.30am to 5.30 pm including weekends and public holidays. Bulky and other wastes which can be taken to a Civic Amenity site and deposited separately include:

- Paper, cardboard, glass, metal, plastic;
- Furniture, mattresses, carpets, tiles and other white goods such as fridges, cookers and microwaves;
- Garden waste;
- Edible oil and lubricant oils;
- Batteries, solvents, neon tubes, expired medicines, used syringes, chemicals, paint and other hazardous domestic waste;
- Computers, monitors, mobile phones, printers, toys, transmitters, electronic tools;
- Small quantities of household construction waste; and
- Tyres.

### 5.7.2 - Management of Bring in sites

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Government, in association with the local councils, intends to achieve 400 ‘bring-in sites’ to facilitate public participation in the collection of clean, source-segregated recyclable materials. Such centres are conveniently located in or near to areas easily accessible to the public that could include car parks, supermarkets, recreation areas, etc, and equipped with labelled and colour-coded containers for receiving and temporarily storing different recyclable materials. To facilitate the acceptance of these facilities, bring-in sites shall be located at a frequency of one site per 300 households and should be maintained in good working order.

Bring-in sites have already been introduced in some localities. As a start, Government allocated €3,494 to each local council that participates in the scheme. Localities which have a ‘no bins policy’ had the funds withdrawn.

Local Councils are also encouraged to locate one site for every 300 households. In the meantime, when sites were identified, WasteServ Malta Ltd assisted in the acquisition of all the necessary permits to install the bring-in sites, the capital expenditure of which has been co-funded through Structural Funds secured precisely for this reason. The recurrent expenditure for the daily operation of these sites was covered by WasteServ and for the future it is foreseen to be met as follows.

WasteServ Malta Limited has concluded an EU co-funded project which provided funding for 300 bring-in sites within localities and 200 other sites within schools. It is important that these bins continue to be used and those local councils, who are responsible for waste collection, could form a partnership with Government in order to further contribute towards separating waste at source.

Bring-in sites combined with a separate kerbside collection system of packaging waste financed through producer subscriptions to licensed schemes should provide the country with the necessary infrastructure to ensure that a producer complies with the relevant regulations. This would ensure that all major stakeholders would become involved in this process leading to a better utilisation of Government resources and the fostering of a strategic partnership between local and central government.

Until such an arrangement is in place, Government is willing to continue to provide and maintain all the bring-in sites designated for each locality at € 3,494 per locality. These funds will be allocated by the Department of Local Councils. Alternatively, a Local Council may opt to be provided with all the required bins and with the € 3,494 per annum to organise the maintenance of the bins in the respective locality on its own steam. Which ever arrangement will be adopted, the standard frequency of 1 bring-in site for every 300 homes shall be adhered to.

### 5.7.3 - Source Segregation and Separate Collection of Recyclables from MSW

Government intends to consult respective stakeholders on the possibility of legislating in favour of source segregated and the separate collection of all domestic, commercial and industrial waste. The reasons for this are threefold. Firstly, source segregation and separate collection of organic waste may be used as feedstock for the upgraded facility at Sant' Antnin (once this is commissioned). Secondly, the source segregated and separate collection of packaging waste contributes towards meeting Malta's waste management targets. Thirdly, every effort must be made to ensure that commercial and industrial outlets have a contract in place for the collection of solid waste. Such a practice should also help to focus the attention of waste producers on the amount and value of their waste and stimulate waste avoidance.

Furthermore, Government intends to continue consulting closely with local councils and all interested stakeholders on the manner in which source segregation and separate collection of waste may continue to be extended. Initiatives already in place are the bring-in-sites that are available in almost every locality and which offer the possibility for the public to separate their recyclables and the Recycle Tuesdays' Initiative which offers a weekly kerbside collection of dry recyclables – paper, plastic and metal. Following agreements with the localities, the separation may be strengthened by the further kerb side collection of the separated waste. In the event of non compliance, Government intends to introduce the necessary legal mandates to ensure compliance even through its own direct intervention.

What is certain is that both businesses and citizens have to rise to the occasion and work in tandem with Government in order to solve a potentially national problem. Statistics from the first four weeks of the Recycle Tuesdays Initiative provided by WasteServ show that the peak amount that was collected was 144,660kg which when divided by the national population produces a per capita contribution to the separated fraction of 0.35kg per person per week.

When one considers the Domestic Waste Composition Survey data (NSO, 2002) it emerges that on the parallels drawn from that exercise one would expect, on average, to have the generation of plastic, paper and metal to amount to around 1.26kg per person per week. Hence the Recycle Tuesdays initiative has so far only managed to contribute around 27.27% of what is perceived to be the statistical potential. This needs to improve and not at the expense of the waste that is deposited in bring in sites.

With respect to bring in sites, statistics for the period 2003-2008 are reproduced in Table 1 hereunder.

Table 1 – Waste Deposited at Bring in Sites 2003-2008 (tonnes)

	Material	2003	2004	2005	2006	2007	2008
Bring in sites	Paper	82.64	476.41	892.04	1084.76	1344.95	1793.37
	Plastic	25.76	163.95	266.14	352.39	537.42	769.84
	Cans	15.76	81.20	135.48	165.34	218.73	256.38
	Glass	33.72	241.02	494.77	632.75	897.39	1287.28

It is evident that if one were to compare the amount of paper, plastic and cans collected via bring-in sites in 2007 (2101.1 tonnes) and compare it to a straight line annual projection based on the maximum amount of waste achieved during the first four weeks of the Recycle Tuesday initiative (6026.8 tonnes), it appears that this latest initiative has the potential to increase the amount of

separated waste that is collected separately. Figures for 2008 show an increase in the amount of waste deposited at bring-in sites, a fact which so far complements other separation initiatives.

Notwithstanding, it is imperative that separation rates are increased in order to meet the targets that are set within the suite of environmental directives as well as to recover as much as possible of the embedded resources within these fractions.

#### 5.7.4 - Private Sector Facilities for the Recycling of Waste

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Many private sector companies are already involved in the processing of specific waste streams such as waste oils. The Solid Waste Management Strategy promotes further private sector involvement in the provision and management of facilities for recycling, such as ELV processing. This is particularly important given that **Policy Objective 2** seeks to diversify the number of waste streams that will be treated in Malta. The Business Promotions Act has now been amended to provide fiscal incentives for the establishment of recycling facilities. Notwithstanding this, the long term economic sustainability of recycling facilities will be influenced by other regulatory and cost factors. The scale of the market for recycled materials in Malta is also limited, necessitating exportation in most cases. Government is committed to reviewing opportunities and threats to further private sector investment in new waste treatment facilities.

#### 5.7.5 - Export of Recycled Products / Recyclable Materials

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The success, sustainability and profitability of waste treatment facilities attempting to recover resources, necessitates the opportunity for the exporting of recyclable products and materials. Given the scale of the local market, recyclables would have to be exported. The current rates charged by port service providers do not help the export potential of such products. Partial exemptions of port charges in the case of recyclables are needed to supplement the mission and the results obtained through the implementation of the aforementioned initiative.

#### 5.7.6 - Collection Systems – The *Modus Operandi*

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There are various strong arguments in favour of reorganising MSW collection service provision into fewer yet larger regions. As a result, Government intends to pursue further the need for waste collection to be regionalised. One must emphasise that the more waste prevention and recovery initiatives take off, the less residual waste remains and the greater the number of separate collections to be carried out. To overcome the existing diseconomies of scale, it is essential that the concept of regionalisation be taken into account in MSW collection processes as well as in other waste collection contracts. Government will support this activity through the setting up of the necessary legislative and administrative framework within which regions for the collection of waste will function. In addition Government is also committed to deploying personnel from within its own resources to act as full time waste manager/s within each region. All these initiatives shall be carried out in collaboration with Local Councils through the Local Councils Association.

The introduction of new systems for the source segregation and separate collection of recyclable materials from MSW will provide an opportunity to optimise collection frequencies and reduce vehicle idle times so that, for example, wet organic waste may be rationalised to be collected four times per week, while essentially dry materials are collected periodically. Rationalisation of collection frequencies in this way has the potential to improve the productivity and reduce the costs of collection services substantially. Government is also committed to explore further the possibility of adopting additional practices and audits that aim at responsabilising individuals towards better waste management behaviours. This will be explored further through separate consultation papers outlining the possible waste collection options available.

This and other measures relating to the collection of MSW mean that the draft contract for the provision of MSW collection services, prepared in mid-2002 for the Department of Local Councils and

presented to local councils in January 2003, have been updated and adopted by Local Councils in the light of the reform in the Local Councils system.

Government will explore the adoption of financial incentives that are best suited for both households and local councils and that encourage them to adopt more environmentally acceptable waste management. In the case of local councils Government has introduced a fee for waste on a *per tonne* basis and has provided incentives for the deposit of properly separated dry recyclables at the Sant' Antnin plant. This would not only ensure increased waste separation and composting initiatives at local level but also instigate the local council to monitor the contractor to ensure that household waste is not contaminated *en route* to the waste facility. Government will remain responsible to educate on a national level and to provide the entire necessary infrastructure to support these initiatives.

### 5.7.7 - Waste Collection Practices

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Government plans to introduce a guidance document for MSW service providers. Waste collection is governed by environmental regulations, as well as regulations and standards related to public health, occupational health and safety, vehicle regulations, local council by-laws, police laws and possibly others. This guidance document will set out the necessary criteria that service providers must aim for. In line with this requirement, local councils will need to introduce a standard procedure for pre-qualifying potential bidders for MSW collection contracts against the requirements stipulated in this guidance document. This will be a further step towards implementing, successfully and in a sustainable manner, new waste management principles in the Maltese Islands.

Government may explore the possibility of assisting the upgrading of all waste collection practices to conform to ISO accreditation. Government will also consider favouring the use of appropriately sized Refuse Collection Vehicles (RCV) with a view to improving congestion that is currently created as well as to improve accessibility within village cores and other narrow streets.

### 5.7.8 - Agricultural and Animal Husbandry Waste

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The Ministry for Resources and Rural Affairs had awarded a consultancy services contract related to the compilation of an Agricultural Waste Management Plan for the Maltese Islands. This Plan has been submitted to Government.

The plan proposes to set up agricultural waste treatment plants to treat cattle, poultry and rabbit manure with the consequent biogas co-generation power and soil improvers production. This provides a treatment alternative whilst recovering embedded energy and providing an alternative to imported fertilizer. The possibility of treating other (non-manure) agricultural waste (fallen stock, slaughterhouse waste, fish waste and other waste from industry) estimated at 7000 tonnes per annum is also considered in the draft plan.

The Agricultural Waste Management Plan has sought to identify a solution that is tailored to Malta's unique requirements and which entails least costs and minimal space requirements taking into account the social, economic and environmental realities of, and objectives for, the Maltese Islands.

The recommended option for the treatment of manures and agricultural slurries in the Maltese Islands involves:

- the construction of a centralized manure treatment plant in Gozo to treat all the manures generated in Gozo, to be combined with WasteServ's Mechanical Biological Treatment (MBT) plant for the organic fraction resulting from the MSW which is to be received at the Waste Transfer Station.
- the construction of a regional manure treatment plant in the north of Malta to treat the manures generated in the north of Malta, to be combined with WasteServ's MBT plant for MSW in Malta North. A site for these treatment plants is to be identified by WasteServ. This plant will initially treat approximately 30% of all the manure and slurry generated in Malta.

- the construction of a regional manure treatment plant as close to the centre of gravity of the residual farms to treat the manures and slurries generated in the north-west, central and south of Malta. This plant will treat approximately 25 - 35% of all the manure and slurry generated in Malta.

The plan recommends that the treatment plants be of modular construction so that plant capacity may be increased if required.

The recommended solution of the Plan is intended to give the following advantages:

- provide a staged approach to mitigate against the inherent uncertainties associated with the animal husbandry sector;
- seek to combine treatment facilities for MSW, sludge and manure within a limited number of sites for enhanced operational flexibility and economies of scale;
- provide a future solution for the treatment of all agricultural manures and slurries, including pig slurry, and thereby achieve a considerable reduction on the loading of the new sewage treatment plants;
- removal of approximately 50% of the nitrogen in manure, which today is causing pollution of the groundwater;
- produce a high-quality fertilizer product, which is stable and easy to use, and may even reduce the import of commercial inorganic fertilizer;
- provide a means of controlling the distribution and application of fertilizer and the recording of fertilization rates;
- produce a significant amount of electricity from a renewable source (approximately 33,000 MWh per year if one also takes the biogas production from the MBT plants into account);
- reduce the amount of greenhouse gas emissions currently being released from the manure heaps and the improper management of manure.

This Strategy also takes into account the commissioning of three new sewage treatment plants. All efforts should be made to synergise the treatment of similar waste streams in Malta and to avoid the duplication of facilities, at the expense of greenfield sites. This would also in turn provide increased economies of scale both for the treatment aspect as well as for the generation of electricity.

It is Government's intention to issue the Agricultural Waste Management Plan for consultation in respect of how to best develop our strategy for the treatment of this waste stream which whilst consolidating facilities within established boundaries provides also for different lines to treat the different waste streams to enhance the re-use potential of the ensuing product.

### 5.7.9 - Biodegradable Waste

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There is also further scope to diversify the range of materials that are separated for recycling or recovery of energy from waste. Typically household waste consists of around 60% food waste and a number of sectors such as the tourism, health (hospital food waste) and agriculture produce significant quantities of organic waste. Government is committed to exploring the potential for the comprehensive collection of commercial and household organic waste, including biodegradable waste and waste oils. Significant progress towards this will be made in 2010 when the Sant' Antrnin Waste Treatment Plant is expected to be commissioned to accept 35,000 tonnes of biodegradable material. Establishing a national collection and treatment regime for food and other organic waste has the dual benefits of:

- Further diverting waste from landfill and associated emissions of methane; and
- Capturing value from waste (potential for biogas and electricity generation from anaerobic digestion).

Composting is another means to reduce the total fraction of organic waste that is disposed to landfill. WasteServ Malta Ltd currently promotes the practice of home composting and offers subsidised compost bins. This practice can help to further divert waste to landfill.

The priorities for recycling and separation of waste are therefore:

- Increase public and business participation in recycling via the use of bring-in sites and kerbside 'Recycle Tuesdays' scheme; and
- To investigate the potential to collect household and commercial organic waste.

## **Objective 7 – More Recycling and Separation of Biodegradable Waste**

**To continue to work towards improvements in the proportion of residual household and commercial waste that is separated for recycling. In the period up to 2015, recycling targets established through the Packaging Directive will be aimed for, working towards a 2020 target of 50%. Priorities to encourage recycling include:**

- Continued education and raising of public awareness to increase recycling participation rates;
- Continue to increase the number of bring-in sites;
- Roll out of responsibility for the management of bring-in sites to the private sector via Local Council procurement;
- A review of current collection regulations to determine how collection regimes can place further bias towards the collection of pre-separated waste over mixed waste; and
- Promote further private sector involvement in the recycling sector.

**Further work will be undertaken into the feasibility of increasing levels of composting and separating biodegradable waste from household and commercial waste for energy recovery at proposed Composting / MBT plants.**

## 5.8 - Policy Objective 8 - Facilities for the Management of Solid Waste

From the previous discussion it is clear that Malta requires more facilities in order to be in a position to fully treat its solid waste arisings. The treatment capacity available was designed to achieve the 2010 target of the Landfill Directive obliging the reduction of organic waste which is directed for landfilling. This treatment capacity is insufficient to meet the targets of 2013 and 2015 and the behavioural pattern that prevails today will also limit the life span of the current engineered landfill forcing the selection of another site for landfilling purposes. Waste which can be diverted to treatment facilities can be treated and resources recovered from it. If such waste is allowed simply to be disposed of at our landfill, this will represent the taking up of unnecessary space from an already finite volume and a rate of consumption of volume which will exhaust the available space in a shorter timeframe. Selecting a new landfill site is indeed an arduous task particularly in the light of Malta's size and density of urban development and we should therefore alter our behaviours with a view towards maximising the amount of landfill space currently available. At the same time, Malta also has an obligation to achieve agreed recovery and recycling targets.

Landfilling of untreated waste remains the least preferred option. Land use constraints in Malta makes this option a far less desirable technique. A policy for diverting waste from landfills can only succeed if the waste management system is able to receive and manage the diverted waste flows. In particular, the 'maturity' of the system will determine the capacity to deal with waste. This capacity depends on the existence of separate collection schemes and recovery capacity to deal with separated and mixed wastes.

The Ghallis engineered (non-hazardous) landfill has a total capacity of 1.7 million cubic metres. The Engineered Landfill of Ta' Zwejra contained the waste landfilled from May 2004 to end of 2006. Waste arisings going to landfills in 2006 amounted to 247,256 tonnes, in 2007 to 278,501 tonnes and 283,930 tonnes in 2008. Taking into account the annual 71,000 tonnes<sup>7</sup> capacity at the Sant' Antnin Waste Treatment Plant, including the potential recovery 36,000 tonnes of separated waste, the total amount of waste which would go to landfill would render its lifespan very short (estimated to be approximately 7 years).

The Waste Management Strategy responds to this scenario by placing further priority on waste minimisation and waste separation at source by businesses and households. The Waste Management Strategy sets an ambitious target to reduce the rate of growth of waste. However, even combined with Malta's significantly increased capacity to manage and recycle separated municipal waste (primarily through the upgraded Sant' Antnin Plant), waste minimisation and recycling alone will not prove sufficient to manage all of Malta's municipal solid wastes.

It is therefore recognised that further capacity to manage, separate and process unsorted waste is needed to reduce significant fractions from being deposited at landfill.

As a result and during the coming years, Government intends to develop new specialised facilities for the residual waste fraction based on the best available technologies option. Government will commission work to ensure that Malta moves towards meeting its targets for Renewable Energy Sources (RES) from the treatment of solid waste. As a consequence, material flow and cost benefit analyses will be undertaken to determine what fractions will be going to the planned facilities and what additional treatment technologies will be required to recover this embedded energy prior to disposal.

### 5.8.1 - Preferred Technology

During the period of the revised Waste Management Strategy (2010-2015), the Government intends to increase the nation's capacity to manage residual fractions of municipal solid waste. This will be achieved through a combination of additional MBT plants and increased incineration capacity.

<sup>7</sup> 35,000 tonnes of biodegradable waste and a material recovery facility to treat 36,000 tonnes of recyclable material.

## 5.8.2 - Sant Antnin Solid Waste Treatment Plant

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In December 2004, the Cohesion Funds application, submitted by WasteServ Malta Ltd to upgrade the Sant' Antnin facility was approved by the Commission to the total amount of EUR 16,747,500 of which EUR 11,723,250 represents the Cohesion Fund EU contribution. All the necessary permits have been secured and the first phase of the plant, destined to manage the collection of dry recyclables, has been brought into operation. Work is ongoing to finalise the subsequent phases of the plant.

The facility will be equipped with a digestion / composting facility to treat 35,000 tonnes of biodegradable material and a material recovery facility to treat 36,000 tonnes of recyclable material. Tonnages indicated are on a per annum basis. Other forms of composting, on a localised scale (such as homes and farms) will also be promoted further wherever possible. In order to further ensure the quality of the input to Sant' Antnin and any other digesters, Government should legislate in favour of separate collection and disposal of all catering waste to this facility (hotels, restaurants, hospitals etc.).

Part of this upgrading involved Government developing a Materials Recovery Facility (MRF) for the recovery of recyclable materials such as plastics, glass, paper, metals and wood. This facility will be able to receive clean, source segregated recyclable materials directly from the waste collectors, bring-in sites and other sources. Most materials treated will be sold for export for recycling and recovery. The MRF will be a facility that will be able to accept materials collected by schemes and which will be subsequently certified as having been recycled by WasteServ.

The 71,000 tonnes of input to the Sant' Antnin facility are initially planned to pass through a Mechanical Treatment Plant (MTP) to recover the metals, inerts, organics as well as the high calorific fraction (plastics, cardboard, etc). The cleaner the fractions become through increased public separation, the less the material that will pass through the MTP.

## 5.8.3 - Proposed Facilities

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Two potential, yet diametrically opposed scenarios would revolve around the further consolidation of digestion as the preferred method of treatment or the move towards incineration as a means for securing volume reduction with both methods allowing for the recovery of energy from waste. The choice will have to be based on a number of criteria not least the following:

- availability of sites for landfilling;
- availability of sites for the setting up of other waste management facilities;
- population contribution towards effective separation of waste at source;
- meeting the agreed targets;
- energy recovery efficiency;
- environmental considerations.

Government shall endeavour to consolidate as much as possible the waste streams generated with a view to minimising the amount of different waste treatment plants required.

The preferred option which is a combination of further MBT capacity and incineration technology (both incorporating waste to energy technology) has been reached following a sectoral review of projected waste streams and available technologies. A report - *Assessing the Feasibility of Waste to Energy Technologies in Malta* was prepared by the then Ministry for Rural Affairs and the Environment in May 2006. It took stock of existing municipal, commercial and agricultural waste streams and considered possible treatment options that would allow for recovery of energy from waste. As part of its terms of reference, environmental and commercial considerations were incorporated. The study concluded that further digestion capacity will be required to process biodegradable waste. To benefit from economies of scale the report recommends the co-treatment of municipal bio-waste with other fractions including sewage sludge and agricultural manure. This recommendation has since been

supported through the Agricultural Waste Management Plan<sup>8</sup>. In addition to the existing Sant' Antrnin Plant a second plant is envisaged for Malta and digestion capacity on Gozo will also be required, to reduce the amount of bio-waste being transported for processing or disposal in Malta (in line with the Proximity Principle).

Although further MBT capacity will assist in separating waste (mainly for refuse derived fuel) and energy recovery from bio-waste, other measures are likely to be required to reduce the remaining volumes of mixed waste that will otherwise be presented for final disposal at landfill.

In this context, the Twinning Project between Malta and Austria (report entitled "Waste to Energy in Malta – Scenarios for Implementation") recommended that incineration would be the preferred technology to complement the new digestion plants. The Environment Report carried out as part of the SEA process supports this technology.

The incineration facility would be in a position to:

1. reduce the amount of waste going to landfill thereby prolonging the lifespan of this facility and postponing the need for new landfill space for some time;
2. permit the recovery of energy from refuse derived fuel which, although currently being produced, cannot be fully utilised. This is particularly significant in the light of current oil prices as well as Malta's commitment to reduce its dependency on the use of fossil fuels;
3. recover energy from the mixed waste fraction which, when disposed to landfill, is, in the main, mostly forfeited; and
4. contribute towards our energy recovery targets.

In procuring the new digestion and incineration facilities, key factors will include:

- A mix of technologies that will minimise waste to landfill;
- Capacity to manage agricultural manure and sewage slurries;
- Provision of spare capacity to account for potential growth in the treatment of agricultural and non 'municipal' commercial waste;
- Consolidation of waste streams – to minimise the amount of waste treatment plants required; and
- Provide maximum economic benefit from the use of public funds, particularly where this involves management / contract agreements with the private sector.

Initial estimations of residual treatment capacity were made in 2006<sup>9</sup>. These will be reviewed through the procurement process for new treatment plants to ensure investment meets current and projected demands.

Each new treatment facility will require permitting through MEPA; any environmental studies required by MEPA will be carried out during this process.

The procurement of each new treatment facility will ensure that the best available technology and potential negative impacts are mitigated. Government will be engaging technical experts in the field to ensure that this objective is met. Potential negative impacts will also be addressed during the MEPA process. Government will work with environmental organisations and residents who live in the vicinity of existing and planned facilities to reduce the potential for inconvenience and increase community benefits.

For some facilities, Government has identified a preferred site and most of these sites are being assessed within a matrix of alternatives as part of the planning process which has already started for most of the treatment facilities. In light of this, Table 2 below sets out the mix of new treatment facilities considered necessary to deliver **Policy Objective 8**.

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<sup>8</sup> Agricultural Waste Management Plan for the Maltese Islands Management, Sustech Consulting, June 2008.

<sup>9</sup> *The Feasibility of Waste to Energy Technologies in Malta, Ministry for Rural Affairs and the Environment, May 2006*

Table 2: List of existing and planned waste treatment facilities

Facility	Description Nature of waste to be treated	Preferred site recommended for further studies
Gozo Waste Transfer Station, Tal-Kus	<p>Municipal and other Solid Waste. A full development planning process for the permanent waste transfer-loading facility at Tal-Kus has been completed. Notwithstanding, Gozo will also benefit from a facility that will treat both animal waste as well as municipal solid waste. This facility will enable the recovery of energy embedded in such waste thereby contributing to Gozo's Renewable Energy Sources amounts.</p> <p>The design of the new transfer station mainly comprises an enclosed and controlled facility for the reception, sorting, processing, interim storage and transfer of waste originating from Gozo and Comino. Similar to activities in Malta, the dry waste fractions shall be manually sorted and bailed to improve efficiency in transportation for further treatment or export.</p>	N/A – Committed facility. Planning consent secured.
Sant Antnin MBT, Marsascala	<p>Municipal Solid Waste (MSW) and source separated Solid Waste (Dry Recyclables). To separate 35,000 tonnes of municipal biodegradable waste and animal husbandry waste from (central / southern parts of Malta) and a material recovery facility to treat 36,000 tonnes of recyclable material. The facility is intended to produce energy from organic waste via biogas and produce RDF for incineration. This facility should be fully operational in 2010.</p>	N/A - Existing facility.
Second MBT Facility, Malta	<p>Municipal and other non-Hazardous, non-Inert Solid Waste currently being received to be deposited at the Ghallis Landfill together with waste resulting from Animal Husbandry.</p> <ul style="list-style-type: none"> <li>• Organic waste from mixed MSW ;</li> <li>• Organic separated household and commercial waste, once collection regime is established;</li> <li>• Organic waste not treated at Sant' Antnin Waste Treatment Plant;</li> <li>• Animal husbandry waste (from north of Malta);</li> <li>• Sewage sludge from north Malta sewage treatment plant;</li> <li>• To treat approximately 30% of manure and slurry generated in Malta;</li> <li>• Separation of metal and aluminium from MSW;</li> <li>• Production of Refuse Derived Fuel;</li> <li>• Treatment of Bulky Refuse currently directed for landfilling.</li> </ul>	<p>Ghallis, Malta.</p> <p>Due to potential synergy with existing waste management functions at Ghallis.</p>
Third small scale MBT facility, Gozo	<p>Organic Waste fraction resulting from MSW and Animal Husbandry</p> <ul style="list-style-type: none"> <li>• Organic waste from mixed MSW, remaining MSW to be transported to Malta for treatment;</li> <li>• Organic separated household and commercial waste, once collection regime is established;</li> <li>• Animal husbandry waste (from Gozo);</li> <li>• Sewage sludge from north Gozo sewage treatment plant.</li> </ul>	<p>A site selection exercise has been carried out to determine the most suitable site for this plant. This exercise recommends the Tal-Kus site although this will now need the necessary MEPA approval. Government is in favour of the Tal-Kus site.</p>

Fourth digestion facility, Malta	<p>Manure</p> <p>There is a provisional identified need for a fourth digestion facility to process animal husbandry waste from farms concentrated in the south of Malta. Further analysis will be prepared before commissioning of this facility. To treat approximately 30% of manure and slurry generated in Malta.</p>	Siggiewi, Malta
Incineration facility (incorporating energy recovery from waste)	<p>Refuse Derived Fuel (RDF) and Waste fractions which cannot undergo other treatment process.</p> <p>Refuse Derived Fuel (RDF) from MBT facilities and rejects from the sorting of dry recyclables at the Sant' Antnin MRF and Waste Transfer Station at Gozo. Other waste fractions which must undergo thermal treatment and covered by the operations permit.</p>	<p>Whilst taking cognisance of the recommendations of the report "Waste to Energy in Malta – Scenarios for Implementation" which recommends that technically the site at Delimara offers opportunities that need to be explored further, a site selection exercise will be carried out to determine the most suitable site for the incineration plant.</p>

## **Objective 8 – Reduce reliance on landfilling: Implementing preferred technologies to deal with residual waste streams**

**The Waste Management Strategy will continue to promote measures that reduce reliance on and take-up of limited landfill space, in line with the waste hierarchy. Following waste minimisation efforts and recycling of some waste fractions, the Waste Management Strategy will promote the management of residual waste streams through a combination of the following technologies:**

- (i) Mechanical Biological Treatment (MBT); and
- (ii) Incineration.

In procuring such technology, Government will ensure regard is given to Best Available Technologies as set out in relevant EU guidelines.

## 5.9 - Policy Objective 9 - Cost Efficient and High Quality Waste Services

The experience of the pegging of charges for disposal at authorised construction and demolition landfills with the charges being incurred by Government was introduced over a three year period and today mirrors the principle of full cost recovery. These charges are thought to have been well absorbed by the construction industry as the amount of landfilled C&D waste kept rising year after year.

Government should ultimately aim towards ensuring full cost recovery of all its existing and new waste management facilities without causing any significant social or economic disturbances. WasteServ Malta Limited was created with the main objective of providing waste management facilities and services as a last resort operator. It is hence Government's aim for WasteServ to farm out as many of these facilities and services as possible and to ensure that their building and operation comes at zero cost to Government. Waste management operations all over Europe are generally carried out by private entities whose business depends on the manner in which they operate. As these European Operators usually manage to derive profit and sustainability from such facilities there is no reason to believe that the case in Malta should be any different.

In our small market there shall be activities with limited room for competition and rates may be inflated. WasteServ has been resorting to contracting the service by tendering process while retaining the management of the waste management activity to be in a position to ensure public use by all permitted users and also have controlled charge for the public service provided. WasteServ should be used to safeguard the interests of the public such that any very expensive service continues to be provided by WasteServ particularly if this can be provided at a cheaper cost. However, the financial regulations for the sector should ideally set parameters which delimit fees, in proportion to the characterisation of the associated costs, which any private operator would be allowed to charge.

Waste management facility financing should ultimately be derived from the fees that are charged for the disposal of waste to be managed by the same facility. Most of the waste arriving at facilities results either from municipal solid waste, collected by Local Councils, from individual households or directly from individual (or a group of) producers.

It must be borne in mind that EU co-financing mechanisms<sup>10</sup> require the recovery of costs on behalf of beneficiaries to occur in a manner which ensures that subsidies may be eliminated.

To this effect it is proposed that all gate fees of Government owned facilities be revised to reflect the true cost of managing that waste. This will also require adjustments of the financing that is currently made to WasteServ and Local Councils for the management of waste. Moreover, such a scenario would pave the way for the divestment of the management of such facilities by Government thereby leading to a more competitive market in the waste management sector.

### 5.9.1 - Waste Collection - MSW

MSW collection services have been assigned to Local Councils. However their operations in respect of the collection of MSW have largely been an individualistic effort with only a limited number of the smaller Councils teaming up to provide a more cost-effective service. It is evident that greater economies of scale can be achieved by regionalising the collection of MSW.

For the purposes of certain services, Local Councils have been grouped into six regions. The selection of the proposed regions was based on the groupings of Local Councils in respect of the devolution for the maintenance and provision of street lighting.

<sup>10</sup> Co-financing mechanisms involve partial financing by the EU and part by the beneficiary of projects accepted for this kind of financing. However, such financing is usually characterized by conditions such as those requiring the beneficiary to ensure full cost recovery of capital and recurrent expenditure.

It is felt that this degree of regionalisation has the potential to enable a more rationalised and cost effective collection of MSW to be achieved. However, in order to further promote the role of Local Councils, Government, in consultation with the Local Councils Association, will be conducting feasibility studies to determine whether it would make economic sense to make use of the regionalised concept.

Government in collaboration with the Local Councils Association should seek to reform the way in which municipal waste is collected. The efforts made by WasteServ in drawing up a waste collection draft contract need to be brought to fruition not least through the necessary consultations with interested stakeholders. Local Councils have also been advised to issue yearly MSW collection service contracts so as to facilitate the introduction of the new contract format, once an agreement is reached. The revised conditions are to apply once a new waste collection setup is launched. Therefore, while the new contract has been drafted, it is not yet being adopted by Local Councils.

Any waste collection system introduced will give cognisance to the autonomy and jurisdiction assigned to Local Councils. In this context, Government will continue to promote the concept of bring-in sites within their localities. The frequency of these bins should conform to the national average, that is, one bring-in site for every 300 homes. In any proposed setup, all entities involved must work closely together to ensure a joint effort and an efficient outcome in this respect as well as to determine whether the standardisation of such sites should be pursued for better identity management. Notwithstanding, it is of utmost importance that the source segregation and separate collection of MSW be raised both through bring in sites as well as through the weekly separate kerbside collection of dry recyclables in order to contribute towards Malta's obligations in terms of packaging waste and European re-use and recycling targets (a minimum of overall 50% by weight by 2020).

Government and Local Councils need to work together with a view towards securing the process by which bring in sites will be eventually devolved to Local Councils within the context of a reform in the financial allocations in respect of waste management.

For similar reasons, it will be important that the supervision and control of MSW collection service providers is strengthened and undertaken on a more professional basis in future.

Government intends to provide regions with a person to act as a waste manager with a view to supervise and control service providers effectively thereby providing a focus on waste management in all regions. Government commits itself to train the waste manager in overseeing adequate systems / procedures for enhanced service quality and reliability. The waste manager may need a sufficient resource in order to perform effectively but this depends on the region in question.

Local Councils are currently entrusted with the collection and disposal of municipal solid waste from households. Under the current system Local Councils pay a contractor to collect and dispose of the municipal solid waste generated by households. Government is of the firm belief that Local Councils play an important part in achieving the necessary separation at source with a view to contributing towards recycling targets for packaging waste as well as for producing a 'cleaner' input to the digestion plants proposed. Government also believes that Local Councils should play an active role in this process and should take initiatives to contribute towards such objectives. In return, Government should provide the necessary incentives to encourage individual actions at a Local Council level.

Current charging systems should be modified to ensure that the fees chargeable to Councils originate in two forms namely:

- (a) a transportation fee for the collection and carriage to the waste facility; and
- (b) a fee based on the weight of waste deposited which is charged directly to the Local Council and not the carrier. This would take place through the introduction of consignment notes which Local Councils would hand over to their waste collector and which would identify the quantity and origin of waste.

Furthermore, Government should adopt a differential pricing policy for all separated waste that is taken to the Sant' Antnin waste treatment plant and subsequently to other waste management facilities. Incentives to promote such pricing policies should be introduced to facilitate its adoption.

This system would incentivise Local Councils to take required measures and initiatives in order to ensure that their community is encouraged to minimise waste requiring door-to-door collection through the possible modification and alteration of behavioural patterns, the use of bring-in sites and any other measures deemed appropriate. Moreover, it would incentivise Local Councils to encourage the Recycle Tuesday initiative with a view towards providing larger quantities of source separated recyclables and bio-waste fraction for treatment at the waste digester.

A national debate should be initiated as to the ideal manner in which financing should be secured for the operation of facilities as well as regards to the introduction of incentives to promote better waste management practices. This should also be complemented by other initiatives that entice Local Councils to minimise on the waste generated within their locality and on the collection of a marketable recyclable fraction that will allow their charges to be lower than those of their peers whilst at the same time providing an equally good service in line with prevailing waste management principles. Local Councils may choose to team up with established schemes to further minimise their waste. This is mirrored by the fact that industry pays for collection and disposal of its voluminous waste. Households equally contribute to significant quantities of waste which although negligible on an individual basis, when aggregated, contribute to a significant expense in terms of what is spent on waste management.

Producers who deposit their waste at any landfill facility should also be charged at an appropriate rate that instils a change in their waste management practices towards more sustainable trends. The principle is to ensure that all producers are responsible for the waste they place for treatment. Whether it is industry or the private household does not really matter for it is the nature of the waste, volumes generated and the treatment process that need to be looked into. Government must ensure that its facilities are sustainable and welcomes proposals from stakeholders on methods to achieve such. At the same time producers must also be responsible towards their Producer Responsibility obligations in order to meet the legal targets.

It is therefore of utmost importance for Producer Responsibility schemes to be promoted in a rational manner that permit economies of scale to be achieved.

WasteServ Malta Limited has recently been allocated funding for 300 locality based bring-in sites and 200 sites within schools. It is important that these bins be put to good use and that Local Councils, who are responsible for waste collection, forge a partnership with Government in order to further contribute towards the gradual introduction of separating waste at source. Government reiterates that it shall be adopting a policy of securing that WasteServ does not compete with private enterprises unless it is forced to do so as an operator of last resort or in the light of unforeseen difficulties. Government will continue to pilot a packaging waste collection scheme which will eventually see a locality based collection system which differentiates between organic/mixed waste and dry recyclables. Whilst the collection of organic/mixed waste will continue to be financed by Government, the collection of dry recyclables will be financed through a mechanism which will see local councils being serviced by licensed schemes which would in turn be funded by importers/producers who place such dry recyclables on the market.

This would provide the country with the necessary infrastructure needed to ensure compliance by producers. Secondly, all major stakeholders would in this way be involved in this process leading to a better utilisation of Government resources and the fostering of a strategic partnership between Local and Central Government and the Private Sector.

Waste management facilities need strong regulatory and financing mechanisms to maintain their sustainability. European policy and legislation on this issue is very clear in that waste producers are expected to pay, through appropriately devised charges, the full costs of the service and facilities required to manage their wastes in an environmentally sound manner. Therefore it is equally important for the local competent authorities to ensure that not only are environmental conditions being observed but that the fee structure for such facilities is one that is approved and regulated in a professional manner that truly reflects the real cost of treating waste at that facility whilst at the same time safeguarding the social and economic realities of Malta's people.

The introduction of any form of incentive-based mechanisms to other waste fractions is seen to be a strategy that could help to contribute towards reducing mixed waste fractions.

Notwithstanding, it would be impossible to have an incentive-based scheme on each and every type of packaging material and therefore Government recognises the need of other setups in particular where packaging waste is concerned.

### 5.9.2 - Private Sector Involvement

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Government feels that we are approaching a time which merits the increased involvement of the private sector in waste management governance. Government will be examining all its current roles with a view to prioritising those which can be devolved or partnered with the private sector. This will be a process which will be discussed with the constituted bodies and which will be subsequently issued for consultation prior to adoption.

By means of this Strategy document, the private sector is herewith invited to put forward its suggestions as to the roles it can assume as a result of this process.

### 5.9.3 - The role of WasteServ

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Government remains committed to the role of WasteServ as ‘the operator of last resort’. **Policy Objective 9** must be implemented with a pragmatic balance. The waste sector in Malta is still in relative infancy when compared to larger EU member states. The role of WasteServ in securing inward investment remains important. Significant private sector partnerships have been put in place to help Malta work towards managing waste in line with its EU Landfill Directive Targets. Government and WasteServ will continue to explore partnership and management options in the procurement of new facilities. Government is also committed to reviewing why private sector investment has been slow to come forward for recycling facilities and certain types of waste treatment facilities such as ELVs (see **Policy Objectives 2 & 7**).

### 5.9.4 - Co-treatment of waste streams

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Malta has a limited market for waste. The application of the proximity principle (which discourages exportation in favour of local responsibility for treatment), and the small quantities of certain waste streams result in certain technologies being less feasible than in larger European Countries where municipalities can share facilities. Government is therefore committed to review treatment options in favour of co-treatment of waste streams. For example, the co-treatment of municipal bio waste with animal husbandry waste is proposed through **Policy Objective 8**.

## Objective 9 – Cost Efficient & High Quality Waste Services

**To deliver cost efficient waste management services and ensure public funds are utilised effectively. Government will promote partnership and joint procurement procedures to ensure economies of scale. Government will continue to promote the polluter pays principle and to promote further private sector involvement in the waste sector; particularly where this can help to ease public sector finances.**

## Appendix A - Actions, Responsibilities and Targets

Objective	Actions	Responsibilities	Targets	Policy Links												
<b>Policy Objective 1</b> <b>Promote Waste Minimisation</b>	<ul style="list-style-type: none"> <li>Monitoring of gate fee charges – to incentivise Local Councils to encourage waste minimisation and higher recycling rates.</li> <li>Maximise opportunities to encourage public awareness and good practice for households and companies (see also Objective 6)</li> </ul>	Shared responsibilities – Government / Local Councils to lead on canvassing opinions towards revised collection schedules and developing feedback messages. Government and other agencies to continue to lead on education initiatives.	<ul style="list-style-type: none"> <li>Reduce average rate of growth in MSW per capita from 3.1% (Recorded between 2000 and 2007) to 1.5% for 2010 to 2015.</li> <li>The Waste Management Strategy will work towards the long term goal of ensuring that 70% of construction and demolition waste will need to be re-used, recycled or otherwise recovered.</li> </ul>	<b>Policy Objective 6</b> (Promote good waste management practices through Education and Communication), <b>Policy Objective 8</b> (Reducing Reliance on Landfilling).												
<b>Policy Objective 2</b> <b>Improve national capacity to manage industrial solid waste and hazardous waste.</b>	<ul style="list-style-type: none"> <li>Development and operation of a Hazardous Waste storage and treatment facility.</li> <li>The Marsa Thermal Treatment Facility will continue to be used for animal, clinical and certain other hazardous waste streams.</li> <li>Improved monitoring of hazardous waste streams (See Actions under <b>Policy Objective 6</b>)</li> </ul>	Shared responsibilities – Government, MEPA (particularly the monitoring of hazardous waste), Private Sector Waste Operators, WasteServ, Consumers and Producers	<p style="text-align: center;">WEEE Targets</p> <table border="1"> <tr> <td>Definition of waste (Category - Schedule 1A of Hazardous Waste Directive)</td> <td>1 &amp; 10</td> <td>3 &amp; 4</td> <td>2, 5, 6, 7 &amp; 9</td> </tr> <tr> <td>Minimum Rate of Recovery</td> <td>80%</td> <td>75%</td> <td>70%</td> </tr> <tr> <td>Component Material</td> <td>75%</td> <td>65%</td> <td>50%</td> </tr> </table> <p>For gas discharge lamps, the rate of component, material and substance reuse and recycling shall reach a minimum of 80% by weight of the lamps.</p> <p>Targets for the collection and treatment of Batteries and Accumulators</p> <p>To achieve a minimum collection rate of batteries<sup>11</sup> and accumulators of 25% in the period to 2015, followed by a minimum collection rate of 45%.</p>	Definition of waste (Category - Schedule 1A of Hazardous Waste Directive)	1 & 10	3 & 4	2, 5, 6, 7 & 9	Minimum Rate of Recovery	80%	75%	70%	Component Material	75%	65%	50%	Policy Objective 6 <b>(Promote good waste management practices through Education and Communication)</b> , Policy Objective 7 – <b>(Increased levels of recycling)</b> and Policy Objective 8 <b>(Reducing Reliance on Landfilling).</b>
Definition of waste (Category - Schedule 1A of Hazardous Waste Directive)	1 & 10	3 & 4	2, 5, 6, 7 & 9													
Minimum Rate of Recovery	80%	75%	70%													
Component Material	75%	65%	50%													

<sup>11</sup> Time frame requested by the Maltese Government to the EU through the 'Justification Document for a Transitional Period for the Batteries Directive' report. If this negotiation proves to be unsuccessful, the collection targets set out through the Directive shall apply – 25 % by 26 September 2012; and 45 % by 26 September 2016.

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**Objective****Actions****Responsibilities****Targets****Policy Links**

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Recycling processes shall achieve the following minimum recycling efficiencies: (a) recycling of 65% by average weight of lead-acid batteries and accumulators, including recycling of the lead content to the highest degree that is technically feasible while avoiding excessive costs; (b) recycling of 75% by average weight of nickel-cadmium batteries and accumulators, including recycling of the cadmium content to the highest degree that is technically feasible while avoiding excessive costs; and (c) recycling of 50% by average weight of other waste batteries and accumulators.

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**ELV Targets**

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Reuse and recovery shall achieve a minimum of 85% by an average weight per vehicle

Reuse and recycling shall achieve a minimum of 80% for vehicles before 1 January 1980

No later than 1 January 2015, for all end-of life vehicles, the reuse and recovery shall be increased to a minimum of 95% by an average weight per vehicle and year. Within the same time limit, the re-use and recycling shall be increased to a minimum of 85% by an average weight per vehicle and year.

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**Packaging Waste**

Packaging Waste Target	2010	2011	2012	2013	2014
Overall Recovery	53	56	58	60	n.a
Overall Recycling	48	51	53	55	n.a
Glass Recycling	43	50	55	60	n.a
Metals Recycling	38	41	46	50	n.a
Plastics Recycling	17.5	19.5	21.5	22.5	n.a
Paper & Board Recycling	42	50	55	60	n.a
Wood Recycling	11	13	14	15	n.a

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Objective	Actions	Responsibilities	Targets	Policy Links
<b>Policy Objective 3</b> <b>Promote Producer Responsibility</b>	<ul style="list-style-type: none"> <li>Continue to implement fiscal incentives to ensure producers take responsibility for waste</li> </ul>	Shared responsibilities – Government / Local Councils to lead on canvassing opinions towards revised collection schedules and developing feedback messages. Government and MEPA to lead on reviewing current planning practices regarding demolition waste.	Ongoing.	Policy Objective 2 ( <b>Improve national capacity to manage industrial solid waste and hazardous waste Policy</b> ), Policy Objective 6 ( <b>Promote good waste management practices through Education and Communication</b> ), Policy Objective 7 – <b>Increased levels of recycling</b> , and Policy Objective 8 ( <b>Reducing Reliance on Landfilling</b> ).
<b>Policy Objective 4</b> <b>To manage Construction &amp; Demolition Waste in a more sustainable manner</b>	<ul style="list-style-type: none"> <li>To implement the recommendations of the Austrian Twinning Study of June 2008</li> </ul>	Shared responsibilities – Government, BICC, MEPA and Private Sector to assist in construction waste minimisation and recycling targets.	<ul style="list-style-type: none"> <li>To work towards re-cycling, reusing / recovery of a minimum of 70% of construction and demolition waste by 2020.</li> </ul>	Policy Objective 1 ( <b>Waste Minimisation</b> ), Policy Objective 6 ( <b>Promote good waste management practices through Education and Communication</b> ), Policy Objective 7 – <b>Increased levels of recycling</b> , and Policy Objective 8 ( <b>Reducing Reliance on Landfilling</b> ).

Objective	Actions	Responsibilities	Targets	Policy Links
<b>Policy Objective 5</b> <b>Promote waste to energy</b>	<ul style="list-style-type: none"> <li>To introduce further MBT processing capacity in Malta and Gozo by 2015 to incorporate waste to energy technology.</li> <li>To introduce incineration facility by 2015, incorporating waste to energy technology.</li> </ul>	Shared responsibilities: Government & private sector	<ul style="list-style-type: none"> <li>Total RES recovered from waste by 2013 (17 GWh/a nnum).</li> </ul>	Policy Objective 8 <b>(Reducing Reliance on Landfilling).</b>
<b>Policy Objective 6</b> <b>Promote good waste management practices through Education and Communication</b>	<ul style="list-style-type: none"> <li>Education and Communications Plan (by Jan 2011)</li> <li>Enforcement resources review</li> <li>Public Sector – Waste management skills and resources review</li> <li>Ensure Green Leaders take a prominent role in the implementation of the Waste Management Strategy</li> <li>Establish and implement a National Waste Management Database and Waste Management Register to provide better monitoring of waste arisings, including hazardous waste</li> </ul>	Government to lead with assistance from Ministry for Education, MEPA, Local Councils and WasteServ. The private sector will also be invited to become involved in dissemination of information and best practice. The skills and resources review remains a requirement of the 2001 Strategy and could be implemented by 'Green Leaders'.	To implement the items listed as Actions for <b>Objective 6.</b>	Policy Objective 1 <b>(Promote Waste Minimisation)</b> , Policy Objective 2 <b>(Improve national capacity to manage industrial solid waste and hazardous waste Policy)</b> , Policy Objective 7 <b>(Increased levels of recycling)</b> and Policy Objective 8 <b>(Reducing Reliance on Landfilling).</b>

Objective	Actions	Responsibilities	Targets	Policy Links
<b>Policy Objective 7</b> <b>More Recycling and Separation of Biodegradable Waste</b>	<ul style="list-style-type: none"> <li>• <b>Implementation Plan for the Management of Biodegradable Waste</b> to consider treatment options and feasibility of a comprehensive system for the collection of separated organic waste from households and businesses.</li> <li>• Participation Plan for recycling and waste separation</li> <li>• Review of collection practices in favour of further source separation and collection of separated waste, including the introduction of separate collection of bio waste<sup>12</sup>.</li> <li>• Composting plan – Prepare a campaign to further promote home composting and consider scope for composting of commercial waste.</li> <li>• Review of opportunities and barriers to further private sector investment in new recycling facilities.</li> </ul>	<p>All stakeholders. Government to lead in terms of Education &amp; Communication (<b>Policy Objective 6</b>), with implementation assistance from entities such as WasteServ and private sector companies providing recycling services.</p>	<ul style="list-style-type: none"> <li>• To meet targets of Landfill Directive and to reduce the organic waste directed to landfill by 2010, 2013 and 2020.(Policy Objective 8)</li> <li>• A minimum of 50% (by weight) of all potentially recyclable MSW to be recycled by 2020</li> <li>• To continue to build and implement new bring-in sites in the period to 2015.</li> </ul>	<p>Policy Objective 6 (<b>Changing Behaviour</b>) and Policy Objective 8 (<b>Reducing Reliance on Landfilling</b>).</p>

<sup>12</sup> Action D3 of the 2001 Waste Management Strategy identified 'Introduce source segregation and separate collection of recyclable (including biodegradable) materials from MSW'. Kerbside and bring in separation facilities exist. Bio waste source separation will be introduced to coincide with the commissioning of Ghallis and future MBT capacity.

Objective	Actions	Responsibilities	Targets	Policy Links
<b>Policy Objective 8</b> <b>Reduce reliance on landfilling: Implementing preferred technologies to deal with residual waste streams</b>	<ul style="list-style-type: none"> <li>To implement the preferred technology mix as specified in this Strategy.</li> </ul>	<p>Government to lead with assistance from the private sector and WasteServ. MEPA to provide regulatory functions for planning and environmental permitting</p>	<ul style="list-style-type: none"> <li>To procure and implement new treatment facilities by 2015.</li> </ul> <p>The Landfill Directive (99/31/EEC) sets the following landfill diversion targets for Malta:</p> <ul style="list-style-type: none"> <li>By 2010 the amount of biodegradable waste sent to landfill is to be reduced to 75% of the total amount by weight of biodegradable municipal waste produced in 1995.</li> <li>By 2013 the amount of biodegradable waste sent to landfill is to be reduced to 50% of the total amount by weight of biodegradable municipal waste produced in 1995; and</li> <li>By 2020 the amount of biodegradable waste sent to landfill is to be reduced to 35% of the total amount by weight of biodegradable municipal waste produced in 1995.</li> </ul>	<p><b>This Policy Objective is interlinked with all Policy Objectives. The treatment capacity and specifications of future treatment infrastructure will be determined following regular review of the success of other targets and objectives to minimise waste and increase levels of recycling.</b></p>
<b>Policy Objective 9</b> <b>Cost Efficient &amp; High Quality Waste Services</b>	<ul style="list-style-type: none"> <li>Finalised review into benefits of regionalisation of waste services and legislate accordingly.</li> <li>Continued review of existing partnership arrangements, costs, size and type of refuse vehicle fleet, and potential for cost efficiencies in the context of waste collection services and waste facilities.</li> <li>Continued review of fiscal context for the waste sector - eg gate fees.</li> </ul>	<p>Government to lead in partnership with the waste transport sector, Local Councils Association, WasteServ, households, and the commercial sector.</p>	<p>Ongoing</p>	<p><b>All Policy Objectives.</b></p>

## Way Forward

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The aim of the Revised Solid Waste Management Strategy for the Maltese Islands is to serve as a policy document for sustainable waste management practices that subscribe to both local and international obligations.

The Strategy is aimed to ensure the well-being of every member of society, from whatever walk of life, and in whatever capacity he or she is currently acting. It is a policy document that thinks of future generations and that has to keep inter-generational solidarity at the heart of the directions to be taken.

No matter how large or small an idea may be, no matter whether it originates from an individual, SME or a corporate or multinational enterprise, all suggestions have the potential to spark off improvements in certain areas of the proposals being put forward. We cannot afford to be self-centred and the common good must prevail.

The success of the past augurs well for the challenges we need to undertake for the future. We cannot afford to be laid back any longer. Waste management is no longer solely Government's responsibility. It is **OUR** responsibility and it is only in a collective manner that we can achieve the objectives that befit the Maltese Islands.

This document is not the ideal forum for the inclusion of the specific details of the individual strategic choices – that forum will develop at a later stage when specific topic papers are released. At this stage, Malta needs to firmly refine and re-establish its vision for the forthcoming years in this sector. Together we can succeed.