

# Gibraltar Waste Management Plan 2011



Ministry for the Environment  
Government of Gibraltar

Prepared by Environmental Agency Gibraltar  
In conjunction with the Department of the Environment





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## 1. INTRODUCTION

This Waste Management Plan supersedes the existing Waste Management Plan and has been prepared by the Environmental Agency on behalf of the Government of Gibraltar (the 'Government'), in conjunction with the Department of the Environment. This Plan fulfils the requirements of the new EC Waste Framework Directive 2008/98/EC, which repealed the previous Waste Framework Directive 2006/12/EC, the Hazardous Waste Directive 91/689/EC and the Waste Oils Directive 75/439/EC. This Management Plan will be adopted in August, 2011 and will be revised in August, 2013.

The purpose of this Waste Management Plan is to provide:

- A framework to enable decisions to be taken for efficient and sustainable waste management of all waste arising in Gibraltar
- Information on the different waste streams and treatment options including forecasts of waste streams in the future.

The two major parts of the Plan are:-

- The existing situation with waste management in Gibraltar (Status).
- The measures intended to be implemented during the next five years (Planning).

Gibraltar is a peninsula situated at latitude 36°7' North and longitude 5°21' West at the southern tip of the Spanish mainland and the eastern end of the Strait which bears its name. It is clearly marked by its famous Rock, a mass of Lower Jurassic limestone running roughly north to south along the greater part of the peninsula which is approximately 6 kilometres long and 1.2 kilometres at its widest point. It rises to a height of 426 metres and lies just 16 kilometres across the Straits from the north coast of Africa. The total area of the peninsula is approximately 6.5 square kilometres.

Gibraltar is a British territory and has a population of some 29,441 people, one of the highest population densities in the world (abstract of statistics 2010). The territory has its own elected Government, which is responsible for all internal matters such as provision of municipal services, trade, health, education and housing.

Much of Gibraltar consists of rocky and dense matorral areas, called the Upper Rock Nature Reserve, i.e. the 'Rock of Gibraltar' Site of Community Importance (SCI), where any further building is prohibited. The remaining land has therefore been densely developed, and most of the population, commercial and leisure activities are concentrated on the lower western slopes of the Rock. Much of the city area is built on land reclaimed from the sea within the harbour. Gibraltar also receives an annual influx of some 10 million visitors, the vast majority being day-trippers from Spain. Gibraltar's land mass, as highlighted above is small some, 6.5 square kilometres, of which 30.8% is the Rock of Gibraltar SCI. It is therefore particularly important for Gibraltar to strike a balance between the requirement for development and the preservation of the environment. The protection of the environment is a matter of prime concern.



**Aerial view of Gibraltar**

Gibraltar is a popular port of call for cruise liners; around 200 call annually, as well as for other vessels. It has three marinas offering over four hundred berths for



yachts; some 3,189 yachts visited in 2010. Gibraltar airport currently offers scheduled air services to the United Kingdom.

There are some 40 kilometres of roads in Gibraltar. The network currently connects to that of Spain by a single access road, which runs across the airport runway. This arrangement causes severe congestion when vehicles are stopped from crossing the runway when planes are landing or taking off. To overcome this, a new road that passes under the runway is currently under construction and will allow a continuous traffic flow to Spain. In recent years Gibraltar has experienced a construction boom which includes major housing and infrastructural projects as well as a new airport terminal, and a new road and tunnel link to Spain. This has increased the volume of construction and demolition waste, although this waste stream is largely recovered and reused.

The economy of Gibraltar has many unusual features most of which stem from its small size in terms of area and population. Gibraltar is not capable of sustaining any kind of agriculture or horticulture due to topographical and size constraints. There is no commercial fishing and there is no domestic industrial manufacturing activity.

## **2. OVERALL WASTE PROBLEMS IN GIBRALTAR**

Gibraltar has unique difficulties in relation to waste management. These include:-

- a) Its small land area (6.5km<sup>2</sup>). There is lack of space to provide local disposal, recycling and recovery facilities.
- b) High population density (29,441 people) that is further aggravated by large numbers of visitors (approximately 10 million a year) and consequent pressures on land use. The range of normal disposal, recovery and recycling options available to other countries is not available to Gibraltar due to economies of scale and limited land availability due to our small size.
- c) There are no production or manufacturing industries in Gibraltar. This means that all of our industrial and commercial goods have to be imported. This creates a large volume of packaging waste which unfortunately we cannot

control or reduce. Reduction of packaging waste will happen locally when manufacturers tackle this issue at source. This said, awareness campaigns are used to inform the public of the need to use fewer resources and re-use items instead of throwing items away.

Gibraltar is, however, committed to ensuring it has a waste management regime which, despite the limitations of the difficulties mentioned above, is compliant with EU obligations. Since Gibraltar is excluded from the customs territory of the European Community, neither the treaty rules on free movement of goods nor the rules of secondary Community legislation intended, as regards the free circulation of goods, to ensure approximation of the laws, regulations and administrative provisions of the Member States pursuant to Article 94 EC, 95 EC and 100a are applicable to it. Consequently, the packaging and packaging of waste directive does not apply locally and so this area of waste management is not covered in this plan.

The amounts of hazardous wastes produced in Gibraltar are small. There are no manufacturing industries and there are, with the exception of the construction industry, limited industrial activities carried out. As a result of this situation, the investment into complex waste recovery plants is uneconomical given the quantity and types of waste generated.

Gibraltar's close proximity to Spain allows producers of hazardous waste to export hazardous waste to approved recovery or disposal facilities in Spain. These transfrontier shipments of waste are conducted through authorised contractors in compliance with the Shipment of Waste Regulations 1013/2006.

Municipal waste is collected six days a week and is then taken, in accordance with the Shipment of Waste procedures, to a licensed and approved landfill/waste recovery facility at Los Barrios, Spain.

Since the publication of the previous Waste Management Plan, significant changes have been made by the Government as regards the management of waste in Gibraltar. These are:

- A stricter enforcement regime, e.g. tighter controls at the frontier for all exported waste, including 'green-listed' waste.
- Improved separate collection arrangements have been introduced for the collection and subsequent recycling of glass, cans, waste electrical and electronic equipment (WEEE) and batteries.

## **2.1 WASTE LEGISLATION & ENVIRONMENTAL PROTECTION**

### ***2.1.1 EU Legislation***

The new Waste Framework Directive 2008/98/EC was adopted on the 20 October 2008 and replaced the previous Waste Framework Directive (2006/12/EC), as well as the Directive on Hazardous Waste (91/689/EEC) and part of the Waste Oils Directive (75/439/EEC) on Waste Oil. The new Framework Directive was transposed into national law in April 2011 by the Public Health Act (Amendment) Regulation 2011.

The main EU Directives dealing with waste and waste management are:

- Directive 2008/98 of the European Parliament and of the Council of the 19<sup>th</sup> November 2008 on waste
- EC Regulation 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste.

### ***2.1.2 The New Waste Framework Directive 2008/98/EC***

The directive sets out a broad framework for waste management policy and legislation in the European Union (EU). The familiar objectives of the previous Directive are carried through into Directive 2008/98/EC, i.e.:

- (i) The duty to manage waste without harming the environment or endangering human health
- (ii) The objective of moving waste up the hierarchy from disposal to recovery, recycling, reuse and ideally waste reduction

- (iii) The requirement for Member States to have a permitting system (licensing in Gibraltar) for waste management activities, with exemptions available for activities that pose less risk to the environment
- (iv) Regulation and inspection of waste facilities
- (v) The polluter pays principle applied to costs of waste management
- (vi) Duty of care
- (vii) Proximity principle, so waste is disposed of within the state of origin or in the nearest disposal facility in the adjoining state (as in the case of Gibraltar)
- (viii) A national waste management plan: Article 7 of the Directive requires competent authorities to draw up waste management plans which shall relate in particular to:
  - The type, quantity and origin of waste to be recovered or disposed of,
  - General technical requirements,
  - Any special arrangements for particular wastes,
  - Suitable disposal sites or installations.

This Plan applies the principles of the Waste Framework Directive as far as practicable within the constraints encountered in Gibraltar. The aim of the plan is to facilitate compliance with waste targets and policy.

### ***2.1.3 Hazardous Waste***

The Waste Framework Directive also includes the definition of hazardous waste taken from the previous Hazardous Waste Directive, which refers to the list of properties in Annex III that renders a waste hazardous (e.g. explosive, oxidising, toxic, harmful, etc).

The Directive requires Member States to take the necessary action to ensure that the production, collection, transportation, storage and treatment of hazardous waste is carried out in conditions providing protection for the environment and human health, including action to ensure the traceability from production to final destination.

It reiterates the ban on mixing different hazardous wastes and the requirement for labelling of hazardous wastes.

#### ***2.1.4 Transfrontier Shipment of Waste***

Regulation (EC) 1013/2006 on shipments of waste establishes a system of controls on waste shipments, with detailed provisions which vary according to the countries of dispatch, destination and transit, the intended purpose of waste shipment (disposal or recovery), and the type of waste involved. Consideration of the proximity principle is paramount under this legislation. Every effort is made locally to ensure that the various treatment facilities used in Spain for our varying waste streams are:

- i) the closest ones to Gibraltar
- ii) compliant with relevant EU and local waste legislation

#### ***2.1.5 Other Directives***

There are other Directives and Regulations dealing with specific aspects of waste, waste management or waste streams. These include the Landfill Directive (1999/31/EC); End of Life Vehicles Directive (2000/53/EC); Ozone Depleting Substances (EC Regulation (2037/2000)); Disposal of polychlorinated biphenyls and polychlorinated terphenyls (Directive (96/59/EC)); Batteries and Accumulators (Directive 2006/66/EC) Incineration of Waste (Directive 2000/76/ EC) and the Waste Electrical and Electronic Equipment (Directive 2002/96/EC).

The Packaging and packaging waste directive (94/62/EC) does not apply locally because its legal basis is article 100a which relates to the free movement of goods from which Gibraltar is excluded.

## **2.2 GIBRALTAR LEGISLATION**

The provisions of the Waste Framework Directive are transposed in Gibraltar law by Part VA of the Public Health Act.

The Shipment of Waste Regulation 1013/2006, is directly applicable and is implemented under the Public Health Act as well.

Other legislation dealing with waste and mentioned above have been transposed into our legislation as follows:

- (i) Landfill Directive (Directive 1999/31/EC) – Landfill Act 2002
- (ii) End of Life Vehicles Directive ( Directive 2000/53/EC) – End of Life Vehicles Rules 2004
- (iii) EC Regulation on Substances that Deplete the Ozone Layer (Regulation 2037/2000)
- (iv) Disposal of PCBs Directive (Directive 96/59/EC) – Part VA Public Health Act 1950
- (v) Batteries and Accumulators Directive (Directive 2006/66/EC) – Part VA Public Health Act 1950
- (vi) Waste Incineration Directive (Directive 2000/76/ EC) – Waste (Incineration) Act 2003
- (vii) Waste Electrical and Electronic Equipment Directive (Directive 2002/96/EC) – Environment (Waste) Regulations 2007.

### ***2.2.1 Environmental Protection.***

A number of other EU Directives provide operational and management controls for waste management facilities in order to ensure a high level of protection for the environment. These include the Integrated Pollution Prevention and Control Directive (96/61/EC) transposed in Gibraltar by the Pollution Prevention and Control Act 2001 and the Waste Incineration Directive (2000/76/EC) transposed by the Waste (Incineration) Act 2003.

The Integrated Pollution Prevention and Control Directive (IPPC) aims to achieve a high level of protection for the environment taken as a whole. This is to be achieved by preventing or reducing emissions to air, water and land from certain industrial activities, including waste facilities.

The Waste Incineration Directive aims to prevent or limit negative effects on the environment and risks to human health from the incineration of many types of waste including municipal and hazardous waste. The Directive is based on the premise

that the harmfulness of the emissions does not depend on the source, but is a property of the substances emitted and sets emission limit values for these. The Directive also controls releases to water.

### ***2.2.2 Definition of Waste***

Article 3 of Directive 2008/98/EC on waste and Section 192A of the Public Health Act define waste as: Any substance which the holder discards or intends to discard or is required to discard, but does not include:

- (a) gaseous effluents emitted into the atmosphere;
- (b) land (in situ) including unexcavated contaminated soil and buildings permanently connected with land;
- (c) uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated;
- (d) radioactive waste;
- (e) decommissioned explosives;
- (f) faecal matter, if not covered by paragraph 2(b), straw and other natural non-hazardous agricultural or forestry material used in farming, forestry or for the production of energy from such biomass through processes or methods which do not harm the environment or endanger human health.

### ***2.2.3 End of waste status***

Article 6 of Directive 2008/98/EC sets down the criteria for “end of waste status”. This will enable certain products recovered from wastes to cease being classed as “waste” and for them to be considered as prime material.

End of waste criteria is likely to develop for aggregates, paper, glass, metal, tyres and textiles. The criteria will be published in the future by EU legislation but four general criteria are laid down in the Directive as follows:

1. the material is used for specific purposes;
2. a market or demand exists for it;
3. it meets the standards and technical demands for such a material or product;
4. its use will not have an adverse impact on the environment and human health.

#### ***2.2.4 Waste Licensing Regime***

Section 192D of the Public Health Act states that no person shall carry out a prescribed activity without first having obtained a license. The prescribed activities are defined as —

- (a) in respect of waste —
  - (i) disposal;
  - (ii) abandonment, dumping or otherwise depositing on land in so far as such activity is not disposal;
  - (iii) recovery; and
- (b) additionally in the case of waste oil —
  - (i) collection;
  - (ii) disposal;
  - (iii) regeneration or use as fuel;
  - (iv) storage;
  - (v) disposal of the residues of regeneration or from combustion.
- (c) additionally in the case of hazardous waste —
  - (i) collection,
  - (ii) transportation.
- (d) additionally, in the case of hazardous waste, incineration.

#### ***2.2.5 Pre-Application Assistance***

Prospective applicants for Waste Licences are encouraged to discuss their proposals at an early stage with the Environmental Agency before submitting an application.



### ***2.2.6 Waste Licence Applications***

An application for a Waste Licence will not be considered as valid unless all the information as required by statutory guidance under Section 192Q of the Public Health Act has been complied with. The Environmental Agency may require additional information. Failure to supply this information will result in the licence not being granted.

The application procedure is as follows:-

1. A person who intends to apply for a licence or extension of a licence must publish in the Gibraltar Gazette and in at least one local newspaper circulating in Gibraltar their intention to apply for a waste licence. This notice of intent must be made not less than 14 days before the actual application for the licence is made. This period is the time allowed for any person to object to the issuing of the licence.
  
2. Once the above period has expired, the person must submit their application with copies of the notices aforementioned. The application must be made to the Environmental Agency not less than two months before it is desired that the licence be issued.
  
3. In considering applications for waste licences the Environmental Agency will ensure that the waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment and in particular –
  - (i) without risk to water, air, soil, plants or animals;
  - (ii) without causing a nuisance through noise or odours;
  - (iii) without adversely affecting the places of special interest;

### ***2.2.7 Waste Licence Consultations***

The Environmental Agency will where appropriate consult:

- The Ministry for the Environment
- The Ministry of Enterprise, Development, Technology and Transport

- The Development and Planning Commission
- Gibraltar Port Authority
- Gibraltar Maritime Administration
- Any statutory undertaker whose activities may be affected.

### ***2.2.8 Working Plans***

The Environmental Agency will require a detailed and comprehensive Working Plan to be submitted by the applicant, the format and content of which will require their approval. Hazardous Waste facility applications will not be authorised unless the Working Plan contains specific codes of practice for dealing with these wastes. Any wastes that are incapable of being disposed, recovered or recycled locally, will be exported to licensed specialised disposal facilities, in accordance with the Shipment of Waste Regulations.

### ***2.2.9 Review of Waste Licences***

All Waste Licences have a validity of two years and will be kept under constant review and revised and updated as necessary to take account of higher standards (Best Available Technology Not Entailing Excessive Costs - BATNEEC), operation practices and national guidance.

## **2.3 SITE INSPECTION AND ENVIRONMENTAL MONITORING**

### ***2.3.1 Inspection of Licensed Facilities***

All licensed waste facilities will receive both routine and unannounced inspections on a regular basis to check compliance with licence conditions at frequencies related to the nature of the facility.

### ***2.3.2 Environmental Monitoring by Licence Holder***

As part of the licence conditions, licence holders will be required to sample, monitor waste and emissions and make reports to the Environmental Agency at specified times.

### ***2.3.3 Environmental Monitoring***

The Environmental Agency will undertake compliance monitoring on waste as appropriate for the facility concerned in order to check licence holders results.

### ***2.3.4 Registration of certain Establishments, Undertakings, and Brokers***

Section 192E of the Public Health Act requires the registration of any establishment or undertaking:

- (a) collecting or transporting waste on a professional basis; or
- (b) arranging as dealers or brokers for the disposal or recovery of waste on behalf on another person.

The Environmental Agency will seek to determine applications for registration as a carrier and/or broker. Where applicants have committed relevant offences the Environmental Agency will consider refusing the application or revoking the registration.

### ***2.3.5 Enforcement***

The Environmental Agency has in place a prosecution procedure taking into account any statutory defences and statutory guidance.

## **2.4 DESCRIPTION OF WASTE POLICY IN RELATION TO WASTE HIERARCHY**

Everyone produces waste as part of their everyday lives. The nature of waste produced varies from relatively harmless materials to noxious and potentially hazardous materials. In order to safeguard public health, the environment and water resources all waste arising from society must be properly handled and disposed of.

The disposal of waste by any means may produce pollution that, unless at very low levels, places a burden on the environment to which it is released, be it air, water or land. Climate change, a global problem, may be contributed to by inadequate waste disposal. Therefore, it is in everyone's interest to ensure that the best practicable environmental option (BPEO) is chosen for the disposal of wastes and that the

principles of BATNEEC are applied where appropriate to achieve sustainable waste management.

The waste streams generated in Gibraltar and covered in this plan are as follows:

- Municipal Waste.
- Non-hazardous bulky waste.
- Hazardous waste.
- Construction and Demolition Waste.
- Shipping Waste.
- Clinical Waste.
- Waste Electrical and Electronic Equipment (WEEE).
- End of Life Vehicles (ELVs).
- Batteries.
- Tyres.

Figure 1 (page 22) provides a snapshot of the waste management process in Gibraltar. Each section is discussed in detail throughout this plan.

Due to Gibraltar's small size, and the lack of heavy industry, major recycling can only be achieved by exporting wastes abroad, which means high transport costs. Most of the consumer goods and raw materials required in Gibraltar have to be imported. The onus, therefore, of the principle of 'Extended Producer Responsibility' falls mainly upon importers, wholesalers, suppliers, etc.

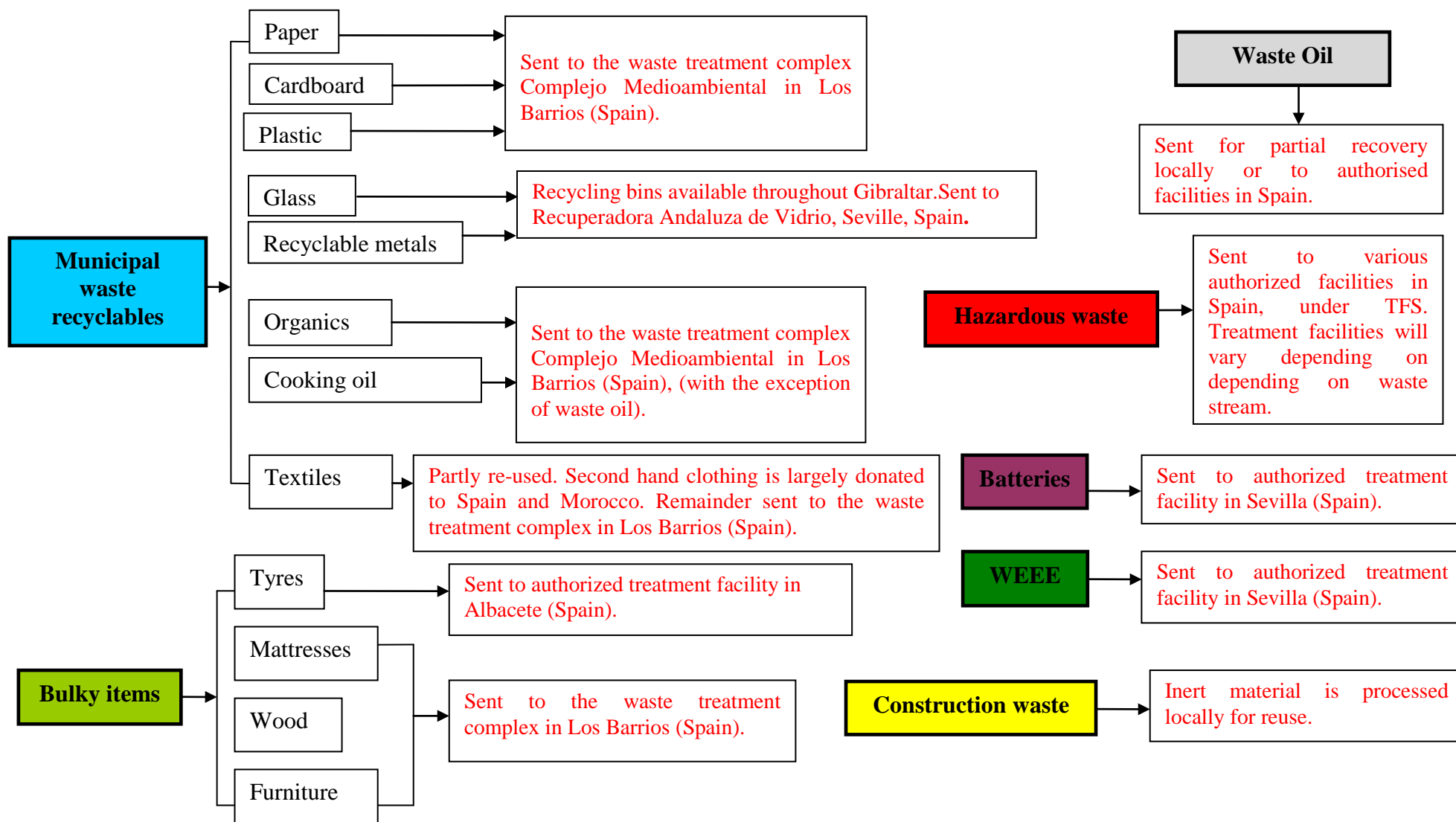
The foremost consideration in developing a waste management strategy for Gibraltar is the current dependency on border co-operation with Spain and the on-going management implications should the border become closed for any reason at any time in the future. This dependency is particularly acute as regards landfill disposal, with no suitable areas for non-inert wastes within Gibraltar.

The ultimate goal of Gibraltar's waste management strategy is compliance with both the 'self sufficiency' and 'proximity' principles, in other words, to become as self-

sufficient as possible in terms of waste collection, treatment and disposal within the smallest geographical area possible. Appreciating how difficult this is to achieve, bearing in mind the unique geography of Gibraltar, the strategy still aims to optimise waste treatment and minimize the reliance on co-operation with Spain for residual waste disposal.

In order to minimise this reliance, a strategy has been developed that encourages the key principles of waste management within the bounds of economic feasibility and viability.

Figure 1. Summary of Waste management processes in Gibraltar



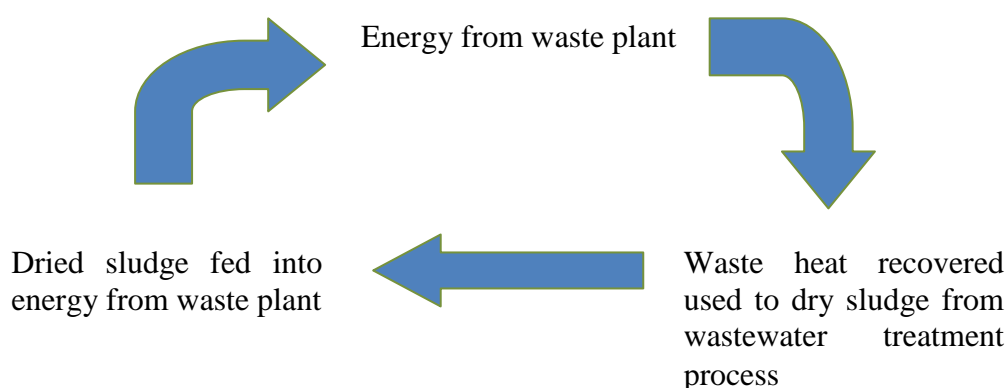
In the order of priority and effectiveness, these principles are listed as follows:

- Encouragement of reduction of waste at source;
- Recycling and re-use of wastes;
- Treatment to reduce volume of wastes - e.g. energy from waste
- Improving efficiency of waste management system and reducing its carbon footprint (Figure 2 below); and
- Careful consideration of location for final disposal of residues.

Allowing that there are limited opportunities for the re-use of wastes or residues from treatment processes within Gibraltar, this strategy aims to minimise the quantity of residual wastes by treatment, re-using and recycling of specific waste streams and, hence, the volumes of residual waste requiring long-term disposal to Spain. Figure 2 illustrates the closed loop system that will be introduced between the Sewage Treatment Plant and the Energy from Waste Plant.

An important point to remember is that all waste management processes considered locally (discussed in 3.1), no matter how efficient, will continue to require some disposal to landfill. The main aim is therefore to reduce reliance on landfill as much as possible.

**Figure 2. Sewage Treatment and Energy from Waste**



This strategy includes the development of an energy from waste plant. Due to the relatively small quantities of refuse and other waste produced locally, the viability of such a project hinges around specified minimum quantities being available and it is

for this reason that waste specific recycling initiatives have been implemented, with this currently being restricted to cans and glass. Other waste items such as paper and cardboard are currently being recycled in a small way. The high calorific value of paper, cardboard and plastic are considered essential and vital to maintain the energy from waste plant operating under optimum conditions. This is particularly important considering that waste heat from the proposed plant will be recovered and used for the desalination of seawater for drinking purposes, the drying of the sewage sludge and there is a possibility that some electricity may also be produced. In fact, the new plant will have the capacity to produce enough water to meet the needs of half of Gibraltar's population and in doing so, reduce our reliance on water production using Reverse Osmosis plants which are energy intensive. Energy recovery and potable water production are both extremely important features of the new plant in view of the difficulties faced by Gibraltar when it comes to acquiring potable water resources.

In summary, although energy from waste is regarded as a less favourable option as far as the waste hierarchy is concerned, it has also proved to be a tried and tested technology, which from a holistic point of view aptly suits Gibraltar's circumstances. Similar conurbations throughout Europe have also followed this route. Energy from waste plants are more environmentally friendly than standard incineration plants. The European Commission in its *Thematic Strategy on the Prevention and Recycling of Waste*, states that plants designed within high-energy efficiency parameters, such as the proposed plant in Gibraltar, could be as favourable as mechanical recycling. The *energy from waste vs. recycling* debate is one of the most contested issues in the field of waste management but *energy from waste* is, after careful consideration, the best waste management option for Gibraltar.

## **2.5 DESCRIPTION OF WASTE POLICY OBJECTIVES**

Despite the limitations encountered in Gibraltar, which are explained in section 2, this Management Plan will address as far as possible the principles contained in the Waste Framework Directive.



There are a number of key principles that need to be taken into account in implementing waste policy. These are:

- Sustainable development
- Proximity principle and self-sufficiency
- Precautionary principle
- Polluter pays principle
- Waste hierarchy
- Best Practicable Environmental Option (BPEO) and;
- Producer responsibility

### ***2.5.1 Sustainable Development***

The guiding principle of sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable development recognises the interdependence of environmental, social and economic systems.

### ***2.5.2 Proximity Principle and Self-sufficiency***

The proximity principle, advocates that waste should be disposed of close to the point at which it is generated, thus aiming to achieve responsible self-sufficiency at a local level. The self-sufficiency principle is that a geographic area should be as self-sufficient as possible in waste management. At present our municipal and hazardous waste is exported to the nearest facilities in Spain.

### ***2.5.3 Precautionary Principle***

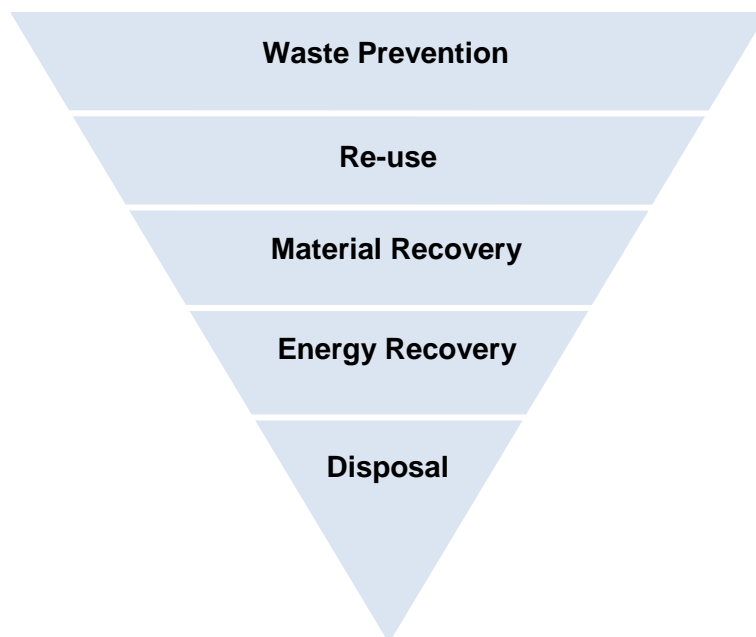
The precautionary principle states that if an action or policy has a suspected risk of causing harm to health or the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is not harmful falls on those taking the action.

### 2.5.4 Polluter pays Principle

The polluter pays principle requires that the costs of pollution be borne by those who cause it. It includes accidental pollution prevention, control and clean up costs. All waste licences issued by the Environmental Agency contain specific conditions that require the licensee to adhere to this principle.

### 2.5.5 The Waste Hierarchy

The concept of a waste hierarchy was developed over the last decades and is underlined in the new EU Waste Framework Directive. It provides a preferred order of priorities for selecting and deciding upon waste management practices. These are:



- **Prevention:** Minimising the use of resources and reducing the quantities and/or hazardous qualities of the wastes generated
- **Re-use:** Using products or items again for the same or different purpose
- **Recovery/Recycling:** Reprocessing of waste materials for use in the manufacture of the same or different product. This includes composting.
- **Energy recovery:** Obtaining energy from waste
- **Final disposal:** If there is no other appropriate solution, the disposal of waste by landfilling or incineration without energy recovery.

This principle needs to be considered in conjunction with other principles, in particular the 'Best Practicable Environmental Option' (BPEO). The waste management strategy discussed in this plan focuses on management and action across all steps of the waste hierarchy. Furthermore, different waste streams fall within different sections of the waste hierarchy. For example, the following waste streams are currently sent to recycling facilities in Spain:

1. Glass
2. Cans
3. Batteries
4. Scrap metal
5. End of Life Vehicles (ELVs)
6. Waste oil
7. Waste Electrical and Electronic Equipment (WEEE)

In an attempt to further increase current recycling rates, more recycling points for cans, glass and batteries will be provided in the upper town using smaller containers and specialised vehicles that will be able to negotiate the narrow streets and lanes within this area. Furthermore, an assessment will be made for the viability of placing small WEEE recycling bins in strategic locations throughout Gibraltar, in the hope of increasing the recovery rate for small electrical and electronic equipment. Textiles - that is to say, second hand clothing - are largely donated to local charities that then send the clothing to developing countries for reuse.

Currently, municipal solid waste is taken to waste treatment complex Complejo Medioambiental Sur de Europa in Los Barrios, Spain. At this site, waste is separated to enable manual and mechanical sorting of recyclables. Biowaste is removed and sent for composting. Any remaining waste is then sent to landfill.

Government awareness campaigns are used to regularly inform the public of the need to minimise the use of resources, reuse as much as possible before disposal and the need for the community to make use of the recycling facilities available. Information on local waste management is included in the Department of the Environment literature as well as on the Government website. The Government is also embarking upon a high-level media awareness campaign aimed to increase

public knowledge of local waste management options and to promote the key principles of its waste management strategy.

### ***2.5.6 The Best Practicable Environmental Option (BPEO)***

The BPEO is the outcome of a systematic and consultative decision-making process that emphasises the protection and conservation of the environment across land, air and water. The BPEO process establishes, for a given set of objectives and circumstances, the option (or combination of options) that provides the greatest benefits or least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term.

### ***2.5.7 The Producer Responsibility***

This principle means that manufacturers, importers, distributors and retailers of products that generate waste should take responsibility for those wastes, rather than expecting the community to bear the burden of arranging and paying for waste collection, treatment, recycling, recovery and disposal.

This principle implies that producers should take responsibility for:

- Minimising their waste arisings
- Designing and developing goods that are inherently recyclable and do not contain materials that pose an unnecessary risk or burden for the environment
- Taking back end-of-life products for re-use, recycling, recovery or final disposal
- Developing markets for the re-use and recycling of the goods they produce
- Informing consumers of the environmental impacts of products and on the management of end-of-life products

### **2.5.8 Waste Authorities**

The Government of Gibraltar is responsible, under the provisions of Section 56 of the Public Health Act, for the collection of municipal waste from households. Municipal waste arising from shops, bars, restaurants and other businesses is also collected as part of this service. The Government of Gibraltar makes arrangements for the collection of litter and bulky household waste. These services are provided by private companies under Government contracts.

The Government also arranges for the disposal of other wastes either directly or by agreement or contract with other companies. It also provides sites where householders can dispose of waste electrical and electronic equipment (WEEE) and inert and non-hazardous waste items such as furniture, timber, building debris, metal scrap etc.

The Environmental Agency is the competent authority appointed by Government for all licensing requirements under Part VA of the Public Health Act (which transposes the provisions of the Waste Framework Directive 2008/98/EC) and for EC Regulation 1013/2006 on shipments of waste.

## **2.6 PUBLIC CONSULTATION AND INFORMATION**

The draft Management Plan has been published on both Environmental Agency and Government of Gibraltar websites so as to give the relevant stakeholders and the general public an opportunity to participate by providing comments and suggestions regarding the Plan.

Government is prepared to consider any proposals or recommendations from any party willing to contribute concrete and tangible proposals that enhance the waste management capabilities in Gibraltar.

The Environmental Agency and the Government of Gibraltar will seek to ensure that information and advice on waste regulation is made available to all sectors of the community - industry, commerce and the general public (including schools) by the

use of awareness campaigns and the provision of information. This Plan is available on the Government of Gibraltar ([www.gibraltar.gov.gi/environment/environment](http://www.gibraltar.gov.gi/environment/environment)) and the Environmental Agency ([www.environmental-agency.gi](http://www.environmental-agency.gi)) websites.

The Environmental Agency provides registers detailing the organisations and individuals currently registered as brokers or dealers of waste and licenses for prescribed activities regarding waste under the Public Health Act. These registers are available for inspection by the general public during normal office hours at the offices of the Environmental Agency, 37 Town Range.

### **3. CURRENT STATUS**

#### **3.1 WASTE STREAMS & CURRENT WASTE MANAGEMENT ARRANGEMENTS**

Gibraltar has no chemical, manufacturing or other heavy industries and therefore the bulk of the waste consists of waste arising from households and commercial premises.

Light engineering industries, a small ship repair yard and Ministry of Defence activities produce small quantities of hazardous waste.

Some cruise liners and other ships calling and stopping at Gibraltar dispose of their waste, including waste oil, locally.

Clinical waste is generated from sources such as medical, nursing, dental and veterinary practices.

Waste arisings in Gibraltar are classified into ten categories namely:

- Municipal Waste
- Non-hazardous bulky waste
- Hazardous waste
- Construction and Demolition Waste
- Shipping waste
- Clinical Waste

- Waste Electrical and Electronic Equipment (WEEE)
- End of Life Vehicles (ELVs)
- Batteries
- Tyres

## 3.2 LOCAL WASTE STREAMS AND CURRENT MANAGEMENT PRACTISES

### 3.2.1 Municipal Waste

Municipal waste is waste that arises from domestic properties, residential homes, educational establishments, hospitals and nursing homes (excluding clinical waste) shops, offices, bars, hotels, takeaways and restaurants and is deemed not to be hazardous waste.

Municipal waste is collected six days a week by Gibraltar Industrial Cleaners, a commercial company on contract to the Government of Gibraltar. Municipal waste arising from Ministry of Defence establishments and its housing estates is also collected on a daily basis and forms part of the overall figure of municipal waste collected.

The 2010 municipal waste arisings within Gibraltar (excluding non hazardous bulky wastes) were estimated to be 18111 tonnes based on a population of 29,441. This



equates to around 616 kilogrammes (kg) of gross municipal waste per capita per year. Although higher than may normally be expected within a developed European country (typically around 524 kg per capita in 2008<sup>1</sup>), these arisings include all waste generated by tourists and packaging waste that comes into Gibraltar.

Municipal waste is collected and unloaded at a temporary transfer station at Europa Advance Road from where it is taken to the Complejo Medioambiental, Sur de Europa, of the Mancomunidad de Municipios of el Campo de Gibraltar, Paraje

<sup>1</sup> Eurostat News release, "40% of municipal waste recycled or composted in 2008", March 2010.

Majadal de Bustos, Los Barrios, Cadiz, Spain. Here, recyclable waste is mechanically and manually separated for recovery, with the remaining fraction going to landfill.

Table 1 shows municipal waste collected during the years 2000 – 2010.



**Table 1. Municipal Waste in Gibraltar in tonnes – 2000 to 2010**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
January	1,765	2,051	2,615	2,755	1,596	1,539	1,504	1,487	1,624	1,414	1,921
February	1,556	2,135	1,279	1,969	1,499	1,232	1,263	1,272	1,374	1,554	1,595
March	1,693	2,589	1,316	2,061	1,499	1,621	1,531	1,414	1,311	1,400	1,647
April	1,359	2,023	3,228	2,165	1,510	1,653	1,153	1,427	1,537	1,424	1,353
May	1,192	2,309	2,518	2,023	1,392	1,476	1,290	1,540	1,158	1,282	1,283
June	2,055	2,183	1,529	1,991	1,636	1,508	1,651	1,382	1,127	1,435	1,504
July	2,668	2,373	2,318	1,672	1,625	1,205	1,236	1,470	1,688	1,462	1,355
August	1,846	2,301	2,121	1,478	1,570	1,397	1,461	1,456	1,539	1,302	1,405
September	1,904	2,015	2,011	1,541	1,588	1,459	1,486	1,379	1,621	1,531	1,526
October	2,068	2,571	2,330	1,715	1,572	1,498	1,793	1,323	1,564	1,495	1,423
November	2,237	2,241	2,002	297	1,393	1,522	1,393	1,469	1,461	1,390	1,474
December	2,256	1,919	1,788	1,774	1,292	1,538	1,688	1,477	1,511	1,451	1,626
<b>TOTALS</b>	<b>22,599</b>	<b>26,710</b>	<b>25,055</b>	<b>21,441</b>	<b>18,172</b>	<b>17,626</b>	<b>17,448</b>	<b>17,095</b>	<b>17,516</b>	<b>17,140</b>	<b>18,111</b>

### **3.2.2 Recycling**

In 2008, a recycling scheme for glass and cans was introduced and separate collection bins for these recyclables have been strategically sited throughout Gibraltar on 42 different locations.



Records available up to February 2011 show that a total of 243,810 kgs of glass and 34,850 kgs of cans have been collected for recycling.

These have been exported to Recuperadora Andaluza de Vidrio and Hermanos Padilla SL Seville, Spain the movement of which were carried out in compliance with the Shipment of Waste Regulations.

Separate collection of spent batteries commenced in late 1997 and this was expanded in 2010. There are at present 23 collection points for spent batteries for recycling.

Records available up to February 2011 show that a total of 149,630 kilos of spent batteries have been collected for recycling. These have been exported under Shipment of Waste arrangements for recycling to Reciclec SA, Seville, Spain.

Figure 3 shows the recycling points in Gibraltar.

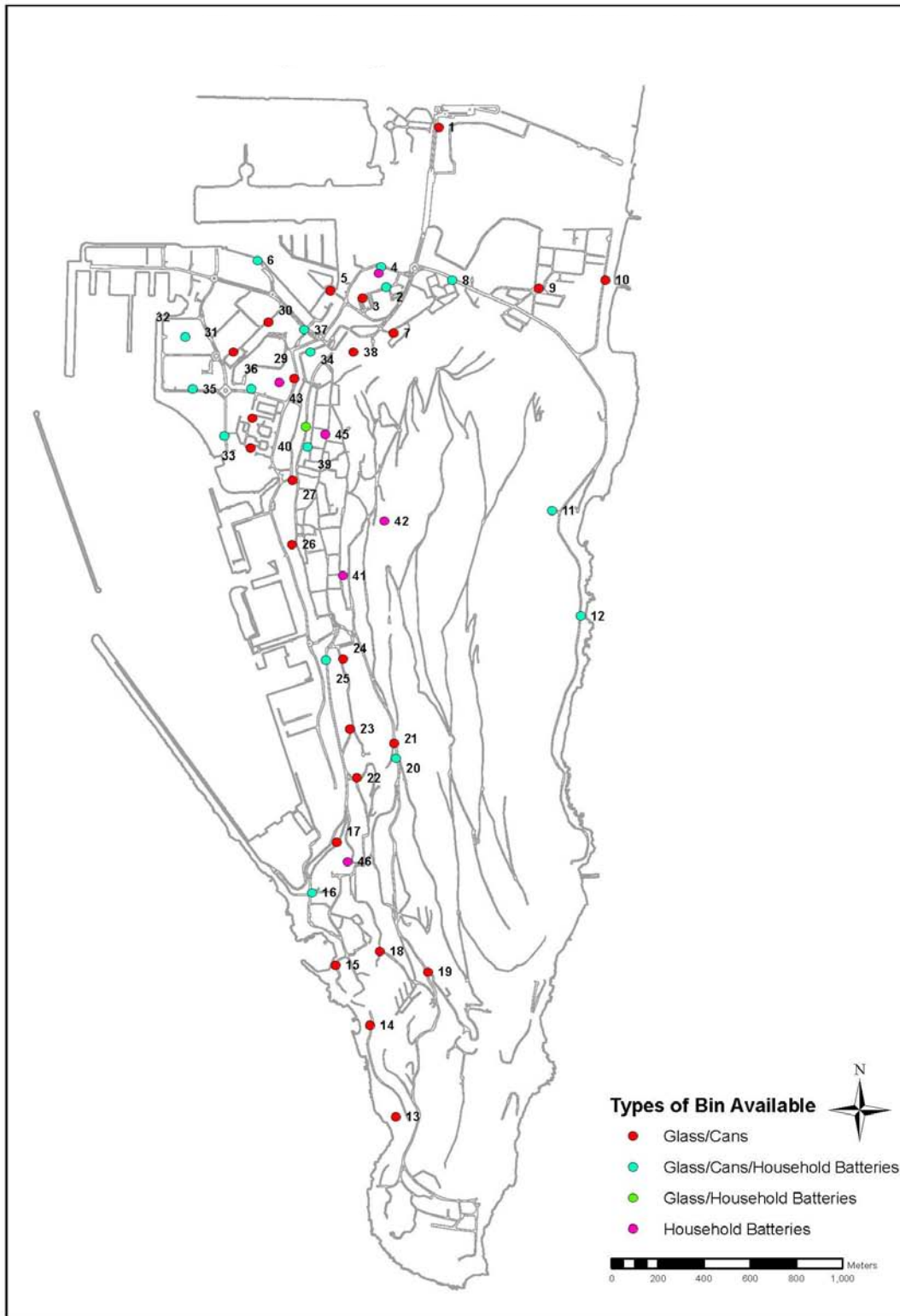
### **3.2.3 Municipal Waste and Non-Hazardous Waste Analysis**

In the Waste Characterisation Study carried out in 2006, municipal waste from three refuse collection routes was analysed. These were the Upper Town, Main Street and Devil's Tower Road. In addition to these, samples were taken from ship waste (see Table 2).

Three collection rounds were chosen to represent the range of waste collected by the municipal rounds. The Upper Town is almost completely residential, Main Street

is predominately non-hazardous commercial waste with some residential and Devil's Tower Road is a mixture of light commercial and residential.

**Figure 3. Recycling Points in Gibraltar**



The sub-samples were sorted by hand into 12 categories:

- Paper and Card;
- Organics;
- Dense Plastics;
- Plastic Film;
- Metals;
- Glass;
- Composites;
- Textiles;
- Special Municipal Waste;
- Unclassified Incombustibles;
- Unclassified Combustibles; and
- Fines.

These categories were then analysed for weight and bulk density. The results of the analysis showed a certain amount of variability in the composition of the waste from the collection rounds which is thought to be due to the type of premises that the round collects from.

There appeared to be a seasonal change with the waste from Upper Town and Devil's Tower Road having lower levels of organic waste and higher levels of paper and cardboard in August than in February. The waste from Main Street by comparison had an increase in organic waste and a decrease in paper and cardboard due to tourists increasing the trade for restaurants, bars, etc.

It can be seen that there was a higher percentage of special municipal waste from shipping than from the collection rounds and there appeared to be a higher degree of variability for the waste from shipping.

**Table 2. Waste Characterization results**

Load Number	Waste Categories	Total weight (kg)	Weight (%)	Bulk Density (kg/l)
1. Upper Town (Residential)	Organic	84.1	38.4	0.267
	Papers & Cardboard	39.8	18.2	0.108
	Composites	16.3	7.4	0.103
	Textiles	5.8	2.6	0.133
	Dense Plastics	13.6	6.2	0.042
	Plastic Film	26.8	12.2	0.036
	Glass	10.8	4.9	0.176
	Metals	12.6	5.7	0.096
	Special Municipal Waste	1.6	0.7	0.091
	Unclassified Combustibles	3.2	1.5	0.183
	Unclassified Incombustibles	1.6	0.7	0.183
	Fines	3.0	1.4	0.343
	<b>Total</b>	219.2	100.0	-
2. Main Street (Commercial)	Organic	28.4	13.1	0.325
	Papers & Cardboard	124.9	57.6	0.085
	Composites	6.8	3.1	0.041
	Textiles	2.8	1.3	0.107
	Dense Plastics	18.0	8.3	0.051
	Plastic Film	14.8	6.8	0.025
	Glass	7.0	3.2	0.2
	Metals	6.4	2.9	0.061
	Special Municipal Waste	2.8	1.3	0.16
	Unclassified Combustibles	2.4	1.1	0.091
	Unclassified Incombustibles	2.4	1.1	0.274
	Fines	Trace	-	-
	<b>Total</b>	216.7	100.0	-
3. Devil's Tower Road (Commercial/ Industrial Residential)	Organic	73.2	31.1	0.523
	Papers & Cardboard	62.8	26.7	0.137
	Composites	8.8	3.7	0.084
	Textiles	19.4	8.3	0.100
	Dense Plastics	16.4	7.0	0.043
	Plastic Film	18.0	7.7	0.043
	Glass	12.0	5.1	0.229
	Metals	9.4	4.0	0.107
	Special Municipal Waste	4.8	2.0	0.137
	Unclassified Combustibles	4.4	1.9	0.168
	Unclassified Incombustibles	0.8	0.3	0.046
	Fines	5.0	2.1	0.571
	<b>Total</b>	235	100.0	-
4. Ship Waste 1	Organic	18.8	11.6	0.358
	Papers & Cardboard	52.6	32.6	0.067
	Composites	3.4	2.1	0.049
	Textiles	15.0	9.3	0.132
	Dense Plastics	14.8	9.2	0.022
	Plastic Film	9.6	6.0	0.030
	Glass	7.0	4.3	0.2
	Metals	8.0	5.0	0.050
	Special Municipal Waste	32.2	20.0	0.2
	Unclassified Combustibles	Trace	-	-
	Unclassified Incombustibles	Trace	-	-
	Fines	0.0	-	-
	<b>Total</b>	161.4	100.0	-

### **3.2.4 Hazardous Waste**

Hazardous waste is defined in Section 192KA of the Public Health Act and means waste which displays one or more of the properties listed in Part 2 Schedule 11A of the Public Health Act which transposes Annex III of the Waste Directive 2008/98/EC.

Hazardous wastes are collected separately by licensed waste contractors and some fractions of hazardous waste produced in small quantities by households, offices etc, may be taken to the Civic Amenities Site of the Government of Gibraltar.

All hazardous waste are sent for either disposal or recovery operations to licensed plants in Spain under the Shipment of Waste Regulations 2006.

Waste oil from shipping and other sources was treated (partial recovery) at a Waste Oil Treatment Facility in Gibraltar but is currently exported mainly to Spain and other EU countries under the Shipment of Waste Regulations 2006.

Table 3 shows the types of hazardous waste, disposal site and quantity of hazardous waste recycled or disposed of between 2005 – 2010 from all sources, including the Ministry of Defence. All such waste was exported in accordance with the Shipment of Waste Regulations.

**Table 3. Hazardous Waste 2005 – 2010**

WASTE	Units	2005	2006	2007	2008	2009	2010	Recovered/ Disposed	Location
Asbestos	Tonnes	151	455	201	193	52	-	Disposed	Gamasur Los Barrios
Bitumen	Cubic metre	13	18	40	187	193	-	"	"
Ceramics & Bricks	Tonnes	-	-	-	-	-	-	"	Reciclad Mijas
Electronic Equipment	"	0.288	82	36	14	54	11	Recovered	Gamasur Los Barrios
Fire Foam	"	-	-	1.8	-	1	2	Disposed	FCC Ambito Cordoba
Fluorescent tubes	"	-	1	0.26	1	2	0.3	Recovered	Recitec Sevilla
Grit	"	10811	2992	57	1520	123	-	Disposed	Gamasur Los Barrios
Halogenated Solvents	"	1	-	-	2	-	-	"	FCC Ambito Cordoba
Lead Batteries	"	6	-	37	-	119	108	Recovered	Gamasur Los Barrios Azor, Murcia
Oil & grease containing waste	"	-	12	42	57	71	-	Disposed	Gamasur Los Barrios
Medicines	"	4	-	-	-	-	-	"	Gemasur Cordoba
Misc. chemicals	"	0.343	-	4.8	-	-	-	"	FCC Ambito Cordoba
Non- halogenated solvents	"	4	3	-	45	-	-	"	"
Oil-containing sludge	"	4800	-	-	-	-	-	"	Gamasur Los Barrios Verinsur Cadiz
Oil filters	"	-	7	8	6	7	5.700	"	"
Waste paint, varnish & chippings	"	5	-	9	12	50	-	"	Gamasur Los Barrios
Petrol	Cubic metre	-	-	2.8	-	-	-	"	Gemasur Cordoba
Photographic liquid	"	1	-	-	-	-	-	"	"
Sand & soil with hydrocarbons	Tonnes	5	600	7946	-	-	-	"	Gamasur Los Barrios
Sand with metals	"	1481	98	-	-	-	-	"	Gemasur Cordoba
Used waste oil	Cubic metre	-	3460	2975	-	-	-	Recovered	Ecologia Iberica y Mediterranea Barcelona

### 3.2.5 Non-Hazardous Bulky Wastes

Bulky waste includes timber, timber pallets, some scrap metals and mattresses. These materials are collected separately from the general waste stream and

transported to a sorting facility situated at Europa Advance Road where they are bulked up on site. Contractors then transport the waste to Complejo Medio Ambiental Sur de Europa, Los Barrios, Cadiz, Spain. The movement is carried out in accordance with the Shipment of Waste Regulations.

Table 4 below shows the quantities in tonnes of non-hazardous bulky wastes collected in years 2006-2010.

**Table 4. Quantities in tonnes of non-hazardous bulky wastes**

	2006	2007	2008	2009	2010
January	539	695	909	1071	727
February	897	760	962	1140	969
March	759	1032	851	1156	1033
April	557	880	1085	1259	869
May	604	953	982	924	720
June	718	881	790	1059	916
July	784	781	1359	975	760
August	712	783	982	783	788
September	665	919	1241	959	907
October	880	1054	1445	1038	1046
November	953	1050	1291	1026	1015
December	637	747	1161	776	830
<b>Totals</b>	<b>8705</b>	<b>10535</b>	<b>13058</b>	<b>12166</b>	<b>10579</b>

### **3.2.6 Construction and Demolition Waste**

Construction and demolition waste is inert waste arising from building construction including improvement repairs, alterations or demolition and excavations.

The volume of waste arising in this category is extremely difficult to quantify as this depends on the degree of building construction activity going on at any given time.



Uncontaminated construction wastes, for example, spoil and rubble are used for the reclamation of land from the sea and in the case of sand for beach replenishment as and when required.

Estimates of construction and demolition waste as calculated in the “Waste Characterisation Study” in 2006 amounted to 30,000 tonnes per annum. In 2009/2010 construction and demolition waste received at the Government Eastside rubble tip amounted to approximately 236,250 tonnes. This figure reflects the considerable amount of major construction, demolition and development works that took place during this period.

### **3.2.7 Shipping Waste**

The Port of Gibraltar provides facilities for the collection and transportation ashore of waste produced by shipping. This includes certain hazardous wastes including bilge oils and grey waters. The collection of these wastes is carried out by contractors that are licensed under Part VA of the Public Health Act and also hold Gibraltar Port Authority Waste Operators Licences to operate within British Gibraltar territorial waters.

These wastes join the main waste streams in Gibraltar and their management is dependent on whether they are hazardous or not.

**Table 5. Waste from shipping landed at the Port of Gibraltar for years 2006-2010**

<b>Category of Waste</b>	<b>Units</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Plastics	Cubic Metres	49	282	100	461	549
Floating dunnage, lining or packing material	“	35	74	42	78	167
Ground paper produce, rags, glass, metal, bottles, etc	“	210	372	71	380	484
Paper product, rags, glass, metal, bottles etc	“	202	301	101	360	559
Food waste	“	34	280	74	291	282
Incinerator ash	“	37	11	2	11	7
Oil slops	Tonnes	172	261	< 1	113	145

### 3.2.8 Clinical Waste

Clinical Waste is classified as hazardous waste by virtue of Section 192KA and the properties contained in Part 2 of Schedule 11A of the Public Health Act.

Clinical Waste consists of the following:

- wholly or partly of human or animal tissue.
- blood or other body fluids, excretions.
- drugs or other pharmaceutical products.
- swabs or dressings or syringes, needles or other sharp instruments being waste which unless rendered safe may prove hazardous to any person coming into contact with it, and
- any other waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practice, investigation treatment care, teaching or research or the collection of blood or transfusion, being waste which may cause infection to any person coming into contact with it.

Clinical Waste arisings for the years 2005 - 2010 are detailed in Table 6 which shows a breakdown of the quantities by month. The clinical waste between January 2005 and April 2008 was taken to Tecnicas Medioambientales TecMed SA, Avenida Card Bueno Monreal 56,20D 41012, Sevilla, Spain. The movements were subject to Transfrontier Shipment of Waste Regulation control.

A new clinical waste incinerator was commissioned in Gibraltar in April 2008 by Environmental Waste and Management Services Ltd at Governor's Cottage, Europa Advance Road and all clinical waste produced in Gibraltar is now incinerated at this plant. The plant is licensed under Part VA of the Public Health Act 1950 and Waste Incineration Act 2003.

**Table 6. Clinical Waste Arisings 2005 - 2010 (in litres)**

Date	2005	2006	2007	2008	2009	2010
Feb	16287	18321	27038	13545	221150	239870
Mar	20850	25028	20114	194400	242110	257835
Apr	17345	22214	26300	174120	220580	230590
May	19410	26099	6000	110160	224755	279445
Jun	12888	23125	-	-	243675	302420
Jul	15470	20586	-	-	235170	260380
Aug	15410	24608	25988	-	229515	247220
Sep	14190	19612	14407	32400	224205	316170
Oct	10859	26145	19346	64800	237110	262620
Nov	15566	19543	17858	31980	219350	262335
Dec	16409	15451	22935	-	236055	334620
TOTAL	191379	257800	203676	643290	2754335	2265210

### **3.2.9 Waste Electrical and Electronic Equipment (WEEE)**

WEEE is classified as hazardous waste. Rapid advances in technology and an expanding demand for new features accelerate the generation of electronic waste. Every year in Gibraltar a large number of electrical and electronic items become obsolete and are discarded.

Waste electrical and electronic equipment includes the following 10 categories:-

1. Large household appliances e.g. refrigerators, coolers, radiators, microwaves, fans, etc.
2. Small household appliances e.g. toasters, fryers, clocks, vacuum cleaners, etc.
3. IT and telecommunications equipment e.g. laptops, desktops, printers, telephones, mobile phones, modems, etc.
4. Consumer equipment e.g. televisions, musical equipment, DVD and video players, etc.
5. Lighting equipment e.g. fluorescent tubes and lamps.

6. Electrical and electronic tools (with the exception of large-scale stationary industrial tools) e.g. power drills, circular saws, jig saws, etc.
7. Toys, leisure and sports equipment e.g. video game consoles, sports equipment with electrical and electronic components.
8. Medical devices (with the exception of all implanted and infected products).
9. Monitoring and control instruments e.g. smoke detectors, thermostats, heating regulators, etc.
10. Automatic dispensers e.g. automatic dispensers for hot and cold drinks, money, confectionary, etc.

The Government of Gibraltar has provided a waste collection point for WEEE at the Civic Amenities Site situated at Europa Road. All WEEE is collected separately and exported for recovery by a licensed contractor under a Transfrontier Shipment of Waste arrangement to Gamasur, Los Barrios, Cadiz, Spain.

**Table 7. Weight of WEEEs collected during 2009 and 2010**

YEAR	WEEE (KGS)
2009	53960
2010	263660

### **3.2.10 End of Life Vehicles (ELVs)**

Directive 2000/53/EC on end-of-life vehicles (ELVs) was adopted in September 2000 and was transposed into local legislation by the End-of-Life Vehicles Rules 2004. Its overall aim is to reduce the environmental impact of scrapped vehicles. The key objectives are to:

- (a) Facilitate and increase the reuse, recycling and recovery of ELVs
- (b) Reduce the incidence of hazardous materials in vehicles and their components
- (c) Improve regulation by introducing certificates of destruction for ELVs
- (d) Ensure that ELVs are treated and disposed of in an environmentally sound manner
- (e) Set up a system of producer responsibility for ELVs.

The Directive applies only to cars, vans and three-wheeled vehicles (excluding tricycles). It does not apply to lorries, coaches and other large commercial vehicles.

Statistics on the number of ELVs were first collated in the year 2008 and the table below shows the number of vehicles collected for decontamination and subsequent recovery.

The End of Life Vehicles are dismantled and de-polluted by a licensed contractor and subsequently crushed. The different fractions are then sent for recovery to Recuperacions Los Chichos SL, Chiclana de La Frontera, Cadiz, Spain, under the Transfrontier Shipment of Waste arrangements.

**Table 8. Number of End-of-Life Vehicles collected for Decontamination and Recovery.**

YEAR	VEHICLES (UNITS)
2008	177
2009	457
2010	172

### 3.2.11 Batteries

The Batteries Directive (2006/66/EC) promotes a high rate of collection and recycling of waste batteries and accumulators and improvement in the environmental performance of all involved in the life-cycle of batteries and accumulators, including their recycling and disposal.



The aim is to reduce the amount of hazardous substances – in particular, mercury, cadmium and lead - dumped in the environment; this should be done by reducing the use of these substances in batteries and accumulators and by treating and re-using the amounts that are used.

To ensure that a high proportion of spent batteries and accumulators are recycled, Member States must take whatever measures are needed (including economic instruments) to promote and maximise separate waste collections and prevent batteries and accumulators being thrown away as unsorted municipal refuse. Arrangements are made enabling end-users to discard spent batteries and accumulators at collection points in their vicinity and have them taken back at no charge by the producers, (or in the case of Gibraltar, retailers and wholesalers). Collection rates of at least 25% and 45% have to be reached by 26 September 2012 and 26 September 2016 respectively.

Accurate records of batteries exported for recycling are only available for the years 2009 and 2010 and a robust system is now in place for the collection of this data in the future. Importation data is also available for 2010. From this, percentage recovery was calculated. In 2010, Gibraltar obtained a 63% recovery for batteries. All batteries were exported for recovery to Reciclec Sociedad Anonima, Seville, Spain under the Transfrontier Shipment of Waste arrangements.

**Table 9. Weight of batteries collected during 2009 and 2010**

Year	Batteries Collected (kgs)
2009	118392
2010	108475

### 3.2.12 Tyres

Tyres are collected separately and stored at Europa Advance Road Waste Transfer Station. The tyres are then sent to an authorised reuse and recycling plant in Albacete (Spain) called Recuperaciones EMRO, Sociedad Limitada. Table 10 shows the amount of tyres in Tonnes (all types of tyres) sent for reuse and recycling.

**Table 10. Tyres sent for reuse and recycling (in tonnes)**

Year	2004	2006	2008	2009	2010
Weight	9.42	206.27	19.04	253.6	200

### 3.3 ORGANISATION & FINANCING

In Gibraltar the financing of waste management includes private enterprises, public enterprises and semi-public entities. Each of the waste streams identified in section 2.4 (listed below) will be discussed in turn.

- Municipal Solid Waste.
- Non-hazardous bulky waste.
- Hazardous waste.
- Construction and Demolition Waste.
- Shipping Waste.
- Clinical Waste.
- Waste Electrical and Electronic Equipment (WEEE).
- End of Life Vehicles (ELVs).
- Batteries.
- Tyres.

**Please note** that costs have not been divided into collection, separation, treatment and final disposal. A global figure is provided which includes all of these stages. The reason for this is that there are very few companies in Gibraltar that deal with waste management. By revealing such detail, we would in effect be doing a disservice to the companies by revealing commercially sensitive data.

#### ***3.3.1 Municipal solid waste***

Municipal Solid Waste costs are paid out of consolidated funds raised by municipal rates and tax. The current cost of treatment (which includes collection, transportation, separation, treatment and final waste disposal) per tonne of municipal solid waste is £73.55.

### ***3.3.2 Non hazardous bulky waste***

Non hazardous bulky waste costs are paid out of consolidated funds raised by municipal rates and tax. The current cost of treatment (which includes collection, transportation, separation, treatment and final waste disposal) per tonne of non hazardous bulky waste is currently £73.55.

### ***3.3.3 Hazardous waste***

The organisation and funding for the collection, transportation, storage, administrative cost, recovery and disposal of most hazardous waste streams are charged by licensed operators to the individual producers of waste.

The Environmental Agency as Competent Authority under the Public Health Act imposes the following charges:-

1. Administration fee for the processing of waste licenses (Permits) is dependent on the time taken in processing the application and whether the Agency has had to engage outside consultants in the preparation of the licence. Licences are subject to a minimum fee of £50.00.
2. Administration fee for the processing of application for the registration as a waste collector, dealer or broker is £25 per application.
3. Administration fee for the processing of Transfrontier Shipment of Waste applications is dependent on the time taken in processing the application and is subject to a minimum fee of £50.00.

The cost of exporting hazardous waste to Spain under Transfrontier Shipment of Waste arrangements is commercially sensitive information due to our small size and local competition. As an example the current cost of exporting oil sludge for recovery is approximately £1,280 per tonne.

### ***3.3.4 Construction and Demolition waste***

All inert construction and demolition waste is recovered and re used for land reclamation. All material is taken by individual contractors to the Eastside Reclamation where it is classified as either inert or contaminated.



Any contaminated material is treated as hazardous waste and rejected. The said contaminated material is then sent to authorised treatment plants under the shipment of waste regulations by the producer.

Government does not raise any charge for the inert construction and demolition waste arriving at the site as it is all reused primarily for the creation of land. The cost to Government for the current creation of land, via this reclamation process from construction and demolition waste is £7,900,000. This sum includes the supply of rock for the creation of the rock bund enclosure, rock armouring, the construction of breakwater, the provision and installation of a geotextile lining, monitoring regime, earth moving, enabling works, and the supply management staff. This figure is based on the construction of an 800 metre breakwater providing for approximately 30,000 metre of reclamation area including the deposition of 750,000 tonnes of material within the new breakwater enclosure. Land in Gibraltar is at a premium, the land created by this reclamation is therefore a valuable asset which may be used for leisure, housing or commercial activities.

### ***3.3.5 Shipping Waste***

These wastes join the main waste streams in Gibraltar and their management is dependent on whether they are hazardous or not. Municipal type waste is taken by private contractor to the waste transfer station and treated along with local municipal solid wastes. The costs of this waste are therefore accounted for under the figures given in 2.2.1.

Any hazardous shipping waste, for example incinerator ash and oil slops, is taken by private contractor to treatment plants in Spain under the transfrontier shipment of waste Regulations at the producer's expense.

### ***3.3.6 Waste Electrical and Electronic Equipment (WEEE)***

All WEEE is sent to authorised treatment facilities in Spain. The Government of Gibraltar has a contract for this purpose. The costs are paid from consolidated funds raised from municipal rates and tax. The cost of treatment (which includes

collection, transportation, separation, treatment and final waste disposal) per kilogram of WEEE is as follows:

1. Large Household Equipment - £0.48
2. Small Household Equipment - £0.35
3. IT and Telecoms Equipment - £0.49
4. Consumer Equipment - £0.54
5. Lighting Equipment – £1.30
6. Electrical and Electronic Tools - £0.39
7. Toys, Leisure and Sports Equipment - £0.45
8. Medical Devices - £0.49
9. Monitor and Control Instruments - £0.48
10. Automatic Dispenser - £0.48

### ***3.3.7 End of Life vehicles (ELVs)***

All ELVs are taken to a local ELV de-polluting authorised centre. The various component parts are currently being stockpiled until the quantities are sufficient to make the costs of transporting them to further treatment facilities in Spain economically viable.

### ***3.3.8 Batteries***

All batteries are sent to authorised treatment facilities in Spain. The Government of Gibraltar has a contract for this purpose. The costs are paid from consolidated funds raised from municipal rates and tax. The current cost of treatment (which includes collection, transportation, separation, treatment, recycling and final waste disposal) per kilo of batteries is £9.24.

### ***3.3.9 Tyres***

All tyres are sent to authorised treatment facilities in Spain. The Government of Gibraltar has a contract for this purpose. The costs are paid from consolidated funds raised from municipal rates and tax. The costs are paid from consolidated funds raised from municipal rates and tax. The current cost of treatment (which includes

collection, transportation, separation, treatment and re use and recycling) per tonne of tyres is £165.

### ***3.3.10 Recyclables***

Glass and cans are collected from the recycling points shown in Figure 2 and taken to:

Recuperadora Andaluza de Vidrio  
c/tra Dos Hermanas Km 51  
Utrera, Alcala de Guararia,  
Sevilla  
Spain

The cost of the service (which includes personnel and administrative costs, local collection, sorting, transportation to recycling facility in Seville, Spain, treatment and re use and recycling) is £24 per tonne of glass and £87 per tonne of cans.

## **3.4 ASSESSMENT OF PREVIOUS OBJECTIVES**

### ***3.4.1 Municipal Waste Disposal***

The 2004 Waste Management Plan indicated that the re-designing and refurbishment of the waste to energy plant for the disposal of municipal waste was expected to be commissioned by late 2004 or early 2005. This has not yet materialised and it is now envisaged that the plant will be re-commissioned by 2015. All our municipal waste will continue to be sent to the Complejo Medioambiental “Sur de Europa” in Los Barrios (Cadiz) Spain.

### ***3.4.2 Collection of Recyclables***

Since the publication of the previous Waste Management Plan the Government has introduced a collection scheme for glass, cans and has augmented the collection points for spent batteries. A site for the collection of WEEE and ELVs has also been provided. The collection and segregation strategy of these waste streams has improved considerably since the adoption of the 2004 Waste Management Plan.

Government has provided two sites which are open to the general public for the disposal of WEEE at no cost.

A new privately operated plant is currently licensed for the dismantling and de-polluting all ELVs. Producers of these wastes have been motivated to segregate their hazardous wastes and to dispose of them separately at approved collection sites or by collection by authorised contractors.

A stricter enforcement regime, e.g. controls at the frontier with Spain to ensure that all exported waste including “green listed” wastes are authorised.

## **4. WASTE MANAGEMENT PLANNING**

### **4.1 WASTE SURVEY**

In February 2007 a Waste Management Study was produced by UK consultants on behalf of Government.

The study reviewed the 2005 waste collection, treatment and disposal practices within Gibraltar, and analysed the strategic options available to Gibraltar to comply with EC legislation.

Wastes generated within Gibraltar are collected by private companies, and for the most part are transported across the border to Spain by road haulage vehicle. In the case of municipal wastes, this operation occurs on a daily basis, from Monday to Friday. In the case of hazardous and green listed wastes for recovery, movements occur on an as-and-when basis, once sufficient quantities of waste have been collected and that makes its movement economical.

The study considered the need to treat and dispose of municipal solid wastes against the recognised objective to reduce the reliance of Gibraltar on the disposal of residues to Spain. Four principal potential development options were identified and compared as follows:

- Option 1 - Maintain current practises (base case);
- Option 2 - Maintain current practises with recycling initiatives;
- Option 3 – Re-design and refurbish the existing energy from waste plant; or
- Option 4 - Develop a new Mechanical Biological Treatment (MBT) facility on existing incinerator site.

Continuing to dispose of Gibraltar's wastes to the ecological complex at Sur Europa in Spain (Option 1) provides a simple but costly solution to Gibraltar's waste management needs, but it also involves on-going reliance on border co-operation with Spain. In addition, this option poses indirect questions for Gibraltar regarding compliance with the EC Landfill Directive, should the facilities at Sur Europa cease to function for any reason. As such, maintaining the current practice is discounted as an acceptable long-term option.

Kerbside recycling (option 2) had previously been considered by the Government of Gibraltar and a number of independent third parties, but has consistently been shown to be uneconomic for the operator; typically due to the costs of collection, transportation and exportation. Separate recycling was not considered a viable option at the time of the study.

Mechanical Biological Treatment (MBT) (option 4) has the potential to offer a strong contribution to recycling performance, and can provide satisfactory results as regards diversion of biodegradable waste from landfill; particularly where the selected treatment technologies concentrate on reducing the biodegradability of residual waste post-recycling. However, MBT does not necessarily provide significant reduction in mass, and relies heavily on suitable outlets being secured for the outputs from the treatment processes.

Given the limited land availability, and the associated lack of need for soil improving materials within Gibraltar, and thus the additional costs of exporting the product, MBT has not been considered a viable option. Furthermore, the land requirement associated with MBT could potentially outstrip the capacity of the current energy from waste site. As such, MBT is seen as second in order of preference of the discussed development options.

Option 3, Energy from Waste, would significantly reduce in the quantity of residual waste requiring transfrontier shipment to Spain. Used in combination with a practical and efficient increase in front-end recycling, this appears to offer the best overall solution to Gibraltar’s waste management needs; particularly as potable water will be produced using the waste heat. In addition, energy from waste facilities typically requires much less space than MBT for an equivalent quantity of incoming waste; this is believed to be an additional key differentiator in the case of Gibraltar.

Returning to the recognised objective of reducing the reliance of Gibraltar on having to export its municipal waste to Spain, a brief summary of the base and worst case scenarios as regards residual waste quantities from the MBT and incineration options are provided for comparison purposes as follows (Table 11):

**Table 11. Waste Comparison Options**

<b>Residual Waste to Landfill</b>		
<b>Process</b>	<b>Best Case</b>	<b>Worst Case</b>
MBT	20%	70%+
Energy from Waste	5%	30%

As such, Option 3 is Gibraltar’s preferred option.

## **4.2 FACTORS INFLUENCING FUTURE WASTE DISPOSAL ARRANGEMENTS**

### **4.2.1 Population**

The total population of Gibraltar stands at 29,441 in 2010. This figure includes Gibraltarian, other British and non-British residents. Ministry of Defence personnel stationed in Gibraltar are included in this figure.

The anticipated overall population likely to be producing waste arisings in the next census year 2011 is estimated to be 29,510. (This figure is based on historical trends

and takes no account of future developments). Examples of future developments include additional housing aimed at attracting new residents to Gibraltar, building of new hotels etc., which might result in further increased numbers of residents in Gibraltar.

#### **4.2.2 Visitors to Gibraltar**

With tourism becoming a major factor contributing to the economy of Gibraltar, the number of visitors to the Rock is increasing.

In 2010, a total number of 11,530,756 visitors called at Gibraltar of which 11,071,345 were visitors arriving by land, 328,264 by sea and 131,147 air arrivals. Table 12 below shows the number of visitors that called into Gibraltar from 2002 - 2010.

**Table 12. Visitor Arrivals in Gibraltar 2002 – 2010**

<b>YEAR</b>	<b>BY AIR</b>	<b>BY SEA</b>	<b>BY LAND</b>	<b>TOTAL</b>
2002	96,439	136,910	7,375,112	7,608,461
2003	114,484	164,052	7,502,815	7,781,352
2004	134,497	182,677	7,311,555	7,628,729
2005	150,303	206,030	7,434,420	7,790,753
2006	143,914	225,567	7,815,661	8,185,142
2007	159,666	292,675	8,977,761	9,430,102
2008	164,939	325,181	9,664,884	10,155,002
2009	160,713	363,213	9,778,312	10,302,238
2010	131,147	328,264	11,071,345	11,530,756

These figures include a number of frontier workers who travel into Gibraltar each day from nearby Spain. The “By Air” figures, in Table 12, include persons arriving at Gibraltar but whose final destination is Spain. It has not been possible to obtain specific figures for these groups of persons but it is reasonable to assume that they form a relatively small proportion of the total daily visitors to Gibraltar and for the purposes of estimating the future quantities of waste arisings will not materially affect the overall amounts.

In estimating the future quantities of waste which will require disposal, consideration must be given to the ultimate resident population to be catered for and an assessment of the likely numbers of visitors to Gibraltar over the next 20 years.

The waste characterization analysis carried out in February 2006 showed that August is considered the peak visitor period for Gibraltar and the quantities of refuse established in this survey therefore included the additional waste arisings from the visitor source. Table 13, shows the number of visitors calling on Gibraltar on a monthly basis for each entry point during the year the study was carried out.

**Table 13. Visitor arrival for 2010 by month and entry points.**

<b>MONTH</b>	<b>By Air</b>	<b>By Sea</b>	<b>By Land</b>	<b>Total</b>
JANUARY	7,592	2,821	737,673	748,086
FEBRUARY	8,483	449	728,085	737,017
MARCH	10,342	2,250	900,678	913,270
APRIL	8,516	28,284	929,329	966,129
MAY	12,104	36,177	895,251	943,532
JUNE	12,296	44,805	951,594	1,008,695
JULY	13,582	38,795	1,020,532	1,072,909
AUGUST	13,324	50,177	1,140,835	1,204,336
SEPTEMBER	13,426	65,313	1,068,230	1,146,969
OCTOBER	13,164	32,341	1,036,565	1,082,070
NOVEMBER	9,672	20,581	817,479	847,732
DECEMBER	8,646	6,271	845,094	860,011
<b>TOTAL</b>	<b>131,147</b>	<b>328,264</b>	<b>11,071,345</b>	<b>11,530,756</b>

The population of Gibraltar is estimated to increase at a growth rate of 0.613% per annum for the next four years (to 2015), reducing to 0.4% per annum thereafter, giving a projected total population in 2030 of 32,657.

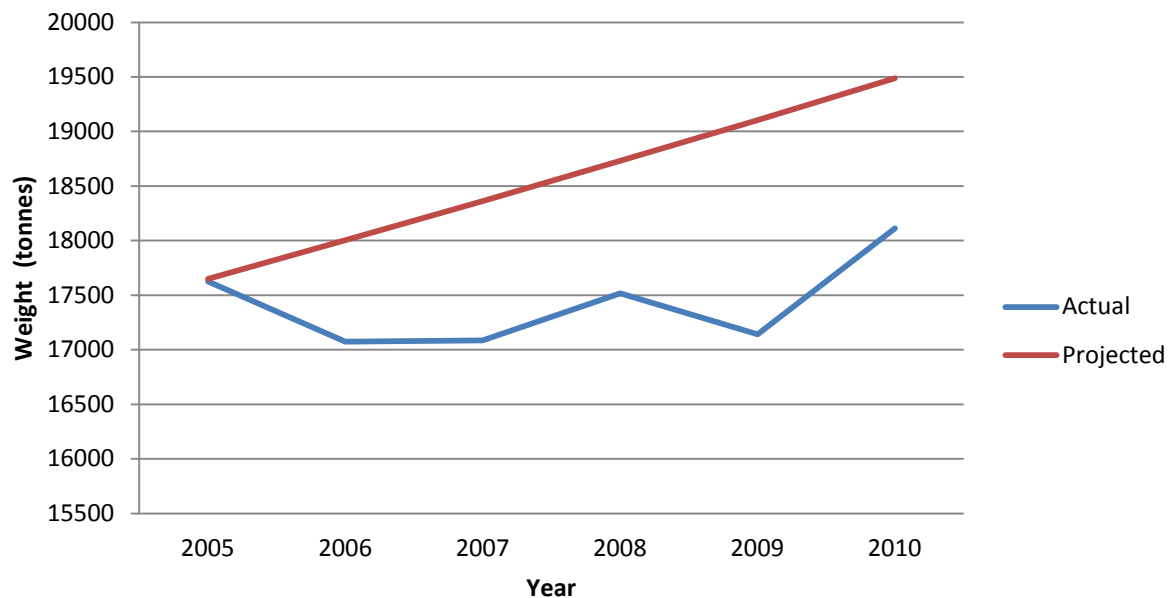
In recent times, municipal waste arisings within Europe have exhibited a typical growth rate of around 2-3% per annum, even with the introduction of local, regional



and national recycling initiatives (due to increased packaging and consumer goods consumption). More recently, however, national recycling initiatives have started to turn around this headline growth rate, even beginning to show a small reduction per annum in places.

In the case of Gibraltar, it is anticipated that the overall growth in municipal arisings will grow in the 0.5% range. This is based on current and projected population growth rates and the actual increase in municipal waste between 2005 and 2010 (Table 1, Graph 1 below). The municipal waste arisings are therefore estimated to rise from 17,650 tonnes per annum in 2005 to 19,920 tonnes per annum in 2030.

**Graph 1. Projected and Municipal Waste**



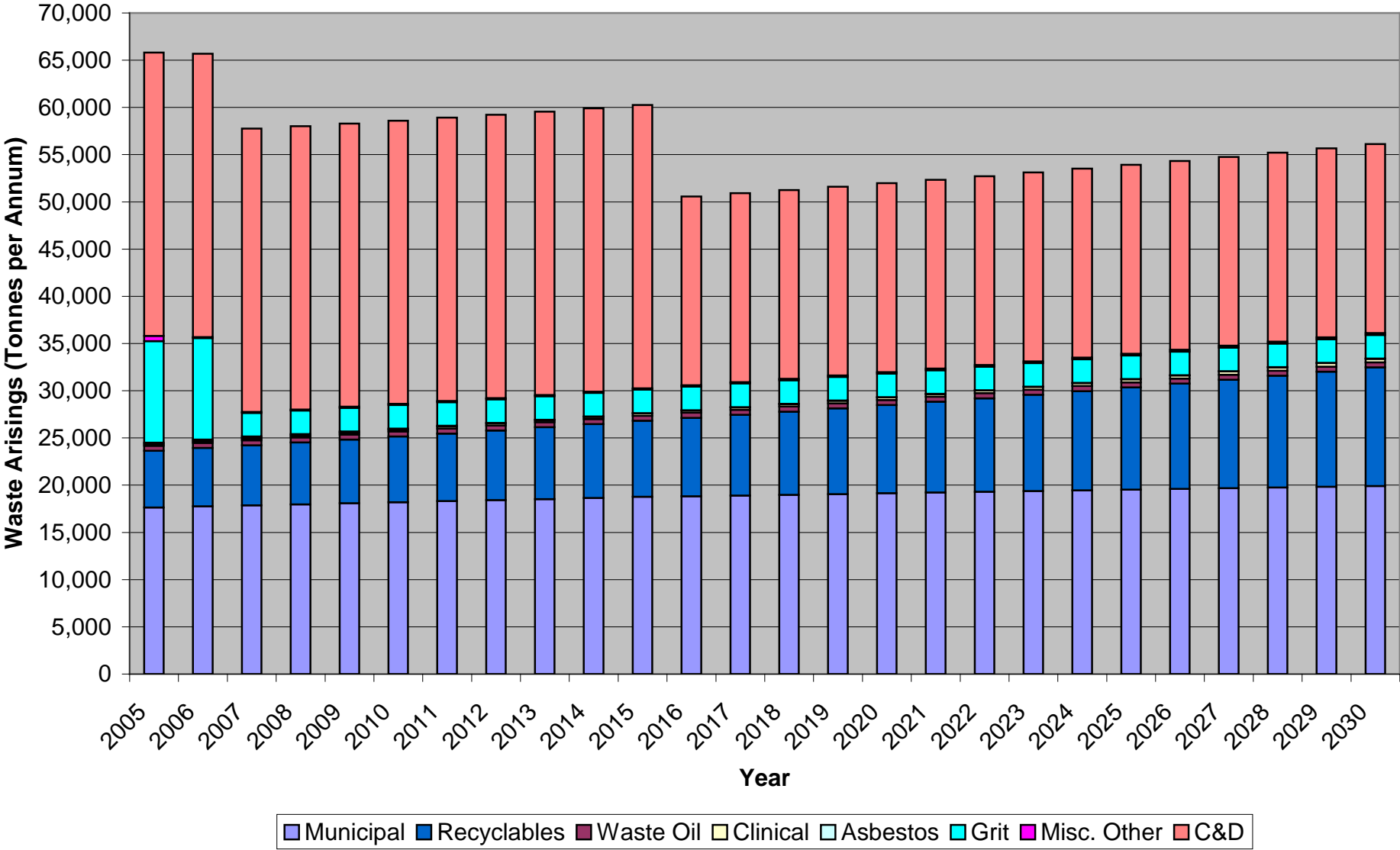
#### **4.2.3 Future Development**

The available space for future development in Gibraltar is somewhat limited. Gibraltar’s size limits building developments because of the non-availability of suitable sites for construction. Future projects are likely to be mainly concerned with upgrading existing facilities or providing selected developments on former Ministry of Defence land or on land reclaimed from the sea for major infrastructural projects, for example a proposed East Side Reclamation and reclamation within the harbour area for Government housing carried out recently.

The recent development boom will clearly have an influence on the population growth and consequently the potential future waste arisings within Gibraltar. In general, it is envisaged that future development will focus mainly on the provision of new tourist facilities, shopping, residential and marina complexes; with growth in waste arisings consequently being focused on the municipal waste stream (Other developments are associated with the growth of Gibraltar as a financial and commercial centre).

Graph 2 illustrates the predicted waste arisings for various waste streams in Gibraltar. The intention is to continue to manage these waste streams in the same manner and with the same setup as at present. The only exception being municipal waste, which will be sent to the energy from waste plant.

Graph 2. Estimated Total Waste Arisings in Gibraltar - 2005 to 2030



After careful consideration of the various options it is Gibraltar's intention to re-design and refurbish the existing energy from waste plant. The application of clean and reliable best available technology lies at the heart of the plant re-design including the composition and characteristics of the waste fed into the system.

However, due to the relatively low volumes of waste produced in Gibraltar, the viability of a waste-to-energy plant is marginal as the quantities are so small that it is just possible to make this viable. It is for this reason that a limited recycling initiative is being implemented based on tin and glass. Other waste items such as paper, cardboard are only being recycled in a small way as their inherent high calorific value is essential to ensure the viability of the energy from waste plant both in terms of stabilising the calorific value of the refuse as well as in ensuring minimum operating volumes. Note should be taken of the fact that Gibraltar's refuse is inherently very wet and fluctuations in calorific value will very negatively impact on the operation of the plant and this is particularly important considering that the waste heat from the proposed plant will be recovered and used for the desalination of seawater for drinking water purposes. The solidified sludge cakes can then be fed into the energy from waste plant thus making Gibraltar more self sufficient and minimising transport and disposal costs of the sludge cakes.

The overall effect of all these developments will be to improve the environment and quality of life enjoyed by the existing population and visitors alike and provides for an integrated approach in terms of waste disposal and energy requirement.

## **4.3 WASTE MANAGEMENT OPTIONS**

### ***4.3.1 Waste Recovery***

All appropriate methods of waste recovery where possible will be encouraged.

### ***4.3.2 Incineration of municipal waste and non-hazardous bulky waste***

The various options for re-use, recovery and disposal of the waste generated in Gibraltar have been considered. The size of Gibraltar and the amount of waste

produced limits the available options and makes options like re-use and composting uneconomical (section 3.1).

The ideal waste disposal option for Gibraltar with its unique circumstances and characteristics would be one where –

- Demands on land use are kept to a minimum
- Human health and the environment are safe guarded
- Waste is reduced as far as possible, and
- Recovery of waste is encouraged.

Utilisation of a “waste to energy” plant is considered to be the option that best fulfils these criteria for Gibraltar as far as municipal waste is concerned, in that

- The plant’s land requirement is small and continues to make use of the existing facility
- Safeguards to human health and the environment can be designed into the upgrading and refurbishment of the plant so as to ensure continued compliance with new EU standards.
- Waste going to landfill in Spain is greatly reduced.
- Waste energy is recovered and re-used for the production of potable water and possibly also electricity.
- Savings in fossil fuels.
- It fulfils the self-sufficiency principle in regard to municipal waste.

After careful consideration of the various options the preferred option is to re-design and refurbish the existing waste to energy plant, which has not been operational since 2001. The necessary redesigns are being undertaken for the refurbishment in order to meet current best practise as well as to allow time for a more integrated approach to be developed for our waste disposal and energy needs, moving forward for the next 25 to 30 years. The refurbished and modernised plant is expected to be commissioned by 2015.

The projected increase in municipal waste, as well as the combustible fraction of non-hazardous bulky waste will be factored into the design of the refurbished waste to energy plant.

Drinking water will be produced using the waste heat recovered from the plant. The waste to energy plant's environmental emission control will be re-designed and improved to meet the requirements of the Waste Incineration Directive. This includes the provision of best available techniques to deal with all emissions.

The ash produced by the plant will be exported to a licensed landfill site in Spain. The movement of the ash will be carried out in accordance with the Shipment of Waste Regulations and to a site that is approved for that purpose by the Spanish Authorities.

At present and until the new plant is commissioned, all municipal waste collected will continue to be taken to the Complejo Medioambiental Sur de Europa of the Mancomunidad de Municipios of El Campo de Gibraltar located in Paraje Majadal de Bustos, Los Barrios, Cadiz, Spain, where recyclable waste is mechanically and manually separated for recovery and recycling.

As part of these temporary arrangements municipal waste is collected as usual and unloaded at a waste transfer station at Europa Advance Road, from where it is subsequently taken to Complejo Medioambiental Sur de Europa for processing.

Though Government's preferred option is the construction of a waste to energy plant as the most economical and suitable way of disposing of our combustible municipal waste, it is committed to the recycling of non-combustible material.

#### **4.3.3 Recycling**

The criteria for recycling is decided on practicality and economics.

The recycling scheme for glass and cans, since its inception, continues to meet with limited success. Recycling rates for glass and cans increased slightly from 2009. The figures are as follows:

**Table 14. Recycling percentages for glass and cans**

	2009	2010
<b>% of cans recycled</b>	1.60%	2.80%
<b>% of glass recycled</b>	10.22%	12.10%

If not improved upon, these figures will not meet our recycling targets of 50% by 2020. Public awareness and advertising campaigns will be increased with the aim of encouraging the local population and commerce to utilise these recycling facilities. More recycling points for cans and glass will be provided in the upper town using smaller containers and specialised vehicles that will be able to negotiate the narrow streets and lanes within this area.

Waste such as metal scrap and WEEE are collected separately. Government provides two facilities where the public and commerce are encouraged to deliver all WEEE. All WEEE collected is then taken by a licensed contractor to approved recovery plants in Spain. These wastes are exported to Spain under the Shipment of Waste Regulations controls to approved recovery plants.

The amount of other wastes, including hazardous wastes, generated by a population the size of Gibraltar, in the absence of any significant manufacturing activities, is too small to justify the provision of recovery, disposal or treatment facilities locally. The costs of providing and operating such facilities to deal with these small amounts of wastes makes little economic sense. Therefore the only alternative option available to Gibraltar is exporting the waste to the nearest recovery or disposal facilities in Spain. Waste oil, however, is partially recovered at a licensed recovery plant locally and the final product transported to Spain for further treatment and re-use.

#### ***4.3.4 Incineration of Clinical Waste***

Clinical waste is generated from sources such as medical, nursing, dental and veterinary practice. The main sources of clinical waste are St Bernard's Hospital, King George V Hospital and Military Medical Centre. The remainder is produced by private surgeries, dental clinics and a veterinary practice.

All clinical waste is required to be properly segregated from domestic waste, be placed in yellow plastic bags and into marked 60 litre plastic containers. Waste, such as sanitary towels, nappies or incontinence pads originating from households are not considered to be either infectious or clinical waste. Similar waste may also be generated in for example, schools, nurseries and shopping centres. Here again the usual assumption is that such waste is not clinical as the source population is essentially healthy and the risk of infection should usually be no greater than for domestic waste.

The Clinical Waste Incinerator built at Europa Advance Road has been in full operation since May 2008. The Clinical Waste Incinerator is adequate to meet Gibraltar's needs for the disposal of clinical waste and all of this waste will continue to go to this facility. In case of unexpected shutdown of the plant, the clinical waste will be exported as was formerly the case to an approved waste disposal plant in Spain in accordance with the Shipment of Waste Regulations.

#### ***4.3.5 Disposal of construction and demolition waste***

The reclaiming of land from the sea on the eastern side of Gibraltar commenced in 1988. A length of coastline approximately six hundred metres extending from Catalan Bay to the southern side of Eastern Beach has been used as the base for this reclamation project. This project entails the reclamation of approximately two hundred and fifty metres out to sea along the entire length of the abovementioned coast. Construction Waste, i.e. solely non-biodegradable, non-hazardous waste, consisting of building debris, rubble and sand was used for reclamation purposes. Approximately 50 metres has so far been reclaimed from the sea and construction waste is currently being stockpiled in this area in preparation for further reclamation which has already commenced. This reclamation will be preceded by the



construction of suitable regional limestone revetment walls on all three sides. The area behind these walls and in front of the existing reclaimed land will be lined with a suitable geotextile material before the stockpiled material is used to infill the area.

The site is fully supervised and the personnel monitor all incoming vehicles to ensure that only non-biodegradable, non-hazardous waste is disposed of in the site.

#### ***4.3.6 Scrap yards/End of Live Vehicles (ELVs)***

All scrap metal is collected by licensed operators for decontamination (if necessary), recovery of different metals and subsequent exportation to Spain. One of the scrap yards is licensed for the dismantling and depolluting of ELVs. All scrap metals and other waste fractions arising from the operation are exported to Spain under Shipment of Waste arrangements.

#### ***4.3.7 Oil Sullage Plant***

There had, until recently, been a waste oil treatment facility situated at Western Arm North Mole, which came into operation in 2001. This waste oil treatment facility was licensed under the Public Health Act to treat waste oil.

However, as a result of a major fire and explosion at the plant, the facility has not been operational for some months and all waste oil is currently being trans-shipped to Spain for treatment, disposal or regeneration.

#### ***4.3.8 Batteries***

There are currently 22 bins strategically sited throughout Gibraltar for the separate collection of spent batteries (refer to Figure 3). Although figures of the quantities of spent batteries collected are only available for 2009 and 2010 there is now a system in place to verify the quantities of batteries imported and collected so as to assess compliance with EU collection targets.

#### **4.3.9 Civic Amenities Site**

The Government provides a site at Europa Advance Road where householders dispose of their bulky timber items, white goods, electrical goods, mattresses, building debris and metal scrap for free.

White goods and electrical goods mentioned above are stored until there is a sufficient quantity for it to be exported to a licensed recovery facility in Spain under the Shipment of Waste Regulations.

This site will shortly be replaced by a larger facility at Europa Advance Road which will facilitate the handling of these wastes more efficiently.

### **5. WASTE MANAGEMENT PLAN REVIEW**

The Waste Management Plan will be reviewed after five years and take into account any known changes in waste streams, waste facilities and waste management options available. A yield and analysis survey on municipal waste in Gibraltar was conducted recently as part of the preliminary investigations for the construction of a new waste to energy plant that will power a seawater desalination facility for the production of potable water.

#### **5.1 CONTINGENCY PLAN**

At present all municipal waste is being exported to Spain for recycling or landfill. The re-designed and refurbished waste to energy plant is expected to be commissioned by 2015 after which all municipal waste with the exception of glass and cans will be redirected to the waste to energy plant.

In the event of the waste to energy plant becoming temporarily unusable or during periods of maintenance, the position will revert to the one existing at present, whereby all municipal waste is taken to the transfer station at Europa Advance Road and transhipped to an approved recycling and landfill site in Spain in accordance with Part IIA of the Public Health Act and Regulation (EC) 1013/2006 on shipments of waste.

## 5.2 IMPLEMENTATION, MONITORING AND REVIEW

### 5.2.1 Implementation

The Waste Management Plan forms the basis of a sustainable approach to the management and organisation of waste disposal in Gibraltar. The implementation of the plan will be secured by the actions of Government Ministries and the Environmental Agency both operationally and through planning procedures. At present the number of companies registered for the collection of waste is unlikely to increase given market conditions and Gibraltar's size. These companies collect waste from the various households and establishments and deliver directly to the waste transfer station. In the case of hazardous wastes, these are stored by licensed contractors for final recovery or disposal under Shipment of Waste Regulations controls in Spain or other EU countries.

All Government contracts on waste collection will ensure that all the requirements of this plan are strictly adhered to and that all operations are carried out using the best practicable environmental option. Government contractors and private entities will be encouraged where possible to:-

- (a) reduce the generation of waste
- (b) where further reduction is not practicable, re-use either for the same or an alternative purpose.

Only if neither of the above offer an appropriate solution should waste be disposed of.

To encourage waste reduction and reuse all Government contractors are issued with literature and information on waste management. In 2011 the Government issued its Environment Action and Management Plan in which there is a commitment to numerous environmental improvement policies. Contractors and private entities are encouraged to adopt an Environmental Policy document or subscribe to an Environmental Management System e.g. ISO 14001.

### 5.2.2 Monitoring

The Environmental Agency will continue to regularly monitor all waste management facilities to ensure that operations are carried out in accordance with licensing conditions. The inspection frequency will be commensurate with the type of waste facility. In addition the Government of Gibraltar, through the Department of the Environment, will monitor and ensure that Government contractors comply with contract conditions.

### 5.2.3 Review

The operation of policies in this Plan and waste disposal trends and developments will be monitored. If it appears that the strategy and policies of the Plan are inappropriate, it will be reviewed. Furthermore, matters relating to the environment, regulatory controls and waste management technology are evolving rapidly and it is recognised that an early review may be required to keep pace with any material change in circumstances.

## 6. WASTE PREVENTION

Prevention is defined within the waste framework directive as:

*“measures taken before a substance, material or product has become waste, that reduce:*

- (a) the quantity of waste, including through the re-use of products or the extension of the life span of products;*
- (b) the adverse impacts of the generated waste on the environment and human health; or*
- (c) the content of harmful substances in materials and products;”*

Waste prevention planning must focus on the following areas (Annex IV, Waste Framework Directive, 2008/98/EC):

- i. Measures that can affect the framework conditions related to the generation of waste
- ii. Measures that can affect the design and production and distribution phase
- iii. Measures that can affect the consumption and use phase

Gibraltar, as already stated in this plan, is a net importer of products. There is no manufacturing or production which means that in terms of waste prevention, it can only focus its efforts on point (iii) and to a lesser extent point (i).

The Government's waste prevention policy will focus on waste prevention and minimisation at the consumption and use phase with the main component focusing on delivering more tangible success in waste reduction. This will be aimed at household, commercial and industrial levels. The objective of these measures shall be to break the link between economic growth and the environmental impacts associated with the generation of waste.

The following measures shall be adopted as part of the waste prevention strategy (extracted from Annex IV, 2008/98/EC):

1. The use of planning measures, or other economic instruments promoting the efficient use of resources.
2. The development of effective and meaningful indicators of the environmental pressures associated with the generation of waste aimed at contributing to the prevention of waste generation at all levels.
3. Economic instruments such as incentives for clean purchases or the institution of an obligatory payment by consumers for a given article or element of packaging that would otherwise be provided free of charge.
4. The use of environmental education in schools, awareness campaigns and information provision directed at the general public as well as specific sectors.
5. The promotion of creditable eco-labels.
6. In the context of public and corporate procurement, the integration of environmental and waste prevention criteria into calls for tenders and contracts. Government policy at present includes environmental criteria which covers minimum packages for relevant tenders.
7. The promotion of the reuse and/or repair of appropriate discarded products or of their components, notably through the use of educational, economic, logistic or other measures.

It is the Government's intention to hold a series of seminars to promote the adoption by the private sector of the Government's Environmental Action and Management Plan. Part of these seminars will focus on waste management, including waste prevention. One of the aims will be to motivate and help businesses to implement a waste management programme by encouraging better, cleaner, greener, more resourceful business practices, through the reduction of the consumption of resources which will in turn avoid the generation of pollution. The ethos "Prevention is better than cure" will be promoted in this context of waste prevention/management. The long-term aim is to try to ensure that cleaner greener production and environmental efficiency become the established norm in both the public and private sectors of our community.

## **6.1 COMMERCE**

As a major producer of waste, commerce have an important responsibility for ensuring that its waste management practices are consistent with the aims and objectives of this Plan. This could be achieved by:

- Reducing the amount of waste produced.
- Adopting waste separation strategies which both save money and protect the environment.
- Reusing materials and packaging where possible.

The Gibraltar Chamber of Commerce encourages its members to have their own Environmental Management Plan or alternatively adopt an Environmental Management System e.g. ISO 14001.

## **6.2 HOUSEHOLDERS**

Householders are important producers of waste and have a role to play in sustainable waste management.

In recent years society has adopted a 'throwaway' attitude and since we do not pay directly for domestic waste collection from the home, there is no direct financial incentive for householders to minimise, reuse or recover waste.

However, good waste management practices are encouraged through Government literature and awareness campaigns. There are a number of measures that householders are advised to take:

- Reuse products rather than throwing them away.
- Consider the durability and efficiency of any product bought.
- Buy reusable products and products with minimum packaging.
- Avoid purchasing products containing hazardous substances.
- Encourage recycling of certain wastes where these facilities are available e.g. glass, cans, WEEE, batteries etc.

Guidance on these issues is and will continue to be available on the Department of the Environment, Government of Gibraltar website <http://www.gibraltar.gov.gi/environment/environment>.

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