

# Thinking Green Digest 2014



Department of the Environment  
and Climate Change

HM Government of Gibraltar



Gibraltar Marine Reserve



# Thinking Green

## Digest 2014

Produced by the Department of the Environment and Climate Change.

This document aims to present an overview of the work carried out during 2014 by the Department of the Environment and Climate Change, as well as significant information relating to our local environment.

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## Minister's Foreword

Even the change of name of the Department of the Environment to the Department of the Environment and Climate Change reflects the refreshing breeze that has swept through environmental governance in Gibraltar in recent years. The year 2014 was no exception, and this Digest takes the reader through an environmental journey from nature conservation through pollution monitoring to international representation and beyond.

The enthusiasm, dedication and at times sheer persistence of the team in the Department and the Ministry are impressive and successful. The environment now has a major influence throughout Government policy, and increasingly environmental principles are being recognised in the private sector too as being good for the country, good for the planet, and good for business.

The work of the Minister for the Environment (who incidentally happens to have a passion for the environment) has become increasingly easy as a new way of thinking has kicked in and successful initiatives follow each other with striking velocity.

I have no doubt that you will enjoy reading our Digest, that you will find something of interest, something to inspire you, and something to make you think what else we can do as stewards of the natural world and as the species responsible for the wellbeing of all that surrounds us.

With my best wishes,

A handwritten signature in blue ink, appearing to read 'John Cortes', with a stylized flourish at the end.

Dr. John Cortes MBE, C.Env.

Minister for Health, Environment, Energy and Climate Change

HM GOVERNMENT OF GIBRALTAR

# Our Natural Environment

## Commonwealth Park



*View North of Commonwealth Park*

On the 12th June 2014, Chief Minister Fabian Picardo officially opened the eagerly awaited Commonwealth Park. Supported by the Kusuma Trust, the park aims to be an important recreational space, in the busy city centre, to be enjoyed by the local community.

The planting at the park is composed of plants that are either native to the Mediterranean or well suited to Mediterranean Climates. Thus, we have some strongly Mediterranean elements among the herbaceous plants, shrubs and trees. These include Bear's Breeches *Acanthus mollis*, Rockrose *Cistus sp.*, or Olive Tree *Olea europaea*.

Of these, some species are native to Gibraltar, whilst others are not. All of the Mediterranean species found in Commonwealth Park are important in attracting wildlife.

The emergent vegetation around the pond is important in promoting use of the pond by wildlife such as dragonflies. Mosquito Fish were not introduced into the pond environment as these are voracious predators and would devour all insects in the immediate vicinity. Plants growing along the margins of the pond include Yellow Iris *Iris pseudacorus*, Common club-rush *Schoenoplectus lacustris*, and Pickerelweed *Pontederia cordata*.



View South of Commonwealth Park

## North West Artificial Reef



*Department of the Environment and Climate Change Diver surveying the reef. A fan mussel (*Pinna nobilis*) can be seen in the above picture beside the diver's right hand.*

The initial phase of deployment began in July 2013, involving the submerging and placement of 70 concrete modules in order to provide the basis for an artificial reef system within a predetermined site in the northwest area of British Gibraltar Territorial Waters (BGTW).

The artificial reef was designed to act as a Fish Aggregating Device (FAD) whilst providing protection and shelter for the area's marine biodiversity and ecosystem. A FAD refers to a man-made object used to encourage and attract marine life. This includes the provision of a spawning area for fish and marine life, provision of natural protection for the recolonization of Annex IV species (as listed under the EU Habitats Directive), and provision of habitat for benthic communities to develop.

The Department of the Environment and Climate Change, during 2014, has been monitoring the area of the North West Artificial Reef System in order to determine the success of the project as well as ensuring it does not have a detrimental impact on the surrounding area. The Department is pleased to report that life is returning to the area through the creation of the artificial reef. The Department will continue to monitor and record marine flora and fauna at the site.



*Conger eel hiding in a reef module    Octopus at home on the reef*



*Other marine wildlife, above and below, settled in the Artificial Reef*



## Mediterranean Ribbed Limpet Relocation

The Mediterranean Ribbed Limpet *Patella ferruginea* is endemic to the Mediterranean and is the most endangered marine invertebrate along the Western Mediterranean rocky shoreline (Laborel-Deguen & Laborel, 1991a; Ramos, 1998).

It is a species which requires strict protection under Annex IV of the EU Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) and locally under Schedule 5 of the Nature Protection Act (1991).

According to Espinosa et al. (2005), the Bay of Gibraltar houses the largest known population of this species in the entire Iberian Peninsula, and very probably in the entirety of continental Europe. The main risks this species faces include an increase in pollution levels along the marine coastline. There are also limiting factors in the development of this species such as the space available on the rocky substrates due to the fact that this species only thrives in the “intertidal strip” of natural coastlines.

During August and September 2014, local endangered Ribbed Mediterranean Limpets were relocated from the North Mole to enable further reclamation in the area.

Over 70 of the endangered limpets were transported to a new location with around six transported daily over a two to three week period.

Due to the fact that removing the Ribbed Mediterranean Limpets forcefully from the rocks on which they are found results in a 90% mortality rate, the chosen method of relocation involved lifting the actual rocks and placing these on a specially prepared flat

bed. The flat bed was surrounded by tires to prevent excessive vibration during transportation to their new home.

Different methodologies were researched by the Department of the Environment and Climate Change; the one followed being the methodology with the highest survivorship for the endangered species.



Above: *Mediterranean Ribbed Limpet (Patella Ferruginea)*

Below: *Photos of Relocation Process*



## Coastal and Ground water sampling

Under the EU water policy of the Water Framework Directive, The Department of the Environment and Climate Change has, since 2009, conducted a monitoring programme of Gibraltar's coastal waters. The coastal waters are managed by The Department of the Environment and Climate Change under the coastal water management plan.

The coastal monitoring programme is by far the most elaborate exercise ever undertaken with regards to assessing the state of our coastal water. Water quality samples amongst other scientific data are being collected on a monthly basis.

The monitoring programme is meant to address any pressures that could potentially affect our coastal environment. Results gathered from this monitoring project are providing The Department of the Environment and Climate Change with an accurate picture of Gibraltar's coastal waters; whilst also providing a basis for future decision making, in terms of aiding the implementation of any necessary programme of measures that need to be introduced, to ensure that our water quality is maintained at a good level.





*Environment Officers coastal water sampling*

Environment officers at the Department of the Environment and Climate Change use a variety of instruments to determine the quality of coastal water, including secchi disks (to measure water clarity), probes, nets, gauges and meters.

The Department also collects groundwater data from the two aquifers found in Gibraltar, namely the bedrock aquifer and the Northern Isthmus aquifer.

Water quality is not just measured by direct sampling. Information is also being derived by observing the surrounding environment such as the seashore and by collecting organisms that live in our coasts, such as plankton.

## Barbary Macaque Management Plan



*Barbary Macaques (Macaca sylvanus). Photo: Eric Shaw*

HM Government of Gibraltar continued work on the Barbary Macaque Management Plan, and began to implement some of its measures.

The Plan, which is being prepared in consultation with experts in Gibraltar and abroad, incorporates a number of actions aimed at improving a wide range of aspects of Gibraltar's famous monkeys.

The main aims of the Plan include: Stabilising the Barbary Macaque population, minimizing incursions into built-up areas and preventing the establishment of urbanised groups, improving monitoring of the macaques, increasing the research and knowledge base, increasing veterinary involvement in the care of the macaques, improving communications of macaque matters to the

public, maximizing the use of the macaques as an educational resource, and improving their value as a tourist product.

Work on the management of our macaques has continued on numerous fronts. New personnel have been employed to tackle on the ground situations, woodland scrub has been cleared in key areas to further enable Macaque movements, and new ponds have been created in different parts of the Upper Rock such as Prince Phillip's Arch, Royal Anglian Way, Farringdon's Battery and Middle Hill. All the macaque feeding sites are being given a facelift, works being completed during 2015.



*Area of Woodland Scrub before clearing.*

*Area of Woodland Scrub after clearing.*



The end product will undoubtedly result in a significant improvement for our macaques and clearly our tourist product.

## Gibraltar Bats

The Gib-Bats project began on 31<sup>st</sup> October 2013 with the aim of identifying and catching bats to increase awareness in Gibraltar. 2013 proved to be extremely successful and the addition of a new species, The Isabelline serotine *Eptesicus isabellinus*, kick-started the studies of Chiroptera (Bats) within Gibraltar.

During 2014, the results of the study undertaken boosted the species list of bats to an impressive 11 known species, which have been seen, heard or caught over the years.

It has been identified that roosting Isabelline serotines are likely to be in Gibraltar with the success of catching both a Juvenile at the top of the Rock as well as a lactating female during successive nights.

During 2014, a very successful International Bat Night, in collaboration between GONHS, The Gibraltar Museum, Gib-Bats and the Department of the Environment and Climate Change, was held with over 200 visitors.

Training has also been successful with Gibraltar now having its very own bat licencing system and licenced trainees.

Funding from various sources has allowed the project to develop rapidly with extremely good results.

On a more negative note, through extensive research and reports, it has been concluded that populations have dropped severely by over 95% in Gibraltar and action must be taken to once again increase numbers.

Steps will be taken in future years to educate, advise and conserve bats in Gibraltar.

Plans for 2015 include a ringing project and further extensive training on how to catch and monitor bats.



*Picture on the left:  
Isabelline serotine Bat.  
A species of bat of the  
Vespertilionidae family.*



*Picture on the right:  
Schreiber's bat. A  
species of vesper bat  
of the Vespertilionidae  
family.*

## Relocation of Macaque Family to Scotland



*Baby Barbary Macaque (Macaca Sylvanus)*

The exportation of a group of Barbary Macaques to the Blair Drummond wildlife park in Sterling, Scotland, grabbed international headlines during October 2014. This was the first large scale export of macaques since the 1990s. The exportation followed a period of extensive research and discussions with park officials which allowed for the relocation of approximately 30 macaques from the Middle Hill Troop, which was frequenting the Laguna Area and Catalan Bay.

The macaques were flown to the UK on a chartered aircraft and then transported by road to the safari park. They were accompanied at all times by two experienced Gibraltar keepers from the Macaque Management team with additional support provided by officials from the Department of the Environment.



*Gibraltar Macaque Management Team Keepers transporting Barbary Macaques*

The selection of this particular group was facilitated by the tracking work carried out last year by a team of US researchers from Notre Dame University together with the Gibraltar Macaque Management Team, GONHS, the Gibraltar Veterinary Clinic and the Department of the Environment and Climate Change, sponsored by National Geographic. The exercise was carried out flawlessly since all the animals were trapped with minimal disruption.

*Blair Drummond Wildlife Park in Sterling, Scotland*



## Barbary Partridge Programme

The Barbary Partridge, a bird that in mainland Europe is only found wild in Gibraltar, is one of the Rock's natural gems.



*Barbary Partridge (Alectoris barbara)*

Primarily a bird of open scrub, its population declined greatly in the early 2000s for a number of reasons. These have included predation, but the most significant reason is likely to have been lack of open habitat. This was as a result of the growth of vegetation without the opening up of thick scrub and increasing open areas where the species feeds and breeds.

In order to tackle this, a programme of habitat clearing has been undertaken in various areas over the past two years. Already sightings suggested that there had been a slight recovery in numbers.

However a decision was taken in consultation with the Nature Conservancy Council that there was a need to increase the number of partridges in order to guarantee their survival.

After considerable effort, which included talks in Rabat between Environment Minister Dr. John Cortes and senior Moroccan Government officials, arrangements were made to import Partridges from Morocco. With the logistic support of Bland Group International, nearly 300 young partridges were brought over and underwent a period of quarantine, in a specially prepared facility, before being released into the wild.



*Barbary Partridge Chicks*

A small group, imported as eggs, were also released as a trial and proved very successful. Works were carried out by the Department of the Environment and Climate Change's Upper Rock Management team and the supervision of the birds was carried out by the GONHS Bird of Prey Unit.

## Gibraltar's Inclusion in the CMS Memorandum



As an environmental treaty under the aegis of the United Nations Environment programme, Convention on the Conservation of Migratory Species of Wild Animals (CMS) provides a global platform for the conservation and sustainable use of migratory animals and their habitats. CMS brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range.

As the only global convention specializing in the conservation of migratory species, their habitats and migration routes, CMS complements and co-operates with a number of other international organizations, NGOs and partners in the media as well as in the corporate sector.

Migratory species threatened with extinction are listed on Appendix I of the convention. CMS Parties strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Besides establishing obligations for each State joining the Convention, CMS promotes concerted action among the Range States of many of these species.

Migratory species that need or would significantly benefit from international co-operation are listed in Appendix II of the convention. For this reason, the Convention encourages the Range States to conclude global or regional agreements.

In this respect, CMS acts as a framework Convention. The agreements may range from legally binding treaties (called Agreements) to less formal instruments, such as Memoranda of Understanding, and can be adapted to the requirements of particular regions. The development of models tailored according to the conservation needs throughout the migratory range is a unique capacity to CMS.

In March 2014, Gibraltar was included within the scope of the United Kingdom signature of the CMS Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MoU).



*Short-toed Eagle in flight.*

## International Union for Conservation of Nature (IUCN)

In December 2014, the Department of the Environment and Climate Change was admitted as a member of the International Union for Conservation of Nature (IUCN) – the world's largest global environmental network.

This is a ground-breaking achievement for the Department of the Environment and Climate Change, given the international reputation and role of the IUCN, which acts as a United Nations Observer and has consultative status on several international conventions on nature conservation, biodiversity and climate change.



## Water Framework Directive – Biota Sampling

Sampling of biota is carried out as part of the Department's requirements under the Water Framework Directive. The Water Framework Directive requires Member States to analyse nutrients as well as physio-chemical parameters and priority substances in all water bodies. The list of priority substances which need to be monitored undergo reviews in order to identify new substances which are of concern to the aquatic environment.

The latest review identified new substances which are categorised as being hydrophobic, meaning that they cannot be properly identified in water. These substances need to be monitored using biota, in particular fish or another biota taxon which is appropriate. The Department's biota monitoring programme consists of both fish and mussel samples. The species sampled include White Bream and Common Mussels both of which are abundant species throughout Gibraltar's coastal waters, therefore providing a representative sample.

Samples have been obtained from both the Eastside and Bay area and were sent to the Centre for Environment, Fisheries and Aquaculture Science (Cefas) to undergo laboratory analysis.

## Department of the Environment and Climate Change Maritime Resources

The Department acquired two new boats during 2014, which will enable staff to patrol and monitor British Gibraltar Territorial Waters.

The main boat, a 10 metre cabin cruiser, has been named “Storm Petrel” after a species which inhabits the Straits and Mediterranean.



*Storm Petrel out at sea.*

The other boat, named “Darwin” after the world famous biologist, is a six metre RHIB. Both these boats will be utilized in the research and monitoring of the Southern Waters of Gibraltar Special Area of Conservation, as well as others marine sites around the Rock.

A team from the Department, made up of Environmental Protection Officers, Department Ecologists and the Department Diving Team, will be manning operations.



*Darwin out at sea.*

# Energy

## Renewable Energy

H.M. Government of Gibraltar, through The Department of the Environment and Climate Change, is committed to producing energy in an environmentally sound and sustainable manner by investing in renewable energy sources. Studies suggest that there are four viable options for Gibraltar in terms of renewable energy: offshore wind, energy from waste, solar and marine current energy.

Government remains open to the possibility of exploring new technologies and is committed to producing at least 15% of its energy from renewables by 2020, as required under the Directive on Promotion of the Use of Energy from Renewable Sources (2009/28/EC), with a view to increasing these further in the long term.



## Solar Thermal Installation at the Tercentenary Hall

Solar thermal technologies were installed during 2013, at the Tercentenary Hall as part of a pilot project. Four flat plate collectors and four evacuated tube collectors have been installed; half of these have been installed facing south and the other half facing south-west.



These systems were monitored throughout 2014 to gather data and ascertain which orientation and system are the most efficient. For further statistical information on renewable energy generated, please refer to the Thinking Green Digest Statistics Report 2014. Installations at other sites around Gibraltar have also proved very successful.



# Energy Performance of Buildings Regulations and the Energy Efficiency Directive



## EPBD



Government has identified those Government buildings which fall within the criteria, as specified in the EED, i.e. total useful floor area above 500m<sup>2</sup> and are either heated and/or cooled. The Department of the Environment and Climate Change is currently working with accredited assessors to obtain EPC's for all required buildings, including schools. Once the information is complete the inventory will be published online as specified by the regulations.

The EED requires public buildings to perform an exemplary role in respect of energy efficiency and under Article 5, Member States are obliged to renovate a minimum of 3% of the total floor area of public buildings per annum to meet minimum energy performance requirements.

First steps have already been taken in this respect, with an LED public lighting replacement programme and Government housing undergoing a process of renovation to include the replacement of windows with double glazing, installation of external cladding and the introduction of smart metering. Furthermore an overall renovation programme for public buildings is being developed.

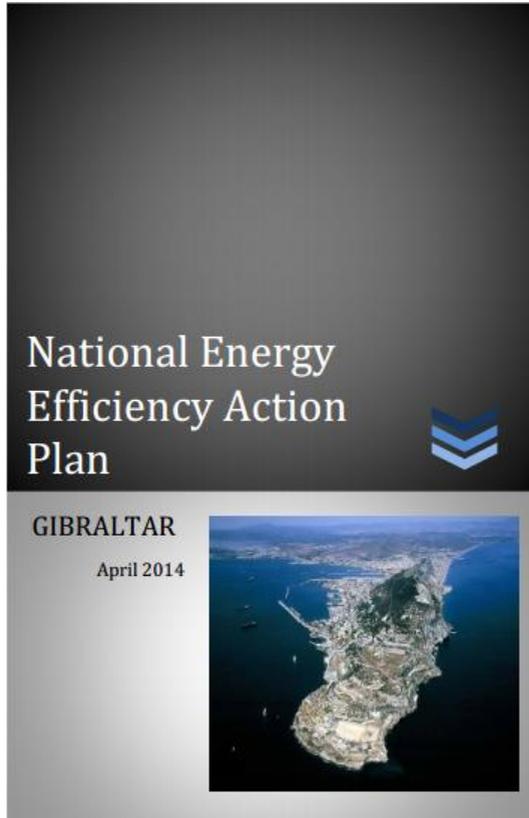


*Glacis Estate  
Refurbishment  
Works*

*Moorish  
Castle Estate  
Refurbishment  
Works*



# National Energy Efficiency Action Plan



HM Government of Gibraltar continues to strive to improve its energy efficiency throughout all sectors and recognises that this is one of the most effective ways to reduce our carbon footprint. In order to achieve this, efforts will focus primarily on the building sector as well as plans to introduce renewable energy.

Improving energy efficiency means that we can reduce our energy bills, reduce energy demand, increase energy security, reduce our greenhouse gas emissions through cost-effective means, and contribute more towards an environmentally sustainable way of life.

The Energy Efficiency Directive (EED) came into force in 2012 and is the most comprehensive directive on energy efficiency. The EED establishes a common framework of measures for improving energy efficiency throughout the European Union (EU) Member States and to ensure that the EU achieves its energy saving target of 20% by 2020.

Gibraltar's energy efficiency target will result in a reduction in primary energy consumption of 222GWh, which is 16% below the 'business-as-usual' scenario and is estimated to be an achievable target. At present, Gibraltar is very dependent on the importation of fossil fuels for energy production and in order to reach the 2020 targets, strategies and measures based on sustainability, improved efficiency and security need to be implemented.

This National Energy Efficiency Action Plan looks at the necessary measures that need to be put into place in order for Gibraltar to achieve its energy saving targets of 20% by 2020, as set by the EU. Measures are distributed across varying time scales and sectors ranging from public, commercial, building and transport sectors, each of which are considered and discussed throughout the plan.

HM Government of Gibraltar is committed to continue to improve Gibraltar's energy efficiency and environmental sustainability.

## EPC Certificates for all HM Government of Gibraltar Buildings

The Energy Performance of Buildings Directive (EPBD) is an EU initiative aimed at reducing the amount of energy consumed by buildings in an attempt to reduce carbon emissions. It is a legal requirement to obtain an Energy Performance Certificate (EPC) for buildings with fixed heating, cooling or mechanical ventilation, upon construction and prior to sale or rental.

The EPBD was transposed into local legislation and presently enforces its requirements through the Environment (Energy Performance of Buildings) Regulations 2012. These Regulations seek to promote the improvement of the energy performance of buildings, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness. In addition to this, it also demands that new buildings, of any size, must be constructed to meet the minimum energy performance requirements. This also applies to existing buildings, undergoing major renovation; in so far as this is technically, functionally and economically feasible.

An EPC provides a rating for the energy performance of a building. The ratings are standard so that the energy efficiency of one building can be easily compared with another building of a similar type. The ratings will look similar to a white goods energy rating where an 'A rating' indicates a high level of efficiency and 'G' indicates a low level.

## Energy Performance Certificate



John Mackintosh Hall  
308 Main Street  
Gibraltar

Building Type:  
Community/day centre  
Assessment method:  
~v3.4.F  
Date of Inspection  
140508

Certificate Reference Number:  
9077-3775-0747-7707-8001  
Date issued:  
13 Jun 2014  
Name of Inspector:  
James Hughes

### This building's performance ratings

This building has been assessed using Gibraltar's Approved Methodology: Simplified Building Energy Model Gibraltar (SBEMg). Its performance is rated in terms of energy efficiency based on energy use per square metre of floor area and environmental impact based on carbon dioxide (CO<sub>2</sub>) emissions. Both ratings are normalised by the performance of the Reference Building. There is more information on how to interpret this information on the Government's website [www.epc.gov.gi](http://www.epc.gov.gi)

Building rules compliance is achieved by a building with an environmental impact rating of 50 or less



The primary energy efficiency rating is a measure of the overall efficiency of a building. The lower the rating the more energy efficient the building is and the lower the fuel bill will be.

The environmental impact rating is a measure of a building's impact on the environment in terms of carbon dioxide emissions. The lower the rating, the less impact it has on the environment.

Since its inception, in 2009, over 1000 properties have been certified.

Public authorities or institutions providing public services are also encompassed within the scope of these regulations and are required to display their Energy Performance Certificate. EPC's for Government buildings that meet the required specifications have been carried out.

The ratings for these government buildings are shown within the Annual Statistics Report 2014, also produced by the Department of the Environment and Climate Change. This inventory is also available online and is updated as necessary.

The Department has currently started work with BRE to develop a revised version of iSBEM which will change the minimum EPC rating to be in line with cost optimal measures; encouraging even greater energy efficiency in buildings.

## Inspection of Boilers and Air-Conditioning Units Requirements

HM Government of Gibraltar is required to establish a regular programme of inspection specifically for heating and air conditioning systems. This is a requirement under the Energy Performance of Buildings Directive (2010/31/EU) which was transposed locally into the Environment (Energy Performance of Buildings) Regulations 2012.

Articles 14 and 15 of the Directive are transposed via Regulations 15 and 16 under the Environment (Energy Performance of Buildings) Regulations 2012.

Regulation 15 states that "a regular programme of inspection of the accessible parts of systems used for heating buildings, such as the heat generator, control system and circulation pumps, with boilers of an effective rated output for space heating purposes of more than 20kW" shall be established.

Regulation 16 states that "a regular programme of inspection of the accessible parts of air-conditioning systems of an effective rated output of more than 12 kW" shall be established.

### **Why are air conditioning inspections required?**

Having an air conditioning system inspected by an accredited energy assessor is designed to improve efficiency, reduce energy consumption, operating costs and the carbon emissions of the system. The energy assessor will highlight improvements to the operating

system or opportunities to replace, older, less energy efficient systems or oversized systems with new energy efficient systems.

The building owner, manager or tenant, dependent on their terms of contract, has statutory obligations and duties of care in the operation and maintenance of air conditioning systems. The inspections referred to are in addition to the normal activities associated with the ownership and operation of air-conditioning systems.

Inspection, maintenance and cleaning programmes maintain the ability of the system to provide a healthy and comfortable environment for building occupants as well as ensuring the safety of the equipment.

### **What is an air conditioning system and which ones require an inspection?**

An air-conditioning system means a combination of the components required to provide a form of indoor air treatment, by which temperature is controlled or can be lowered. This includes both fixed and self-contained systems, such as split systems and centralised systems.

Only air-conditioning systems with an effective rated output of more than 12kW are affected by these regulations. This will include systems consisting of individual units which are less than 12kW but whose combined effective rated output is more than 12kW.

The effective rated output is the maximum calorific output in kW, specified and guaranteed by the manufacturer of the system as deliverable during

continuous operation while complying with the useful efficiency indicated by the manufacturer.

One or more air conditioning units within a building controlled by a single person are considered to comprise a single air conditioning system for the purposes of the regulations. The person who controls the operation of the system is the person who controls the technical functioning of the system, not someone who can just adjust the temperature or whose only responsibility is to adjust the controls.

Air-conditioning systems that provide refrigeration for process applications, such as server rooms, would also require an inspection if that part of the system allows an inspection to be carried out.

### **What types of boilers need an inspection?**

A boiler under these Regulations means the combined boiler body-burner unit, designed to transmit to fluids the heat released from burning. This does not include boilers used for the sole purpose of heating water for use within the building.

Only boilers, used for space heating purposes, of an effective rated output for space heating purposes of more than 20kW will require an inspection under the Regulations.

For further detailed information, please visit [www.gibraltar.gov.gi/new/inspection-boilers-and-ac-systems](http://www.gibraltar.gov.gi/new/inspection-boilers-and-ac-systems)

## St. Bernard's Hospital

A renewable energy system is being planned for the hospital. This will comprise of roof mounted photovoltaic panels providing the primary energy to electrically power an array of modular heat pumps. The low grade energy from the heat pumps will be used to preheat the incoming mains water supplying the hospitals' domestic hot water calorifiers. Heat rejected by the heat pumps will be captured and transferred to the hospitals' chilled water infrastructure. The net effect will be to considerably reduce the hospitals dependence on the present fossil fueled diesel boilers.

## Energy Efficiency Funds

A provision exists for residential estates to obtain low interest loans via the Credit Finance Company to implement environmentally friendly improvements to housing estates. A total of £1.1 million has already been given out in loans under this scheme. One such estate is Sir William Jackson Grove, which has made use of these funds to install solar photovoltaic panels on its roofs to power the communal lighting. These soft loans are also available for the replacement of inefficient lighting with LEDS. The government has also introduced a tax allowance of up to £3,000 for the installation of solar energy for boilers.

For further detailed information, please visit:  
[www.thinkinggreen.gov.gj/index.php/resources/energy/157-government-incentives](http://www.thinkinggreen.gov.gj/index.php/resources/energy/157-government-incentives)

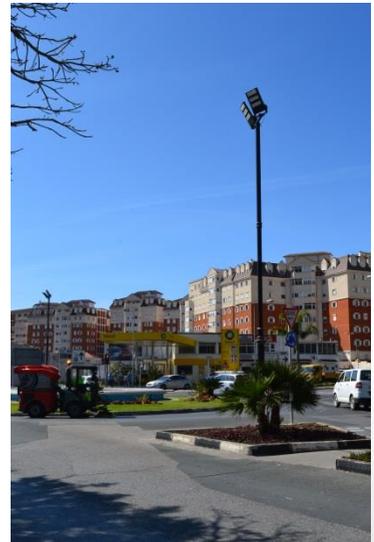
## Energy Efficiency Lighting

The Gibraltar Electricity Authority (GEA), on behalf of HM Government of Gibraltar, has embarked on a rolling programme to replace all street lighting with energy efficient light-emitting diode (LED) bulbs. LED lamps have a lifespan and electrical efficiency that is several times better than incandescent lamps, and significantly better than most fluorescent lamps.

Through this rolling, replacement programme, the GEA are reducing maintenance costs associated with the use of incandescent or fluorescent lamps in addition to reducing Gibraltar's demand on electricity to power our street lighting.

The aim of this programme is to replace all street lighting, throughout Gibraltar, with LED lamps in order to further reduce our demand for fossil-fuel produced electricity. This will contribute to a healthier and cleaner local environment for all Gibraltarians.

*Pictures around Gibraltar of where replacement lamps have already been installed.*

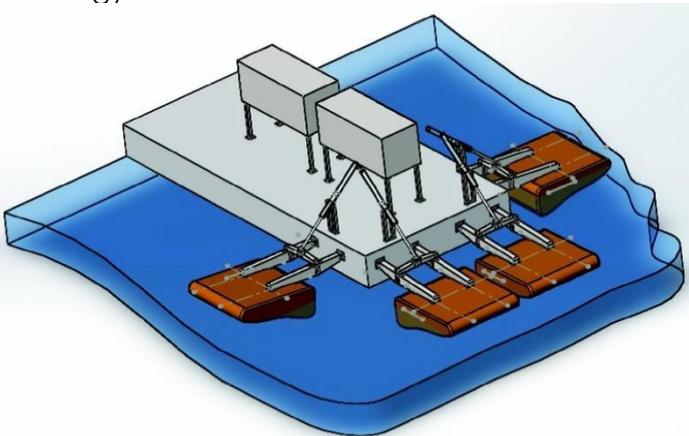


## Eco-Wave - Harnessing Wave Energy

The Government of Gibraltar has signed a power purchase agreement for the provision of wave energy. The agreement with Eco Wave Power is for the provision of an initial 0.5MW energy device on the eastside, with a view to further expansion up to a full 5MW plant if the project is successful.

Eco Wave Power is an international wave power developer, headquartered in Israel. Their technologies use uniquely shaped buoys to capture and convert wave energy into low-cost, clean electricity and the floaters will be specifically designed in accordance with our particular wave climate. The system will also have in-built storm protection and shock-wave protection mechanisms.

Wave energy is being deployed more and more widely across the globe and Gibraltar's unique location, coupled with the ability to reliably calculate and project wave patterns, mean that this is a very promising technology for the Rock.



*EcoWave Power.  
Isometry view of Gibraltar's proposed power plant*

# Climate Change



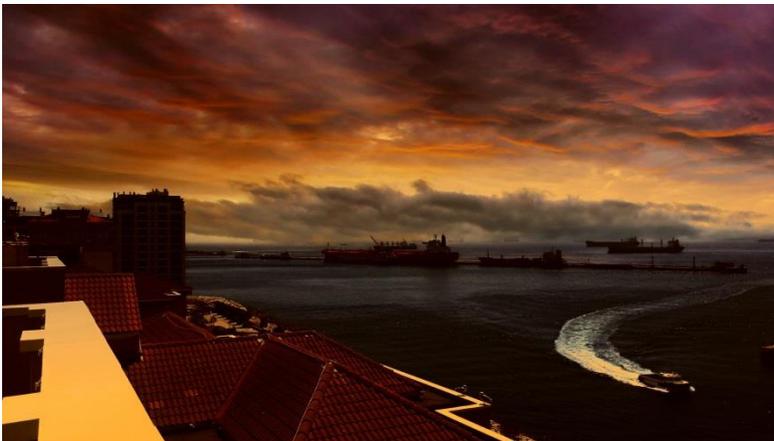
Climate change has ceased to be a scientific debate, and is no longer just one of our many environmental and regulatory concerns. Climate Change has become the overriding environmental issue of our time, and the single greatest challenge facing environmental regulators. It is a growing crisis, which will not only impact the environment but all aspects of human activity including the economy, food production, and health.

There is alarming evidence that important climatic tipping points, leading to irreversible changes in major

ecosystems and the planetary climate system, may already have been reached.

Ecosystems as diverse as the Amazon rainforest and the Arctic tundra may be approaching thresholds of dramatic change through warming and drying. Mountain glaciers are in alarming retreat and the downstream effects of reduced water supply in the driest months will have repercussions that could transcend generations. Climate feedback systems and cumulative environmental effects are building across Earth's systems demonstrating consequences we cannot anticipate.

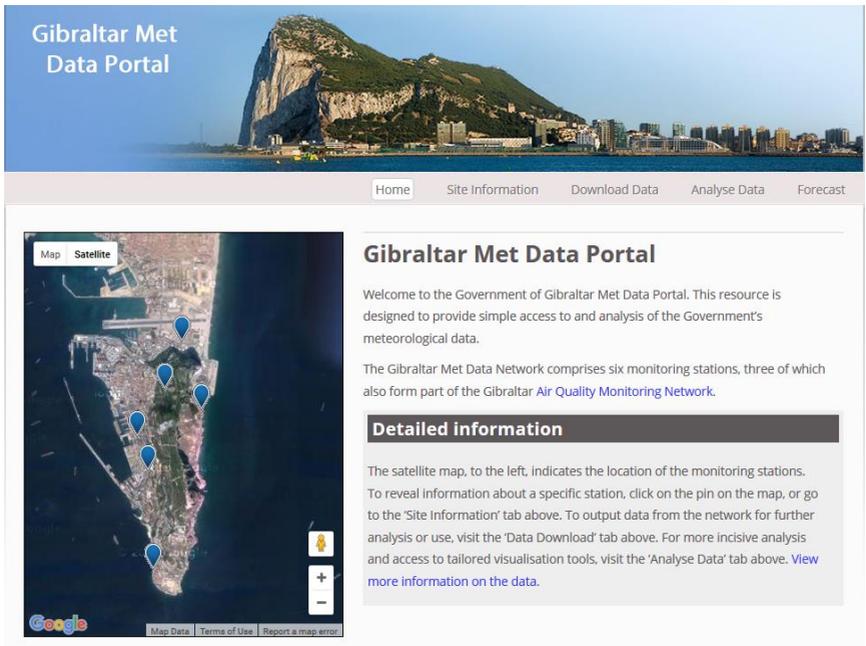
The most dangerous climate changes may still be avoided if we transform our hydrocarbon based energy systems. The tools are available; we just need to apply them. Raising awareness about climate change is extremely important, as it is an issue which is affecting many and will eventually affect us all. Awareness can lead to change and a better future for us and our environment.



## Meteorological Data Web Portal

HM Government of Gibraltar launched a new weather data portal as part of the wider Gibraltar Climate Change Programme.

The portal provides a 'one stop shop' to access, visualize and manage data from the Gibraltar Meteorological Network that can be accessed online at: [www.gibmetportal.gi](http://www.gibmetportal.gi)



**Gibraltar Met Data Portal**

Home Site Information Download Data Analyse Data Forecast

**Gibraltar Met Data Portal**

Welcome to the Government of Gibraltar Met Data Portal. This resource is designed to provide simple access to and analysis of the Government's meteorological data.

The Gibraltar Met Data Network comprises six monitoring stations, three of which also form part of the Gibraltar [Air Quality Monitoring Network](#).

**Detailed information**

The satellite map, to the left, indicates the location of the monitoring stations. To reveal information about a specific station, click on the pin on the map, or go to the 'Site Information' tab above. To output data from the network for further analysis or use, visit the 'Data Download' tab above. For more incisive analysis and access to tailored visualisation tools, visit the 'Analyse Data' tab above. [View more information on the data.](#)

*Gibraltar Met Data Portal Homepage*

The main purpose of the network and the portal is to assemble climate-relevant data. The network consists of six sites located around Gibraltar that collect data on wind speed and direction, temperature, rainfall, solar intensity and barometric pressure.

The stations are located at the following sites:

- North Front Cemetery
- Bruce's Farm
- The Caleta Hotel
- Rosia Road
- Witham's Road
- Bleak House

The dashboard styling of the portal provides a simple and clear layout with headline information on the front page as well as a dedicated download page with a data analysis section. A weather forecast service is also available that the public is encouraged to use.

# Greenhouse Gas Inventory produced for Gibraltar

HM Government of Gibraltar announced the development of a City-Level Greenhouse Gas Inventory for Gibraltar in line with the Government's wider strategy to combat climate change.

The Department of the Environment and Climate Change and the Climate Change Task Force, chaired by the Deputy Chief Minister, have been actively addressing key aspects of Gibraltar's strategy during the course of the year.

Effective monitoring, reporting and verification of greenhouse gas emissions (GhGs) forms a critical element in developing a strategy towards a low carbon economy and Gibraltar's inventory is amongst some of the most comprehensive city-level inventories produced to date.

The City-level Greenhouse Gas Inventory is available online under the Department of the Environment and Climate Change's webpages on the HM Government of Gibraltar's website.



Department of the Environment  
and Climate Change

HM Government of Gibraltar

*Front cover of the City-level Greenhouse Gas Inventory produced for Gibraltar*

## A City-Level Greenhouse Gas Inventory for Gibraltar



## Carbon Disclosure Project



The Carbon Disclosure Project (CDP) is an organisation that works with businesses and cities to disclose greenhouse gas emissions. Recognizing that evidence and insight are vital in driving forward real change, the CDP uses the power of measurement and disclosure to improve the management of environmental risk.

Cities present both a large problem and a significant opportunity in the management of global greenhouse gas (GHG) emissions. The 2008 World Energy Outlook estimated that cities accounted for over 70% of global GHG emissions, yet they also offer unique mitigation opportunities, due to the concentration of people and activities in a geographically small area.

In recognition of this, CDP cities was launched. This provides a platform for standardized reporting of emissions data, analysis of climate risks and opportunities and adaptation plans for cities around the world. One of the greatest advantages of the annual report is to city leaders who can identify peers who are addressing similar risks and issues with new and innovative strategies for reducing carbon emissions and mitigating climate risks.

Gibraltar first reported via the CDP platform in 2014 and will continue to do so, working to develop better systems of monitoring and verification and to develop climate reduction and adaptation strategies.

United Nations Climate Summit

# CLIMATE SUMMIT 2014

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## CATALYZING ACTION

In September 2014, UN Secretary General Ban Ki-moon hosted a Climate Summit, intended to galvanise and catalyse action on climate change. Minister for Health, the Environment, Energy and Climate Change, Dr. John Cortes, along with the Department of the Environment and Climate Change Chief Executive Officer, Dr. Liesl Torres were invited to attend.



The Summit brought together Heads of State, Ministers, Heads of international organisations, including the World Bank, and major players in the private sector to discuss the way forward ahead of the UN Climate Conference, COP21 to be held in Paris in 2015. It provided a unique opportunity for leaders to champion an ambitious vision, anchored in action to enable a meaningful global agreement in 2015.



For its part, Gibraltar remains committed to an ambitious carbon reduction programme and is due to publish an updated Climate Change Programme in 2015.

# Waste

## Municipal Transfer Site

Our Municipal Transfer Site has undergone some improvements in order to contain waste stored in preparation for transfer to Spain for disposal. These improvements include overhead coverings to reduce the level of solar exposure and protection from the high winds experienced, especially in Easterly wind conditions.



*Gibraltar Waste Transfer Site Improvements*

## Plans to expand our recycling scheme further

HM Government of Gibraltar went through the process of further expanding its supply of recycling bins to include Waste Cooking Oil Bins.

Currently, the Gibraltar Civic Amenities Site caters for the collection of waste cooking oil from the public and private sectors. The new waste cooking oil bins were distributed throughout Gibraltar and a tender was drafted for the servicing of these bins.



In addition to the introduction of these new bins, our current stock of recycling bins also increased to allow for higher distribution and closer availability to all areas throughout Gibraltar.



## Waste Characterisation Study

In 2006 a Waste Characterisation Study was carried out, in which municipal waste from three refuse collection routes was analysed; the Upper Town, Main Street and Devil's Tower Road. In addition, samples were taken from ship waste. The collection rounds were chosen to represent the range of wastes collected by the municipal rounds; to include residential waste and non-hazardous commercial waste.

In 2014, the Department of the Environment and Climate Change commissioned another Waste Characterisation Study following the 2006 methodology to see how composition had changed, the impact the introduction of the recycling scheme may have had and provide an updated understanding of waste streams and waste composition in Gibraltar. The most recent study also carried out a laboratory analysis of samples, including total moisture, ash content, fixed carbon and gross calorific value. All this data will assist in the design of the new Waste Treatment Facility. Furthermore, a Waste Flow Model was also created to help forecast future waste arisings, composition and assist in ensuring regulatory compliance.

*Staff carrying out the Waste Characterisation Study*



## HM Government of Gibraltar introduces Litter Bins with incorporated Ashtrays

The Department of the Environment and Climate Change introduced, during 2014, new Litter Bins with incorporated ashtrays. The aim of introducing these litter bins is to encourage smokers not to drop cigarette ends on the floor, in order to reduce the resulting amount of littering, and reducing the fire hazard of having ends thrown into current Litter Bins which are intended for the disposal of waste.

The words "Make the Change – Quit Now" have been printed on the newly incorporated Litter Bins to remind smokers of the health consequences of the habit.



*New Litter Bins with incorporated ashtray*

# Educational Awareness

Environmental education explains how natural environments function and, in particular, how human beings can seek to manage their behaviour and ecosystems in order to live sustainably. It refers not only to education within the school system but also to all efforts to educate the public, including print materials, websites and media campaigns. The Department of the Environment and Climate Change considers educational awareness of utmost importance and devotes a major part of its efforts to creating a better and more sustainable environment.

## World Environment Day

World Environment Day (WED) is an annual event which aims to be the biggest and most widely celebrated global day for positive environmental action. WED activities take place all year round but culminate on 5th June every year, involving people from all over the world.

WED celebrations began in 1972 and have grown to become one of the main vehicles through which the UN stimulates worldwide awareness of the environment and encourages political attention and action. Gibraltar has

now been taking part in the WED celebrations for many years. Through WED, the UN Environment Programme is able to personalise environmental issues and enable everyone to realise not only their responsibility, but also their power to become agents for change in support of sustainable and equitable development. WED is also a day for people from all walks of life to come together to ensure a cleaner, greener and brighter outlook for themselves and future generations.

The 2014 theme focused on the Small Island Developing States (SIDS) and Climate Change. Due to their small size and isolation, these small island states are highly vulnerable to risks of natural and environmental disasters, such as climate change and sea-level rise – a risk we face in Gibraltar as well, as we too are surrounded by the sea.



**World Environment Day**  
5 June

Many of the Schools took part in the World Environment Day celebrations at the Tercentenary Hall; presenting the issue of Climate Change through song and dance.



*Hon Minister Cortes addressing the audience at World Environment Day*

The Department also took the opportunity to show the latest recycling adverts and videos depicting possible sea-level rise scenarios and Gibraltar's bathymetry.

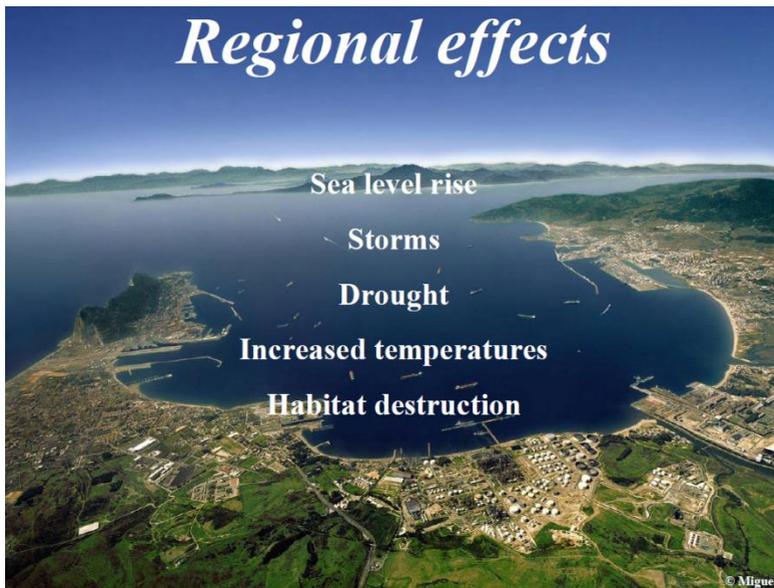


*Schools taking part in World Environment Day at the Tercentenary Hall.*

## School Presentations

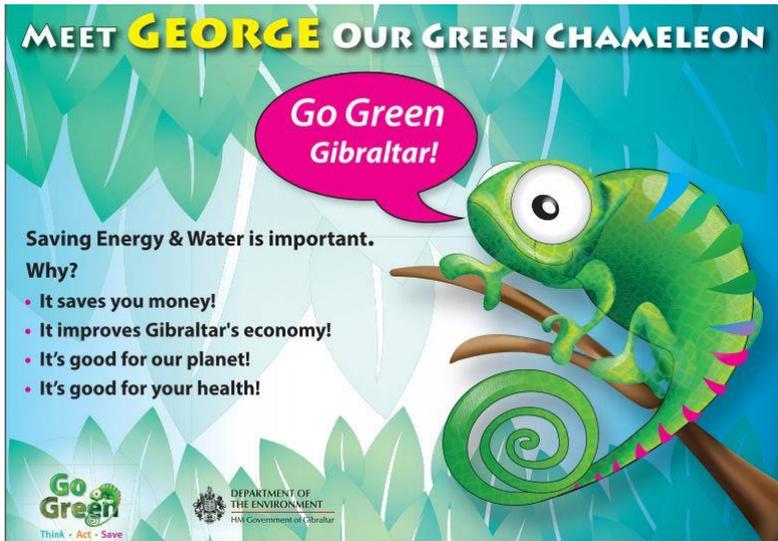
As part of its educational awareness programme, every year The Department of the Environment and Climate Change visits all schools and presents them with an environmental issue. The yearly theme is determined by the United Nations Environmental Programme.

The theme for 2014, Small Island Developing States and Climate Change, was very well received by pupils and teachers alike.



## Energy Efficiency Awareness Campaign

An awareness campaign was launched to further encourage local residents to save as much energy and water as possible in September 2014. This included awareness days, TV adverts and information leaflets for distribution to the public.



Did you know that only 3% of all the water in the world is fresh water and that only 1% is available for drinking water? In Gibraltar we are fortunate to have a desalination system to convert our sea-water into drinking water. However this process uses electricity, therefore if we reduce water use we also save electricity – you save even more energy if you minimise your hot water use!!

There are many simple ways in which we can save water around the home. Think of your own bathroom – do you

turn off the tap when brushing your teeth? How long are your showers? Do you turn the shower off while washing your body or shampooing your hair? Are any of your taps leaking? Did you know low-flow shower heads and taps are widely available? What about your kitchen? Could you save water when cleaning the dishes? Or when cooking? You could wash vegetables and fruit in a bowl, instead of under running water or use water left over from boiling to water your plants – just let it cool down first!

By saving water you save both water and electricity, you save money, you conserve resources and reduce pollution. We cannot live without water and water conservation is our personal responsibility, not just something we can leave up to other people. We all use water as part of our everyday lives, so why not do your bit and start reducing your water use today?



A greener workplace can mean a lighter carbon footprint, a healthier and more productive place to work and it's also good for the bottom line. Whether you're the boss or the employee, whether your office has started to take its first green steps or is still waiting to see the light, some easy steps can lay the groundwork for a healthier and environmentally low-impact workspace.

From how you get to work, to how to save energy in your workspace, to using green materials and even greening your lunch! Every little helps when Going Green.

If you are already taking environmentally friendly steps at home why not at work too? Feel empowered – you don't need to be the boss to start improving your workspace's energy efficiency. So what to do?

Conserve your computer's energy – set your computer to sleep mode or energy-saver mode and make sure everything is switched off at the end of the day or when not in use, including office photo-copiers and fax machines. If you are leaving your office – switch off the lights and the air con or heater. Reduce printer use - only print when you really need to and use 100% recycled chlorine-free paper and print double-sided. Getting new office equipment – make sure its Energy Star-certified or need a new computer? Consider laptops, they consume less energy than desktop computers. Add more recycling bins. Swap to LED's. Pack your lunch in re-usable bags and containers instead of plastics and foil paper. Keep your blinds open during cool days to let sunshine in and warm your office, and close blinds on warmer days to keep your office space cooler. Bring in a plant - besides cleaning the air of allergens, dust, mildew and even toxic chemicals from

printers, green plants make the corner of your work space prettier and cheerier for your long work hours...and remember to Spread the Word! Best way to green the scene at work is to get others involved - share your tips with your boss and co-workers and make it fun!



Did you know that there are vampires lurking in your home and office? Thankfully not the kind intent on draining your blood but your 'vampire' appliances which are draining power and your wallet by sucking up energy, even when you are not using them!

Vampire power, also called standby power, is the energy used by your appliances when they are turned off but still plugged in. Each appliance wastes just a little bit of power on standby mode, but those kilowatt-hours add up over time. Think about it - it takes electricity to power the little clocks on your DVD player and microwave, and even electronics that are completely

off draw some energy as long as they are plugged in. Statistics vary, but experts say standby power consumption in an average home ranges from 5% to 10% of your household energy consumption!



Furthermore, by leaving gadgets plugged in despite the device being fully charged is also wasting energy and costing you more money. The most overcharged devices are laptops and mobile phones but there are other culprits including electric toothbrushes and cordless phones.

So how do you fight off the ravages of vampire power? The first step is to identify which electronic devices drain power when not in use. An energy meter will provide information on how much energy you are using and through which products. However, you don't need one to start saving energy and money today – simply Think. Act. & Save. – unplug devices when you are not using them or invest in a smart power strip. Smart power strips

work to reduce your power usage by automatically turning off electricity to all things you don't need; for example when you turn off your TV, a smart strip turns off power to DVD players, hi-fi systems, cable boxes, game consoles etc. On your TV, de-fang 'quick start' which can double its annual energy use and on your computer disable screensavers and instead set the monitor to turn off after 10-15 minutes instead. Also, identify how long it takes to charge your devices, for example on average phones take about two-three hours to charge – therefore charging overnight wastes energy. Let's not waste another drop to these fiends!



Think • Act • Save

## Awareness Days at the Piazza (City Centre)

Awareness Days have been held at the Piazza to inform the public of the Department's Energy Efficiency Campaign as well as the environmental benefits and importance of saving energy and water.



*Department of the Environment and Climate Change Staff involved in an awareness day.*

In addition to talking with members of the public about the importance of reducing one's energy and water consumption, members of the Department distributed an awareness leaflet (opposite) highlighting the key messages of the campaign.

So many reasons to save energy and water – none not to!  
 It's good for your health! – Cleaner air means a healthier environment for you and your family.  
 It's good for our planet! – Electricity in California is currently produced by burning fossil fuel. Greener saving resources and burning less fossil fuel. Greener saving resources and burning less fossil fuel. Greener saving resources and burning less fossil fuel.  
 It saves you money! – Cutting down on unnecessary energy and water use will help reduce your monthly bills.  
 Saving energy and water is important because:

**KEEP A LID ON IT!**  
**COOK WISELY-**

Tip 8

**USE AIR CONDITIONING WISELY**  
 (OPTIMAL 21° SETTING)

Tip 7

**Tip 9**

**SET YOUR WATER HEATER AT 60° TO SAVE ENERGY & MONEY**

**Tip 10**

**BUY 'A+' RATED ITEMS WHEN REPLACING APPLIANCES**

**Go Green**

Think • Act • Save

DEPARTMENT OF THE ENVIRONMENT  
 100 Government of California

Energy Efficiency Information Leaflet

**Tip 1**

**SWITCH OFF! TURN OFF THE LIGHTS WHEN YOU LEAVE A ROOM**

**Tip 2**

**USE YOUR WASHING MACHINE EFFICIENTLY! ONLY FULL LOADS, COLD OR 30° WASHES**

**Tip 3**

**USE ENERGY EFFICIENT LED BULBS & SAVE MONEY**

**Tip 4**

**DON'T LEAVE WATER RUNNING**

**Tip 5**

**ONLY BOIL AS MUCH WATER AS YOU NEED: SAVE ON WATER & ELECTRICITY**

**Tip 6**

**TURN DEVICES OFF AT THE SWITCH**

## Thinking Green Website

The Government's vision for a sustainable future is a rich, diverse & healthy environment in Gibraltar for present and future generations to enjoy. In line with HM Government of Gibraltar's commitment to greater environmental awareness and a need for local action, the Department of the Environment and Climate Change launched its THINKING GREEN website in 2013.



*Thinking Green Website Home Page*

The site provides users with a comprehensive selection of articles pertaining to all aspects of Gibraltar's local environment. This information ranges from articles relating to our diverse biodiversity to tips on how to become more environmentally friendly. Information will also be posted of upcoming events organised by the Department of the Environment and Climate Change and will also provide an opportunity to catch up with past events and topics.

In addition to the comprehensive selection of articles added and/or updated on a regular basis, a new section was launched during 2014 dedicated specifically for our younger generation.

Welcome to our Kids Zone!

Follow Us 



Kids Zone Menu

- Our Natural Environment
- Games

Within these pages we have loads of cool facts and important information

*Thinking Green Website – Kids Zone Home Page*

The KIDSZONE section of the Thinking Green Website provides our younger audience with articles relating to Gibraltar's natural environment. This section will be expanded further in future to include information on energy and waste.

  **COMMON DOLPHINS**

The Common Dolphin is a mammal.

They can grow to a length of 2.5m.

They can weigh up to 150kg.

Males are generally longer and heavier than females.

This is the size of a Common Dolphin compared to the size of an average human.



**THREATS TO COMMON DOLPHINS**

Common dolphins face a number of threats due to human activities.

Pollution, especially certain types of metals, in our seas are particularly bad for dolphin health. Whilst marine pollution can be obvious, it is often the pollutants that cannot be seen that cause the most harm to these dolphins as well as all other life in our waters.

They also get caught in fishing nets, by accident, which can lead to their death by drowning.

Over-fishing by fishermen in boats is another important threat, because the more fish caught means there is less fish for the dolphins to eat.

Common Dolphins can be found throughout the year in our waters, particularly in summer when they are spotted from the beach. The colour pattern on their body is unusual and therefore easy to spot. On each side they have an hourglass pattern, lightly coloured in front and dirty grey in back.

These dolphins have a varied diet, including many species of fish and squid. Because Gibraltar's waters are full of life, including many different species of fish, our waters are perfect feeding grounds for dolphins.



*Common Dolphin Informational Leaflet available for download from the Kids Zone section of the Thinking Green Website*

## Eurasian Eagle Owl

**ἄγλαός**

The Eurasian Eagle Owl is a very large and powerful bird.

It is smaller than a Golden Eagle but larger than a Snowy Owl.

**ἄγλαός**



**Facts** →

- Eurasian Eagle Owls have a wingspan of up to 188cm.
- The Eurasian Eagle Owl can measure up to 75cm in length.
- Female Owls can weigh up to 4.2 kg, whilst male owls weigh up to 3kg.
- Their tail can measure up to 31cm.
- Their bill can grow up to 5.8cm long.
- The Eagle Owl can live for up to 20 years in the wild as they have no natural predators.



**Habitat**

The favourite types of home for an Eagle Owl are rocky areas. They like to build their nests on cliff ledges, crevices and caves.

Building their nests on cliff ledges allows Eagle Owls to raise their young in a safe environment where there is little chance of attack from others.

Because Gibraltar has a large cliff area, the Eagle Owl can be spotted in Gibraltar, especially on the East Side Sand Slopes and cliffs by Sandy Bay. This area of Gibraltar is their favourite habitat.




← This is a picture of two young Eurasian Eagle Owls.

**Home Range of the Eurasian Eagle Owl**

The green area of this map shows where the Eurasian Eagle Owl can be found.



*This is what an eagle owl looks like when they feel they are in danger. They will attack anyone or anything that gets too close.*



*Eurasian Eagle Owl Informational Leaflet available for download from the Kids Zone section of the Thinking Green Website*

The Government's vision for a sustainable future involves the commitment from all generations to contribute to a greener local environment.

Visit our THINKING GREEN website at:  
[www.thinkinggreen.gov.gi](http://www.thinkinggreen.gov.gi)

## KidsZone Apps

In line with H.M. Government of Gibraltar's commitment to greater environmental awareness and a need for action locally, the Department of the Environment has also launched a series of games and information online specifically targeted towards our younger generation. The Gibraltar Jigsaw Puzzles Game aims to increase awareness about our local environment through the solving of various jigsaw puzzles, whilst the Gibraltar Recycling Game aims to increase recycling awareness by means of an interactive game that informs the public on how to recycle items using the different coloured bins provided in Gibraltar.



*Images from the Gibraltar Jigsaw Puzzle Game*



*Image from the Gibraltar Recycling Game*

## Macaque TV Advert

As part of its ongoing macaque management programme, HM Government of Gibraltar launched a new TV advert, aimed at raising awareness of the links between human behaviour and macaque behaviour. The advert, produced for the Department of the Environment and Climate Change, shows how monkeys respond to the availability of food found in refuse and encourages all citizens to behave responsibly and dispose of their household rubbish correctly.



*Images from the Macaque TV Advert*

It is hoped that the advert will serve to raise awareness of an important issue and help to foster a better understanding of human-macaque interactions.

## Green Business Initiatives

As part of its commitments under the energy performance of Buildings Directive, the Environmental Action & Management Plan and the Government's Green Procurement Policy, the Department of the environment and Climate Change organized a 2-day training course on sustainable construction in January 2014.

The course was delivered by the Green Register, an independent, self-funded and not-for-profit organisation, whose principal goal is to promote sustainable building practices across all disciplines of the construction industry.

The Department of the Environment and Climate Change is in the initial stages of developing a Green Business Award Scheme to include:

- Green Business of the Year Award
- Green Award
- Lifetime Achievement Award
- Innovation Award

These awards will celebrate the pioneers of Gibraltar's new green economy. The awards will recognise excellence in environmental responsibility, reconfiguration of business models around sustainability principles, and the unsung heroes of the environmental services industry.

## Sustainable Construction Course

As part of its commitments under the Energy Performance of Buildings Directive, the Environmental Action and Management Plan and the Government's Green Procurement Policy, the Department of the Environment and Climate Change organised a two day training course on sustainable construction.



The course was delivered by The Green Register and took place at the Caleta Hotel on the 23<sup>rd</sup> and 24<sup>th</sup> January 2014. The Green Register sent three of their expert trainers to deliver the course "Sustainable Building Services".

The course was offered to individuals who work or have an interest in the construction industry and the built environment.

The first day of the course involved a comprehensive look at all aspects of sustainable construction, from Sustainable Construction Standards, through to Low Carbon Techniques, allowing participants to take away a greater understanding of what works and what is just eco-bling.

The second day of the course provided an ideal opportunity for participants to learn about subjects that are relevant to professionals and allowed individuals to choose workshops from a range of topics. These 90 minute sessions, aimed at the advanced level, dealt with topics ranging from Breathing Construction in Detail, Eco-retrofit of Historic Dwellings, including best practice detailing, Specifying Sustainable Timber and Rainwater/Greywater Systems. These topics offered something for every environmental discipline.



## Mediterranean Expert Group Meeting on Sustainable Development in Higher Education (HE)

Co-organised by MIO-ECSDE and University Gloucestershire and hosted by HM Government of Gibraltar, this meeting was held on the 28<sup>th</sup> and 29<sup>th</sup> July 2014.

The meeting was attended by academics working with sustainable development in their Institutions from both shores of the Mediterranean. A total of 17 international experts representing Higher Education Institutions (HEIs), Ministries, NGOs and other bodies from Greece, Italy, Malta, Monaco, Morocco, the Netherlands, Portugal, Spain, Tunisia and the UK, participated together with 7 experts from Gibraltar.

The Expert Group meeting was convened with the understanding that higher education has a unique and significant contribution to make to the sustainable development of the Mediterranean. Participants reviewed aspects and capitalized on the work done so far in HEIs in the countries represented. Discussions also took place regarding future priorities, at the Euro-Mediterranean level, building upon three key strategic frameworks:

- the United Nations Economic Council for Europe (UNECE) Education for Sustainable Development Strategy;
- the Mediterranean Strategy for Education for Sustainable Development (MSESD); and

- the Mediterranean Strategy for Sustainable Development (MSSD), (under the Barcelona Convention),

The Department of the Environment and Climate Change produced a number of display boards with information pertaining to different areas of our local environment. These served to increase awareness and promote the efforts of conserving and improving our local environment. All were received with great praise.

As an outcome of the meeting, experts recommended the development of a draft action plan in order to monitor sustainability performances of HEIs, based on a list of indicators, which have been applied since 2011 for the Spanish HEIs (CRUE initiative) and is currently expanding to Latin American HEIs (RISU Initiative), Kuwait and elsewhere.

*Right: Hon Dr. John Cortes, Minister for the Environment and Climate Change, opening the Expert Group Meeting.*



*Left: Prof. Mohamed Ftouhi from Morocco.*

# Awareness Posters produced for the Mediterranean Expert Group Meeting on Sustainable Development in Higher Education



## ENERGY ENERGY ENERGY ENERGY ENERGY



### Renewable Energy

Renewable energy is energy that is derived from natural resources that are replenished at a faster rate than they are consumed. Renewable energy sources include wind, solar, hydro, geothermal, biomass, and tidal energy.

### Low-Water - Harvesting Water Energy

Low-water harvesting is a technique used to collect and store rainwater for use in various applications. It involves installing a system of gutters and downpipes to capture rainwater from a roof or other surface. The collected water can be used for irrigation, flushing toilets, and other non-potable uses.

### Value Thermal Installation of the Rectory Hall

The Rectory Hall in Gibraltar has been upgraded with a new thermal installation to improve its energy efficiency. The upgrade includes the installation of energy-efficient lighting, insulation, and heating systems.

### St. Bernard's Hospital

St. Bernard's Hospital in Gibraltar has implemented a range of energy-saving measures to reduce its carbon footprint. These measures include the installation of energy-efficient lighting, insulation, and heating systems.

### Energy Efficiency Fund

The Energy Efficiency Fund provides grants to help businesses and organizations improve their energy efficiency. The fund covers the cost of energy audits, insulation, and other energy-saving measures.

### CASA Swimming Pool

CASA Swimming Pool in Gibraltar has installed a solar heating system to reduce its energy consumption. The system uses solar panels to heat the pool water, reducing the need for traditional heating methods.

### Solar Powered Street Lighting

Solar powered street lighting has been installed in Gibraltar to reduce energy consumption and carbon emissions. The lighting is powered by solar panels and batteries, eliminating the need for traditional electricity.

### Home Generating Power Station

Home generating power stations have been installed in Gibraltar to provide a sustainable source of electricity. These stations use renewable energy sources such as wind and solar to generate power.

### Green Business

Green business refers to businesses that operate in an environmentally sustainable and socially responsible manner. Green businesses aim to reduce their carbon footprint and improve their energy efficiency.

### Energy Performance Buildings Regulation

The Energy Performance Buildings Regulation (EPBR) sets minimum energy efficiency standards for buildings. The regulation requires building owners to improve the energy efficiency of their buildings and to display an energy performance certificate (EPC).

### Green Building of The Year Award 2011

### Green Award 2012

### Leadership Recognition 2012

### Information Award 2012



### Energy Efficiency and Saving Resources

Energy efficiency and saving resources are key to sustainable development. By using energy more efficiently, we can reduce our carbon footprint and save money.

### Energy Efficiency and Saving Resources Awareness Campaign

The Energy Efficiency and Saving Resources Awareness Campaign aims to raise awareness of energy efficiency and saving resources. The campaign includes a range of activities such as energy audits, workshops, and information campaigns.

### Energy Efficiency and Saving Resources

Energy efficiency and saving resources are key to sustainable development. By using energy more efficiently, we can reduce our carbon footprint and save money.

### Energy Efficiency and Saving Resources

Energy efficiency and saving resources are key to sustainable development. By using energy more efficiently, we can reduce our carbon footprint and save money.

## EFFICIENCY



## CLIMATE CHANGE CLIMATE CHANGE CLIMATE CHANGE CLIMATE CHANGE CLIMATE CHANGE

**Introduction to Climate Change**

Climate change is a global phenomenon caused by the increase in greenhouse gases in the atmosphere. This leads to a rise in global temperatures and various other effects such as melting glaciers and rising sea levels.

**World Environment Day**

World Environment Day is an annual event held on June 5th. It is a day of global awareness and action for the environment. The theme for World Environment Day 2012 was "Green Economy: Where Inclusion Matters".

**Green Economy**

A green economy is an economy that is low-carbon, resource-efficient, and socially inclusive. It aims to reduce greenhouse gas emissions and improve the environment while also creating jobs and improving living standards.

**Green Jobs**

Green jobs are jobs that are related to the green economy. They include jobs in renewable energy, energy efficiency, and environmental protection.

**Green Buildings**

Green buildings are buildings that are designed and constructed to be energy-efficient and environmentally friendly. They use sustainable materials and technologies to reduce their carbon footprint.

**Green Transport**

Green transport is transport that is low-carbon and environmentally friendly. It includes walking, cycling, and using public transport.

**Green Living**

Green living is a lifestyle that is environmentally friendly. It involves using energy-efficient appliances, recycling, and reducing waste.

**Green Education**

Green education is education that focuses on environmental sustainability and the green economy. It aims to raise awareness of climate change and encourage sustainable living.

**Green Investment**

Green investment is investment in green businesses and technologies. It aims to support the transition to a green economy and reduce greenhouse gas emissions.

**Green Finance**

Green finance is finance that is used to support green businesses and technologies. It includes green bonds, green loans, and green equity.

**Green Procurement**

Green procurement is the process of purchasing goods and services in a way that is environmentally friendly. It involves choosing suppliers that are committed to sustainability.

**Green Supply Chain**

Green supply chain is a supply chain that is environmentally friendly. It involves working with suppliers that are committed to sustainability and reducing their carbon footprint.

**Green Marketing**

Green marketing is marketing that focuses on environmental sustainability. It involves promoting green products and services and raising awareness of climate change.

**Green Communication**

Green communication is communication that focuses on environmental sustainability. It involves using communication channels to raise awareness of climate change and encourage sustainable living.

**Green Leadership**

Green leadership is leadership that focuses on environmental sustainability. It involves setting an example for others and encouraging them to adopt sustainable practices.

**Green Innovation**

Green innovation is innovation that focuses on environmental sustainability. It involves developing new technologies and products that are environmentally friendly.

**Green Policy**

Green policy is policy that focuses on environmental sustainability. It involves setting rules and regulations that encourage sustainable living and reduce greenhouse gas emissions.

**Green Regulation**

Green regulation is regulation that focuses on environmental sustainability. It involves enforcing rules and regulations that encourage sustainable living and reduce greenhouse gas emissions.

**Green Standards**

Green standards are standards that focus on environmental sustainability. They provide a framework for businesses and organizations to measure their environmental performance.

**Green Certification**

Green certification is certification that focuses on environmental sustainability. It involves awarding certificates to businesses and organizations that meet certain environmental standards.

**Green Labeling**

Green labeling is labeling that focuses on environmental sustainability. It involves using labels to indicate the environmental friendliness of products and services.

**Green Reporting**

Green reporting is reporting that focuses on environmental sustainability. It involves publishing reports on a business's or organization's environmental performance.

**Green Disclosure**

Green disclosure is disclosure that focuses on environmental sustainability. It involves providing information about a business's or organization's environmental performance to stakeholders.

**Green Transparency**

Green transparency is transparency that focuses on environmental sustainability. It involves being open and honest about a business's or organization's environmental performance.

**Green Accountability**

Green accountability is accountability that focuses on environmental sustainability. It involves being responsible for a business's or organization's environmental performance.

**Green Responsibility**

Green responsibility is responsibility that focuses on environmental sustainability. It involves being committed to environmental sustainability and taking action to reduce greenhouse gas emissions.

**Green Ethics**

Green ethics is ethics that focuses on environmental sustainability. It involves using ethical principles to guide decision-making and behavior.

**Green Governance**

Green governance is governance that focuses on environmental sustainability. It involves using good governance practices to manage environmental sustainability.

**Green Risk Management**

Green risk management is risk management that focuses on environmental sustainability. It involves identifying and managing risks related to environmental sustainability.

**Green Opportunity**

Green opportunity is opportunity that focuses on environmental sustainability. It involves identifying and exploiting opportunities related to environmental sustainability.

**Green Challenge**

Green challenge is challenge that focuses on environmental sustainability. It involves setting and achieving goals related to environmental sustainability.

**Green Vision**

Green vision is vision that focuses on environmental sustainability. It involves having a clear and inspiring vision of a sustainable future.

**Green Mission**

Green mission is mission that focuses on environmental sustainability. It involves having a clear and inspiring mission statement that guides decision-making and behavior.

**Green Values**

Green values are values that focus on environmental sustainability. They provide a framework for decision-making and behavior.

**Green Culture**

Green culture is culture that focuses on environmental sustainability. It involves creating a culture that values environmental sustainability and encourages sustainable living.

**Green Identity**

Green identity is identity that focuses on environmental sustainability. It involves creating a unique and inspiring identity that reflects a commitment to environmental sustainability.

**Green Brand**

Green brand is brand that focuses on environmental sustainability. It involves creating a strong and recognizable brand that is associated with environmental sustainability.

**Green Reputation**

Green reputation is reputation that focuses on environmental sustainability. It involves building a positive reputation for environmental sustainability.

**Green Trust**

Green trust is trust that focuses on environmental sustainability. It involves building trust with stakeholders through transparency and accountability.

**Green Loyalty**

Green loyalty is loyalty that focuses on environmental sustainability. It involves building loyalty with customers and employees through a commitment to environmental sustainability.

**Green Retention**

Green retention is retention that focuses on environmental sustainability. It involves retaining customers and employees through a commitment to environmental sustainability.

**Green Growth**

Green growth is growth that focuses on environmental sustainability. It involves achieving growth through a commitment to environmental sustainability.

**Green Success**

Green success is success that focuses on environmental sustainability. It involves achieving success through a commitment to environmental sustainability.

## TACKLING THE ISSUE



