



Department of the Environment  
Government of Gibraltar

## Enviro-Watch



Image courtesy of [www.aleksandarrodic.com](http://www.aleksandarrodic.com)

# *Towards an energy efficient society*

Climate change is one of the greatest challenges facing today's society. Unstable weather patterns and changing climatic conditions will affect the basic elements of our lives with access to clean water, food and health care being compromised. Heavy storms may well become more frequent and if they do, Gibraltar will not be immune, as evidenced by the destruction caused by recent storms which left much of Gibraltar without salt water for over a week.

Concrete and practical actions need to be taken at all levels if we are to reduce the impacts of the climate change phenomenon. Improving energy efficiency is the fastest and most cost effective means of saving energy and reducing emissions. It has already made a significant difference with the International Energy Agency estimating that global

energy demand would be 50% higher today without the energy savings achieved through energy efficiency since 1973.

Although this is a promising start, there are still significant savings to be made. Individuals, businesses and Government will all be called upon to play their part in reducing energy waste, by investing in energy efficiency measures for the home and workplace and by choosing to buy more energy efficient buildings and products. In addition, Government will strive to create the right policy framework to support and encourage individuals and organizations to take action.

No single policy measure can deliver all the energy savings required to make a real difference, however, in combination they can make a major contribution towards the fight against climate change.

Fig.1 Greenhouse gas emissions by source (Stern Review)

### Global Emissions by Sector

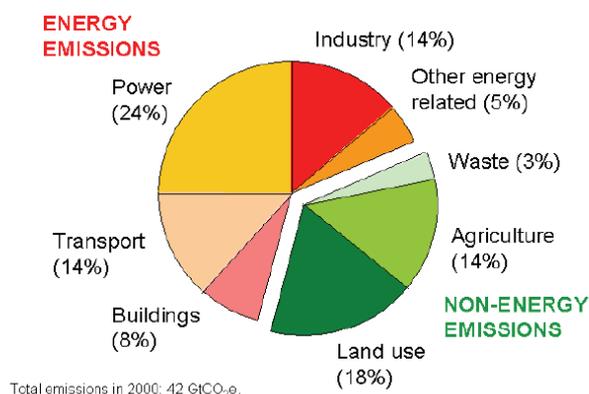


Image courtesy of <http://news.bbc.co.uk>

Here in Gibraltar we have transposed a number of EU Directives into local legislation which deal with energy saving measures. These include EU Directives on energy services and energy end use efficiency, the promotion of renewable energy and the energy performance of buildings. Together they will facilitate the shift towards a low energy, low carbon economy.

*"Climate change is not just another issue. It is the issue that, unchecked, will swamp all other issues. The only hope lies in all the countries of the world coming together around a common global project to rewire the world with clean energy. This is a path to peace - peace among people, and peace between people and nature." - Ross Gelbspan*



# Traffic & Transport

The transport sector accounts for a significant percentage of Gibraltar's carbon dioxide emissions. It's not only carbon that we need to worry about, however, cars and motorbikes emit various air pollutants which are harmful to your health and to the planet:

- ◊ Nitrogen oxides irritate the airways, are involved in the formation of ground level ozone and contribute to acidification and global warming
- ◊ Carbon monoxide decreases your blood's ability to carry oxygen
- ◊ Volatile Organic Compounds (VOCs) such as benzene are known carcinogens
- ◊ Fine particulate matter aggravates symptoms in individuals who already suffer from respiratory or cardiovascular disease
- ◊ Ground level ozone: this is not directly emitted by vehicles but forms as a result of chemical reactions between nitrogen oxides and VOCs. Ground level ozone irritates airways and can trigger reactions in people who already suffer from asthma.
- ◊ Carbon dioxide is one of the most well known greenhouse gases which are resulting in global warming and climate change.

These pollutants can cause either acute effects (after a short exposure time to high levels of pollutants) or chronic effects (occurring over time after continuous exposure over months and years).

## Minister's column



I am pleased to present the third edition of the newsletter *Enviro-watch* which focuses on the issue of energy.

Power generation continues to be one of the root causes of climate change, accounting for 80% of greenhouse gas emissions in Europe. The transition towards a low-carbon economy will require collective action from all sectors of society, not least from each of us as individuals. This newsletter seeks to highlight some of the ways in which we can each make a difference, by using energy more efficiently, thus reducing our impact on the planet.

Although Gibraltar is small it has its part to play in the fight against climate change and raising awareness is a key part of this process. Government will continue to work to provide the public with the tools to enable them to make environmentally informed decisions.

The Honourable Ernest Britto OBE ED

In addition to these effects, noise from traffic also impacts upon the general health and quality of life of citizens. Problems with congestion are increasing with traffic jams being a regular feature of every day life for most Gibraltarians.

The car is the greediest form of transport in terms of space, the same journey by bicycle takes up to 4 times less space, by bus up to 30 times less! ([www.mobilityweek.eu](http://www.mobilityweek.eu))

It's not all doom and gloom though, by making sensible choices about the way we travel we can each have a significant impact on the quality of our air and our health.



### Public Transport

Why not sit back, relax and let someone else do the driving? Taking the bus into work allows you to put off the potential stresses of the day for a little longer, giving you the chance to read the paper, listen to music or just relax rather than stressing about traffic and trying to find a parking space. At just 90 pence for a return journey, the bus is also considerably cheaper than running a car. Families should also remember that buses are free to school children of all ages.



### Walking

As well as being environmentally friendly, walking is a low impact, low intensity exercise, making it ideal for people of all ages and fitness levels. It has numerous health benefits such as lowering your risk of heart disease, controlling your blood pressure and helping to manage your weight. Studies suggest that walking can also help prevent colon cancer, lower stress levels and improve your sleep. It can relieve arthritis and back pain as well as strengthening bones and joints, reducing your risk of osteoporosis in later life. It can help to improve self esteem and lift your mood, relieving symptoms of depression and anxiety. Incorporate walking into your daily routine and you'll soon start to notice the benefits!



### Cycling

Hopping on your bike is one of the quickest ways to get around town. Many journeys to work are ideal distances for cycling and it's a great way of getting exercise without having to hit the gym. You don't have to be super fit to do it and it'll help you burn calories, reduce stress and feel younger! There are no petrol costs associated with cycling and, with the introduction of bicycle racks around the rock, you don't need to worry about parking.

# Energy Performance of Buildings

Energy consumption is the largest contributor towards climate change and the residential and tertiary (commercial) sector accounts for more than 40% of final energy consumption within the EU. This sector of society is continually expanding, a trend which is bound to lead to increased energy consumption and hence increased CO<sub>2</sub> emissions. Experts believe that the EU could meet over half of its Kyoto commitments through energy efficiency improvements.

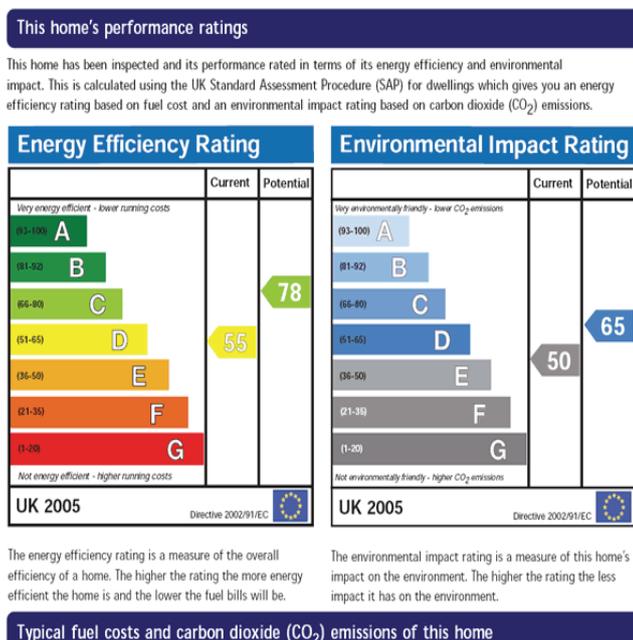
The EU Directive on the Energy Performance of Buildings aims to promote improved energy efficiency in buildings, taking into account outdoor climatic and local conditions as well as indoor climate requirements and cost-effectiveness.

The energy performance of a building is defined as the amount of energy actually consumed or estimated to meet the different needs associated with a standardised use of the building, which may include, among others, heating, hot water heating, cooling, ventilation and lighting.

The Directive contains several requirements as listed below:

- ◇ Development of national methodology for the calculation of energy performance.
- ◇ Production of Energy Performance Certificate (EPC) for all buildings when constructed, rented or sold.
- ◇ Requirement for public buildings to display energy certificate
- ◇ Regular inspections for air conditioning systems

Fig. 2 Typical format of EPC



Energy Performance Certificates will rate a property on the basis of its energy efficiency with A being the most efficient and G the least.

The EPC will also include tailored, cost effective suggestions on how to improve the energy efficiency of the building in question. As well as helping to cut emissions to the atmosphere, improving the energy performance of a building will also help the owner/occupier to cut costs through reduced electricity bills.

Recommendations for energy efficiency improvement measures are likely to include improved insulation, energy efficient lighting as well as the potential for inclusion of micro-renewable technologies.

All new buildings will fall under the scope of this Directive, as will all existing buildings with over 1000m<sup>2</sup> of useful floor area undergoing major renovations.

The Directive has been transposed into local legislation via the Building (Energy Performance) Rules 2008 which come fully into force on the 4th January 2009.

The Department of the Environment will be organising courses for relevant professionals in order to provide them with the necessary training to use the approved methodology and to produce Energy Performance Certificates.

**“Saved energy is the cleanest and cheapest form of energy”**



## Saving energy round the home

It's not just the way your house is built that will affect how much energy it uses. Effective energy management within the home will also make a significant difference. Try implementing the following energy saving measures around the home:

- ◇ Turn all lights off when rooms are not in use
- ◇ Don't leave appliances on standby
- ◇ When boiling the kettle, only use as much water as you need
- ◇ Close all doors and windows when using heating/air conditioning
- ◇ Take a shower instead of a bath
- ◇ Draught proof your windows and doors

# Environmental Education

Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action (UNESCO, Tbilisi Declaration, 1978).

Environmental education creates awareness and sensitivity to the environment and the challenges it faces. It increases our knowledge and understanding of these issues and provides us with the skills necessary to resolve them.

Environmental education can be fun and easily integrated into all subject areas. It allows for the expansion of traditional



classroom lessons into ones that will reach multiple learning styles. Learning about the environment develops teamwork and problem solving skills as well as encouraging creative thinking.

In our increasingly urban world, learning about nature gives us a better understanding of interactions between human society and the environment. Most importantly, it presents us with strategies and develops the critical thinking skills necessary to care for the planet, for ourselves and for future generations.

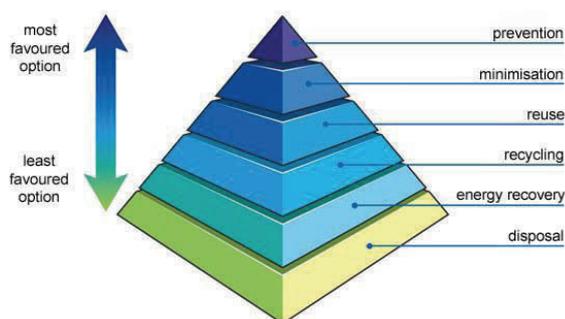
The Department of the Environment will be recommencing its environment programme in schools in January when it will be visiting local schools to talk about climate change. It will also be hosting World Environment Day in June when schools will once again get involved.

## Waste

Disposal of waste is another major source of energy usage within modern society. Each person in Gibraltar produces over half a tonne of waste per year, more than the average for developed European countries. So how can you cut down on your waste?

- ◇ Buy products with minimal packaging
- ◇ Choose re-usable products rather than disposable ones
- ◇ Avoid individually wrapped portions
- ◇ Favour products with a high recycled content
- ◇ Use your own carrier bags when going shopping
- ◇ Use re-sealable, re-usable containers for lunches and leftovers
- ◇ Print on both sides of the paper
- ◇ Use the blank side of used paper for draft printing or scrap message pads
- ◇ Use electronic communication whenever possible
- ◇ Use recycled or Forest Stewardship Council (FSC) approved paper as standard

Fig.3 The Waste Hierarchy (image courtesy of [www.wasteonline.org](http://www.wasteonline.org))



## Energy from Waste

The Government of Gibraltar is currently in the process of designing the refurbishment of the existing energy-from-waste plant at Europa Advance Road. This refurbishment will take into account new EU Directives controlling emissions from these plants. Once the plant is up and running it will help Gibraltar to fulfill its obligations under the Landfill Directive as well as going some way towards meeting its renewable obligations.

Energy from waste refers to any waste treatment process that creates energy in the form of heat or electricity from a waste source. The energy recovered from the process will be used for desalination and the drying out of sewage sludge from the new sewage treatment plant.

The refurbishment of the plant forms part of the Government's Waste Management Plan, a revised version of which will be released in 2009.

 The recycling of non-combustible material is also being encouraged by Government, with 17 purpose built bins for the collection of glass and cans having been placed at strategic locations around the Rock. Consideration is now being given to increasing the number of collection points in order to further encourage and facilitate recycling.

### Useful Telephone Numbers

Department of the Environment	20050294
Environmental Agency	20070620
G.O.N.H.S.	20072639
ESG	20043516
Friends of the Earth	20077655 / 20041073

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