

RENEWABLE ENERGY: What's The Problem? PART 1

One of the foundations of Gibraltar's economy is the tourist trade: millions of people visit here each year. A town too small to produce many material goods, Gibraltar has a service-sector economy based partly on our timeless tourist attractions: the sunny weather, the towering Rock, the Straits. It could be said that our town lives on infinitely renewable resources: bearing this in mind, we may well ask ourselves why our energy resources are not similarly renewable. Would it be possible for Gibraltar to run itself on these natural and infinite resources of sun, sea and wind, instead of importing fuel at increasing expense?

Gibraltar's electricity is reliant on fuel combustion, and is produced at three stations: GibElec, OESCO and the Ministry of Defence station. The pitfalls of fossil fuel combustion are many: the harm it causes to the environment is huge. By-products of the combustion process, such as carbon dioxide, contribute to global warming through the "greenhouse effect", which in turn is held responsible by many for the increases in extreme weather conditions around the world. Moreover, noxious pollutants such as carbon monoxide are extremely dangerous to human health; sulphur dioxide causes acid rain.

It is generally accepted that the world will face the ultimate oil crisis in the not-too-distant future. The "peak oil" theory suggests that there will come a definite point in time when half of the world's oil reserves will have been used: from then on, oil production can only decline, whilst consumption will continue to rise dramatically. Opinion is divided over when this time will come, but most agree that it's a question of mere decades. The problem will surely make itself known within the century, and most likely within many of our lifetimes. So, the question we should all be asking is: What can renewable energies do to overcome – or at least mitigate – this problem?

The types of renewable energy viable for potential use in Gibraltar are: wind, solar thermal (water heating), solar photo-voltaic, geothermal (heating/cooling), and biomass (imported). Wind, biomass and solar photo-voltaic/thermal energy are those capable of producing electrical output on a large scale. This said, at this present time at least, any renewable energy scheme in Gibraltar would be undertaken as part of a hybrid system: to support the fuel combustion output, especially at peak times. Gibraltar's electricity generation capacity is approximately 38 MW (megawatts) – the total amount generated in a year is estimated at 134 GWh (gigawatt hours).

Of these potential energy resources, biomass is the only one which is not present in sufficient amounts here in Gibraltar itself, and which would therefore have to be imported. Direct biomass combustion involves the burning of waste materials, especially organic waste – unfortunately, this means that it too contributes to pollution by releasing chemicals into the air. Meanwhile, the production of clean and viable fuels from biomass is a costly procedure.

It follows that wind power and solar energy should be two of Gibraltar's biggest potential resources: anyone already enjoying the bright, breezy Poniente days at the beach will attest to this!

In the next ESG newsletter, we will see how these forces could be harnessed to provide a more ecological system for us all.
