By Tim Pullen

Why Install Renewable Energy Systems?

Climate change

Energy underpins every aspect of our economy and day-to-day lives. Specifically oil affects every part of our lives. Look around you now and you will have trouble finding anything – from the chair you are sitting on to the food you will eat, that does not need oil. However, the use of fossil fuels, which currently provide the bulk of our energy, releases greenhouse gases (such as carbon dioxide) into the atmosphere. Due to factors such as population growth and changes in lifestyle, the demand for energy has increased to levels where the burning of fossil fuels is releasing enough greenhouse gases into the atmosphere to directly affect our climate system.

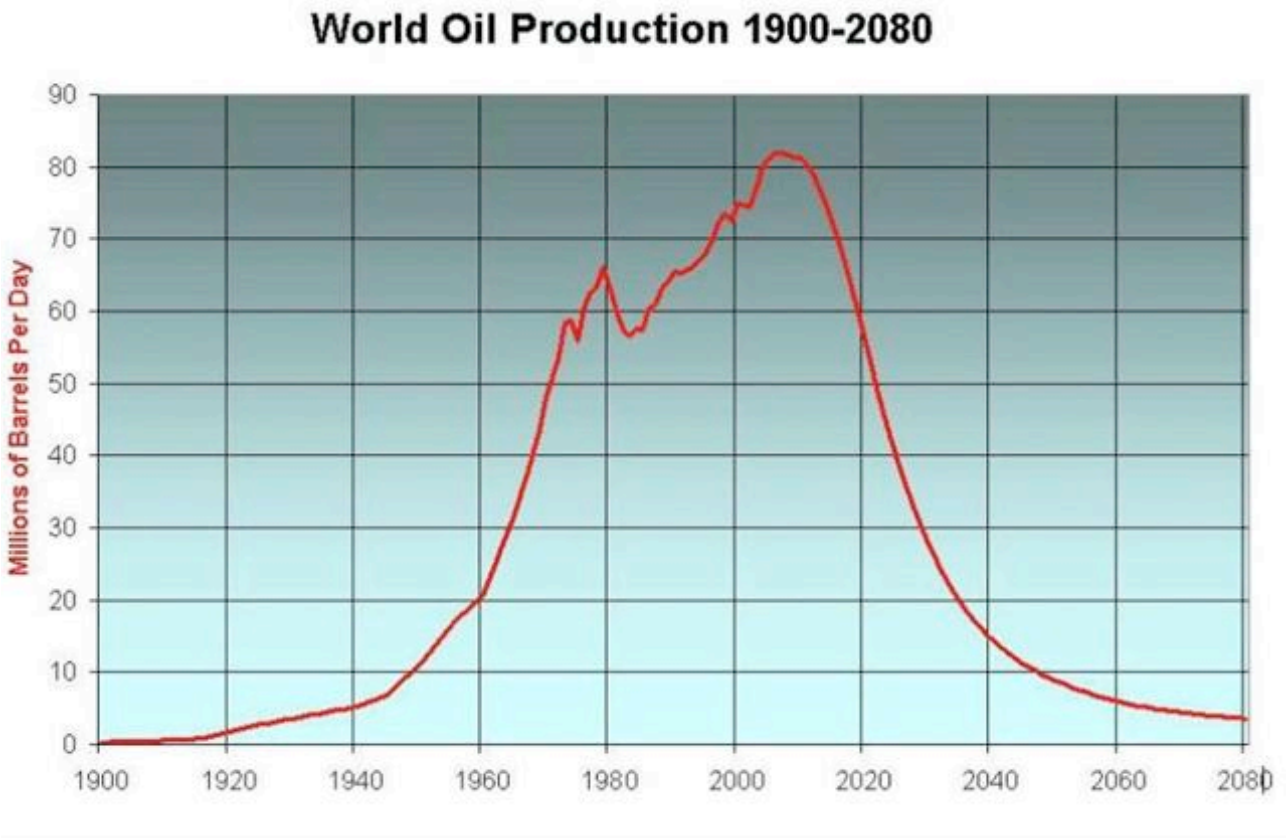
There is now a scientific consensus that climate change is real and that it poses an immense threat to the world we live in. Impacts of climate change will make global problems such as drought, famine, flooding, disease, regional security and population displacements worse, and seriously hinder poor countries' efforts to tackle poverty. The BBC reports and is interested in the change in climate and the New Scientist has been consistent reporting on this issue for years.

The UK is currently responsible for the release of around 3 per cent of global greenhouse gas emissions, despite having only 0.01 per cent of the world's population. UK energy industries are the largest single contributor to UK greenhouse gas emissions, contributing over a third (54 million tonnes) of the total amount of carbon dioxide emitted in the UK.

To help lessen the effects of climate change, we must reduce the level of greenhouse gases emitted. This can be achieved by generating our energy from sources that emit low or even zero levels of greenhouse gases. We can also make sure that we use energy as efficiently as possible. However, these are not either/or options.

Peak Oil

We in the West are an oil based society. Everything we do - from the cars we drive to the furniture we sit on to the food we eat - requires oil. Peak oil is an expression used to describe the idea that at some point in time we will reach a peak in the rate at which we can pump oil out of the ground. Regardless of the size of the world's remaining oil reserves, limits exist to the speed with which we can actually extract the liquid from the rock. Once we hit that peak, daily production rates will decline over time.



Why does this matter? Because no such limits exist on the growth in demand for oil. It must be remembered that oil is a finite resource. What there is is all there will ever be. We need to remember that almost the whole production in the graph above was, until the 1960's, consumed by the developed world and that the demand from the developing world needs to be added. At some point demand for oil will outstrip production capacity. Some say we have passed that point but those in the know argue reaching peak oil sometime between 2005 and 2030.

There is a further argument that irrespective of when we reach peak oil, we should use oil for those things that only oil will do. That is, we can produce energy from many things, but we can only produce plastics, for instance, from oil. In addition plastics can be recycled and used time and time again. Oil as fuel can only be burnt once.

In early 2008 we saw the effect of diminishing rates of oil production with world prices exceeding $140 per barrel. The 2009 recession has reduced the price of oil, but there is an inevitability about the price of oil rising.

So Why Put Renewable Energy on My House?

Apart from saving the world, or at least your own small corner of it, there is a direct financial benefit.

The average modern 4 bedroom house with 4 people living in it will typically use about 25000kWh of energy on heating and hot water and a further 5000kWh to 6000kWh on electrical power. The cost today will be between £1200 and £2500 p.a. depending on fuel. That cost will increase over time, the only question is how fast it will increase. Renewable energy systems fix the price of your energy at today's price. That is, if you spend £10,000 on a wind turbine, that turbine will go on producing energy for its life (probably 20 to 25 years) and the cost to you of the electricity it produces is the price of the turbine spread over its life – probably 6p to 8p per kWh compared to a current price from the grid of 10.5p per kWh. That may not sound much of a saving, but you will still be paying 6p to 8p in 20 years time.