

Why Do We Need Renewable Energy?

Fossil Fuels Are Limited

The first and main reason for why governments and businesses are keen to move to renewable energies as soon as possible is that fossil fuels are a finite resource. We may or may not have reached peak oil - the point at which demand outstrips supply - and by current figures, many experts seem to agree we did so around 2008 with only external factors creating fluctuations in demand making it difficult to predict precisely when it will run out. That is another debate entirely that our politicians and economists have argued for decades, and will continue to argue for many years to come. Whichever way we look at it, fossil fuels will run out eventually and it will take some 10,000,000 years to replenish what we have used in around 150 years.

As the human population increases, our rate of consumption of these fossil fuels also increases. Geologists and others whose job it is to locate and access these pockets of crude oil are finding it increasingly difficult to locate and extract new sources. Whether we have 1 year or 100 years left of oil, many argue that what is left should remain in the ground because it is not sustainable - it will run out eventually and so we should prepare for a post-fossil fuel world now.

Carbon Emissions & Climate Change

The most immediate problem, particularly in light of the COP21 agreement of 2016, and the changes we have seen to the climate in the last 150 years, is climate change and the carbon emissions that are forcing it. In the last few years especially, no part of the world has been untouched by freak weather conditions. Most continents have recorded record high temperatures in summer,

record lows in winter and increased frequency of typhoons and hurricanes, record dry spells, drought and flooding. There is no doubt that these freak weather conditions are affecting every country.

Most renewable energy sources, and the technology used to harness them, are low carbon emission. In most cases, once installed they have minimal or no carbon output and can still provide our energy needs. We can never go fully carbon neutral as it takes resources to make a solar panel, build a dam and so on, but it is a critical and significant reduction of our carbon output. What we do need to do, is to take the steps we can to reduce our carbon footprint for international regulations, to help those in the developing world, and to protect ourselves against the freak weather. We also know that the ice caps are melting and the sea levels are rising which creates food shortages and national instability as well as being an expensive situation for our insurance.

Energy Security

Energy security is a relative newcomer to public perception when we consider the greater need for renewable energy. The beginning of this decade has seen instability in the Middle East. The Arab Spring swept across Algeria, Tunisia, Libya, Egypt and Syria leading to pro-democracy demonstrations. There are ongoing problems in Syria with the rise and spread of ISIS. Why have these political issues in other parts of the world encouraged the rest of the world to think about its energy plan?

The Middle East is one of the biggest suppliers of oil to the world. South America also produced oil, North America and South America supplies coal and the UK, Russia and other European Atlantic powers mine for gas. New tension between Russia and the west, firstly over Ukraine and secondly over Syria, has led to increased distrust between world powers. Being dependent on other countries for our energy supply is problematic in itself, but

when international relations between supplier and supplied sour, increased wholesale prices threatening to destabilize the economy is the least that could happen. If a supply is cut off, then disaster could strike. For this reason alone, we need spare capacity and multiple avenues of energy acquisition.

Energy security will become a much greater factor as fossil fuels begin to dwindle. More than ever before, demands on energy supply often outstrip supply of conventional production forcing prices up. It is expected that increased tension over acquisition and protection of resources could lead to global conflict. Some are already arguing that the crisis in Syria is less about campaign for democracy reform in a major Middle Eastern power, and more a result of ongoing regional climate crisis. Former farmers who have fled to Europe and beyond have cited drought as the major catalyst for the civil war in the country.

The price of oil has fluctuated greatly in the last 10-15 years - from an all-time high in 2012 to 2013 to record lows in 2015 to 2016. Oil prices have a knock on effect for the economy when they are at the extreme and lead to protests. We must remember that oil is a commodity and when prices are erratic, it affects jobs all over the world.

Economic Stability

Related to some of the issues mentioned above, where renewable energy offers a constant and sustained supply (such as hydroelectric, wave power, solar and biofuels), energy prices are likely to remain stable and in turn, keep the economy stable. In many cases, energy produced from renewable sources is already cheaper than that produced by non-renewable means. Mentioned above, Idaho produces a large amount of energy from geothermal sources. Another example is Texas where energy produced from wind power is noticeably cheaper for the state's citizens.

Environmental Damage

As fossil fuel supply gets harder to acquire, and prospectors search for new pockets of oil and have to drill longer and deeper to acquire it, there has been conflict between environmental groups and industry and between governments and both groups when local wildlife and environmentally sensitive areas are threatened. Here in the US, public consciousness and the need to protect our wildlife and natural landscapes means that many new developments are protested with concerns of environmental damage. Ongoing protests against fracking and new drilling in Europe and North America and recent examples. Though some renewables will have an environmental impact, many do not and when built, have no further impact - unlike ongoing drilling.

Public Health

Oil, gas and coal drilling and mining have high levels of pollution that are pumped into local environments and the wider atmosphere, so while protestors attempt to prevent the building of pipelines or new prospecting in virgin areas and wilderness, it is as much about public health as it is about conservation. We have known for decades about the knock on effect of industrial processes for public health. Few renewables are entirely emission-free, but their output is much lower than conventional fossil fuel acquisition and processing.

What are The Renewable Energy Types?

Renewables are by definition unlimited, but it is important to note that not all forms are environmentally friendly. Here, we look at some of the most common types of renewable energy and discuss their advantages and limitations.