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ENVIRONMENTAL UPDATE

WRITTEN BY
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About the Author



Don Potts is a widely experienced environmentalist and naturalist, actively managing a major nature reserve on the Surrey/Sussex

borders. He was previously Director of the British Wildlife Appeal and has worked in central government, holding a number of important positions with environmental NGOs. Don manages Volvo's Eco-Adventure programme for schools and young people in the UK and is the author of Volvo's international programme for young people, Volvo Adventure, which supports biodiversity and sustainability projects throughout the world. He will regularly be writing updates to keep us informed of the latest developments within the environmental industry.

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GAS

Centrica, the owners of the UK's largest gas field in Morecambe Bay, Lancs, has announced its closure. The official line is that this is due to repairs and maintenance but rumours persist that Centrica are furious about the Chancellor's recent rises in tax on oil and gas fields, meaning that the Morecombe Bay field is now paying 87% tax on profits, making it uneconomical. Whether Centrica will re-open this very important field is now in doubt, unless the government changes its overall taxation policy.

CARBON CAPTURE

Coal is the cheapest and most abundant fossil fuel in the world. It is also the most polluting. The UK government is launching a fund of £4 billion, obtained from the European Investment Bank, to sponsor four carbon capture and storage (CCS) plants around the UK. CCS works by separating out the CO₂, freezing it and then pumping the liquid CO₂ into underground reservoirs. Whilst technically feasible, early results from a trial plant in Germany indicate that electricity produced from CCS is four times more expensive than from a conventional coal fired power station. New generations of gas fired power stations will also have to be fitted with CCS if the UK is to reach its target of cutting its CO₂ emissions by 34% by 2020. The new floor price for CO₂ of £16/tonne is causing a radical rethink in the UK energy sector, which is already having to deal with a market heavily skewed in favour of renewables such as wind and solar.

CARBON PRICES

The announcement of a price of £16/tonne for carbon, rising to £30/tonne, has caused a wave of protest amongst some of the UK's largest chemical companies. They have protested to the Chancellor that this carbon tax will make their UK operations uneconomic and will force them to relocate outside the UK. The Energy Secretary, Chris Huhne, does not accept this argument, as he strives to reach the UK's challenging CO₂ reduction targets and believes this is sabre rattling on behalf of companies, who do not wish to pay for their polluting activities.

ELECTRIC CARS

Since 1/1/11 550 electric cars have been sold in the UK and have received the £5,000 per car government subsidy. This brings the total number of electric cars on the UK's roads to 1,850. Reports from local authorities around the country indicate that recharging points which have been installed are rarely used; with only Westminster reporting moderate use. EU air quality laws look to be one of the winning points for electric cars in urban areas, with price, residual values and range anxiety working against the future viability of electric cars as the preferred choice of consumers and company car drivers.

GOVERNMENT CUTS

Both the Carbon Trust and the Energy Savings Trust have had their grants cut. All of their income will be abolished from 2012 and the government has decided that the only funding available to them will be projects which they can bid for under open competitive tenders. Whilst this is not the final curtain for either organisation, their future is obviously now uncertain, despite having established a good reputation for their work over the last decade.

BIOETHANOL

In order to meet the UK's biofuel target of 3.5% by 2011, Britain's largest bioethanol plant was built by Ensus on Teesside at a cost of £300m. The factory was forecast to consume 1 million tonnes of East Anglian wheat, producing 400m tonnes of bioethanol and 300m tonnes of good quality animal feed p.a. This was all based on wheat trading at £100/tonne. Wheat prices are now £200/tonne and the Teesside plant is currently mothballed. There is growing unease about the use of food quality wheat and corn being used to produce bioethanol for fuel. Over 20% of USA corn and wheat now goes into ethanol production, causing worldwide food shortages as the USA eases back on exports.

WIND ENERGY

A most unusual aspect of how the earth functions is the role of solar energy. So-called sunspot activity has been declining for a number of years and is predicted to continue declining for another 50 years. This happened before, between 1645 and 1715, and caused a mini ice age and very hot summers. One consequence of this is that the Atlantic jet stream declines, leading to calm conditions over the UK and the EU. The Atlantic jet stream is the most important provider of the UK's future investment in wind turbines.

SOLAR ENERGY

A consortium of solar energy companies has been given the go ahead to challenge the UK government in the High Court. This case centres around the withdrawal by the government of subsidies for large-scale solar energy projects from the original fund of £360m. It is believed the government was so alarmed by the planning of large-scale solar energy farms and the subsequent soaking up of most of the £360m fund that it has had second thoughts about supporting large solar projects of 50 kilowatts and above. Solar energy companies stand to lose many millions of pounds having already purchased land, received planning permission and ordered thousands of solar panels. The government has described many of these projects as led by “speculators chasing easy, hot money” which has infuriated the solar energy sector which says it has invested in good faith, following the government's launch of its solar fund.

CYCLISTS

In London and Bristol cyclists now outnumber passenger cars on the streets of these cities. This seems to be a reflection of high fuel prices and a desire for better health amongst commuters. Cycling groups are now demanding parity with cars and want all dual carriageways to have a cycle-only lane. One little-reported fact is that cyclists will seriously damage their health in most UK cities unless they wear effective face masks, capable of trapping particulate emissions. Over 300,000 people die each year in the EU and 30,000 people in the UK from heart and respiratory disease caused by poor air quality, primarily from NO_x and particulates.

WIND TURBINES

The government has decided to review the feed-in tariff for wind energy in 2011. This is against a backdrop of growing public dislike of onshore wind farms and the need for a new National Grid, at a cost of £40 billion, to cope with the intermittent pulsing of wind energy. The UK government needs to move rapidly to build new nuclear and gas fired power stations, if power shortages are not to occur from 2016 onwards. The recent decision by Germany to close all of its nuclear power stations means it will face some energy shortages, as renewables will be unable to fill the gap created by the disappearance of nuclear energy. Only France, which is 96% nuclear powered, has no fear of energy shortages or any dependence on foreign oil or gas.

THE SUN

To the delight of climate change sceptics, scientists from the US National Solar Observatory are predicting that sunspot activity is declining markedly and that the sun will go into “hibernation” from 2020. The significance of this is that when this happened before, between the years 1645 and 1715, a mini ice age occurred, with long, bitterly cold winters and the Thames freezing over every winter. Sunspot activity and solar flares have been known for many years to be closely linked to rises and falls in global temperatures and climate change sceptics say that solar activity and volcanoes are the major influences on the world’s climate and that man-made CO₂ is too small an issue to have any real impact on the planet’s climate. Global warming experts say that this ignores the real issue that man-made emissions of CO₂ and methane could have a devastating impact and the risk is too high to ignore. It would seem likely that solar energy, volcanoes and the world’s oceans do indeed have significant impact on the Earth’s climate but man’s activities in burning fossil fuels are also likely to have an impact which is yet to be clearly understood but may be the final tripping point beyond which the Earth’s natural functions cannot cope.

In complete contrast to the previous report, UK government ministers have ordered emergency powers to shut down the UK’s national electricity grid due to the threat of a predicted huge solar flare within the next 18 months. This prediction indicates that the damage to the National Grid, to the banking system, to all computers and satellites would be highly disruptive and would paralyse the country for months. Such events have occurred before, for example when the USA and Canada were hit in 1989, causing the city of Quebec and many parts of California to be severely disrupted. The UK’s Chief Scientist, John Beddington, has been warning the government that all navigational, defence and computer systems are at high risk. In 1859 a major solar flare completely disrupted telegraph systems worldwide. Experts are now predicting that a class five storm will hit the Earth in 2012/2013.

JELLYFISH

Vast swarms of jellyfish have caused the closure of Torness nuclear power station in Scotland. Millions of jellyfish are clogging the filter screens on the plant’s water intake cooling systems.

ROAD DEATHS

1,857 people died on the UK's roads in 2010, a drop of 16% on 2009 figures and the lowest since records began in 1926. The only category in which deaths rose was for cyclists.

WIND FARMS

Power generated by the UK's wind farms fell by 6% in 2010. Onshore wind farms generated just 1.9% of the UK's energy in 2010. Renewables in total produced 7.4% of the UK's energy needs, against a target of 15% by 2020. The Renewable Energy Foundation states that £5 billion has been spent on wind farms since 2002, with very little real return. It estimates that £6 billion p.a. will be spent until 2030. It also appears that wind speeds in the UK are showing a steady decline.

GREEN INDEX

A new stock market-based green index is to be launched, aimed at forcing the EU's biggest polluters to clean up their emissions. The Environmental Tracking Index went live on all traders Bloomberg terminals on 6/6/11. This index will rank EU companies according to their emission levels. High levels of emissions or failure to disclose will see such companies dropping to the bottom of the rankings. This index has been developed by the Environmental Investment Organisation (EIO), a not-for-profit research body, and is designed to cause a drop in share price for poor performers. The EIO is targeting mainstream investors and not niche green market investments and believes the only way to really alter the behaviour of polluters is to hit them where it hurts – namely via their share price. Two indexes are part of this launch, namely the ETUK100 and the ETEurope300, and early indications are that nine of the top 10 performers were from the financial services sector, with Aviva being declared the EU's greenest business.

CARBON TAXES – AIRLINES

The EU has decided to introduce carbon taxes for airlines in 2012. The existing carbon taxes for high CO₂ emitters such as steel, horticulture, chemicals and power generators will mean all airlines must pay a tax on every tonne of CO₂ they emit. They will, of course, pass this tax directly on to consumers, i.e. passengers, as all the aforementioned industries have done. The EU has, however, decreed that not only EU airlines will be captured but that all flights entering EU air space must pay. This has triggered an international lawsuit from US airlines. Carbon emissions and their associated penalties are now amounting to billions of euros within the EU and do not exist in any other part of the world, making many industries deeply concerned about their competitiveness. With no global CO₂ taxation it is likely that the EU and the UK must reconsider their overall carbon taxation policy. China is also now threatening to stop EU airlines from flying to China in retaliation for the EU's carbon taxation policy. Lufthansa has stated that this carbon tax will cost it approximately £200m a year and will threaten the future viability of all EU airlines.

GERMANY – NUCLEAR

Germany has voted to close all of its 17 nuclear power stations by 2022. This has been forced on the German government by widespread public opposition to nuclear and the rise in the number of Green MPs. Nuclear produced 25% of Germany's power and industry leaders believe Germany now faces widespread power shortages and a reliance on imported energy. France, by contrast, has announced a 1 billion expansion of its nuclear sector. The UK is poised to build five new nuclear stations by 2020. Germany appears to be the only advanced economy turning its back on nuclear generated power and relying instead on a huge expansion of wind and solar generated energy.

THE WORLD

CHINA - THE YANGTZE

This river, the largest in Asia and home to over 400 million people who live within its 3,960 mile catchment, has run dry over much of its length in the worst drought in over 50 years. Ships have run aground and people now have no drinking water or water for agriculture. The Three Gorges Dam has released huge quantities of water to alleviate the drought but many critics say the dam is responsible for drastically damaging the water table in the Yangtze basin. The Three Gorges hydro-electric turbines can no longer operate as the huge reservoir has dropped below the optimum operating level. Environmental issues in China, which have been of secondary importance to economic progress, are now assuming much greater significance, as political leaders recognise the long-term damage to the future of China and its people.

CHINA

As reported in previous updates, tension is rising on the Asian high seas as China, Vietnam, Brunei, Indonesia, Taiwan, Malaysia and the Philippines clash over sovereignty. At stake is a potential 200 billion barrels of oil and 2,000 trillion cubic feet of gas. These clashes centre on the ownership of small atolls, low lying islands and coral reefs, with warships regularly coming into conflict in the South China Sea at the heart of the disputes. China shows no sign of backing down in an aggressive campaign of ownership claims. Even the USA is now becoming involved and is expressing "a national interest" and has warships regularly patrolling the disputed areas. China has very little indigenous oil and gas and the booming Asian economy means an unlimited demand for energy.

GLOBAL FUEL PRICES

Average price paid for petrol around the world is as follows:

Turkey	£1.64/litre
Venezuela	1.4p/litre
Sweden	£1.41/litre
Bahrain	12.8p/litre
UK	£1.36/litre
Germany	£1.39/litre
Saudi Arabia	9.7p/litre
Portugal	£1.36/litre
Holland	£1.52/litre

THE WORLD

CLIMATE CHANGE

The International Energy Agency (IEA) has announced that global warming gases were at a record level in 2010, reaching 30.6 gigatonnes and that attempting to reach any reduction on global CO₂ emissions was unrealistic.

CORAL REEFS

The University of Miami believes that coral reefs are in big trouble due to the acidification of the oceans. Corals do not like increased levels of CO₂ which, when absorbed into water, produces carbonic acid. This, in turn, kills off the coral, causing so-called “bleaching”.

BIOFUELS – AIRCRAFT

Boeing has successfully tested a 15% biofuel mix on its new 747-8 which has flown the Atlantic. Synthetic kerosene produced from the camelina plant grown in Montana can now be produced in commercial quantities and many aviation experts believe that all aircraft will be using biofuels within two years alleviating the high price of oil and the growing concern over aviation’s global CO₂ emissions. Further research is under way with halophytic plants which can be grown using salt water in desert conditions, thus avoiding using fertile soils normally used for food production. Such plants produce oil-rich seeds which can be converted into synthetic kerosene.

ELECTRIC CARS

A new and unforeseen problem for electric cars has arisen, namely a market battle over the design of plugs. What is really needed is a common design which would operate for all models on an international basis but this is not happening due to a row between Germany, Japan, France and Italy. The dream situation would be a recharging network across the EU which would allow vehicles to recharge irrespective of which country the car was in. Further problems are appearing in that safety organisations are opposing the recharging of electric vehicles from domestic sockets. Recharging from a domestic AC supply takes eight hours but only 30 minutes from a high voltage DC supply at commercial premises. This would appear to be an ideal opportunity for the EU to step in with strong legislation to provide a level playing field.

THE WORLD

LIGHT BULBS

With much discussion about the merits and demerits of low energy/longlife light bulbs, it is interesting to note that a light bulb in a Californian fire station has been burning for just over 110 years. First installed at the Livermore Fire Station in 1901, the bulb has only been extinguished in rare electricity blackouts. The trick seems to be to keep the bulb burning continuously and not to switch it off and on (see centennialbulb.org).