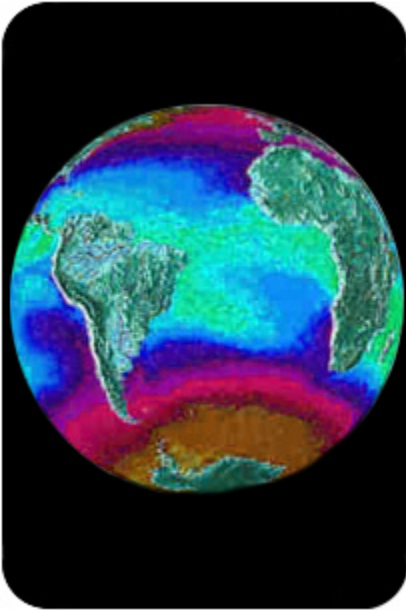


THE BURNING FUSE OF SUSTAINABILITY



It is very British that a revolution that will change our lives profoundly over the coming years actually began its course almost 200 years ago. This is a revolution in energy policy, and it will leave the nuclear debate looking like a discussion between sad, old fogies, arguing about the best way to build the Maginot Line.

Needless to say, the government barely understands what is going on, and certainly has no claim to be leading the changes. Nevertheless, the change is in a shift from assumptions that energy systems are about big power generation that must struggle to keep up with insatiable consumer demand. The debate will be replaced by a recognition that the future will be shaped within a national system of local energy networks; a system where every part of our existence – our home, our roads, our workplaces, schools and hospitals – are generators of

sustainable energy rather than just consumers of it.

This isn't pie-in-the-sky thinking. It is already happening now; and being driven by local visionaries and engineers who have metamorphosed into eco-engineers, holistic scientists and sustainability designers. The more I became immersed in the construction of my own eco-house, the more I entered a world which is both humbling and exhilarating. Some 80% of new buildings in Berlin have solar powered energy generators. Holland has installed 'hot road' energy systems under asphalt road surfaces that provide heating/cooling for local houses. (Every 1 km of road heats about 400 houses). Toronto is replacing energy guzzling, air conditioning systems in modern buildings, with a cooling system that circulates (and returns) water from Lake Ontario. Woking, in England, has installed its own local wiring system, generates 135% of its own energy needs, and will be coming off the National Grid in the next few years.

On an even bigger scale, the Mayor of London's Climate Change Programme aims to make London energy self-sufficient within a decade, and up to 20 global cities are in discussions with London about doing the same. When you consider that London currently consumes more energy than the entirety of either Portugal or Ireland, you realise the scale of the revolution we are talking about. And not one job of the energy will come from nuclear.

Bear with me a bit while I turn the clock back to where it all began. The year was 1817, and at the junction of Water Street and what was to become Gas Street, the City of Manchester built the country's first gasworks. The revolutionary body behind this was the Manchester Police Commissioners who, 11 years earlier, had asked a local manufacturer to fit a gas lamp over the entrance to the police station. Crowds would gather at night to marvel at the piddling little flame that lit the entrance. But the Commissioners became convinced that this was the answer to their street lightning problems. In reality it became so much more.

By the time Joseph Chamberlain led Birmingham into an era that championed municipal democracy and

'Gas and Water' socialism in the 1870s, there were already 49 municipal gas companies around the country. Leeds and Glasgow had joined Manchester as the early pioneers in a movement that grew from local visionaries rather than the national parliament.

What all of these cities did was to recognise they could deliver energy security for their citizens and use profits from the gas undertakings to fund an infrastructure of civic amenities that dramatically enhanced the quality of life for their people.

Between 1852 and 1861 sufficient profits were passed from the municipal gas company to the Improvement Committee for Manchester to install its first decent public water supply system; along with the drains and sanitation network to support it.

By 1884, Birmingham had cut the price of gas to its citizens by 30% in the 10 years since its Gas Company had formed. It had also built a new recreation ground and was using gas profits, through the Municipal Water Committee, to deliver a public, clean water system.

How did all this happen? Without doubt it tapped in to a strange combination of socialist vision and the vulnerability of capitalism at the time. Then, as now, big businesses wanted access to secure and cheap energy supplies. Britain was emerging from an era of 'shopocracy' in which the over-riding obsession of the Establishment was low taxes.

The result was low investment, short-termism, slums, cities that were health nightmares and a level of illiteracy that blighted society as much as individual lives. In exchange for energy security, industry had reached the stage where it was happier to see gas profits municipally re-invested in local infrastructures than pocketed by outside speculators. It is only what Woking, and the Mayor of London, are seeking to do now.

Virtually all of the cities pioneering this Gas and Water socialism either raised the initial money in local taxes (the Rates) or in issuing Public Bonds. If cities today offered 'Sustainability Bonds' to do the same we would see a flood tide of money to support them. From individual households who wanted to become stakeholders in a sustainable energy future, to pension funds that wanted to protect their members from another dot.com debacle, there would be no shortage of backers. The result would be a revolution of unimaginably exciting proportions. And it is already beginning to happen.

In 1997, the small island of Samso was designated Denmark's 'renewable energy island'. Now its straw and woodchip district heating plants, its wind turbines and solar power systems provide the entirety of the island's energy needs. Today's argument now is about what system replaces the notion of incineration. Do you go for gasification of wood chips, or bio-digesters (producing gas and a 'residue' of high grade garden fertiliser) or bio-reactors (offering gas and bio-fuels)? Is the answer to look into a different direction combining wind or solar generators and hydrogen cells? It is a debate I am agnostically excited about.

All I know is that it is the way we think about today's energy systems that is hopelessly out of date. Look at any power station you pass and the billowing plumes of steam they emit are testimony to the 60% of energy inputs they throw away into the sky. Then, energy gets fed into a National Grid that leaks like a sieve. By the time the electricity gets through the 'distributor' and 'supplier' charges in the network, four

fifths of the original energy input has disappeared. We could run the British economy simply on the energy we throw away – if only we produced and distributed it differently.

New municipal energy companies could sell energy services rather than energy consumption. In much the same way that big companies now lease their computers rather than buy them, the new energy companies could offer energy services packages to the public. For a fixed price (tied only to inflation) you could be offered micro-generation systems for your own home, alongside upgrading the energy efficiency of the home itself. If the energy company kept the surplus energy generated it might even pay them to offer to install low energy appliances throughout the house as part of the package.

It is a vision no more (and no less) radical than that offered by the Gas and Water socialists of the 19th century. Today's challenge is to create networks of local energy systems, safe from terrorist attacks, able to survive environmental change, and light in the ecological footprint they impose on the century ahead. In the coming month, Manchester will have another landmark. The 400ft Cooperative Insurance tower will display the largest array of solar panels anywhere in the country. As one commentator put it, the building will generate enough energy to make 9 million cups of tea a year. But its significance will be as a symbol not as the solution.

The tower stands alone. If it's heating and cooling still depend on air conditioning then the developers should be shot. If it ignores the issue of water recycling it will fail to make the connections that City leaders made 2 centuries earlier. But it will still be a reminder of where we should be going if we are to catch up with European partners.

In the Netherlands, acoustic barriers along motorways are topped with solar panels that provide energy for housing and industry. Wind turbines along their A15 motorway will generate 60MW of electricity for the Gelderland province by 2010. All of the motorways in Britain could easily be lit by solar and wind energy if we simply had the vision and the political will to do so.

And that's the rub. Today's parliament is no more than a 19th century shopocracy. Obsessed with empowering the individual, it has lost sight of the collective. The fate of the 21st century will, however, be shaped by the politics of interdependency and not of individualism. The pioneers and visionaries who would build our New Jerusalem's are no longer waiting for a government that will not come. They are driven by an excitement that fuels itself. Grasp it, and we too may yet say

"Bliss it was in that dawn to be alive

But to be young was very heaven";

All we need is to harness the youthfulness of our dreams rather than of our limbs. And the best thing is that we can do it together.