

# The Energy Crisis

## What energy crisis?

### We have all the solutions we need

Since the start of the industrial revolution, human societies have been consuming ever-increasing amounts of energy. This has been mostly in the form of fossil fuels - coal, oil and natural gas - with some, since the 1960s, coming from nuclear power. And throughout this time the suppliers of that energy have promoted the myth that we have been faced by a potential crisis due to not having enough energy to meet all our needs or desires. **This has always been untrue. We have simply been using the wrong sources of energy.**

This myth has certainly served the vested interests of the big energy suppliers. 19th century coal barons and 20th century oil and gas corporations have grown enormously rich out of our increasing addiction to fossil fuels. Through the 1950s and 60s, the scientists who had given the world the nuclear arms race and the threat of Mutually Assured Destruction were able to appease their consciences by promoting "peaceful" nuclear power, while governments used the technology to build up stocks of plutonium for bomb making.



We ignored as old-fashioned the abundant sources of free energy which had helped power civilisation for centuries. We failed to develop the clean technologies of wind and water for the needs of new times and the electronic age, and became increasingly dependent on the big industrial energy suppliers.



### Over the past 50 years we have gradually come to see the downsides of the energy systems we have come to rely on.

Fossil fuels have polluted our atmosphere, with smog causing ill health, acid rain killing forests, and now, finally, CO<sub>2</sub> levels producing a Greenhouse Effect that has destabilised our climate, caused unprecedented droughts, floods, wildfires and extreme weather events, and threatens our very survival.

And we have seen nuclear power create catastrophic accidents from Windscale to Three Mile Island, Chernobyl and Fukushima, nuclear weapons proliferation from Iran to North Korea, the insoluble problem of managing nuclear waste, and, most recently in Ukraine, the vulnerability of nuclear facilities in war and conflict.

### Renewable energy gives us a better way forward

Now we have begun, belatedly, to develop clean renewable energy, we can see that there never was an energy shortage. Modern solar power and wind turbines, combined with clean hydrogen and the still largely untapped resource of tidal power, can provide all the energy we need.

**We do have the answers, and a brighter, cleaner, safer future is definitely possible.**

# Towards a sustainable zero-carbon future



## Solar Power

### Free energy from every rooftop

The total amount of fossil fuel and nuclear energy consumed by humanity is a drop in the ocean compared to the amount of the sun's energy which falls on the earth every day.

The land required for solar panels alone to provide all global energy is 450,000 sq. Km. That's less than the current land footprint of all fossil fuel infrastructure, and less than 5% of the area of the Sahara Desert (9.2m sq. km.). And solar photo-voltaic (PV) panels work on light, not heat, anywhere the sun is shining, including the UK.

## Wind Energy

On-shore wind power and solar PV are now the cheapest forms of electricity generation in the UK, as well as the quickest and easiest to install. Unlike elsewhere in Europe, government policy in the UK has held back the erection of on-shore wind turbines.

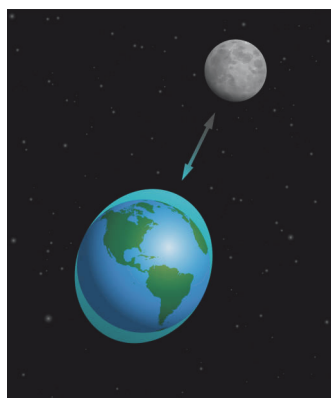
A system based on renewable energy would be far cheaper for consumers than our present system based on gas and nuclear.



## Tidal Power

### An untapped resource, as regular as clockwork

Critics of wind and solar power say they are unpredictable and cannot be relied upon. That cannot be said about tidal power, because the tides go up and down as regularly as the rotation of the earth. The gravitational pull of the moon on the earth's oceans causes high and low tides all round the world twice a day. The power of these tides can be harvested by underwater turbines, barrages and tidal lagoons.



The UK's long coastline has a large tidal range ideal for tidal generation. Plans have existed for decades and the UK could be leading the world, but investment has gone to nuclear power instead.

## Hydrogen - the perfect fuel of the future

Hydrogen is the perfect zero-carbon zero-pollution fuel of the future. When it burns, the hydrogen atoms simply combine with oxygen from the air to make  $H_2O$  - water - and nothing else. No pollution, no  $CO_2$ , just water vapour. And, as most people will remember from school science lessons, water can be split into its constituent parts of hydrogen and oxygen by passing an electric current through it. So hydrogen can be easily obtained from water once we have enough spare renewable electricity, and generating hydrogen in this way will also provide a means of storing surplus energy generated by wind or solar on very windy or very sunny days.

**Taken together, solar, wind, tidal and renewably generated hydrogen provide an energy mix that can meet all our needs and will never run out. Properly insulating our buildings will also save energy and cut demand, making the transition easier. And the best news for consumers is that once the infrastructure investment has been made, unlike coal, oil, natural gas or nuclear power, there are no ongoing fuel costs - it's free energy!**