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From **The Times**

October 3, 2009

Science: Stand by for the Supergrid

Why the world needs an 'extreme energy makeover'

Anjana Ahuja

2 COMMENTS | RECOMMEND? (3)

If you are a glass-half-empty sort of person you might find yourself tempted by the Cheltenham Literature Festival event on October 17 entitled "2050: Did Science Save Us?". This discussion will take participants more than 40 years into the future, when humankind has defied all sorts of shenanigans to stay in existence. What technologies, the panel will ask, are most likely to help us to survive to that point and beyond?

As regular readers will know, I don't go in much for doom and gloom. But I am weirdly fascinated by what 2050 will be like, given that scientists have an annoying propensity to refer to this particular year. The date has its attractions: close enough to be within our grasp, yet far enough away for scholars to make predictions that we will have forgotten about (can you recall what our predecessors said would happen in 2010?).

Here is a potpourri of predictions that may or may not be realised 40 years hence: we will be immortal; if we are still dying, we'll be able to download our brains into machines to preserve our "souls"; our yoghurt pots will say "good morning" to us; most Britons will be obese; a million species will be extinct (although I fear that China still will be pimping its female giant pandas).

There are expected to be 10 billion people on the planet, with international borders redrawn by climate change (asylum seekers will flee the heat of Southern Europe for northerly climes). And there won't be enough energy for everyone. That is the survival scenario that the Cheltenham event will address.

It is plausible that we'll be in a bit of a pickle by 2050, so I'm pleased that some scientists have taken the job of soothsayer seriously, and dreamt up technologies that could help us out. Among the most exciting is the Supergrid. It is a popular word in the world of green technology, and refers to networks of pipes and cables that could channel energy around the globe.

Beyond the basic premise of countries being able to share energy, however, there are different ideas of what the Supergrid would entail. One proposal is to trap solar energy falling on the Sahara and funnel it to Europe. Less than 1 per cent of the sunlight falling in this area could power the whole of the Continent, according to the European Commission Institute for Energy. Solar farms — vast tracts of solar panels — in North Africa would generate electricity that could be sent over direct-current transmission lines. The infrastructure costs would be huge, up to £36 billion, but unavoidable if we want to keep the lights on.

Through the Supergrid, countries would also share energy; if the wind stopped blowing in the North Sea, we could import geothermal energy from Iceland, for example. Such a scheme would also prevent us becoming too dependent on Russian energy.

Another interpretation of the Supergrid appears in *Physics World* next month. Paul Michael Grant, a private energy consultant, calls for an "extreme energy makeover" for the world, with the construction of "SuperCities" criss-crossed with "SuperCables"

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hydrogen (a mixture that has been dubbed hydricity); the hydrogen would be delivered as a fuel (for cars, say) and would also have the handy effect of cooling the cables during power transmission.

I'm rather encouraged by such big schemes: 2050 might be a date to look forward to, rather than dread — as long as we can avoid the talking yoghurt pots.

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October 3, 2009 2:36 BST

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October 3, 2009 11:37 AM BST

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