

Letter from Machynlleth by William Shepherd¹

The only sane humane ecological policy for meeting British electricity needs in the 21st century is to phase out nuclear power as soon as possible without turning out the lights. This means replacing the nuclear electricity base load as a matter of some urgency.²

Most electricity strategies fail to adequately disambiguate energy and electricity needs...while fudging over the complexity of integrating different electricity producing components into an electricity grid distribution system.³

In part this is because much of the essential research still needs to be done; research that should be government-led⁴ and include modelling of variably-scaled grid integration options from a self-sufficient village grid to a continental grid with nested grids and smart grid management and control technology as the most likely future post-nuclear electricity infrastructure.

Private vested interests...grid, pipeline or energy component and resource owners and operators are not the right people for this infrastructure replacement R&D project. Buggy whip makers would have found themselves with a conflict of interest had they been asked to design horseless carriages.

Wind power is not the panacea once believed.⁵ At the current state of wind science,⁶ wind-generated electricity is only useful when coupled to supplementary storage capacity from non-wind technologies. Large or small-scale hydro-coupling with wind is one possibility. This is what Denmark does by piggy-backing on Norway's mountain landscape. Without this Nordic collaboration Denmark's wind development makes little economic sense. While not unique to Denmark it is not a common situation elsewhere in the world.

Useful lessons for wind energy may be learned from the right exploitation of another solar energy technology. Tidal



barrage schemes such as the one proposed for a new London Airport in the Thames Estuary might also address the coupling specifications of economically viable wind power because the current proposal sensibly matches natural realities with specific needs. But this is a particular set of conditions and not something to be generalised.

A *Global Electricity Grid* linking the light and dark sides of the planet also bears serious consideration although this

looks like using a sledge hammer to crack a nut...forty-five minutes being all the time needed for the sun to supply the energy needed for a year. There are also legitimate concerns about undesirable and unanticipated side effects. The larger the project, the greater the likelihood that 'the side effects will be the main effects'.⁷

¹ This article entitled *Wind Failures* was first posted as Climate Blog Nr. 59 at <http://climate.blog.co.uk> on Saturday 6th August 2011. The URL of the original blog (with hyperlinks) is <http://climate.blog.co.uk/2011/08/06/wind-failures-11619681/>. Machynlleth is a market town in Powys, Wales and was the seat of Owain Glyndŵr's *Welsh Parliament* in 1404. From 1536 to 1974 it lay in the historic county of Montgomeryshire. Machynlleth hosted the *National Eisteddfod* in 1937 and 1981.

² Great Britain has the dubious good fortune of French nuclear electricity available through the Channel Tunnel cables...and French nuclear fall-out just a few miles away (with a prevailing wind). The country also has other options to join consortia developing future European (or Icelandic) grids. But these should be transition arrangements with subsidiarity as the national energy policy goal...i.e. with energy and electricity self-sufficiency pushed down to the smallest possible unit everywhere.

³ For further details on the case against a national wind energy strategy, see *The Wind Farm Scam* by John Etherington.

⁴ Local national and state strategies should include the option of outsourcing the research to public state confederations such as the United Nations and the United States. Competition has its place but not everywhere.

⁵ The natural availability of wind energy and the engineering realities of harnessing its power limit its use. Wind creation technologies might alter this. Shaping the natural and man-made environment is an unexplored technology presently invoked accidentally to collapse cooling towers and create windy city centre environments. Buckminster Fuller also pointed out that bringing the wind down to ground-based turbines made more sense than putting turbines at the end of long poles.

⁶ Wind science should be an integral part of the sciences of aeronautics and fluid flow derived from Bernoulli's studies of pressure differentials and their wider impact on the real world. Yacht designers might turn out to be the leading experimental scientists. It took centuries for the fore and aft rig to be invented in the 16th century to allow ships to sail into the wind.

⁷ Academia should have developed a *Science of Scale* during the 19th & 20th Century in response to the growth of scale following the industrial revolution and the rise of large scale technological applications. Instead it allowed a bogus theory of diminishing

In the long term it makes neither (public) economic nor (private) commercial sense to misrepresent the special conditions of an isolated farm house high on the Yorkshire Moors to invent a policy of national wind-electricity generation targets and massive public subsidies to private hustlers. The inevitable result will be the projecting and eventual mis-selling of damaging and expensive *Wind Farm Solutions* for urban and suburban domestic settings and industrial usage with quite different operant conditions.⁸



The Welsh Parliament is set to be one of the first public authorities to question the rationale behind the six-fold increase in UK wind generation capacity over the next decade planned by the British Government. If Wales is to play her part she will need to install 800 huge wind turbines in the hills of mid-Wales.⁹

These will generate electricity many miles from where it is needed, necessitating a new 19-acre substation of five 250-ton transformers, connected via a 400,000-volt cable on 150-foot high pylons to the main grid in Shropshire 30 miles away.

To build all this, the roads and bridges must be strengthened to transport the giant transformers and huge amounts of concrete and steel. According to a report in *Private Eye*¹⁰ these plans are strongly opposed in the region, 'so politicians have moved into

full obfuscation mode'. Welsh first minister Carwyn Jones (Labour) has made conflicting statements as to how large the scheme is to be.¹¹

On the subject of whether the cables could be buried instead of using pylons, Tory energy minister Charles Hendry has assured anxious delegations that he would "listen carefully to the arguments before a final decision is made", and that "the issue isn't cut and dried". This is not how the local grid operator *Scottish Power (sic)* sees it: it says burying the cables would increase the cost of the connection from £50 million to £500 million - clearly implying that pylons will be used.¹²

Wind being wind, at most this giant scheme will have an intermittent average output of around 400 megawatts. This is the equivalent of one medium-sized (reliable electricity-generating) gas-fired power station that could be built on a plot about the same size as the planned new transformer alone - but on the site of a disused coal-powered station with existing road access and connection to the grid. Instead the people of Mid-Wales will have to put up with the politicians' desired monstrosity subsidised by the long-suffering tax-payers of Middle England.

Wind Power Lobbyists dismiss such reports as 'alarmist' and 'anecdotal'. But the alarm is real and cumulatively, anecdotal evidence is more meaningful than official announcements, dodgy dossiers and manipulated statistics. In fact the ever-increasing quantity of anecdotal evidence indicates a broader failure to think through energy and electricity needs from basic principles. David Bellamy summed it up in declaring that "wind power is a swindle."

returns, which applies to marginal land, to be taken as a general theory that was beneficial to national prosperity and human happiness. In fact capital accumulation is probably the only other field for which it is relevant.

⁸ In a sane, humane ecological society with sensible laws (e.g. against usury), the perpetrators would also be criminally liable.

⁹ Across Montgomeryshire this implies a density greater than one per square mile.

¹⁰ See a short piece in *Private Eye* (Issue Number 1294 on 5th August 2011) entitled *Keeping the Lights On*.

¹¹ Carwyn Jones has hinted that planning concerns will limit the scale of the scheme, while targeting a capacity of 70 percent greater than would be the case if these concerns were allowed to prevail.

¹² There may be other wider environmental ramifications than those included in these cost estimates. See *Megaliths, Meis & Miners* by William Shepherd at <http://www.cesc.net/adobeweb/scholars/shepherd/fengshui.pdf>.