

by Derek Morrison



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*Solar farms built in northern climes
Skyline monuments — wind turbines
But how to store the wind and sun
Not thought about as policies spun
And so we pay to Grid not feed
If wind and sun they have no need
Renewable energy going to waste
From policies made in unseemly haste.
Green power storage first must be cracked
For move from fossils to be backed
Much conversion figures in this quest
Although no solution has yet proved best.
But a certain irony has come to pass
Green electricity is turned to gas
Or it can be used to power a pump*

*Moving water uphill for later dump
Or compressing air can be its fate
For driving turbines at later date.
But wait ...
Here come the disruptive events
For hydrocarbons now cost fewer cents
Oil's demise has been much tracked
But now the shale is truly fracked
And the Arabs then lowered the price
So we embrace again our fossil vice.*

[To listen to this verse select below]

<http://www.cyberstanza.com/wp-content/uploads/2015/04/EnergyDraining.mp3>

(a longer version follows)

——- Longer version ——-
*Solar farms built in northern climes
Skyline monuments — wind turbines
Nuclear still generates much heat
While Gaia-man claims it can't be beat.*

*Oil's demise has been much tracked
But now the shale is truly fracked
The Arabs then lowered the price
Both prolonging our fossil vice.*

*Nuclear can still create much steam
If new stations brought on stream
But for this all costs are high
It's Fukushima where sentiments lie.*

*Renewable energy makes much sense
But question why the great expense*

*As subsidies sucked from State's teat
For climate targets they claim to meet.*

*So the wind can blow at wrong time
Turn it off — still profits climb
Or, turbines where the wind don't blow
It doesn't matter if they go slow.
Or, one large turbine claims no harm
While marking spot for future farm.*

*Subsidies should be no objective
Else energy policy becomes defective
Politicians creating one green mess
No conviction — just sound-bite press.*

*Producing energy is much less tough
Than finding ways to store the stuff
But when Man first burned the stick
Nature showed it had solved the trick.*

*Such energy is stored in fossil fuels
But now we must follow different rules
For our energy must come clean
Power must fly under banner green.*

*But how to store the wind and sun
Not thought about as policies spun
Hence now we pay to Grid not feed
If wind and Sun their power no need
Renewable energy going to waste
From policies made in unseemly haste.*

*Green power storage must be cracked
For move from fossils to be backed
Much conversion figures in this quest*

Although no solution has yet proved best.

*But a certain irony has come to pass
Green electricity is turned to gas
Or it can be used to power a pump
Moving water uphill for later dump
Or compressing air can be its fate
All driving turbines at a later date.*

*So much reliance on Man's ingenuity
For squaring circle of energy security
If our leaders don't grasp this nettle
Then Lovelock's Gaia may matter settle.*

[To listen to this verse select below]

http://www.cyberstanza.com/wp-content/uploads/2015/04/EnergyDraining_long.mp3

Commentary

At the time of writing the price of oil has fallen dramatically. The major oil producing countries (OPEC), in response to the fracking revolution taking place in North America, reduced the cost of their hydrocarbons to maintain their market dominance in this energy sector. This had made their competitors more expensive hydrocarbon extraction technologies less economically viable. OPEC's move also risks reducing the economic impetus for the the transition to sustainable and less environmentally damaging energy sources.

I used to have a very large bottle garden in which I grew a variety of plants. The environment in the bottle had to be kept in pretty good balance or, as eventually happened, everything died because I didn't pay it enough attention. That's kind of like my simple view of our Goldilock's planet, i.e. a bottle garden hurtling through space with a narrow strip of sometimes turbulent atmosphere which many of the creatures living on it seem, by their use and abuse of resources, determined to either poison or make more turbulent. We can but hope that our ingenuity will square the circle of energy security – in time. But I can't help feeling that in our rush to “save the planet” we are creating some new and highly visible problems that people are going to end up living with for a very long time.

Pay a visit to Scotland and it's not long before wind turbines seem to be populating every skyline. Some people may perceive this as monuments to technological progress; others perceive skyline pollution. One of the great stimuli for green energy producers is the subsidies being paid from the public purse, e.g. either via the so called "feed-in tariff" but also as "constraint payments", i.e. not producing energy. The latter arises when the national electricity grid doesn't require the energy being produced by intermittent sources of electrical power like the wind and the sun. To me this just goes to show what an immature technologies and energy markets we currently have. We urgently require economic, efficient and widely-adoptable energy storage solutions for green power production otherwise the fossil fuels will continue to dominate our energy needs and contaminate both our environment and world politics ad infinitum.

There are other commentators who take a more optimistic view, most notably Matt Ridley whose book *The Rational Optimist* sets a positive tone on human development and progress with his blog and articles providing material guaranteed to stimulate debate. He is not alone in this regard, James Lovelock (the Gaia-man in my verse) still courts controversy among many environmentalists because of his support for nuclear fission as a key (the key) 'green' energy source.

I don't know what the answer is but we certainly need more efficient and less damaging energy sources than digging/or sucking up stuff from the ground, processing it, and then burning it. My related poem [Dangerous Breaths](#) (CyberStanza, 23 March 2015) provides a perspective on some of the consequences of doing so.

Plants solved energy storage and conversion via photosynthesis millions of years ago; so perhaps we need an instant photosynthesis like solution? Electric cars also provide a pointer to the direction we need to be moving in but, despite the hype, there are still major energy recharging and storage challenges to be overcome there – but that will be the subject of a forthcoming posting on CyberStanza.

Postscript

[Tesla Motors announced](#) on 1 May 2015 its intention to employ the battery technology it currently uses in its elite electric cars, e.g. Tesla Model S, for domestic power storage. Its Powerwall product is designed to store the energy produced by, for example, solar panels on a house roof for later use by the consumer. I like the sound of this because rather than

feeding locally generated power into a national or regional market distorted by subsidies, power generation and storage directly benefits the house owner. Theoretically, between 7 and 10 kWh could be stored on a circa 1.3 metre battery pack on the side of a wall.

In effect this would be equivalent of the small uninterruptible power supply (UPS) I currently use to protect my computers and network from the effect of power cuts except it would be a UPS for the whole home capable of keeping things going for quite a long time. Wind generation as well as cheap rate electricity from the grid could also be used to charge the unit. A flatscreen TV typically consumes around 0.1kWh, a washing machine 2.3kWh, a laptop 0.05kWh, lights 0.1kWh per room, and fridge 0.2kWh (all per day). A pretty big roof and array of solar panels, however, would be needed to generate 7-10kWh per day and so while Tesla's Powerwall could make a contribution to the energy needs of a household it still isn't the solution and is likely to be the province of the environmentally oriented with a high disposable income and so able to meet the capital and installation costs, e.g. solar panels and Powerwall); unless future government subsidies come into play of course. Whether Lithium Ion batteries are the best long term bet for such storage is also a moot point. But much respect is due to Tesla's Elon Musk for pushing our thinking in this direction.

I can't help thinking that, although less fashionable than solar panels on roofs, it's perhaps the idea of cheaper rate electricity being used to charge the Powerwall which merits our – and government's – attention most, e.g. charge up Powerwalls during the night or to help absorb a surplus of wind-generated or solar power from a national or regional grid.

Finally, it's notable that only the US has more (553) utility scale (can generate 4MW or more of electricity) than the UK's 408 solar farms. Comparisons are: China (315); Germany (209); Spain (172); France (91); Italy (91); Greece (13); Portugal (13) – (source: [Wiki-Solar](#)). We should note, however, that although China and Spain have less utility scale solar farms than the UK they generate more electricity from them either because they are bigger or the amount of solar energy falling on them is greater. In the UK, Scotland is not such a great place for solar farms for this reason, but somehow there are still [plans afoot](#) for some ... hmm.

Links and Resources

[The Price of Cheap Oil](#), Costing the Earth, 25 March 2015, BBC Radio 4

[Energy Storage](#), Costing the Earth, 14 May 2014, BBC Radio 4

[A Rough Ride to the Future](#), James Lovelock, 2014, Penguin

[Nuclear energy for the 21st century](#), Speech by James Lovelock to the International Conference in Paris, 21 – 22 March 2005.

[Fossil fuels are not finished, not obsolete, not a bad thing](#), Matt Ridley (also published in Wall Street Journal, and Sunday Times).

[The Rational Optimist](#), Matt Ridley, 2010, Fourth Estate

[Onshore wind farms subsidies would be scrapped by Tories](#), BBC News, 24 April 2014

[Feed-in frenzy: How a wind farm subsidy loophole is short-changing billpayers and damaging Britain's clean energy market](#), Institute for Public Policy Research, 10 February 2015

Institute for Public Policy Research (IPPR) [Energy and Climate Change articles](#).

[Department of Energy and Climate Change \(UK\)](#)

[Response to Sunday Telegraph coverage of constraint payments report](#), Department of Energy and Climate Change, 26 August 2014.

The end of subsidies for large scale solar farms in the UK. [Solar energy 'could provide 4% of UK electricity by 2020'](#), BBC News, 24 March 2015

[Renewable Energy Foundation](#)

[Dave Toke's green energy blog](#)

[The Carbon Brief](#) (blog)

[Wiki-Solar](#) – worldwide data on utility scale solar power