

Parasitic Power Producers

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www.carbon-sense.com
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Tags: Green energy, parasitic power, wind power, solar power, Dr Patrick Moore, the trilobites strike back.

Promoting Parasitic Power Producers

Wind and solar are parasitic power producers, unable to survive in a modern electricity grid without the back-up of stand-alone electricity generators such as hydro, coal, gas or nuclear. And like all parasites, they weaken their hosts, causing increased operating and transmission costs and reduced profits for all participants in the grid.

Without subsidies, few large wind/solar plants would be built; and without mandated targets, few would get connected to the grid.

Green zealots posing as energy engineers should be free to play with their green energy toys at their own expense, on their own properties, but the rest of us should not be saddled with their costs and unreliability.

We should stop promoting parasitic power producers. As a first step, all green energy subsidies and targets should be abolished.



The Miracle of Green Energy - by Steve Hunter
www.stevhunterillustrations.com.au

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Viv Forbes, 17th July 2014

For those who wish to read more:

Wind Power Chaos in Germany:

<http://www.telegraph.co.uk/comment/9559656/Germanys-wind-power-chaos-should-be-a-warning-to-the-UK.html>

The reality of green energy:

<http://wattsupwiththat.com/2014/07/18/the-stark-reality-of-green-techs-solar-and-wind-contribution-to-world-energy/>

Blowing Our Dollars in the Wind.

Wind energy produces costly, intermittent, unpredictable electricity. But Government subsidies and mandates have encouraged a massive gamble on wind investments in Australia - over \$7 billion has already been spent and another \$30 billion is proposed. This expenditure is justified by the claim that by using wind energy there will be less carbon dioxide emitted to the atmosphere which will help to prevent dangerous global warming.

Incredibly, this claim is not supported by any credible cost-benefit analysis - a searching enquiry is well overdue. Here is a summary of things that should be included in the enquiry.

Firstly, no one knows how much global warming is related to carbon dioxide and how much is due to natural variability. However, the historical record shows that carbon dioxide is not the most important factor, and no one knows whether net climate feedbacks are positive or negative. In many ways, the biosphere and humanity would benefit from more warmth, more carbon dioxide and more moisture in the atmosphere.

However, let's assume that reducing man's production of carbon dioxide is a sensible goal and consider whether wind power is likely to achieve it. To do this we need to look at the whole life cycle of a wind tower.

Wind turbines are not just big simple windmills – they are massive complex machines whose manufacture and construction consume much energy and many expensive materials. These include steel for the tower, concrete for the footings, fibre glass for the nacelle, rare metals for the electro-magnets, steel and copper for the machinery, high quality lubricating oils for the gears, fibre glass or aluminium for the blades, titanium and other materials for weather-proof paints, copper, aluminium and steel for the transmission lines and support towers, and gravel for the access roads.

There is a long production chain for each of these materials. Mining and mineral extraction rely on diesel power for mobile equipment and electrical power for haulage, hoisting, crushing, grinding, milling, smelting, refining. These processes need 24/7 reliable electric power which, in Australia, is most likely to come from coal.

These raw materials then have to be transported to many specialised manufacturing plants, again using large quantities of energy, generating more carbon dioxide.

Then comes the construction phase, starting with building a network of access roads, clearance of transmission routes, and excavation of the massive footings for the towers. Have a look here at the massive amount of steel, concrete and energy consumed in constructing the foundations for just one tower. <http://www.youtube.com/watch?v=KX0RhjeLICs>

Not one tonne of steel or concrete can be produced without releasing carbon dioxide in the process.

Almost all of the energy used during construction will come from diesel fuel, with increased production of carbon dioxide.

Moreover, every bit of land cleared results in the production of carbon dioxide as the plant material dozed out of the way rots or is burnt, and the exposed soil loses its humus to oxidation.

Once the turbine starts operating the many towers, transmission lines and access roads need more maintenance and repair than a traditional power plant that produces concentrated energy from one small plot of land using a small number of huge, well-tested, well protected machines. Turbines usually operate in windy, exposed, isolated locations. Blades need to be cleaned using large specialised cranes; towers and machinery need regular inspection and maintenance; and mobile equipment and manpower needs to be on standby for lightning strikes, fires or accidents. All of these activities require diesel powered equipment which produces more carbon dioxide.

Even when they do produce energy, wind towers often produce it at times when demand is low - at night for example. There is no benefit in this unwanted production, but it is usually counted as saving carbon fuels.

Every wind farm also needs backup power to cover the 65%-plus of wind generating capacity that is lost because the wind is not blowing, or blowing such a gale that the turbines have to shut down.

In Australia, most backup is provided by coal or gas plants which are forced to operate intermittently to offset the erratic winds. Coal plants and many gas plants cannot switch on and off quickly but must maintain steam pressure and "spinning reserve" in order to swing in quickly when the fickle wind drops. This causes grid instability and increases the carbon dioxide produced per unit of electricity. This waste should be debited to the wind farm that caused it.

Wind turbines also consume energy from the grid when they are idle - for lubrication, heating, cooling, lights, metering, hydraulic brakes, energising the electro-magnets, even to keep the blades turning lazily (to prevent warping) and to maintain line voltage when there is no wind. A one-month study of the Wonthaggi wind farm in Australia found that the facility consumed more electricity than it produced for 16% of the period studied. A detailed study in USA showed that 8.3% of total wind energy produced was consumed by the towers themselves. This is not usually counted in the carbon equation.

The service life of wind towers is far shorter than traditional power plants. Already many European wind farms have reached the end of their life and contractors are now gearing up for a new boom in the wind farm demolition and scrap removal business. This phase is likely to pose dangers for the environment and require much diesel powered equipment producing yet more carbon dioxide.

Most estimates of carbon dioxide "saved" by using wind power look solely at the carbon dioxide that would be produced by a coal-fired station producing the rated capacity of the wind turbine. They generally ignore all the other ways in which wind power increases carbon energy usage, and they ignore the fact that wind farms seldom produce name-plate capacity.

When all the above factors are taken into account over the life of the wind turbine, only a very few turbines in good wind locations are likely to save any carbon dioxide. Most will be either break-even or carbon-negative - the massive investment in wind may achieve zero climate "benefits" at great cost.

Entrepreneurs or consumers who choose wind power should be free to do so but taxpayers and electricity consumers should not be forced to subsidise their choices for questionable reasons. People who claim climate sainthood for wind energy should be required to prove this by detailed life-of-project analysis before getting legislative support and subsidies.

Otherwise we are just blowing our dollars in the wind.

For those who wish to read more:

UK Wind farms will create more carbon dioxide than they save:

<http://www.telegraph.co.uk/earth/energy/windpower/9889882/Wind-farms-will-create-more-carbon-dioxide-say-scientists.html>

Wind energy does little to reduce carbon dioxide emissions:

<http://theenergycollective.com/willem-post/64492/wind-energy-reduces-co2-emissions-few-percent>

The High Cost of reducing carbon dioxide using wind energy:

http://www.manhattan-institute.org/html/ib_11.htm

Wind power does not avoid significant amounts of greenhouse gas emissions:

<http://carbon-sense.com/wp-content/uploads/2011/06/lang-wind-and-emissions.pdf>

<http://www.masterresource.org/2009/11/wind-integration-incremental-emissions-from-back-up-generation-cycling-part-i-a-framework-and-calculator/>

Wind Power may not reduce emissions as much as expected:

<http://www.forbes.com/sites/jeffmcmahon/2012/05/30/wind-power-may-not-reduce-carbon-emissions-argonne/>

Why Wind Won't Work:

<http://carbon-sense.com/2011/02/08/why-wind-wont-work/>

Energy Consumption in Wind Facilities:

<http://www.aweo.org/windconsumption.html>

Growing Problem of Grid Instability:

<http://www.spiegel.de/international/germany/instability-in-power-grid-comes-at-high-cost-for-german-industry-a-850419.html>

Contractors prepare for US\$1B boom in decommissioning North Sea wind farms:

<http://www.heavyliftpro.com/news/niras-cashes-in-on-wind-farm-future.html>

Time to End Wind Power Corporate Welfare:

<http://www.nationalcenter.org/NPA644.html>

Five Fatal Flaws of Solar Energy.

The sun is the most important energy source on Earth. It provides our daily warmth and light and the rotation and orbit of the earth turn its steady output into fluctuating day and night, summer and winter. Solar energy powers the growth of all trees, grasses, herbs, crops and algae; it creates the clouds and powers the storms; it is the source of all hydro, photo-voltaic (PV), solar-thermal, bio-mass and wind energy; and, over geological time, it also creates coal.

PV solar panels can directly harvest solar energy. They are useful in remote locations, for some portable applications and, with enough panels and batteries, stand-alone solar can even power homes.

But solar energy has five fatal flaws for supplying 24/7 grid power.

Firstly, sunshine at any spot is always intermittent and often unreliable. Solar panels can only deliver significant energy from 9am to 3pm – a maximum of 25% of each day. Solar can often help supply the hot afternoon demand for air conditioning, but demand for electricity generally peaks at about 6.30pm, when production from solar is usually zero.

Secondly, to be a stand-alone energy supplier, PV solar needs batteries to cover those times when solar is not producing - about 75% of the time under ideal cloudless skies. To charge the batteries for continuous power, while also supplying usable power, a solar plant can only deliver a theoretical maximum of 25% of its day-time capacity. The chance of cloudy days will greatly increase the battery storage needed, and the generating capacity absorbed in charging the batteries. Currently, only pumped hydro storage could possibly supply the storage capacity needed and then only at massive cost, and in a few suitable locations.

Thirdly, solar energy is very dilute, so huge areas of land are needed to collect industrial quantities of energy.

If it were possible to anchor a solar collector one meter square at the top of the atmosphere, aligned continuously to face the sun, and never shadowed by the earth or the moon, it would receive solar energy at the rate of 1,366 Watts per square metre (W/m^2) – that would power 13 light bulbs each using 100 watts.

If that panel were located on the surface, at the equator, under clear skies, aligned continuously to face the sun, and never shaded by the earth or the moon, solar energy dissipated by the atmosphere would reduce energy received to 1,000 watts.

In the real rotating world, where sunshine only reaches usable intensity for about 25% of the time, the best located panel would have a capacity factor of about 17% - it would receive 170 watts of energy – not quite 2 X 100W light bulbs.

PV solar panels convert solar energy to electrical energy at an efficiency factor of about 15%. Thus our panel, at the equator, year round, should deliver 25.5 watts of electrical energy – one very dim light bulb.

Away from the equator, solar energy hits the Earth's surface at an angle, thus delivering less energy per panel. This useful site shows how solar intensity varies with latitude in Australia:
<http://www.bom.gov.au/jsp/awap/solar/index.jsp?colour=colour&time=latest&step=0&map=solarave&period=3month&area=na>

Shift that panel to Melbourne, add clouds, shading, urban air pollution and dirt on the panels, and fix it to a sloping roof often aligned poorly to collect sunshine, and it is time to start the diesel generator in the car port.

It is sensible to use unused space like roofs for solar collectors but such fragmented facilities will never match a compact well-designed solar plant in construction, maintenance and cleaning costs or go close to achieving the correct panel orientation.

Most people underestimate the land needed for significant solar collectors. In a learned paper published in 2013, Graham Palmer has produced a credible calculation that it would need a square with 31 km sides, completely filled with PV panels, to collect energy equivalent to Australia's annual electricity requirements.

Source: <http://www.mdpi.com/2071-1050/5/4/1406>

To also charge batteries to maintain steady supply from a stand-alone solar facility would require at least four times this area – imagine 3,844 square kilometres of collectors, even if suitable battery technology was available.

In addition, PV panels start to degrade in rain, hail and sunshine from the day they are installed, some panels losing significant capacity in as little as three years. And unless washed regularly, dust and bird poop degrades their performance even quicker. All those sparkies checking panel performance and all those cleaners need access roads – this greatly increases the area needed for industrial solar installations.

The fourth fatal flaw of solar energy is the pernicious effect of the dramatic fluctuations in supply on the reliable and essential parts of the grid. When solar electricity floods the network around mid-day, the back-up stations have to throttle back, all the stations needed for stability and backup have their profits reduced, and some may be forced to close, making the network even more fragile and prone to blackouts. Then if a cloud floats across the sky, the backups have to re-start swiftly.

Fifthly, large-scale solar power will create environmental damage over large areas of land. Solar collectors may only manage to convert about 10% of the sun's energy into electricity, the rest being reflected or converted into local heating. But the whole solar spectrum is blocked, thus robbing 100% of the life-giving sunshine from the ground underneath, creating a man-made solar desert. For solar-thermal, where mirrors focus intense solar heat to generate steam, birds that fly through the heat beams get fried. Why would true environmentalists support industrial-scale solar energy collection?

All consumers should be free to use solar energy in their own way at their own cost. But these five fatal flaws mean that collecting solar energy should never play more than a minor and very expensive role in supplying grid power.

Desertec, the utopian US\$560 billion project designed to cover 16,800 square km of the Sahara Desert with solar panels, and then export electricity 1,600 km to Europe, has collapsed.

A similar fate awaits other attempts to extract 24/7 grid power from intermittent, unpredictable and dilute solar power.

The latest "Desertec Idea" is "solar roads" where highways are paved with solar panels. Imagine the construction and maintenance costs, the length of transmission lines, and the problems of shading and abrasion by traffic, the hazards of cleaning and the random non-ideal orientation of the panels.

Not with my money thanks.

Viv Forbes, 24 July 2014

For those who would like to read more:

Solar Power Realities:

<http://carbon-sense.com/index.php?s=solar+power&Submit=Go>

Desertec Sahara Solar Project abandoned:

<http://www.euractiv.com/energy/desertec-abandons-sahara-solar-p-news-528151>

Household Solar Photovoltaics – supplier of marginal abatement or Primary Source of Low Emission Power?

<http://www.mdpi.com/2071-1050/5/4/1406>

The Solar Fraud – Why Solar Energy Won't Run the World, Howard C. Hayden, Second Edition, 2004, Vales Lake Publishing www.valeslake.com www.energyadvocate.com

Solar Roads? Too good to be true:

<http://cleantechnica.com/2014/06/12/video-solar-roadways-good-true/>

Disclosure: Viv Forbes has a degree in applied science and long experience in the resource, energy and investment industries at senior levels. He is Chairman of the Carbon Sense Coalition and a non-executive director and small shareholder in a small Australian coal explorer. He has a vested interest in having access to reliable economical electricity supplies.

The Sensible Environmentalist to Visit Australia

Known as The Sensible Environmentalist, Dr Patrick Moore has been a leader in the environmental movement for more than 40 years. He is a co-founder of Greenpeace where he served as the Canadian President for nine years and as a Director of Greenpeace International for six years.

Today, Dr Moore is committed to finding solutions to our environmental issues by striking a balance between the needs of people and the need to protect the environment. His environmental policy is based squarely on science and logic. He believes that too much of today's "pop-environmentalism" is filled with sensationalism, misinformation, and fear. His personal website is: <http://www.ecosense.me/>

Dr Moore has accepted an invitation from The Galileo Movement to visit Australia later this year. Patrick's lecture at the recent International Climate Change Conference in Las Vegas outlines his journey from eco-warrior to defender of science, logic and the environment. He explains his scepticism of recent catastrophic global warming claims: <https://www.youtube.com/watch?v=NtcNjoDe5>

Organisers are seeking donations to cover costs of Patrick's tour. If you would like to help them, go here: <http://www.galileomovement.com.au/donations.php>

Thanks for your Support

We recently sent a letter to our mail-list seeking support and feedback. It was titled "How to Combat the Mania of our Times". An unusual number of emails were rejected with this warning: "Message filtered". So if you did not get it, please let us know, and please tell your spam checker we are an allowed sender. Corporate IT systems seem to erect the biggest barriers.

Despite that hiccup, we got a huge supportive response. Apologies to all those people we have not yet answered. We do read everything, but sometimes cannot answer everything.

A few generous people also sent subscriptions – big thanks there too. A few asked to "Unsubscribe", and for once we got no abuse! And we got offers to help edit things.

Thanks to all.

Three Selected Responses:

1. Hi Viv, your carbon sense is brilliant n wonderful and accurate. What you n all these are doing; thank you; and again, intelligent truth in your letters to the local papers. When you n me meet, I'll bring my bathroom scales; you're worth your weight in gold.

Barry B,
Ipswich, Queensland, Australia.

2. Keep on going. Lately I have been keenly reading your articles in our local paper, and the responses your articles receive. It infuriates and bemuses me at the same time, at the hype, lies and naivety of some people. We are not in a financial position to help and are limited in knowledge of how to use facebook, etc. But I read and forward these emails to others in our reach.

Kerry B
Laidley Queensland, Australia

3. Thanks, YES ABSOLUTELY, KEEP ADVOCATING CARBON SENSE !.....YOU ARE MORE IMPORTANT THAN YOU REALIZE !.....

I always appreciate receiving your email updates. Your work is very important and I'm sure it has influenced Tony Abbott and others in decision making roles. After all, Australia has probably the only western government to have reversed and rid themselves of a carbon tax...This alone is a huge accomplishment that we must aspire to, an example that undoubtedly will be used to convince others from the same misadventure.

We here in the province of British Columbia, Canada have a Carbon Tax (CT) that with a population of only 4.5 million is siphoning approx 1.1 \$billion annually from our pockets. During the latest election of May 2013 the debate to repeal the CT was...how could we replace over a \$billion in tax revenue from other sources? The answer from the Liberals who enacted it approx 5 yrs ago (in power since 2001) is that we couldn't afford to get rid of it. Since, it has become accepted as the norm, and now other municipal and regional Public Transit authorities want the CT increased so they can take a bigger share rather than upping our property taxes or upping the separate fuel surcharge gas tax etc., you know the game they play.

I write many letters to the editors and circulate some of them to 85 editors around our province. I learn from many of the sources you listed, have been following you for 6-7 years and especially enjoy your work as you have a nice simplified educational and impactful storytelling way of explaining the topics.

The attacks from the left give many of us skeptics more resolve which reminds me of Johnny Cash's song "I won't back down". Keep hammering away at them as progress may be slow but I can see subtle changes in a lot of editors' attitude.

Roland S
Langley, British Colombia, Canada

The Last Word - our enemies have noticed us Trilobites:

<http://vvattsupwiththat.blogspot.com.au/2014/07/honk-if-you-love-trilobites.html>

Note the deliberate deception. This is not the famous "Wattsupwiththat":- <http://wattsupwiththat.com/>

No, it is "V Vattsupwiththat". Par for the course from them.

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"Carbon Sense" is an independent newsletter produced for the Carbon Sense Coalition, an Australian based organisation which opposes waste of resources, opposes pollution, and promotes the rational use of all energy resources including carbon energy.

*Literary, financial or other contributions to help our cause are welcomed.
We get no government grants and unlike many of our opponents, we do not pose as a charity and in fact pay GST and income tax on our operations. We live on subscriptions alone.*

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