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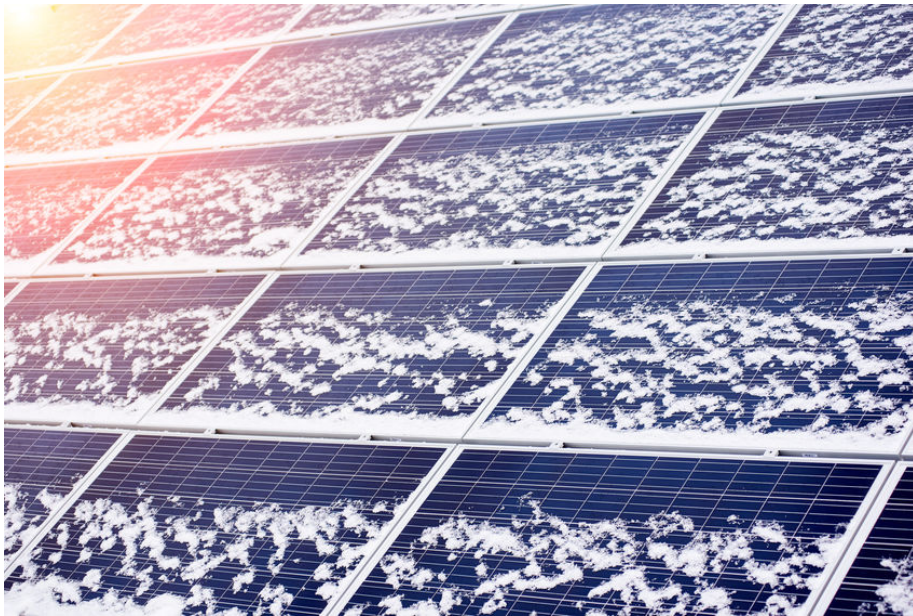
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A brutal example of why 100% renewables can't work

By David Wojick | February 4th, 2019 | Energy | 20 Comments

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The brutal cold wave that just struck America provides a stark example of why 100% renewables cannot possibly work. Once the massive high pressure system was in place there was almost no wind, so no significant wind power. And the coldest temperatures by far were at night or early morning, when there was no solar power either.

For example, take the Mid Atlantic region overseen by the PJM regional transmission organization. PJM coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. They also monitor system reliability.

At 8 am on January 31, PJM was in the deep freeze. Total electric power usage was reported to be roughly a whopping 140,000 MW. Of that wind provided just over 1,000 MW (next to nothing) and solar provided nothing at all. There was basically no wind power and no solar. Nor would there have been no matter how much wind and solar generating capacity was built, because the wind was not blowing and the sun was not yet shining. Freezing to death in the dark comes to mind. Fortunately reliable coal, gas and nuclear did the trick.

It is obvious that under these sorts of severe conditions, which are by no means rare, renewables are useless. Protracted high pressure cold or hot waves occur every few years almost everywhere in America.

The 100% renewables people (including Green New Dealers) claim to have two solutions to this deep intermittency problem, but both solutions are fantasies.

The first is what I call the super grid. Here the idea is that



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the wind must be blowing someplace, so all we have to do is generate the power there and wire it in. The killer problem is that these high pressure systems are truly monstrous. In the present case PJM might have been able to get some wind power out of the Rockies, but over half of the country is in between and it would have been in line for juice too. (Plus there is no solar anywhere at night.)

But the western states are also subject to monster hot and cold high pressure systems that cause peak need for electricity. So to make the super grid work we would need enough wind generating capacity to supply the entire country replicated several times, perhaps in each of the four corners of the lower 48. We would also need a transmission system that got the power from each corner to the entire country. This is the super grid.

I doubt that this much reliable wind potential is even there, but it does not matter, because the cost of this monstrosity would be fantastic. Powering New York from Denver, and then Denver from New York, and so on for all possible cross country combinations, is absurd.

The second fantasy solution to deep intermittency is called storage, which mostly means batteries. Here the cost is if anything greater than the super grid, plus we are dealing with huge quantities of toxic chemicals.

We are in fact installing utility scale battery arrays with some major solar generating systems, so this may be fooling people into thinking that batteries can overcome intermittency. But these battery systems are for dealing with short term fluctuations, for grid stabilization. Despite costing hundreds of millions of dollars, they store less than an hour's generator output and 200 MW is a big system.

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Having enough batteries to serve just PJM with wind and solar would probably cost several trillion dollars, if it could be made to work. Once again the cost for making America 100% renewable powered would be astronomical.

If these fantastical so-called solutions to deep intermittency were paid for by electricity users then only the rich could afford the juice. Doing it with carbon taxes would be even more regressive. Then too, these monster solutions are probably infeasible from an engineering point of view as well, not to mention unbuildable.

None of this impossibility bothers the politicians, including the Green New Dealers. The people, or at least the Democrats among them, have been sold a pack of green fantasies, which they now want delivered. Stay tuned.

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Linda Marita • 3 hours ago



Unreliable energy like wind and solar isn't green and it is definitely not free energy. We need energy to survive. Cold is deadlier than heat. Ideology can blind people to reality.

2 ^ | v • Reply • Share ›



reagangs • a day ago

Battery storage is Direct Current (DC) and not efficient for long distance transmission. DC would have to be converted to Alternating Current (AC) for any reasonable transmission, not a very efficient conversion. Massive battery storage product minerals would have to be mined in open pits, what the greenies despise most.

Yes, eventually the petroleum resources will start to play out and natural reactions would dictate their use with rising cost/prices. By then we will have more efficient 'green' energy sources. I can envision DC electric semi haulers with solar cells on top of every available horizontal surfaces with massive battery storage taking up half of the gross weight and with speeds of 30 mph and needing a DC charge every 100 miles. Heaven forbid that the batteries don't ignite and destroy the vehicle and trailer. The same with electric transport of rail freight and people.

On a bright and shiny day, cleaning off the dust and traffic sludge from the solar cells, before commuting would be in the mix. Electric public transportation would get a boost.

2 ^ | v • Reply • Share ›



Brin Jenkins → reagangs • a day ago

Grid watch UK shows the load generation situation here, is there such a site in the US?

^ | v • Reply • Share ›



reagangs → Brin Jenkins • a day ago

Probably, but most are out of sight/mind. Lots of tags for "Grid Watch UK" on the net but not much substance.

We are still widely using cheap petroleum resources (US\$1.80/gallon). The fuel efficiency standards with engine improvements have upped the GPM (gallons per mile) When I was in Canada in 2005 for the company, gasoline was ~US\$2/L. My little truck four banger 2.4 L inline engine with rear wheel drive gets 30+ mpg. With improvements in traffic routes and fewer delays on the freeways, road gpm has improved and will only get better as time goes on. Regards, retired engineer.

2 ^ | v • Reply • Share ›



Brin Jenkins → reagangs
• 3 hours ago

Grid watch UK seems to be masked by greenie ground source associations and others these days.

<https://www.gridwatch.templ...>

This is the one I watch, by a private electrical engineer without any subversive grants.

^ | v • Reply • Share ›



Li D → Brin Jenkins • 8 hours ago

Try this.

<https://www.eia.gov/realtim...>

^ | v • Reply • Share ›



Undecider • 15 hours ago

This won't stop Liberals from demanding the insane.

1 ^ | v • Reply • Share ›



DirkM → Undecider • 8 hours ago

I found it odd that Budweiser said they

powered Atlanta during the Super Bowl with wind power when the 154 MW from the OK wind farm they bought it from is a small fraction of the 1.5 GW Atlanta (just city proper) uses. It's one thing when politicians lie but when we let businesses start getting away with it, we're well on our way down the road to hell.

1 ^ | v • Reply • Share ›



David Wojick → DirkM
• 21 minutes ago

They said they are powering their brewing with wind. In the law this is called a "legal fiction." They paid the wind farm for the amount of electricity they use in brewing, but those electrons do not actually come to their brewery, especially when the wind farm is not generating. If one tries to scale this fiction up to the state or city level you pretty quick;u run into the supergrid problem.

^ | v • Reply • Share ›



Linda Marita → DirkM • 3 hours ago

Not impressed with that ad 🙄

^ | v • Reply • Share ›



Li D → Undecider • 6 hours ago

" This won't stop Liberals from demanding the insane. "

Hahahahaha. That's funny as anything. I bet this phrase is said several times a day by Labor, Katter, Greens, PHON, and sometimes even National, staffers. It's a brilliant bumper sticker.

^ | v • Reply • Share ›



Brin Jenkins → Undecider • 8 hours ago

Perhaps his remuneration depends upon him being critical?

being critical:

^ | v • Reply • Share ›



John Chism • 27 minutes ago

"If you buy me a hamburger today. I'll gladly pay you back on Tuesday." Wimpy from Popeye.

The ideology behind renewable green energy is to get rid of fossil fuels to reduce the Carbon Dioxide they add to the environment and eliminate Fossil Fuels in the future.

Every form of device is made from Fossil Fuels. It takes Fossil Fuels to make the Fossil Fuels into the parts used in them. It takes Fossil Fuels to mine all the metals and minerals used in all the renewable energy devices. Fossil Fuels are used in all means of transportation of the metals and minerals to every step that refines them and in refining them Fossil Fuels energy is needed. Then the refined products are shipped using Fossil Fuels to the next place where Fossil Fuels energy takes it and makes it into a

[see more](#)

^ | v • Reply • Share ›



Derpitudinous_Neologism • 13 hours ago

It's not an example.

It's a ~~thought~~ experiment.

Jeez. How desperate is C"FACT" for content?

^ | v • Reply • Share ›



Brin Jenkins → [Derpitudinous_Neologism](#)
• 8 hours ago

Content? not much in any of your own posts.

2 ^ | v • Reply • Share ›



Li D → [Brin Jenkins](#) • 6 hours ago

Eh, Derp posts heaps of content.

Seriously, be objective and see how

much he posts that's relevant and on topic and coherent. Heaps.
Some commenters objectively post zero relevant articulate comment. They just troll.
Besides that, Derp is occasionally very funny indeed. I like funny. Without a dose of funny, I don't think I could put up with all the bullshit here.

1 ^ | v • Reply • Share ›



guitardude → Brin Jenkins
• 6 hours ago

Not much? You are way too kind with New_Derp aka Schittia_Pantsia.

1 ^ | v • Reply • Share ›



Derpitudinous_Neologism → Brin Jenkins
• an hour ago

Say...you still haven't given a single example when called out on your bushit allegations. That's why everyone knows you're full of sh++ now.

^ | v • Reply • Share ›



DirkM → Derpitudinous_Neologism
• 8 hours ago

The article presents Jan. 31, when renewables provided less than 1% of demand, as an example of how little we get from renewables after hundreds of billions in investment. How desperate are you to want to criticize this data?

2 ^ | v • Reply • Share ›



Derpitudinous_Neologism → DirkM
• an hour ago

Oh? What about all the other areas where supply is more than 1% from that hundreds of \$Bns spent?

Try harder.

^ | v • Reply • Share ›

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