

Noyes, Thomas G. (DNREC)

From: John Nichols <j.nichols87@yahoo.com>
Sent: Wednesday, October 25, 2017 3:00 PM
To: Kowalko, John (LegHall); Paradee, Trey (LegHall); Todd Goodman; Noyes, Thomas G. (DNREC); Slater, Andrew C. (DOS); Hartigan, Matthew (DOS); Office of Governor John Carney
Subject: This is what 40% wind energy looks like - subsidies lead to energy poverty and power outages.

Australians choosing between vegetables and paying their power bills



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Australians are cutting back on basic things like fresh fruit and vegies in order to keep the lights on.

Renewable energy supporters 'shouldn't get hysterical over criticism'



Renewable energy supporters 'shouldn't get hysterical over criticism'

Those who point out the real and well documented problems with the electricity system shouldn't be burned as her...

Tom,

Please add both of these article to public comments against offshore wind. Please attribute the submissions to me.

John Nichols



Australians choosing between vegetables and paying their power bills, Debt Helpline warns

AM David Taylor

Updated Tue 24 Oct 2017, 5:30am

Australians are cutting back on basic things like fresh fruit and vegies in order to keep the lights on with the National Debt Helpline taking 14,000 calls in September — a record for the month, and up 14 per cent on the same time last year.

The helpline said borrowers were mainly calling from metropolitan Sydney and Melbourne and regional Queensland, where power bills are rising faster than what many can cope with.

One of those callers was Patricia Young, 34, from Merrylands in Sydney's West.

She earns \$19 an hour as a barista for the Salvation Army, but it's not enough to keep pace with her rising power bills.

"When those bills have to come out, obviously we have to buy less fresh fruit and veggies and just make do," Ms Young said.

She said the financial squeeze was also taking an emotional toll.

"When you have to ask for help, you feel like you're failing a little bit."

Most calls to the helpline relate to gas bills, credit card debt, and rent.

Single mother Ms Young said until power bills start to come down, it will be harder to get by.

"You can't obviously sit around with the lights off, and the TV off — there's only so much you can do."

"It's something they really, really need to look at."

Fiona Guthrie, a spokesperson for the helpline, warned financial distress was on the rise again and there was little relief, particularly for people on low fixed incomes — such as Ms Young.

"It doesn't matter how good you are at budgeting — there's a point where you just can't keep going."

The National Debt Helpline also warned of new entrants into the payday lending market who offered high-cost, short-term loans.

Ms Guthrie said as the number of Australians in debt distress rose, more companies sought to profit from vulnerable people.

"We're just adding more ways for people to try and make ends meet by using credit, and there is a point where that doesn't work anymore."

Topics: poverty, electricity-energy-and-utilities, australia

First posted Mon 23 Oct 2017, 10:31pm

Contact David Taylor

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JLawson

6 days ago

Unfortunately, the majority of the cost increases we're seeing come from maintenance of the network rather than household personal use. You can disconnect every appliance in your home, but if you still have an account, you still share that cost. One has to wonder why the cost of cables, substations and repairs seems to have grown so much.

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pleb1

6 days ago

Just be smart with your power usage most importantly - turn off that damn heat pump in summer and get a fan - take shorter showers etc - maybe convert your hot water and heating to mains gas - That one saved me a heap on my powerbill and the gas bill was peanuts - there are numerous solutions you just got to make the effort

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Jobson Groeth

6 days ago

Maybe the problem is not so much the high power bills but that after 35 years of neoliberal economic policy average working class Australians can't afford the basics. This is very much the case in America (that beloved fairytale land of the LNP) where the working poor live in abject poverty.

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charleybrown

6 days ago

Those with high power bills need to do a power audit. We did and found out our dishwasher was costing over a \$1. each wash, now we wash the dishes by hand.

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ThumbFingers

6 days ago

Prices always go up and never come down. I do everything I can, turning everything but the fridge off at the wall except the few hours when I'm at home and awake. 7.7KW per day and still getting charged nearly \$300 per quarter, and that's before the recent price rises. Can't even imagine how low income families are coping. I'm in the bottom 50% of income earners in the country, are we all supposed to grow our own vegies in tiny apartments? Are we all supposed to wash our clothes in the sink? Would the power companies find some way to charge us anyway? I hope Turnbull can fix it (I just can't see Shorten winning an election). Abbot can crawl back under whatever rock he came from, he's not helping anyone any more.

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ABC NEWS

ANALYSIS

South Australian blackout: When the lights go out, it's a sign the electricity grid isn't working well

By political editor Chris Uhlmann

Updated Wed 5 Oct 2016, 5:40pm

The blackout of an entire state is rare. And bad.

Having all the lights go out in a storm, even a big one, is not a sign of an electricity grid that's working well.

And the Australian Energy Market Operator's (AEMO) preliminary report has not yet determined why the whole of South Australia went to "black system" at 4.18pm local time on Wednesday September 28.

"The root cause is subject to further analysis being conducted," it says.

Once those statements would have seemed uncontroversial but not in the political storm that has raged since South Australia was shut down over a week ago.

Now to dare suggest that the state's heavy reliance on wind generation might have made its grid more vulnerable to a blackout is heresy.

So, since this column raised that heresy last week, let's examine it again, in the light of the AEMO's preliminary report on the event.

The starting point is to understand South Australia's unique energy mix.

The state now gets 40 per cent of its power from wind — a higher proportion than most other places on earth — and all coal-fired generation has been mothballed.

The rest comes from a mix of gas-fired power and two interconnectors that link it to Victoria's brown coal-fired power plants.

Wind presents two engineering problems when it is hooked up to a grid that was designed before it was viable.

First, it is intermittent so all of it has to be backed up by baseload power for those days when the wind does not blow.

Second, for an electricity network to function, demand and supply have to be kept near the perfect harmony of 50 cycles (50 hertz) every second of every day. If the frequency gets out of tune it trips the shutdown switch.

This electrical harmony is called synchronous supply, and thermal power is very good at delivering it. Wind power is asynchronous as its frequency fluctuates with the breeze, so it has to be stabilised by the give and take of other sources of demand and supply.

To ensure a reliable supply of electricity at an acceptable standard AEMO has frequency ancillary control services in place to deal with rapid changes in the ebb and flow.

Power operator knew storm was brewing

The AEMO report says that the energy market operator was expecting "severe weather" on Wednesday September 28.

Just before the power went down there was 800 megawatts of wind generation, 330MW of gas and 610MW was being imported from Victoria.

That wasn't the only thing being imported. The report says "there was no local [frequency ancillary control services]

requirement pre-event, as there was no credible risk of separation of SA from the national electricity market."

That seems an extraordinary statement. The operator knew a storm was brewing and took a punt that the line to Victoria would stay up, keeping South Australia's frequency in harmony.

If the gamble fails so will South Australia's capacity to control rapid changes in supply and demand and whatever power generation is left in the state will be snuffed out.

The real drama plays out in a 90 second window between 4:16:46pm and 4:18:16pm.

The weather triggers a series of transmission faults and three major 275 kilovolt lines are lost. Then, in two separate events, 315 MW of wind generation is disconnected. This unexplained, rapid loss of wind power is the event that begins the cascade towards blackout.

"In the events leading up to the SA region black system, generation reduction occurred at six wind farms," the report says. "There was no reduction in thermal generation."

Why it happened is still a mystery.

"Additional analysis is required to determine the reasons for the reduction in generation and observed voltage levels before any conclusions can be drawn," the report says.

Demand then shifts dramatically to the line with Victoria. Just before the wind generation failed the Heywood interconnector's flow was about 525 MW, well within its normal operating limit of up to 600MW.

The reduction in generation and the oscillations caused by the transmission network events drove demand to "flows between 850 to 900 MW" well in excess of its capacity. So it shut itself down.

Now the "non-credible" had become credible. At 4:18:15pm the door to Victoria slammed shut, draining 900MW of supply in a heartbeat. There was "a rapid reduction in the power system frequency" in South Australia and it "fell to zero". That tripped the two thermal power stations at Torrens Island and Ladbroke Grove and all remaining wind farms.

And the lights went out across the state.

It should be noted here that the report says that 14 of the 22 transmission towers that went down did so, "following the SA black system".

System had further flaws

In the eerie dark that followed the operator immediately began working through a pre-determined restoration plan. And that revealed more deficiencies in the system.

The operator has two contracts in South Australia for System Restart Ancillary Services (SRAS). Their identities are a secret for contractual reasons, so the report calls them SRAS 1 and SRAS 2.

Plan A was to use SRAS1 to jump start the thermal power station at Torrens Island and, at the same time, restore the interconnection with Victoria.

"This was seen as the quickest and safest way to restore supply to South Australia," it says.

In a footnote it adds, "wind farms cannot be used in the initial stages of a power system restoration due to the variable nature of their output".

Things didn't go well.

"Due to an issue currently under investigation, SRAS provider 1 was unable to supply sufficient capacity to restart any of the Torrens Island power station units," the report says.

SRAS 2 was out due to "damage caused by the storm".

Plan C was to hook up the interconnector with Victoria and use it to jump-start the state. By 6:54pm Torrens Island was restarted but it needed another two hours before it could deliver any power.

At 6:36pm the operator was advised that the gas-fired turbines at Pelican Point could be ready in four hours. Here, it's worth noting that gas plants can't just spring into action — they need time to warm up. Pelican Point had been off-line before the storm, bid out of the market by cheap, abundant wind.

SA power system 'extremely fragile'

So what have we learned from this report?

That weather sparked a series of events that spiralled into a state-wide blackout. That it was the sudden loss of wind power that tripped the interconnector with Victoria and that loss of generation is yet to be explained.

It is also undeniable that South Australia now has an extremely fragile power system. It cannot operate with any confidence if the interconnector with Victoria is down and if the state blacks out it can't be restarted with wind power.

Politicians have said a lot of things in the wake of this outage. But judge them by what they do.

South Australia is already calling for rule changes in the national electricity market because it recognises its reliance on wind and rooftop solar has made the state's system less secure.

This won't be the last fix that South Australia will need to patch up the problems.

Finally, we know that the energy market is in transition to cleaner forms of power and that is unstoppable. In time the engineering difficulties posed by wind will be overcome.

Or they will be as long as people aren't burned as heretics for daring to point out the real and well documented problems with integrating new forms of energy into an old grid.

And, if those who claim to be friends of renewables continue to respond to any criticism with hysterics, then they will be responsible for ensuring the budding renewable industry suffers irreparable reputational damage.

Because, if the lights keep going out, people will lose faith.

Topics: [electricity-energy-and-utilities](#), [wind-energy](#), [sa](#)

First posted Wed 5 Oct 2016, 9:30am

