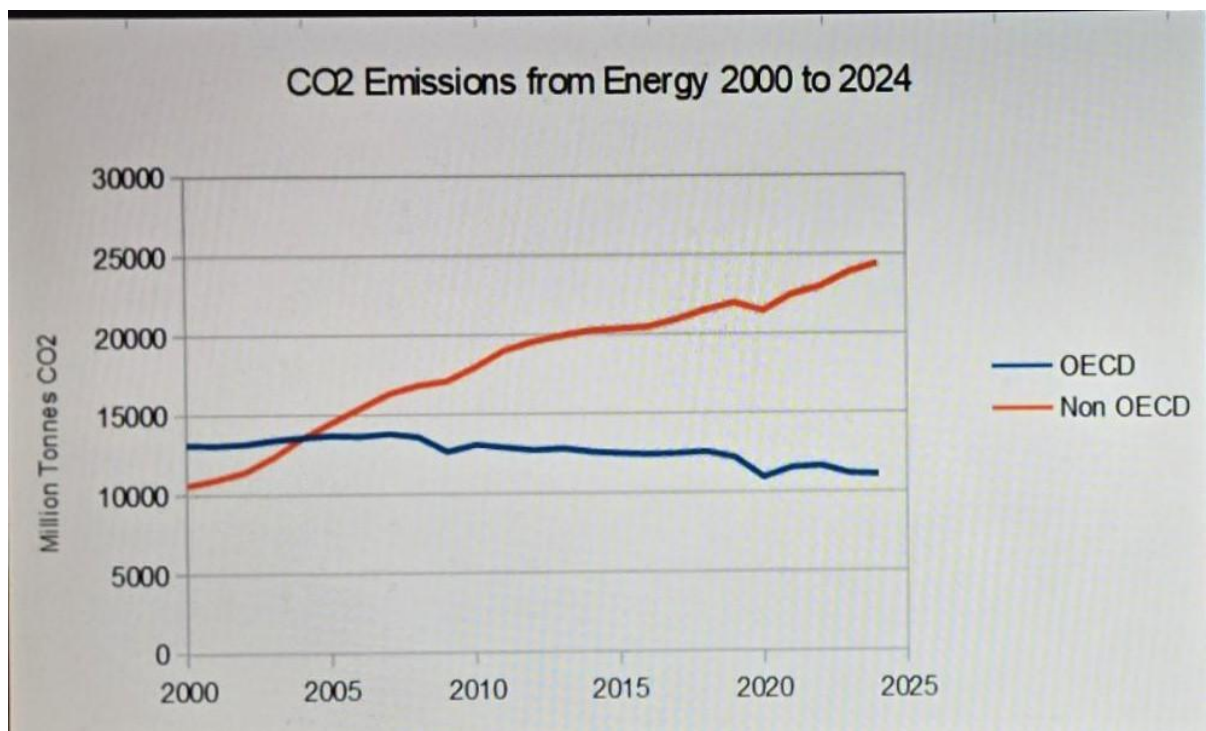


Save Our Surroundings (SOS) objects to this RUINABLES project. It will only add to the already long list of adverse impacts for no practical benefit. The major claimed objectives of reducing green house gas emissions and providing affordable energy supply are a cruel hoax on the Australian people.

This chart, produced annually by BP but now by the Energy Institute, for the 2000 to 2024 period demonstrates that the trillions of dollars spent so far on industrial wind and solar is wasted. The OECD countries, which includes Australia, have had little impact in reducing CO2 by about 2,000 million tonnes over the last 25 years compared to the additional 15,000 million tonnes produced by the non-OECD countries.



Also, according to the IPCC, human-created emissions are only about 3% and natural emissions 97% of the atmosphere. Australia is only about 1.3% of the 3%. China, India and the USA account for more than 50% of the 3% or 1.5% of total human-created emissions.

If the whole of Australia's 1.3% of emissions were eliminated then it would virtually have no impact on the global climate, as confirmed by the then Chief Scientist, Alan Finkel in 2017.

Hence, this project likewise cannot have any impact on the climate. Likewise, it cannot result in reducing the energy costs to consumers. No developed country in the world has achieved a reduction in its electricity costs once the installed capacity of wind and solar generation exceeds 30% of the system capacity.

As demonstrated by South Australia, which on 4 June 2024, despite having a wind and solar capacity of over 80%, generated its electricity from 97% gas and 3% diesel. No solar after

sunset, no wind as a wind-drought prevailed and the country's biggest batteries were soon flat.

During the same 14 hours period on the 4/06/24 the entire NEM grid, despite having over 30% wind and solar capacity, only had 1% wind generation, zero solar generation and zero batteries backup. Refer Appendix A for more detail.

The evidence is clear. This RUINABLES project will only add to Australia's soaring electricity costs and unreliable electricity supply but no measurable effect on the global climate. The project must be rejected as it is not justified on the facts presented in this submission.

The Respondent for the proposed project must address, by either accepting the accuracy of the points made in this SOS submission or by providing contrary evidence, in their Response to Submissions.

Why does SOS use RUINABLES instead of Renewables to describe industrial wind and solar electricity generation projects and all their supporting infrastructure such as BESS, pumped hydro and specific transmission lines? Just some of the reasons are presented below.

Definition of Ruinables

To better understand the impacts of Australia's transition to a predominately industrial wind and solar driven electricity system we need a better term to describe industrial elements of the new system. That term is Ruinables.

Save Our Surroundings (SOS) defines ***Ruinables*** as, *industrial large scale dispersed, intermittent, non-synchronous, non-dispatchable energy derived from not always available input sources such as the Sun (solar energy) and Wind (wind power) supported by intermittently available energy storage sources, such as Battery Energy Storage Systems and Pumped Hydro works, all connected by new Transmission Infrastructure to the existing grid.*

Why the term Ruinables?

Save Our Surroundings (SOS) has over many years researched, analysed and written hundreds of papers and submissions, as well as appearing as witnesses at Federal Joint Parliamentary hearings and presenting at numerous independent planning panels on specific Ruinables projects.

There are so many issues with the term Renewables because it is predominately the industrial wind and solar works, BESS, pumped hydro and associated new transmission infrastructure elements that create complexity in presenting the problems with these to people with little understanding of Australia's transition to a new but not better electricity network.

For instance, industrial wind and solar works, BESS, pumped hydro and new transmission infrastructure (Ruinables):

1. Ruin Australia's energy security as the supply of components are mainly sourced from China, the world's highest emitter of green house gasses.
2. Ruin Australia's national security due to the predominance of foreign sourced components and the foreign control and influence over our electricity networks.
3. Ruin the stability of the existing electricity grid due to its unpredictable variable output (availability, quality and stability of frequency and voltage).
4. Ruin the Australian economy by making the provision of energy increasingly more and more expensive, so causing higher costs for almost every endeavour leading to individual hardships, record business failures, reduced manufacturing and investments going overseas.
5. Ruin the principle of equity by imposing huge industrial developments and all their negative consequences on regional and rural Australians while city dwellers are exempted.
6. Ruin the fairness between small scale solar and large scale solar because the former has its capacity limited (e.g. a 6.6kW system restricted to 5kW export to the grid) and will soon be charged to supply to the grid, whereas industrial large scale generators get guaranteed revenue under the Capacity Investment Scheme and guaranteed minimum income per MW hour under the RET scheme.
7. Ruin the principle of inter-generational equity through ever increasing \$billions in recurring subsidies that are largely financed from government debts that will have to be repaid by future generations.
8. Ruin the principle of government policy justification on the basis of rigorous cost-benefit analysis, which was not done so resulting in multi-billion dollar cost-blowouts (e.g. Snowy 2.0 originally \$2b, latest > \$10b, Marinus Link originally \$3.5b for two cables but latest is \$6.575b in \$June 2023, CWO-REZ NSW originally \$680m but \$5.45b by January 2024), continually rising energy costs to consumers, grid instability, no measurable impact on climate, loss of jobs, etc.
9. Ruin evidenced-based decisions by ignoring the overseas experiences that every country that has incorporated more than 30% of wind and solar electricity capacity has resulted in significantly increased energy costs to consumers, reduced economic activity and increased the unreliability of energy delivery.
10. Ruin the concept of equivalence as Ruinables capacity is NOT equivalent to Coal, Gas and Nuclear power capacity by a factor of at least 1:10, when based on expected output (kilowatt hours) over, say 50 years using just economic lives and capacity factors.
11. Ruin the ability of rural communities to voice their objections by for example, in NSW, requiring 50 or more written unique objections to Ruinables proposals that

consist of over 1000 pages or more and only 4 weeks on exhibition.

12. Ruin productive food producing land by covering large areas with industrial structures that replace primary industry benefits of feeding both Australians and overseas communities as well as providing export income.
13. Ruin productive food producing land by compulsorily acquiring land for transmission infrastructure, so reducing productivity of the land lost and often the remaining land.
14. Ruin, potentially, future use of agricultural land where toxic contamination from solar panels (e.g. large scale damage from hail, lightning, fires, storms, land fill disposal), from deterioration of wind turbine blades (release of nano-particles through abrasion or landfill disposal, lightning, fires, storms, oil leaks) has occurred.
15. Ruin the principle of social licence by ignoring typically 90 - 100 % of submissions from communities being objections to individual projects.
16. Ruin availability to local residents of essential services (e.g. trades, medical) during the up to three years construction period per project, each requiring hundreds of imported workers, and potentially overwhelming the local population several times over (e.g. population of historic town of Gulgong NSW is 2700, proposed multiple labour camps starting 4kms from town totalling 7000 or more imported workers plus 3000 relatives, during the expected cumulative peak construction period 2026-28).
17. Ruin the rural and regional life-styles of areas subjected to: firstly, years of construction activity impacting services, roads, travel, safety, noise, accommodation, rents and: secondly, loss of rural jobs, loss of amenity, loss of nature, loss of community and loss of health for decades.
18. Ruin years of a person developing their property only to have a massive industrial development only metres from their boundary.
19. Ruin the viability of existing local businesses that compete for workers by having to attract workers by higher wages and the provision of, or subsidised, accommodation.
20. Ruin the mental health of some affected people because of endless Ruinables proposals for nearly a decade already, invasion of their properties, loss of relationships, industrialisation of their environment, sleep deprivation from audible and infrasound, economic impacts, loss of leisure time, etc.
21. Ruin the desirability of tourists to visit rural areas which will be surrounded by thousands of square kilometres of Ruinables projects visible for tens of kilometres.
22. Ruin job opportunities for local youth as rural jobs are reduced and ongoing Ruinables on-site jobs are typically zero-less than ten, even for individual projects that occupy thousands to tens of thousands of hectares of land.

23. Ruin the ability of rural and regional fire services to protect local communities from fires and toxic smoke in and around industrial works.
24. Ruin wildlife habitats through land clearing and fencing off natural wildlife movements.
25. Ruin the lives of local wildlife, often threatened and endangered species, through the destruction of habitat and causing death during construction and operation.
26. Ruin family relationships and create social disharmony.
27. Ruin friendships and create conflict between neighbours because hosts get financial gain but neighbours are negatively affected in multiple ways (e.g. visual, noise, water run-off, pests, increased fire risks, reduced food production, higher insurance premiums, unable to insure for increased risks, reduced property values).
28. Ruin the lives of artisan miners in the Republic of Congo and the Uyghur in China who are used as slave labour to produce Ruinables components.
29. Ruin the rural, regional and ocean views of residents, visitors and tourists.
30. Ruin the character of rural and wilderness areas by covering thousands of square kilometres with industrial structures, some as high as 300m and 200m wide and which can be visible from over 70kms away.
31. Ruin any justification for subsidising old Ruinables technologies that were first used for generating electricity from a wind turbine to charge a battery (James Blyth in 1887) and commercial solar panels (Bell Laboratories in 1950s) and have been in use globally at scale for nearly 30 years.
32. Ruin any case for a transition to a Ruinables dominated energy system by ignoring or distorting facts, logic, physics, engineering, and actual experience that repeatedly show that the stated objectives are not and will not be achieved (that is: affordable electricity, reliable and secure supply, combating climate change through emissions reductions).
33. Ruin any case for a transition to a Ruinables dominated energy system by ignoring or distorting facts, logic, physics, engineering, and actual experience that repeatedly show that sun and wind droughts mean no electricity generated for consumers, including industrial batteries (BESS) and pumped hydro schemes. (refer Appendix B for examples).

Appendix A: Examples of Sun and Wind droughts

*"The **National Electricity Market (NEM)** is a wholesale market through which generators and retailers trade electricity in Australia. It interconnects the six eastern and southern states and territories and delivers around 80% of all electricity consumption in Australia.*

Western Australia and the Northern Territory are not connected to the NEM. They have their own electricity systems and separate regulatory arrangements."

[<https://www.dceew.gov.au/energy/markets/national-electricity-market>]

Example 1: June 2024

This example of posts on 5/6/2024 and on 8/4/2025 was sourced from John Moore's petition on change.org which he based on data from the AEMO dashboard at <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem>

"Unreliable Renewables CAN NEVER BE PART of the modern Australian Grid. This was shown clearly from the AEMO data dashboard, when for fourteen hours, batteries, solar and wind contributed 6% or much less to the Grid"

"From 4/6/24 4.50pm uninterrupted to 7.00am 5/6/24 (14 hrs) Solar – Wind and Batteries NEVER PRODUCED MORE THAN 6% OF NATIONAL GRID PRODUCTION REQUIREMENTS AND WAS EVEN DOWN TO 1%.

Eastern States 4th June 2024 4.50pm EST. Batteries 0%, Biomass 0%, Black Coal 46% Brown Coal 14%, Gas 21%, Hydro 15% Diesel 1% Solar 0%, Wind 1%. Batteries, Solar and Wind, only producing 1% of the input to the Grid.

14 hours later. Eastern States 5th June 2024 6.50am EST. Batteries 1%, Biomass 0%, Black Coal 51% Brown Coal 17%, Gas 13%, Hydro 12% Diesel 1% Solar 0%, Wind 5%. Batteries, Solar and Wind, only producing 6% of the input to the Grid.

At 11pm on the 4/6 by State. Electricity was produced by: NSW 88% Black Coal, QLD 91% Black Coal, VIC 81% Brown Coal, SA 92% Gas, TAS 95% Hydro.

The spot price in SA at 6.20pm, peaked at \$3,936 per MWh."

Example 2: 24 May 2025

This example was a result of SOS analysing data provided by the NEM-Watch.Info Live Supply & Demand Widget on 23/05/2025 at two NEM times, 18:30 and 20:00, that is, evening peak demand time.

Table 1 is an extract of the generation sources by region. We draw attention to South Australia because as at April 2025 it already has about 80% installed capacity of wind 45.8%, large solar 20.5% and rooftop solar 13.7% and so is representative of the likely effect of a 82% renewables dominated NEM grid by 2030. SA has capacities of diesel 3% and gas 17%.

It also imports electricity from interstate. SA also has substantial battery storage capacity. Table 2 shows the demand by source and region.

Table 1: Generation (MW) by Source & Region

	GENERATION (MW) 18:30 (6:30pm)			GENERATION (MW) 20:00 (8pm)		
Source	SA	Qld/NSW/VIC/TAS	Total	SA	Qld/NSW/VIC/TAS	Total
Black Coal		11691	11691		11707	11707
Brown Coal		4314	4314		4357	4357
Gas	1098	2880	3978	1044	2471	3515
Hydro		4121	4121		3376	3376
Wind	340	1530	1870	350	2068	2418
Large Solar	0	1	1	0	1	1
Small Solar (rooftop)	66	14	80	0	0	0
Battery Storage	324	487	811	64	39	103
Other		17	17		17	17
Total	1828	25055	26883	1458	24036	25494

Table 2: Demand (MW) by Source & Region

	Demand (MW) 18:30			Demand (MW) 20:00		
Source	SA	Qld/NSW/VIC/TAS	Total	SA	Qld/NSW/VIC/TAS	Total
AEMO operational	1979	24803	26782	1953	23520	25473
Pumping Hydro			0			0
Battery Charging	2	21	23	1	18	19
Met by Rooftop solar	66	14	80	0	0	0
Total	2047	24838	26885	1954	23538	25492

Table 2 is an extract of the demand sources by region at the same points in time as the generation. Some points to note are that:

- At 18:30 peak demand SA was generating 60.1% from gas, 18.6% from wind, zero from large-scale solar, 3.6% from rooftop solar and 17.7% from battery storage.
- At 18:30 peak demand SA was only generating 89% of its required demand, the balance being imported from Victoria.
- At 20:00 SA was generating 71.6% from gas, 24% from wind, zero from large-scale solar and rooftop solar and battery storage has dropped to 4.4% after just 1.5 hours.
- At 20:00 SA was only generating 74.6% of its required demand, with gas running near maximum capacity and wind at only 13% of its nameplate capacity with the

balance of 25.4% being imported from Victoria.

- At 20:00 the total NEM was generating 45.9% black coal, 17.1% brown coal, 13.8% gas, 13.2% hydro, 9.5% wind, zero from large-scale solar and small solar and 0.4% battery storage and 0.1% other.
- Across the entire NEM grid wind, solar and batteries contributed less than 10% of the, not particularly high, required demand of 25,494 MW despite being more than 53% of the NEM capacity (AEMO December 2024*: Coal 24.1%, gas 13.8%, Hydro 9.1%).

Conclusion

It appears that South Australia is the "canary in the mine" and the examples 1 and 2 clearly demonstrate that, as many engineers, economists, consultants, analysts, commentators and others have stated, an electricity system dominated by wind and solar electricity generation, even with storage, cannot even meet SA's demand let alone the whole of Australia.

Sun and wind droughts are natural occurrences which can last for short or very long periods and occur simultaneously across the entire NEM grid, as occurred on 4/6/2024 and other occasions.

The inevitable consequence of a transition to a Ruinables-based energy system, which Australia is already experiencing, is an expensive, unreliable, unstable, high security risk energy system that is destroying environments and the economy for no measurable benefit.