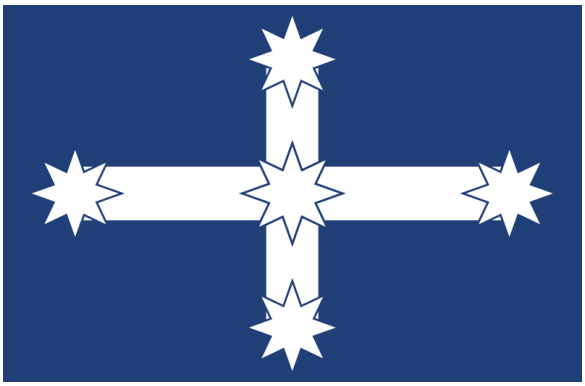
‘Community Engagement Review’

Review by the Australian Energy Infrastructure Commissioner



Submission by:

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Introduction

The Great Dividing Range is Australia's most productive, biodiverse, and substantial topographic feature. It has served as a dependable food bowl and producer of plantation timber to the Australian economy for centuries. These commercial activities, essential to the Nations prosperity, cannot continue to be viable without fossil fuels as the driving energy source well into the foreseeable future.

Its National Parks and reserves that encapsulate the greatest biodiverse forests in Australia, which apart from being home to critically important ecosystems, also provide enjoyment to thousands of people including many tourists seeking relief from the built environment.

But Energy Minister Bowen is obsessed with offering up this rich, biodiverse region to wind and solar farm proponents on which to build thousands of enormous new generation turbines, millions of solar panels, thousands of mega-batteries, and tens of thousands of kilometres of interconnecting high voltage power lines; potentially transforming it into an industrial wasteland. The turbines and solar panels will render thousands of acres of fertile agricultural land sterile. The new transmission grid will cut a swathe thousands of kilometres long through magnificent forests and prime farms, rendering the land to that of a worthless moonscape. As this poorly planned travesty unfolds, it is becoming increasingly evident that it can **bring only human misery and ecocide to bear on our rural communities and natural landscape**, and in so doing will threaten the Nation's food and sovereign security.

Sadly, I feel this renewable energy rollout has the potential to develop into an uncompromising divide between City *vs* Country – and possibly **'**the great divide' of this Nation could be in our midst. Be rest assured that this reckless rollout will be unequivocally denied by the will of the country folk of this Nation to the very end.

Advanced economies – including most of Europe, much of the United States, Canada, Australia, New Zealand, and others – have embarked upon an impossible mission to 'decarbonise' their economies and achieve 'Net-Zero' emissions of carbon dioxide ($C0_2$) and other greenhouse gases by 2050 in the quest to find the legendry 'El Dorado'. The net zero plans turn almost entirely on building large numbers of wind turbines and solar panels to replace reliable and affordable generation facilities that use fossil fuels (*coal, oil, and natural gas*) to produce electricity. The idea is that, as enough wind turbines and solar panels are built, the former coal, oil, and

gas-burning power stations can gradually be retired, leaving an emissions-free electricity system. That idea might be credible if one was to ignore the carbon emissions already embedded in the renewable energy infrastructure and the backup problems associated with energy storage e.g., Snowy 2, that will be required to deliver reliable electricity twenty-four seven.

Embedded Carbon - $C0_2$

Embedded carbon is the CO_2 emissions created in manufacturing and the transport to a job site and the construction practices used to assemble, erect and dispose of structures.

Put simply, embedded carbon is the *carbon footprint* of an infrastructure project before it becomes operational. It also refers to the CO_2 produced in maintaining the infrastructure and eventually decommissioning it, transporting the waste to landfill or recycling it.

So, it is important to account for the embedded CO_2 emissions resulting from the manufacture, deployment, construction and disposal of all the wind turbine towers, blades, solar panels, mega – batteries, roads, transmission towers and transmission lines. There is no disputing the fact that the total amount of electricity that will ever be generated by industrial wind turbines and PV solar panels will never in their short lifespan compensate for the embedded CO_2 emissions resulting from the manufacture, deployment, construction and disposal of all that massive infrastructure.

It simply doesn't stack up economically (*without subsidies*) nor environmentally!

Energy Storage

Wind and solar facilities provide only intermittent power, which must be fully backed up by something – fossil fuel generators, nuclear plants, batteries, or some other form of energy storage – so that customer demand can be matched at times of low wind and sun, thus keeping the grid from failing. The Federal government has mostly or entirely ruled out fossil fuels and nuclear as the backup, leaving some form of storage as the main or only remaining option. They have then simply assumed that storage in some form will become available. The consideration of how much storage will be needed, how it will work, and how much it will cost has been entirely inadequate.

Energy storage to back up a predominantly wind and solar generation system to achieve net zero is an enormous problem, and very likely an unsolvable one. At this time, there is no proven and costed energy storage solution that can take a wind and

solar electricity generation system all the way to net zero emissions, or anything close to it. Governments are simply setting forth blindly, without any real idea of how or whether the system they mandate might ultimately work or how much it will cost. The truth is that, barring some sort of miracle, there is no possibility that any suitable storage technology will be feasible, let alone at an affordable cost, in any timeframe relevant to the announced plans of the politicians, if ever.

Baseload and Peaking Power

To understand why wind or solar power, even with battery backup, will not be sufficient to supply the electric power needs of any modern industrial economy, one must first understand how an electric power system works.

A large-scale power grid consists of two segments. Baseload power and peaking power:

Baseload power is the minimum amount of energy required for normal daily operations. Coal and hydro have satisfied our Nations baseload for the past century because they operate full time. It is interesting to note that wind turbines require baseload electricity to start up, before the blades gather sufficient momentum to turn by the force of the wind.

Peaking power is the additional power that is needed when the system is forced with unusual amounts of demand. Natural gas has served to provide peaking power because it can be cycled on and off quickly, as needed.

Neither wind nor solar can be relied upon for either baseload or peaking power necessary to drive industry**,** wind turbines generate power only when the wind blows between certain speeds, and the power they generate fluctuates constantly as wind gusts vary. Solar provides no power at night, and only reduced power on cloudy days, during storms, or when dirty. Battery backup, the power source that is supposed to fill the gaps when wind and solar are not producing electricity or are producing less than what is in demand, will not exist in the needed capacities for decades to come, if ever. There simply aren't enough batteries, not enough being built and not enough of the needed raw materials to build them being mined and refined.

These realities, mean every megawatt of wind and solar added to the electric grid requires a megawatt of backup from traditional sources to run constantly at less-than-peak levels as spinning reserve, to regulate the flow of fluctuating power delivered to the grid from turbines and solar panels when they are operating and to take up the slack during periods when either or both sources of weather-dependent power are not operating.

Footprint

Despite these realities, Minister Bowen intends to shut down all baseload and peaking power sources as fast as he can, and then in order to meet net zero electric power needs, wind turbines and solar panels will then need to carpet an incredibly disproportionate percentage of Australia's land mass. Much of it, prime agricultural land.

Believing, that industrial wind and solar farms are destined to improve our environment requires a high level of cognitive dissonance. It demands that one ignores the wholesale environmental destruction and loss of extremely limited productive agricultural land **(it is important to note that only 4% of Australia is arable**) needed to place 3,800 turbines, 64 million solar panels and string together 28,000 klms of high voltage transmission lines. Then there is the humanitarian repression involved to mine *(immense footprint - tenfold that of mining conventional minerals*) and process the minerals and suite of rare earths for the manufacture of solar panels and mega-batteries.

Biodiversity

And there is the **wholesale slaughter of millions of birds and bats**; including rare and protected raptors *(which have a 'Certain' classification risk of collision with turbine blades*) like our iconic Wedge-tailed Eagle being smashed to smithereens year in year out by wind turbine blades, until their extinction. Proper surveys carried out by independent world-renowned ecologists in Southern California (*Wiegand 2012*) and Tasmania (*Debus 2022*) have now confirmed **a raptor habitat population sink of approximately 80% since wind farms began operation** – outrageous. No amount of 'biodiversity offsets credits' will ever bring these poor creatures back to life or replace their breeding habitat with 'like for like'. This incongruous scheme (*Biodiversity Offsets Scheme*) is seriously flawed in many aspects and is in urgent need of review, particularly with respect to wind farms proposed on lands with remnant woodlands adjacent to National Parks. These woodlands serve as connectivity corridors for wildlife to freely commute in and out of National Parks and provide refuge in times of bushfire events, common in Australia. Eighty five percent of many National Parks were burnt out in the 2019/20 Black Summer bushfire event, but fortunately most of the adjacent woodlands on freehold lands were saved and so were many wildlife, that have since repopulated and migrated back to the Parks. The woodlands are just as important, if not more important, as the National Parks themselves in serving as sanctuaries and breeding habitat for wildlife. Expansive wind farm footprints however are severely compromising the Parks and adjacent Woodland Corridors primary purpose, i.e., to provide sanctuary and breeding habitat for flora and fauna.

There are over 90 Parks and Reserves with adjacent woodland habitat on The Great Dividing Range many of which are or will be severely impacted by wind farm and solar farm developments and, all are home to protected and endangered species of flora and fauna. The importance of these areas is demonstrated by the many plants and animals that are listed on both the NSW BC Act and the Federal Environmental Protection and Biodiversity Conservation Act (EPBC Act) e.g., Little Eagle (*endangered*), Glossy Black Cockatoo (*endangered*), Greater Glider (*endangered*)**, iconic Wedge-tailed Eagle** (*protected*), Brush-tailed Wallaby (*vulnerable*) and **iconic Koala** *(endangered*) to name just a few. And countless varieties of rare vegetation including '*hollow bearing'* trees that predate European Colonisation of this country, that will be sacrificed in the aim of reaching net zero.

I ask, why is it that these protected areas, some containing UNESCO World Heritage listed Gondwana Rainforest, are no longer protected once a renewable energy developer applies to government to build a wind or solar farm. Why is 'the rule book' suddenly tossed out the window, completely ignoring all existing constraints contained by law in the Federal EPBC Act, and then the door left wide open for mainly foreign owned companies and foreign financial institutions, including the Chinese Communist Party (CCP) having undisclosed geopolitical conflicts of interest to walk in and irreparably destroy our environment and take home the lucrative subsidies - I just don't understand why this is so.

It is an outrageous contradiction in terms, to continue to approve 'killing fields' adjacent to wildlife sanctuaries and breeding grounds.

What passes for environmentalism these days has absolutely nothing to do with the conservation of our natural and rural environments – this obsession with wind and solar farms is now unleashing ecocide and actively vandalising the environment. The irony is that the most acute threat to Australia's biodiversity comes not from the slow warming of the planet, supposedly by CO_2 the gas essential in the biological process of photosynthesis and hence the planets panacea for food production, but from the reckless deployment of wind turbines and solar panels in our most beautiful and fragile ecosystems on The Great Dividing Range.

Contamination and Waste Management

Australia's population is growing very quickly, so it follows that demand for electricity is going to grow exponentially over the next two decades, meaning we will need to build even more turbines, panels, batteries, roads and high voltage transmission lines than presently estimated, if we are to meet net-zero 2050. And by then that infrastructure will have reached its comparatively short end of life (20 years) and will need to be replaced with the next round of renewable energy infrastructure. One could liken this ridiculous situation to - 'a dog chasing its tail'.

Then there is the monumental problem of toxic contamination finding its way into soil profiles and waterways including; rivers, creeks, farm dams, town water storage systems, oceans and The Great Barrier Reef; and waste management arising from wind and solar components, that every level of Australian government from Federal and State to LGA's and respective EPA agencies is sweeping under the carpet, as no level of government will acknowledge (*formally*) that there is an issue with contamination from leaking solar panels and from eroding turbine blades or has a Waste Management Plan in place for the spent renewable energy infrastructure.

Europeans who have far more experience with wind turbines than us are ringing alarm bells regarding toxic Bisphenols (BPA) eroding from the leading edges of the blades as a fine microscopic dust. They draw the analogy of 'The Trojan Horse Affect', when micro-particles of BPA enter the intestinal systems of fish and animals and going up the food chain. Finally finishing up on our dinner table – 'The Trojan Horse Affect'. The World Health Organisation (WHO) has recognised the dangers of this highly toxic chemical for some time and now thankfully this research has been passed onto the EU Chemicals Register – ECHA/REACH, which body is preparing new stricter regulations and recommendations regarding the manufacture, deployment and disposal of wind turbine blades in Europe.

Nor does any Australian government agency impose decommissioning bonding on wind and solar farm developments, which is standard practice in both the mining and construction industries. Where are the hundreds of millions of toxic solar panels and hundreds of thousands of poisonous BPA ridden turbine blades going to end up. This is a **'ticking time-bomb'** of massive proportions that can only end in intractable litigation.

Technological Transformation

Proponents of net zero admit the technological transformation required is akin to a wartime effort. If net zero is to be accomplished, all manufacturing will have to be directed away from whatever products we make now and be diverted to the production of millions of turbines, panels, electric vehicles, batteries, transmission towers and power lines, battery packs and associated technologies for the net zero economy. The government will have to conscript factories, and by extension their workers, into a warlike net zero crusade against chimeric climate change. It would all be for naught, moreover, because global greenhouse gas emissions would continue to rise due to embedded emissions in renewable infrastructure, and due to powering economic growth in developing countries that are not foolish enough to impose fossil fuel restrictions on themselves.

Then there are the labour demands of the net zero transition.

Even if all the thousands of truck drivers, fuel station and convenience store employees, oil and gas field workers, coal miners, workers at chemical refineries and power stations, and others put out of work by the net zero ambitions could seamlessly transition to jobs in mining, refining, building, installing, and maintaining renewable energy technologies, Australia would have to open its borders to millions more migrant labourers in order to get the job done in the truncated timeline required. We simply cannot build, manage, and maintain the equipment, tools, vehicles, and appliances needed with the labour force currently residing in Australia.

Wind and solar farm developers by way of massive subsidies (*improper*) can offer workers irresistible renumeration and as the construction of these renewable energy projects unfold it is placing unprecedented demand on regional labour. Cracks are already starting to appear here in regional NSW (*and Australia wide*) with labour shortages putting extreme downward pressure on livestock markets with abattoirs now on a no-quote basis and kill space stretching out to 8 weeks *(normally 1-2 weeks*). Processors are struggling to find labour and, they say if they had the work force, they could kill an extra 2,000 head of cattle a week at each abattoir. As one processer said recently – "If abattoirs across the country had the labour, then we may very well be looking at a different market".

Coal

Coal has served humanity exceedingly well in enabling the Industrial Revolution to evolve and has saved millions upon millions of lives since that time by providing reliable and affordable power. There is no escaping the fact, that fossil fuels have had the lowest global footprint by far for providing electricity, although they emit carbon dioxide, but what doesn't. Remember the embedded CO_2 in the manufacture, deployment, assembling and erecting of wind turbines, solar panels and mega-batteries and, then the disposal of same.

Coal remains the largest source of power globally and, given its wide availability, and reliability, it is likely to remain so for the foreseeable future. It is important however to draw the distinction between two types of coal. There is anthracite *(black coal*) and there is lignite (brown coal). Anthracite is mostly burnt and exported from here in Australia *(apart from in Victoria where they burn lignite*), whereas lignite is more commonly resort to in the Northern Hemisphere. Anthracite is a clean burning coal, whereas lignite is recognised worldwide as a toxic highly pollutant coal. Thankfully the Australian economy continues to rely on anthracite (*black coal*) for export revenue and as a source of affordable, reliable electricity, as it matches the requirements for modern high efficiency Ultra Super Critical High Energy Low Emissions (HELE) coal fired power plants and, in the production of alumina, chemicals, cement and steelmaking to name but a few. I feel it is important to note

that the two critical building blocks, cement and steel, cannot be cleanly and commercially produced by any other means than by anthracite *(black coal*).

In comparison, the wind and solar farm footprint projected to cover a totally unjustifiable expanse of Australia's land mass, impacting mainly on The Great Dividing Range and Western Slopes will be far too great and have far too many reaching consequences for any reasonable person to contemplate. And despite this utterly preposterous footprint, renewable energy is still far too weak a source of electricity to drive Australian industry on a constant commercial basis.

The laws of physics and the challenges of engineering mean the near instant shift to zero emissions; many expect simply cannot occur. The modern world was built to run on fossil fuels and any transition will take much longer than we have so far imagined, if it can be achieved at all.

Nuclear

The only possible way I can see of achieving net zero and maintaining reliable affordable dispatchable power, is by nuclear energy. Small modular reactors (SMR's) would be the best possible replacement baseload generators for Australia's remaining coal fired power plants. For instance, four SMR's stacked in sequence at Liddell, would comfortably cover the gap left by the withdrawal of coal at that plant.

But Minister Bowen continues to chant, that nuclear power will push up electricity prices and take too long to come online, insisting that wind and solar are cheaper and will be a faster path to net zero. This war cry is baseless as is evident by his obstinate refusal to engage in any rational debate on renewable *vs* nuclear power generation. Anytime he does present costings on wind and solar he refers to the CSIRO and AEMO GenCost Reports, which fallacious reports conveniently and consistently leaves out the $1.2 to $1.5 trillion cost for an entirely new (*of gigantic physical proportions*) transmission grid that is required for the renewable energy option, which cost will be passed on mainly to unsuspecting urban consumers. And he continues to argue that 82% of our electricity demand will be satisfied by renewables by the end of the decade. What he doesn't mention is that nuclear SMR's could be up and running at Liddell in a similar timeframe. This scenario is perhaps a more likely outcome, firstly because of the dialogue and cooperation (*despite the prohibition on nuclear*) that continues via the 'Australian Treaty Series 1981 No 8' between Australia and Canada, and secondly that the existing transmission grid can be utilised - thereby negating any need to build a new one.

The French and Canadians have put paid to the argument on cost; their consumers pay about half what the wind and solar powered Germans do for example. And the French don't suffer the indignity of routine power rationing and blackouts like their German neighbours, who have a deep reliance on non-dispatchable wind and solar.

Indeed, it's nuclear power from France, coal-fired power from Poland and natural gas from Russia, that keeps Germany's near-terminal power grid from total collapse. But unlike Germany, Australia is an Island Nation that doesn't have an umbilical cord to enable us to plug into dispatchable power from a neighbour whenever renewable energy lets us down.

We have 32 countries in the world right now that are nuclear,19 being G20 nations **(Australia being the only G20 country that hasn't gone nuclear),** and for them the economics stack up. And there are another 50 countries, that are embarking on nuclear programs or seriously assessing it right now; for them a critical path method (CPM) or timeframe if you like, and the economics also stack up.

Having a civil nuclear industry would increase our sovereign independence with additional long-term benefits to the AUKUS initiatives. Whereas, non-dispatchable renewable power will only make Australia more geopolitically vulnerable, than we already are to the whims of the CCP.

The failure to lift the Federal prohibition on nuclear energy is denying Australians the opportunity to let the market decide between two energy generation options:

- **Unreliable, unaffordable, environmentally destructive, wind farms, solar farms and mega-batteries, connected by a disorderly maze of 80m high transmission towers (*each the height of the Sydney Harbour Bridge Pylons*) and high voltage power lines criss-crossing our Rural Landscape and rendering prime agricultural and grazing land useless and next to worthless.**

  Or

- **Reliable, affordable, environmentally friendly Ultra Super Critical High Energy Low Emissions (HELE) anthracite *(black coal*) fired power stations, gas turbines and Small Modular Nuclear Reactors (SMR's) using our existing energy generation infrastructure on the present-day footprint and including the existing high voltage power transmission grid.**

Conclusion

The renewable energy industry has a reputation problem that just won't go away and it's getting worse. 'All fur coat and no knickers'. Consequently, Rural Australians are galvanised in defending our communities, our homes, our land, our farms, our farm animals, our native flora and fauna, and ourselves against the greed of foreign owned companies, who are encouraged and supported by political zealots driven by ideology and not reality. Rural communities are fighting to save all Australians from a fatally flawed unreliable, unaffordable, environmentally destructive patchwork quilt of wind and solar generators, across the eastern states of Australia, proposed to be

connected by a hideous web of high voltage transmission lines, rendering prime agricultural and grazing land next to worthless.

The actions of communities in fighting against this renewable invasion has prompted the Federal Government to seek a **'social licence'** from Rural Australians. **Make no mistake, this pursuit will be unequivocally denied by the backbone of this Nation!**

The existing grid has served our Nation well for generations and is one that can cope with increased demand well into the future. That is, if we continue to generate baseload dispatchable electricity. But the radical idea of reversing that generation by way of wind and solar farms, will need an overbuild in capacity by a factor of three or four-fold, which means **'Rewiring the Nation'**, and that will require thousands of kilometres of gazetted rights of way (ROW) resulting in substantial land devaluations that are crucial issues for 'social licence'. I am in no doubt that the gargantuan issue of rights of way - ROW as the acronym suggests, together with numerous other renewable energy issues; *environmental, health, roads, transport and indigenous,* can only end in intractable litigation.

Here in Walcha NSW, there is documented proof held by the Walcha Council that 76% of people object to the proposed wind and solar farms in the Walcha LGA. That survey however was taken well before any serious consideration had been given to the impacts of the impending new high voltage transmissions towers and power lines. Now that EngeryCo (*NSW government*) have tabled their plans for a new grid, I would suggest that more than 90% of the community will rise up in vehement response to the monstrous spiderweb proposed to criss-cross our beautiful district.

Communities all along The Great Dividing Range and Western Slopes have now joined forces to do everything we can to stop this futile violation of Rural Australia further unfolding.

When will it be that we acknowledge that this renewable energy ecocide is causing irreparable environmental harm and human misery, and we regain a fundamental respect for an unspoiled landscape and our quintessential Australian way of life.