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Development Assessment
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Submission uploaded: www.planningportal.nsw.gov.au/major-projects

From: [REDACTED]

Dear Team Leader

SOS Objects to Amended SSD-9679 Hills of Gold Wind Project

Save Our Surroundings (SOS) is a network of community groups across multiple states that share their experiences about, and research into, industrial wind, solar, BESS and pumped hydro proposed and developed projects and their impacts on affected individuals and regional communities.

SOS strongly objects to this project as a simple analysis shows it is not "fit for purpose" and is environmentally damaging.

Project summary:

Up to 70 (or 65?) 6MW 230m high turbines i.e. capacity of 420MW (or 390MW?);

Cover 24km of mountain tops;

Up to 1000GWhpa (or 1100GWhpa);

23km of new transmission infrastructure;

Generate enough electricity for 185,000 homes;

8km south of Nundle;

6,806ha site (68km²);

211 construction jobs and 28 operational jobs;

Project value \$750m;

Original EIS Nov 2018 by Wind Energy Partners ;

Engie bought out Wind Energy Partners on 28/11/2020;

25 year life;

Claim the project output is needed to offset the closure of Liddell power station.

Based just on the project summary above:

- inconsistency of information on the proponent's web-site and documentation, a typical issue with most proposals; it can't be 65 or 70 6MW turbines and still have a capacity of 420MW
- which is it, 1000GWh or 1100GWh annually; 420MW and 1100GWh equates to a capacity factor of 29.9%, very close to the average of all wind works across the National Energy Grid
- in addition to scarring 24km of bushland mountain tops it further scars the landscape with 23km of transmission lines and associated infrastructure
- claims it will supply electricity to 185,000 homes; however, what homeowner only wants electricity available on average 7 hours a day (i.e. 30% of the time) with none on some days and nights when in a wind drought or too little or too much wind blows?
- audible noise can travel long distances; however infrasound (inaudible low frequency sound) can travel, according to some studies, a lot further (up to 13km); elephants can pick

up infrasound through their feet over tens of kms away and whales sense infrasound over vast distances; both audible and infrasound have been shown to be detrimental to human health; the nearby residences and the villages of Nundle and Hanging Rock (3-8kms away) are well within the range that 65 or 70 skyscraper size wind turbines, under certain conditions, may adversely affect the health of these people and animals

- 68km² appears an enormous waste of resources and destruction of bushland and agricultural land for such an intermittent, unreliable, weather impacted source of electricity generation; especially when much more electricity can be produced 24/7 from generators requiring very little land and materials by comparison e.g. HELE, CCGT or SMRs
- 28 operating jobs is a poor return for the communities around this project, especially as it is very unlikely all the jobs will be drawn from them; the cumulative impacts of this project, the Liverpool Ranges, Liverpool Plains and numerous CWO REZ projects that will result in years of disruption to their lives, damage to roads, loss of tourism, traffic delays, etc.
- a project value of \$750M, based on NREL modelling and other studies, indicates that about 75% (\$563m) is for imported equipment; 12.5% capital cost (\$94m) and 12.5% (\$93m) for construction; not much Australian content in this project!
- it has been observed that wind and solar works change ownership before, during and after construction; Beryl solar works changed owners three times in three years, so is this current project owner for Hills of Gold Wind in it for the long haul of 25 years plus decommissioning/rehabilitation time or are they just a typical construction firm that builds and sells, like several other such projects?
- does the claim that the wind project is necessary to replace the output of Liddell power station when it closes completely in April 2023 stack up? AGL states (4/12/22) that Liddell is currently a 1260MW available capacity power station, has an output of 6000GWh annually, supplies 750,000 average family households and employs about 200 people. Several other wind and solar proposals make the same claim; table 1 compares this proposed wind project with the current 50 years old Liddell power station.

Table 1 - Proposed Wind Project comparison with Current Liddell Operation

Parameter	Hills of Gold Wind	Liddell	How wind compares
Capacity	420MW	1260MW	One third the capacity
Annual output	1100GWh	6000GWh	18.3% of the output pa
Capacity factor	29.9%	54.4%	55% less reliable
Households supplied	185,000 intermittently	750,000 on demand	75.3% fewer houses supplied
Operating workers	28	200 approx.	86% fewer jobs
Operational life	25 years claimed	50 years actual	Half the life
Land utilised	68km ²	~22km ² excl the Lake	Three times more land
Number of equivalent wind projects to match Liddell's output	2,289MW, 153 operations workers, 371km ² of land and a \$4.1 billion cost (over \$3b imported equipment)		5.45 times more wind projects needed, plus new transmission lines and up to 100% additional source of electricity provision from gas/coal or storage

From Table 1 it is evident that:

1. the capacity of the wind works is not equivalent to a similar base-load power plant e.g. the 420MW for the wind project equates to only about a 140MW base-load power station
2. it is even more evident that the intermittent output of the wind works (1,100GWh) is much less than an equivalent 24/7 base-load power plant (2,000GWh based on Liddell's output)
3. the wind works capacity factor (29.9%) is vastly inferior to even a 50 years old based-load power station (54.4%); modern base-load power stations have capacity factors above 90%. [capacity factor is the ratio of actual or estimated output to the potential 24/7 output over a year based on the stated maximum capacity of the power plant]
4. the wind works operating staff of 28 is much lower than a base-load power station, which also provides such jobs for at least twice as long (> 50 years)
5. to even get close to the same output as Liddell, a wind works would need to be nearly 5.5 times larger, so requiring nearly 17 times more land and \$4.1billion in expenditure plus other costs specifically needed to be incurred for the wind works to be constructed and operate (e.g. new/upgraded roads, new transmission infrastructure, compensation payments, higher subsidies).

The non-equivalence of capacity values results in misleading the general public and others, as does the omission of capacity factors. The SEARS requires proponents to include a comparison with alternatives to their project but they do not do so. By omitting comparisons with rooftop solar, offshore wind turbines, HELE, CCGT and nuclear power plants they avoid a proper understanding of the options, particularly those that can produce electricity at least 90% of the time compared to the wind works estimated 30% a year.

This proposed project will do little to address the already compromised energy needs of NSW, let alone, Australia. In fact, it will make it worse as evidenced by overseas experiences in recent years and our own experiences in 2022 with soaring electricity prices, blackouts, energy rationing and business closures predicted for years to come.

Yours Faithfully
Save Our Surroundings (SOS)