

EIS Submission: Hunter Power Project (Kurri Kurri Power Station)

8 June 2021

Snowy Hydro Limited is proposing to develop the Hunter Power Project (the 'Project'), an up to 750 MW open cycle gas turbine peaking power station near Kurri Kurri, New South Wales. This submission is made in response to the Project environmental impact statement (EIS)(Reference: SSI-12590060), which is open for public submissions until 9 June 2021. This submission concerns the justification for the Project and its greenhouse gas emissions.

1. Justification for Project

The Planning Secretary's Environmental Assessment Requirements require that the EIS include "a justification for the proposed project as opposed to alternatives".

1.1 NEM Forecasting – Capacity Gap, January-February 2024

EIS Chapter 4 explains that the National Electricity Market has a host of rules around electricity reliability, including a "reliability standard" and a new, stricter, "Interim Reliability Measure" (IRM). The EIS quotes from the Australian Energy Market Operator (AEMO) and Liddell Taskforce (2020) reports to tell the story that to reduce the risk of any significant involuntary blackout events during peak demand days in summer 2023-24, AEMO in 2017 forecast "1,000 MW of additional new flexible and dispatchable resources" would be required to replace the Liddell power station (AEMO, 2017). The EIS goes on to explain that subsequently, in 2019, AEMO revised this estimate to 215 MW (AEMO, 2019). The EIS subsequently asserts "there is therefore a clear need to fill this gap in dispatchable capacity, and to provide the firming capacity that will achieve the necessary reliability in the overall energy supply system" (Snowy Hydro, 2021; p.52).

Comment: The EIS, in its presentation of Project need, does not identify that the Liddell Taskforce found that a range of already committed and probable projects would be "more than sufficient" to address the energy reliability gap in summer 2023-2024 (Liddell Taskforce, 2020; p.11). Nor does the EIS identify that AEMO's August 2020 Electricity Statement of Opportunities (ESOO)—which was published in time to be considered in the drafting of this EIS—further revised this gap to 154 MW, applicable to the period 1 January 2024 to 29 February 2024, in order to satisfy the stricter IRM, while noting that the NSW region was not expected to exceed the reliability standard until 2029-30 (AEMO, 2020; p.4, Table 1, p.60). In other words, AEMO considers that in January and February 2024, *on weekdays between 15:00h and 20:00h*, the underlying reliability standard will be satisfied and the 154 MW shortfall against the IRM represents a 'vulnerability' to blackouts in the event that "high demands, generator outages, and low renewable generation" coincide.

The "*clear* need to fill this gap" asserted in the EIS to justify the Project is a clear overstatement. Already, the 50 MW Wallgrove Grid Battery is under construction in Western Sydney and is expected to be operational by late 2021 (Renew Economy, 2021a). The 50 MW New England Battery, which is under construction near Armidale, is expected to be operational in 2022 (PV Tech, 2021). Further battery projects are slated to follow, including the 100 MW Riviera Energy Storage System recently announced (Renew Economy, 2021b; NS Energy, 2021a).

1.2 NEM Forecasting – Requirement for Longer Term Capacity and Gas Price

Interestingly, while the EIS did not identify that the 2020 ESOO had revised its 2024 forecast to 154 MW, the EIS did describe the 1,480 MW generation capacity that the 2020 ESOO forecast as needed for NSW against the reliability standard by 2030 (Snowy Hydro, 2021, p.55) (AEMO, 2020a; Table 1).

The EIS identifies that under the AEMO Integrated System Plan (ISP) (AEMO, 2020b), opportunities for "6-9 GW of new dispatchable resources" are anticipated by 2040 (Snowy Hydro, 2021; p.56). It quotes from the ISP as follows: "*To firm up the inherently variable nature of distributed and large-scale renewable generation, we will need new flexible, dispatchable resources: utility-scale pumped hydro, large-scale battery energy storage systems, distributed batteries, VPP and other demand side participation (DSP). New flexible gas generators could play a greater role if gas prices remained low at \$4 to \$6 per GJ over the outlook period.*" The "outlook period" being to 2040. (Snowy Hydro, 2021; p.56).

The EIS asserts the Project is in line with the ISP, as it "provides dispatchable generation, being a 'flexible gas generator' to assist with firming up the intermittent wind and solar generation that is expected to replace dispatchable coal fired generation as the coal plants retire in the future." (Snowy Hydro, 2021;

p.56). The EIS is not, however, specific on the gas supply solution for the Project, and notes this will be subject to separate approvals (Snowy Hydro, 2021; p.28). In the absence of gas connection, it is proposed the plant run on diesel (Snowy Hydro, 2021; iii).

Comment: The EIS asserts the Project is consistent with the ISP in the long term because it is a ‘flexible gas generator’, however it fails to discuss the crucial component noted in the ISP—gas price. The “cheapest” new gas source for NSW has been much debated, including in relation to Narrabri Gas Project, proposed by Santos. A report by ACIL Allen, submitted by Santos to the NSW Independent Planning Commission during 2020, considered gas prices over the same period (ACIL Allen, 2020). ACIL Allen noted that the 2020 AEMO Gas Statement of Opportunities (AEMO, 2020c) forecast “the average undeveloped 2P marginal cost of production is \$5.66/GJ”, and furthermore:

“New South Wales has also been increasingly reliant on supply from Queensland CSG over the past few years. The marginal cost of undeveloped 2P CSG reserves in Queensland is now estimated to be around \$5.70/GJ. With transportation costs of around \$2.50/GJ added according to the latest tariffs posted by APA, the delivered cost will be north of \$8/GJ. It is expected that the Narrabri project will be competitive with these prices considering the ability of Santos to reduce costs of production to \$6.40/GJ.” (ACIL Allen, 2020; p.23)

Note that the transportation costs of as-yet unconstructed pipelines have not been factored into Narrabri’s cost (potentially around \$2.10/GJ), and analysts have predicted higher production costs for the field than Santos has estimated (Renew Economy, 2020; TAI, 2020). Nevertheless, it is quite clear that the low price of gas that AEMO identifies as necessary to the competitiveness of new open cycle gas turbine (OCGT) plants in the 2030s are unlikely to be present. It is unclear how this has been factored into the economic case for the Project, which assumes a 30-year operational life (Snowy Hydro, 2021; p.21).

1.3 Assessment of Alternatives – OCGT vs Grid Batteries

The EIS compares OCGT plant to grid batteries. In doing so, the EIS highlights that:

- “while battery storage can provide a similar function to an open cycle gas generation facility in terms of firming, it currently remains constrained by shorter run times (i.e., lower MWh) than a comparable gas fired plant” (Snowy Hydro, 2021; p. 59)
- “batteries are being developed to fulfil short-term roles such as intra-day energy transfer or levelling” (Snowy Hydro, 2021; p.60)
- “Batteries are inherently limited by their storage capacity (megawatt hours or MWh) relative to their MW capacity, dictating how long they can operate in a single continuous period of generation” (Snowy Hydro, 2021; p.60)

Comment: Given that the justification for the Project is the potential capacity ‘gap’ (vulnerability) that AEMO identified in *the five-hour period* between 15:00h and 20:00h during the summer months of January and February 2024, the skewing of the assessment of alternatives to suggest that grid batteries are less preferable to this function than the Project is misleading.

1.5 Consistency with Local Plans

The EIS argues that the Project is consistent with the Hunter Regional Plan 2036 and the Cessnock Community Strategic Plan 2027.

Comment: The purpose of diversifying away from a coal-based economy in the Hunter Valley, ultimately, is to *diversify away from fossil fuels*, because the global economy will be drastically reducing its consumption of fossil fuels in coming decades. The argument that the Project is consistent with the listed strategies and plans—because it provides an alternative source of ‘energy’—is a contrivance. It is a Herculean misreading of the ultimate objective at community level.

Seeking to diversify a region from one fossil fuel to another fossil fuel that must also rapidly decline to achieve net zero by 2050 (IEA, 2021) is a fallacious argument and injurious.

2. Greenhouse Gas Emissions

The Planning Secretary's Environmental Assessment Requirements require that the EIS include "an assessment of the likely greenhouse gas impacts of the project."

Per the extracted Table 15.14 below, the EIS estimates that the total greenhouse gas emissions of the Project, assuming a 30-year operational life, will be in the order of 14,816,116 tonnes CO_{2e}.

Table 15.14: Proposal Emissions Summary (Scopes 1 + 2 + 3)

| | Scope 1 emissions (t CO _{2e}) | Scope 2 emissions (t CO _{2e}) | Scope 3 emissions (t CO _{2e}) | Total emissions (t CO _{2e}) |
|---|--|--|--|--|
| Construction | 3,237 | 486 | 10,740 | 14,463 |
| Annual Operation (Year 1) | 243,585 | 468 | 48,925 | 292,978 |
| Annual Operation (Years 2-30) | 406,259 | 468 | 93,572 | 500,299 |
| Total (Construction + 30 years Operation) | 12,028,331 | 14,531 | 2,773,254 | 14,816,116 |

Comments: There will be those that argue that the release of 14 million tonnes CO_{2e}, in the context of Australia's emissions, or global emissions, are insignificant. However, in *Sharma vs Minister for the Environment*, the Federal Court of Australia considered the remaining fossil fuel budget necessary to meet a 2°C target under the Paris Agreement. The court found there was no sufficient basis to accept that the 33 million tonnes (Mt) CO_{2e} (Scope 1 and 2) and 100 Mt CO_{2e} (Scope 3) proposed to be emitted by the Whitehaven Coal Vickery Extension Project was accommodated within the remaining carbon budget. The Federal Court found there was a reasonably foreseeable risk of harm to Australian children flowing from the Minister's approval of the coal mine (para.271), and that the Minister owed Australian children a duty of care when considering whether to approve the Project. Justice Bromberg wrote (para. 253):

253 I accept that, even on the marginal risk assessment referred to at [84], the prospective contribution to the risk of exposure to harm made by the approval of the extraction of coal from the Extension Project may be characterised as small. It may fairly be described as tiny. However, in the context of there being a real risk that even an infinitesimal increase in global average surface temperature may trigger a 4°C Future World, the Minister's prospective contribution is not so insignificant as to deny a real risk of harm to the Children. The risk of harm in question is reasonably foreseeable even without regard to the unparalleled severity of the consequences of that risk crystallising. But the magnitude of the danger to which the Minister's conduct is likely to contribute must also be taken into account. When that is done, the conclusion that, by reference to "contemporary social conditions and community standards" (King at [97] (Nettle J)), a reasonable person in the Minister's position would foresee the risk and take reasonable and available steps to eliminate it, is established. If it were necessary in this inquiry to ask whether the risk may reasonably be disregarded (as is stated by McHugh J in Tame at [108] and in Graham Barclay Oysters at [87]) my answer would be "no": cf. Graham Barclay Oysters at [89] (McHugh J).

Over its proposed 30-year life, the Project is likely to require gas from as-yet undeveloped resources. The International Energy Agency (IEA) recently released its Net Zero by 2050 scenario, setting out what the agency considers to be a rapidly closing—but still possible—pathway to limit warming to 1.5°C. The IEA has been very clear that to achieve this pathway, no new oil and gas reserves should be exploited beyond 2021 (IEA, 2021). Projects using technologies that will embed the continued use of fossil fuels for 30 years, when extensive global decarbonisation efforts are required *this decade* to achieve the Paris goals, must be deeply scrutinised. As the IEA has stated, "More than ever, energy decision makers need to take a hard, evidence-based look at where they stand and the implications of the choices they make" (IEA, 2019).

Fossil fuel projects that do not stack up should not be approved.

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