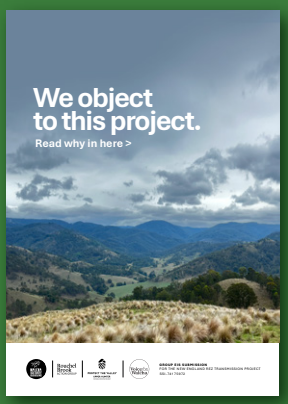
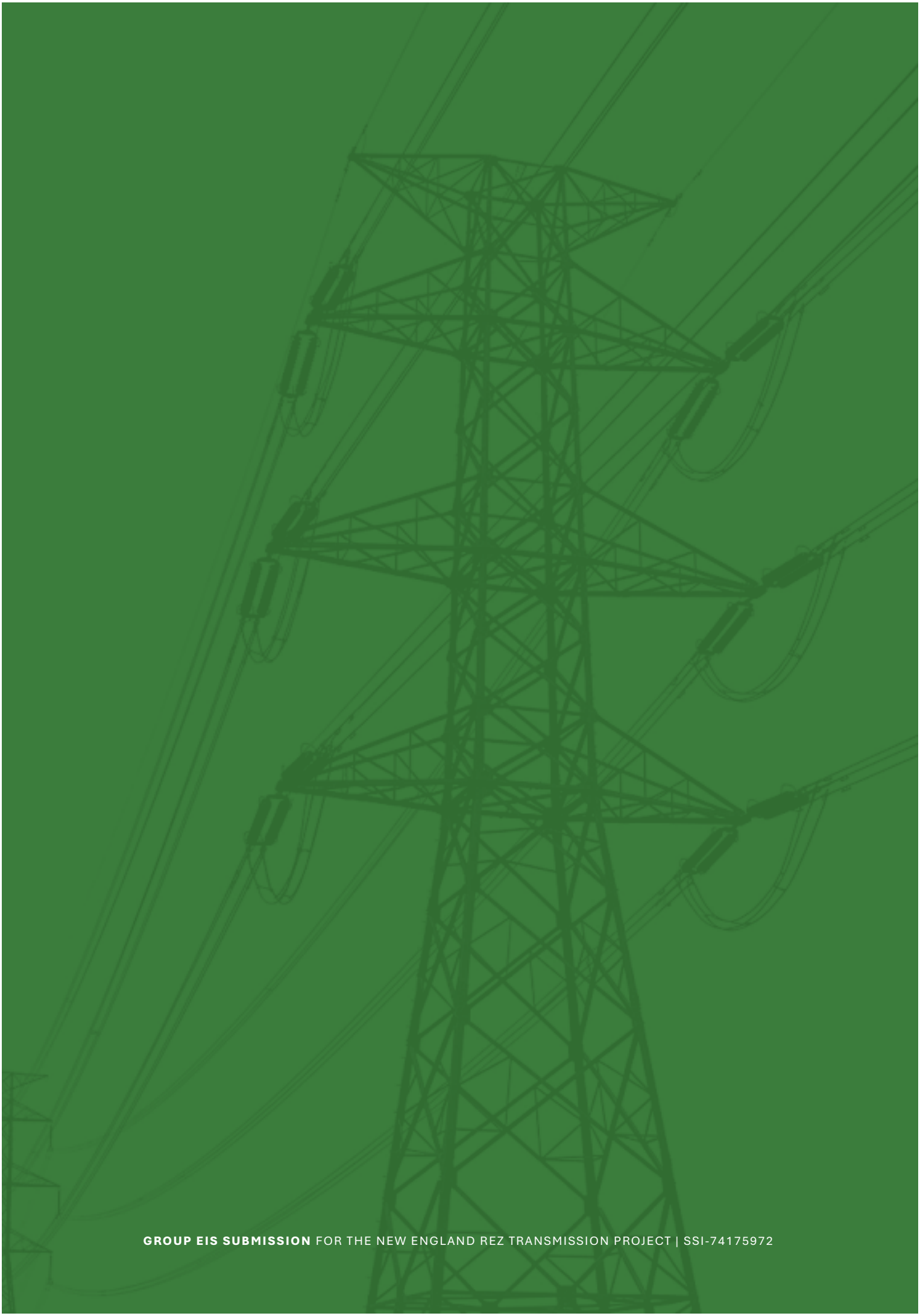
SECTION 4

Timor Caves, Barry Karst and Cave-dwelling Bats

THIS IS **ONE** SECTION OF **TWENTY TWO,**
THAT FORMS PART OF A LARGER GROUP SUBMISSION
TO THE NEW ENGLAND REZ TRANSMISSION PROJECT
SSI-74175972



Walcha High Country Guardians | Rouchel Brook Action Group | Protect the Valley Upper Hunter Responsible Infrastructure Group | Voice for Walcha



GROUP EIS SUBMISSION FOR THE NEW ENGLAND REZ TRANSMISSION PROJECT | SSI-74175972

SECTION 4

Timor Caves, Barry Karst and Cave-dwelling Bats

Key issues we have found ...



Cave locations remain unverified

The assessment relies on incomplete cave mapping, leaving the position, depth and condition of caves beneath proposed works inadequately understood.



Bat conclusions precede data analysis

Recorded bat survey data remains unanalysed, yet the assessment reaches conclusions about threatened species and risks of serious, irreversible impacts.



Bat habitat extends beyond caves

Bat habitat mapping relies on narrow buffers, without adequately assessing wider feeding areas, movement routes and connections between occupied roosts.



Haul traffic threatens occupied roosts

Sargeants Gap Road would carry construction traffic near occupied bat roosts, without adequate assessment of noise, vibration, dust and lighting.



Cave groundwater studies are missing

Runoff and spills could enter cave waterways, while groundwater investigations and controls tailored to these vulnerable underground systems remain deferred.



Survey and protect before approval

Complete cave and bat surveys, analyse existing data, set protective buffers and publicly exhibit the revised assessment before granting approval.

WALCHA HIGH COUNTRY GUARDIANS | Rouchel Brook ACTION GROUP | PROTECT THE VALLEY UPPER HUNTER RESPONSIBLE INFRASTRUCTURE GROUP | Voice for Walcha

Read in more detail >







> Before granting approval, a complete set of cave and bat surveys must be completed

SECTION **4**

Timor Caves, Barry Karst and Cave-dwelling Bats

EXECUTIVE SUMMARY

The EIS does not meet the Planning Secretary's Environmental Assessment Requirements (SEARs) for the Timor and Barry karst systems and the four threatened cave-dwelling bats that depend on them. The SEARs require the Biodiversity Development Assessment Report (BDAR) to assess all prescribed impacts (karst, caves and cliffs) in accordance with the Biodiversity Assessment Method, to assess the impacts of transport route road upgrades, and to assess serious and irreversible impacts under BAM section 9.1. The BDAR concludes that impacts are 'negligible' without having entered or surveyed a cave, on a mapped extent it admits is incomplete, with bat detector data it states has 'not yet been analysed', and with the presence of two of the four species decided by an expert report and the third 'assumed'.

The same caves and the same four bats were before the Department and the Independent Planning Commission in the Hills of Gold Wind Farm case (SSD-9679), 8 km away. There, the Department and the Biodiversity Conservation and Science Group accepted that the development corridor was unlikely to support breeding habitat only after turbines had been removed and relocated so that, in the proponent's words, the potential for a direct serious and irreversible impact on cave-dwelling microbats had 'been avoided through the removal and relocation of specific turbines'. The NE REZ EIS asks the Minister to accept the same conclusion on a desktop review and a promise to investigate after approval. The precautionary principle is engaged on the EIS's own words and has not been applied. The karst and bat assessment must be completed and the EIS re-exhibited before determination.

Contents

SEARs requirements not met	3
Deficiencies	6
1. The karst has not been surveyed	6
2. The cave-dwelling bats: conclusions reached before the data	9
3. Karst hydrology, consultation and what the Hills of Gold record established	12
Questions the EIS must answer before determination	15
Key references	17

SEARs requirements not met

> Page references: BDAR pages are PDF pages of Technical Report 1; main EIS pages are PDF pages of EIS-02 (printed page = PDF page – 35).

SEARs requirement	What the SEARs say	What the EIS does
Biodiversity: BDAR method	The BDAR must 'document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM'	Karst assessed by 'desktop review' of speleological society information, contour mapping and 1:500k geology (TR01 p. 98); 'No notable caves were observed within the project area' (p. 215); Barry extent 'has not been confirmed' (EIS-02 PDF p. 749)
Biodiversity: SAII	The BDAR must 'include an assessment for serious and irreversible impacts (SAII) in accordance with Section 9.1 of the BAM'	SAII polygons for the large-eared pied bat and large bent-winged bat rest on bat detector data that 'has not yet been analysed' (pp. 560, 579), presence by 'Expert Report' or 'Assumed present' (pp. 561, 579, 627), and a 100 m buffer around an incomplete mapped extent
Biodiversity: ancillary infrastructure	The BDAR must 'assess the impacts associated with all ancillary infrastructure, including the transport route road upgrades'	The Sargeants Gap Road haul route is to be widened 300 m from a known winter roost in Main Cave (p. 773); no bat-specific noise, vibration or lighting assessment of the upgrade against the roost caves; vibration assessed on a smooth road (TR09 p. 84) the traffic report says will degrade (TR07 p. 139)
Biodiversity: survey	Targeted surveys per the Commonwealth survey guidelines for threatened bats (TR01 p. 89) and BAM survey requirements	No cave entrance inspection, harp trapping or emergence count at Timor or Barry is reported; the eastern cave bat has 'No surveys completed… within the survey window of November – January' (p. 627)
Water and Soils: groundwater	Assessment of impacts on 'groundwater aquifers and groundwater dependent ecosystems having regard to the NSW Aquifer Interference Policy'	Timor Caves hold streams and stygofauna; works 'could theoretically result in… altered hydrological processes and water quality' (pp. 772, 774); no karst groundwater investigation; GW5 defers it to detailed design
General Requirements: consistency	'consistency in information presented in the EIS and all technical reports'	Karst 'avoided' (EIS-02 PDF pp. 91, 307; App B) while the alignment and tracks 'intersect the Manning Group Limestone Beds, which are understood to host the Barry caves system' (p. 749); Timor limestone both 'Permian' and 'Devonian' on one page (TR01 p. 215)
Engagement	Report consultation undertaken and how it informed the design	NHVSS was met once, online, on 8 December 2025, and the NSW Karst Management Committee on 4 November 2025 (TR01 p. 94); nothing either body said is reported

> Table ES1 **- SEARs requirements not met for karst and cave-dwelling bats**

Severe deficiencies

- **Conclusions before data.** The BDAR records 1,291 recorder-nights for the large-eared pied bat and 902 for the large bent-winged bat, each with the note '(Note: ultrasonic data has not yet been analysed)' (TR01 pp. 560, 579). The SAII findings for both species were reached before the survey data was examined.
- **No cave has been surveyed.** Cave extent was 'predicted' by digital modelling and a desktop review; 'the exact location of the caves, depth of cover to the proposed road widening… is not known at this stage' (EIS-02 PDF p. 650). The Hills of Gold record shows the published cave index undercounts Timor by a factor of four (23 caves in the 1985 Australian Karst Index against 89 documented by NHVSS in 2024 and 95 now).
- **Presence assumed.** The large bent-winged bat is 'Assumed present', no expert is named for it, and its polygon is borrowed from the expert report for two other species on the basis of 'similar breeding requirements' (pp. 579, 902).
- **Foraging counted to 2 km only.** The BDAR itself says these bats hunt 'above the tree tops' in forest and disperse 'within approximately 300 km' of maternity caves (p. 578), and that the karst systems form 'a wider ecological network, with mobile bat species utilising multiple roost sites' (p. 215). The polygons count foraging habitat within 2 km of the caves and nothing beyond: 2,063.55 ha of suitable habitat becomes 20.54 ha for the large-eared pied bat; 1,181.46 ha becomes 0.1 ha for the large bent-winged bat (pp. 561, 579).
- **A roost 300 m from a haul road.** The large bent-winged bat winter roost in Main Cave is 'about 300 m north-west of Sargeants Gap Road' (p. 773), the road the project will widen for construction traffic. NHVSS advises that most caves within 300 m of the road hold permanent roosts (Main, Hill, Belfry and Helictite caves). The EIS calls the impact 'negligible' and 'minor'.
- **Barry assessed on an extent the EIS admits is incomplete.** 'The full extent of the Barry caves system has not been confirmed'; the alignment and access tracks cross the limestone that hosts it (EIS-02 PDF pp. 746, 749).
- **Everything that would answer these points is deferred.** GW5 (geotechnical and geophysical investigation), NV12 and the 'unknown extents of karst… in inaccessible land' are left to detailed design, after the decision that gives the project its planning authority.

We ask that the karst and bat assessment be completed before determination, that the revised BDAR be publicly re-exhibited, and that the Minister refer the assessment to the Independent Planning Commission for advice and a public hearing, because the material on these matters needs independent testing.



> Figure 1 – **Timor Caves**

Deficiencies

The EIS does not presently demonstrate that the prescribed impacts on the Timor and Barry karst systems, or the serious and irreversible impacts on cave-dependent bats, have been assessed in accordance with the BAM as the SEARs require.

In particular, the EIS does not adequately resolve:

- the location, number and extent of caves at Timor and Barry within 100 m, 300 m and 2 km of the works (TR01 p. 215; EIS-02 PDF pp. 650, 749);
- the presence or absence of maternity and winter roosts in those caves, which has been concluded from an absence of records rather than survey (TR01 p. 773);
- the analysis of 2,193 recorder-nights of acoustic data collected for the two SAII bat species (TR01 pp. 560, 579);
- the foraging range of each of the four cave-dwelling species and the habitat that falls within it (TR01 pp. 561, 578, 579);
- the noise, vibration, dust and lighting effects of widening and using Sargeants Gap Road as a haul route on the roost caves within 300 m of it (TR01 p. 773; TR09 p. 84);
- the karst groundwater system at Timor, its stygofauna and its pathways from road, laydown and helipad runoff (TR01 pp. 772, 774; EIS-02 PDF p. 748);
- whether the alignment and access tracks at Barry sit on cave-bearing limestone (EIS-02 PDF p. 749); and
- what the NSW Karst Management Committee and NHVSS told EnergyCo, and what changed as a result (TR01 p. 94).

1 | The karst has not been surveyed

1.1 Evidence

The BDAR describes its karst method as 'Desktop review of Newcastle & Hunter Valley Speleological Society information relating to karst systems at Barry and Timor', contour and elevation mapping, and 1:500k surface geology (TR01 p. 98). In the field, 'No notable caves were observed within the project area, however digital modelling to map the predicted extent of caves and cliff lines within 10 km of the project area identifies widespread examples' (p. 215).

The BDAR recognises what is at stake: the Timor and Barry systems 'are recognised as highly sensitive features due to their ecological, geological and hydrological values. They are known to provide habitat for threatened micro-bats and cave invertebrates (stygofauna) and sensitive speleothems' (p. 215). At Timor, 'about 4.6 ha of the subject land that encompasses a 3.3 km long section of Sargeants Gap Road, occurs above the known (mapped) extent of karst', and impacts 'could theoretically result in localised surface subsidence or collapse, altered hydrological processes and water quality (surface and groundwater), and/or localised degradation and damage of surface karst' (pp. 772, 774). 'The exact location of the caves, depth of cover to the proposed road widening, geotechnical condition of the caves and presence of potentially vibration sensitive karst formation such as helictites is not known at this stage' (EIS-02 PDF p. 650).

At Barry, the karst 'has not been as thoroughly mapped or publicly documented as Timor Caves' (TR01 p. 215); 'the full extent of the Barry caves system has not been confirmed'; the known extent was 'provided to EnergyCo by the speleological society'; and 'portions of the transmission alignment and access tracks north-west of the known Barry caves extent intersect the Manning Group Limestone Beds, which are understood to host the Barry caves system'.

> Source: EIS-02 PDF pp. 746, 749

Topic	What is said	Where
How karst was assessed	'Desktop review of Newcastle & Hunter Valley Speleological Society information relating to karst systems at Barry and Timor'; contour mapping; 1:500k surface geology	TR01 p. 98
Field observation	'No notable caves were observed within the project area, however digital modelling to map the predicted extent of caves and cliff lines within 10 km of the project area identifies widespread examples'	TR01 p. 215
Timor Caves	'the project area intersects with one karst environment in which various cave systems have been mapped… Timor Caves'; described as 'Permian limestone units of the southern Sydney Basin' and, five lines later, as 'Devonian limestone outcrops within the headwaters of the Isis River'	TR01 p. 215
Barry	'An additional area of karst has been identified by the Newcastle and Hunter Valley Speleological Society at Barry, although this karst area has not been as thoroughly mapped or publicly documented as Timor Caves'; 'available information indicates that it comprises a network of caves that support important biodiversity values, including roosting habitat for micro-bats'	TR01 p. 215
Barry extent	'the full extent of the Barry caves system has not been confirmed'; the known extent was 'provided to EnergyCo by the speleological society'; 'portions of the transmission alignment and access tracks north-west of the known Barry caves extent intersect the Manning Group Limestone Beds, which are understood to host the Barry caves system'	EIS-02 PDF pp. 746, 749
Timor cave locations	'The exact location of the caves, depth of cover to the proposed road widening, geotechnical condition of the caves and presence of potentially vibration sensitive karst formation such as helictites is not known at this stage'	EIS-02 PDF p. 650
Works over karst	'about 4.6 ha of the subject land that encompasses a 3.3 km long section of Sargeants Gap Road, occurs above the known (mapped) extent of karst'; impacts 'could theoretically result in localised surface subsidence or collapse, altered hydrological processes and water quality (surface and groundwater), and/or localised degradation and damage of surface karst'	TR01 pp. 772, 774
Threatened bats	Large-eared pied bat, little bent-winged bat, eastern cave bat and large bent-winged bat 'recorded or predicted to occur in the subject land' and 'potentially occupy these structures for roosting'	TR01 p. 773
Breeding roosts	'No maternity roosts are known from the subject land. A winter roost for the large bentwing-bat… is known from Main Cave in Timor Caves (NSW OEH 2011b), located about 300 m north-west of Sargeants Gap Road. Additional winter roosts may occur in caves or suitable rocky areas in inaccessible areas'	TR01 p. 773
SAII polygon, large-eared pied bat	'The species expert has identified the Timor karst system as the only potential breeding habitat (caves) within or adjoining the project area'; breeding habitat = 100 m buffer; foraging/roosting = 2 km buffer; 0.18 ha directly impacted on Sargeants Gap Road; 2,857.67 ha of potential habitat 'avoided'	TR01 pp. 890–891
SAII polygon, eastern cave bat and others	'The species expert has identified the Timor and Barry Karst Systems as the only potential breeding habitat (caves) within or adjoining the project area'	TR01 pp. 561, 627
Large bent-winged bat ecology	'Populations form discrete groups centred on a maternity cave that is used annually in spring and summer… At other times of the year, populations disperse within approximately 300 km of these maternity caves'	TR01 p. 578

Conclusion	'the project is expected to result in negligible impacts to mapped karst, caves, crevices, cliffs, rocks or other geological features of significance'	TR01 p. 773
What is deferred	'EnergyCo will seek geotechnical and vibration advice to inform the construction vibration limits'; measures 'to mitigate impacts on any unexpected areas of karst identified in inaccessible areas'; App F GW5, NV12 → HH13	TR01 pp. 773–774; EIS-03 App F
Consultation	NSW Karst Management Committee, 4 Nov 2025 (online); NHVSS representative, 8 Dec 2025 (online). Appendix E records 'engagement with… the Newcastle and Hunter Valley Speleological Society' as the response to community concern; no content of that engagement is reported	TR01 p. 94; EIS-02 PDF p. 231
Literature relied on	Lishmund et al. (1986) The Limestone Deposits of NSW; Webb et al. (2023); Rutledge (2008) Timor Caves; NSW OEH (2011b, 2012b, 2013)	TR01 pp. 89, 1096, 1104

> Table 1 **- What the EIS and BDAR say about the karst**

1.2 EIS shortcoming

The SEARs require the BDAR to assess 'all direct, indirect and prescribed impacts in accordance with the BAM'. Karst, caves, crevices and cliffs are a prescribed impact under clause 6.1 of the BC Regulation. A prescribed impact cannot be assessed on a predicted extent that the assessor concedes is incomplete and imprecise, and the BDAR's conclusion that the project 'is expected to result in negligible impacts to mapped karst' (p. 773) is a conclusion about the map, not the caves.

The Hills of Gold record shows how far short such a map falls. In that case NHVSS put on the record 89 documented caves at Timor against 23 in the 1985 Australian Karst Index the proponent's consultant relied on, 'extensive roosting caves' at Barry, 12 bat species at Timor, and caves still being found (Eyrie Cave, 2021; a new crustacean in Lake Cave). The proponent's own geomorphologist conceded that LiDAR and orthophotography 'cannot be conclusive in identifying (or dismissing)' potential habitat. NHVSS now documents 95 caves at Timor with about 12 more under investigation, 2 at Barry, about 170 at Glenrock and 9 at Crawney Pass (NHVSS, personal communication, October 2026).

The precautionary principle (EP&A Regulation s 193(a)) is engaged on the EIS's own words: a threat of serious or irreversible harm that the BDAR describes, and scientific uncertainty that it admits. In the Timor quarry case, Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Ltd [2010] NSWLEC 48, Preston CJ held that a scientifically plausible possibility of caves and cave fauna was enough to activate the principle and that lack of full scientific certainty was not a reason to postpone protective measures (at [174]–[179]). The result was a year of cave and subterranean fauna monitoring before any blasting, an independent expert panel and a cave discovery protocol ([2010] NSWLEC 104). The NE REZ EIS reaches 'negligible' first and promises the investigation (GW5) afterwards.

1.3 Consequences

If approval issues on this material, the first survey of the caves beneath and beside the works will be done by the contractor under a management plan, after the decision. A cave or roost found then can only be managed, not avoided, and the public will have had no opportunity to comment on it.

> POSITION SOUGHT

1. Before determination, a geophysical and geotechnical survey of the full 3.3 km of Sargeants Gap Road over karst and of the Manning Group Limestone crossing at Barry, with cave mapping by NHVSS or an accredited speleological surveyor, published and re-exhibited.

2. The 'mapped extent' of karst at Timor and Barry used for the SAII polygons to be published with its source, date and author, and reconciled with the NHVSS cave database.

3. Any tower, access track or ancillary site found to lie on karst at Barry to be relocated off it as a modification under s 5.25 with public exhibition, not under a management plan.

2 | The cave-dwelling bats: conclusions reached before the data

2.1 Evidence

Four threatened cave-dwelling bats are 'recorded or predicted to occur in the subject land': the large-eared pied bat (Chalinolobus dwyeri, EPBC-listed), little bent-winged bat, eastern cave bat and large bent-winged bat (TR01 p. 773). The BDAR's species expert 'has identified the Timor and Barry Karst Systems as the only potential breeding habitat (caves) within or adjoining the project area' (pp. 561, 627). Three of the four are at risk of a serious and irreversible impact.

Species	Survey effort recorded	Method used to assess presence	Polygon	Pages
Large-eared pied bat (Chalinolobus dwyeri)	48 ultrasonic recorders, 1,291 recording nights, all subregions; Hunter 14 recorders, 318 nights. '(Note: ultrasonic data has not yet been analysed)'	'Expert Report' (Lachlan McRae)	Suitable habitat 2,063.55 ha; polygon 20.54 ha roosting/foraging (2 km buffer) and 0.18 ha breeding (100 m buffer); limited to Ellerston and Tomalla subregions	pp. 13, 560–561
Eastern cave bat (Vespadelus troughtoni)	Hunter 14 recorders, 318 nights only; 'No surveys completed in the Hunter IBRA sub region within the survey window of November – January'	'Expert Report' (Lachlan McRae)	Same 100 m / 2 km construction as above	pp. 13, 626–627
Large bent-winged bat (Miniopterus orianae oceanensis)	30 ultrasonic recorders, 902 recording nights. '(Note: ultrasonic data has not yet been analysed)'	'Assumed present'; polygon borrowed from the expert for the two species above because it 'is a cave dwelling microbat with similar breeding requirements'	Suitable habitat 1,181.46 ha; polygon 0.1 ha (SAII breeding only), being road widening on Sargeants Gap Road	pp. 578–579, 902

> Table 2 - **How the BDAR assessed the SAII cave bats (TR01 survey tables)**

The BDAR's own species account for the large bent-winged bat says it 'hunts in forested areas, capturing moths and other flying insects above the tree tops', that populations 'form discrete groups centred on a maternity cave' and 'at other times of the year, populations disperse within approximately 300 km of these maternity caves' (p. 578). Of the karst generally: 'karst systems in the region function as part of a wider ecological network, with mobile bat species utilising multiple roost sites across the landscape' (p. 215).

On roosts: 'No maternity roosts are known from the subject land. A winter roost for the large bentwing-bat (Miniopterus orianae oceanensis) is known from Main Cave in Timor Caves (NSW OEH 2011b), located about 300 m north-west of Sargeants Gap Road. Additional winter roosts may occur in caves or suitable rocky areas in inaccessible areas' (p. 773). Sargeants Gap Road 'would be widened and improved to support construction traffic'; 'minor noise and vibration-related impacts may occur'; the conclusion is 'negligible' (p. 773).

NHVSS advises that most caves within 300 m of Sargeants Gap Road have permanent bat roosts, the largest being Main Cave, with Hill, Belfry and Helictite caves also permanently occupied (NHVSS, personal communication, October 2026). In the Hills of Gold case the Australian Speleological Federation recorded twelve microbat species at the Upper Hunter karsts and that 'bats have been recorded flying forty or more kilometres a night to find food' (ASF, 20 January 2024). ACKMA's concern was 'bats which roost in, and in forest around, the caves' and the loss of their insect food supply 'regardless of them being cave dwelling or forest dwelling' (ACKMA, 22 December 2023).

2.2 EIS shortcoming

The SEARs require an SAII assessment 'in accordance with Section 9.1 of the BAM'. The BDAR's SAII findings for the large-eared pied bat and the large bent-winged bat were made on acoustic data that the BDAR states has not been analysed. That is not an assessment; it is a placeholder for one.

Presence of the large bent-winged bat is 'assumed' and its breeding polygon is drawn by analogy with two other species. No expert report has been prepared for it. The only breeding-habitat conclusion in the project area therefore rests on one expert's desktop polygon for two species, extended by analogy to a third, with the acoustic data for all of them unanalysed.

The 2 km foraging buffer is unexplained. The BDAR describes highly mobile species that forage above the forest canopy and disperse hundreds of kilometres, then counts as habitat only the vegetation within 2 km of a cave. Clearing for the easement, access tracks, the Timor Crawney Road laydown and the Crawney Road helipad all lie within the foraging landscape of the Timor, Crawney Pass, Barry and Glenrock colonies and are counted as nothing. The connectivity assessment rates the Sargeants Gap Road–Timor segment 'High' for a 140 m dual-500 kV gap (TR01 pp. 836–837) but considers gliders and koalas, not bats.

'No maternity roosts are known' is a statement about records, not about the caves. The only roost the BDAR cites is from a 2011 source. No cave at Timor or Barry was entered, inspected or surveyed by harp trap or emergence count for this project. The eastern cave bat, whose survey window is November to January, has no survey within it.

The Sargeants Gap Road upgrade is a 'transport route road upgrade' that the SEARs require the BDAR to assess. A haul road widened and carrying construction traffic 300 m from an occupied winter roost, with helipad operations nearby (TR09 p. 101), has been given no bat-specific noise, vibration or lighting assessment; the vibration assessment assumes a smooth road surface (TR09 p. 84) that the traffic report says will deteriorate (TR07 p. 139).

In the Hills of Gold case the Department told the Commission that 'the area surrounding the project site is known to have high species diversity and density of microbats' (Department meeting transcript, p. 8). Four bats were identified as potential SAII entities: the large-eared pied bat, large bent-winged bat, little bent-winged bat and eastern cave bat (Assessment Report para 200). The Department and BCS accepted that 'the development corridor is unlikely to support breeding habitat for these species' only after the proponent's

Revised BDAR could state that the potential for a direct SAII to cave-dwelling microbats had 'been avoided through the removal and relocation of specific turbines from the project footprint' (Revised BDAR p. 22); six turbines (T1, T19, T23, T27, T31 and T41) were removed across two amendment reports for biodiversity reasons. The Commission then imposed a 135 m setback from Ben Halls Gap Nature Reserve (Condition A7) and a Bird and Bat Adaptive Management Plan with at least 12 months of baseline data and curtailment at a 5.5 m/s cut-in for moderate-risk turbines (Condition B28; Assessment Report para 208). The same regulator, on the same caves and bats, is being asked here to accept avoidance on a desktop review.

2.3 Consequences

The Minister's opinion under s 7.16(3) of the Biodiversity Conservation Act, whether the project is likely to have a serious and irreversible impact, cannot lawfully be formed on data the proponent has not analysed and a presence the proponent has assumed. For the Commonwealth, the large-eared pied bat is EPBC-listed (EPBC 2025/10405) and the significant-impact assessment relies on the same material; that decision is separately reviewable.

> POSITION SOUGHT

1. Analysis and publication of the 2,193 recorder-nights of acoustic data, and of the Hunter subregion survey, before determination.
2. Targeted cave-fauna survey (entrance inspection, harp trapping, emergence counts, winter and maternity seasons) of every cave within 2 km of works at Timor and Barry, with BCS sign-off, before determination.
3. A literature-based foraging range for each of the four species, the polygons redrawn to it, and the cleared vegetation within it counted and offset.
4. An expert report for the large bent-winged bat, and the species expert reports relied on for the large-eared pied bat and eastern cave bat exhibited with the revised BDAR.
5. A bat-specific noise, vibration, dust and lighting assessment of the Sargeants Gap Road upgrade and the Crawney Road helipad against the roost caves, with vibration limits and exclusion periods fixed in the conditions.
6. A bat monitoring program with 12 months of baseline data before any works over karst and raw data to BCS, modelled on Hills of Gold Condition B28.





3 | Karst hydrology, consultation and what the Hills of Gold record established

3.1 Evidence

Timor Caves are groundwater-dependent ecosystems holding streams and stygofauna (TR01 p. 215). The EIS says 'contaminants… could infiltrate karst catchments' (EIS-02 PDF p. 748) and that impacts on karst from the road upgrade 'could be permanent if unmitigated' (TR01 p. 773). No karst groundwater investigation is reported; measure GW5 commits to geotechnical and geophysical investigation after approval. In the Hills of Gold case, reports commissioned by Hills of Gold Preservation Inc from Greg Chapman and Dr Robert Banks found 'No underground water flows have been considered'.

EnergyCo met the NSW Karst Management Committee on 4 November 2025 and an NHVSS representative on 8 December 2025, both online (TR01 p. 94). Appendix E records 'engagement with… the Newcastle and Hunter Valley Speleological Society' as the response to community concern (EIS-02 PDF p. 231). Nothing either body said is reported, and no written advice from the Karst Management Advisory Committee or BCS on the karst is exhibited. NHVSS confirms the route was moved away from the Timor and Barry karst after its earlier submission, and that bat foraging and migratory ranges were not considered (NHVSS, personal communication, October 2026).

International guidance treats transmission lines on karst as a case for prior inventory and buffering. The UIS/IUCN Guidelines for Cave and Karst Protection (2nd ed., 2022) class 'electrical transmission lines' among linear infrastructures and state that 'an environmental assessment study involving the site and the immediate surroundings (a protection buffer zone) should be made prior to any installation. In this zone, a more detailed study involving inventory of caves and surface karst features should be performed in order to assess whether the project should go ahead or should seek alternative locations'; that 'the stability of nearby caves and how they relate to vibration during construction and operation' requires 'a case-by-case study'; and that 'runoff from roads… is often contaminated and tends to be directed towards drains and ultimately sinking points in karst terrains' (printed p. 60). Guideline 52: 'All feasibility studies for construction projects in karst areas should include careful examination of the planned location, a detailed environmental assessment and the size of a protective buffer zone.' Guideline 2: 'in karst catchments, surface actions result in direct or indirect impacts underground or further downstream.' Guideline 61: 'Define protection buffers for karst water sources, such as springs, wells and caves' (printed pp. 102, 105–106).

#	Deficiency	NE REZ EIS	Hills of Gold comparison	Ground
1	No cave survey	'No notable caves were observed'; extent predicted by digital modelling and a desktop review of NHVSS information	NHVSS: 89 documented caves at Timor, caves still being discovered in 2021; Biosis conceded LiDAR and orthophotography 'cannot be conclusive'	BAM prescribed impacts (karst); Reg s 193(a)
2	Barry assessed on an admittedly incomplete extent	'not as thoroughly mapped or publicly documented'; 'full extent… has not been confirmed'; alignment and tracks intersect the Manning Group Limestone 'north-west of the known Barry caves extent'	NHVSS: 'extensive roosting caves' at Barry; Barry Cave one of three known cave roosting sites in the HoG BDAR	SEARs BIO; precautionary principle
3	Breeding habitat	'No maternity roosts are known from the subject land'; large-eared pied bat	BCS would not accept 'unlikely to support breeding habitat'	BC Act s 7.16(3); BAM s 9.1

	concluded by absence of records	SAII polygon = 100 m buffer of mapped breeding habitat; 0.18 ha impacted, 2,857.67 ha 'avoided'	until turbines were removed and relocated; Department acknowledged 'high species diversity and density of microbats' around the site	
4	Foraging and roost network under-scoped	Foraging/roosting polygon = 2 km buffer; bent-winged bats 'disperse within approximately 300 km' of maternity caves (TR01 p. 578)	ASF: bats fly 'forty or more kilometres a night'; NHVSS: migratory paths between Crawney Pass, Timor and Barry; HoG BDAR named three roost sites 5–15 km apart	SEARs BIO; BAM indirect/prescribed impacts
5	Data sources old or unstated	Lishmund et al. 1986; Rutledge 2008; NHVSS material reviewed on desktop; content of the 8 Dec 2025 NHVSS meeting not reported	HoG proponent relied on the 1985 Karst Index and was shown to have missed 171 caves; NHVSS corrected the record in that case	SEARs ENG03 (report what consultation changed)
6	Bat survey effort not reported for the karst	2,695 detector-nights project-wide; no cave entrance surveys, harp trapping or emergence counts reported at Timor or Barry	ASF: 'only acoustic monitoring and for a short period'; detector range 30–100 m	BAM survey requirements; SEARs BIO
7	Hydrology of the karst not assessed	Sargeants Gap Road works 'could theoretically result in… altered hydrological processes and water quality'; Timor Caves are groundwater-dependent ecosystems with stygofauna; 'contaminants… could infiltrate karst catchments' (EIS-02 PDF p. 748); no karst groundwater investigation	HOGPI reports (Chapman; Banks): 'No underground water flows have been considered'; ACKMA on 'fissures, grikes, sinks and caves'	SEARs WAT03; Reg s 193(a)
8	Internal inconsistency	Karst 'avoided' (EIS-02 PDF pp. 91, 307; App B) vs alignment intersects the Barry limestone (p. 749); Timor limestone 'Permian… southern Sydney Basin' and 'Devonian' on one page (TR01 p. 215); Sargeants Gap Road vibration assessed on a smooth road (TR09 p. 84) the traffic report says will degrade (TR07 p. 139)	—	SEARs G06; Reg s 190(3)
9	Mitigation deferred	GW5 'investigations will be required'; NV12 → HH13; measures for 'unknown extents of karst' in inaccessible land to come	HoG: avoidance designed in before determination; 135 m setback and BBAMP with 12 months' baseline fixed in conditions	Reg s 192(1)(d)(iv)
10	Agency position not exhibited	No advice from the NSW Karst Management Advisory Committee or BCS on the karst is reproduced	HoG: BCS advice of 10 January 2023 drove the redesign	SEARs consultation requirements

> Table 3 **- Deficiencies, the Hills of Gold comparison and the ground**

3.2 EIS shortcoming

The EIS does not do what the international guidance for transmission lines on karst calls for: no cave inventory within a defined buffer, no case-by-case vibration study of the caves beside the haul road, no karst-specific runoff controls at the sinking points. The BDAR lists the OEH karst guidelines among its background documents (TR01 p. 89) but applies none of their substance to Timor or Barry.

The SEARs require assessment of impacts on 'groundwater aquifers and groundwater dependent ecosystems having regard to the NSW Aquifer Interference Policy'. A karst aquifer with known stygofauna beneath a haul road, a 165 ha laydown and a helipad has not been assessed as one. The SEARs also require the EIS to report how engagement informed the design; two meetings with the bodies that hold the only cave data for the area are recorded as dates and nothing more.

The Hills of Gold Wind Farm (SSD-9679) was approved by the Independent Planning Commission on 9 September 2024 after 1,122 portal submissions and 675 submissions to the Commission. Its record shows what the Department and BCS required when these caves and bats were last at issue: avoidance designed in before determination on BCS advice of 10 January 2023, a 135 m setback and a 12-month bat baseline fixed in conditions. It also shows the published cave data the proponent relied on missed 171 caves across the district. The NE REZ EIS relies on the same class of data and offers a later investigation in place of avoidance.

3.3 Consequences

Without a karst groundwater assessment, the surface water, erosion and spill controls for Sargeants Gap Road, the Timor Crawney Road laydown and the Crawney Road helipad are designed for ordinary catchments, not for one that drains into caves. Without the consultation record, the decision-maker cannot know whether the only cave specialists consulted agree with the BDAR's conclusions.

> POSITION SOUGHT

1. A karst groundwater investigation and a karst-specific erosion, sediment and spill protocol for Sargeants Gap Road, the Timor Crawney Road laydown and the Crawney Road helipad, approved by the Karst Management Advisory Committee, before determination.
2. Publication of what the NSW Karst Management Committee and NHVSS advised EnergyCo, and of any written advice from BCS or the Karst Management Advisory Committee on the karst assessment.
3. No vibratory compaction, blasting or heavy haulage within a buffer of any identified cave set by the survey, with vibration limits fixed in the conditions rather than left to GW5.

Questions the EIS must answer before determination

1	What is the source, date and author of the 'mapped extent' of karst at Timor and at Barry used to draw the SAII polygons, and does it include the 95 caves NHVSS has documented at Timor and the Barry caves recorded since the 1985 Karst Index?
2	What did NHVSS tell EnergyCo on 8 December 2025, and what did the NSW Karst Management Committee advise on 4 November 2025? Why is neither recorded in Appendix E beyond the word 'engagement'?
3	Has any cave at Timor or Barry been entered, inspected for bats, or surveyed by harp trap or emergence count for this project? If not, on what evidence does the species expert conclude there is no maternity roost?
4	When will the 1,291 and 902 recorder-nights of acoustic data for the large-eared pied bat and large bent-winged bat be analysed, and will the results be exhibited before determination?
5	Why is there no expert report for the large bent-winged bat, and on what survey evidence did the species expert for the large-eared pied bat and eastern cave bat conclude that no maternity roost exists at Timor or Barry?
6	What is the basis for a 2 km foraging buffer for each of the four species, given the BDAR's own description of their ecology?
7	How many caves lie within 100 m, 300 m and 2 km of the Sargeants Gap Road works, the transmission alignment at Barry and the access tracks that 'intersect the Manning Group Limestone Beds'?
8	What is the depth of cover between the Sargeants Gap Road formation and the nearest cave passage, and which caves (Main, Hill, Belfry, Helictite, Eyrie, Lake, others) lie beneath or beside the 3.3 km of works?
9	Has the karst groundwater system at Timor been assessed as a groundwater-dependent ecosystem under the Aquifer Interference Policy, and what are the pathways from road works, laydown and helipad runoff to it?
10	Is the Timor limestone Devonian or Permian? Which geological mapping was used, and has it been ground-truthed?
11	Why does the EIS conclude 'negligible' impact on karst and then commit to geotechnical and geophysical investigation (GW5) afterwards? What happens if that investigation finds a cave under the works?
12	Has BCS or the Karst Management Advisory Committee provided written advice on this EIS's karst assessment, and will it be exhibited?

> POSITION SOUGHT

The karst and cave-bat assessment has not been done: the caves have not been surveyed, the bat data has not been analysed and the only breeding habitat in the project area has been assessed by assumption. The Department and Planning Minister should not determine the project until that assessment is complete and has been publicly re-exhibited.

Accordingly, the submission seeks the following position:

1. EnergyCo should be required to complete the karst survey, the cave-fauna survey and the acoustic analysis, prepare a revised BDAR, and re-exhibit it for public comment. A Submissions Report or Amendment Report that the public cannot comment on is not an adequate substitute; the Department's own guidance says that 'in most cases, the PIR is not exhibited' (DPHI, SSI Guide Appendix E, s 1.3).
2. The Minister should refer the assessment to the Independent Planning Commission for advice and a public hearing under s 2.9 of the EP&A Act, because the material on karst and cave-dependent bats needs independent testing, as it received in the Hills of Gold case.
3. The Minister's opinion under s 7.16(3) of the Biodiversity Conservation Act should not be formed until the SAII assessment for the three cave bats rests on analysed data, a surveyed extent and an exhibited expert report.
4. If approved: cave-fauna survey with BCS sign-off before any works over karst; vibration limits, exclusion buffers and seasonal restrictions fixed in the conditions; a karst groundwater protocol approved by the Karst Management Advisory Committee; relocation of any tower, track or ancillary site found on karst at Barry as a modification under s 5.25; and a bat monitoring program with 12 months of baseline data and raw data to BCS, modelled on Hills of Gold Condition B28.
5. For the Commonwealth decision (EPBC 2025/10405): the significant-impact assessment for the large-eared pied bat relies on the same unanalysed data and unsurveyed extent and should not be accepted until they are remedied.

This is not a request that EnergyCo prove a negative. It is a request that the surveys the BDAR itself says are needed, and the data the BDAR itself says it has collected, be completed and examined before the decision rather than after it.

Key references

- Environmental Planning and Assessment Act 1979 (NSW), ss 2.9, 5.17, 5.25; Environmental Planning and Assessment Regulation 2021 (NSW), ss 192, 193(a).
- Biodiversity Conservation Act 2016 (NSW), s 7.16(3); Biodiversity Conservation Regulation 2017, cl 6.1 (prescribed impacts); Biodiversity Assessment Method 2020, s 9.1.
- Planning Secretary's Environmental Assessment Requirements (SEARs), SSI-74175972, amended August 2026: Biodiversity; Water and Soils; General Requirements (consistency); Engagement.
- EnergyCo, New England REZ Network Infrastructure Project EIS, October 2026: EIS-02 PDF pp. 91, 231, 307, 309, 650, 746–749; Technical Report 1 (BDAR) pp. 13, 89, 94, 98, 215, 560–561, 578–579, 626–627, 772–774, 836–837, 890–891, 902; Technical Report 7 p. 139; Technical Report 9 pp. 84, 101; Appendix F measures GW5, NV12, HH13.
- Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Ltd [2010] NSWLEC 48 (Preston CJ), [174]–[179], [231]; (No 2) [2010] NSWLEC 104.
- Independent Planning Commission, Hills of Gold Wind Farm (SSD-9679): Statement of Reasons for Decision, 9 September 2024 (Table 1; Section 5.4; Conditions A7 and B28); DPE Assessment Report paras 184, 193, 200, 208 as quoted in the Statement of Reasons; Revised BDAR p. 22 as quoted; Department meeting transcript, p. 8; public meeting transcripts 1–2 February 2024.
- Newcastle and Hunter Valley Speleological Society, submission to the IPC, 28 January 2024, and personal communication (M. Dalton, G. Smith), October 2026, cited with NHVSS consent.
- Australian Speleological Federation (Dr C. Buswell), letter of 20 January 2024; Australasian Cave and Karst Management Association (I. Eddison), letters of 23 January 2021 and 22 December 2023.
- Rutledge, Smith, Brainwood and Baker (2008) Timor Caves, Hunter Valley NSW; Hoye (2008) Bats at Timor (as cited in TR01 p. 1104).
- Gillieson, D.S., Gunn, J., Auler, A. and Bolger, T. (eds) (2022) Guidelines for Cave and Karst Protection, 2nd edition, International Union of Speleology and IUCN, pp. 60, 102, 105–106 (Guidelines 2, 4, 6, 41, 52, 53, 60, 61).
- NSW Department of Planning, Housing and Infrastructure, SSI Guide Appendix E – Preparing a Preferred Infrastructure Report (2026), s 1.3.
- Timor Caves, Barry Karst and Cave-dwelling Bats – Draft 04 – 1 November 2026 – prepared for Protect the Valley for the joint submission group.

WALCHA HIGH COUNTRY GUARDIANS

Rouchel Brook ACTION GROUP

PROTECT THE VALLEY
UPPER HUNTER
RESPONSIBLE INFRASTRUCTURE GROUP

Voice for Walcha