



5 March 2026

Northern Territory Environmental Protection Authority
GPO Box 3675
DARWIN NT 0801

Via open consultation webpage

To Whom it May Concern,

RE: EP2026/050 – Darwin H2 Project Nominee Pty Ltd proposes to develop the Wak Wak Solar Farm, a 2.7 GWp solar photovoltaic facility with 6 GWh battery energy storage system.

1. The Environment Centre NT (**ECNT**) is the peak community sector environment organisation in the Northern Territory of Australia, raising awareness amongst community, government, business, and industry about environmental issues, holding government to account over environmental governance and supporting community members to participate in decision-making processes and action.
2. ECNT welcomes the opportunity to comment on the proposed Wak Wak Solar Farm; a 2.7 gigawatt peak (GWp) solar photovoltaic (PV) facility with a 6 gigawatt hour (GWh) battery energy storage system (BESS), located within NT Portion 4477 and sections 1435, 1436 and 1580, Hundred of Guy, in the Litchfield Local Government Area, approximately 45 km southeast of Darwin. The project area encompasses approximately 3,400 ha, with a disturbance footprint of 2,500 ha.
3. ECNT has long advocated for the transformation of the Northern Territory's economy into one grounded in renewable energy production, rather than continued reliance on fossil fuels. ECNT's 'Recharging the Territory Report' proposes an alternative economic vision for the NT that could see thousands of new jobs and lower power prices for Territorians. ECNT believes that the Northern Territory can capture an incredible opportunity to turn the Territory's abundance of solar resources into jobs, drive economic growth, and secure an affordable energy future for all Territorians.
4. While the Wak Wak Solar Farm is a renewable energy project, the proponent states the energy will power the proposed Middle Arm Development which is a fossil fuel gas hub. Furthermore, the siting and scale of the project, involving the clearing of up to 2,500 ha of a greenfield site containing very high biodiversity and rural scenic amenity values, means that its environmental impacts require the most rigorous possible assessment. Furthermore, the referral documentation is lacking crucial details that would enable a proper assessment of its impacts.
5. For these reasons, the ECNT recommends the NT EPA:
 - require an Environmental Impact Statement (EIS) level of assessment, given the significant and potentially irreversible impacts of the proposed action on threatened species, significant vegetation communities adjacent to a Site of Conservation Significance, and the broader Darwin biodiversity hotspot; and
 - require additional information from the proponent, including a comprehensive site selection analysis, completed cultural heritage and sacred sites surveys, detailed



hydrological impact assessment, and a robust biodiversity offset strategy, before any approval is granted. The project entails a high degree of uncertainty regarding the adequacy of avoidance measures, particularly regarding hydrological impacts and erosion; and whether the proponent has adequately demonstrated that this site supporting very high biodiversity values is the best available location for this project.

3. Biodiversity Impacts

6. The ecology report provides clear evidence that the proposed project area has very high biodiversity values, with multiple threatened species recorded during surveys. The report notes that the study area 'is very large, contains a variety of habitat types, and represents a significant proportion of the greater Darwin region that had hitherto not been surveyed.' Multiple threatened flora and fauna species were detected across the study area, several representing range extensions and new population records of regional conservation significance.
7. ECNT submits that the high biodiversity value of the proposed disturbance area significantly raises the threshold for environmental assessment and the urgent need to review alternative sitings for this proposal. The biodiversity values alone necessitate an EIS level of assessment rather than assessment by referral information alone.

3.1 Impacts on terrestrial environmental quality and terrestrial ecosystems

8. Deforestation and land use change from intact native vegetation supporting important habitat values will have a significant impact on the terrestrial ecosystems including for the threatened species that live there. Wildlife corridors do not mitigate the loss of 2,500 ha of habitat for native species, this scale of clearing is likely to have regional-scale impacts on wildlife populations. Furthermore, the development is situated proximate to the Adelaide River Coastal Floodplain Site of Conservation Significance.
9. Land clearing is a fundamental pressure on the environment, resulting in the loss, fragmentation, and degradation of native vegetation, a variety of impacts on soils including erosion and loss of nutrients, and the disruption of essential ecosystem processes.
10. Threats to biodiversity from land clearing and habitat loss are among the greatest pressures on threatened species in Australia, and to the environment more generally. Land clearing is recognised as a Key Threatening Process under the EPBC Act. The proponent itself acknowledges in the NT EPA referral form that 'clearing of 2,500 ha of a greenfield site is required to facilitate the construction and operation of the proposal' and that 'this clearing is unavoidable.'
11. ECNT submits that the assertion that 2,500 ha of clearing is unavoidable has not been adequately demonstrated. The referral and supporting documents do not present a rigorous analysis of alternative sites or configurations that could reduce the clearing footprint, particularly in relation to avoiding areas of high ecological value. A proper application of the mitigation hierarchy – avoid, then mitigate, then offset – requires that avoidance options be exhausted before impacts are treated as unavoidable. A comprehensive assessment of alternative sites must be undertaken – sometimes development is simply inappropriate for areas with such high biodiversity values including important habitat for threatened species.



3.3 Threatened Flora

12. The following threatened flora species were confirmed as present within the study area during the proponent's ecological surveys:

- *Typhonium praetermissum* (Vulnerable in the NT; Endangered under *EPBC Act*). This species is endemic to the Darwin region and relies on intact lateritic plateau habitat. Cumulative impacts on this endemic species must be taken into account with the Middle Arm Development precinct also anticipated to cause unacceptable impacts to this endemic species.
- *Cleome insolata* (Vulnerable in the NT): One population confirmed within the study area with 17 individual records. The ecology report identifies this as a range extension – the population is more than 7 km east of the nearest previously known population, in a different catchment, and increases the total number of known populations to eight. At 17 plants, it is one of the smallest known populations of this NT-endemic species.
- *Utricularia dunstaniae* (Vulnerable in the NT): One population confirmed with 67 records within sandsheet heath habitat.
- Darwin Cycad (*Cycas armstrongii*): Records at varying densities across the study area.

13. ECNT submits that these threatened plant species are at very high risk of significant impacts from this development. These are endemic species that have small populations and the impacts from this development may present an unacceptable risk to their long-term viability, particularly when considered with other proposed development across the region (notably *Typhonium praetermissum* and the Middle Arm Development Precinct).

3.4 Threatened Fauna

14. The following threatened fauna species were confirmed as present within the study area during the proponent's ecological surveys:

- Black-footed Tree-rat (*Mesembriomys gouldii gouldii*) (Endangered in the NT and under the *EPBC Act*): There are two confirmed camera detections of this Endangered species. The ecology report states that all known populations and habitat supporting the Black-footed Tree-rat should be protected wherever possible given the species' continuing decline.
- Bare-rumped Sheath-tailed Bat (*Saccolaimus saccolaimus nudicluniatus*) (Vulnerable under the *EPBC Act*): Confirmed at four (potentially five) acoustic monitoring sites. The ecology report states that all remnant vegetation in the project area – and potentially even cleared areas – constitutes foraging habitat for this species, and that roosting habitat is limited to old-growth forest with large hollow-bearing trees. Critically, prior to this survey program there were only five known records of the species in the greater Darwin region (all to the north); the Wak Wak detections potentially double the known regional record set and are of very high conservation significance.
- Northern Brushtail Possum (*Trichosurus vulpecula arnhemensis*) (Vulnerable NT and under the *EPBC Act*): Detected at 29 camera sites with multiple occurrences, indicating a significant local population for a species that has suffered drastic declines across its range.



- Partridge Pigeon – eastern subspecies (*Geophaps smithii smithii*) (Vulnerable in the NT and under the *EPBC Act*): Four camera detections and multiple incidental sightings in the south-west and centre of the study area. The ecology report states these records are on the northern edge of the mainland sub-population’s extent. This species is now rarely recorded in the greater Darwin region, with no records from recent regional surveys at Gunn Point, Weddell, or Holtze. The Wak Wak records are therefore of high conservation significance.
 - Howard River Toadlet (*Uperoleia daviesae*) (Vulnerable in the NT and under the *EPBC Act*). This species was acoustically detected at 13 of 15 recorders across all 3 sandsheet heath patches targeted. The detection extends the known range of this species 6 km to the south-east, and includes records in a sub-catchment with no prior records of the species. This is a species with a severely restricted range broadly coinciding with the greater Darwin region.
 - Mertens’ Water Monitor (*Varanus mertensi*) (Vulnerable NT and Endangered under the *EPBC Act*) and Mitchell’s Water Monitor (*Varanus mitchelli*) (Vulnerable NT and Critically Endangered under the *EPBC Act*): Multiple incidental sightings along watercourses.
 - Northern Blue-tongued Skink (*Tiliqua scincoides intermedia*) (Vulnerable NT/ Critically Endangered under the *EPBC Act*): Detections at four locations across the study area, consistent with a species persisting locally despite significant range-wide decline.
15. ECNT is particularly concerned about the Bare-rumped Sheath-tailed Bat. The ecology report states that at the time of the survey, only five other records of this species existed in the greater Darwin region, all to the north of the study area. A project that destroys or fragments remnant vegetation across a significant area of the Darwin region – including old-growth forest with the hollow-bearing trees this species depends on for roosting – could have a catastrophic effect on a population whose regional extent and status are still being determined.
16. ECNT submits that the significance of the Partridge Pigeon records are also very important. This species has effectively disappeared from the broader Darwin region. The Wak Wak study area appears to hold one of the last remaining sub-populations on the northern mainland. Clearing of the woodland habitat in which these birds were detected, or degradation of fire regimes through the introduction of invasive grasses, could extirpate this remnant population.
17. The Fawn Antechinus (Vulnerable under the *EPBC Act*, Endangered in the NT) and Pale Field-rat (Vulnerable in the NT) were not confirmed during surveys but remain at medium likelihood of occurrence within the study area. ECNT submits that the absence of confirmed detections of these species does not constitute adequate evidence of absence, particularly given the documented low densities of small mammals across much of the Top End.

3.5 Migratory Species

18. Multiple migratory species listed under the *EPBC Act*, including the Oriental Cuckoo and Barn Swallow, have been recorded in the vicinity of the study area. The woodland and open habitats present in the proposed disturbance area are used by these species during the wet season. ECNT submits that the cumulative impact on migratory species – including through habitat loss



and the Lake Effect Hypothesis risk posed by solar panels – has not been adequately addressed in the referral documentation.

19. Research has demonstrated that many animals, including insects and birds, possess polarisation-sensitive vision and can mistake the light reflected by solar panels for open water surfaces. This 'Lake Effect Hypothesis' (LEH) represents an ecological trap risk for birds and insects in the vicinity of the facility. Given the documented presence of threatened fauna and migratory species in and around the study area, ECNT submits that the proponent must conduct a specific LEH risk assessment and implement mitigation measures as part of the design of the facility.

3.6 Invasive Species and Fire Regime

20. The ecology report records multiple invasive weed species across the study area, including Gamba Grass, Annual and Perennial Mission Grass, and Guinea Grass. Gamba Grass is a nationally listed Key Threatening Process and is particularly significant: it produces fire fuel loads up to ten times that of native grasses, converting the ecologically-important mosaic of low and high intensity fires that characterise Top End savannas into a regime of high-intensity, ecologically damaging fires. ECNT submits that a construction and operation phase weed management plan, with specific protocols to prevent the spread of Gamba Grass and other Category 1 invasive species, must be a mandatory condition of any approval.
21. The ecology report demonstrates that Black-footed Tree-rat habitat is strongly correlated with areas of lower fire frequency. The introduction of construction vehicles, personnel, and altered vegetation across a 2,500 ha footprint carries significant risk of spreading fire-promoting weeds into previously unaffected areas, potentially triggering irreversible changes to fire regimes across a much larger area than the disturbance footprint itself.

4. Surface Water and Hydrology

22. Land clearing has the potential to significantly impact the health of rivers, creeks, and other aquatic environments, particularly where cleared land borders waterways. It is a direct cause of erosion, sediment runoff, and changes to water quality and flow regimes – affecting in-stream habitat and the viability of aquatic wildlife populations.
23. 2,500 ha of deforestation within a seasonally inundated, hydrologically connected area will have a significant impact on hydrological processes including altering water flow paths, increasing surface water runoff, silting up adjacent wetlands and streams. The study area contains an unnamed major drainage that crosses the centre of the area, Acacia Creek in the south, and two additional creek systems in the north. All waterways within the study area flow to the south-east towards the Adelaide River catchment.
24. The proponent does not provide sufficient information on mitigation practices to minimise erosion and run off. Considering a substantial portion of the project area is currently fully submerged due to normal seasonal inundation, ECNT and local community members raise the concern that this location is not suitable for this development.
25. ECNT submits that the referral documentation does not contain an adequate hydrological impact assessment. Specifically, the proponent must demonstrate:



- That the construction and operation of solar infrastructure will not materially alter surface water flow regimes, runoff volumes, or flood behaviour within the Adelaide River catchment.
- That proposed disturbance buffers around all mapped watercourses are adequate to protect riparian vegetation, water quality, and aquatic habitat throughout the 60-year project life.
- That stormwater management infrastructure is sufficient to prevent sediment and chemical runoff from entering waterways during construction and operation.

5. Cultural Heritage

26. ECNT notes that the proponent acknowledges that cultural heritage surveys are yet to be completed, and that an AAPA Authority Certificate process is ongoing.
27. ECNT submits that a comprehensive cultural heritage and sacred sites assessment is required as part of the assessment, including through the appropriate native title representative body (the Northern Land Council) and the sacred sites authority (the Aboriginal Areas Protection Authority).
28. ECNT also notes that the proponent is committed to seeking an Indigenous Land Use Agreement (ILUA) with relevant Traditional Owners. ECNT submits that free, prior and informed consent must be obtained from all relevant Traditional Owners before any project activity commences.

6. Community impacts

29. ECNT staff have been conversing with rural residents living near the proposed Wak Wak Solar Farm on a regular basis as part of our ongoing community engagement activities. A community meeting was held at the Humpty Doo Village Green Hall on Wednesday 25th February 2026, specifically to hear community views on the proposal. No participants supported the solar farm being built at the proposed Wak Wak location. Their reasons for objecting to the proposal were varied and valid, including that the development will not directly benefit them with the energy supporting heavy industry at Middle Arm; and also that their cherished rural amenity will be irrevocably destroyed. Below is a list of statements and the main objections that local people have raised with us:

- *We live rural because we love the bush.*
- *Losing our rural lifestyle. Not what people who choose to live rural want. They want bush, space, wildlife and nature.*
- *Cumulative impacts on the rural area were often raised - Wak Wak Solar Farm, Lloyd Creek Rural Village, AROWS - all combining to destroy amenity, recreation areas, fishing access, places people enjoy visiting, wildlife habitat, etc.*
- *People questioned how clearing such a large area could be called green.*
- *It will destroy the amenity on our neighbouring block (home).*
- *What are they doing for neighbours?*
- *We don't see any benefit for the community.*



- *We ride our quads/buggies/mountain bikes/horses in the proposed area.*
- *We enjoy seeing the emus, echidnas, horses, cattle and wildlife in the area.*
- *Scepticism on accuracy of maps and survey results (wildlife & wet areas).*
- *There are ridges and high lookout spots in the area that don't show on the maps.*
- *The area flooded after Cyclone Fina with debris seen high up in trees (3m high?).*
- *There are Wulna sacred sites there.*
- *I am concerned the solar farm will bring in fires, weeds and ferals.*
- *Solar farm weed management - concerns glyphosate spray over the solar farm area will run off into water ways and seep into aquifers (one man compared it to Katherine PFAS).*
- *The solar farm's land clearing will cause water run off and aquifer recharge issues.*
- *Bulldozing and clearing will affect stream flows and cause streams to silt up.*
- *The solar farm will split the rain and cause the storms to go around. This could also affect the Elizabeth Valley and Elizabeth River areas.*
- *Temperature reduces solar panel efficiency. It's too hot for a solar farm here.*
- *How will the solar farm affect Lloyd Creek developments?*
- *The solar is for Inpex to greenwash - carbon credits.*
- *There is no proof that the solar farm will meet needs.*
- *What about end of life plans and rehabilitation?*

30. ECNT submits that these community concerns warrant a detailed community consultation and genuine consideration within a best-practice Social Environmental Impact Assessment framework.

7. Site Selection and Alternatives

31. The NT EPA referral form states that the proposed disturbance footprint of 2,500 ha has been identified as 'suitable' for development following ecological survey. However, the referral does not provide a detailed analysis of alternative sites that would avoid or minimise clearing of this high-value biodiversity areas.

32. ECNT submits that the proponent has not demonstrated that the Wak Wak site, as currently configured, represents the optimal balance between renewable energy objectives and avoiding environmental impacts. Specifically:

- The referral does not appear to have considered co-locating the solar facility on previously cleared, degraded, or disturbed land within the broader region. There are significant areas of cleared agricultural and pastoral land in the greater Darwin hinterland that may offer equivalent solar resources with substantially lower biodiversity value.
- The referral does not provide a sensitivity analysis of how adjusting the disturbance footprint – by reducing the development area or reconfiguring panel layouts – could avoid or reduce impacts on the highest-value sandsheet heath patches, old-growth forest, and confirmed threatened species locations.



33. ECNT submits that a far more expansive analysis of suitable sites is needed, with particular attention to identifying areas of land that have already been cleared or that contain lower environmental value. The details of this analysis must be made publicly available.

7. Cumulative Impacts

34. The NT Environment Protection Act 2019 (EP Act) requires consideration of cumulative impacts as part of the environmental impact assessment process. ECNT submits that the following cumulative impacts of the proposal must be taken into account:

- The Wak Wak Solar Farm is directly linked to the Darwin H2 Hub project at the Middle Arm Precinct (MAP). The cumulative social and environmental impacts of the broader Darwin H2 Hub project – including the green hydrogen production facility, associated transmission infrastructure, and potential future industrial expansion at MAP – should be assessed in conjunction with this referral.
- The Middle Arm Precinct itself is subject to ongoing development, with multiple significant industrial projects proposed. The cumulative environmental impact of simultaneous large-scale renewable energy development, transmission infrastructure, and industrial expansion across the Darwin hinterland and coastal areas requires comprehensive assessment of all cumulative impacts.
- Any EPBC Act referral for this project must similarly address cumulative impacts, including the combined effect of multiple projects within the greater Darwin biodiversity hotspot, which the proponent's ecology report identifies as an area of exceptional and largely unsurveyed biodiversity value.

35. ECNT refers the NT EPA to recent peer-reviewed research published in the *Australasian Journal of Environmental Management*¹. The research demonstrates that without strategic regional land use planning that integrates conservation expertise and spatial biodiversity data at the site selection stage, the cumulative impacts of utility-scale solar development will irretrievably compromise the NT's biodiversity. Critically, the study does not argue against renewable energy — it argues that the NT has ample land and solar resource to accommodate the energy transition without destroying sensitive ecosystems, but only if development is directed to appropriate locations through genuine strategic spatial planning. Approving large-scale solar developments on a case-by-case basis, without that overarching strategic framework in place, risks continued biodiversity loss through 'death by a thousand cuts'. ECNT submits that the Wak Wak Solar Farm referral exemplifies this problem: a greenfield site of confirmed high biodiversity value, proposed for development in the absence of the regional conservation planning that would identify whether it is an appropriate location at all.

8. Commonwealth EPBC Act

¹ Billee McGinley, Andrew Edwards & Stephen T. Garnett (05 Nov 2025): Gaps in conservation planning in the Northern Territory of Australia: preparing for the energy transition, *Australasian Journal of Environmental Management*, DOI: 10.1080/14486563.2025.2575948



36. ECNT is encouraged that the proponent has correctly identified in the NT EPA referral form that the proposed action may be a controlled action under the EPBC Act, and that an EPBC referral will be submitted subsequent to the NT EPA referral.
37. Given the confirmed presence within the study area of multiple species listed as threatened under the EPBC Act – including the Black-footed Tree-rat (Endangered), Northern Quoll habitat (Critically Endangered/NT), Bare-rumped Sheath-tailed Bat (Vulnerable), Partridge Pigeon (Vulnerable), Howard River Toadlet (Vulnerable), and Northern Brushtail Possum (Vulnerable) – ECNT submits that the proposed action is very likely to constitute a controlled action under the EPBC Act.
38. ECNT submits that the Commonwealth Minister should:
 - decide that the action is a controlled action under section 75(1) of the EPBC Act, based on its likely impacts on matters of national environmental significance; and
 - afford the referral a high degree of scrutiny for its impacts on nature and communities, at the level of Environmental Impact Statement.

9. Further Information Required

39. ECNT submits that the referral documentation in its current form does not contain sufficient information to enable a proper assessment of the proposal's impacts. The following information must be provided by the proponent before any assessment decision is finalised:
 - A comprehensive site selection analysis demonstrating that the proponent has rigorously considered alternative sites and configurations, with particular reference to previously cleared or lower-biodiversity land.
 - Completed cultural heritage and sacred sites surveys conducted in partnership with relevant Traditional Owners and the Aboriginal Areas Protection Authority.
 - Detailed hydrological impact assessment, including the flood hydrology modelling already referenced in the referral, which must be made publicly available.
 - A comprehensively demonstrated mitigation hierarchy that avoids impacts on all confirmed threatened species locations, all sandsheet heath patches of very high and high quality, old-growth forest patches, and all mapped riparian vegetation.
 - A biodiversity offset strategy that is proportionate to the scale and significance of the residual biodiversity impacts, developed in accordance with NT and Commonwealth offset policies, and subject to independent expert review.
 - A comprehensive weed management plan with specific protocols to prevent the introduction and spread of Gamba Grass and other invasive species during construction and operation.
 - A cumulative impact assessment addressing the combined impacts of the Wak Wak Solar Farm, overhead transmission lines and associated Darwin H2 Hub infrastructure.

10. Conclusion

40. ECNT supports the transition to renewable energy in the Northern Territory. This transition should prioritise energy security for Territorians, and be undertaken in a way that engages



meaningfully with communities and values the Territory's ecological values. ECNT cannot support a project that proposes to clear 2,500 ha of important high value habitat – confirmed to support a remarkable diversity of threatened species and to form part of the broader Darwin biodiversity hotspot – without the most rigorous environmental assessment and without satisfactory demonstration that biodiversity impacts have been avoided to the maximum extent possible. While we strongly support renewable energy transition, these developments must not drive further biodiversity and habitat loss, particularly for species threatened with extinction. Some locations are simply not appropriate for development where the ecological and social trade-offs are too high.

41. ECNT submits that the NT EPA should require an EIS level of assessment for this proposal; require the proponent to provide the additional information identified above; support broader strategic land use planning, prioritising the protection of high-value biodiversity areas, to ensure the appropriate siting of renewable energy projects, and; ensure that the public is afforded a meaningful opportunity to participate in each stage of the assessment process.

If you would like any further information relating to this submission, please do not hesitate to contact the Environment Centre NT.

Yours sincerely,

Allana Brown

Senior Nature Campaigner