Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10359/1
Permit type:	Purpose permit
Applicant name:	Infinite Green Energy Pty Ltd
Application received:	22 September 2023
Application area:	0.25 hectares of native vegetation
Purpose of clearing:	Construction of a deceleration (turning) lane
Method of clearing:	Cutting and Mechanical clearing
Property:	Northam-York Road reserve (PIN 11469183) Lot 60 on Plan 20224, Muluckine
Location (LGA area/s):	Muluckine
Localities (suburb/s):	Shire of Northam

1.2. Description of clearing activities

Infinite Green Energy Pty Ltd are proposing to clear 0.25 hectares of native vegetation along an approximate 300 metre stretch of Northam-York Road reserve (see Figure 1, Section 1.5). The proposed clearing is to accommodate a larger project in the Green Energy space where Infinite Green Energy Pty Ltd are proposing to construct a Green Hydrogen plant; the Meg 1 project. The proposed clearing of 0.25 hectares of native vegetation in this clearing permit application will accommodate a deceleration lane when accessing the proposed project site. The aim of this deceleration lane is to improve road user safety to reduce the probability and severity of crashes potentially caused by slowing heavy vehicles (Infinite Green Energy Pty Ltd, 2023a).

1.3. Decision on application

Decision:	Refused
Decision date:	28 November 2024

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed, and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

The Delegated Officer decided to refuse to grant a clearing permit. In making this decision, the Delegated Officer had regard for the site characteristics (Appendix B), relevant datasets (Appendix G.1), the clearing principles set out in Schedule 5 of the *Environmental Protection Act 1986* (EP Act) (Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3.3).

Consideration of planning instruments and other relevant matters when making a decision on a clearing permit application is a requirement under section 51O(4) of the EP Act. During the assessment of the application, the Shire of Northam (the Shire) advised that development approval was required for the associated Green hydrogen plant and a development approval application was refused by the Regional Joint Development Assessment Panel in March

2024. The Shire is aware the applicant has had a pre-lodgement meeting with the State Significant Development Unit (Shire of Northam, 2024), however it is unclear whether a new application has been lodged to date. The Delegated Officer considered that the absence of a valid Development Approval for the associated project is a relevant consideration as, should this approval not be given, there would be no reason for the clearing to occur for the associated road upgrade works.

The Delegated Officer noted that these planning matters remain unresolved and that the applicant has not provided DWER with a clear timeline as to when Development Approval for the associated project may be obtained. Furthermore, in responding to DWER's notice advising that it intended to refuse the application, the applicant provided no further update as to the lodgement of the Development Approval and was subsequently uncontactable. The Delegated Officer considered that the applicant has been afforded a reasonable opportunity to provide an update on the required approvals and was of the view that DWER is unable to hold the application indefinitely.

Accordingly, the Delegated Officer determined to refuse to grant a clearing permit. In the absence of the Development Approval for the subsequent project, it would be unnecessarily harmful to the environment for DWER to authorise the clearing of native vegetation when such clearing may not be required.

1.5. Site map

Figure 1 Map of the application area. The area crosshatched blue indicates the application area.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the polluter pays principle
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- *Environmental Offsets Guidelines* (August 2014)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Limited evidence was submitted by the applicant indicating avoidance and mitigation measures. The proposed clearing was limited to the existing alignment of the Northern-York Road approaching the unsealed site access road and existing infrastructure (Infinite Green Energy Pty Ltd, 2023a).

After consideration of avoidance and mitigation measures, it was determined that an offset to counterbalance the significant residual impacts to Carnaby's black cockatoos and significant remnant vegetation would be necessary.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing present a risk to biological values, significant remnant vegetation, and land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (Fauna) - Clearing Principles (a) and (b)

Assessment

A desktop assessment identified 13 conservation significant fauna records within the local area (10-kilometres radius), including three migratory birds, four priority fauna species, three vulnerable fauna species, two endangered bird species and one other specially protected bird species. Of the 13 fauna species, only the Carnaby's black cockatoo (*Zanda latirostris)* is considered likely occur within the application area.

Within Western Australia, Carnaby's (*Zanda latirostris*) is listed as endangered under the EPBC Act and is a long-lived, slow-breeding bird which display strong pair bonds and nest within tree hollows. They forage over a large area, feeding on a variety of native and introduced plant species depending on source availability (DCCEEW, 2022). Carnaby's cockatoos will forage up to 12 kilometres from their nest locations during the breeding season and up to 20 kilometres from known roost sites outside of the breeding season. Night roost sites are typically within two

kilometres from reliable watering points, and remnant patches of vegetation are considered important in maintaining connectivity of black cockatoo habitat across the landscape (DCCEEW, 2022). The application area is also located within the known distribution of Carnaby's cockatoo.

A clearing assessment report provided by the applicant (IGE, 2023) identified two native species occur within the application area; *Eucalyptus rudis* (Flooded gum) and *Eucalyptus camaldulensis* (River Red gum) which provide suitable roosting value for Carnaby's cockatoo (DEC, 2011). Flooded gum also provides low quality foraging value and with the presence of hollows of a suitable size, this species also provides breeding value to Carnaby's cockatoo. Suitable breeding hollows develop in both dead and alive trees; particularly in Eucalypt species, which consist of a diameter at breast height (DBH) of at least 500 millimetres (DCCEEW, 2022). Trees which support suitable hollows are generally located within 12 kilometres of foraging habitat and also within close proximity to permanent watering points.

Representative photos of the vegetation within the application area (see Appendix F) indicate the present trees are too young and do not consist of a DBH of a suitable size to contain a suitable nest hollow to provide breeding values to the Carnaby's black cockatoo. While the trees within the application area do not provide suitable breeding value they do support night roosting habitat as the application area is located approximately 350 metres south of the Mortlock River, a perennial river. Also noting the extensively cleared landscape, Carnaby's cockatoo will utilise any tall trees within the landscape near a permanent water source, therefore the application area is considered to have significant roosting habitat for Carnaby's black cockatoo.

After the application of the mitigation hierarchy it was determined a significant residual impact remains and the clearing is likely to consist of a significant impact on Carnaby's cockatoo roosting habitat and also a further reduction in low quality foraging within an extensively cleared landscape.

Conclusion
Given the above assessment, the proposed clearing will result in the loss of 0.25 hectares of Carnaby's cockatoos roosting habitat as well as low quality foraging habitat.

For the reasons set out above, it is considered that the impacts of the proposed clearing on Carnaby's cockatoo cannot be managed to be environmentally acceptable, therefore an offset is required to counterbalance the significant residual impact.

The applicant agreed to undertake revegetation in an adjacent area as a suitable offset.

3.2.2. Significant remnant vegetation - Clearing Principle (e)

Assessment

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearing of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The application area is located within the Avon wheatbelt IBRA Bioregion which retains 18.51 percent of remnant vegetation which is below the national objectives.

At a local scale, the application area is mapped as beard vegetation association 352 which is described as medium woodland; York Gum (Government of Australia, 2019) and the extent of native vegetation within the local area is 8.53 percent, which is also inconsistent with national objectives and therefore the application area is within an extensively cleared landscape.

While the application area does not consist of a diverse floristic community, the presence of *Eucalyptus rudis* (Flooded gum) and *Eucalyptus camaldulensis* (River Red gum) provides important environmental value to Carnaby's cockatoo as outlined in section 3.2.1 above. Given the application area is located within an extensively cleared landscape the vegetation proposed to be cleared also provides important local ecological linkage and is considered a significant remnant.

Conclusion
Based on the above assessment, the proposed clearing will result in a further reduction of significant remnant vegetation of the Avon Wheatbelt IBRA bioregion and the overall remnant vegetation of the local area. Given the clearing will result in the remnant vegetation being cleared below national objectives and targets for biodiversity conservation, an offset is required to counterbalance the significant residual impacts. The applicant agreed to undertake revegetation in an adjacent area as a suitable offset.

3.2.3. Land and water resources - Clearing Principle (g)

Assessment

According to spatial data, the mapped soils within the application area are highly susceptible to wind erosion, water erosion, nutrient export, and flooding. The mapped soils and topographic contours in the surrounding area do not indicate that the proposed clearing is likely to contribute to increased incidences or intensity of flooding.

Noting the location and size of the application area and the condition of the vegetation, the proposed clearing is unlikely to have an appreciable impact on land degradation.

Conclusion
Based on the above assessment, the proposed clearing is unlikely to result in significant land degradation risks.

3.3. Relevant planning instruments and other matters

While the proposed road works does not require other approvals, the Shire advised that the associated Green Hydrogen plant requires Development Approval and that an application was refused by the Regional Joint Development Assessment Panel on 26 March 2024. The Shire recommended that the application is withdrawn until such time the land use issue is resolved (Shire of Northam, 2024).

It is understood that the applicant had a pre-lodgement meeting with the State Significant Development Unit, however no evidence of lodgement of a new development approval application was provided by the applicant and no timeframe was provided to indicate when this approval is likely to be granted. Given the applicant does not have development approval for the associated project for which the proposed clearing to construct a deceleration lane is required, it would be environmentally harmful to grant a clearing permit without the associated approvals.

Several Aboriginal sites of significance have been mapped within the local area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

4 Suitability of offsets

Through the detailed assessment outlined in Section 3.2 above, the Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance and mitigation measures summarised in Section 3.1:

- 0.25 hectares of low quality foraging and roosting habitat for Carnaby's black cockatoo
- 0.25 hectares of a significant remnant of vegetation within the intensive land use zone, of which the local area (10 kilometre radius) retains 8.68 percent remnant vegetation.

The applicant agreed to undertake revegetation in an adjacent area and provided revegetation completion criteria to mitigate the impacts of the proposed clearing. However, given the proposed project does not currently hold appropriate development approval, the offset proposal was not finalised.

The justification for the values used in the offset calculation is provided in Appendix F.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
The applicant provided a proposed offset site and completion criteria for the proposed revegetation.	The proposed offset location and completion criteria assisted in assessing whether the proposed offset was suitable to counterbalance the significant residual impacts of the proposed clearing.

Appendix B. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is an isolated patch of native vegetation in the intensive land use zone of Western Australia. It is surrounded by highly cleared rural landscapes. The proposed clearing area is a small-isolated remnant in a highly cleared landscape. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 8.68 per cent of the original native vegetation cover.
Ecological linkage	The application area is mapped within a Roadside Conservation Linkage (Object ID: 20707).
Conservation areas	There are no mapped conservation areas within the application area. The closest conservation area is a conservation covenant located six kilometres South-East of the application area.
Vegetation description	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of *Eucalyptus rudis* (Flooded gum), *Eucalyptus camaldulensis* (River Red gum) and introduced species *Eucalyptus globulus* (Tasmanian Blue gum), *Schinus mole* (Pepper tree) and *Chilopsis linearis* (Desert Willow Tree). Representative photos are available in Appendix G. This is consistent with the mapped vegetation type: • York 352, which is described as: Wheatbelt; York gum, salmon gum etc. *Eucalyptus loxophleba, E. salmonophloia*. Goldfields; gimlet, redwood etc. *E. salubris, E. oleosa*. Riverine; rivergum *E. camaldulensis*. Tropical; messmate, woolyb The mapped vegetation type retains approximately 8.68 per cent of the original extent (Government of Western Australia, 2019).
Vegetation condition	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in degraded to completely degraded (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photos are available in Appendix G.
Climate and landform	Northam has a Mediterranean climate with hot dry summers and cool wet winters. January is the hottest month reaching an average high of 34.2 degrees Celsius, where July is the coldest month with an average low of 16.9 degrees Celsius.

Characteristic	Details
Soil description	The soil is mapped as Avon Flats Subsystem which is described as alluvial terraces and floodplains that occur adjacent to the Avon, lower Mortlock and lower Dale rivers.
Land degradation risk	The soils in the application area are mapped as being highly susceptible to land degradation in the form of wind erosion, water erosion, waterlogging, water repellence, subsurface acidification, and phosphorus export.
Waterbodies	The desktop assessment and aerial imagery indicated that there are no mapped rivers or waterbodies within the application area.
Hydrogeography	The application area is mapped within the Avon River Catchment Area and falls within the Northern Zone of Rejuvenated Drainage hydrological zone.
Flora	A total of 13 conservation significant flora records occur in the local area (10-kilometre radius from the centre of the application area), including eight priority 3 (P3) flora species, one priority 4 (P4) species and four threatened (T) flora species, of which only one species is found on the same soil type as the application area *Tribonanthes minor*. Noting the condition and species identified within the application area, the application area is not likely to contain any threatened or priority flora species.
Ecological communities	There are no mapped Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) within the application area. The vegetation within the application area is not representative of any mapped TEC/PEC within the local area.
Fauna	A total of 13 conservation significant fauna records occur in the local area (10-km radius), including three migratory bird species, four priority fauna species, three vulnerable fauna species, two endangered fauna species and one other specially protected species. The application area is mapped within the known distribution zone of the Carnaby's black cockatoo.

B.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Avon Wheatbelt	9, 517, 109.95	1, 761, 187.42	18.51	174, 980.68	1.84
Vegetation complex					
Beard vegetation association 352	630, 577.61	108, 887.52	17.27	10, 191.45	1.62
Local area					
10km radius	319974.38	27295.35	8.53	-	-

*Government of Western Australia (2019)

B.3. Land degradation risk table

Risk categories	*Land Unit 1*
Wind erosion	M1: 10-30% of the map unit has a high to extreme hazard
Water erosion	L2: 3-10% of the map unit has a very high to extreme hazard
Subsurface Acidification	H2: >70% of the map unit has a high risk or is presently acidic
Water logging	H2: >70% of the map unit has moderate to very high hazard
Water repellence	L2: 3-10% of the map unit has a high hazard
Phosphorus export risk	H2: >70% of the map unit has a high to extreme hazard

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared contains significant habitat for Carnaby's black cockatoo. However the application area is not likely to contain significant flora or a unique assemblage of plants.	May be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared contains significant habitat for Carnaby's black cockatoo comprised of potential roosting habitat and low quality foraging habitat.	At variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The application area does not contain habitat suitable to support threatened flora species.	Not likely to be at variance	No .
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: The area proposed to be cleared is not representative of adjacent threatened ecological communities due to the highly degraded nature of the vegetation.	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the native vegetation in the local area is inconsistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is considered to be part of a significant ecological linkage in the local area.	At variance	Yes *Refer to Section 3.2.2, above.*
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.	Not likely to be at variance	No
Environmental value: land and water resources		

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given no water courses or wetlands are recorded within the application area, the proposed clearing is now within an environment associated with a watercourse or wetland.	Not likely to be at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are highly susceptible to wind / water erosion, and nutrient export. Noting the location of the application area and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on land degradation.	May be at variance	Yes *Refer to Section 3.2.3, above.*
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: The application area is mapped within the Avon River Catchment Area and the Northern Zone of Rejuvenated Drainage hydrological zone. Given the extent of the proposed clearing and that no water courses or Public Drinking Water Source Areas are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.	Not likely to be at variance	No
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.	Not likely to be at variance	Yes *Refer to Section 3.2.3, above.*

Appendix D. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.

Condition	Description
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix E. Offset calculator value justification

WA Environmental Offsets Calculator

Rationale for scores used in the offset calculator.

Carnaby's Black Cockatoo Habitat		
Calculation	**Score (Area)**	**Rationale**
Conservation significance		
Description	Carnaby's Black cockatoo habitat	Application area consists of Flooded gum (E. rudis) and River Red Gum (E. camaldulensis) and is within the known distribution of Carnaby's cockatoo habitat..
Type of environmental value	Species (fauna)	Carnaby's black cockatoo
Conservation significance of environmental value		Carnaby's black cockatoo is listed as endangered under the BC Act (state) and EPBC Act (federal)
Landscape-level value impacted		Yes - linkage along the road reserve
Significant impact		
Description	Loss of Carnaby's Black Cockatoo habitat	Application area contains 0.25 hectares of vegetation that provides low quality foraging and roosting habitat for Carnaby's cockatoo in an extensively cleared landscape. The local area retains approximately 8.7% of its original native vegetation extent.
Significant impact (hectares) / Type of feature	0.25	0.25 hectares of moderate quality foraging and roosting habitat for Carnaby's cockatoo will be impacted by the proposed clearing.
Quality (scale) / Number	4	Patchy roadside vegetation. Application area is mapped 26 km away from nearest confirmed roosting site and 16 km from nearest confirmed breeding site. However, the area is within the known distribution of Carnaby's cockatoo and noting the extensively cleared landscape (site context), and the site being within 300 metres of a perennial river, the trees are considered to provide foraging and roosting habitat for Carnaby's cockatoo.
Rehabilitation credit		
N/A		
Offset		
Description	Rehabilitation within adjacent unvegetated area	The applicant has proposed to undertake revegetation of an empty paddock close to the proposed clearing.
Proposed offset (area in hectares)	0.3	The total area required to counterbalance the significant residual impacts of the proposed clearing on BC habitat.
Current quality of offset site / Start number (of type) of feature)	0.00	The proposed rehabilitation site is bare of vegetation.
Future quality WITHOUT offset (scale) / Future number WITH offset	0.00	Due to completely degraded nature of the vegetation in the proposed offset site, it is assumed there will be no improvement to the vegetation quality without the proposed revegetation
Future quality WITH offset (scale) / Future number WITH offset	5.00	Revegetation with suitable foraging species for Carnaby's cockatoos using best practice rehabilitation methods and appropriate completion criteria would result in good quality foraging habitat for Carnaby's cockatoo.
Time until ecological benefit (years)	15.00	15 years minimum to establish the vegetation and achieve a suitable foraging resource.
Confidence in offset result (%)	0.8	Moderate to high level confidence that the rehabilitation will succeed and the overall habitat quality would improve.

Duration of offset implementation (maximum 20 years)	20.00	The offset will be implemented in perpetuity. The maximum value has been applied.
Time until offset site secured (years)	2.00	Time for the rehabilitation to commence and vegetation to be established, upon which the conservation covenant can be applied.
Risk of future loss WITHOUT offset (%)	15.00	The revegetation area is assumed to be zoned as rural. There is a high level of risk of loss due to clearing permitted via exemptions.
Risk of future loss WITH offset (%)	5.00	The offset site will be required to be conserved in perpetuity via a conservation covenant, which will reduce the risk of loss in the future.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

Significant Remnant Vegetation		
Calculation	**Score (Area)**	**Rationale**
Conservation significance		
Description	Remnant Vegetation	Application area is located within the Avon Wheatbelt IBRA bioregion. The extent of native vegetation remaining in the local area (10km radius) is 8.68%.
Type of environmental value	Vegetation/Habita	Remnant vegetation
Conservation significance of environmental value	Terrestrial native vegetation complex - < 30% extent remaining in the bioregion	Significant remnant vegetation. The remaining vegetation extent in the local area (8.68%) is under the national objectives and targets for biodiversity conservation in Australia which aims to retain a minimum of 30% remnant vegetation within the bioregion. The vegetation proposed for clearing also provides foraging and roosting habitat for Carnaby's black cockatoo and acts as a linkage for stepping stones for translocating fauna.
Landscape-level value impacted		Yes - within roadside conservation linkage
Significant impact		
Description	Loss of significant remnant vegetation	
Significant impact (hectares) / Type of feature	0.25	0.25 hectares of remnant vegetation proposed for clearing within the intensive land use zone. The local area retains 8.68% remnant vegetation, which is below the national objectives and targets for biodiversity conservation in Australia which aims to retain a minimum of 30% remnant vegetation within the intensive land use zone. .
Quality (scale) / Number	4	Patchy roadside vegetation. Remnant vegetation within an extensively cleared landscape.
Rehabilitation credit		
N/A		
Offset		
Description	Rehabilitation within adjacent unvegetated area	The applicant has proposed to undertake revegetation of an empty paddock close to the proposed clearing.
Proposed offset (area in hectares)	0.26	The total area of revegetation required to counterbalance the significant residual impacts of the proposed clearing of remnant vegetation within an intensively cleared landscape
Current quality of offset site / Start number (of type) of feature)	0.00	The proposed rehabilitation site is bare of vegetation
Future quality WITHOUT offset (scale) / Future number WITH offset	0.00	Due to completely degraded nature of the vegetation in the proposed offset site, it is assumed there will be no improvement to the vegetation quality without the proposed revegetation
Future quality WITH offset (scale) / Future number WITH offset	5.00	Assuming successful revegetation using best practice rehabilitation methods and appropriate completion criteria would improve the vegetation condition to counterbalance the loss of remnant vegetation from the proposed clearing
Time until ecological benefit (years)	15.00	15 years minimum to achieve foraging resource.
Confidence in offset result (%)	0.8	Moderate to high level confidence that the rehabilitation will succeed and the overall habitat quality would improve.
Duration of offset implementation (maximum 20 years)	20.00	The offset will be implemented in perpetuity. The maximum value has been applied.
Time until offset site secured (years)	2.00	Time for the rehabilitation to commence and vegetation to be established, upon which the conservation covenant can be applied.
Risk of future loss WITHOUT offset (%)	15.00	The revegetation area is assumed to be zoned as rural. There is a high level of risk of loss due to clearing permitted via exemptions.
Risk of future loss WITH offset (%)	5.00	The offset site will be required to be conserved in perpetuity via a conservation covenant, which will reduce the risk of loss in the future.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

Appendix F. Roadside vegetation and photographs of the vegetation

MEG-HP1 (Northam) Hydrogen Project – Northam-York Road Verge, Clearing Assessment Report (Infinite Green Energy, 2023b)

Road verge vegetation types

Within the proposed clearing area of the Northam-York Road verge approximately 900 m2, comprised cleared or modified areas (planted/revegetated that includes some native species) and remnant native vegetation. Verge flora was comprised of slender wild oats, Bermuda grass and various weeds.

Main vegetation identified within the area, was described as:

- Flooded gum (*Eucalyptus rudis*)
- River Red gum (*Eucalyptus camaldulensis*)
- Tasmanian blue gum (*Eucalyptus globulus*) - introduced
- Pepper tree (*Schinus molle*) - introduced
- Desert Willow Tree (*Chilopsis linearis*) - introduced

Photographs of the proposed clearing area

Northern-York Proposed Road Verge Clearing. Green symbol indicates shrubs and trees.

Northam-York Road looking west from existing site access and proposed clearing area.

Appendix G. Sources of information

G.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)

- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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