Infinite Green Energy
Fuelling The Future

MEG-HP1 (Northam) Hydrogen Project

Northam-York Road Verge

Clearing Assessment Report (CAR)

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1. Introduction

The Infinite Green Energy (IGE) objective is to create a new kind of energy future in the region and internationally by leveraging our domain expertise in developing renewable hydrogen projects that will facilitate the transitioning of the Australian economy towards decarbonisation and net zero emissions.

Our ethos engrained in our culture is to leverage our natural resources including water, solar and wind energy through alliances proven technology partners, to deliver commercial scale projects that deliver renewable hydrogen to the evolving domestic and international markets and create a model of lower-carbon energy production that can be replicated worldwide.

Our vision is to establish IGE as a leader in the green hydrogen sector and to elevate Australia onto the global stage by demonstrating the country has the technology, skills and entrepreneurial mindset to be ahead of the pack in the development of green hydrogen projects. We are excited to be facilitating and being at the forefront of this transformation towards the net zero emissions economy and establishing Australia on the world stage in demonstrating this capability.

1.1. Background

The IGE MEG HP1 Early Production System is a small-scale project designed to produce IGE's first hydrogen for the domestic transport market. The project, located in Northam, has been envisioned to kick start the development of an end-user market for hydrogen through a fast-tracked hydrogen production schedule. The project will be powered by renewable energy sources and will have up to 10 MW of electrolyser capacity with a nameplate production capacity of 4.4 tonnes of hydrogen per day.

The new 10 MW system will utilise surplus renewable power from the existing 11 MW Northam Solar Farm and an additional 8 MW array to be constructed. The facility will also be connected to the Wester Power grid to allow for 24/7 output.

The plant will utilise 2x 5 MW capacity polymer electrolyte membrane (PEM) system to produce green hydrogen. Hydrogen will be compressed in gaseous form and transferred to trailer mounted Multi Element Gas Containers (MEGCs) for transportation by road to Hydrogen Refuelling Stations (HRSs). IGE has future plans to distribute liquefied green hydrogen to transport sector customers within the region.

Stage 2 of project development will be designed to allow for hydrogen production expansion to a 20 MW electrolyser and will be powered by a combination of solar and wind energy. Subsequent approvals are planned to include an option for green hydrogen liquefaction facilities.

1.2. Purpose

This report describes the scope of work, for the clearing native vegetation within an area of 0.2496 ha along the Northam York Road to accommodate a deceleration lane when accessing the Proposed Green Hydrogen Meg 1 project site. The aim of the project is to improve road user safety by attempting to reduce the probability and severity of crashes potentially caused by slowing trucks.

2. Scope

Infinite Blue Energy (IBE) propose to develop a hydrogen production plant, Early Production System (EPS), adjacent to the site of the existing Northam Solar Farm. The current solar array is located within the NW corner of the property. The new EPS proposed location will be in the SE corner of the property (Lot 7), adjacent to the Northam-York Road, south of the Mortlock River.

IGE are planning to submit to MRWA a proposal to upgrade the Northam-York Road that will enable trailer mounted Multi Element Gas Containers (MEGCs) trucks to utilise the road for the transportation of Hydrogen Refuelling Stations to collect and deliver Hydrogen from the proposed hydrogen plant to downstream clients.

On review of study and considering Hydrogen is classed as 'Dangerous Goods' the proposed upgrade will involve installing boom gates at the ARC train line crossing.

The proposed updated road design involves the installation of a de-acceleration left turn lane on the existing eastbound Northam-York primary distributor road approaching the site access road. The access road from Northam – York Road to the IGE project site is currently an unsealed, private road.

To increase road safety, to accommodate and construct the de-acceleration/waiting lane it will be necessary to clear a small number of trees along the Northam-York approach road. There is a large gum tree located at the unsealed access road entrance on the left side approx. 10m in height that will require removal and there are several smaller trees of varying size and mixed species along the Northam-York western approach road that will require clearing. (See Figure1)

Figure 1: Northam Hydrogen Plant Deceleration Lane and Site Access

3. Site Location Map Detail

3.1. Northam Map

Infinite Green Energy's (IGE) proposed hydrogen production plant is situated at the existing Northam solar farm located approximately one kilometre east of the Northam townsite, on the northeast side of the Northam – York Road and adjacent to the East Perth – Kalgoorlie railway line, as shown in Figure 2.

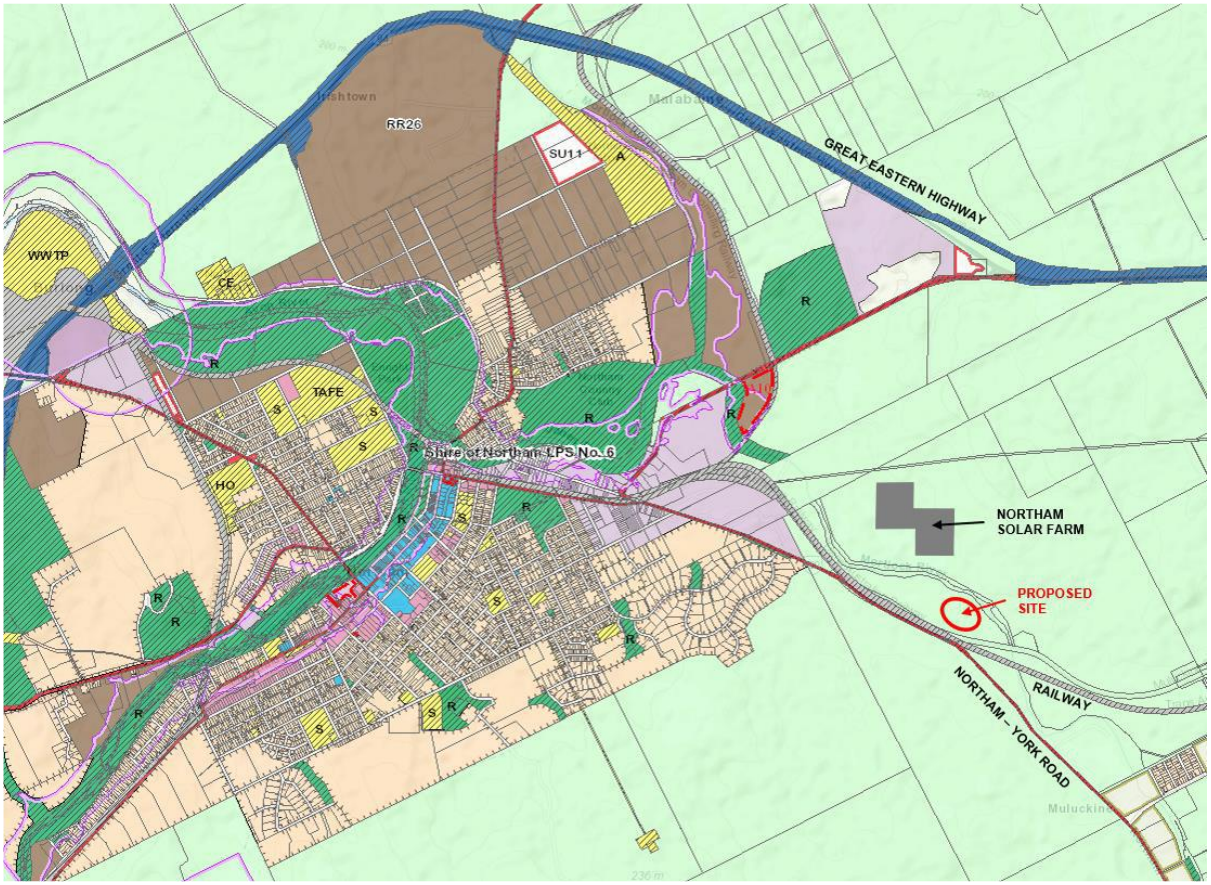

Figure 2: Site Location

Access to the subject site is proposed to utilise the existing private level crossing of the railway line that currently provides access to the Northam Solar Farm from the Northam – York Road.

3.2. Desktop Study and Site Inspection

To provide an assessment of potential environmental clearing impacts, IGE examined GIS data from Western Australia's Department of Parks and Wildlife for threatened and protected flora, fauna, communities, reserves, and environmentally sensitive areas. In addition, a search was conducted for the area on the Department of Energy and Environment's (DEE) Protected Matter Search Engine.

The AHIS database was queried to identify if any sites of Aboriginal Heritage are located on or near the Site. In addition, the Aboriginal Heritage Places Dataset was downloaded from the Department of Aboriginal Affairs (DAA) website. Information on European cultural heritage was obtained using the Australian Places Inventory.

Other information such as wind erosion, weeds, managed lands, bush fire prone areas and world heritage etc. was obtained using spatial information available from data.wa.gov.au.

3.3. Desktop Study Findings

Data and information acquired through the desktop study confirmed that no existing protected, threatened environmental species or cultural features are known to exist within the proposed clearing area along the MRWA road corridor.

3.4. Site Survey Results

A site visit was conducted by Peter Galloway the IGE Environmental Manger and Michael Hutt, the IGE Construction manager on December 5, 2022, to identify environmental aspects on the proposed road verge clearing area adjacent to the Northam-York main road. Vegetation clearing will be required for the proposed construction of a deceleration lane on the Northam-York Road approaching the hydrogen plant site unsealed access road. This lane will provide a safe area clear of through traffic for any 'left turning' inbound vehicles that will be required to decelerate or stop and wait for trains to clear the level crossing junction.

Habitats were inspected to identify the vegetation types present along the verge. Topography and amenity values were also considered.

Figure 3: Project Site Entrance and Existing Level crossing

3.5. Clearing Assessment

The purpose of this Clearing Assessment Report (CAR) is to provide a report detailing the assessment of native vegetation clearing that is proposed to be undertaken by IGE at the proposed Northam Meg 1 Hydrogen Plant.

The CAR outlines the key activities associated with the Meg1 Hydrogen Project, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the project using the ten Clearing Principles, and the strategies used to manage vegetation clearing.

3.6. Alternatives to Clearing

Alternatives to clearing for the Project were limited by the existing alignment of the Northam-York Road approaching the unsealed site access road. The verge clearing will be undertaken to minimise the amount of clearing required.

3.7. Location of proposed clearing

The proposed location of the native vegetation clearing is along the Northam York main Road verge. Several isolated York gums (*Eucalyptus loxophleba*) were located along the verge side adjacent to the road.

Soils vary across the site with red granite loams on the higher ground to the north and sand across the southern lower ground. The area along the western edge near the runoff control berm is comprised of stronger clays (pers. comm. D. West farmer/landowner).

Table 1. Manage the Road Verge Clearing Impacts

Aspect Management Measure	Applied to Design	Outcome
Installation of safety barriers	No	The installation of safety barriers will not result in a reduced clearing footprint or reduced environmental impacts.
Alignment to existing Northam-York approach road	Yes	The deceleration lane will be designed to align with MRWA standards including the Road Safety Management System (ROSMA).
Alternative alignment of deceleration lane	No	The deceleration lane cannot be relocated as it is designed to connect to the site access road travelling east.
Installation of kerbing	No	The installation of kerbing is not applicable to a deceleration lane
Simplification of design to reduce number of lanes and / or complexity of access	Yes	The type and length of lanes to decelerate on existing road will be incorporated into the lane design.
Preferential use of existing cleared areas for accessing site	No	No temporary clearing can be accessed from the main road
Drainage modification	No	Water flow runs into existing culvert

4. Policies and Planning Regulations

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).

4.1. Assessment Against the Ten Clearing Principles

In assessing whether the Project's proposed clearing is likely to have a significant impact on the environment, the Project was assessed against the ten clearing principles (EP Act 1986, Schedule 5).

Each principle has been assessed in accordance with the 'Guide to the Assessment of Applications to Clear Native Vegetation' (Department of Environment Regulation, 2014).

The proposed clearing will have very low impact on the environment in accordance with s.51DA of the EP Act and is not likely to be at variance to the clearing principles.

Table 2 Clearing principles for native vegetation under Schedule 5 of the EP Act

Principle	Description	Action Required
a	Native vegetation should not be cleared if it comprises a high level of biological diversity.	No
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 indigenous to Western Australia.	No
c	Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	No
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.	No
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.	No
f	Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	No
g	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	No
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.	No

Principle	Description	Action Required
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.	No
j	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	No

5. Vegetation Management

IGE will endeavor to avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing will be kept to a minimum.

5.1. Surrounding Riverbanks and Remnant Woodland

The Mortlock River South lies approximately 15-30 m North of the proposed hydrogen site footprint. The area between the riverbank and arable paddock was formed of woodland (circa 30% cover) with sparse understorey and ground cover dominated by agricultural weeds.

The woodland was dominated by flooded gum (*Eucalyptus rudis*), salmon gum (*Eucalyptus salmonophloia*), swamp she-oak (*Casuarina obesa*) and one other eucalypt that are possibly hybrids between *E. camaldulensis* and *E. rudis* as described by French (2012).

The understorey is formed of swamp paperbark (*Melaleuca rhaphiophylla*), infrequent needlebush (*Hakea preisii*) and occasional *Acacia* spp. Occasional plants of the dominant species listed above were also present. The ground cover was dominated wholly by wild oats (Matters of Environment, 2017).

6. Flora and Vegetation

A Threatened Ecological Community (TEC) has been reported immediately NW of the development envelope.

The DPAW data show that several stands of "Eucalypt Woodland of the Western Australian Wheatbelt" lie Immediately North of the Site. This is classed as a critically endangered, threatened ecological community (TEC) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and therefore a matter of National Environmental Significance (MNES). It has been designated Priority level 3 in Western Australia.

A dieback survey has been deemed unnecessary due to the historical agricultural land use and the lack of intact native vegetation (Matters of Environment, 2017).

6.1. 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

6.2. Landforms

No significant landform was identified in Carnegie Clean Energy Northam PV Array Environmental Site Assessment Report for the area adjacent to the proposed EPS (Matters of Environment, 2017). As the clearing area has been disturbed previously from road construction works a soil and landform survey are not deemed necessary unless a site visit raises this as a potential environmental factor.

6.3. Proposed Clearing Area

Figure 4: Northam –York Road Proposed Road Verge Clearing- ● Shrubs & trees

Figure 5: Northam – York Road looking west from existing site access and proposed clearing area

Figure 6: Proposed Clearing Area, Plan View

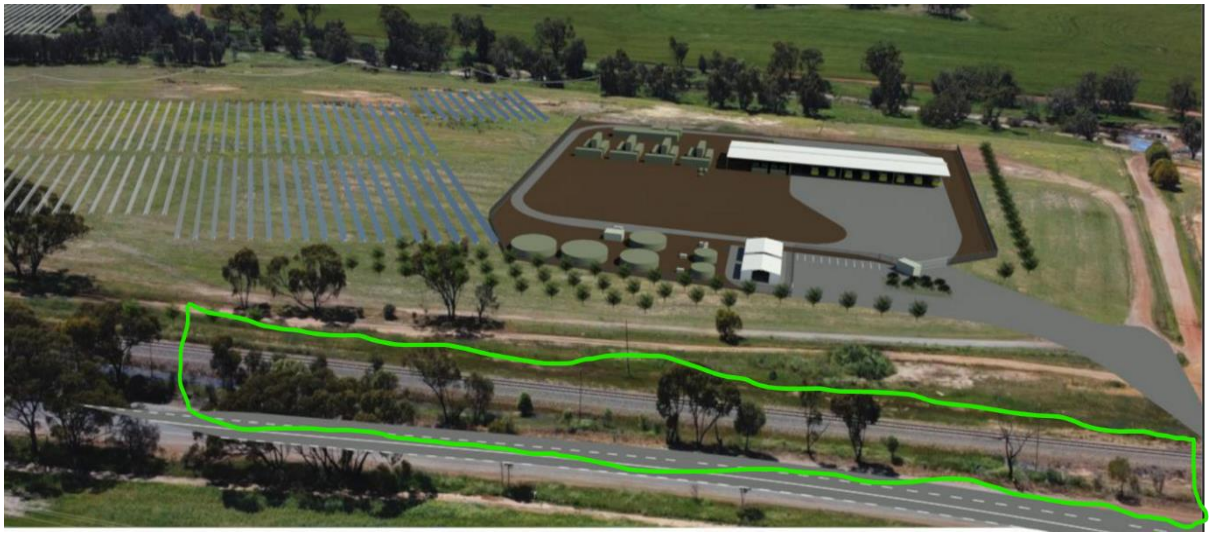

Figure 7: Proposed Native vegetation Clearing on Northam-York Road Looking North

Figure: 8 Northam-York Road Looking North

7. Conclusions

IGE's proposed clearing native vegetation within a 0.2496 ha area for the construction of a left turn lane on the Northam – York Road for Multi Element Gas Container trucks to approach the MEG 1 Project safely and to increase road safety and to minimise the risk of traffic accidents from decelerating and turning trucks.

By utilising management mitigation measures and assessing the surroundings, the environmental impacts identified for this clearing report are likely to be negligible. The clearing area has been previously disturbed by road construction. No impacts on features of cultural heritage or social values have been identified. Therefore, the proposed road verge clearing will have a very low environmental impact in accordance with s.51DA of the EP Act.

8. References

Department of Environment Regulation. (2014). *A guide to the assessment of applications to clear native vegetation*. Department of Environment Regulation.

French, M. (2012). *Eucalypts of Western Australia's Wheatbelts*. Malcolm French.

Matters of Environment. (2017). *Carnegie Clean Energy Northam PV Array* [Environmental Site Assessment Report]. Carnegie Clean Energy.

9. Appendix

Clearing area map.


Monnock River
Lot 60 on Plan 2024
Northam-York Rd
Lot ID No 3500396
120
Project Area MEG HP1
Indicative clearing area
Relevant cadastre lots
N
0
25
50 m
Northam Hydrogen Project MEG HP1
Clearing area
infinite green
Author: Oliver Krumholz
Approved: Peter Galloway
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