



PROJECT CHINA STONE

Visual Amenity

17

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17 VISUAL AMENITY

17.1 INTRODUCTION

A visual impact assessment was undertaken by Hansen Bailey to determine the impact of Project China Stone (the project) on the visual quality and character of the surrounding area. This section describes the methodology for the visual impact assessment, the existing visual setting, the visual effects and impacts of the project, and proposed mitigation measures.

The visual assessment addressed the activities to be undertaken on the project site. These activities will include the construction and operation of a large scale open cut and underground coal mine. Major features that were the focus of this assessment included the establishment of overburden emplacement areas and key mine infrastructure such as Coal Handling and Preparation Plants, rail loop and train loading facilities, workshops, mine waste storage facilities, workforce accommodation village and the on-site power station (Figure 17-1).

17.2 METHODOLOGY

The visual assessment involved field inspections and photographic and map analysis in order to identify visual receptors, and then characterise the existing visual setting, the sensitivity of visual receptors and the visual effect of the project.

Visual sensitivity is a measure of how critically the various components of a project are viewed by people utilising different land uses in the vicinity. It considers the importance of visual amenity to the receptor, with residential receptors considered to have a higher visual sensitivity than receptors such as industrial facilities.

Visual effect is a measure of the level of visual contrast between the project elements and the existing visual environment, and is determined by a balanced consideration of the following:

- Screening by intervening topography and vegetation;
- The level of contrast and integration between the project elements and the landscape within which they are viewed;
- The distance between the visual receptor and the project elements; and
- The proportion of the view occupied by the project elements.

Lines of sight were developed to assist in determining the visual effect of the project at the various visual receptors. A line of sight is a representative line drawn from a visual receptor to the project elements. Lines of sight are drawn at eye level and are used to evaluate the extent to which project elements will be visible at a receptor location. Topographic maps and aerial photographic imagery were used to identify the terrain and vegetation across the site, and then determine the level of screening by intervening vegetation and topographic elements, such as ridgelines and hills, between the visual receptor and the project elements.

The visual impact on each visual receptor is then assessed through the consideration of the visual sensitivity of the receptor and the visual effect of project elements as viewed from the receptor, using the visual assessment matrix (Table 17-1). The result of this assessment is a level of impact ranging from High Impact to Low Impact.

Table 17-1 Visual Assessment Matrix

VISUAL ASSESSMENT MATRIX				
	High Effect	Moderate Effect	Low Effect	Very Low Effect
High Sensitivity	High Impact	High Impact	Moderate Impact	Low Impact
Moderate Sensitivity	High Impact	Moderate Impact	Low Impact	Low Impact
Low Sensitivity	Moderate Impact	Low Impact	Low Impact	Low Impact

17.3 VISUAL ASSESSMENT

17.3.1 Existing Visual Setting

Visual Setting

The local visual landscape is dominated by grazing land and remnant woodland vegetation. A well vegetated ridgeline known as Darkies Range is a dominant feature in the landscape and runs in a roughly north to south alignment through the western portion of the project site (Figure 17-1).

The region is remote, with the closest townships being Charters Towers, approximately 285 km by road to the north, and Clermont which is approximately 260 km by road to the south-east.

Public roads in the region include:

- The Gregory Developmental Road which is the major transport corridor for the region;
- Elgin-Moray Road, an unsealed local government road which provides access to the project site from the Gregory Developmental Road; and
- Moray-Carmichael Road, an unsealed local government road which provides access to the project site from Elgin-Moray Road.

Project Setting

The terrain in the project site is generally flat at around 200 - 300 m Australian Height Datum (AHD) with the exception of Darkies Range which reaches a height of approximately 500 m AHD. The site is located at the head of the Tomahawk and North Creek catchments and there are no significant waterways traversing the site. The project site consists of remnant vegetation and is used for cattle grazing and coal exploration. There is limited built infrastructure on the project site consisting of stock fencing, unsealed access tracks and stock watering dams.

17.3.2 Visual Receptors

Visual receptors in the vicinity of the project site are limited to isolated rural residences and unsealed local government roads. The three closest residences were selected for the purposes of the visual impact assessment (Figure 17-1).

Potential views from these visual receptors represent the range of critical views within the primary visual catchment of the project. An assessment of visual effects and impacts on these locations will be representative of the primary visual catchment area as a whole. Visual effects and impacts on areas beyond these locations will generally be less, and will have been considered in the context of the closer and more critical view areas within the primary catchment.

17.3.3 Visual Sensitivity

The visual sensitivity of the identified visual receptors is described in the following sections.

Remote Rural Residences

The following three isolated rural residences were identified within 15 km of the project site:

- Moonoomoo Homestead;
- Carmichael Homestead; and
- Dooyne Outstation.

Dooyne Outstation is not permanently occupied and is only used intermittently.

For the purposes of this assessment, these three isolated rural residences are considered to have a high visual sensitivity due to the potential for visual impact to adversely affect their residential amenity. However, the visual sensitivity of rural residences would be dependent on their orientation to the project and their design (i.e. whether they have a verandah with expansive views to the project or a garden or shed blocking the view).

Local Government Roads

Elgin-Moray Road and Moray-Carmichael Road are both unsealed local government roads that provide the primary access from the Gregory Developmental Road to the project site. They are typically utilised by local rural residents and coal exploration related traffic, and are not common routes for tourists.

These two roads have a low visual sensitivity as they are not a tourist route, are distant from the project site, are predominately utilised for mining and agricultural related traffic and the direction of travel is orientated oblique to the project site.

17.3.4 Visual Effect

The potential visual effect of the project will be primarily related to the elevated portion of the overburden emplacement areas and the tall power station stack. The key visible elements of the project are listed in Table 17-2 and shown in Figure 17-1, with line of sight analysis shown in Figures 17-2 to 17-4.

Views toward visible elements of the project will largely be obscured by woodland vegetation and topographical relief between receptors and the project elements. Combined with the significant distance between the receptors and project elements (between 12 km and 20 km), it is predicted that the overall visual effect of the project will be very low.

Table 17-2 Key Visible Project Elements

VISIBLE ELEMENT	LOCATION	DESCRIPTION AND DIMENSIONS
Overburden Emplacement Areas	Southern and central portion of the project site	The overburden emplacement areas will be a maximum of 180 m above the existing ground surface.
Power Station Stack	In the south-east of the project site	The power station stack will be 210 m above the existing ground surface and will have a diameter of approximately 15 m.

17.3.5 Visual Impact

Table 17-3 shows the results of the visual impact assessment for the project. This included consideration of the line of sight analyses shown in Figures 17-2 to 17-4. The line-of-sight from each visual receptor was developed using topographical maps and aerial photographic imagery to evaluate the visibility of project elements.

Table 17-3 Visual Impact Assessment

VISUAL RECEPTOR	SENSITIVITY	PROJECT ELEMENT	VISUAL EFFECT	VISUAL IMPACT
Moonoomoo Homestead	High	Overburden Emplacement Areas	Not Visible	-
		Power Station Stack	Not Visible	-
Carmichael Homestead	High	Overburden Emplacement Areas	Very Low	Low
		Power Station Stack	Not Visible	-
Dooyne Outstation	High	Overburden Emplacement Areas	Very Low	Low
		Power Station Stack	Very Low	Low
Elgin-Moray Road and Moray-Carmichael Road	Low	Overburden Emplacement Areas	Very Low	Low
		Power Station Stack	Very Low	Low

Remote Rural Residences

Moonoomoo Homestead

The nearest visual element of the project to this receptor is the overburden emplacement area, located over 10 km to the east. Views from Moonoomoo Homestead toward the project will be screened by the undulating topography associated with Darkies Range as shown in Figure 17-2 and the project will not be visible.

In summary, the elements of the project will not be visible from this receptor, and will therefore not give rise to visual impacts.

Carmichael Homestead

The nearest visual element of the project to this receptor is the overburden emplacement area, located over 15 km to the north-east (Figure 17-3). Distant views from Carmichael Homestead toward the overburden emplacement area will be possible, however at this distance would only have a very low visual effect. The visual impact on this receptor will therefore be low (Table 17-3).

Dooyne Outstation

The nearest visual element of the project to this receptor is the power station stack, located over 12 km to the west (Figure 17-4). Distant views from Dooyne Outstation toward the power station stack will be possible, however at this distance would only have a very low visual effect. Potential views to the overburden emplacement area will also be distant (over 18 km) and will be obscured by intervening vegetation. The visual impact on this receptor will therefore be low (Table 17-3).

Local Government Roads

Intervening vegetation and topography will provide screening of the overburden emplacement areas during a journey along the Elgin-Moray Road and Moray-Carmichael Road. Coupled with the long range viewing distances (over 21 km) and the fact that views would generally be oblique to the direction of travel views to the project will be unlikely. The visual impact on road users will therefore be low (Table 17-3).

Lighting

Night lighting at the mine infrastructure area will not be visible from the remote rural residences or local government roads. Lighting is likely to be noticeable only as a faint glow above the facilities. Night lighting is not

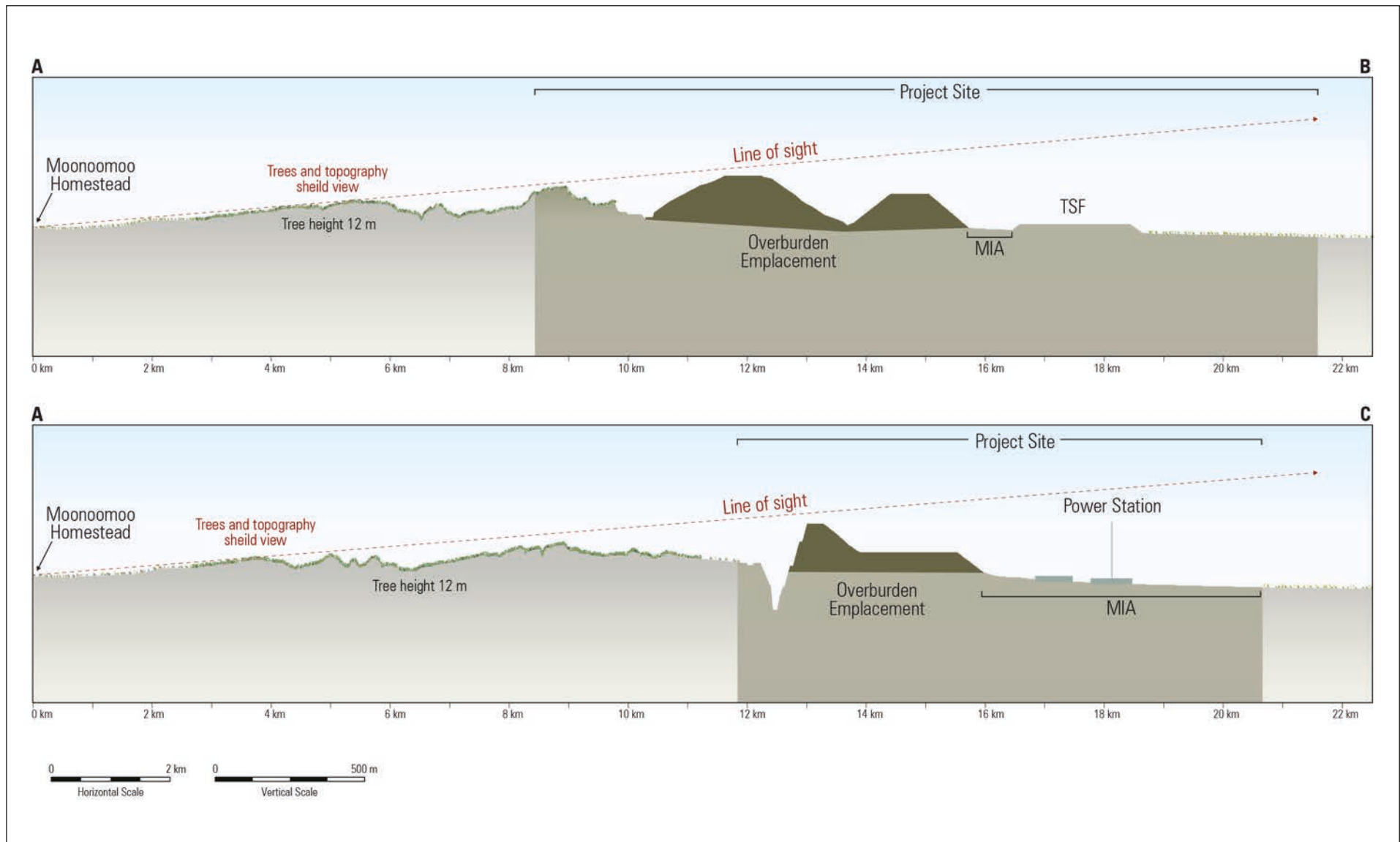
likely to adversely impact on remote rural residences or road users due to the long range viewing distances and the screening of direct line of sight to the facilities by intervening vegetation, topography and the overburden emplacement areas.

17.4 MITIGATION AND MANAGEMENT MEASURES

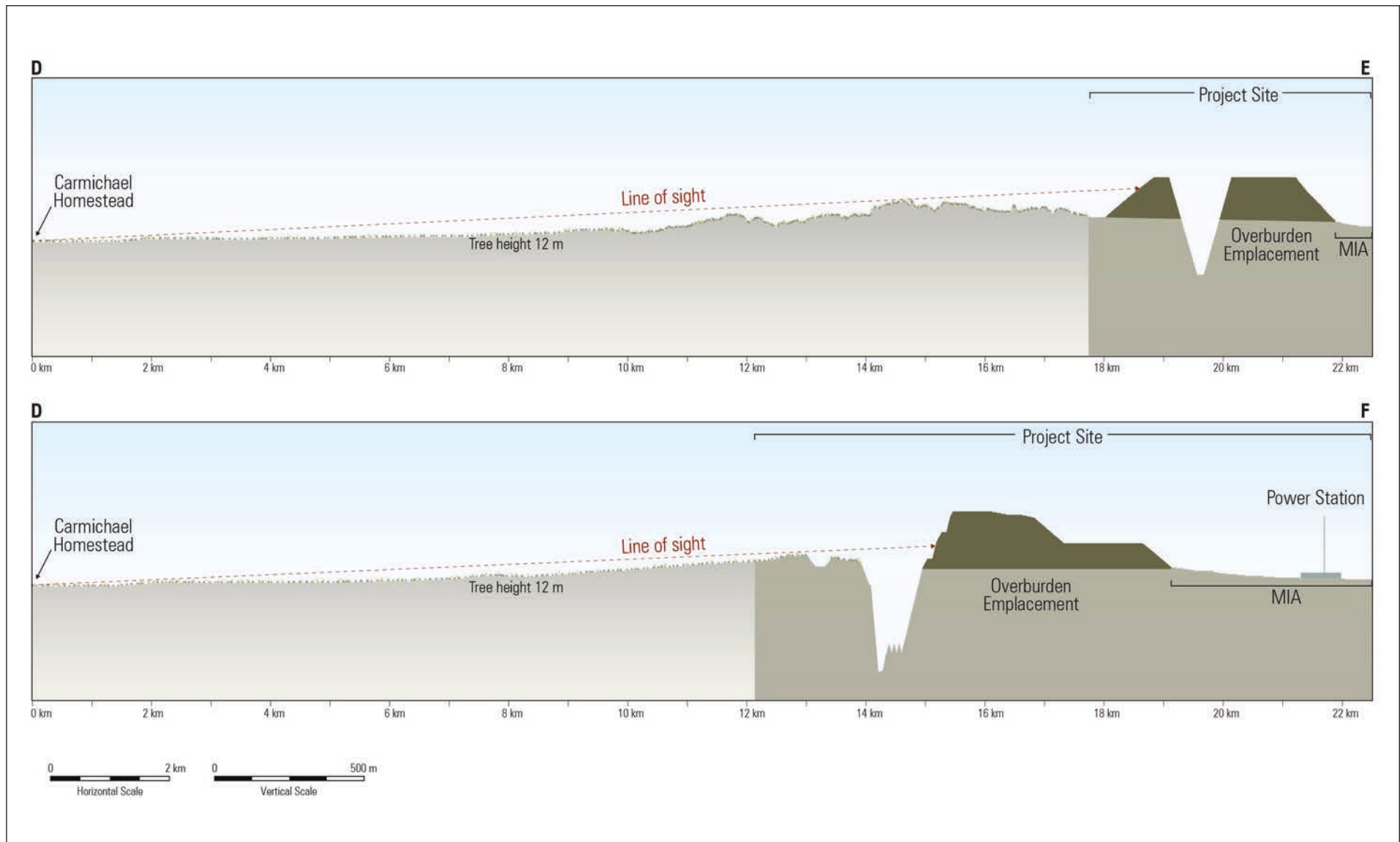
The following mitigation measures will minimise the visual and lighting impacts of the project:

- Progressive rehabilitation and revegetation of overburden emplacement areas to minimise the visual effect;
- Use of neutral tones in the cladding of infrastructure to blend with the surrounding environment; and
- Design of external lighting to minimise off site impacts.

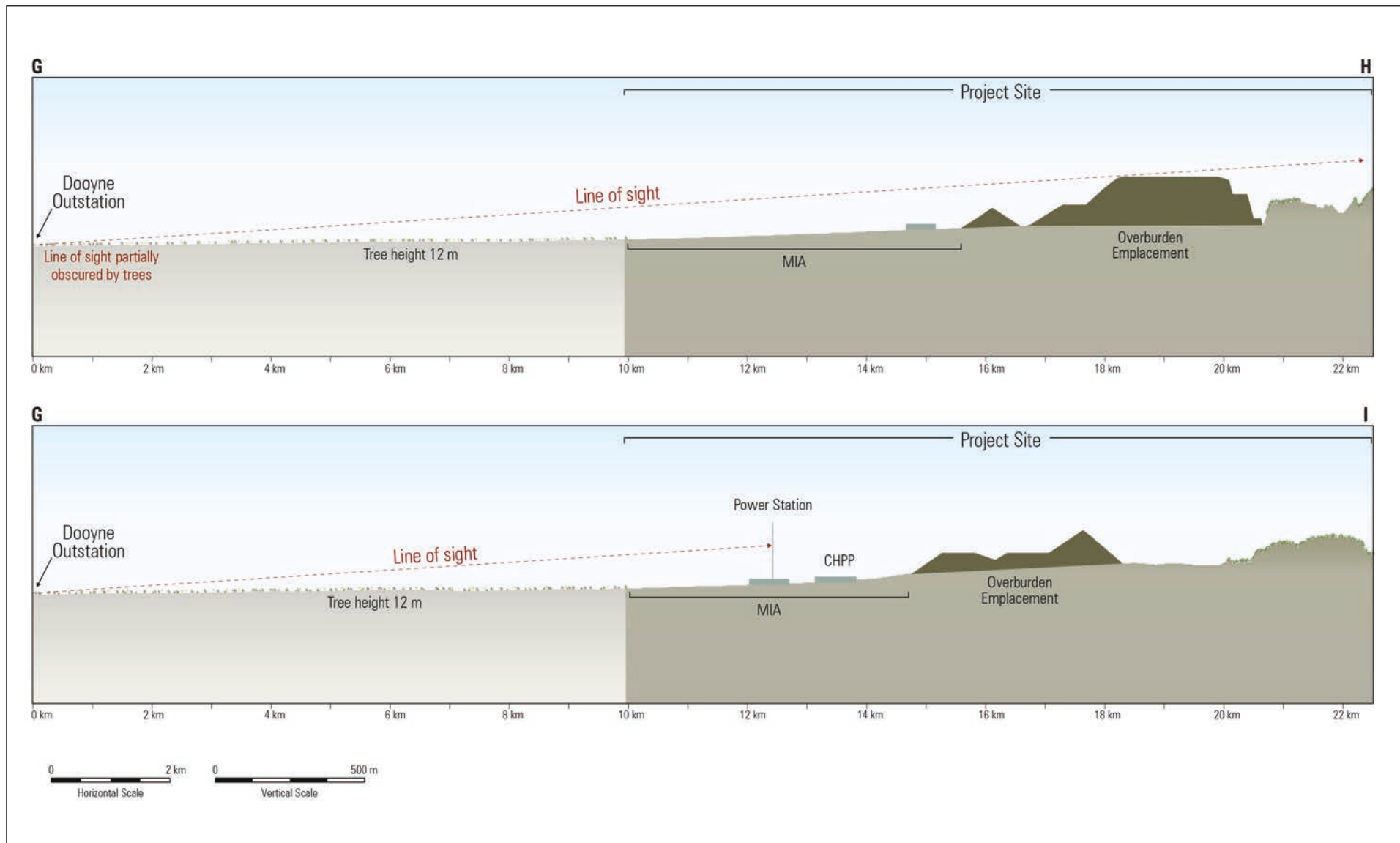
FIGURES



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