Transmission line from Cataby substation to Eneabba substation

Western Power Corporation

Report and recommendations of the Environmental Protection Authority

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1. Introduction and background

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment and Heritage on the environmental factors relevant to the proposal by Western Power Corporation (WPC) to construct and maintain a 132 kilovolt (kV) transmission line from the Cataby substation to a substation at Eneabba. The transmission line will follow a route over approximately 80 kilometres (km) and will traverse the Coomallo Nature Reserve and the Hill River Nature Reserve. The transmission line is proposed to reinforce and improve the quality and reliability of power supply in WPC's Great Northern Region, including areas between Muchea and Geraldton.

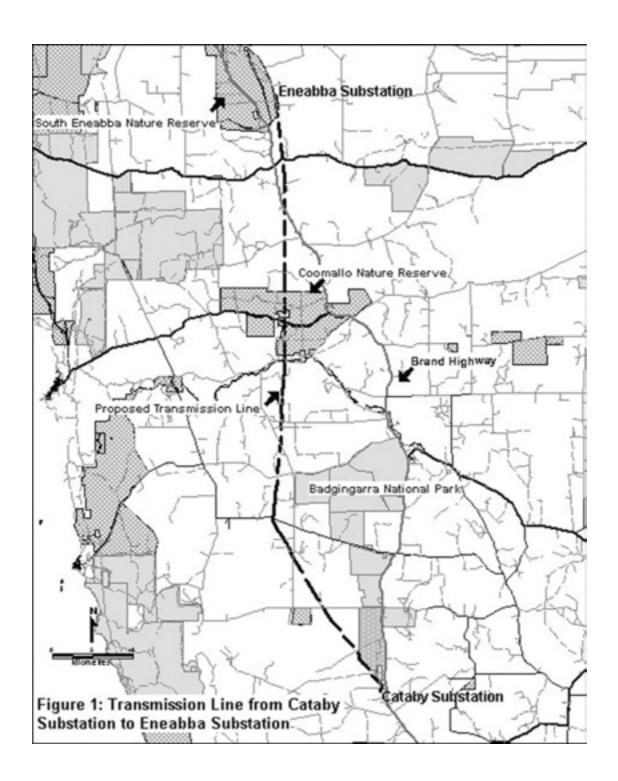
Based on the information provided, the EPA considered that while the proposal has the potential to have an effect on the environment, the proposal could be readily managed to meet the EPA's environmental objectives. Consequently, it was notified in *The West Australian* newspaper on 10 June 2002 that the EPA intended to assess the proposal through Assessment on Referral Information.

The proponent has submitted a referral document for this proposal setting out the detail of the proposal, potential environmental impacts, and giving a number of appropriate commitments to manage the potential environmental impacts that were identified (WPC 2002). The EPA considers that the proposal described can be managed in an acceptable manner subject to these commitments and recommended conditions being made legally binding.

The EPA therefore has determined under Section 40(1) that the level of assessment for the proposal is Assessment on Referral Information, and this report provides the EPA advice and recommendations in accordance with Section 44(1).

2. The proposal

The proposed line route (figure 1) is approximately 80 km long and traverses 8.5 km of nature reserve, 56 km of private property, 2.3 km of Main Roads property and 13 km within the Tiwest Yalgoo Mines mining lease. The transmission line involves the permanent clearing of up to 7.8 hectares (ha) of vegetation for the tower sites and tower access roads, and the temporary clearing of up to 23.4 ha for construction activities including line stringing. Of this, approximately 0.5 ha of permanent clearing and 4.5 ha of temporary clearing are within land managed by the Department of Conservation and Land Management (CALM). The transmission line will be constructed in a 50 metre (m) management corridor. The vegetation along the majority of the proposed route is less than 1 m in height. Any vegetation, directly under the transmission line, over 3 m in height will require some management.



The main characteristics of the proposal are summarised in Table 1 below.

Table 1: Summary of key proposal characteristics

Element	Quantities/Description
Period of construction	19 months approximately
Local Government areas traversed	Shire of Dandaragan
	Shire of Coorow
	Shire of Carnamah
Length of line	80 kilometres approximately
Line voltage	132 kilovolts
Tower height	Average 47 metres
Minimum phase conductor to ground clearance	7 metres
Span between towers	550 metres approximately
Width of management corridor	50 metres
Area of temporary vegetation disturbance	23.4 hectares approximately
Area of permanent vegetation clearing	7.8 hectares approximately
Conservation areas traversed	Coomallo Nature Reserve
	Hill River Nature Reserve
Major proposal components	Lattice tower and pole construction
	Conductor stringing
	Maintenance

3. Consultation

During the preparation of the referral information, the proponent has undertaken consultation with Government agencies, in particular CALM, the Conservation Commission of Western Australia and the Water and Rivers Commission. These key stakeholders have a direct interest in the project and changes have been made to the proposal to ensure that the requirements of these agencies are met. Further, the proponent has committed to continued consultation with these agencies through the implementation of the proposal. Landholders along the route have also been consulted.

4. Relevant environmental factor

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment and Heritage on the environmental factors relevant to the proposal and the conditions and procedures, if any, to which the proposal should be subject. In addition, the EPA may make recommendations as it sees fit.

It is the EPA's opinion that the following environmental factor relevant to the proposal requires detailed evaluation in this report:

a) Vegetation – the effects of the construction and ongoing maintenance of the transmission line on local and regional vegetation both within conservation reserves and elsewhere along the transmission line corridor.

4.1 Vegetation

Description

WPC identified the clearing of vegetation as a major issue in the development of the proposal and have aligned the route to minimise the level of vegetation clearing. The eventual route of the proposed transmission line will require up to 7.8 ha of permanent vegetation clearing associated with the area around each of the towers and clearing for permanent access, and approximately 23.4 ha of temporary vegetation disturbance for construction of the towers and stringing of the conductors. Of this area of clearing, 0.5 ha of permanent clearing and 4.5 ha of temporary disturbance is within CALM managed land.

Assessment

The EPA's environmental objectives for this factor are to:

- maintain the abundance, species diversity, geographic distribution and productivity of vegetation communities;
- ensure that regionally significant flora and vegetation communities in these reserves are protected;
- ensure that the conservation values and management of existing and proposed reserves are not compromised; and
- ensure that the proposal meets the requirements of the EPA Position Statement Number 2: *Environmental Protection of Native Vegetation in Western Australia*.

In the design of the transmission line, WPC has proposed that there will be no new substantial access track cleared along its length. Existing tracks will be used where possible and WPC proposes to construct cut-in spurs between existing tracks and proposed tower base sites. The sighting of the line adjacent to an existing 132 kV transmission line will allow access to the proposed transmission line by using existing access tracks. At the same time it will provide a mechanism to restrict access to the existing and proposed transmission lines. This will minimise vegetation clearing and also limit the likelihood of transfer of weeds and pathogens (including dieback (*Phytophthora* sp)) along the length of the line.

The proposal is within the area covered by the EPA's Position Statement Number 2, *Environmental Protection of Native Vegetation in Western Australia* and it is the EPA's expectation that it meet the elements detailed in Section 4.2, "Clearing in the agricultural area where alternative mechanisms address biodiversity values" and Section 4.3, "Clearing in other areas of Western Australia".

WPC has taken reasonable and practical measures to limit the clearing of vegetation for this proposal. As a result, the amount of proposed vegetation clearing is small in comparison with the length of the transmission line. Due to the small, localised footprint of each tower (approximately 12 m x 12 m) and the spatial separation between each tower (approximately 550 m), significant biodiversity changes are not expected to occur.

Vegetation surveys conducted along the transmission line did not identify any Declared Rare Flora. However, a number of Priority flora species were identified. WPC has advised the EPA that CALM is satisfied with the mechanisms proposed to minimise impact on these Priority species, including minor alterations to the line route if required and continued consultation with CALM in relation to specific placement of towers to avoid impact on Priority 2 species. It is not expected that any other threatened populations, communities or associations will be impacted by this alignment of the transmission line. To minimise overall impacts on biodiversity, WPC has proposed environmental mitigation measures in relation to the impact of the proposal on vegetation within the State's conservation reserves and elsewhere along the route of the transmission line. The mitigation strategy provides for the purchase of land for addition to the conservation estate. The mitigation strategy, endorsed by the Conservation Commission, will result in no nett loss to the conservation estate.

The proponent has committed to the development and implementation of a Vegetation Management Plan (Commitment 3) to detail the revegetation of areas of temporary disturbance. In particular, consideration will be given to the contingencies required in the case of natural revegetation of areas of temporary disturbance not being sufficient.

Strategies to reduce visual impact, such as the installation of poles instead of towers have also reduced the required amount of vegetation clearing. Poles will be used in visually significant areas such as within the Coomallo Nature Reserve (in the vicinity of Jurien Road) and in the vicinity of the crossing of Bibby Road, Dandaragan (the primary route from the Brand Highway to Cervantes).

The proponent has confirmed that the development of this transmission line would not require CALM to alter its fire management in the vicinity of the proposed transmission line. A four-metre clear area will be maintained around each transmission tower to ensure that fire does not directly threaten the structures, insulators or live electrical conductors during controlled burns.

Summary

Having particular regard to the:

- (a) relatively small area of vegetation clearing required, when considered in the context of the 80 km length of the transmission line, the localised footprint of each tower and the spatial separation between each tower;
- (b) proponent's commitment to develop an Environmental Management Program (Commitment 1), incorporating a Vegetation Management Plan (Commitment 3), a Weed Management Plan (Commitment 5) and a *Phytophthora* Hygiene Management Plan (Commitment 7), all of which will be integrated into the proponent's existing Environmental Management System; and
- (c) the measures proposed to mitigate for the vegetation affected and to ensure that there will be no net loss of the conservation estate as a result of this proposal,

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objectives for this factor.

5. Conditions and Commitments

The EPA recognises that not all of the commitments are written in a form which makes them readily enforceable, but they do provide a clear statement of the action to be taken as part of the proponent's responsibility for, and commitment to, continuous improvement in environmental performance. The commitments, modified if necessary to ensure enforceability, then form part of the conditions to which the proposal should be subject, if it is to be implemented. The proponent's commitments as shown in Appendix 2, should be made enforceable.

Having considered the proponent's commitments and information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by WPC to construct and maintain a transmission line from Cataby to Eneabba is approved for implementation. Matters addressed in the conditions include the requirement that the proponent shall fulfill the commitments in the Consolidated Commitments statement set out as an attachment to the recommended conditions in Appendix 2.

6. Other advice

6.1 Electromagnetic fields (EMF)

WPC designs and operates all its powerlines in compliance with the safe exposure limits recommended by the World Health Organisation (WHO) and adopted by the National Health & Medical Research Council of Australia (NH&MRC). The recommended limit in the NH&MRC guidelines for exposure to EMF for up to 24 hours per day is 1000 milliGauss (0.1 milliTesla). WPC proposes that the magnetic field within the transmission line corridor will be just over 5 milliGauss. It is expected that only activities that may contravene the safe electrical clearances of the transmission line will be restricted from being undertaken under the line and within the easement. The transmission line meets the guidelines recommended by WHO and the NH&MRC and it is considered that the proposal can meet the EPA's objective.

6.2 Priority fauna species

The Coomallo Nature Reserve is a known breeding site for the Carnaby Black Cockatoo, *Calyptorhynchus latirostris*, which is listed in Schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 1999*. All taxa of the fauna specified in Schedule 1, being fauna that is rare or likely to become extinct, are declared to be fauna that is in need of special protection. Field surveys have indicated that the Carnaby Black Cockatoo could potentially use the Eucalypt trees growing along the Coomallo Creek, at the proposed transmission line crossing, for nesting sites. The transmission line design has been modified to include tall towers in the vicinity of Coomallo Creek to ensure that these Eucalypt trees are not disturbed during construction and maintenance. The wires for the transmission line will clear the canopy by 6 m and will be installed using a helicopter or any other means that avoids disturbance to the trees. No other habitats of Specially Protected (Threatened) fauna are recorded to occur along the transmission line route.

7. Conclusions

The EPA has considered the proposal by WPC to construct and maintain a transmission line from Cataby substation to Eneabba substation. The proposed route passes through areas of conservation reserve including Coomallo Nature Reserve and Hill River Nature Reserve. Construction of the transmission line will result in the permanent clearing of up to 7.8 ha of vegetation and the temporary disturbance of up to 23.4 ha.

The proponent has minimised the amount of vegetation clearing required through the proposed management of construction and maintenance activities and by selecting a route which largely follows existing tracks.

The proponent has maintained a distinction between the level of temporary vegetation disturbance and the level of permanent vegetation clearing required. Undertaking construction of the transmission line in a manner that will allow the areas of temporary disturbance to rehabilitate, will reduce the amount of vegetation to be permanently cleared. The proponent's intention not to construct a dedicated access track along the length of the line, and instead to use existing tracks and cutting in spurs where necessary, will minimise access along the transmission line and consequently minimise the potential introduction and spread of weeds and pathogens.

The vegetation proposed to be cleared or disturbed by this proposal has been examined against the EPA's Position Statement No. 2 *Environmental Protection of Native Vegetation in Western Australia* which outlines the EPA's expectations for proposals with a clearing component. It is the EPA's view that the proposal meets the elements detailed in Section 4.2, "Clearing in the agricultural area where alternative mechanisms address biodiversity values" and Section 4.3, "Clearing in other areas of Western Australia". The amount of clearing is small considering the length of the transmission line. As a result of the small, localised footprint of each tower (approximately 12 m x 12 m) and the spatial separation between each tower (approximately 550 m), significant biodiversity changes are not expected to occur. Flora surveys have not identified Declared Rare Flora along the proposed route, and specific management is proposed for Priority flora species identified. The proponent's mitigation strategy provides for the Conservation Commission to acquire additional areas of remnant vegetation for inclusion in the conservation estate.

To minimise potential impact on visual amenity, the proponent has committed to the installation of poles instead of towers along sections of the line route and to locate towers in low areas rather than at tops of ridges.

The electromagnetic fields resulting from the transmission line will be in compliance with the safe exposure limits recommended by the World Health Organisation and adopted by the National Health & Medical Research Council of Australia.

The EPA has concluded that it is unlikely that the EPA's objectives would be compromised provided there is satisfactory implementation by the proponent of the proponent's commitments and the recommended conditions set out in Appendix 2.

8. Recommendations

The EPA submits the following recommendations to the Minister for the Environment and Heritage:

- 1. That the Minister notes that the proposal being assessed is for a transmission line from Cataby to Eneabba, being proposed by Western Power Corporation.
- 2. That the Minister considers the report on the relevant environmental factor as set out in Section 4.
- 3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 2, including the proponent's commitments.
- 4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

Appendix 1

References

EPA (2000) Environmental Protection of Native Vegetation in Western Australia: Clearing of native vegetation with particular reference to the agricultural area, Environmental Protection Authority Position Statement No. 2.

Western Power Corporation (2002) Cataby to Eneabba 132 kV Transmission Line: Environmental Referral, January 2002.

Woodman Environmental Consulting Pty Ltd (2002) *Proposed Cataby to Eneabba Transmission Line Flora, Vegetation and Dieback (Phytophthora cinnamomi) Survey*, prepared for Western Power, Perth, Western Australia, February 2002.

Appendix 2

Recommended Environmental Conditions and Proponent's Consolidated Commitments

RECOMMENDED CONDITIONS AND PROCEDURES

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

TRANSMISSION LINE

FROM CATABY SUBSTATION TO ENEABBA SUBSTATION

Proposal: The construction and operation of a 132 kilovolt transmission line,

approximately 80 kilometres in length from the Cataby substation to the Eneabba substation, as documented in schedule 1 of this

statement.

Proponent: Western Power Corporation

Proponent Address: GPO Box L921, PERTH WA 6842

Assessment Number: 1436

Report of the Environmental Protection Authority: Bulletin 1051

The proposal referred to above may be implemented subject to the following conditions and procedures:

Procedural conditions

1 Implementation and Changes

- 1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.
- 1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.
- 1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is not substantial, the proponent may implement those changes upon receipt of written advice.

2 Proponent Commitments

- 2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement.
- 2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfillment of the conditions in this statement.

3 Proponent Nomination and Contact Details

- 3-1 The proponent for the time being nominated by the Minister for the Environment and Heritage under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment and Heritage has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.
- 3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 3-3 The nominated proponent shall notify the Department of Environmental Protection of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

4-1 The proponent shall provide evidence to the Minister for the Environment and Heritage within five years of the date of this statement that the proposal has been substantially commenced or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment and Heritage will determine any dispute as to whether the proposal has been substantially commenced.

4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment and Heritage, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- the environmental factors of the proposal have not changed significantly;
- new, significant, environmental issues have not arisen; and
- all relevant government authorities have been consulted.

Note: The Minister for the Environment and Heritage may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

5 Compliance Audit

- 5-1 The proponent shall prepare an audit program in consultation with and submit compliance reports to the Department of Environmental Protection which address:
 - the implementation of the proposal as defined in schedule 1 of this statement;
 - evidence of compliance with the conditions and commitments; and
 - the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environmental Protection is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement. Usually, the Department of Environmental Protection prepares an audit table which can be utilised by the proponent, if required, to prepare an audit program to ensure that the proposal is implemented as required. The Chief Executive Officer is responsible for the preparation of written advice to the proponent, which is signed off by either the Minister or, under an endorsed condition clearance process, a delegate within the Environmental Protection Authority or the Department of Environmental Protection that the requirements have been met.

The Proposal (Assessment No. 1436)

The proposal involves the construction and operation of a 132 kilovolt transmission line from Western Power Corporation's Cataby Substation to a substation at Eneabba.

The transmission line route is approximately 80 kilometres in length (Figure 1). Where possible the line follows existing roads and tracks to minimise the clearing of vegetation. The transmission line, which is primarily lattice tower construction up to 60 metres high, traverses Coomallo Nature Reserve, Hill River Nature Reserve and private property.

The key characteristics of the proposal are summarised in Table 1 below.

Table 1: Key Characteristics Table

Element	Quantities/Description
Period of construction	19 months approximately
Locality	From the Cataby substation to the
	Eneabba substation.
Local Government areas traversed	Shire of Dandaragan
	Shire of Coorow
	Shire of Carnamah
Length of line	80 kilometres approximately
Line voltage	132 kilovolts
Tower height	Average 47 metres
Minimum phase conductor to ground clearance	7 metres
Span between towers	550 metres approximately
Width of management corridor	50 metres
Area of temporary vegetation disturbance	23.4 hectares approximately
Area of permanent vegetation clearing	7.8 hectares approximately
Conservation areas traversed	Coomallo Nature Reserve
	Hill River Nature Reserve
Major proposal components	Lattice tower and pole construction
- -	Conductor stringing
	Maintenance

Proponent's Environmental Management Commitments

May 2002

TRANSMISSION LINE FROM CATABY SUBSTATION TO ENEABBA SUBSTATION (Assessment No. 1436)

Western Power Corporation

Schedule 2: Proponent's Environmental Management Commitments for the Cataby to Eneabba Transmission Line (Assessment Number 1436)

Topic	Objective/s	Action	Timing	Advice
General Environmental Management		Commitment 1 Develop an Environmental Management Program (EMP) that: 1. includes specific plans and procedures developed in consultation with concerned stakeholders through ongoing stakeholder liaison and discussion by the proponent's officers, which addresses construction and operational	Pre-construction	CALM WRC
		 impacts and stakeholder concerns; includes monitoring procedures and control of the activities of employees, agents and contractors to ensure adherence to environmental requirements identified in the EMP; is integrated into the existing Western Power Corporate Environmental Management System and documented in the Environmental Management Information System (EMIS); and 		
		4. incorporates a series of management plans addressing the following:		
		(i) vegetation management		
		(ii) weed management		
		(iii) Phytophthora management		
		Commitment 2		
		Implement the approved Environmental Management Program required by Commitment 1.	Construction and Post-construction	CALM WRC
Vegetation		Commitment 3		
	the proposal on remnant native vegetation	Prepare a Vegetation Management Plan that addresses:	Pre-construction	CALM
	including threatened species and vegetation	1. a system of environmental offsets;		
	communities.	2. procedures to ensure that the transmission line does not reduce the overall area of remnant native vegetation within the State's secure conservation estate;		
		3. the protection of Declared Rare and Priority species;		
		4. spring flora survey of Priority flora on Location 10826;		
		5. management practices associated with traversing watercourses (particularly the proposed stream crossing north of Jurien Road); and		
		6. the rehabilitation of vegetation where native regeneration has not occurred.		

Topic	Objective/s	Action	Timing	Advice
		Commitment 4 Implement the approved Vegetation Management Plan required by Commitment 3.	Construction and Post-construction	CALM
Weeds	Control the spread of weeds along the transmission line corridor.	Commitment 5 Prepare a Weed Management Plan that addresses: 1. appropriate hygiene techniques to control the spread of noxious and environmental weeds along the proposed transmission line corridor; 2. the conduct of post-construction audits; and 3. eradication of introduced weeds.	Pre-construction	CALM DoA
		Commitment 6 Implement the approved Weed Management Plan required by Commitment 5.	Construction and Post-construction	CALM DoA
Phytophthora cinnamomi (Dieback)	Control the spread of Phytophthora cinnamomi resulting from activities associated with the proposal.	Commitment 7 The proponent will prepare a <i>Phytophthora</i> Hygiene Management Plan based on the protectable areas protocol that addresses: 1. land tenure, vegetation condition and identified access routes; 2. specific strategies addressing post-construction activities associated with transmission line maintenance; 3. conduct of all activities within the Tiwest Joint Venture lease in accordance with that company's Dieback Management Plan; and 4. management of the <i>Phytophthora</i> risk of the existing transmission line.	Pre-construction	CALM
		Commitment 8 Implement the approved <i>Phytophthora</i> Hygiene Management Plan referred to in Commitment 7.	Construction and Post-construction	CALM

Topic	Objective/s	Action	Timing	Advice
Fauna	Minimise impact of the transmission line on protected fauna.		Pre-construction	CALM
		Commitment 10 Implement the approved Management Plan required by Commitment 9.	Construction and Post-construction	
Visual Amenity	Ensure that visual amenity is not significantly affected by the proposal	Commitment 11 Use poles in place of towers for a distance of approximately 1.1 kilometres north and 2.7 kilometres south of Jurien Road and for approximately 1.1 kilometres north and 2.7 kilometres south of Bibby Road, Dandaragan.	Construction	

Abbreviations:

CALM: Department of Conservation and Land Management DoA: Department of Agriculture WRC: Water and Rivers Commission