

**MAJOR PROJECT ASSESSMENT:
WOLLAR TO WELLINGTON 330kV
TRANSMISSION LINE**

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

December 2006

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GLOSSARY AND ABBREVIATIONS

DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (Commonwealth)
Department, the	Department of Planning
Director-General	Director-General of the Department of Planning
DNR	Department of Natural Resources
DoP	Department of Planning
DPI (Fisheries)	Department of Primary Industries (Fisheries)
EA	Wollar to Wellington 330 kV Transmission Line Environmental Impact Statement, TransGrid, International Environmental Consultants Pty Ltd, 2005
ECA	Environment and Conservation Areas
EEC	Endangered Ecological Communities
EMP	Environmental Management Plan
EMF	Electric and Magnetic Fields
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
PEMP	Project Environmental Management Plan dated October 2006 which identifies all the environmental aspects and mitigation measures that will be employed arising from the construction and maintenance of the line.
Project	The Wollar to Wellington Transmission Line, proposed by TransGrid, as outlined in the EIS and Submissions Report
Proponent	TransGrid
RTA	Roads and Traffic Authority
SoC	Statement of Commitments
Submissions Report	Submissions Report prepared in accordance with 75H(6) of the EP&A Act – March 2006
TSC Act	<i>Threatened Species Conservation Act 1995</i>

1 EXECUTIVE SUMMARY

TransGrid proposes to construct a 330 kV transmission line between Wollar and Wellington. The project would be approximately 117 kilometres long, passing through the Midwestern Regional Council and Wellington Council areas. The proposed project is required to improve the reliability of electricity supply to the Central West and meet growing demand. The proposed project is subject to Part 3A of the *Environmental Planning and Assessment Act 1979* and requires the approval of the Minister for Planning.

The transmission line will comprise standard self supporting 330 kV single circuit, steel lattice towers supporting twin conductors strung at high tension for each phase and two overhead earth wires. The transmission line will be located in a 60 metre wide easement. The proposal also includes access tracks required for construction and maintenance.

The capital cost of the proposal is approximately \$43 million including clearing of vegetation and construction of access tracks. If approved, construction could begin in 2007, and take approximately 18 months to complete.

Between 29 August 2005 and 30 September 2005, the Proponent exhibited the EA. The Proponent received 43 submissions on the EA received from nine Government agencies, seven community groups, four private companies and 23 private individuals. Twenty six of these submissions objected to or raised concerns about the proposal. A petition with 47 signatories opposing the project was also submitted. Key issues raised in submissions included:

- inadequate and inaccurate justification of the proposal;
- impact on flora and fauna, particularly the clearing of endangered ecological communities;
- indigenous heritage impacts; and
- visual impact of the proposal.

Other important issues such as cumulative and construction impacts, EMF and Greenhouse Gases were also raised.

The Department has assessed all key issues and those raised in the submissions.

TransGrid considers the line as important to ensure there is an adequate and reliable supply to the NSW Central West. It has investigated the feasibility of this as compared to alternate energy sources available that can achieve supply reliability for this region. The Department accepts TransGrid's justification and supporting documentation that there is a need to improve supply reliability within the area.

However, TransGrid has indicated that prior to commencing construction, it will test the market to ascertain whether there are other solutions to meet the reliability criteria. If a feasible solution exists, construction of the Wollar to Wellington line could be deferred or possibly eliminated.

In addition to this commitment, the Department recommends conditions of approval that require, prior to commencement of the line, TransGrid to demonstrate that no other reasonable and feasible options exist. Subsequently, the approval will not become operational until such time as the Director-General is satisfied that the Wollar-Wellington proposal provides a justifiable network solution.

The Department, in consultation with the Department of Environment and Conservation (DEC), has concluded that impacts associated with loss of the endangered ecological communities can be adequately offset through the acquisition of a 130 hectare property (or equivalent) adjacent to the Wollemi National Park. In fact there is likely to be a net benefit in terms of adding to the conservation estate.

Residual impacts associated with indigenous heritage, visual and other impacts can be mitigated and/or managed to ensure an acceptable level of environmental performance. Cumulative impacts are considered to be minor.

TransGrid has prepared a Project Environmental Management Plan, which details how construction impacts will be managed. The Department considers the document adequately deals with construction stage issues. The Department recommends conditions requiring a CEMP be implemented, based on the PEMP. Other conditions relate to monitoring and auditing, environmental offsets, visual impact mitigation, and operational stage management.

Consequently, the Department considers that the project is in the public interest and should be granted deferred commencement approval, subject to conditions.

2 BACKGROUND

2.1 Project Justification

The purpose of the proposed transmission line, as stated in the EA, is to reinforce the electricity supply in the Central West Region to minimise the risk of interruptions to supply, based on a criteria that the expected energy not supplied (in any year of a ten year planning horizon) should be less than 10 System Minutes for the worst single element credible contingency. Studies by TransGrid indicate that this reliability criterion would now not be met in the western region, in the event that the Mount Piper to Wellington Transmission Line was out of action. In addition, based on load growth forecasts (2002 figures) demand would increase, thereby adding to this problem.

Subsequently, TransGrid has advised that a reliability criterion of N-1 will need to be achieved (see section 6.2), which is more stringent than the 10 system minutes.

TransGrid subsequently investigated potential reinforcement options that could be undertaken to improve the standard and reliability of electricity supply including:

i) Demand Management

Investigations by TransGrid indicate that the reduction in energy resulting from the implementation of demand management programs would not be timely enough or sufficient to avoid or significantly delay the ongoing need to augment the network.

ii) Alternative Energy Sources

Investigations by TransGrid indicate that alternative energy sources including solar, wind and hydro-electricity were not adequately available in the Central West to avoid the need to augment the network. Whilst local gas or diesel fired combustion turbines could assist in meeting peak loads, investigations by TransGrid and Country Energy indicated they would be significantly less cost effective than augmentation of the transmission network.

iii) Transmission network augmentation

As demand management programs would be inadequate to meet the electricity supply standard, and alternative energy sources would not meet existing or future demands, TransGrid determined that an augmentation of the transmission network in the Central West was required. TransGrid investigated three 330kV augmentation options, namely:

1. a new 330 kV line from Wollar to Wellington;
2. a new 330 kV line from Yetholme to Kerrs Creek; and
3. a new 330 kV line from Yetholme to Wellington.

Option 1 (Wollar to Wellington)

Involves the construction of a 330kV line between Wollar and Wellington, a new 330kV switching station at Wollar and connections to the Wellington substation/switchyard. The line would be a second 330kV line which would run to Wellington and would remove system limitations associated with outages on the existing network in addition to being able to be constructed without complex staging and possibly risky system rearrangements.

Option 2 (Yetholme-Kerr's Creek)

This would involve the construction of a new 330/132kV substation at Kerrs Creek which is situated on the Mount Piper- Wellington 132kV line, construction of a 330kV line between Yetholme and Kerr's Creek substation, a new single circuit 132kV line from Kerr's Creek to Molong and a short double circuit 132kV line from Kerr's Creek to the network (Mt Piper-Wellington Line). Rearrangement of 132kV lines at Orange and Yetholme and rearrangements of 330kV lines at Kerr's Creek, Yetholme and Mount Piper in addition to new switch bays at Mt Piper.

Option 3 (Yetholme-Wellington)

This involved construction of a 330kV line between Yetholme and Wellington, reconstruction of the existing single circuit to double circuit between Wallerawang and Yetholme and rearrangement of 132kV lines at Yetholme and Wallerawang. 330kV rearrangements and connections will be required at Wallerawang, Yetholme and Mt Piper. This option would remove system limitations beyond a ten year planning horizon.

After detailed studies of the above mentioned options, TransGrid concluded that a new 330 kV Wollar to Wellington line was preferred, as it entirely removed the system limitations that would occur during an outage (such as local incidents like bushfires) of the existing 330 kV line, by establishing a 330 kV 'ring'.

2.2 Route Selection

TransGrid undertook a selection process to identify potential routes between Wollar and Wellington. The criterion which was employed to assess the viability of the routes is as follows, which, was then used for comparison of the below corridors:

- Number of dwellings potentially affected within the corridors
- Property sizes along the route
- Number of dwellings 250-500m from the line itself
- Number of Heritage Items (indigenous and non- indigenous)
- Agricultural land capability
- Visual Impact
- Tourism Impact
- Areas of National Park/Nature Reserve
- The health, structure and integrity of existing vegetation
- Number of threatened Flora and Fauna Species

Corridor options are shown in Figure 1.

Northern Corridor and Northern Corridor Variation

The corridor commences North of Wollar bordering Goulburn River National Park and travels west passing Ulan on the South, then North West before a South Western shift to pass Beryl before continuing West across the Cudgegong River and terminating at Wellington. This line has been refined between Ulan and Beryl due to the existence of sites containing mineral deposits as identified by the Department of Mineral Resources.

Central Corridor

This corridor originates South of Wollar and travels between the Northern and Southern parts of Munghorn Gap Nature Reserve then proceeds West via an existing easement through Cooks Gap. It then travels in a South-westerly direction through the Southern outskirts of Gulgong and Two Mile Flat before reaching Wellington substation.

Southern Corridor

The corridor commences approximately 5km South of Wollar and also passes between sections of the Munghorn Gap Nature Reserve through to Moolarben, before heading west to Home Rule and Twelve Mile until it reaches the Wellington substation.

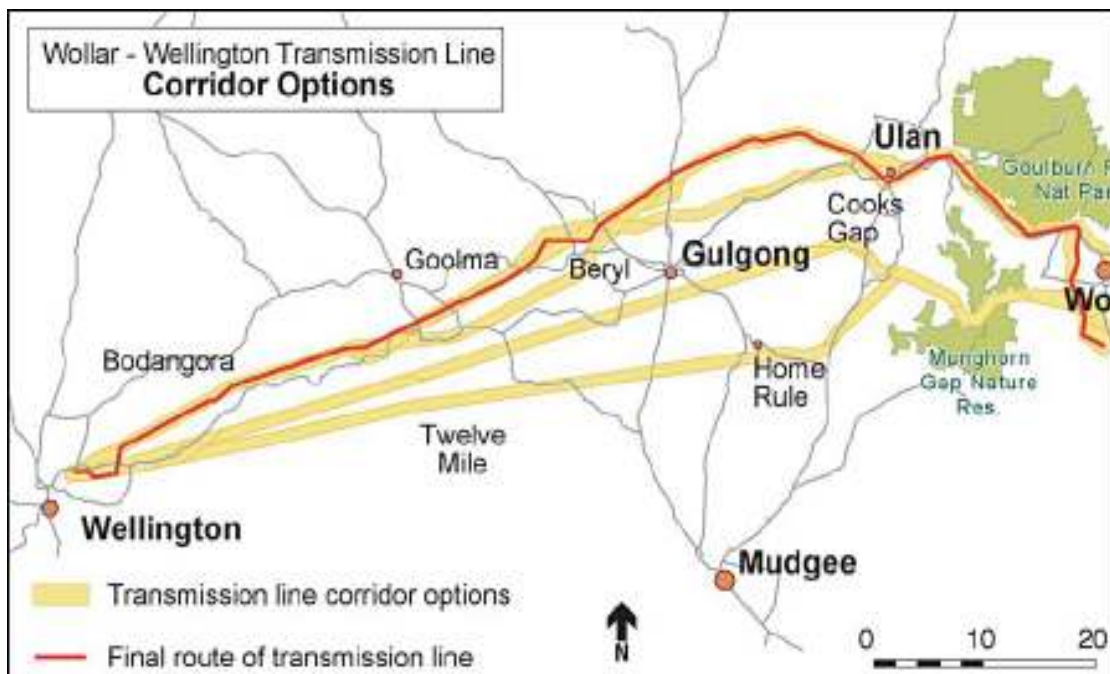


Figure 1: Wollar Wellington Corridor Options; Source TransGrid Wollar-Wellington Corridor Options report 2003

Table 1: Option Comparison – Wollar to Wellington

	Northern Corridor	Northern Corridor Variation	Central Corridor	Southern Corridor
Cost (Million)	\$67	\$67	\$68	\$66
Houses potentially affected	58	91	85	69
Distance of transmission line to existing dwellings (250m)	15	26	23	14
Distance of transmission line to existing dwellings (500m)	42	67	64	41
Use of existing infrastructure easements	Yes, Wollar-Ulan	Yes, Wollar-Ulan	No	No
Use of crown land (excl. National Parks, Reserves and Forests)	Yes, 2km	Yes, 2km	No	Yes, 1km
Property size (0-10ha)	70	71	90	54
Property size (10-50ha)	140	162	190	175
Impacts on Tourism (value based on comparison)	Least impact	Least impact	Moderate impact	Most impact (Multiple Vineyards and guesthouses)
Visual Impact (Value based on comparison)	Lowest impact	Lowest impact	Moderate Impact	Most impact (Rural residential clusters along corridor, dwelling numbers and tourism in area)
Land capability (cultivation agriculture)	25km	33km	33km	24km
Land capability (grazing which can continue under lines)	64-67km	64-67km	59km	48km
Threatened Species	5	5	10	10
Vegetation (sparse/poor quality)	94km	94km	88km	83km
Traversing National Parks/Reserves	No	No	Yes, Munghorn Gap Nature Reserve (2.2km)	Yes, Munghorn Gap Nature Reserve (2.2km)
Heritage Items	30	38	20	28

TransGrid selected the Northern Corridor for the transmission line.

The basis for this selection was that the houses deemed potentially affected by the line were the lowest in number, with low numbers of dwellings located within 250 or 500m of the line. Additionally, the Northern Corridor utilises an existing transmission easement for a significant portion of the line and, where the proposed easement will cross private agricultural land, the majority of land use is grazing which can continue within the easement once construction has finished.

Visual and tourism impacts are considered to be minimal by the Proponent compared to the other routes.

In response to concerns by the residents of Cadonia Estate (near Wellington), TransGrid further refined the Northern corridor and have incorporated this variation into the final route.

Environmentally, the Northern corridor and variation has the lowest number of threatened species (5), doesn't traverse any National Parks or Nature reserves and contains 94km of 'sparse/poor quality vegetation' predominately within cleared land, including isolated pockets which are not connected to other remnant vegetation or vegetation which has been partially cleared such as the undergrowth removed.

The proposed corridor is outlined in Figure 2.

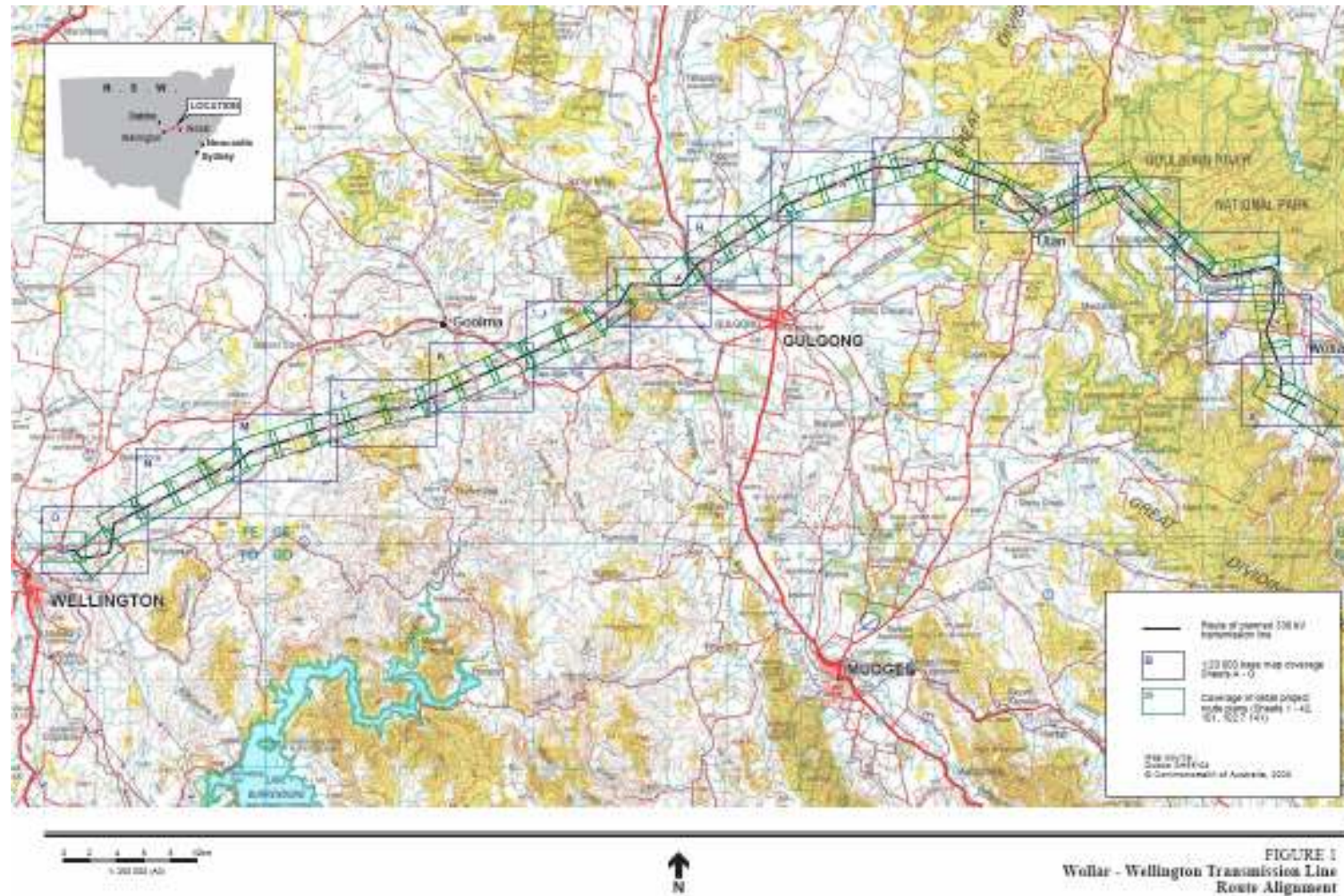


Figure 2: The proposed Wollar to Wellington Transmission line (source: Wollar to Wellington 330Kv Transmission Line Environmental Assessment August 2005).

3 PROPOSED DEVELOPMENT

3.1 Project Overview

TransGrid proposes to construct a 330 kV transmission line between Wollar and Wellington. The project would be approximately 117 kilometres long, passing through the Midwestern Regional Council and Wellington Council areas.

The proposal would involve construction and operation of a 330 kV transmission line between a new 330 kV switching station near Wollar to the existing substation at Wellington. It would comprise of standard self supporting steel lattice towers, 330 kV single circuit wires, conductors strung at high tension for each phase and two overhead earth wires. The transmission line would be located within a 60 metre wide easement, to be acquired by TransGrid. The proposal would also include access tracks required for construction and maintenance within the easement.

The capital cost of the proposal is approximately \$43 million including clearing of vegetation and construction of access tracks.

3.2 Physical components of the transmission line

The transmission line would comprise of twin conductor cables approximately 27mm in diameter, spaced 380 mm apart, along with two overhead ground wires. The conductor cables and overhead wires would be strung between the steel lattice support towers, so that a minimum clearance of 9 metres from the ground is maintained at all times. Additional clearance heights would be required to cross rivers, roads, railway tracks and other transmission lines.

A total of 277 support towers would be erected as part of the project. The support towers would involve two basic structure types, namely suspension towers and tension towers. The towers would be supported on reinforced concrete footings and range in height from 22 to 38 metres in height. The towers would be spaced approximately 400 metres apart, dependant on the terrain. Characteristics of the support structures are listed under Table 2.

Table 2: Major Components (Supporting Towers) of the Proposed Wollar to Wellington Transmission Line

	Suspension	Tension
Typical Use	Along straight line sections	At major directional changes and railway crossings.
Max Height (m)	36.0	38.0
Average Height (m)	28.0	28.0
Max Dimension of Base (m)	9.6 x 4.7	12.3 x 12.3
Max Height to cross-arm (m)	32	28
Insulator Arrangement	Suspension Arrangement	Longitudinal Tension Arrangement
Foundation Type	Four Bored Footing	Four bored or mass concrete footing
Typical Average Span on Level Ground	400	400

3.3 Easement and Access Tracks

The proposal would be located within a 60 metre wide easement. The proposal would include the removal of trees and shrubs within the easement to ensure safe clearance of the line, minimise bushfire risk and reduce maintenance costs. Selected trees outside the easement would be removed if they posed a risk to the line clearance or had a potential to fall onto the line.

Vegetation will be restricted to ground cover and low growing shrubs which will be controlled on the easement, through slashing during maintenance. TransGrid has indicated it would retain mature vegetation in gullies and on steep slopes along the easement, provided it would not impact the line clearance, or increase the risk from bushfires or line outages. Additionally, it would retain vegetation at selected locations near residences, water courses, and along identified fauna corridors. TransGrid has indicated that it would consider replanting areas along the easement and has reached an agreement with the Proponent of the Wilpinjong Mine to use low growing native shrubs and trees to provide cover when the line runs through areas which will be revegetated.

TransGrid proposes to upgrade existing tracks and build new tracks to access the location of support structures during construction and operation of the transmission line. The location of new access tracks would be determined in consultation with relevant property owners. The tracks would be suitable for heavy vehicle use during construction and four-wheel drive vehicles during operation.

3.4 Offsets Package

The proposal would require the removal of approximately 97 hectares of woodland, including 57.1 hectares of the Endangered Ecological Community (EEC) of White Box – Yellow Box – Blakely's Red Gum Woodland. The EA identified TransGrid's ongoing commitment to offset the impact of transmission lines in NSW through funding for Greening Australia and involvement in joint threatened species research programs with the DEC, universities and local community groups. TransGrid is also committed to developing a package of conservation initiatives in relation to this project, however, no details or commitments were outlined in the EA.

Following discussions with DEC and the Department, TransGrid outlined a more detailed and comprehensive offsets package in the Submissions Report. TransGrid now proposes to purchase a 130 hectare property located beside the Wollemi National Park, to be transferred to the National Parks Estate. The property contains approximately 90 hectares of EEC grassy woodland communities in relatively good condition. The property was identified by the DEC as an appropriate size site, to enhance the reservation of White Box Grassy Woodland communities and offset the impact of the current proposal. In the event that this property is unable to be purchased, TransGrid has committed to provide an alternative compensatory offset (property), in consultation with the DEC.

TransGrid also proposes to provide an additional \$90,000 to Greening Australia, or another suitable body, to compensate for the clearing of native vegetation for the project. The funds would be applied to undertake compensatory planting of native vegetation predominantly within the NSW South West Slopes Bioregion. The offsets package is discussed in further detail in Section 6.4 of this Report.

3.5 Associated infrastructure

The proposal also requires the following infrastructure works:

- Deviation of two sections of the existing Mt Piper to Wellington 330 kV transmission line into the Wellington substation, in order to connect the new Wollar- Wellington 330 kV line into the Wellington Substation. Assessment of this is included in the EA;
- Construction of a new switching station at Wollar. Assessment and approval of the switching station are subject to a separate Part 4 Development Application which has been approved by Mid Western Regional Council.

3.6 Construction Timetable

Construction is anticipated to take approximately 18 months to complete. TransGrid has proposed to undertake construction from 7.00am to 6.00pm Monday to Saturday. Limited construction work on Sunday and public holidays is also proposed for works that would not cause noise nuisance at nearby residential properties, emergency work to avoid loss of lives or property or delivery of materials requested by the police or other authorities in the interest of public safety.

Concrete batching plants would be constructed along the route, to supply concrete for tower foundations. Tower structures would be fabricated off-site and be transported to the construction site(s) by heavy vehicle for assembling and erection via cranes. Construction of each tower would take approximately six days. TransGrid anticipated that ten to twenty structures per week would be completed by teams. The stringing of the high tension wires would be carried out in five to 10 kilometre sections and take approximately one to two weeks. In areas where clearing is not permitted or in rough terrain, helicopter stringing would occur to minimise environmental disturbance.

4 STATUTORY CONTEXT

4.1 Background on the Statutory Context

The proposal is permissible without development consent and hence was subject to Part 5 of the EP&A Act.

The Proponent determined that the project was likely to significantly affect the environment and would require the preparation of an Environmental Impact Statement (EIS) in accordance with Section 112 of the EP&A Act. As TransGrid is both the Proponent and a determining authority for the proposal the approval of the Minister for Planning is required as the project required an EIS.

The Proponent sought Director General's Requirements (DGRs) on 27 January 2004 for preparation of an Environmental Impact Statement (EIS), as the project at this time was subject to Division 4, Part 5 of the EP&A Act. The DGRs were issued on 4 March 2004.

4.2 Major Project Status

Part 3A of the EP&A Act commenced on 1 August 2005 and Division 4 of Part 5 was repealed. The Wollar to Wellington Transmission Line project required an EIS to be obtained within the meaning of Part 5 of the EP&A Act, the Minister's Order of 29 July 2005 made the proposal subject to Part 3A. The Order stated that public authority proposals, otherwise requiring an EIS under Part 5, would be subject to Part 3A.

The Minister for Planning remained the relevant approval authority. An EA for the proposal was prepared and publicly exhibited between 29 August 2005 and 30 September 2005. A Species Impact Statement (SIS) was also exhibited concurrently as TransGrid identified that the proposal would be likely to have a significant impact on Threatened species. In this situation, Part 5 of the EP&A Act requires that an SIS be obtained and exhibited. Note, however, Part 3A does not require an SIS.

4.3 Exhibition

As part of the EA exhibition TransGrid:

- notified all property owners in the vicinity of the site who could be affected by the proposal;
- notified Wellington and Mid Western Regional Councils and relevant State government agencies;
- advertised the exhibition of EA in the Sydney Morning Herald, Mudgee Guardian and Wellington Times; and
- publicly exhibited the EA at Wellington and Mid Western Regional Councils, Department of Planning, NSW Nature Conservation Council and Wollar Service Centre.

On 20 October 2005, pursuant to Clause 8J of the *Environmental Planning and Assessment Amendment (Infrastructure and Other Planning Reform) Regulation 2005*, the Director-General adopted the previously issued Director-General's requirements as environmental assessment requirements and accepted the EIS and SIS as the environmental assessment and the public exhibition period for the purposes of Part 3A.

On 29 March 2006, the Proponent lodged a Project Application under Section 75E of the EP&A Act. This application was required due to the project not falling under the transitional arrangements of the former Division 4, Part 5 and therefore the Part 3A process under the Act applied.

The Proponent lodged a Submissions Report in March 2006. A Preferred Project Report was not required by the Director-General as no substantive changes were made to the project as described in the EA. In accordance with section 75F (6) of the EP&A Act, the Proponent prepared a draft Statement of Commitments that was included in the Submissions Report.

4.4 Submissions Report

The Submissions Report was lodged in March 2006 and contained the Project Environmental Management Plan (PEMP) and Statement of Commitments, which in turn included details required for the Construction Environmental Management Plan (CEMP) and an outline of the Operation Environmental Management Plan (OEMP).

The PEMP and SoC were revised after discussions with the Department and resubmitted in October 2006. Both the revised PEMP and SoC are considered satisfactory and adequately cover matters which are required as part of the CEMP and OEMP. In particular, the material included in the PEMP covers all the detail that would be required in a CEMP (normally dealt with as a post approval document). The material dealing with the operation stage is in outline form, and further details will need to be submitted prior to commencement of operation.

The assessment report and recommended conditions of approval recognise the existence of these documents where project specific issues and mitigation measures have been identified. Specifically a condition is recommended that requires the CEMP to be consistent with the PEMP. A further condition is recommended requiring the OEMP to be consistent with the PEMP, but also requiring the Director General's approval.

4.5 Permissibility- Local Planning Instruments

The proposed development is located within the Wellington and Mid Western Regional Council Local Government Areas. The Mid-Western Regional Council was formed in the 2005 and incorporated the former Mudgee Shire, the majority of the former Rylstone Shire and a small proportion of the Merriwa Shire. The Wellington Local Environmental Plan (LEP) 1995, the Mudgee LEP 1998 and Merriwa LEP 1992 are therefore applicable to the proposal.

The proposed project traverses a number of land parcels which are zoned as follows:

Mudgee LEP 1998:

- Zone 1(a) General Rural
- Zone 1(f) Forests
- Zone 7(b) Environmental Protection – Nature Conservation
- Zone 8(a) National Parks and Nature Reserves (Existing)

Merriwa LEP 1992:

- Zone 1(a) General Rural

Wellington LEP 1995:

- Zone 1(a) Rural

Under these LEPs, the proposal is permissible with consent, subject to consistency with the zoning objectives.

Currently, the Mid-Western Regional Council has developed a Draft Interim Local Environmental Plan 2006 for the area covered by the current Mudgee LEP 1998.

As of 20 July 2006 the Department determined that the draft LEP be revised in areas such as minimum lot sizes for subdivision within an agricultural zone prior to issue of a Section 65 Certificate for statutory exhibition. The LEP has not been resubmitted as of November 2006. It is not anticipated that zoning in the vicinity of proposal would be changed.

4.6 Other Planning Instruments

In addition to the LEPs mentioned above, the assessment of the proposed development is subject to the following planning instruments and strategies:

- *State Environmental Planning Policy No 4- Development Without Consent and Miscellaneous Complying Development*
- *State Environmental Planning Policy No 44- Koala Habitat Protection*
- *Hunter Regional Environmental Plan 1989*
- *Central West Catchment Blueprint*

The Department has considered the proposed project against the objectives and aims of these instruments, and is satisfied that the proposed project is generally consistent with the provisions of these instruments.

Clause 11(1) of *State Environmental Planning Policy No 4 – Development without Consent and Miscellaneous Exempt and Complying Development* applies to this proposal. This has the effect of making the proposal permissible without consent and therefore an 'activity' under Part 5 of the EP&A Act. As described previously, a Ministerial Order makes Part 5 projects where the Proponent is also a determining authority and would require an EIS, subject to the Part 3A process.

4.7 Commonwealth Approvals

The proposal is also considered to be a controlled action (removal of threatened species) under the EPBC Act and, requires approval from the Commonwealth Department of Environment and Heritage (DEH) in this regard.

5 CONSULTATION AND ISSUES RAISED

5.1 Submissions Received

The Department received 43 submissions on the EA: nine (9) submissions from public authorities including Mid Western Regional Council, seven (7) from community groups and 27 from the general public and business groups. Twenty six (26) submissions either objected to or raised concerns with the proposal. 1 Petition containing 47 signatures was also received opposing the proposal.

Public Authority Submissions

A summary of issues raised by public authorities is listed below in Table 3

Table 3: Submissions from Public Authorities

Public Authority	Recommendation
Australian Rail Track Corporation	The Australian Rail Track Corporation (ARTC) advised that TransGrid would be required to submit a Master Access Deed application to ARTC.
Mine Subsidence Board	The Mine Subsidence Board advised that the project would not be impacted by mine subsidence.
Department of Environment and Conservation	The Department of Environment and Conservation (DEC) advised that TransGrid would be required to develop an offsets package, in consultation with the DEC. DEC requested additional information on impact on riparian zones, and cumulative impact with Wilpinjong and Moolarben Coal Mines. DEC also recommended that trapping of the Stripe-faced Dunnart be undertaken to determine the population, nest boxes be regularly monitored and trees to be planted to provide for food for Black Cockatoos. The DEC supported the recommendations in the EA for collection and relocation of Aboriginal objects and notes that Care and Control Permits may be required, and that written reports should be provided to the DEC in relation to all relocated objects. The DEC identified tower locations, yet to be surveyed, that may have moderate to high archaeological potential and also recommended that safeguards be developed to protect potential sites in the vicinity of water courses.
NSW Heritage Office	As no works are proposed in the boundary of heritage items listed on the state heritage register, approval from the Heritage Office is not required. The NSW Heritage Office supports the proposed mitigation measures. The NSW Heritage Office also raised issues in relation to flora, fauna and non-indigenous heritage.
Telstra	Comments were provided in relation to the impact of the proposal on Telstra's infrastructure and requested the Proponent provide additional information.
Roads and Traffic Authority	The Roads and Traffic Authority (RTA) outlined the requirements for the transmission line crossing the Castlereagh Highway (SH18) and noted that widening of this road was likely.
Mid-Western Regional Council	Council requested that TransGrid consider proposed minor and major road alignments when siting towers beside Ulan and Wollar Roads. Council also requested that clearing of EEC be minimised, an annual contribution be provided to compensate for vegetation loss, and that local seed collection and replanting be undertaken. Council noted that the Hunter Catchment Blueprint had not been considered in the EA.

Department of Natural Resources	The Department of Natural Resources (DNR) outlined erosion and sediment, riparian, and timber disposal management methods that should be employed during construction of the project. DNR noted that there was a very high salinity risk that should be considered around identified catchments. DNR recommended that habitat corridors be retained.
Department of Primary Industries	The Department of Primary Industries (DPI) noted that the proposed route may sterilise shallow underground coal resources and requested that the route be changed to the northern route (without the variation) or that the transmission line be relocated to Crown Land between Excel Mining's tenements and Slate Gully Road (see section 2). DPI advised that landowners should be informed of construction and consultation in relation to rehabilitation. DPI also requested stockpiling of native hardwood to allow future resnagging of the river.

Community Group Submissions

A number of submissions were received from environmental and other interest groups. Issues raised in the submissions include:

- inadequate justification;
- insufficient investigation of alternative, non-greenhouse gas generating power sources;
- potential link to a future power station at Ulan;
- loss of flora and fauna including EEC; and
- Indigenous heritage impacts.

Public Submissions

Many of the issues raised by community and interest groups were also raised in submissions from the general public and businesses. Other issues raised in submissions include:

- cumulative impact of the transmission lines and coal mines;
- inadequacy of the EA;
- visual impact of the proposal, particularly from Slate Gully Road;
- failure to consider the Hunter Blueprint Catchment; and
- impact of EMF;

These issues are addressed in Section 6 of the report.

6 ASSESSMENT

6.1 Environmental Impacts

Key issues raised in the submissions to the proposal and/or identified during the Department's assessment included:

- justification for the project;
- alternative sources for power augmentation;
- flora and fauna impacts, including loss of endangered ecological communities;
- indigenous heritage;
- visual impacts of towers;
- a range of other issues such as cumulative impacts, non-indigenous heritage, Greenhouse Gas emissions and potential of a new power plant in the Ulan-Wollar area.

6.2 Project Justification

Issue

If the existing Mt Piper to Wellington transmission line is out of service at peak periods, other system elements currently could not supply the full load to Western regions. With increasing demand over time, the loads at risk and periods at risk will continue to grow.

The main concern raised in the submissions was that the transmission line was not required due to peak growth figures used in the EA overestimating the electricity demand of the area as demonstrated in the TransGrid 2005 Annual Report.

Consideration

The Department of Energy, Utilities and Sustainability (DEUS) has recently issued mandatory licence conditions for NSW distribution businesses, including Country Energy, requiring that the N-1 reliability standard be applied to all parts of the network that supply loads greater than 15MVA. TransGrid is responsible for supplying the load to Country Energy and therefore must also ensure reliability of both TransGrid and Country Energy's network.

The N-1 reliability standard is more stringent than the 10 System Minutes standard that had earlier been subject to an agreement between Country Energy and TransGrid. The N-1 reliability standard requires that the full electricity load be supplied, with any single power system element, including the most critical element, out of service whereas the 10 system minutes refer to a period where no power will be supplied to the network and is not as stringent as the N-1 criteria.

The EA highlighted that prior to Country Energy and TransGrid agreeing to meet the N-1 standard, the Western area was physically losing the equivalent of a 3hr and 20 minute interruption a year.

As has been noted above, concern was raised by the community that the demand forecast figures (2002) used by TransGrid in the EA were well above the demand forecast figures produced by TransGrid as part of its 2005 Annual Planning Report.

The transmission line, however, was adequately justified at the time of the EA, as figures presented indicated that the 10 System Minutes standard was already being exceeded in the western region. Use of TransGrid's figures from 2005 indicates that the N-1 reliability standard is currently not being satisfied. Augmentation is required now to ensure reliability. The need for this is magnified by increasing demand from within the region.

The Department notes differences between 2002 and 2005 forecasts i.e. lower growth rates. However, reliability is an issue now and any growth will exacerbate this situation.

The Department considers that TransGrid has adequately demonstrated the need to augment the electricity system in the western region, in order to meet the N-1 reliability standard criteria.

6.3 Alternative sources for power augmentation

Issue

As outlined under Section 2.1 of this report, TransGrid investigated a variety of options to meet the reliability criteria for electricity supply in the Central West. Studies by TransGrid indicated that specific demand management programs would be inadequate to reduce power requirements and were not cost effective. Studies by TransGrid also indicated that there were no feasible load power sources available, such as wind, solar or gas fired power that could adequately augment the power supply.

In 2001 Green Power Services was engaged by TransGrid to identify opportunities for demand management and local generation in the western area to address the transmission system limitations. TransGrid subsequently developed six options including a combined demand management/network option. The combined demand management/network option was identified as the most cost effective option during the preliminary application of the regulatory test. It was estimated that a peak load reduction of 23 MW would result from the implementation of a demand management program, prior to the required construction of the network component, however this would not delay the need for the transmission line to meet the 10 system minutes or the more stringent N-1 criteria.

A key concern raised in the submissions was that the project remained reliant on coal generated power and alternative, non greenhouse gas generating options were not adequately investigated. In particular, a submission by Wambo Power Ventures indicated that a 115MW gas fired turbine that was proposed for Cobar would meet the reliability standards for this network and defer the need to construct a transmission line until 2017. Note no Project Application has been lodged for the proposal to date.

Consideration

Investigations by TransGrid indicated that there were no feasible alternative energy sources available within the region to adequately augment the electricity network. No alternative proposal had been received by TransGrid during these investigations or prior to the release of the EA. The submission from Wambo Power Ventures that was received during the exhibition of the EA, however, indicates that the reliability limitations could be met by a proposed gas fired power station at Cobar. This proposal would also involve the construction of a new gas pipeline to Cobar and a 132kV transmission line from Cobar to Nyngan.

TransGrid is formally assessing the technical and commercial merits of the proposal as an alternative to the Wollar to Wellington 330kV transmission line. In undertaking this assessment, TransGrid is seeking to determine the extent to which the Cobar proposal could defer construction of the transmission line.

As part of its further consideration of alternatives, TransGrid is currently intending to return to the wider market again in early 2007 to seek interest from anyone, not just Wambo, for alternatives to the Wollar-Wellington line.

Following discussions between the Department and TransGrid, the Department has agreed to finalise the assessment of the transmission line prior to the completion of the evaluation of alternatives for the western region being completed by TransGrid. This is because given the existing reliability issues it is imperative that work commence on a solution as soon as an option has been confirmed as most appropriate. This could be the Wollar-Wellington line or an alternative. If the line is the solution, the project should be able to commence as soon as possible after confirmation as the most suitable option.

TransGrid has stated that they would either defer, or not proceed with the project, in the event, that an alternative such as the Wambo proposal is a cost effective alternative to augmentation of the electricity line.

The Department therefore recommends that any approval be subject to a deferred commencement condition. TransGrid would be required to submit a report to the Department prior to the commencement of construction identifying whether non-network alternatives for the Western Region are able to meet the capacity and reliability requirements in a cost-effective manner, when compared with the transmission line. This provides TransGrid with the opportunity to move quickly to address reliability issues if it has been demonstrated there are no alternatives.

6.4 Flora and Fauna Impacts

Issue

TransGrid has stated that the proposed transmission line route was selected to avoid impacts to high conservation vegetation and to minimise impact on threatened species. Despite this the proposal would still result in the clearing of native vegetation in woodland communities listed as Endangered Ecological Communities (EECs) under the Threatened Species Conservation Act, 1995 (TSC Act) and the *Commonwealth Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) and woodland providing habitat for threatened and regionally significant flora and fauna species.

In order to identify the impact of the transmission line on flora and fauna including threatened species, and to meet state and Commonwealth legislative requirements, the following assessments were undertaken as part of the EA

- threatened species assessment under Section 5 A of the Act (called the eight part test at the time of assessment);
- a referral to the Department of Environment and Heritage (DEH) to fulfil the requirements of the EPBC Act, and
- a Species Impact Statement (SIS) to fulfil the requirements of Section 110 of the TSC Act and the requirements of the Director-General of the DEC.

TransGrid undertook desktop and on the ground surveys to identify the impact of the transmission line.

Note: Under Part 3A of the EP&A Act there is no longer a requirement for assessments under Section 5 of the Act or a Species Impact Statement however it is still essential that impacts on threatened species are addressed.

Details of the surveys are outlined in Section 5.4.1 of the EA. The location of each of the towers was identified and modified, where required, in order to minimise the impacts of clearing. The survey and associated analysis identified that the proposal would result in the clearing of 97.5 hectares of woodland, including 57.1 hectares of EECs, largely being Blakely's Red Gum Woodland (including EPBC Grassy White Box Woodland and EPBC Yellow Box/Red Gum Grassy Woodland). The location of a tower was modified in order to avoid impact on Narrow Goodenia (*Goodenia macbarronii*).

The proposal would result in potential removal of the habitat of 24 fauna species listed in the SIS and potentially reduce the connectivity of a number of habitat corridors in the locality. The SIS also identified other indirect impacts on flora and fauna resulting from the proposal including fragmentation of habitat, edge effect, weed invasion and incursion from feral animals.

In order to minimise the impact of the proposal on native flora and fauna and to provide for no net loss of biodiversity, TransGrid outlined a range of mitigation measures in the EA. Proposed mitigation measures include fauna rescue and pre-clearance surveys to be undertaken during construction, erection of species specific nest boxes, and reduction in the level of disturbance underneath the transmission line in areas where the threatened species of Narrow Goodenia (*Goodenia macbarronii*) and Stripe-face Dunnart were recorded. TransGrid also propose that post construction there will be groundcover in the form of low growing shrubs and grasses, with taller species retained beneath the transmission line along habitat corridors, though limited details of where this could occur were provided.

TransGrid propose to provide a compensatory habitat package for the cleared woodland including the EECs, however, details of the compensatory package were not developed in the EA.

Issues

The impact of the proposal on flora and fauna was the primary concern raised in submissions. Key issues in relation to this included:

- inadequacy of surveys;
- loss of 97 hectares of woodland, including 57.1 hectares of EEC;
- insufficient details of offset package and other localised measures to compensate for loss of flora and fauna;
- fragmentation of woodland and habitat corridors;
- impact on the Wilpinjong Mine's Enhancement and Conservation Areas (ECA's).

These issues have been addressed in the Submissions Report prepared by TransGrid and are discussed below.

Consideration of Key Issues

The EA and SIS outlined the desktop and field surveys that were undertaken to identify the impact of the proposal on the flora and fauna.

It is considered that sufficient surveys and studies were undertaken to identify the impacts of the proposal. These impacts have been identified comprehensively in the maps contained in Volume 3 of the EA. A number of submissions raised concern about the loss of 97 hectares of woodland, including 57.1 hectares of EEC. The DEC raised concerns that the EA did not contain any specific offsets or compensation program to address the loss of woodland resulting from this proposal.

TransGrid has proposed an offset and compensation package in the Submissions Report. TransGrid now propose to purchase a 130 hectare property adjoining the Wollemi National Park that has been identified by the DEC. The property has approximately 90 hectares of EEC grassy woodland communities, predominantly in good condition. The property would be transferred to the National Parks Estate in order to enhance the reservation of White Box Grassy Woodland communities. In the event that the property can not be acquired, TransGrid propose to provide an alternative compensation offset selected in consultation with DEC. The DEC has advised that the purchase of the 130 hectare property is supported.

TransGrid also propose to provide \$90,000 to Greening Australia or another suitable body for compensatory plantings of native vegetation predominantly within the NSW South West Slopes Bioregion. The DEC has advised that this is not supported, as compensation should be provided in areas closer to the transmission line than the NSW South West Slopes Bioregion. DEC has advised that the \$90,000 be used to contribute to management funds of such land, in the region. This contribution is in addition to what is required to offset the clearing.

A recommended Condition of Approval requires the purchase of the property and its transfer into the National Parks Estate shall occur prior to the commencement of construction, unless otherwise agreed by the Director-General. In the event that this property is unable to be purchased, TransGrid would be required to purchase a property of similar ecological value, as agreed by the Director-General of DEC, and under a timetable agreed to by the Director-General of Planning. TransGrid would also be required to provide \$90,000 to Greening Australia's 'GreenGrid' project for land rehabilitation.

The Department notes DEC's views, but recognises that the \$90,000 is additional to what is required to offset the clearing. The details of how the \$90,000 will be used is to be set out in a flora and fauna strategy.

The EA identified two vegetation corridors that could be impacted by the proposal. The eastern corridor is located between towers 15 and 91 and a narrower central corridor exists between towers 162 and 176. Whilst approximately 42 hectares of woodland in the eastern corridor would be impacted by the proposal, the EA states that the transmission line would not sever the movement corridor. The EA states that removal of 7.8 hectares of vegetation in the central corridor would not significantly impact on regional connectivity. This is considered satisfactory.

Concern was raised that insufficient details were provided in regard to mitigation measures, particularly in relation to retention of vegetation in regional vegetation corridors and on other areas along the alignment including gullies. The Submissions Report therefore outlined areas on the alignment where restricted and selective clearing would be undertaken, enabling retention of vegetation less than four metres. In particular the Submissions Report identified an area of the central corridor not less than 150 metres wide, where restricted and selective clearing would be undertaken. The Submissions Report also listed a number of other areas where restricted and selective clearing would be undertaken.

A concern has also been raised that the proposal would restrict the proposed Enhancement and Conservation Area (ECA) "B" for the approved Wilpinjong mine between towers 36 and 39. The Submissions Report states that the transmission line would not impose any additional impacts on the use of the land but would limit the heights of vegetation that could be used for the section of the ECA impacted by the transmission line easement and the Department understands that the owners of Wilpinjong mine and TransGrid have an agreement in this regard.

To ensure that some level of vegetation enhancement can occur along the alignment where it intersects Wilpinjong's ECA, the Proponent has developed a vegetation protocol in conjunction with Excel Coal (Wilpinjong Mine Owners). This permits vegetation of limited height within the easement for fauna corridors.

The Department considers that the construction and operational impacts on flora and fauna will be manageable provided that the mitigation measures and offsets highlighted within the SoC and CEMP are implemented. Further, ongoing management and selective clearing of the line will be satisfactory.

6.5 Indigenous Heritage

The EA provides an assessment of the archaeological and cultural heritage values of the area and the potential impact of the Project on indigenous heritage values as highlighted in Appendix B, Volume 2 of the EA by OzArk Environmental and Heritage Management Pty Ltd.

The assessment included a search of Aboriginal heritage registers, Local Environmental Plans and a number of field surveys. The Gallannggabang Local Aboriginal Land Council (GLALC), Warrabinga Native Title Claimants Corporation, Murong Gialinga ATSIC and the Mudgee Local Aboriginal Land Council (MLALC) were consulted in the process. The Wellington Local Aboriginal Land Council has not been operational prior to and throughout assessment of the proposal.

Issue

The surveys identified a total of 28 sites. 19 Sites have been classified as 'open sites' which are areas that are physically disturbed and exposed to the elements. 9 of the 19 sites have been identified as having a Potential Archaeological Deposit (PAD) which is a subsurface deposit. Of the remaining sites, 7 were isolated finds (a singular item on a site) and two were identified as a stand alone PAD.

Assessment identified that the line will have an impact on 11 of the above sites with an additional six requiring mitigation measures to avoid disturbance. The sites which will be impacted have been assessed to have a moderate to low sensitivity as the land has previously been cleared and is the subject of agricultural activities.

The Proponent has identified a number of initiatives that have been completed or will be undertaken during construction which include:

- An Indigenous Heritage Management Plan (IHMP) which is part of the PEMP;
- A program of Aboriginal archaeological monitoring and salvage collection in areas of previous disturbance and for the 9% (approximately) that wasn't surveyed due to property owners refusing access to these properties. These will be undertaken by a qualified archaeologist in partnership with the Aboriginal stakeholder groups; and
- A detailed archaeological survey involving recording and collection of identified Aboriginal artefacts within all areas which will involve construction activity.

Consideration

TransGrid has indicated in the EA that they intend to apply for a S87 (1) and 90 Permit to cover monitoring, test excavation and partial site destruction. However, as the project is now assessed under Part 3A, these permits are not required.

The majority of areas which have been surveyed by the Proponent are highly modified environments which are predominately agricultural land with a high likelihood that areas of high archaeological importance have been already destroyed. Further, subsurface impacts will be minimal aside from tower construction sites. On the surface, vehicular movement pre and post construction will be minimal as maintenance will be infrequent and along predetermined routes which form part of this assessment.

It is noted that only the Gallangabang Local Aboriginal Land Council (GLALC) and Murong Gialinga ATSIC made submissions during the exhibition of the EA and support the recommendations and mitigation measures proposed by the indigenous heritage consultant. Mitigation measures proposed for tower specific locations are as follows:

- Establishment of an exclusion zone outside the immediate worksite for towers 9, 30, 41, 46, 51 and 80 using physical barriers such as onion skins to stop vehicular or pedestrian access;
- Collection and/or relocation of artefacts at towers 51 and 155;
- Monitoring of the locations between towers 207 and 208 (Ulan Creek crossing) and 128 by a qualified archaeologist and/or qualified Aboriginal community member with any items reburied in a recorded location or retained; and
- Test excavation of tower sites 191, 198, 112, 53, 30 and 32 with appropriate mitigation measures (collection, relocation or monitoring) implemented.

The Department raised concern in relation to site CR-OS4 with PAD located underneath Tower 198. The site contains an artefact scatter of over 1000 items consisting of flakes and cores considered unusual by the consultant.

Discussions with TransGrid revealed that they have tried to relocate the tower in accordance with the consultant's findings to limit disturbance to no avail. Currently the location of Tower 198 is within a disused quarry area which also is subject of stock movements. So as to meet engineering requirements, a line relocation of 46m was required. TransGrid carried out a hypothetical line exercise and it was revealed that an additional tower would be required 170m away from the proposed Tower 198 location and in an area which has previously been undisturbed.

The local indigenous community and DEC were consulted on this matter namely Tower 198 to remain in its original location provided that appropriate mitigation measures are implemented as per the PEMP.

The Department accepts this position as there is greater merit in restricting activities to an area which has had some disturbance rather than relocating the Tower to another location considered to be of high value and has yet to be disturbed.

The Department considers that the proposed surveys, monitoring and environmental control measures specified within the PEMP and SoC will ensure protection of the Aboriginal sites and minimise the impacts at their location.

6.6 Visual Impacts

An assessment of potential visual impacts of the proposal is provided in Chapter 7 of the EA with supplementary Visual Catchment maps which indicate high and moderate visual impact provided in Volume 3, - Figures and Plans. 5 submissions referenced Visual Amenity issues in response to the EA. The visual impacts were derived from an assessment of visibility, distance, topography, vegetation cover, viewers affected, duration, angle of view and visual sensitivity. Visual impacts and mitigation measures are discussed.

The Proponent identified that visual impacts played a role in route selection through consideration of the number of tourism generating developments (wineries for example), dwellings and rural-residential estates along the proposed route.

Prior to submission of the EA, TransGrid altered the Northern Corridor around Wellington and in particular an area called the Cadonia Estate in response to concerns about visual amenity. The associated Northern Variation involved relocation of the line away from the Estate by a minimum of 500m to the nearest residence. It is also worth noting that the line was relocated away from Ulan township due to the same reasons.

TransGrid identify that although it has tried to mitigate visual impacts in the majority of cases, visual impacts of the line differ according to each landscape, distance from viewing point, intervening tree cover or backdrop. Photo montages were developed for areas identified as High visual impact to identify potential problems.

The EA identifies that the proposed line will have some impact on the existing view catchments of towns, villages and subdivision areas.

Issue

Submissions received have expressed concerns about the severity of visual and amenity impacts of the proposal particularly in the vicinity of Slate Gully Road which is located near Wollar. These claim that the towers and associated infrastructure will detract from the amenity and rural-residential character of the areas. This in turn will have a detrimental impact on property prices.

Consideration

The Wellington-Wollar proposal is a development which has potential to impact on landholders through the easement and physical infrastructure by introducing new elements into the landscape. i.e. cleared areas and towers/wires.

At selected points along the route, the line parallels the following existing transmission lines:

- Beryl to Ulan 132kV for 15km;
- Wellington to Beryl 132kV for 15km; and
- A Second Wellington to Beryl 132kV section for 10km

The line also parallels existing infrastructure such as the Sandy Hollow to Maryvale Railway and crosses land which is the subject of a Project Application with the Department (Moolarben Coal Project) or where mining proposals have been approved by the Minister for Planning as is the case with the Wilpinjong Coal Project (1 February 2006) and is therefore located in an area affected by major development.

In relation to the line when it is located on private property, TransGrid has determined the easement locations in consultation with the property owners so as to minimise impacts to vistas where possible. In the case of Slate Gully Road, the transmission line will be located off the private properties (i.e. on Crown land).

Slate Gully Road

Slate Gully Road is an area where the Proponent concedes there will be a high impact on visual amenity. 6 dwellings are located approximately 400m-1000m away from the proposed line with two dwellings on the Western side of the road identified as having the highest impact. The current easement is the result of consideration of alternate route options in the area being discounted due to presence of land which contains a heavily vegetated and undisturbed environment with any new line having a greater environmental impact than that on land which has already been cleared.

The line in this area has been designed so as to be located as close as possible (taking into account fire safety and the like) to the vegetated hill for backdrop screening in order to minimise visual impacts of the structures in isolation.

Photo montages, which have been developed for Slate Gully Road to demonstrate impacts which may arise from the line are shown below the photos. They do not illustrate the tower painting or site landscaping proposed and committed to within the Submissions Report, PEMP and SoC.

All Photo montages are sourced from the Wollar to Wellington 330kV Transmission Line Environmental Assessment Volume 3- Figures and Plans and relate to the Southern most property as it was determined to be the premise that would be subject to the greatest adverse visual impact as a result of multiple towers in the view line. The Photo Montages are considered to be appropriate.

Mitigation measures such as using dulled conductors (which are to be utilised along the entire line), painting of towers 22.1,23,24,25,26 and 27 green and planting of supplementary screening outside the easement, once constructed, in negotiation with the land owner are proposed to further reduce the line's visibility.

Although the location of the transmission line is not ideal in respect to Slate Gully Road, the Department accepts TransGrid's justification with respect to the route and the limitations of alternatives in this instance. The Department considers that with the proposed mitigation measures, the impacts will be acceptable given the need for the proposal.



Figure 3: Existing view Slate Gully Road



Figure 3a: Artists rendition view Slate Gully Road (Tower 22.1)



Figure 4: Existing view from Southern most property on Slate Gully Road



Figure 4a: Artists Rendition Southern most property (Tower 25)



Figure 5: Existing View from Southern most property on Slate Gully Road



Figure 5a: Artists Rendition Southern most property (Tower 23)

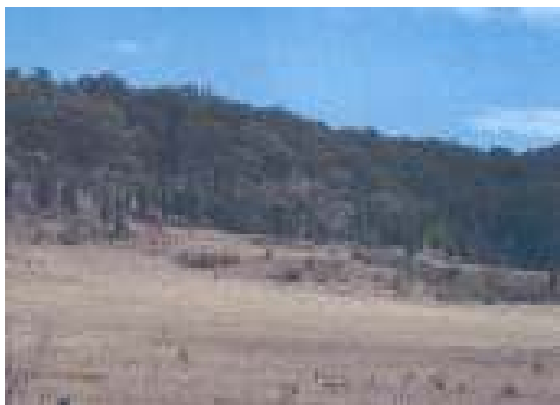


Figure 6: Existing View from Southern most property on Slate Gully Road

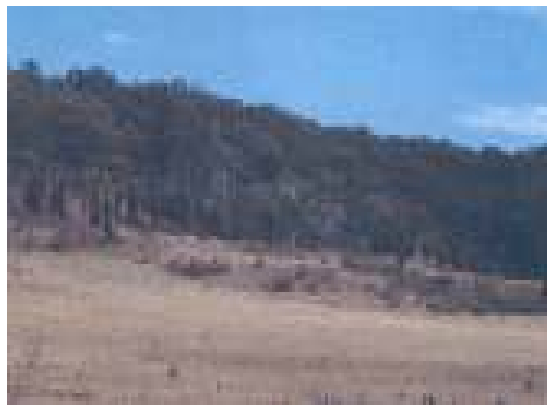


Figure 6a: Artists rendition Southern most property (Tower 22.1)

Other Areas

Road crossings at Barigan Road and Wollar Road in particular have been identified as areas where there would be visual impact due to the lines being dominating items on the landscape and the absence of mitigation measures at these locations. Wollar Road in particular serves as a tourist drive between Wollar and Mudgee.

Although the line may dominate the landscape at these locations, the impact is considered minor as there are no immediately surrounding residences and exposure to this vista would be brief, as a vehicle travels through the area.

In the majority of cases, TransGrid has consulted with property owners with respect to the siting and possible impacts of the line. In the course of negotiation, criteria for vegetation screening has been developed.

The Department considers that the proposed mitigation measures specified in the SoC and PEMP are satisfactory. It is considered that any screening should consider the use of advanced/mature plantings due to time taken for seedlings to establish.

Additionally, the Department considers that all property owners along the route in addition to Slate Gully Road should have the opportunity to acquire screen plantings from TransGrid at the Proponents cost. This will provide a pro-active approach to properties who may not have considered the visual impacts of the line comprehensively and by incorporating this as a condition of approval, give them the opportunity for mitigation after the establishment of the line.

Other Issues

6.7 Cumulative Impacts

There were eight submissions which raised concern as to the cumulative impact that the transmission line would have on the environment particularly around the Ulan-Wollar area and its interaction with existing and proposed mining operations. Mining operations dominate the landscape in this region and in particular equipment associated with processing and transport of products. The addition of the line to this landscape will not significantly change the surrounding environment and thus will have a minimal impact on the surrounding area.

The Department has carefully assessed whether the line would increase cumulative clearing impacts in these areas. There will be additional clearing in the area. However, as discussed above an offsets package will be required and this will provide a net environmental benefit by increasing the conservation estate.

The Department considers that the mitigation measures outlined in the Statement of Commitments and Project Environmental Management Plan adequately address the specific impacts of the proposal.

6.8 Non Indigenous Heritage

The proposed route will pass through areas identified to have non-indigenous heritage significance.

The EA contains an assessment of the archaeological and cultural heritage values of the area and the potential impact of the project on sites as highlighted in Appendix B, Volume 2 of the EA by OzArk Environmental and Heritage Management Pty Ltd.

Issue

Five sites were identified through the State Heritage Register within 2km of the proposed easement and two sites of Commonwealth heritage within 2km of the easement. Site Inspection identified 12 additional sites which were considered to have local significance by the Proponent's consultant, examples being remnant farm infrastructure and a disused shale oil mine.

The construction of the line and associated easement will involve surface and subsurface disturbance in areas with predominately low sensitivity. One submission was made during exhibition which related to a rock structure on a property which disputed the historical importance of a rock structure identified by the consultant.

Consideration

Items which were identified as having local importance by the consultant and had not been listed on the Council Local Environmental Plans were assessed to be in poor condition by the consultant as a result of agricultural activity on properties.

The transmission line easement was designed to avoid listed items of State or Commonwealth significance, and anything else identified (apart from the rock structure).

The Proponent has adopted a 'due diligence' approach to a rock structure of unknown origin which was identified as being out of context with the surrounding area. This was confirmed by the property owner indicating that the item had been placed on the property.

The Department considers that the proposed surveys, monitoring and environmental control measures ensure protection of Non-indigenous relics and have been adequately addressed through the Proponent's SoC and PEMP.

6.9 Electric and Magnetic Fields (EMF)

All alternating electric currents generate electric and magnetic fields (EMFs). This includes electricity transmission lines such as the Wollar-Wellington project.

The electric field strength that emanates from a transmission line depends on the voltage whereas the magnetic field strength depends upon the current (electricity running along the line). Potential health effects resulting from EMFs are a concern in sectors of the community.

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) has published information on its web site dealing with powerlines and human health. Some of the key conclusions are:

- Electric fields can be easily shielded;
- Shielding of magnetic fields is technically difficult – increasing distance from the source is the easiest way of reducing exposure. Buried transmission lines generate lower magnetic fields, because of their design;
- Human studies have consistently shown that there is no evidence that prolonged exposure to weak electric fields results in adverse health effects;
- The widespread use of electricity means that everyone is exposed to EMFs from a variety of sources;

- On balance the scientific evidence does not indicate that exposure to 50Hz EMFs found near powerlines is a hazard to human health; and
- Whether chronic exposure to magnetic fields is equally harmless remains an open question. However, the studies to date have indicated either no association or a weak association with adverse health effects. Thus, the majority of scientists, and Australian radiation health authorities in particular, do not regard chronic exposure to 50Hz fields at the levels commonly found in the environment as a proven health risk;

To the extent that there are concerns, they now focus on magnetic rather than electric fields.

There are currently no Australian standards regulating exposure to these fields.

The National Health and Medical Research Council (NHMRC) had issued Interim guidelines on limits of exposure to 50/60 Hz electric and magnetic fields. These guidelines were aimed at preventing immediate health effects resulting from exposure to these fields. The recommended magnetic field exposure limit for members of the public (24 hour exposure) was 1,000 milligauss (mG). It should be noted that this limit did not apply to cancer risk resulting from chronic exposure to 50 Hz magnetic fields. The equivalent electric field limit was 5kV/m. It should also be noted that these guidelines have been rescinded and are now under review.

In Australia, it is common to apply the Principle of Prudent Avoidance – without ‘undue inconvenience’ (simple, easily achievable measures) and at modest cost, to reduce EMF exposure. NSW Health has advised the Department of its policy on magnetic fields. It stated that it would be appropriate to use the Prudent Avoidance Principle when considering magnetic fields associated with new or upgraded high voltage power lines, with the objective of minimising the level of magnetic field exposure for residents.

Issue

Seven submissions were made in relation to EMF as a result of exhibition raising concerns about fields and health impacts.

The EA set out the predicted EMF levels for the transmission line which were based on the study of the current fields from the existing Mt Piper to Wellington 330kV line. This was because the Wollar to Wellington conductor height would be similar to the Mt Piper line with predicted loads and fields anticipated to be similar to this line.

Magnetic fields vary with the load which is dependant on the power flow which varies in accordance with consumer demand. Electric fields are dependant on the voltage through the line. Both fields can be further influenced by the height of the wires above ground and the physical arrangement of the cables related to the distance of the receiver from the line.

The proposed line is expected to generate a maximum electric field of 6.9kV/m at worst case when standing on the centreline (directly underneath the transmission line in the centre). When standing at the 30m easement edge, fields reduce to 1.1kV/m at worst case and 0.2kV/m at 60m.

For Magnetic fields, at the centreline, the worst case (short-term emergency load) is measured to be 84.9mG whereas the Time weighted average load is measured to be 50.1mG. At 85m the field drops to 3.2mG in the worst case with the average load measured to be 1.9mG, decreasing further with greater distance.

Consideration

It is acknowledged by both TransGrid and the Department that there are a range of views in relation to the EMF issue.

The Department recognises scientific literature on the subject is extensive, complex and inconclusive which makes it difficult to determine impacts conclusively. However, as the route of the transmission line is in rural and semi-rural environments, it is considered impacts as a result of EMF will be negligible as dwellings are generally situated in excess of 250m away from the line and the nearest school is situated 400m away from the line.

The Department considers that TransGrid has assessed the proposed line in accordance with prudent avoidance principles in accordance with the Gibbs Inquiry recommendations in 1991 with the line being located well clear of houses and schools and arrangement of cables to minimise field strengths.

6.10 Hunter Catchment Blueprint

The Hunter Catchment Blueprint is similar to the Central-West Catchment Blueprint that was described within the EA. Both are formed by representatives from the community, conservation groups, Aboriginal community and state and local Governments.

Both Blueprints contain specific and measurable targets and management actions aimed at improving the quality and sustainability of both catchments. The Central West Blueprint covers the Bogan, Macquarie, Cudgegong, Talbragar and Castlereagh River Catchment whereas the Hunter Blueprint covers the Upper Hunter, Goulburn Rivers and the Wilpingjong and Wollar Creek catchments.

Issue

Following submission of the EA, it was identified that the Hunter Catchment Blueprint had not been considered in the assessment and that the line may have impacts particularly in the Wollar-Ulan area as it has been identified as a high priority area for aquatic health, vegetation/biodiversity, salinity and soil conservation.

Consideration

Although the Hunter Catchment Blueprint was raised by seven submissions, it is worth identifying that the Central West Catchment Blueprint applies to the majority of the proposed route and its issues are similar and were considered in preparation of the EA.

The Department considers that the proposed surveys, monitoring and environmental control measures will ensure protection of the environment and achieves the goals as specified within the Hunter Catchment and Central West Catchment Blueprints and have been incorporated into the project as part of the PEMP.

6.11 Construction Impacts

During construction, it is reasonable to expect some noise, traffic, air and water quality issues if left unmitigated.

The Proponent, to alleviate these potential issues, has developed a comprehensive PEMP and has committed to a range of mitigation measures from the outset to address a range of construction, maintenance, protection and rehabilitation strategies to minimise impacts on residents and the environment and to ensure the successful contractor complies with standards and community expectations.

The Department is satisfied that the measures included in the PEMP will adequately manage these issues.

6.12 Greenhouse Gases and Future Power plants

Some submissions raised concern that the proposed line could be used to connect a new or expanded coal fired power plant, and/or it would increase Greenhouse Gas emissions by transporting and enabling use of coal fired electricity.

In terms of connecting to new power plants, this Project Application only relates to a new transmission line. This line is intended to cater for reliability/supply security and meet increased demands from the Central West. The assessment is on this basis. Any new power plants and associated connection would be the subject of separate applications and assessment.

The Department also notes TransGrid's technical advice set out in its Submissions Report. This indicates that the capacity of the proposed line has the smallest practicable thermal rating, and would not support the connection of a local power plant of any appreciable size.

In terms of greenhouse gas emissions, the line will be capable of transporting electricity from any source, including from less greenhouse intensive sources should they be available. At the moment, it appears highly likely that most of this would be from coal fired power plants. However, the transmission line is about ensuring adequate and reliable supply to users in the Central West region, and thereby reducing the risks of supply failure. It is not about encouraging the additional use of coal fired electricity nor does it.

The Submissions Report indicates that, for a given load, there will be less system losses than currently occurs, and on that basis there will be some reduction of greenhouse gas emissions. This is because less current will need to be carried in the existing lines, as the load can be shared with the new line. The Submissions Report estimates potential reductions in CO₂ emissions of about 45,000 tonnes/year. (Note the Submissions Report also estimates a one off CO₂ emission of about 81,000 tonnes from construction of the line).

As indicated in section 6.3, there are limitations to alternatives. However, as also indicated, TransGrid will be further testing the market (including the proposed gas fired power plant at Cobar) to ascertain if there are other alternatives that could remove (or at least defer) the need for the line. The Department's recommendation is that the proposed line does not proceed until it has been demonstrated that there are no viable non network solutions.

6.13 Summary of Conditions

In accordance with section 75F (6) of the EP&A Act, the Proponent prepared a Statement of Commitments. These commitments, among other undertakings, contain proposed mitigation measures to reduce impacts of a range of social and environmental issues identified in the EA. Additionally, the Proponent also submitted a Project Environmental Management Plan which provided construction level detail for these environmental and social issues in addition to the SoC.

The Department's recommended Conditions of Approval incorporate the Proponent's Statement of Commitments and the Project Environmental Management Plan as referred to throughout this report. A summary of the Department's recommended Conditions is as follows:

- Condition of Approval No 1. This requires the Proponent to investigate non-network alternatives which may defer the construction of the line. Construction is not to commence until these alternatives have been considered and the Director General is satisfied that no reasonable and feasible alternatives exist;
- Condition of Approval No 2. This specifies a time frame for which construction must physically commence, i.e 5 years from the date of approval;
- Conditions of Approval Nos 3 to 7. These cover administrative and compliance requirements;
- Conditions of Approval Nos 8 to 10. These specify the requirements for an Environmental Management Representative;
- Conditions of Approval Nos 11 to 14. These require the preparation of a CEMP, OEMP and cover auditing requirements;
- Condition of Approval No 15. This outlines the offset requirements as agreed by the DEC for the project;
- Condition of Approval No 16. This condition requires the Proponent to commit to additional visual mitigation measures following establishment of the line in addition to those specified in the PEMP;
- Condition of Approval No 17. This condition requires the Proponent to consider additional utilities and services along the route to determine if they require protection, diversion and/or support at the Proponent's cost.

7 CONCLUSION

The Department is satisfied that there is a need to augment electricity supply in the Central West to ensure adequate reliability (which is currently below acceptable levels) and to cater for demand growth. The proposed Wollar-Wellington line would achieve this aim.

There will be a range of impacts especially in relation to visual and clearing. However the Department is satisfied that the proposed mitigation measures and the offsets package will ensure the impacts can be managed to acceptable levels.

Conditions are recommended to ensure that this will be achieved. The conditions require an offset package, compliance and auditing and preparation and implementation of a Construction Environmental Management Plan and Operation Environmental Management Plan. The bulk of potential impacts will be at construction stage. TransGrid has submitted a detailed CEMP as part of the PEMP. This document provides sufficient measures to ensure that construction impacts will be adequately managed.

TransGrid has acknowledged there may be other alternatives that need to be considered which could remove the need for the line, or more likely defer its implementation. At this stage, TransGrid is testing the market to ascertain whether there are other options that may be feasible. Therefore, any approval should be subject to deferred commencement. That the project will not commence until, and unless, TransGrid has satisfactorily demonstrated that the other options are not viable or effective.

Accordingly, the Department recommends that the Project Application be approved, subject to the conditions of approval set out in Appendix A.

APPENDIX A RECOMMENDED CONDITIONS OF APPROVAL

SCHEDULE 1: DESCRIPTION OF THE WOLLAR TO WELLINGTON 330kV TRANSMISSION LINE

Application No: 06_0053

The Project is the Wollar to Wellington 330kV Transmission Line as described in the:

1. Environmental Impact Statement (EIS) for the Wollar to Wellington 330kV Transmission Line prepared by International Environmental Consultants Pty Ltd, dated August 2005 - later adopted as the Environmental Assessment (EA) under Part 3A of the Act; and as amended by
2. Submissions Report for the Wollar to Wellington 330kV Transmission Line prepared by TransGrid dated March 2006;
3. Statement of Commitments for the Wollar to Wellington 330kV Transmission Line prepared by TransGrid dated October 2006; and
4. Project Environmental Management Plan prepared by TransGrid October 2006.

SCHEDULE 2: CONDITIONS OF APPROVAL – WOLLAR TO WELLINGTON 330KV LINE

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DEFINITIONS AND ABBREVIATIONS

Term	Definition
Conditions of Approval	The Minister's Conditions of Approval for the Project.
CEMP	Construction Environmental Management Plan.
Construction	Includes all work in respect of the Project other than survey, acquisitions, fencing, investigative drilling or excavation, building/road dilapidation surveys, minor clearing (except where threatened species, populations or ecological communities would be affected), establishing site compounds (in locations meeting the criteria of the Conditions), or other activities determined by the EMR to have minimal environmental impact (e.g. minor access roads, minor adjustments to services/utilities, etc.).
DEC	Department of Environment and Conservation. Also includes the Environment Protection Authority and the National Parks and Wildlife Service.
Department, the	Department of Planning (DoP).
Director-General, the	Director-General of the Department (or delegate).
Director-General's Agreement	A written advice from the Director-General (or delegate).
Director-General's Approval	A written approval from the Director-General (or delegate). Where the Director-General's Approval is required under a Condition the Director-General will endeavour to provide a response within one month of receiving an approval request. The Director-General may ask for additional information if the approval request is considered incomplete. When further information is requested the time taken for the Proponent to respond in writing will be added to the one month period.
Director-General's Report	The report provided to the Minister by the Director-General of the Department under section 75I of the EP&A Act.
DNR	Department of Natural Resources.
Environmental Assessment (EA)	Means the Wollar-Wellington Environmental Impact Statement dated August 2005 prepared by International Environmental Consultants Pty Ltd.
EMR	Environmental Management Representative.
EP&A Act	Environmental Planning and Assessment Act.
Minister, the	Minister for Planning.
Operation	Means operation of the Project, but does not include commissioning trials of equipment or temporary use of parts of the Project during Construction.

Term	Definition
OEMP	Operation Environmental Management Plan.
Offsets Package	The package of measures highlighted within the Project Environmental Management Plan for environmental improvement.
Project Environmental Management Plan (PEMP)	Project Environmental Management Plan, dated October 2006 which, identifies all the environmental aspects and mitigation measures that will be employed arising from the construction, operation and maintenance of the line.
Project	The Project in Schedule 1 of this Approval.
Proponent	Means TransGrid
Publicly Available	Available for inspection by a member of the general public (for example available on an internet site or at a display centre).
Reasonable and Feasible	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.
Statement of Commitments (SoC)	TransGrid Wollar to Wellington 330kV Transmission Line Statement of Commitments dated 31 October 2006.
Submissions Report	Means the <i>Wollar to Wellington 330kV Transmission Line Submissions Report</i> prepared by TransGrid (March 2006).
Sensitive Receiver	Residence, education institution (e.g. school, TAFE college), health care facility (e.g. nursing home, hospital) and religious facility (e.g. church).
Stages	Stages refers to the: • division of an Project into multiple contract packages; and/or • Construction or Operation of a Project in discrete sections.
Structure	Residence, farm shed or other building.

DEFERRED COMMENCEMENT

1. Prior to the commencement of construction, the Proponent is to submit a report to the Director-General detailing the outcomes of the investigations into non-network alternatives (such as embedded generation) which may defer the construction of the proposed Wollar to Wellington Transmission Line. The report should include details of cost, timing and the capacity for these alternatives to address both customer expectations and network reliability criteria for the western region. Construction may not commence until the report demonstrates, to the Director General's satisfaction, that reasonable and feasible alternatives have been considered that would enable the reliability criteria for the western region to be met and the Wollar to Wellington Transmission line is an appropriate option to meet such.

LAPSING OF APPROVAL

2. This approval lapses five (5) years from the date of approval unless construction has physically commenced by that date.

ADMINISTRATIVE CONDITIONS

The Project

3. The Project must be carried out consistent with:
 - a) the procedures, safeguards and mitigation measures identified in the Environmental Assessment, as modified by the Submissions Report;
 - b) the Statement of Commitments;
 - c) the Project Environmental Management Plan and;
 - d) these conditions.
4. These Conditions prevail in the event of any inconsistency with the requirements for the Construction and Operation of the Project arising out of the documents described in condition 3 (a) to (c) above.

These Conditions of Approval do not relieve the Proponent of its obligations under any other Act.

5. It is the responsibility of the Proponent to ensure compliance with all of these Conditions and to implement any measures arising from these Conditions of Approval, Statement of Commitments and the Project Environmental Management Plan.
6. The Proponent must bring to the Director-General's attention any matter that may require further assessment by the Director-General.
7. The Proponent must comply with any requirements of the Director-General arising from the Department's assessment of:

- a) any reports, plans or correspondence that are submitted to satisfy these Conditions of Approval; and
- b) the implementation of any actions or measures contained in such reports, plans or correspondence.

Environmental Management Representative

8. The Proponent must request the Director-General's Approval for the appointment of an Environmental Management Representative (EMR) at least eight weeks before Construction commences (or within any other time agreed to by the Director-General). In its request the Proponent must provide the following information:
 - a) qualifications and experience of the EMR including demonstration of compliance with relevant Australian Standards for environmental auditors;
 - b) authority and independence (from the Proponent or its contractors) of the EMR including details of the Proponent's internal reporting structure; and
 - c) resourcing of the EMR role.The EMR must be available:
 - i for sufficient time to undertake the EMR role.
 - ii at any other time requested by the Director-General;
 - iii during any Construction activities identified in the CEMP to require the EMR's attendance; and
 - iv for the duration of Construction.
9. The Director-General may at any time immediately revoke the approval of an EMR appointment by providing written notice to the Proponent. Interim arrangements for EMR responsibility following the revocation must be agreed in writing between the Director-General and the Proponent.
10. The EMR is authorised to :
 - a) consider and advise the Director-General and the Proponent on matters specified in the Conditions of Approval and compliance with such;
 - b) determine whether work falls within the definition of Construction where clarification is requested by the Proponent;
 - c) review the CEMP;
 - d) periodically monitor the Proponent's activities to evaluate compliance with the CEMP.
 - e) provide a written report to the Proponent of any non-compliance with the CEMP observed or identified by the EMR. Non compliance must be managed as identified in the CEMP;
 - f) issue a recommendation to the Proponent to stop work immediately if in the view of the EMR an unacceptable impact on the environment is occurring or is likely to occur. The stop work recommendation may be limited to specific activities causing an impact if the EMR can easily identify those activities. The EMR may also recommend that the Proponent initiate reasonable actions to avoid or minimise adverse impacts;

- g) review corrective and preventative actions to monitor the implementation of recommendations made from audits and site inspections;
- h) certify that minor revisions to the CEMP are consistent with the approved CEMP; and
- i) provide regular (as agreed with the Director-General) reports to the Director-General on matters relevant to carrying out the EMR role including notifying the Director-General of any stop work recommendations.

The EMR must immediately advise the Proponent and the Director-General of any incidents relevant to these Conditions resulting from Construction that were not dealt with expediently or adequately by the Proponent.

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

11. A Construction Environmental Management Plan (CEMP) must be prepared, before Construction commences, and implemented, in accordance with these Conditions of Approval and all relevant Acts and Regulations.

The CEMP must include, but is not limited to:

- a) management responsibilities. This must include the role of the EMR as specified in condition 8 of this approval;
- b) compliance reporting. This must include the requirements of condition 15 of this approval;
- c) a community consultation strategy;
- d) a soil and water management strategy;
- e) a dust/air quality management strategy;
- f) a noise and vibration management strategy;
- g) a flora and fauna management strategy;
- h) a weed management strategy;
- i) a visual impact management strategy;
- j) a heritage management strategy;
- k) a waste management strategy;
- l) a traffic and transportation management strategy; and
- m) provisions to rectify property damaged by construction works.

The CEMP must be consistent with, and incorporate the construction stage matters included within the PEMP.

The CEMP must be reviewed by the EMR. Construction may not commence until the EMR has certified that the CEMP is consistent with this Condition of Approval. The EMR must bring to the Director-General's attention any shortcomings in the CEMP.

In addition, the CEMP must

- a) be made Publicly Available, prior to the commencement of construction, and
- b) be provided to the Department, other relevant government Departments and Councils prior to the commencement of construction.

Any minor revisions to the CEMP must be certified by the EMR as being consistent with this Condition of Approval. Any revisions which are inconsistent with this Condition of Approval must be submitted to the Director-General for approval.

OPERATION ENVIRONMENTAL MANAGEMENT PLAN (OEMP)

12. An *Operation Environmental Management Plan* (OEMP) must be prepared, before operation commences, and implemented, in accordance with these Conditions of Approval and all relevant Acts and Regulations. The OEMP must be consistent with those operation stage measures identified in the Project Environmental Management Plan.

The OEMP must include but is not limited to:

- a) track and access maintenance protocols;
- b) easement clearing and maintenance standards;
- c) impacts on flora and fauna from operation and periodic clearing;
- e) weed management protocols;
- f) management of indigenous sites; and
- g) auditing of activities.

The OEMP must be reviewed by the EMR and submitted to the Director-General for approval at least 4 weeks before commencement of operation unless otherwise agreed by the Director-General. The EMR must bring to the Director-General's attention any shortcomings in the OEMP.

In addition, the OEMP must

- a) be made Publicly Available, prior to the commencement of operation, and
- b) be provided to the Department, other relevant government Departments and Councils prior to the commencement of operation.

Any revisions which are inconsistent with this Condition of Approval must be submitted to the Director-General for approval.

AUDITING

Construction Compliance Reports

13. The Proponent must provide the Director-General, Wellington and Mid-Western Regional Councils, and any other relevant government departments nominated by the Director-General with Construction Compliance Reports. The EMR must review the Construction Compliance Reports before they are submitted to the Director-General and bring to the Director-General's attention any shortcomings.

The first *Construction Compliance Report* must report on the first six months of construction and be submitted a maximum six weeks after expiry of that period. The second, and subsequent, Construction Compliance Reports must be submitted at maximum intervals of

six months from the date of submission of the first Construction Compliance Report (or at any other time interval agreed to by the Director-General) for the duration of Construction.

The Construction Compliance Reports must include information on:

- a) compliance with the CEMP, Statement of Commitments and the Conditions of Approval;
- b) compliance with any approvals or licences issued by relevant government departments and/or Wellington and Mid-Western Regional Councils for the Construction phase of the Project;
- c) the implementation and effectiveness of environmental controls. The assessment of effectiveness should be based on a comparison of actual impacts against performance criteria identified in the CEMP;
- d) any results of environmental monitoring, presented as a summary and analysis;
- e) the number and details of any complaints, including a summary of main areas of complaint, action taken, response given and intended strategies to reduce recurring complaints;
- f) details of any review and amendments to the CEMP resulting from Construction during the reporting period; and
- g) any other matter relating to compliance with the Conditions of Approval or as requested by the Director-General.

The Construction Compliance Reports must also be made Publicly Available.

Environmental Impact Audit Report - Construction

14. An *Environmental Impact Audit Report - Construction* must be prepared and submitted to the Director-General a maximum three months after the Project begins Operation (or at any other time interval agreed to by the Director-General). The *Environmental Impact Audit Report – Construction* must also be submitted to Wellington and Mid-Western Regional Councils and other government departments upon the request of the Director-General.

The *Environmental Impact Audit Report – Construction* must:

- a) identify the major environmental controls used during Construction and assess their effectiveness;
- b) summarise the main environmental management plans and processes implemented during Construction and assess their effectiveness;
- c) identify any innovations in Construction methodology used to improve environmental management; and
- d) discuss the lessons learnt during Construction, including recommendations for future projects.

FLORA AND FAUNA OFFSETS

15. As part of the package to offset the clearing of native vegetation including Endangered Ecological Communities, the Proponent is required to purchase the 130 hectare property contiguous with Wollemi National Park, as identified by the DEC and specified in item 18 of the Statement of Commitments, and transfer it into the National Parks Estate, prior to the commencement of construction, unless otherwise agreed by the Director-General. In the event that this property is unable to be purchased (because it is not for sale), the Proponent must purchase a property of similar ecological value, as agreed by the Director-General of DEC, and subject to a time frame agreed by the Director-General. As part of the offsets package, the Proponent must also provide \$90,000 in additional funding to an extension of the GreenGrid project, being undertaken in partnership with Greening Australia. Details of the offsets package are to be outlined in the Flora and Fauna Management Strategy.

VISUAL IMPACT MANAGEMENT STRATEGY

16. The Proponent shall make available advanced locally occurring native plantings for all residents along the transmission line easement, at their request, so as to provide screening to properties on private land.

MISCELLANEOUS

17. The Proponent must identify if there are any additional utilities and services other than Telstra lines (hereafter "services") potentially affected by Construction to determine requirements for diversion, protection and/or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. The Proponent in consultation with service providers must ensure that disruption to services resulting from the project are minimised and advised to customers.