
2005-2006

NEW SOUTH WALES

Electricity Network

Performance Report

TransGrid

INTRODUCTION

This Network Performance Report has been prepared by TransGrid to fulfill the requirements of the Electricity Network Operator reporting regime and the Electricity Supply (Safety and Network Management) Regulation 2002. The enactment of Electricity Supply (Safety and Network Management) Regulation 2002 has superseded the Electricity Supply (Safety Plans) Regulation 1997.

Clause 7(5) of the Regulation specifically excludes the requirement for TransGrid to lodge a Customer Installation Safety Plan.

This report has been independently appraised in accordance with the requirements of the DEUS Report Outline. The Appraisal Report confirmed that this Report is complete and that the data presented can be relied upon by the Department for carrying out performance analysis.

1 PROFILE

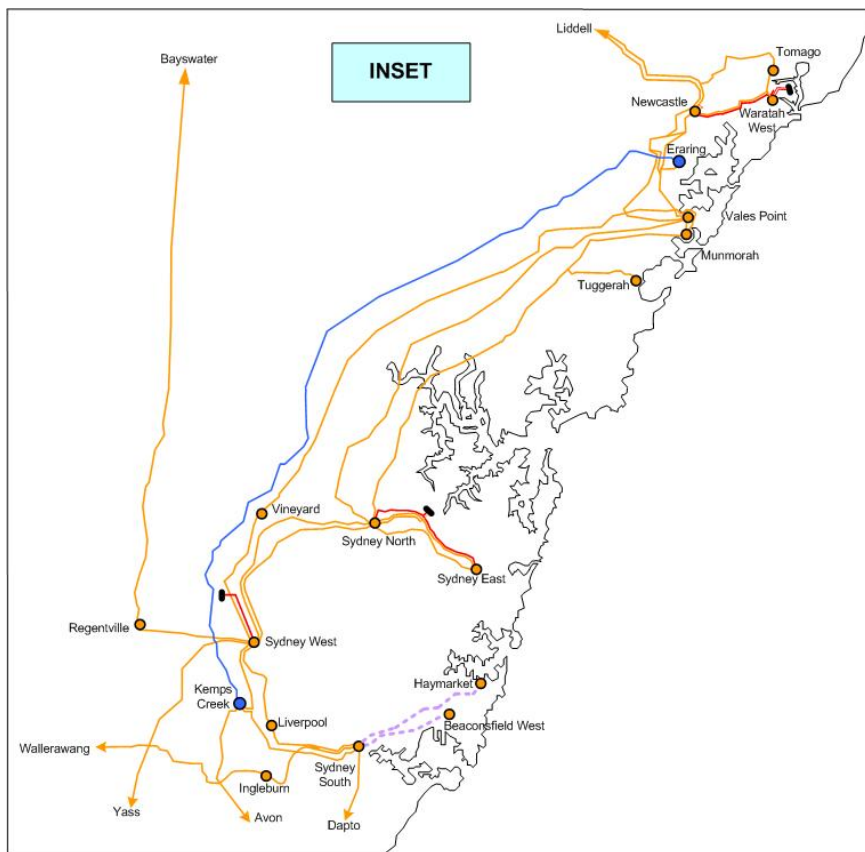
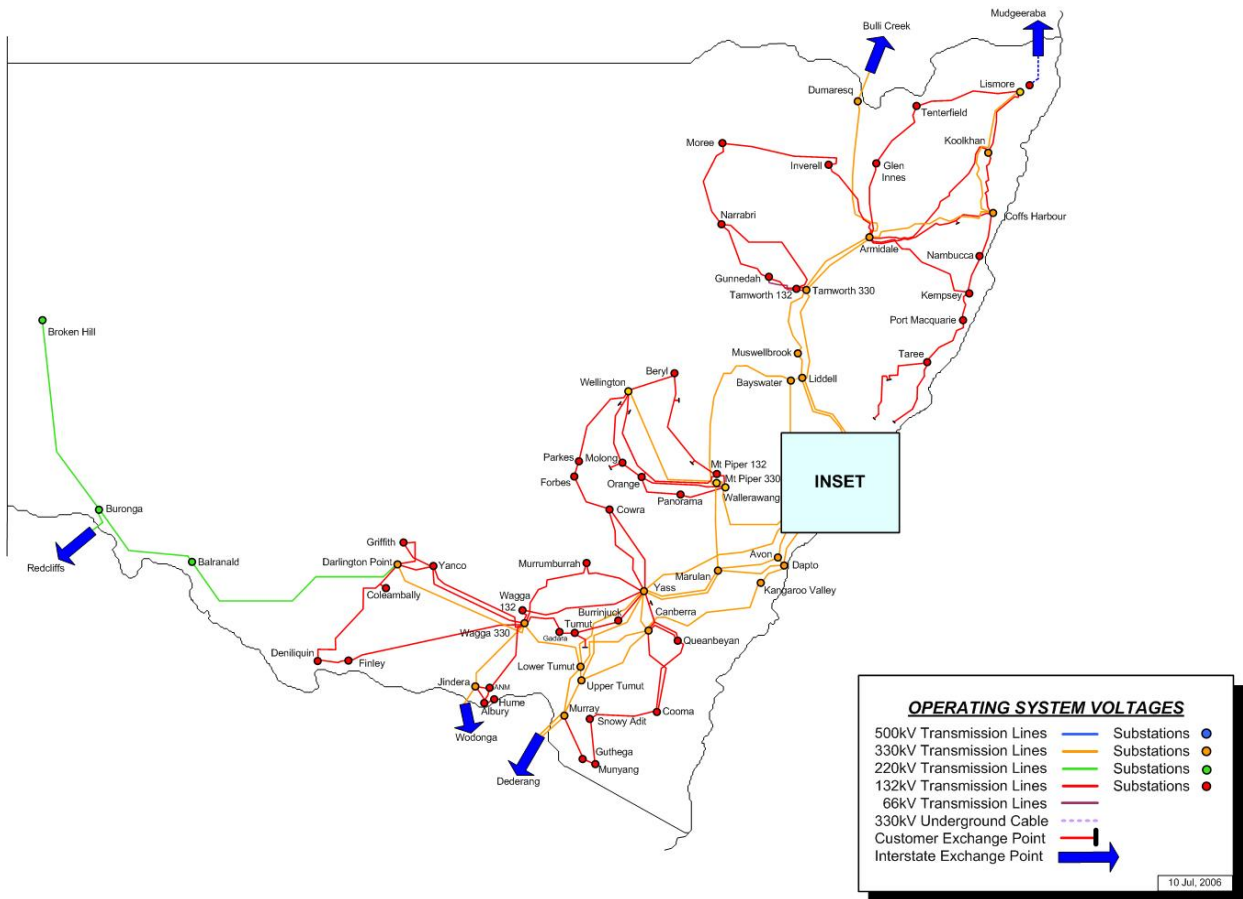
TransGrid is the owner, operator and manager of the high voltage transmission capability between generators, distributors and directly connected end users in New South Wales as well as interconnections with Queensland and Victoria. The system is a major part of one of the most extensive systems in the world comprising 82 substations and power station switchyards and over 12,400 kilometres of transmission lines.

The system operates at voltage levels of 500, 330, 220 and 132kV. The substations are located on land owned by TransGrid and the transmission lines of steel tower, concrete or wood pole construction are generally constructed on easements acquired across private or public land.

TransGrid has staff strategically based at locations throughout NSW in order to meet the day to day operation and maintenance requirements as well as being able to provide emergency response. The main administrative office is located at the corner of Park and Elizabeth Street Sydney. Field staff are co-ordinated from major depots located at the Metropolitan Centre in Western Sydney and at Newcastle, Tamworth, Orange, Wagga Wagga and Yass.

	Number at 30-6-05	Number at 30-6-06
Customer Numbers (Total)	14	13
Maximum Demand (MW)	13,126	13,292
Energy Delivered to Year End GWh	72,496	74,901
System Loss Factor (%)	2.8%	2.7%
Transmission System (km)	12,485	12,480
High Voltage Overhead (km)	12,438	12,433
High Voltage Underground (km)	47	47
Substations (Number)	82	82
Employees (Full Time Equivalent Number)	961	945
Contractors (Full Time Equivalent Number)	71	141

Note: Distances for overhead and underground lines are circuit km.



2 NETWORK MANAGEMENT

2.1 Overview

TransGrid's vision is to be recognized as a world class electricity transmission company. It is committed to providing a safe working environment and ensuring the reliability of its electricity transmission network.

TransGrid published its updated (5 year) Network Management Plan 2007-2011 in June 2006. This Plan provides a focus for ongoing analysis within TransGrid aimed at continually improving the management of the transmission system while also providing an authoritative vehicle for dissemination of information to TransGrid's managers, employees, customers and stakeholders.

TransGrid also produced its new 30 Year Plan in January 2005, covering the period from 2005 to 2034. The 30 Year and 5 Year Plans quantify TransGrid's medium and long term strategies for asset management and provide expenditure budget forecasts.

Ongoing management strategies aimed at the achievement of TransGrid's mission are the maintenance and development of Asset Maintenance Policies and Strategies in the framework of an accredited Quality Documentation system, a system of Quarterly Asset Performance Reviews, regular Technical Performance Assessments and audits, and extensive benchmarking studies.

In accordance with the Electricity Supply (Safety and Network Management) Regulation 2002, TransGrid prepared and lodged a Public Electrical Safety Awareness Plan on 30th June 2003 and lodged its Network Management Plan and Bush Fire Risk Management Plan on 29th August 2003.

Subsequently, independent audits of the Network Management and Bush Fire Risk Management Plans were conducted and Audit Reports were lodged on 31st October 2003.

2.2 Network Complaints

TransGrid has developed and implemented a corporate system called Incident Notification on its Intranet. A sub-section of this system is for Customer Complaints. When a complaint is received either by personal contact, by phone or by mail, the recipient of the complaint creates a new record in the Complaints system and directs it to an appropriate officer. That officer then acts upon the complaint and records the details of any action and the outcome. When appropriate, the issue is then closed. The system allows for review of any complaints that have not been closed off in the required time.

TransGrid has an established process of contacting all property owners before entering their property to perform any type of work in maintaining transmission lines, easements and access tracks to explain the nature of the work to be done, so that all property owners' concerns may be addressed prior to commencement. During the year, each of TransGrid's Regions received a number of calls from property owners relating to this work. Most of these calls were enquiries about activities about to take place and are satisfied with information supplied by TransGrid officers. However, some required further discussion with property owners to clarify the situation and sometimes provide rectifying actions.

In its three regions for 2005/2006, eleven (11) notable verbal or written expressions of dissatisfaction were received. Of these, three were related to vegetation management and are listed in Table 2.1. The remainder were related to: open gates, damaged fences and released stock (3); injured stock (2); property damage (2); and noise (1) which is listed under "Noise and Interference" in table 2.2.

In addition, there were two (2) minor complaints about untidiness left by contractors; one (1) advice about access track erosion for TransGrid's information; six (6) invalid complaints that were referred to third parties responsible; and one (1) invalid complaint by a disgruntled developer.

There were no claims made as a consequence of interrupted supply which was caused by TransGrid.

Complaint Performance Data

Table 2.1 - Complaints Received Regarding Network Issues	
	05/06
Complaints Total	21
Complaints per 1,000 Distribution Customers	N/A
Complaints regarding Vegetation Management*	3

* This statistic is to indicate the general level of complaints about this publicly sensitive issue.

Table 2.2 - Network Complaint Investigations Completed 2005/2006			
Category	Nature of Complaint	Number	Number Valid*
Voltage	Sustained over voltage		
	Sustained under voltage		
	Voltage fluctuations		
	Voltage dips		
	Switching transients		
	N-E voltage difference		
	Ground fault voltage		
	Voltage unbalance		
	Mains signalling voltages (Outside defined range)		
	HV injection (HV/LV Intermix)		
	Notching		
	Invalid		
	SUB TOTAL (Supply Voltage Complaints)		
Current	Direct current		
	Harmonic content		
	Inter Harmonics		
	Invalid		
		SUB TOTAL (Supply Current Complaints)	
Other Quality	Mains signalling reliability		
	Noise & Interference	1	1
	Level of supply capacity		
	Supply frequency		
	Level of EMF		
	Invalid		
	SUB TOTAL (Other Quality of Supply Complaints)	1	1
	SUB TOTAL (All Quality of Supply Complaints)		
Reliability	No. of supply failures		
	Duration of supply failures		
	No. of <1 min. interruptions		
	Invalid		
		SUB TOTAL (Reliability of Supply)	0
Safety	Overhead line safety	1	0
	Underground safety		
	Electrical station safety		
	Service line safety		
	Invalid		
	SUB TOTAL (Network Safety)	1	0
	TOTAL	2	1

* A complaint is valid where non-compliance with published service and network standards occurs.

2.3 Accredited Service Provider Scheme

Not Applicable

3 NETWORK PLANNING

3.1 Overview

TransGrid is responsible for the planning and development of transmission networks in New South Wales in two interrelated roles.

Firstly it has been nominated by the NSW Minister for Energy to be the Jurisdictional Planning Body (JPB) for NSW. In this role it:

- Represents the NSW Jurisdiction on NEMMCO's Inter-regional Planning Committee (IRPC);
- Provides jurisdictional information to the IRPC to enable it to assist NEMMCO in producing its annual Statement of Opportunities (SOO) and Annual National Transmission Statement (ANTS); and
- Carries out an Annual Planning Review, prepares an Annual Planning Report (APR) for NSW and reports to the Minister on matters arising from the Annual Planning Review, the SOO and ANTS.

Secondly it is registered with NEMMCO as a Transmission Network Service Provider (TNSP) in the NSW region of the National Electricity Market (NEM). The National Electricity Rules (the Rules) require TransGrid, as a TNSP, to:

- Analyse the future operation of its transmission network to determine the extent of any future network constraints;
- Conduct annual planning reviews with Distributors to determine the extent of any emerging constraints at points of connection between the TNSP's network and the Distributor's network and determine options for the relief of constraints;
- For each identified need co-ordinate a consultative process for consideration and economic analysis of network augmentation options in accordance with the AER's regulatory test and determine the recommended option;
- After resolution of any disputes concerning the recommended option arrange for its implementation in a timely manner; and
- Prepare and publish an Annual Planning Report for NSW by June 30 of each year.

The Rules require the Annual Planning Report to include:

- Load forecasts;
- Results of annual planning reviews with Distributors;
- Planning proposals for future connection points;
- Forecast of constraints over 1, 3 and 5 years;
- Summary information for proposed augmentations; and
- Consultation reports on proposed new small transmission network assets (NSTNAs).

These obligations are described more fully in Chapter 5.6 of the Rules and the AER's regulatory test.

In 2004, in accordance with a directive from the Ministerial Council on Energy, the Annual Planning Report's structure was aligned with the structure of the ANTS and Annual Planning Reports in other NEM Jurisdictions. Thus in addition to the above the APR contains a summary of relevant National Transmission Flow Path (NTFP) developments.

To meet these obligations, TransGrid incorporates appropriate elements of the New South Wales Government's Total Asset Management (TAM) System regarding inter-agency plans and strategic planning (refer to Sections 3.3 and 3.5 of this report), service delivery strategy (refer to Section 3.2 of this report) and assessment and Decision Tools (refer to Section 3.4 – Demand Management – of this report.)

3.2 System Design Criteria (Reliability Planning Standards)

Under NSW legislation TransGrid has responsibilities that include planning for future NSW transmission needs, including interconnection with other networks.

In addition, as a TNSP in the NEM, TransGrid is obliged to meet the requirements of Schedule 5.1 of the Rules. In particular, TransGrid is obliged to meet the requirements of clause S 5.1.2.1:

“Network Service Providers must plan, design, maintain and operate their transmission networks ... to allow the transfer of power from generating units to Customers with all facilities or equipment associated with the power system in service and may be required by a Registered Participant under a connection agreement to continue to allow the transfer of power with certain facilities or plant associated with the power system out of service, whether or not accompanied by the occurrence of certain faults (called “credible contingency events”).

The Rules also set out the required processes for developing networks as well as minimum performance requirements of the network in a range of areas including:

- A definition of the minimum level of credible contingency events to be considered;
- The power transfer capability during the most critical single element outage. This can range from zero in the case of a single element supply to a portion of the normal power transfer capability;
- Frequency variations;
- Magnitude of power frequency voltages;
- Voltage fluctuations;
- Voltage harmonics;
- Voltage unbalance;
- Voltage stability;
- Synchronous stability;
- Damping of power system oscillations;
- Fault clearance times;
- The need for two independent high speed protection systems;
- Automatic reclosure of overhead transmission lines; and
- Rating of transmission lines and equipment.

TransGrid consults with NEM participants and interested parties during the planning process and in determining proposals for network augmentations.

TransGrid's planning obligations are also interlinked with the licence obligations placed on Distribution Network Service Providers (DNSP) in NSW. TransGrid must ensure that the system is adequately planned to enable their licence requirements to be met.

In addition to meeting requirements imposed by the Rules, environmental legislation and other statutory instruments, TransGrid is expected by the NSW jurisdiction to plan and develop its transmission network on an “n-1” basis. That is, unless specifically agreed otherwise by TransGrid and the affected distribution network owner or major directly connected end-use customer, there will be no inadvertent loss of load (other than load which is interruptible or dispatchable) following an outage of a single circuit (a line or a cable) or transformer, during periods of forecast high load.

In fulfilling this obligation, TransGrid must recognise specific customer requirements as well as NEMMCO's role as system operator for the NEM. To accommodate this, the standard “n-1” approach can be modified in the following circumstances:

- Where agreed between TransGrid and a distribution network owner or major directly connected end-use customer, agreed levels of supply interruption can be accepted for particular single outages, before augmentation of the network is undertaken (for example radial supplies).

- Where requested by a distribution network owner or major directly connected end-use customer and agreed with TransGrid there will be no inadvertent loss of load (other than load which is interruptible or dispatchable) following an outage of a section of busbar or coincident outages of agreed combinations of two circuits, two transformers or a circuit and a transformer (for example supply to the inner metropolitan/CBD area).
- The main transmission network, which is operated by NEMMCO, should have sufficient capacity to accommodate NEMMCO's operating practices without inadvertent loss of load (other than load which is interruptible or dispatchable) or uneconomic constraints on the energy market. At present NEMMCO's operational practices include the re-dispatch of generation and ancillary services following a first contingency, such that within 30 minutes the system will again be "secure" in anticipation of the next critical credible contingency.

In 2005 DEUS introduced mandatory licence conditions on DNSPs which set out certain reliability standards for sub-transmission and distribution networks. The licence conditions specify "n-1, 1 minute" reliability standards for sub-transmission lines and zone substations supplying loads greater than or equal to specified minimums, eg 15 MVA in urban and non-urban areas. These conditions imply a requirement on TransGrid to provide a commensurate level of reliability in its network supplying NSW DNSPs.

Accordingly Country Energy has requested TransGrid to provide a commensurate reliability standard at connection points to its network, ie "n-1, 1 minute" reliability where Country Energy's maximum demand is greater than or equal to 15 MVA.

The jurisdictional requirements and other obligations described above also require the following to be observed in planning:

- At all times:
 - Electrical and thermal ratings of equipment will not be exceeded;
 - Stable control of system voltage will be maintained, with system voltages maintained within acceptable levels; and
 - Synchronous stability of the interconnected power system will be maintained.
- A quality of electricity supply at least to Rules requirements is to be provided;
- A standard of connection to individual customers determined by Connection Agreements is to be provided;
- As far as possible, connection of a customer is to have no adverse effect on other connected customers;
- Environmental constraints are to be satisfied;
- Acceptable safety standards are to be maintained; and
- The power system in NSW is to be developed at the lowest cost possible whilst meeting the constraints imposed by the above factors.

A further planning consideration is the provision of sufficient capability in the transmission network to allow components to be maintained in accordance with TransGrid's asset management strategies.

3.3 Demand Management

TransGrid treats non-network options, including demand management (DM) options, on an equal footing with network options. Thus consideration of DM options is fully integrated onto TransGrid's network planning processes.

DM options are implemented by third parties who have the relevant expertise and resources. Thus, for a demand management option to be implemented to meet a network constraint it must, in addition to passing the AER's regulatory test, have a proponent who is committed to implement the option and to accept the contracted risks.

It is expected that DM options will emerge either from joint planning with distributors, NEM participants or other interested parties. Reasonable DM options may include, but are not limited to, combinations of the following:

- Reduction in electrical energy consumption through increases, at points of end-use, of:
 - Improved energy efficiency devices and systems;
 - Thermal insulation;
 - Renewable energy sources such as solar; and
 - Alternative reticulated energy sources such as natural gas.
- Reduction in peak electricity consumption through increases, at points of end-use, of:
 - Tariff incentives;
 - Load interruption and reduction incentives;
 - Energy storage systems;
 - Embedded generators; and
 - Power factor correction equipment.

TransGrid actively promotes DM options through:

- Identifying opportunities for DM options through joint planning with Distributors and engaging expert external consultants;
- Informing the market of constraints via its Annual Planning Report and consultations for alleviating individual constraints;
- Participating in reviews of the Demand Management Code of Practice for Electricity Distributors in NSW;
- Participation in initiatives and reviews by the Department of Energy and Utilities and Sustainability (DEUS) and IPART that include consideration of DM and its relationship to the development of electricity networks; and
- Joint sponsorship of DM projects, for example the installation of Pacific Solar's Crystalline Silicon on Glass photovoltaic system located at the Powerhouse Museum in Sydney.

TransGrid is committed to include DM and other non-network alternatives such as embedded generation to address emerging constraints to meet its reliability obligations.

It is presently assessing the availability and viability of non-network alternatives to address the forecast requirements for its transmission system supplying Newcastle - Sydney - Wollongong area with relevant activities as follows:

TransGrid has retained the services of CRA International, a world recognised expert in this area. On behalf of TransGrid, CRA has made contacts with the following types of potential providers of non-network alternatives:

- All electricity distribution companies whose service territories overlap the project area;
- Electricity retailers with a significant number of large customers in the project area;
- Demand response aggregators; and
- Companies that build own and operate embedded generation.

In total, 42 companies have so far been contacted. Of these, eight are potential providers of embedded generation.

TransGrid is also developing a framework for commercial arrangements that will need to be considered in making non-network solutions practical. These have included the potential desirability of a two rather than a one-year contract period and the need to monitor the take-up of demand response and test/verify its ability to respond, including the degree to which firm capacity levels can be delivered.

CRA is currently assembling the material that will constitute the invitation for Expressions of Interest, expected to be issued in 2006.

TransGrid also deferred the Wollar – Wellington transmission line project to allow the assessment of non-network alternatives to meet reliability criteria for western NSW

TransGrid's joint planning with the NSW distributors also provides a mechanism to identify opportunities for DM options. NSW distributors follow a similar process to TransGrid in preparing planning reports for their networks, thereby providing another useful source of information for proponents of DM options. They also follow a Demand Management Code of practice that details the steps to be followed in considering and implementing DM options in distribution planning.

An example of the outcomes of these activities is as follows:

As part of the joint planning for electricity supply to the Sydney CBD and inner suburbs, TransGrid, Energy Australia and the Department Planning have initiated and are currently conducting a high priority project to implement a DM strategy to identify opportunities to reduce demand growth that may defer or avoid network expansion in the greater Sydney area. The project covers investigations and identification of feasible DM and local generation opportunities. TransGrid and Energy Australia are supporting the project by committing a total of \$10 million towards implementation by contributing \$1 million per year each over a five-year period. DEUS joined the project in November 2004.

The overall project structure in terms of funding is as follows:

- 30% Investigative works to identify DM opportunities to reduce demand;
- 60% "On the Ground" peak reduction projects to actively reduce demand; and
- 10% Project management & administration: consultancy reports, public education, promotion and project administration.

A number of projects, such as identification and investigation of the St George / Sutherland area for demand reduction opportunities, are complete. The final reports are on the Demand Management and Planning project website (<http://www.planning.nsw.gov.au/dmpp/>).

Other projects in hand include:

- Opportunities for demand reduction and energy efficiency initiatives in the St George and Sutherland area of Sydney;
- Assessment of opportunities to reduce demand for electricity through power factor correction in the inner metropolitan Sydney region;
- Photovoltaic system output monitoring in Sydney's suburb of Newington.

During the 2005/6 financial year approval was given to several innovation projects. One of these, using ice storage technology, has been installed on commercial premises as an alternative to replacing the existing air conditioning system. A number of projects under the Heat, Ventilation and Air Conditioning (HVAC) have been approved and are in the process of being implemented during 2005/06. Also, a study of 275 participating sites out of 344 identified in the Sydney CBD, covering investigations to identify opportunities for load reduction, has been completed. A report for public review is being prepared and will be published on the project website later in the year.

The total expenditure by TransGrid on the project is \$2.2 million with the expenditure for 2005/06 being \$1.4 million.

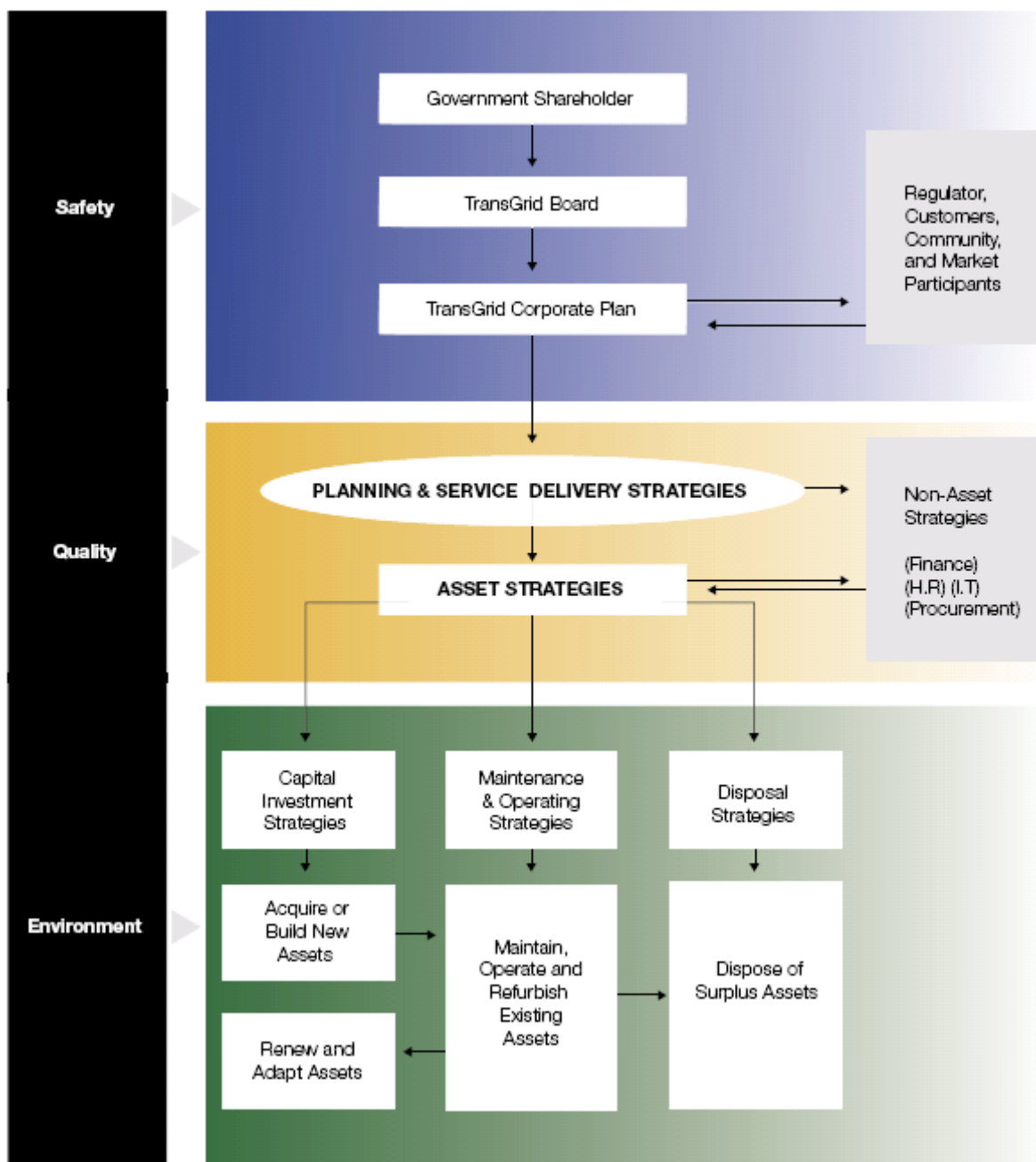
4 ASSET MANAGEMENT

4.1 Overview

TransGrid is constantly striving to optimise its asset management performance as a means of achieving its corporate vision “to be recognized as a world class electricity transmission company” and meeting its customers’ expectations of system reliability and quality of supply. This involves the development, maintenance and ongoing review of Asset Management Policies and Strategies for the maintenance, refurbishment and replacement of the full range of network assets.

To accomplish this mission, TransGrid has developed an Asset Management model that is based on the New South Wales Government’s Total Asset Management (TAM) Model as promulgated in 2001. TransGrid’s model is shown in the figure below.

Network Management Model



As a service delivery utility, TransGrid's approach is to apply the various elements of the TAM model, including strategies for Planning & Service Delivery, Assets, Capital Investment, Asset Maintenance and Asset Disposal, as well as the recommended implementation Plans for HR, IT, Procurement and the legislative, community and stakeholder forms of direction. In addition, TransGrid strives to meet its service delivery obligations as seen by its external Regulator in the form of Reliability and Availability while also meeting its corporate and community commitments to safety, the environment and quality.

To support this objective, TransGrid has initiated or maintained a number of strategies during the year.

- The review of maintenance policies and asset management strategies to implement the outcomes of Risk Management principles, identifying the criticality, reliability, risks and exposures associated with particular courses of action.
- Achievement of a consistently high standard of asset maintenance is facilitated by TransGrid's continued certification to ISO 9001 of its Quality Documentation system. Despite the large geographical distances between Regions and their assets, there is confidence in the effective application of identical policies across the network.
- Quarterly Asset Performance Reviews are conducted by maintenance, operating, asset management and design staff to specifically review the performance of the network assets during the previous three months. This involves the detailed analysis of all forced and emergency outages during the period, as well as a review of the long term availability and reliability trends to determine any issues requiring further investigation. Review meetings were held on September 2005, November 2005, February 2006 and May 2006.
- Technical Performance Assessments are carried out bi-annually on each Region to audit the technical standard and completeness of the maintenance performance. Independent internal auditors with specialist knowledge of the maintenance functions for different asset types conduct these assessments. A formal report detailing observations and business risks is prepared, with a follow-up process to ensure that any issues identified are effectively addressed. During the year, assessments were conducted at Northern Region/Newcastle (August 2005), Central Region/Metropolitan (December 2005) and Southern Region/Wagga (March 2006.)
- TransGrid's maintenance performance in the Australasian and International sphere is monitored through its regular participation in a number of benchmarking studies. ITOMS (International Transmission Operations & Maintenance Study) is organised by a steering committee representing twenty six transmission organisations from Australasia, Europe, United Kingdom and United States and managed by the consulting group UMS. It compares at a detailed level the comparative costs of individual maintenance functions and their associated outage service levels. The results of these studies continue to provide insights into other best performer organisations' work practices. This information is fed back into TransGrid's reviews of its own practices and policies, completing the self-improvement cycle of asset management. During the year, TransGrid fulfilled its participation in the ITOMS 2005 study for analysis of performance during the year 2004/2005.
- TransGrid implemented a Reliability Steering Committee to provide Executive oversight of all matters affecting network and system performance. The committee convenes on a quarterly basis and reviews the previous quarter's network performance in liaison with the Quarterly Asset Performance Review Working Group and System Planning and Performance Review Working Group with an overall aim of improving network reliability.

These and other asset management strategies which meet the TAM model are described in detail in TransGrid's Network Management Plan, contained in the document Network Management Plan 2001 – 2006 and re-issued as Network Management Plan 2007 – 2011 in May 2006, as follows: Planning and Service Delivery (Section 3.), Asset Strategies (Section 4.), including Capital Investment Strategies (Section 4.1), Asset Maintenance and Operating Strategies (Section 4.2) and Asset Disposal Strategies (Section 4.4).

4.2 Technical Service Standards

TransGrid's prime service standards of customer focussed network performance are those of Reliability and Availability.

4.2.1 Reliability

A customer's perception of a network provider's reliability performance is based on how often the customer loses supply due to a temporary failure of TransGrid's plant. The less often or less severe any such losses, the better the perceived performance. The industry defines this reliability in 'system minutes'. Simply put, any loss of supply event can be described as the number of minutes that the total network would have to be down for at the network's annual maximum demand to equate to the amount of energy (MWh) that was not supplied. For example, in 2005/2006, TransGrid's measure of one (1) system minute was 221.5 MWh.

For the current Revenue Reset period, the AER has implemented two reliability service standard measures that count the number of events where loss of supply either is greater than 0.05 but less than or equal to 0.4 system minutes (with a target of 5 or less), or the number that exceed 0.4 system minutes (with a target of 1 or less).

4.2.2 Availability

TransGrid's connected customers perceive the network's availability as its readiness to effectively transfer energy from the generators to the distributors. Simply put, it is a measure of the total time all transmission assets were in service compared to the theoretical ideal of all assets being in service for 100% of the time. It is impacted by the duration of planned outages for scheduled maintenance and capital construction or replacement programs as well as unscheduled outages from plant failures. Higher values of transmission availability may be achieved by minimalisation of planned maintenance (through optimisation of maintenance policy) and more effective co-ordination of all planned outages, as well as improved maintenance practices to achieve fewer plant failures.

For the current Revenue Reset period, the AER has implemented a Transmission Line Availability target of 99.50%.

4.2.3 Quality of Supply

TransGrid addresses its obligations to quality of supply in a manner set out in Section 3.2 (Reliability Planning Standards) of this report and as required by Schedules S5.1a and S5.1 of the national Electricity Code covering, inter-alia:

- Frequency and Frequency Variations
- System stability
- Power frequency voltage
- Voltage fluctuations
- Voltage waveform distortion
- Voltage unbalance
- Protection systems and fault clearance times

4.3 Transmission Reliability

4.3.1 Reliability

For the year 2005/2006, TransGrid experienced 13 Energy not Supplied outages totalling 0.683 system minutes. When converted to a percentage of energy delivered, this equates to a reliability exceeding 99.999%. There were three (3) incidents with ENS greater than 0.05 system minutes, and no incidents with ENS > 0.4 system minutes, compared to AER targets of 5 and 1 respectively.

4.3.2 Availability

For the year 2005/2006, TransGrid achieved an availability of 99.47%. This represents the availability of TransGrid's transmission lines at all voltages from 132kV up to 500kV. The marginally below target

value was due mainly to the abnormally large quantity of capital work for pole replacement programs during the year where the duration of outages for capital works exceeded that for scheduled maintenance.

4.3.3 Connection Point Performance

Of TransGrid's 13 connected customers, 7 did not experience any unplanned outages causing loss of supply or interruption to generation. Four (4) distribution customers experienced loss of supply from unplanned outages. These were ActewAGL, Country Energy, EnergyAustralia and Integral Energy. Two (2) Generator Customers experienced interruption to generation. These were Macquarie Generation and Snowy Hydro Limited.

The data provided in this section is determined in accordance with TransGrid's "Service Standards Reporting Policy – Attachment 1: Criteria for Inclusion and Exclusion of Outages for Performance Measures".

4.3.4 Transmission Reliability Performance Data

Table 4.9 – Transmission Circuit Availability Trend						
Circuit Availability	Objective	01/02	02/03	03/04	04/05	05/06
Percent	99.50	99.69	99.64	99.65	99.59	99.47

- Note: 1. A measure of the circuit availability compared to the total if no outages had occurred.
2. Outages will occur for maintenance purposes and thus 100% is inherently unachievable.

Table 4.10 – Network Reliability Trend						
Network Reliability (Off Supply Event Numbers)	Objective	01/02	02/03	03/04	04/05	05/06
No. > 0.05 but < 0.4 system minutes	5	3	5	4	1	3
No. > 0.4 system minutes	1	0	2	1	0	0

Note: The measure for this table has changed (from total System Minutes to Number of Events) since the 2004/05 Report. Data for past years in this table is taken from historical data.

Table 4.11 – Outage (Un-Planned) Average Duration (Minutes) Trend						
Outage Duration	Objective	01/02	02/03	03/04	04/05	05/06
Minutes	1500	1374.6	917.2	585	1037.4	943.9

Note: The measure for this table has not been included in previous Report. Data for past years in this table is taken from historical data.

Table 4.12 – Connection Point Interruptions (Unplanned) 2005/2006		
Connection Point	Number of Interruptions	Total Duration of Interruptions (Minutes)
ActewAGL		
Queanbeyan 132/66kV S/S – 66kV Fdr 0844 Fyshwick	1	41
Queanbeyan 132/66kV S/S – 66kV Fdr 0845 Fyshwick	1	41
Country Energy		
Cooma 132/66/11kV S/S – 132kV Fdr 974 Bega	1	102
Griffith 132/33kV S/S – 33kV Fdr No.11 Goolgowi	2	135

Griffith 132/33kV S/S – 33kV Fdr No.12 Hanwood	2	135
Munyang 132/33kV S/S – 33kV Fdr No.1 Perisher	1	7
Munyang 132/33kV S/S – 33kV Fdr No.2 Perisher	1	7
Murrumburrah 132/66kV S/S – 66kv Fdr 837 Jugiong	1	99
Murrumburrah 132/66kV S/S – 66kv Fdr 83D Murrumburrah	1	99
Murrumburrah 132/66kV S/S – 66kv Fdr 847 Boorowa	1	99
Orange 132/66kV S/S – 66kV Fdr 818 Blayney	1	33
Orange 132/66kV S/S – 66kV Fdr 8F1 Orange South	1	33
Orange 132/66kV S/S – 66kV Fdr 8M1 Industrial 1	1	33
Port Macquarie 132/33kV S/S – 33kV Fdr 711 Laurieton tee Pumps	1	61
Port Macquarie 132/33kV S/S – 33kV Fdr 710 Owen St	1	45
Port Macquarie 132/33kV S/S – 33kV Fdr 708 Owen St tee Boronia St	1	45
Queanbeyan 132/66kV S/S – 66kV Fdr 82K/1 Bungendore	1	57
Queanbeyan 132/66kV S/S – 66kV Fdr 82A1 Lom Rd	1	57
Queanbeyan 132/66kV S/S – 66kV Fdr S826 Captains Flat	1	57
Queanbeyan 132/66kV S/S – 66kV Fdr 82B High St	1	57
Queanbeyan 132/66kV S/S – 66kV Fdr 82F No.11 Transformer	1	57
Queanbeyan 132/66kV S/S – 66kV Fdr 82M No.12 Transformer	1	57
Tamworth 132/66kV S/S – 66kV Fdr 804 Nundle	1	235
Yanco 132/33/66kV S/S – 33kV Fdr No.5 Whitton	1	94
Yanco 132/33/66kV S/S – 33kV Fdr No7 Murrami	1	94
EnergyAustralia		
Sydney South 330.132kV S/S – 132kV Fdr 283 Milperra tee Revesby	1	5
Integral Energy		
Mount Piper 132/66kV S/S – 66kV Fdr 828 Portland	1	207
Macquarie Generation		
Liddell Power Station – No.4 Generator Transformer (Note 3)	1	30
Snowy Hydro Limited		
Guthega P/S – 132kV Bay No.1 Generator Transformer	2	67
Guthega P/S – 132kV Bay No.2 Generator Transformer	2	67

- Note: 1. This table provides a listing of customer connection points off supply events.
2. Events included in this list may have been excluded from the data shown in Table 4.11.
3. There was no 'Energy not Supplied' from this interruption. TransGrid switchgear was ready to switch within 30 minutes. Macquarie Generation elected to perform maintenance work on boiler plant resulting in the Generator/Tx being out of service for 2,117 minutes.

Table 4.13 – Connection Point Numbers 2005/2006	
Total Number of Connection Points (Number)	388

5 NETWORK SAFETY

5.1 Overview

TransGrid's goal is zero injuries, occupational illnesses and incidents. Our first priority is the health and safety of our people, our contractors, visitors and the public. Our strategies are aimed at continually improving our performance and maintaining a major focus on risk management.

Our OHS Management System is aligned with AS 4801 and TransGrid has applied for certification to this standard which is expected to be completed in early 2007. As a self insurer, TransGrid also complies with the WorkCover OHS Model for Self Insurers and is audited by WorkCover on a three-yearly basis.

To ensure that TransGrid's OHS management system is implemented effectively and provides for continuous improvement, a number of strategies have been developed and implemented. These include:

- Executive OHS Committee;
- TransGrid Health and Safety Plan
- TransNet;
- Schedule of compliance audits and inspections;
- Safety Communications Steering Committee;
- Quarterly Health and Safety Themes;
- Chairman's Safety Award;
- Annual Safety Day – First Aid, Fire Fighting and Risk Assessment competitions;
- Presentations to TransGrid Board of every LTI by respective injured employee and/or their manager;
- Membership and participation in industry committees and working groups and Field Days.

Executive OHS Committee

The Executive Occupational Health and Safety Committee has responsibility for monitoring the implementation of the OHS management system. This includes over-seeing the development of corporate occupational health and safety policies and procedures and the promotion and monitoring of health and safety performance within TransGrid. A number of subcommittees have also been established under the Executive OHS Committee to address specific areas of TransGrid's activities. Reports from these subcommittees report to the Executive OHS Committee on a quarterly basis:

- Safety Rules
- Working At Heights
- High Voltage Safe Working Practices
- Fire Protection
- Electric & Magnetic Fields
- Clothing
- Safety Communications Steering

TransGrid Health and Safety Plan

This Plan sets out TransGrid's Objectives and targets for each year and is the basis for the development of business unit Health and Safety Action Plans.

The objectives for 2005 -2006 were:

1. Reinforce and standardise Risk Management processes.
2. Reinforce and promote consultative mechanisms to improve health and safety communications.
3. Promote a healthy and safe working environment through the provision of targeted training and awareness programs.

TransNet (TransGrid's Intranet)

TransNet is an integral part of the TransGrid OHS management system. All policies, procedures, manuals, forms, etc are made available to all employees electronically via TransNet. This system also provides other OHS information such as:

- Corporate Health and Safety Plan – objectives and targets
- OHS Risk Management Database – including TransGrid's Risk Register, completed work activity and workplace risk assessments, work method statements, forms;
- Incident Notification System – all hazards, near misses and OHS incidents are notified electronically which facilitates immediate notification to relevant personnel. This system is currently being enhanced to include the investigation report;
- Approved Safety Equipment lists – details the equipment that has been approved for use within TransGrid;
- Listings of First Aid Attendants, Injury Management Co-ordinators, OHS Committees (members, meeting dates, minutes);
- OHS Statistics – updated monthly and posted on TransNet;
- Health and Safety Notice Board – includes Safety Alerts, Safety Bulletins and general notices, links to external OHS websites.

Schedule of Compliance Audits and Inspections

Compliance audits and inspections were conducted to ensure that procedures are implemented in accordance with legislative and organisational requirements. These include OHS system audits (all TransGrid locations at least biannually), random, unannounced safety compliance inspections, site conformance inspections, contractor audits and team leader audits of pre-work risk assessments.

OHS Audit reports provided by internal and external auditors reflect a strong OHS commitment, understanding and performance across TransGrid.

Safety Communications Steering Committee

Communication is an integral component of our health and safety system aimed at ensuring that everyone is aware of their responsibilities and role in the implementation of our strategies.

The Safety Communications Steering Committee (comprising the General Manager/Human Resources and Business Services, Manager/Health and Safety, OHS Advisor and the seven elected OHS Committee Chairpersons) assists with the review of policy and procedures through consultation with local OHS committees. The Safety Communications Steering Committee also develops initiatives to promote health and safety to maintain a high level of awareness amongst staff including the Quarterly Health and Safety Themes.

The Quarterly Health and Safety themes promoted throughout TransGrid during 2005-2006 included:

Year	Quarter	Health Theme	Safety Theme
2005	Winter	Self awareness checks	Working at Heights
2005	Spring	Asthma and allergies	Working away from home
2006	Summer	Know your limitations	The right tools for the job
2006	Autumn	Stretch and Flex	Plan the job before you start
2006	Winter	Eat Well, Stay Well	Think before you move

Chairman's Safety Award

The annual Chairman's Safety Award recognises an individual or team who has made a significant contribution to safety in TransGrid throughout the year. The winner for 2005 was a powerworker from Yass who designed and constructed an herbicide spray unit to fit a Kubota out front mower. This unit streamlined weed control procedures making it a safer and more productive process.

Annual Safety Day

TransGrid also holds an annual Safety Day with Risk Assessment, First Aid and Fire Fighting competitions for teams representing all areas of TransGrid. This was held at Orange in October 2005. In addition to these internal competitions, TransGrid also had teams participating in the Electricity Supply Industry Field Days held at Dubbo in June 2006.

Presentations to TransGrid Board

Employees who sustain a lost time injury are invited to attend a Board meeting with their manager to discuss the incident. This provides an avenue for the Board to gain a better understanding of the issues confronting our employees in the workplace, causes of incidents and enables discussion on the corrective actions implemented to prevent any recurrences.

Participation in Industry Committees

TransGrid takes an active role in a number of industry committees and working groups (such as ENA HSE Committee, WorkCover IRG, DEUS ISSC, etc.) to ensure that trends and expectations of legislators, industry and the community are understood and managed effectively. Compliance to these requirements was demonstrated by nil infringements or prosecutions and the renewal of TransGrid's workers compensation self insurer licence to 30 April 2007.

5.2 Serious Electricity Network Accidents (Public)

Initiatives are addressed in more detail under Section 6 – Public Electrical Safety Awareness Campaign Reports.

Category	01/02	02/03	03/04	04/05	05/06
Non-Fatal	0	0	0	0	0
Fatal	0	0	0	0	0

Table 5.1 also includes accidents where electricity was involved in the injuries.

5.3 Actionable Electricity Network Safety Incidents (Public)

Category of Incident	01/02	02/03	03/04	04/05	05/06
Overhead Mains in Position					
Overhead Mains Fallen		3			
Overhead Service in Position					
Overhead Service Fallen					
Underground Mains					
Underground Service					
Street Light Fitting or Support					
Cable Boxes, Pillars and Service Cabinets					
Substation (Excluding Pole-type) – Fire and/or Explosion		1			
Substation (Excluding Pole-type) - Other					
Substation (Pole-type) - Fire and/or Explosion					
Substation (Pole-type) - Other					
Poles Columns or Towers					
Air Break Switches					
Pole Mounted Equipment (Reclosers, Drop Out Fuses, etc)					
Service Connection or Customer Switchboard					
Other (Describe below)					
Total	0	4	0	0	0

5.4 Serious Electricity Network Accidents (Network Worker)

Table 5.3 includes accidents where electricity was involved in the injuries.

	01/02		02/03		03/04		04/05		05/06	
	NF	F	NF	F	NF	F	NF	F	NF	F
Employees	0	0	0	0	1	0	0	0	1	0
Network Operator Contractors	0	0	0	0	0	0	1	0	1	1
Accredited Service Providers	0	0	0	0	0	0	0	0	0	0

NF: Non Fatal F: Fatal

Table 5.3 also includes accidents where electricity was involved in the injuries (i.e. Serious Electrical Accident)

On 17 June 2006, a sub-contractor to Balfour Beatty was fatally injured when he fell from the top of a tower while working on the deviation of TransGrid's 81 Liddell - Newcastle 330kV Transmission Line, about 10 kilometers south of Singleton. The incident is still being investigated by both Balfour Beatty and WorkCover and the causes of the fall have not been confirmed at this stage. Work by the contractor will not re-commence until TransGrid has a clear understanding of the cause of the incident and actions taken to prevent a re-occurrence. Consequently 220 days has been included in the

'Number of Days Lost' statistics for contractors for this year (as per previous ESAA guidelines on performance measures).

Another serious incident occurred with a contractor employee (Complete Vegetation Management) when a hanging limb from a tree being felled struck the contractor on the head on 19 October 2005. The contract employee was appropriately trained and qualified and had undertaken the appropriate risk assessments and precautions. He was wearing the appropriate safety equipment including a helmet. He received serious injuries, has not returned to work and is still undergoing rehabilitation. This has also contributed to the significant rise in the average lost time rate for contractors.

One of the lost time injuries for TransGrid also involved a fall (non fatal) from a pole on 21 September 2005. The employee fell approximately 11 metres and suffered multiple fractures and head injuries. He is still in hospital undergoing intensive rehabilitation. TransGrid's investigations have indicated that the employee was following all the appropriate work procedures and was wearing and using all the appropriate protective safety equipment.

TransGrid is undertaking a review of the risks and control measures associated with working at heights on transmission lines.

5.5 Actionable Electricity Network Safety Incidents (All Network Workers)

Category of Incident	2001/02	2002/03	2003/04	2004/05	2005/06
Overhead Mains in Position					1
Overhead Mains Fallen					
Overhead Service in Position					
Overhead Service Fallen					
Underground Mains					
Underground Service					
Street Light Fitting or Support					
Cable Boxes, Pillars and Service Cabinets					
Substation (Excluding Pole-type) – Fire and/or Explosion		1		1	
Substation (Excluding Pole-type) - Other		2			
Substation (Pole-type) - Fire and/or Explosion					
Substation (Pole-type) - Other					
Poles Columns or Towers					
Air Break Switches					
Pole Mounted Equipment (Reclosers, Drop Out Fuses, etc)					
Service Connection or Customer Switchboard					
Other (Describe below)					
Total		3	0	1	1

There was one Actionable Safety Incident on 30th April 2006. While dismantling a disconnected section of the 995 Albury to Hume 132kV transmission line the overhead conductor parted. Though staff were in the immediate vicinity, there were no injuries incurred. As there were three remaining spans of the conductor remaining to be dismantled, the work method was reviewed to ensure that the remaining work could be done safely. The failed conductor was sent for metallurgical testing but found no evidence of a systemic fault.

5.6 Electricity Network Operator Lost Time Injury Data

This section covers all types of injuries to employees and contractors engaged in work on or associated or providing administrative support to the network operator.

Lost Time Injuries

While the combined number of lost time injuries for employees and contractors for 2005/2006 has increased from the previous year, it is not clear that it is an indication of an upward trend over the longer term. Most of the contractor incidents have occurred when undertaking vegetation management and TransGrid has been working with the contractors to identify solutions to the causes of these incidents. There does not appear to be a trend in the type of incidents occurring.

All lost time injuries suffered by TransGrid employees (other than the fall) were strains and sprains. A new strategy has been developed by TransGrid to engage the services of an occupational therapist over the coming year to work with management and employees in identifying and addressing issues associated with this type of injury.

Measure	01/02		02/03		03/04		04/05		05/06	
	E	C	E	C	E	C	E	C	E	C
Number of Workers (full-time equivalent)	949	106	956	22	974	89	961	71	942	141
Number of Lost Time Injuries	9	1	4	0	7	3	4	4	7	8
Number of Days Lost	87	16	29	0	130	101	63	76	228	506
Lost Time Injury Frequency Rate (LTIFR)	4.7	4.7	2.1	0	3.6	16.9	2.1	28	3.7	28.4
Average Time Lost (ATL)	9.7	16	7.3	0	18.6	33.7	15.8	19	32.6	63.2

E: Persons employed by the network operator.

C: Persons employed by contractors engaged by the network operator.

NOTE: Numbers of Network Operator staff are for overall average for the year, not the end-of-year number.

The majority of contractor lost time injuries relate to vegetation management on easements in rugged bushland and which historically has been manually intensive due to environmental considerations. TransGrid is working with the contractors to introduce mechanical plant to reduce the OH&S risk.

6 Customer Installations

Not Applicable

6.1 Reports against Customer Installation Safety Plans

Not Applicable

6.2 Customer Installation Shock Reports

Not Applicable

7 BUSH FIRE RISK MANAGEMENT

7.1 Bush Fire Risk Management Plan

TransGrid's Bush Fire Risk Management Plan (revision 3) is published on TransGrid's website. The previous revision of the plan was subject to external audit and found to comply with the requirements of the Electricity Supply (Safety and Network Management) Regulation 2002 in relation to TransGrid's transmission network assets. Some minor improvements to the plan recommended in the audit report have been included in the current revision (see section 4.3 below).

7.2 Bush Fire Risk Management Performance

7.2.1 Performance Indicators

TransGrid's network performed very well during the 2005-2006 reporting period, no bushfires were ignited by any of the high voltage assets. The following table summarises the performance outcomes, and compares these to the previous year's performance:

Indicator	2004-2005 Performance		2005-2006 Performance	
	Target	Actual	Target	Actual
Network Assets Inspected in Bush Fire Prone Areas	100 %	100 %	100 %	100 %
Outstanding Network Risk Defects in Bush Fire Prone Areas	Nil	Nil	Nil	Nil
Fires where it appears ignition may have been caused by network assets	Nil	Nil	Nil	Nil(*)

(*) An incident occurred on 21st December, 2005 on 330kV Transmission Line 66 – Murray to Lower Tumut. This line was transferred from Snowy Hydro ownership to TransGrid on the 27th June 2002. A helicopter patrol of this line was initiated after a trip and auto reclose / trip and lockout protection operation on the 21/12/2005, and a report of fire in the Blackjack area north of Khancoban by National Parks. The helicopter patrol identified the fire as being in a localised area that included span 68-69 about 100m from tower 69 under TL66 where the line crosses the Tooma River. The fire spread slowly and was extinguished by the RFS with less than 2 Ha affected.

Subsequent investigations did not identify vegetation issues, asset issues, maintenance issues or environmental conditions that could have initiated the trip and fire. It is possible that the fire was not initiated by an arcing fault. However, TransGrid has taken a prudent approach and undertaken actions that assume the line caused the trip. These include additional vegetation removal at the site and initiating plans to raise the conductor to increase ground clearance that may be an issue in another part of the span under high wind conditions.

7.2.2 Performance Reviews

Formal reviews are carried out for all major incidents involving Network assets. These reviews are conducted under terms of reference set by the relevant General Manager or the Executive.

TransGrid has carried out reviews of the major bush fire emergencies that have impacted the NSW network in the last decade. These reports are:

- "Review of System Operation and Performance during the N.S.W. Bush Fire Emergency January 1994".

- “Review of Network Performance During Bush Fires in December 2001 – January 2003.
- “Investigation into the Impact of Bush Fires on TransGrid’s Network” 4th-6th December 2002.

These reports covered:

- An assessment of system plant and performance
- A review of operating practices, emergency response procedures, and design and maintenance standards; and
- The identification of strategies with respect to easement or site management to enhance reliability of the network in future or similar bush fires.

Generally the reports concluded that the network exhibited excellent performance during these emergencies. A number of improvements have been implemented as a result of these reviews, which will further enhance network reliability.

TransGrid classifies the transmission lines into high, medium and low inspection regimes. These classifications are based on a number of risk factors including factors such as vegetation regrowth rates and line condition that impact on bush fire risk. These are reviewed annually prior to setting the next year’s inspection and maintenance requirements. Document GM AS L7 001 “Transmission Line Inspection Classifications” that lists these line classifications was reviewed in March 2006. The review required a change in classification to two lines however this was not related to any change in bush fire risk.

7.3 Audits

7.3.1 Report Recommendations for the Bush Fire Risk Management Plan

The previous revision of the Bush Fire Risk Management Plan (Revision 2) was audited as requested by the Director-General of the Ministry of Energy & Utilities (now known as DEUS – Department of Energy, Utilities & Sustainability) by Denhine Holdings Pty Ltd and was found to comply with the Regulation in relation to TransGrid’s transmission network assets (Audit Certificate issued on 28th October 2003). The improvement suggestions resulting from this audit were addressed in the previous reporting period.

7.3.2 Technical Performance Assessments

Technical Performances Assessments (TPAs) are undertaken annually in each of TransGrid’s three Regions to audit maintenance and inspection compliance to TransGrid’s policies. In 2005/2006 TPAs were undertaken in Northern Region (Newcastle Area), Central Region (Sydney Area) and Southern Region (Wagga Wagga Area). No bush fire risk non-compliance issues were identified by these TPAs.

7.4 Preventative Programs

TransGrid’s preventative program is centered on its routine easement maintenance.

7.5 Proactive Programs

TransGrid provides representation to Bush Fire Management Committees as detailed in Attachment 1 of the Bush Fire Risk Management Plan. At these meetings TransGrid provides advice on matters such as the impact proposed hazard reduction burns will have on TransGrid lines and recommendations are made on how to protect these assets prior to the commencement of a burn.

TransGrid has also provided advice to the relevant BFMCs that TransGrid easements can be maintained, particularly in NPWS and State Forest managed estates, in a manner such that they can be utilised as Strategic Fire Advantage Zones (SFAZ). Some easements are now being managed in cooperation with these agencies to provide these zones.

Reference should also be made to TransGrid’s Public Electrical Safety Awareness (PESA) plan that provides a strategy for the communication of the fire hazards associated with overhead power lines and vegetation and other electrical safety initiatives.

7.6 Number of Disconnections

Not applicable.

8 PUBLIC ELECTRICAL SAFETY AWARENESS CAMPAIGN REPORTS

TransGrid's Public Electrical Safety Awareness Plan 2004 – 2007 is based on a risk assessment of public safety issues. The generic risk assessment process identified eight strategic issues for attention in the Plan:

1. Unauthorised access to substations
2. Unauthorised climbing of transmission towers
3. High machinery and extendable plant operating under transmission lines
4. Excavators and earth moving machinery in vicinity of high voltage cables
5. Kite flying and model planes in proximity to transmission lines
6. Fires under or in proximity to transmission lines
7. Crop dusting and aerial surveillance activities
8. Navigable waters under transmission lines

2005 – 2006 Plan

Actions to address each of the strategic issues have been identified in the 2005 – 2006 Action Plan. These were included in 3 specific focus areas:

1. Relationship Management

Objective:

To effectively manage relationships with property owners, emergency services and construction contractors on issues relating to public electrical safety.

Actions Achieved:

Property Owners:

- ♦ Maintained liaison with property owners and provided them with TransGrid contact details for information and enquiries as appropriate.
- ♦ Provided relevant information to property owners about electrical hazards and dangers associated with fire in proximity to overhead lines as appropriate.
- ♦ Reviewed and updated listings of relevant service providers (e.g. crop dusters, irrigation contractors etc).
- ♦ Maintained liaison with service providers and provided information as appropriate.

Emergency Services:

- ♦ Completed emergency services familiarisation for new substations identified with a “critical” ranking in the Network Security Plan.
- ♦ Provided information and/or briefings for Police in relation to all other substations not considered “critical” in the Network Security Plan.
- ♦ Liaised with the NSW Rural Fire Service regarding appropriate training and information on electrical safety with TransGrid's assets.

Construction Contractors:

- ♦ Maintained a Regional service to respond to enquiries from construction contractors and developers.

2. Site Specific Issues

Objective:

To identify issues of public electrical safety relating to specific substations, transmission lines and cables, and to develop appropriate actions to eliminate or control these issues.

Actions Achieved:

Substations:

- ♦ Reassessed sites in accordance with exposure factors to identify any additional sites requiring specific actions.
- ♦ Continued with and/or developed specific initiatives for sites identified with an increased public electrical safety exposure.

Transmission Lines:

- ♦ Reassessed sites in accordance with exposure factors to identify any additional sites requiring specific actions.
- ♦ Continued with and/or developed specific initiatives for sites identified with an increased public electrical safety exposure e.g. new fencing.
- ♦ Reviewed Waterways Authority (WWA) requirements for registered sites and signage for navigable waters relating to overhead transmission lines.
- ♦ Maintained an inspection and compliance program for WWA requirements.
- ♦ Reviewed and/or implemented kite flying and model plane signage in proximity to transmission lines as appropriate.

Cables:

- ♦ Maintained inspection patrols for marker posts and gutter markers with TransGrid contact details.

3. Community Interaction

Objective:

To raise community awareness of electrical safety associated with TransGrid's assets and to ensure information on electrical safety is readily available when required.

- ♦ Placed advertorial on electrical safety in Orange local papers to coincide with TransGrid's Safety Day held at Orange in October 2005.
- ♦ Kids Risk Assessment competition held in Yass primary schools during November 2005.
- ♦ Information brochures relating to the dangers associated with electricity, including fires in proximity to overhead lines are available to the public as required.

The effectiveness of TransGrid's PESA Plan has been demonstrated by the lack of reported incidents. The replacement of security fencing at substations identified with an increased public electrical safety exposure (such as signs of vandalism or unauthorised entry to substations) has significantly decreased incidents in those substations.

New signage has been placed in parks and areas where model planes and kite flying near transmission lines may be conducted and no incidents have been reported in these areas.
