

ELECTRICITY NETWORK PERFORMANCE REPORT

2011/12



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Introduction

This Electricity Network Performance Report has been prepared by TransGrid to fulfil the requirements of the Electricity Network Operator reporting regime and the Electricity Supply (Safety and Network Management) Regulation 2008.

This report outlines TransGrid's performance in meeting its NSW regulatory objectives for the 2011/12 Financial Year.

1 Profile

1.1 Overview

TransGrid is Australia's largest electricity transmission company with its network comprising some 12,600 kilometres of high voltage transmission line and underground cables, as well as 94 substations and switching stations, worth over \$5.2 billion.

TransGrid is responsible for planning and developing the New South Wales transmission system to meet the requirements of customers within NSW and the ACT and to facilitate operation of the National Electricity Market.

The TransGrid network operates at voltage levels of 500, 330, 220 and 132 kilo volts (kV). TransGrid's substations and power station switchyards are located on land owned by TransGrid. Transmission lines are generally constructed on easements acquired across private or public land.

TransGrid has a number of key challenges including the management of a capital works program for 2009-2014 to refurbish and replace ageing assets as required and to meet increases in system demand to provide a secure energy supply for NSW during a period of uncertain demand growth.

TransGrid has staff strategically based at locations throughout NSW. They are responsible for the day to day operation and maintenance activities along with emergency response capability. The main administrative office is located at 201 Elizabeth Street, Sydney. Field staff are co-ordinated from major depots located in Tamworth, Newcastle, Orange, Western Sydney, Yass and Wagga Wagga.

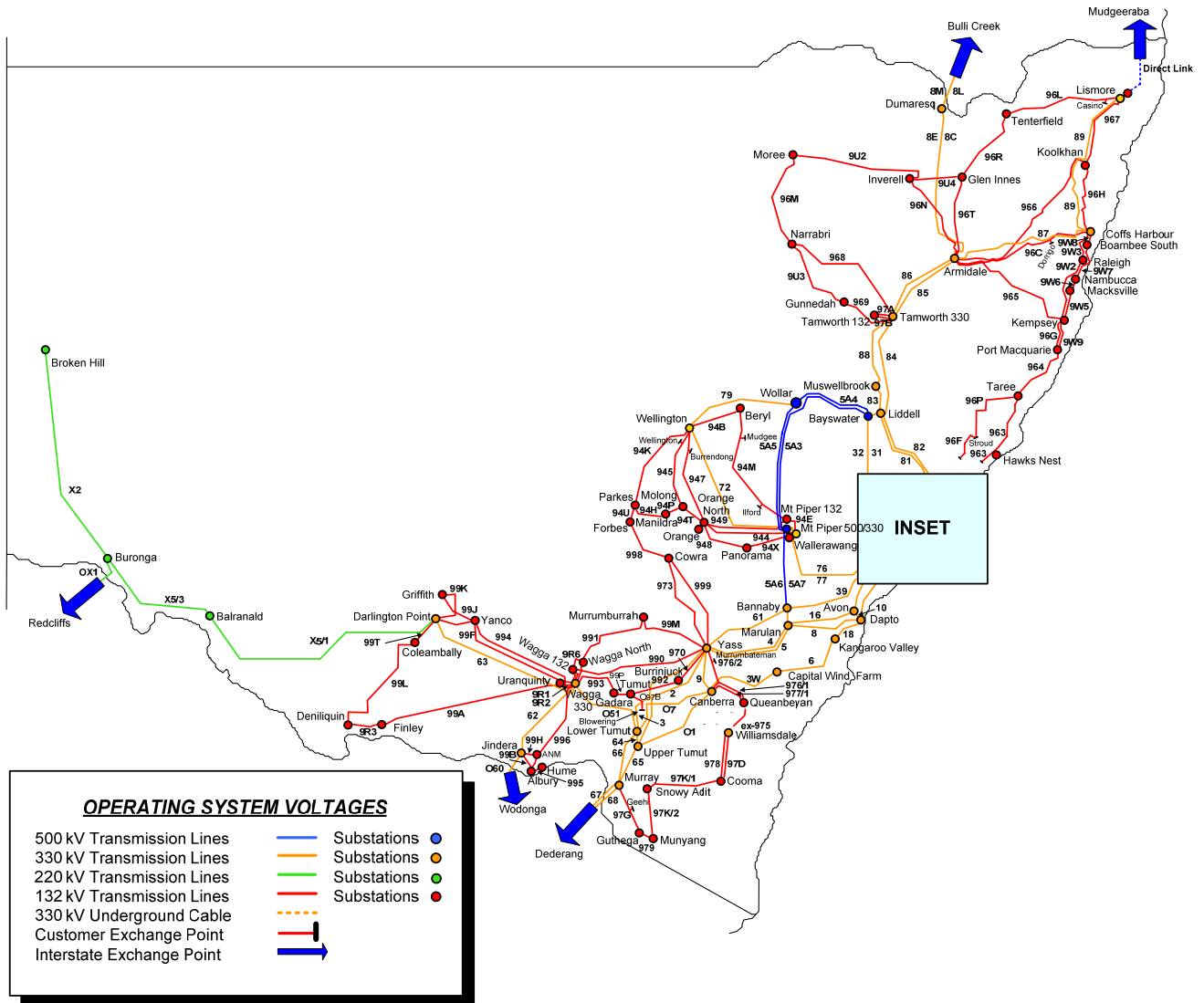
Table 1.1 Network Operator Statistics

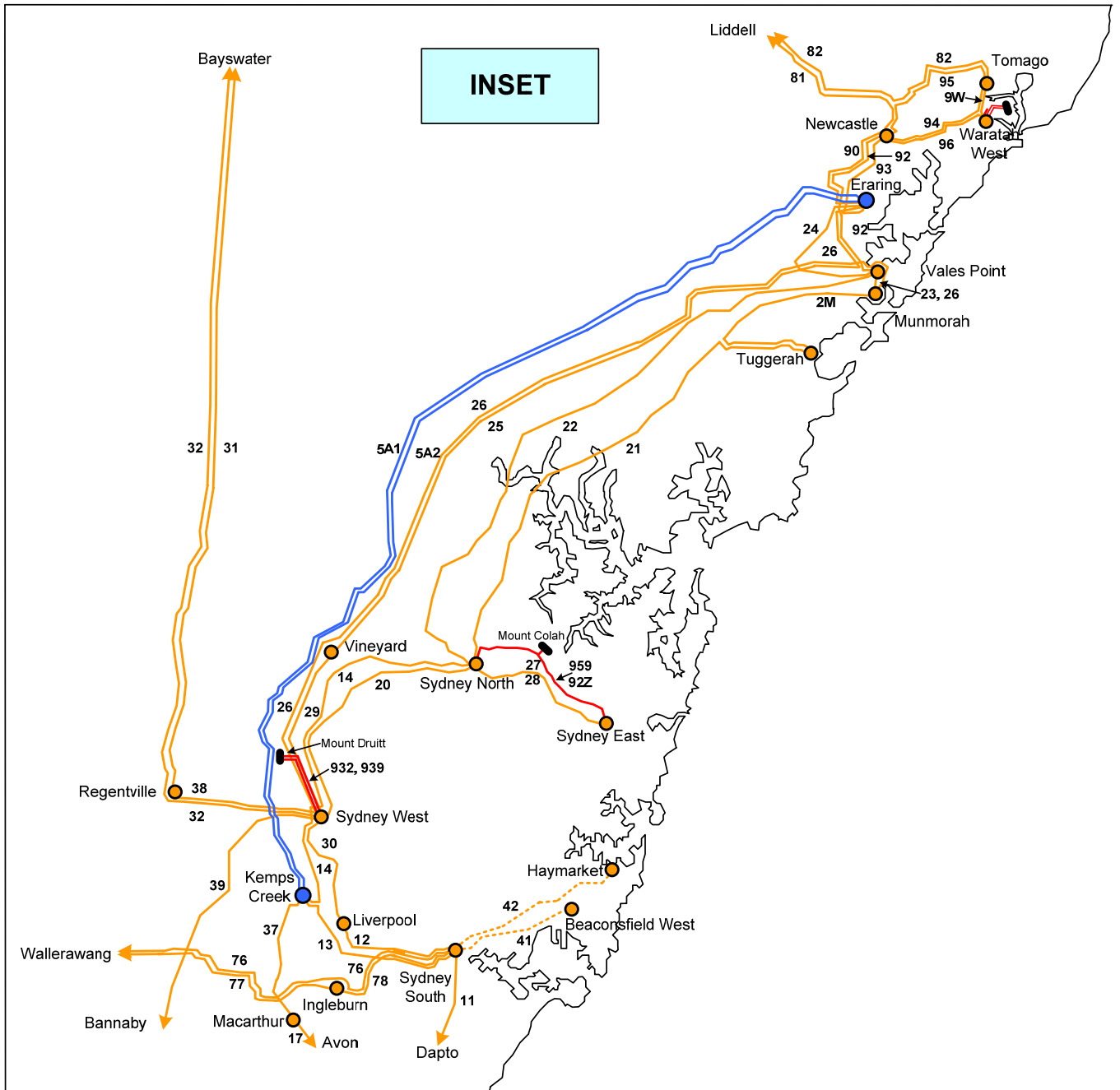
	Number at end of 2010/11	Number at end of 2011/12
Customer Numbers (Total)	14	14
Maximum Demand (Aggregated System MW)	14,820	12,884
Energy Received to Year End (GWh)	71,916	70,884
System Loss Factor (%)	4%	1.5% ¹
High Voltage Overhead (km)	12,610	12,623
High Voltage Underground (km)	47	47
Substation (Number)	91	94
Structures (Number)	36,349	37,189
Poles (Number)	38,440	39,069
Employees (Full Time Equivalent Number)	1,027	1,063
Contractors (Full Time Equivalent Number)	387	176 ²

Notes:

1. The difference in the System Loss Factor figure between the previous reporting year and the current year is due to a change in the definition of the energy transmitted parameter used in the System Loss Factor calculation. TransGrid has modified its definition to take into account only energy that passes through TransGrid's system. It includes embedded generation directly connected to TransGrid's network as well as energy delivered to auxiliary loads.
2. Contractor numbers are largely dependent on capital works projects and vary depending on the number and type of projects being undertaken.

Figure 1.1 TransGrid's Transmission Network





1.2 Capital Works Program

TransGrid's capital works program is needed to ensure the NSW electricity transmission network continues to deliver the secure, reliable and safe supply of electricity to businesses and consumers in the NSW and ACT. TransGrid also has an ongoing program of refurbishment and replacement of ageing assets to ensure reliable supply to all customers.

Between 2009 and 2014 regulatory period the Australian Energy Regulator approved \$1,945 million for capital expenditure on demand-driven projects. In response to lower than anticipated demand growth, TransGrid has deferred approximately 30% or \$570 million of this allowance.

For the 2011/12 financial year TransGrid's capital expenditure was \$384 million.

Table 1.2 shows TransGrid's capital expenditure in the last 5 financial years.

Table 1.2 Capital works program trend

Year	Previous Years				Current Year
	2007/08	2008/09	2009/10	2010/11	2011/12
Capital works program (\$M)	355.0	619.9 ¹	428.7	378.6	384

Notes:

- The peak in capital expenditure during the 2008/09 period was due to the completion of the major components of the Western 500 kV project, the completion of Macarthur 330 kV substation, and Wagga North 132 kV substation.

Recently Completed Projects

Establishment of Orange North 132 kV Switching Station

To meet the present and emerging limitations, TransGrid has established Orange North 132 kV Switching Station to the north of the existing Orange 132/66 kV Substation to increase the capacity of the transmission network supplying the Orange area. The switching station works were completed in March 2012 with the line rearrangements due to be completed in August 2012.

Glen Innes – Inverell 132 kV Line

To meet limitations in the network supplying the Inverell area, TransGrid has constructed a new 132 kV line between its Glen Innes and Inverell Substations and provided a new 132 kV switchbay at each site to connect the line.

New Kempsey – Port Macquarie 132 kV Line

To meet limitations in the network supplying the north coast of NSW, TransGrid has replaced the existing 96G Kempsey – Port Macquarie single circuit 132 kV line by a new double circuit 132 kV line and provided 132 kV line switchbays at Kempsey and Port Macquarie 132 kV Substations for the connection of the extra 132 kV circuit.

Manildra – Parkes 132 kV Line

To meet limitations in the network supplying the Cowra, Forbes and Parkes area, TransGrid has constructed a new 132 kV line between Manildra 132/11 kV Substation and Parkes 132/66 kV Substation and provided a 132 kV line switchbay at each of those substations to connect the new line.

Establishment of Williamsdale 330/132 kV Substation

The construction of Williamsdale 330/132 kV Substation was completed in October 2011. This includes the provision of 330 kV switchbays at Canberra 330/132 kV Substation completed in January 2012.

Other Projects

- Rehabilitation of Murray 330 kV switching station
- Completed line switchbays for distributor requirements at Beryl, Cooma, Griffith and Finley 132 kV Substations
- Completed fault rating upgrade at Sydney North 330 kV Substation
- Transformer replacements at Vineyard and Wallerawang 330 kV Substations

2 Network Management

2.1 Overview

In the 2011/12 financial year TransGrid has commenced a number of new initiatives related to improving the management of the transmission network. These include:

- Over the last 12 months TransGrid has established a Portfolio Management Office (PMO) to better co-ordinate the capital works program across the whole organization and prioritise projects to meet the needs of our customers and other NEM participants more effectively.
- The ongoing delivery of Project Symphony, a business transformation project to further integrate the way TransGrid conducts its business. The upgrade of the Ellipse and Oracle ERP systems are part of this project.
- Generator and Demand Management Forum's were held in 2011/12 to support TransGrid's corporate objective to service the market. These forums provided an opportunity to provide details on TransGrid's initiatives and to obtain valuable feedback and idea exchange from these key customer groups.

2.2 Network Complaints

There were 26 complaints registered during 2011/12. This is higher than recorded last year, but is in line with typical performance over the last five years. This volatility in the number of complaints can be expected due to fluctuations in the number and types of major capital projects being undertaken in each financial year.

Eight complaints were associated with the Manildra – Parkes 132 kV transmission line project. The complaints included damage to property after wet weather, unnecessary clearing of trees, leaving gates open and usable timber being removed without permission.

Four complaints were received regarding access track condition and gates left open not related to project activities.

Three construction related complaints were received due to dust generated at Wallerawang, road works associated with cable works at Beaconsfield West and abusive language by a Contractor to a member of the public.

Two complaints were associated with the Dumaresq - Lismore 330 kV transmission line project. The complaints were related to the valuation process associated with acquiring easements.

Two complaints were associated with the Western Sydney Supply Project. The complaints related to the notification process for the environmental assessment exhibition and run off from the Rookwood Rd substation site during construction.

Two complaints were received relating to the inability to contact a TransGrid staff member when required and one staff member illegally parking during a site visit.

One complaint was received relating to a TransGrid contractor leaving gates unlocked on a private property as part of the Kempsey to Port Macquarie 132 kV transmission line project.

One complaint was received as part of the Stroud to Taree project due to the complainant receiving receipt of a submission to the public consultation process when no submission was made.

One complaint was received regarding noise levels adjacent to a TransGrid substation.

Two complaints were received relating to AusGrid and Essential Energy assets which were redirected to the appropriate entity.

All of these complaints have been addressed with the complainant.

Table 2.1 Complaint Performance Data

Years	Previous Years				Current Year
	2007/08	2008/09	2009/10	2010/11	2011/12
Complaints Total	27	92	20	3	26
Complaints regarding Vegetation Management	4	1	1	1	0

3 Network Planning

3.1 Overview

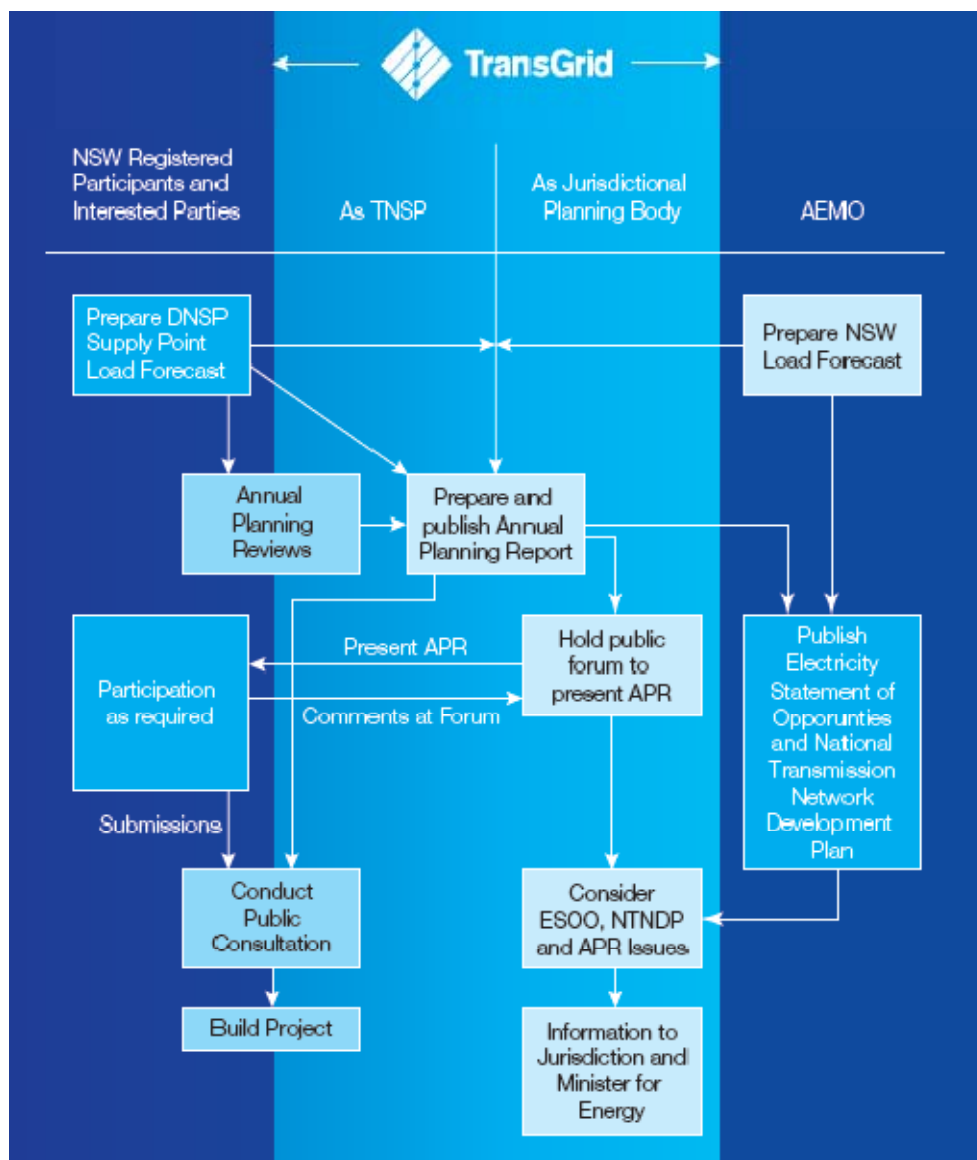
TransGrid carries out planning in accordance with its regulatory obligations under the National Electricity Rules (NER), Jurisdictional requirements and customer expectations. As the Jurisdictional Planning Body (JPB) for NSW, TransGrid works with the Australian Energy Market Operator (AEMO) to provide input to the Electricity Statement of Opportunities (ESOO) and National Transmission Network Development Plan (NTNDP).

As a registered Transmission Network Service Provider (TNSP) in the National Electricity Market (NEM), TransGrid is required to perform a yearly planning review and produce an Annual

Planning Report (APR 2012) with information relevant to supply demand balance, transmission network planning and distribution network planning.

The roles of AEMO, TransGrid and other parties in the planning process are set out in Figure 3.1.

Figure 3.1 TransGrid's Planning Roles



3.2 System Design Criteria (Planning Standards)

Under NSW legislation, TransGrid has responsibilities that include planning for future NSW transmission needs and interconnections with other networks. The NSW Government has specified the Transmission Network Design and Reliability Standard to be applied by TransGrid.

In addition, as a TNSP in the NEM, TransGrid is obliged to meet the requirements of Schedule 5.1 of the NER. In particular, TransGrid is obliged to meet the requirements of clause S5.1.2

The NER sets out the required processes for developing networks as well as minimum performance requirements of the network in a range of areas. These include contingency events, power transfer capability, power, voltage, and frequency quality, line ratings and protection systems. It also requires TransGrid to consult with AEMO, Registered Participants, and interested parties and to apply the AER's Regulatory Investment Test for Transmission (RIT-T) to development proposals.

In meeting these obligations TransGrid's approach to network planning is socially and economically based and is consistent with both the NER and the RIT-T. It includes consideration of non-network options such as demand side response (DSR) and demand management (DM) and/or embedded generation, as an integral part of the planning process. Joint planning with Distribution Network Service Providers (DNSPs), directly supplied industrial customers, generators and interstate TNSPs is carried out to ensure that the most economic options, whether network options or non-network options are identified and implemented to meet customer and community requirements.

In addition to meeting requirements imposed by the NER, environmental legislation and other statutory instruments, TransGrid is required by the NSW Government 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 directly connected end-use customer, there will be no loss of load (other than load which is interruptible or dispatchable) following the occurrence of a credible contingency on the network at any time. In fulfilling this obligation, TransGrid must recognise specific customer requirements as well as AEMO's role as system operator for the NEM.

TransGrid's planning obligations are also interlinked with the licence obligations placed on DNSPs in NSW. TransGrid must ensure that the system is adequately planned to enable their licence requirements to be met. For instance, if the mandatory DNSP license obligation is an "n-1, 1 minute" reliability standard 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, the requirement imposes a consequential obligation on TransGrid to provide a commensurate level of reliability in its network supplying the sub-transmission line or zone substation. In addition to adherence to NER and regulatory requirements, TransGrid's transmission planning approach takes into account the historical performance of the components of the NSW system, the sensitivity of loads to supply interruption and asset maintenance procedures. It has also been recognised that there is a need for an orderly development of the system taking into account the long-term requirements of the system to meet future load and generation developments.

3.3 Demand Management

The primary drivers for investment in new assets on the NSW transmission network is the need to replace ageing assets based on condition monitoring and due to increase in peak demand. As critical system elements age and their ratings are reduced and as demand increases, system constraints emerge as the maximum capability of existing assets is reached. To relieve constraints, investments in new transmission assets may be required. However, if the peak demand can be managed, it is possible to reduce, defer or eliminate the need for new transmission investment and thereby reduce the costs and environmental impacts associated with the construction of new assets.

During the assessment of options to address an emerging constraint, demand management is referred to as a non-network option. Non-network options consist of one or more of demand management, demand side response, embedded generation and local generation.

Demand Management or Demand Side Responses

DM or DSR options may include, but are not limited to, combinations of the following:

- Reduction in electricity demand at points of end-use by using energy efficiency systems, renewable and reticulated energy sources, etc
- Reduction in peak electricity consumption at points of end-use through tariff and load curtailment incentives, energy storage systems, standby generators, power factor correction, etc

Embedded or Local Generation

Embedded or local generation options may include generation or cogeneration facilities located on the load side of a transmission constraint. Alternative energy sources such as bagasse, biomass, gas, hydro, solar, wind, etc.

TransGrid actively promotes these non-network options by informing the market of constraints via the APR, external consultations, joint planning and reviews with distributors and joint sponsorship of research projects.

3.3.1 Consideration of Non-Network Options by TransGrid

TransGrid's Annual Planning Report provides advance information to the market on the nature and location of emerging network constraints. This is intended to encourage interested parties to formulate and propose feasible non-network options to relieve emerging network constraints.

TransGrid considers non-network options on an equal footing with network options when planning its network augmentations and applying the AER's regulatory investment test.

For a non-network option to be considered during the evaluation and analysis process, it must be feasible and capable of being implemented in time to relieve the emerging constraint. The option can then be recommended and implemented if it satisfies the RIT-T regulatory test.

It is expected that DM and local/embedded generation options would emerge from joint planning with DNSPs, from the market or from interested parties.

3.3.2 Price Signals and Financial Incentives to Encourage DM and Local Generation

TransGrid is a provider of bulk transmission network services and is best placed to implement 'bulk' DM options. For instance, a monthly maximum demand charge on customers encourages the implementation of demand side response at the time of maximum demand on the transmission network.

Additionally, TransGrid can and does provide financial incentives via direct payments under network support contracts with wholesale suppliers of demand reductions such as larger end users or embedded generators or DM aggregators. Contractual payments to smaller suppliers of DM are now proving practical for TransGrid with the advent of DM aggregators. The regulatory incentive framework is evolving to provide improved commercial incentives for TransGrid to engage in these activities.

3.3.3 Promotion of DM and Local Generation Alternatives by TransGrid

TransGrid actively promotes DM and local generation alternatives through:

- Identifying opportunities for DM and local generation options through joint planning with the Distributors and engaging expert external consultants where warranted;
- Informing the market of constraints via the Annual Planning Report and consultations for alleviating individual constraints;
- Participation in initiatives and reviews that include consideration of DM and its relationship to the development of electricity networks; and
- Joint sponsorship of research projects involving DM and embedded generation.

On 10 May 2012, TransGrid hosted a DM Innovation Forum in Sydney involving all distributors, universities and advisors participating in the DM programs with TransGrid. At the Forum, progress reports on all of the joint projects were presented. The participants also discussed the ways in which DM can be further promoted in NSW. The Forum was very well received by all participants as a result of the open exchange of information.

4 Asset Management

4.1 Overview

TransGrid has developed an Asset Management model that is based on the NSW Government's Total Asset Management Model.

TransGrid strives to meet availability, reliability, environmental, and safety objectives through efficient implementation of policies and procedures across every phase of the asset management lifecycle. These policies and procedures have been designed within a risk management framework to ensure that their implementation is carried out to achieve OHS, environmental, and regulatory requirements.

The performance of the network is constantly monitored and Asset Management Strategies and Maintenance Policies are updated to ensure that asset performance objectives are met.

In the coming year a strategic corporate initiative is being undertaken to review TransGrid's Asset Management Framework to identify any possible improvements against recognised asset management guidelines and good industry practice.

4.2 Technical Service Standards

The AER Service Target Performance Incentive Scheme sets out TransGrid's primary customer service standards. The measures are:

- Reliability, based on the number of Energy not Served events
- Availability, based on transmission line, transformer, and reactive plant availability

- Average unplanned-outage duration
- Market impact of transmission congestion

Further details of this scheme are available in the Service Target Performance Incentive Scheme Guideline published by the AER, available on its web site.

<http://www.aer.gov.au/content/index.phtml/tag/AERElectricitySection/>

4.3 Transmission Reliability

The availability of transmission lines, transformers and reactive plant were below target values for transmission line, transformer and reactive plant availabilities. TransGrid is carrying out a large quantity of capital work for transmission line rebuilds, pole replacements and transformer replacements. The outages associated with these capital works are the main contributor to the lower availability result.

Of TransGrid's 14 connected customers, 11 did not experience any unplanned outages causing loss of supply or interruption to generation. One interconnector experienced an unplanned outage.

Table 4.1 Transmission Asset Availability (%) Trend

	Objective	Years				
		2007/08	2008/09	2009/10	2010/11	2011/12
Transmission Lines	99.26%	98.55	98.44	98.17	98.99	99.08%
Transformers	98.61%	97.69	98.42	98.60	98.43	97.82%
Reactive Plant	99.12%	98.97	98.96	96.35	95.71	96.17%

Table 4.2 Network Reliability Trend (Off Supply Event Numbers)

	Objective	Years				
		2007/08	2008/09	2009/10	2010/11	2011/12
Measure A >0.05 System Minutes Events	4	3	3	4	2	2
Measure B > 0.25 System Minutes Events	1	0	0	1	1	0

Table 4.3 Outage (Un-Planned) Average Duration (Minutes) Trend

Objective	Years				
	2007/08	2008/09	2009/10	2010/11	2011/12
824	843	862	607	926	1688

The Average Unplanned Outage Duration is presently tracking at a relatively high level as a result of the occurrence of a small number of events, the nature of which has necessitated longer than average repair times. The root cause of these events have been reviewed and no particular trends or risks have been determined warranting corrective action.

Table 4.4 Market Impact of Transmission Congestion (5 min dispatch periods)

Objective	Years				
	2007/08	2008/09	2009/10	2010/11	2011/12
2857	N/A	N/A	1770	822	315

Good performance on this measure has been recorded in 11/12.

Table 4.5 Connection Point Interruptions (Unplanned) Current Year

Connection Point Interruptions (Unplanned) Current Year		
Connection Point	Interruption Number	Interruption Duration Total (Minutes)
Endeavour Energy		
932 Sydney West - Mt Druitt 132 kV TL	1	26
Essential Energy		
No.1 Perisher 33 kV TL	1	37
No.2 Perisher 33 kV TL	1	37
851 Beryl - Mudgee tee Gulgong 66 kV Line	1	2
No.1 Balranald - Balranald 22 kV Line	2	456
No.2 Balranald - Moulamein 22 kV Line	2	456
8C1 Molong - Cumnock Tee Orange West 66 kV Line	1	114
858 Forbes - Forbes Town 66 kV Line	1	166
859 Forbes - Forbes Town 66 kV Line	1	146
893/5 Forbes - Payten's Bridge 66 kV Line	1	166
895 Forbes - Parkes 66 kV Line	1	167
896 Forbes - West Jemalong 66 kV Line	1	146
Macquarie Generation		
No.1 330 kV Gen Tx Group	1	27
Interconnector		
Interconnector NSW/Qld TLs 8E & 8C	1	217

Table 4.6 Connection Point Numbers

Connection Point Numbers End Current Year	
Number of Connection Points (Total Number)	448 + 6 interconnectors

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 Health & Safety Management System is certified to Australian Standard AS/NZS 4801.

TransGrid's Health & Safety Management System is overseen by the Executive Health and Safety Committee which is chaired by the Managing Director and includes the Executive General Manager or senior management representative from each business unit.

Over the last twelve months a Health and Safety Board Committee has been formed which meets quarterly to review TransGrid's health and safety incidents and risks. In addition, a number of strategies during the year have been developed, implemented and monitored to ensure the system is effective and provides for continuous improvement. These include:

- Safety Improvement Program;
- Corporate Health and Safety Plan;
- Safety Communications Steering Committee;
- Quarterly Health and Safety Themes;
- Annual Safety Day – First Aid, Fire Fighting and Risk Assessment competitions;
- Schedule of compliance audits and inspections;
- The Wire (intranet) – maintains relevant health and safety information accessible to all employees; and
- Membership and participation in various industry committees, working groups and Field Days.

In 2012/13 the above strategies will continue with a focus on:

- health & safety behaviours;
- electrical safety;
- contractor safety; and
- Wellbeing and health;

Corporate Health and Safety Plan

This Plan sets out TransGrid's objectives, targets and key strategies for the year and is the basis for the development of business unit Health and Safety Action Plans. Progress reports on each business unit's Action Plan are reviewed by the Executive Health and Safety Committee on a quarterly basis.

A Corporate Health and Safety Plan 2012/13 has been developed, communicated and cascaded through the business where Business Units develop their own unique health and safety plan and measures based on the corporate plan and the local health and safety risks.

Wellbeing

The TransGrid "Wellbeing" Program has the vision "to promote living a healthy, happy and productive life by making personal choices that contribute to a healthy and balanced lifestyle". The Program provides principles, policies and programs to support employees in the following areas:

- Physical Wellbeing - Maintaining healthy and energetic bodies by making informed choices about exercise, diet and general fitness.
- Emotional Wellbeing - The peace of mind, confidence, and self-respect that we achieve by coming to terms with the full range of emotions.
- Social Wellbeing - Recognising the value and contribution of the relationships with family, colleagues and the community.
- Financial Wellbeing - A sense of comfort and security that results from informed financial decisions that help us achieve our life goals.

Annual Safety Day

TransGrid's annual Safety Day is in its 54th year. Competition events include an Apprentice Wiring Challenge, Risk Assessment, First Aid and Fire Fighting for teams representing all areas of TransGrid. This will be conducted in Sydney West Region in August 2012.

TransGrid's Safety Day helps to reinforce TransGrid's emphasis on safety as the number one priority. The day helps to hone safety skills which positively influence a sustained safety culture in the workplace. It is also an opportunity to display and discuss issues relating to safety and well being.

Schedule of Compliance Audits and Inspections

Compliance audits and inspections are conducted to ensure that procedures are implemented in accordance with legislative and organisational requirements. These include health and safety system audits, random unannounced safety compliance inspections, site conformance inspections, health and safety audits on contractors and team leader audits of pre-work risk assessments. Non conformances identified in audits are reported and actions are tracked.

Health and safety audit reports provided by internal and external auditors reflect a strong health and safety commitment, understanding and performance across TransGrid.

Participation in Industry Committees

TransGrid takes an active role in a number of industry committees and working groups such as Energy Networks Association's Health, Safety and Environment Committee, Ministerial Council on Energy - Energy Supply Industry Safety Committee and the Department of Trade and Investment, Regional Infrastructure and Services NSW Industry Safety Steering Committee. Participation ensures 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.

5.2 Public Injuries

In the 2011/12 financial year there were no Serious Electricity Network Accidents or Reportable Safety incidents where members of the public were involved.

Table 5.2 Public Injuries

Year	Previous Years				Current Year
	2007/08	2008/09	2009/10	2010/11	2011/12
Non-Fatal	0	0	0	0	0
Fatal	0	0	0	0	0
Total	0	0	0	0	0

5.3 Worker Injuries

The injuries reportable in this section are defined in the guidelines for the Significant Electricity Network Incidents (SENI) Scheme. These definitions changed during the year, and so the reporting is based on the following guidelines.

One serious electrical accident was recorded in the 2011/2012 financial year. This incident occurred outside Wallerawang

132 kV substation on 14 November 2011 when a flashover from an existing line to a newly erected pole resulted in a minor electrical shock to two construction workers. Both TransGrid and the contractor have completed inquiries and recommendations to address the issues identified are being implemented.

Date of Incident	Number of injuries	Guideline
Prior to 1 May 2012	Serious Electricity Network Accident + Serious Electrical Accident	Significant Electricity Network Incidents Objectives, definitions and reporting requirements February 2011
After 1 May 2012	Reportable Safety Incidents	SENI Definitions and Reporting Requirements June 2012

Table 5.3 Serious Electrical Network and Electrical Accident and Reportable Safety Incidents.

Year	Previous Years				Current Year	Current Year
	2007/08	2008/09	2009/10	2010/11	July 2011 – April 2012	May 2012 – June 2012
Workers	0	1	1	0	0	0
Contractors	0	0	1	2	1	0
Total	0	1	1	2	0	0

5.4 Major Incident Reports

No major incidents reports were provided to the Minister in 2011/12.

6 Bush Fire Risk Management

6.1 Bush Fire Risk Management Plan

TransGrid's Bush Fire Risk Management Plan is published on TransGrid's website as Chapter 4 of the Network Management Plan 2011-2016. A previous revision of the plan was subject to external audit and found to comply with the requirements of the then in force 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 were included in the subsequent revision and carry through to the current plan.

6.2 Bush Fire Risk Management Performance

6.2.1 Network Performance

TransGrid's network performed very well during the 2011-12 reporting period. There were no incidents of fire ignited by network assets. The following table summarises the performance outcomes, and compares these to the previous year's performance:

Table 6.1 Bushfire risk management

Year	Previous Years				Current Year
	2007/08	2008/09	2009/10	2010/11	2011/12
Assets in bush fire prone areas checked by pre-summer inspection %	100%	100%	100%	100%	100%
Private lines in bush fire prone areas checked by pre-summer inspection %	N/A	N/A	N/A	N/A	N/A
Fire ignitions by network assets (Number)	1	1	1	0	0
Complaints from the public regarding preparation for the bush fire season (Number)	0	0	0	0	0

6.3 Audits

6.3.1 Technical Performance Assessments

Technical Performance Assessments (TPAs) are undertaken annually in each of TransGrid's three Regions to audit maintenance and inspection compliance to TransGrid's policies. In 2011/12 TPAs were undertaken in Northern Region (Newcastle Area), Central Region (Metropolitan Area) and Southern Region (Wagga Area). No bush fire risk non-compliance issues were identified by these TPAs.

6.4 Preventative Programs

TransGrid's preventative program is centred on its routine easement maintenance. Inspection of transmission line hardware and accessories provides further confidence in the reliability of the system to not pose a bushfire ignition risk, and to remain safe during any bushfire occurrence in the area.

6.5 Proactive Programs

TransGrid provides corresponding representation to Bush Fire Management Committees as detailed in Attachment 2 of document GD AS G2 006 – Administration of the Network Management Plan. When required, the meetings are attended by a regional representative providing 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.

As part of TransGrid's Public Electrical Safety Awareness (PESA) plan (Chapter 3 of the Network Management Plan 2011-2016), a brochure has been provided to members of the Bush Fire Management Committees outlining the fire hazards associated with overhead power lines and vegetation, and safety guidelines to be observed during fire fighting in the vicinity of overhead power lines.

7 Public Electrical Safety Awareness

TransGrid's Public Electrical Safety Awareness Plan (PESAP) is based on a risk assessment of public safety issues with regard to TransGrid's assets. The PESAP is made available to all employees on TransGrid's Intranet "The Wire" and to the public via TransGrid's external website, as per Chapter 3 of the Network Management Plan 2011-2016.

The 2011/12 Action Plan for the implementation of the PESAP continued with the three specific focus areas from previous Plans: Relationship Management, Site Specific Issues and Community Interaction. Specific highlights for this year included:

- Commencement of electrical safety presentations to schools with TransGrid power lines in their property. These presentations provide basic electrical safety awareness information, as well as specific discussion relating to the power lines in the school property. The 2011/12 program focused the presentations on Primary Schools, with High School programs being developed as part of the 2012/13 Action Plan.
- Commencement of installation of revised maximum vessel height signage for existing waterway crossings in accordance with the requirements of NSW Maritime for crossings of navigable waterways,

The implementation of strategies is regularly reviewed by a working group of representatives from each Region and a report is provided to the Executive OHS Committee quarterly for review.

In addition to regular inspections by field staff, random audits are conducted on all TransGrid substations at least once every two years by the OHS Advisors to monitor safety conformance and identify any public safety issues. Identified issues are managed via reports to the relevant managers of the sites and recorded in the Issue Management System as appropriate.

8 Power Line Crossings of Navigable Waterways

In accordance with Australian Standard AS 6947-2009, the crossings of navigable waterways by TransGrid infrastructure have been reviewed in conjunction with NSW Maritime and risk assessments of each crossing location have been completed.

In accordance with the NSW Maritime Power Line Crossings of Navigable Waterways Electricity Industry Code, the installation of updated signage indicating maximum allowable vessel height has commenced on a priority basis to meet the required timeframes.

Crossings with existing non-compliant signage that were identified as not requiring signage due to significant crossing height will have the non-compliant signage removed.

Table 8.1 Power Line Crossings of Navigable Waterways Summary

	Existing (Number)	New (Number)	Incidents (Number)*	Crossings Reconstructed (Number)#	Crossings Identified as Requiring Conversion to Submarine Crossings (Number)
Overhead Crossings	41	0	0	0 ¹	0
Submarine Crossings	0	0	0	0	0

Note:

- Two crossings of the Clarence River near Grafton have crossing heights that are below the expected maximum vessel height notified by NSW Maritime. These two crossings are by one 132 kV transmission line, either side of an island in the Clarence River. The vessel heights notified by NSW Roads and Maritime are considered by TransGrid to be excessive at 28m and 34m. These crossings have been discussed with NSW RMS, and no modifications will be carried out on the power line crossings until final decisions of bridge heights are made regarding the updated Harwood Bridge and Grafton Bridge duplication projects. New signage in accordance with AS6947-2009 has been installed at these crossings warning of the maximum allowable vessel height at the current power line crossing height. It is not considered technically feasible to convert these crossings to submarine crossings due to the nature of the power system modifications for this work.



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