

ELECTRICITY NETWORK PERFORMANCE REPORT

2012/13



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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 2012/13 Financial Year.

1 Profile

1.1 Overview

TransGrid is Australia's largest electricity transmission company with its network comprising more than 12,700 kilometres of high voltage transmission line and underground cables, as well as 94 substations and switching stations, worth over \$5.4 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 kilovolts (kV). TransGrid's substations and power

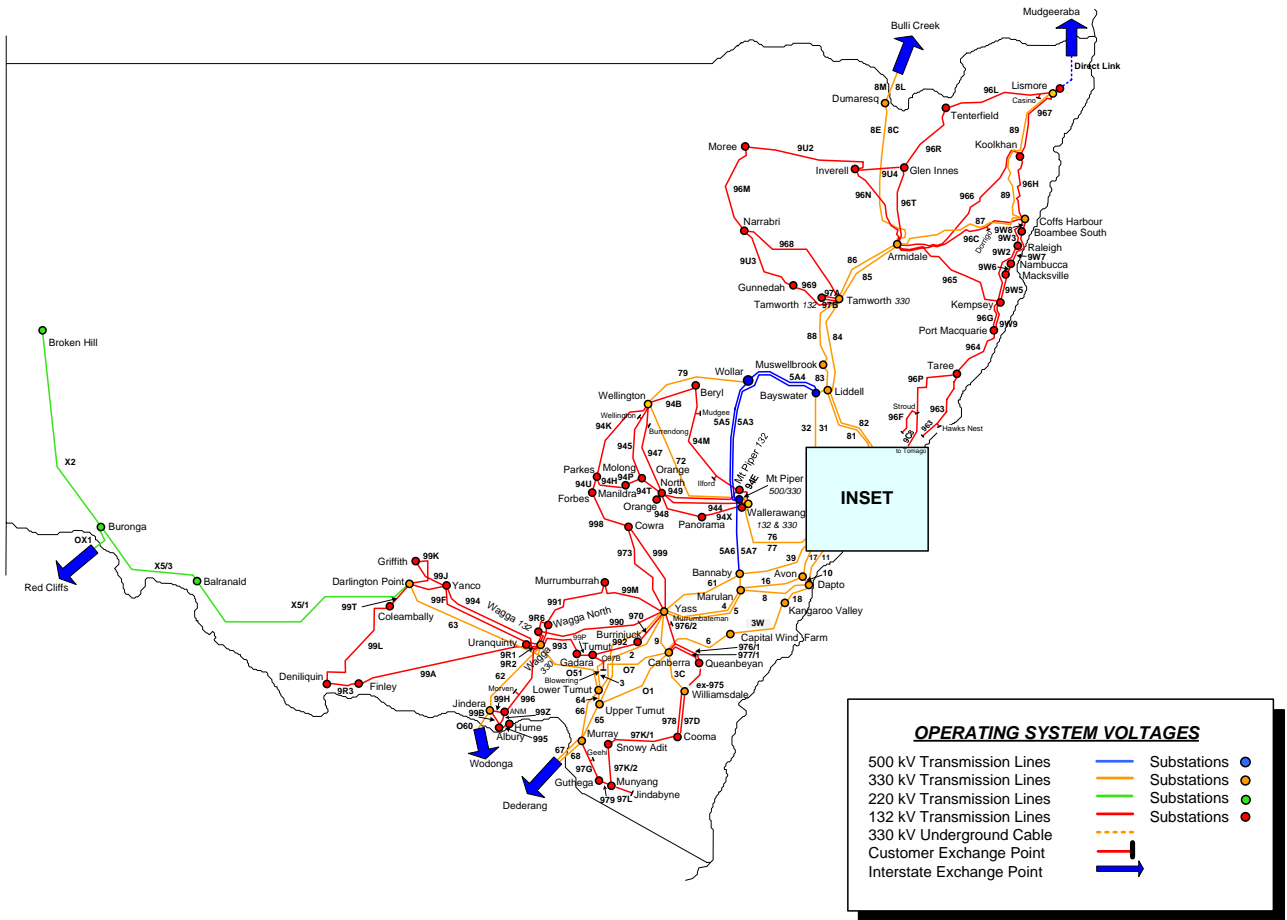
station switchyards are located on land owned by TransGrid. Transmission lines are generally constructed on easements acquired across private or public land.

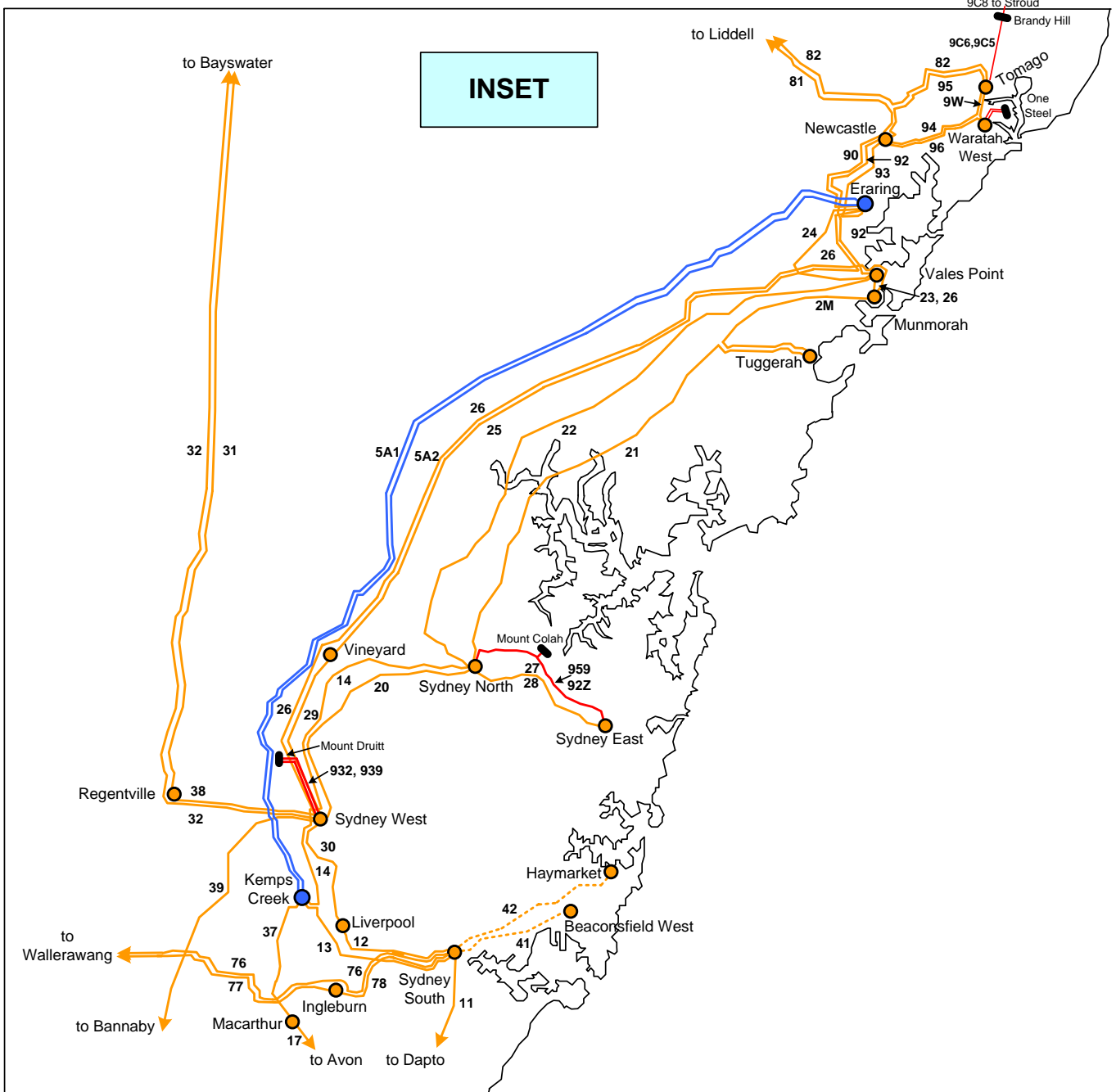
TransGrid has staff strategically based at locations throughout NSW. They are responsible for day-to-day operations and maintenance activities, as well as emergency response. The main administrative office is located at 201 Elizabeth Street, Sydney. Field staff are co-ordinated from major depots located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

Table 1.1 Network Operator Statistics

	Number at end of 2011/12	Number at end of 2012/13
Customer Numbers (Total)	14	15
Maximum Demand (Aggregated System MW)	12,884	13,946
Energy Received to Year End (GWh)	70,884	65,579
System Loss Factor (%)	1.5%	1.43%
High Voltage Overhead (km)	12,623	12,704
High Voltage Underground (km)	47	47
Substation (Number)	94	94
Structures (Number)	37,189	37,400
Poles (Number)	39,069	39,016
Employees (Full Time Equivalent Number)	1063	1069
Contractors (Full Time Equivalent Number)	176	156

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 a secure, reliable and safe supply of electricity to businesses and consumers in NSW and the ACT. The capital works program is primarily driven by either the need to augment the network as demand grows, or the need to replace assets when they reach the end of their serviceable life.

Between 2009 and 2014 TransGrid will undertake more than 80 projects across NSW as part of a \$3 billion capital works program. For the 2012/13 financial year TransGrid's capital expenditure was \$547.3 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	
	2008/09	2009/10	2010/11	2011/12	2012/13
Capital works program (\$M)	619.9	428.7	378.6	384.4	547.3

1.2.1 Recently Completed Projects

Beaconsfield West 330/132kV Substation Redevelopment

TransGrid replaced the 132 kV gas insulated switchgear at Beaconsfield West 330/132 kV Substation as it had reached the end of its serviceable life. There was also a need to provide additional 132 kV cable connections, a third 330/132 kV transformer and two 132 kV capacitors. These works were completed in November 2012.

Wallerawang 132/66kV Substation Replacement

The old Wallerawang 132/66 kV Substation is in the process of being decommissioned at the end of its serviceable life. Construction of the new Wallerawang 132/66 kV Substation was completed in May 2013. Over the coming year, transfers of the 132 kV and 66 kV transmission lines from their current connection point at the old substation to the new substation site will be undertaken. This work is expected to be completed by mid 2014.

Tomago 330/132kV Substation Development

To relieve constraints on the sub-transmission system in the Newcastle area, TransGrid has expanded the Tomago 330/132kV Substation with the installation of a third 330/132kV transformer and the provision of two additional 132 kV line switchbays. The works were completed in June 2013.

Munyang Transformers Replacement

TransGrid replaced two 132/33kV oil filled transformers at Munyang Substation that were at the end of their serviceable life with new gas-insulated transformers. These works, which reduce the environmental risk at this site adjacent to the Snowy River, were completed in March 2013.

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 completed in September 2012.

Establishment of Williamsdale 330/132 kV Substation

The construction of Williamsdale 330/132 kV Substation was completed in October 2011. The provision of the 330kV supply to the substation was achieved with the completion of the Canberra to Williamsdale 330kV transmission line in February 2013. The ACT and the Cooma/Monaro region is now supplied from the Williamsdale 330/132kV substation

Supply to the Hawks Nest/Tea Gardens Area

Hawks Nest is located approximately 75 kilometres south of Taree. Essential Energy constructed a new single transformer 132/33kV substation together with associated 33kV line works to connect it to the local 33kV network to meet reliability requirements for the area. TransGrid provided short sections of 132kV line to connect the new substation to the 963 Tomago – Taree 132kV transmission line. The substation was commissioned in October 2012.

Other Projects

- Completed connections for distributor requirements at Newcastle, Waratah West, Port Macquarie and Vales Point Substations.
- Capacitor bank replacements at Sydney West, Coffs Harbour, Port Macquarie and Griffith substations.
- Provision of dual switching at Liddell 330kV switchyard for the 84 Liddell – Tamworth 330kV transmission line.
- Installation of Phase Angle Measurement Units at five sites between Sydney and Newcastle as part of joint work with Ausgrid on the Smart Grid Smart City project.

2 Network Management

2.1 Overview

In the 2012/13 financial year TransGrid has commenced a number of new initiatives related to improving the management of the transmission network. These include:

- The completion of the Project Symphony, a business transformation project to further integrate the way TransGrid conducts its business. An upgrade of the Ellipse and Oracle ERP systems were the main component of this project.
- The second Demand Management Innovation Forum was held in 2012/13 to support TransGrid's corporate objective to service the market. This forum provided an opportunity to provide details on TransGrid's initiatives and to obtain valuable feedback and idea exchange from key customer groups.
- TransGrid is currently moving towards certification for its asset management systems under the PAS 55 / ISO 50001 Asset Management Framework. PAS 55 (later ISO 55001) is an internationally recognised framework which allows asset management performance to be objectively measured against a maturity scale, and to enable the targeting of improvement programs in those areas considered to give the best value. This initiative aims to formally recognise TransGrid's asset management capabilities and provide a framework for the continuing improvement of core asset management competencies.

2.2 Network Complaints

There were 44 complaints registered during 2012/13. This result is higher than 2011/12, but within the bounds of the five year historical results. 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.

The majority of complaints were associated with the major capital works program and primarily relate to:

- Issues with impacts of construction such as noise, dust, restriction to business opening hours and other impacts (23 complaints).
- Objections to specific project works, including consultation processes, compensation and visual amenity concerns (9 complaints).
- Issues with access to land for project work, including protocols not being followed and gates not left as found (7 complaints).

Complaints are formally registered with TransGrid's Corporate Communications team and all attempts are made to address with the complainant. A summary of complaints and outcomes are provided to senior management at regular intervals to monitor the organisations performance in complaint handling.

Table 2.1 Complaint Performance Data

Years	Previous Years			Current Year	
	2008/09	2009/10	2010/11	2011/12	2012/13
Complaints Total	92	20	3	26	44
Complaints regarding Vegetation Management	1	1	1	0	1

3 Network Planning

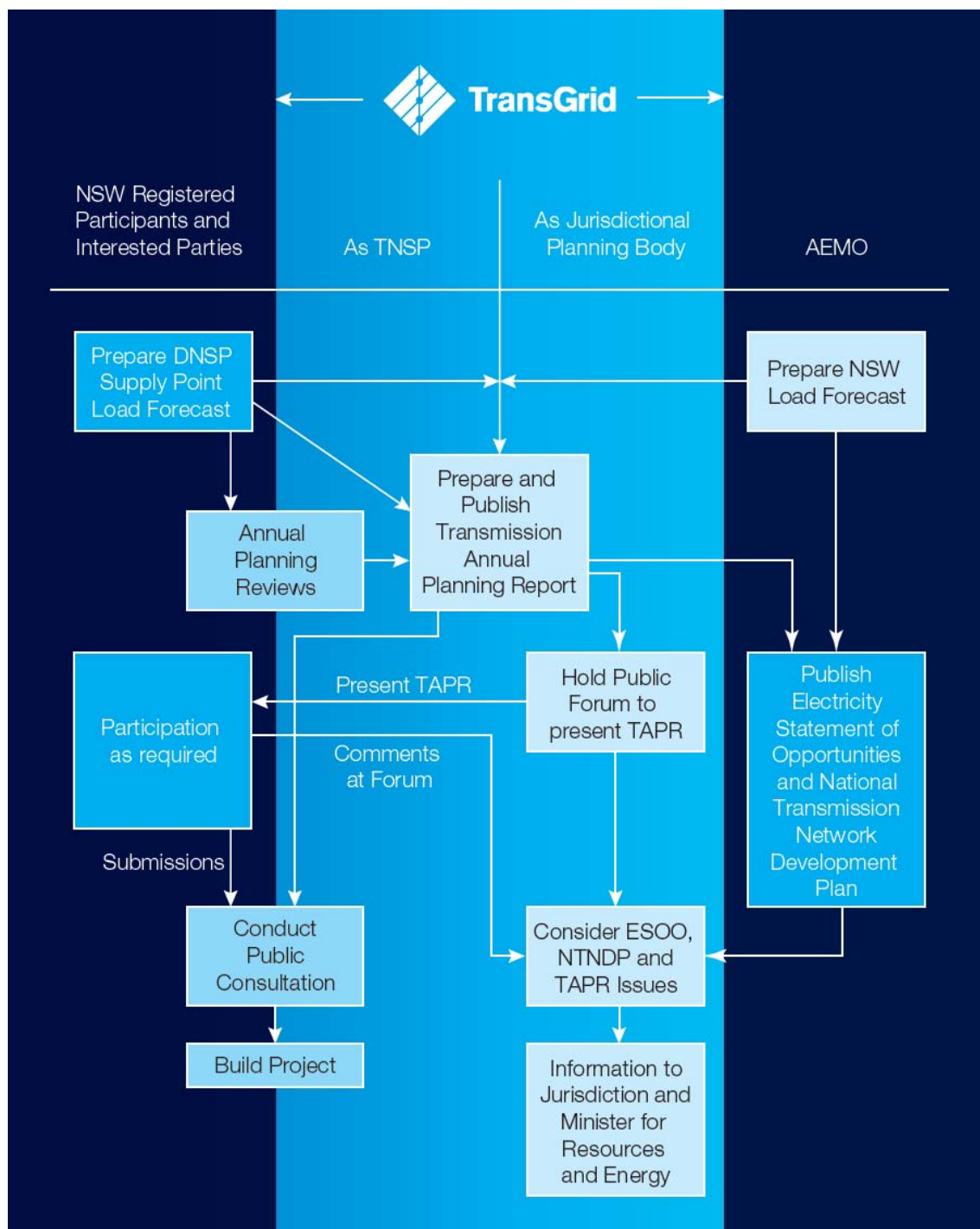
3.1 Overview

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.

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 a Transmission Annual Planning Report (TAPR) 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 the 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 due to their condition and the need to augment capacity due to increases in peak demand. System constraints emerge as the maximum capability of existing assets is reached. These constraints are usually due to growth in demand, or in some cases a reduction in rating for ageing assets due to their condition. 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 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 (DM) or Demand Side Response (DSR)

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. They may utilise alternative energy sources such as bagasse, biomass, gas, hydro, solar, etc.

TransGrid actively promotes these non-network options by informing the market of constraints via the TAPR, 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 TAPR 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 RIT-T.

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.

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 increasing number 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 DNSPs and engaging expert external consultants where warranted.
- Informing the market of constraints via the TAPR 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.
- Joint sponsorship of research projects involving DM and embedded generation.

On 14 June 2013, TransGrid hosted its second DM Innovation Forum in Sydney involving all NSW and ACT distributors, universities and advisors participating in the DM programs with TransGrid. Invitations were also extended to interstate DNSPs, with one providing a presentation via teleconference facilities. 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. 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 OH&S, 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.

4.2 Technical Service Standards

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

- Reliability, based on the number of Energy Not Served (ENS) 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/node/9417>

4.3 Transmission Reliability

The availability of transmission lines, transformers and reactive plant were below target for the 2012/13 financial year. This is mainly because of TransGrid's large capital works program for transmission line rebuilds, pole replacements and transformer replacements. Also, a small number of reactive plant failure events have resulted in prolonged reactive plant outages.

Of TransGrid's 15 connected customers, 12 did not experience any unplanned outages causing loss of supply or interruption to generation. No interconnectors experienced an unplanned outage.

Table 4.1 Transmission Asset Availability (%) Trend

	Years					
	Objective	2008/09	2009/10	2010/11	2011/12	2012/13
Transmission Lines	99.26%	98.44	98.17	98.99	99.08%	98.89%
Transformers	98.61%	98.42	98.60	98.43	97.82%	97.59%
Reactive Plant	99.12%	98.96	96.35	95.71	96.16%	96.13%

Table 4.2 Network Reliability Trend (Off Supply Event Numbers)

	Years					
	Objective	2008/09	2009/10	2010/11	2011/12	2012/13
Measure A >0.05 System Minutes Events	4	3	4	2	2	4
Measure B > 0.25 System Minutes Events	1	0	1	1	0	1

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

Objective	Years				
	2008/09	2009/10	2010/11	2011/12	2012/13
824	862	607	926	1688	1705

The Average Unplanned Outage Duration result is 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 has 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				
	2008/09	2009/10	2010/11	2011/12	2012/13
2857	N/A	1770	822	315	1013

The Market Impact of Transmission Congestion result for 2012/13 has been within the proposed target level.

Table 4.5 Connection Point Interruptions (Unplanned) Current Year

Connection Point Interruptions (Unplanned) Current Year		
Connection Point	Customer	Interruption Duration Total (Minutes)
218 Sydney West - Eastern Creek 132kV Line	Endeavour Energy	329
217 Sydney West - Eastern Creek 132kV Line	Endeavour Energy	329
79C Griffith - Darlington 33kV line	Essential Energy	60
79F Griffith - Yenda 33kV line	Essential Energy	60
79J Griffith - Griffith Zone Standby 33kV line	Essential Energy	60
79G Griffith - Griffith West 33kV line	Essential Energy	60
80R Beryl - Ulan 66kV line	Essential Energy	7
851 Beryl - Mudgee tee Gulgong 66kV line	Essential Energy	7
No.1 Balranald - Balranald 22kV Line	Essential Energy	156
No.2 Balranald - Moulamein 22kV Line	Essential Energy	156
No.3 Broken Hill - South 22kV Line	Essential Energy	86
No.4 Broken Hill - Railway Town 22kV Line	Essential Energy	86
No.5 Broken Hill - Talc St -2 22kV line	Essential Energy	86
722 Moree - Moree 66kV Line	Essential Energy	222
876 Moree - Bellata 66kV Line	Essential Energy	222
879 Narrabri - Wee Waa 66kV Line	Essential Energy	161
861 Narrabri - Walgett 66kV Line	Essential Energy	161
834 Narrabri - Narrabri 66 66kV Line	Essential Energy	161
833 Narrabri - Narrabri 66 66kV Line	Essential Energy	161
882 Narrabri - Wee Waa 66kV Line	Essential Energy	161
837 Murrumburrah - Jugiong 66kV Line	Essential Energy	209
83D Murrumburrah - Murrumburrah 66kV 66kV Line	Essential Energy	209
847 Murrumburrah - Boorowa 66kV Line	Essential Energy	209
96C Armidale - Coffs Harbour Tee Dorrigo 132kV TL	Essential Energy	93
723 Moree - Wenna tee Wathagar 66kV Line	Essential Energy	119
881 Moree - Garah tee Ashley 66kV Line	Essential Energy	109
721 Moree - Moree 66kV Line	Essential Energy	109
723 Moree - Wenna tee Wathagar 66kV Line	Essential Energy	109
97G Murray - Guthega tee Geehi 132kV TL	Snowy Hydro	2966
97G Murray - Guthega tee Geehi 132kV TL	Snowy Hydro	97
M5 Murray - Murray 1 330kV TL	Snowy Hydro	20

Table 4.6 Connection Point Numbers

Connection Point Numbers End Current Year	
Number of Connection Points (Total Number)	457 + 6 interconnectors

Note: for the purpose of connection point interruption reporting, the connection point numbers are counted as the basis of the number of individual supply points to all customers.

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. A Health and Safety Board Committee also meets quarterly to review TransGrid's health and safety incidents and risks. In addition, a number of key health and safety strategies and programs have been developed or conducted through the 2012/13 year including:

- Improving contractor engagement and accreditation processes.
- Project management improvement and delivery.
- Continuing the communication of quarterly health and safety themes that reflect the key health and safety risks.
- Shifting the reporting focus off lost time injuries to reporting high consequence near misses and incidents.
- Improving the quality of safety compliance audits and inspections.
- Encouraging health and safety information and communication which is increasingly available on "The Wire" (TransGrid's intranet).

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

- Demonstrating health & safety behaviours.
- Minimising incidents through improving the safety focus for contractors.
- Reducing the number of high consequence incidents.
- Wellbeing and health.

The following activities continue to underpin our health and safety program:

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 2013/14 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 18th annual Safety Day attracted more than 80 participants and hundreds more spectators to Eastern Creek on 24 August 2012. Safety Day featured the traditional fire fighting, first aid, risk assessment and wiring competitions. 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 was also an opportunity to display and discuss issues relating to safety and wellbeing.

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 construction and asset replacement projects, and maintenance activities. 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 and Australian Standards 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, Electrical Industry Asbestos Safety Working Group, Regional Infrastructure and Services NSW Industry Safety Steering Committee and the Australian Standards Technical Committee for the development of AS5577, the Electrical Industry Safety Management System Standard.

Participation ensures that trends and expectations of legislators, industry and the community are understood and managed effectively.

5.2 Public Injuries

In the 2012/13 financial year there were no Serious Electricity Network Accidents or Reportable Safety incidents where members of the public were involved.

Table 5.1 Public Injuries

Year	Previous Years				Current Year
	2008/09	2009/10	2010/11	2011/12	2012/13
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 2012, and so the reporting is based on the following guidelines.

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

No major reportable safety incidents occurred in the 2012/13 financial year. The relatively large (when compared with historical figures) number of reportable safety incidents is due to the change in reporting definitions. None of these incidents resulted in injury to workers or contractors, but met the SENI scheme definition of incidents involving electricity or network equipment or apparatus where a significant risk of serious injury was present.

Table 5.2 Serious Electrical Network and Electrical Accident and Reportable Safety Incidents.

Year	Previous Years				Current Year	
	2008/09	2009/10	2010/11	July 2011 – April 2012	May 2012 – June 2012	2012/13
Workers	1	1	0	0	0	2
Contractors	0	1	2	1	0	4
Total	1	1	2	1	0	6

5.4 Major Incident Reports

A contractor engaged by TransGrid on the Murray to Guthega transmission line upgrade project, died as the result of injuries he received in an incident that occurred on 11 April 2013. The incident involved mobile plant and occurred on an access track leading to structure 21 on TransGrid's transmission line 97G. At the time of the incident, emergency procedures were deployed, an emergency signal was triggered and emergency services crews notified. WorkCover was also contacted and since that time a number of interviews with a WorkCover investigation officer have taken place and TransGrid continues to cooperate with WorkCover in its investigation.

This incident did not meet the SENI reporting criteria as it occurred outside TransGrid property and easements and did not involve electricity or network apparatus.

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 2013-2018.

6.2 Bush Fire Risk Management Performance

TransGrid's network performed well during the 2012-13 reporting period. There were two incidents of fire ignited by network assets.

→ On Thursday 4th October 2012, TransGrid's 330 kV transmission line 24 Vales Point – Eraring tripped and reclosed on a number of occasions. A bushfire was reported in the area. Investigations have revealed that it is likely that the trips were the result of arcing between the transmission line conductor and a tree in span 19-20 in the Wyee area.

→ On Wednesday 12th December 2012, TransGrid's 220kV transmission line X5/1Darlington Point – Balranald tripped and locked out near Balranald due to a broken conductor falling to the ground. A small crop fire ensued which was extinguished by the local Rural Fire Service. The conductor failure was determined to have been caused by wear from a loose conductor vibration damper.

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
	2008/09	2009/10	2010/11	2011/12	2012/13
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	0	0	2
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 2012/13 TPAs were undertaken in Northern Region (Tamworth Area), Central Region (Orange Area) and Southern Region (Yass Area). No bush fire risk non-compliance issues were identified by these TPAs.

6.4 Preventative Programs

TransGrid's bushfire 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 2013-2018), 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 Chapter 3 of the Network Management Plan 2013-2018.

The 2012/13 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:

- Continuation of the BeSafeKidz 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. In support of this, an advertisement relating to the BeSafeKidz program was placed in the 2013 Police Legacy Child Safety Handbook which is distributed throughout NSW Primary Schools.
- Completion 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. Some old signage is due to be removed by June 2014.

The implementation of each specific strategy in the Action Plan 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. Satisfactory progress on each strategy was noted during the 2012/13 reporting period.

In addition to regular inspections by field staff, random audits are conducted on all TransGrid substations at least once every two years by 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 Issues 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 been completed 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 by June 2014.

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 initially notified by NSW Maritime. These two crossings are by one 132kV transmission line, either side of an island in the Clarence River. Discussions have been held with NSW RMS, with the outcome being a revision of the maximum expected vessel heights to meet the 17m as marked on the new signage, with no further modification of the crossing required. RMS will update the boating maps with the revised information. A revision of this arrangement has been requested by RMS in 2018 to assess the river traffic and the suitability of the safety clearance of the crossing at that time.



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