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Mr. Sebastian Roberts
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Australian Competition and Consumer Commission
Level 35, The Tower
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Melbourne VIC 3000

By email: sebastian.roberts@accc.gov.au

Dear Sebastian,

Re: Annual Performance Incentive Scheme Report for 2004 Calendar Year

I am pleased to submit with this letter TransGrid's Annual Performance Incentive (PI) Scheme Report for the 2004 calendar year, which has been prepared to meet the requirements of the ACCC's Service Standards Guidelines dated, 12 November 2003.

The Guidelines required TransGrid to report within two months after the end of the reporting period on:

- Actual network performance against the performance measures established by the ACCC in the 4th May 2004 TransGrid Draft revenue cap decision; and
- The financial incentive calculation as per the Draft revenue cap decision.

The PI scheme is based on service standard measures that are common to all Transmission Network Service providers (TNSPs). However, the ACCC recognised in its November 2003 decision on service standards that there must be flexibility in how these performance measures are implemented for each TNSP. In particular, the importance of measuring performance consistently over time was emphasised. The PI scheme is based on the assumption that performance measurement will be consistent with the way in which historical performance was derived for target setting.

The performance measures implemented for TransGrid are defined in the attached paper. These definitions are consistent with the definitions used for submitting data to the ACCC for target setting and the annual performance report has been prepared consistent with these definitions.

TransGrid's actual performance is shown in the following sections of the Report:

- **Summary of Calculation of 2004 Service Standard Performance Measures**
  This section details the actual values used to calculate the performance measures, and the calculated value of the performance measures.
- **Results for Calendar Year 2004**
  This worksheet summarises actual performance against each performance measure, including calculation of the S factors and financial incentive.

TransGrid is not requesting any force majeure exclusions from any performance measure.

Please do not hesitate to contact me on (02) 9284-3555 or by email should you require clarification of any of the information provided in this report.

Yours sincerely,

10/2/05

Kevin Murray
General Manager/Network

TransGrid

Performance Against

ACCC Service Standards

2004

11th February 2004

Service Standards Performance Incentive Scheme Implementation for TransGrid

1. Purpose

In its Draft Revenue Cap Decision 2004/05 – 2008/09 for TransGrid dated 28th April 2004, The Australian Competition and Consumer Commission (ACCC) established a Performance Incentive scheme to provide TransGrid with additional incentive to maintain and improve service quality. TransGrid's Performance Incentive scheme is based on a number of service standard measures which are common to all TNSPs

The performance targets established by ACCC have been based on data of TransGrid's historical performance. Consequently, the measurement of TransGrid's performance under the performance incentive scheme has been conducted using the same criteria incorporated in the historical data from which the targets were derived.

This document sets out the performance measures implemented by TransGrid consistent with the above principle, its guidelines for measuring those performance measures, and the performance measure results with incentive scheme bonus/penalties calculated from those results.

2. Performance Measures

2.1 Measure 1 - Transmission Circuit Availability

Formula for Measure:

$$\% \text{ Availability} = 1 - \frac{\text{sum(number of transmission circuit outage hours)}}{\text{Total possible circuit hours available}}$$

Circuits include regulated overhead lines and underground transmission cables (each with a designated TransGrid transmission segment identification number).

Number of transmission circuit outage hours means in relation to each circuit, the number of hours during each reporting period in which that circuit was unavailable to provide transmission services.

Total possible circuit hours available is the number of circuits multiplied by 8760 hours.

2.1.1 Inclusions

Subject to the exclusions specified below, outages on transmission circuits in the *regulated* TransGrid transmission system from all causes including planned, forced and emergency outages.

2.1.2 Exclusions

• Transient interruptions less than one (1) minute

• Unregulated transmission assets.

• Any outages caused by a 3rd party such as intertrip signals, generator outage, customer installation, customer request or NEMMCO direction.

• switching to control voltages and fault levels within required limits, both as directed by NEMMCO and where NEMMCO does not have direct oversight of the network (in both cases only where the element is available for immediate energisation if required).

• The opening of only one end of a transmission circuit (e.g. where the transmission circuit remains energised and available to carry power with immediate manual or automatic return to service).

• Force majeure events (including multiple structure failures)

2.2 Measure 2 - Transformer Availability

Formula for Measure:

$$\% \text{ Availability} = 1 - \frac{\text{sum(number of transformer outage hours)}}{\text{Total possible transformer hours available}}$$

Transformers include regulated transformers counted in 3-phase units (each with a designated TransGrid transformer identification number).

Number of transformer outage hours means in relation to each transformer, the number of hours during each reporting period in which that transformer was unavailable to provide transmission services.

Total possible transformer hours available is the number of transformers multiplied by 8760 hours.

2.2.1 Inclusions

Subject to the exclusions specified below, outages on all transformers in the *regulated* TransGrid transmission system from all causes including planned, forced and emergency outages.

2.2.2 Exclusions

• Transient interruptions less than one (1) minute

• Unregulated transmission assets.

• Auxiliary transformers

• Static Var Compensator transformers (which are counted as part of the SVC).

• Any outages caused by a 3rd party such as intertrip signals, generator outage, customer installation, customer request or NEMMCO direction.

• switching to control fault levels within required limits, both as directed by NEMMCO and where NEMMCO does not have direct oversight of the network (in both cases only where the element is available for immediate energisation if required).

• The opening of only one or both sides of a transformer for operational purposes, such as to control losses, fault levels, incompatibility of tap changes etc but where the transformer remains available to carry power on immediate manual or automatic return to service.

• The period where a transformer is made available for service, but not switched in, at the end of each day of a multi-day planned outage.

• Force majeure events.

2.3 Measure 3 – Reactive Plant Availability

Formula for Measure:

$$\% \text{ Availability} = 1 - \frac{\text{sum(number of reactive plant outage hours)}}{\text{Total possible reactive plant hours available}}$$

Reactive plant include regulated capacitor banks, reactors, synchronous condensers, static Var compensators (each with a designated TransGrid plant identification number).

Number of reactive plant outage hours means in relation to each item of reactive plant, the number of hours during each reporting period in which that plant was unavailable to provide network services.

Total possible reactive plant hours available is the number of reactive plant multiplied by 8760 hours.

2.3.1 Inclusions

Subject to the exclusions specified below, outages on all reactive plant in the *regulated* TransGrid system from all causes including planned, forced and emergency outages.

2.3.2 Exclusions

• Transient interruptions less than one (1) minute

• Unregulated transmission assets.

• Capacitors banks and reactors operating at less than 66kV.

• Any outages caused by a 3rd party such as intertrip signals, generator outage, customer installation, customer request or NEMMCO direction.

• Reactive plant switched out by System Operations, or left out after repairs that make it available for service, for operational purposes.

• Force majeure events.

2.4 Measures 4 and 5 - Reliability

Definition for measures:

Measure 4: Number of events per annum greater than 0.05 *system minutes*.
Measure 5: Number of events per annum greater than 0.40 *system minute*.

System minutes are calculated for each supply interruption by using the following formula:

$$\frac{\text{(Total MWh unsupplied x 60)}}{\text{MW peak demand}}$$

where:

MWh unsupplied is the energy not supplied as determined by using NEM metering and substation load data. This data is used to estimate the profile of the load over the *Period of the Interruption* by reference to historical load data.

Period of the Interruption starts when a loss of supply occurs or when System Operations directs a customer to reduce load and ends when TransGrid offers full supply restoration to the customer or the customer regains supply via back-feed through its own system.

In cases where restoration or loss of supply is multi-staged, the total MWh Unsupplied is the cumulative sum of MWh unsupplied calculated over the various stages until supply is fully restored.

MW peak demand means the maximum amount of aggregated electricity demand recorded at entry points to the TransGrid transmission network and interconnector connection points during the calendar year in which the event occurs, based on NEMMCO's Historical Demand process.

Inclusions

Subject to the exclusions specified below, all unplanned losses of supply to customers on all parts of the *regulated* transmission system.

Exclusions

• Transient interruptions less than one (1) minute

• Unregulated transmission assets.

• Any outages caused by a 3rd party such as intertrip signals, generator outage, customer installation, customer request or NEMMCO direction or automatic underfrequency load shedding (UFLS).

• Planned outages.

• Where TransGrid protection operates correctly due to a fault on a customer's or a 3rd party system.

• Pumping station supply interruptions (such as Barnard River, Burrawang, Bendeela, Kangaroo Valley and Jindabyne). These interruptions were excluded from historical data used for target setting as there being no effective loss of supply due to their ability to obtain the pumping load at a later time after restoration of supply.

• where a customer's own control/protection system trips their plant during a transient voltage fluctuation or other quality of supply event, whether caused by TransGrid or otherwise.

• Force majeure events.

Notes

The following points further clarify the implementation of the Reliability performance measure:

• The > 0.05 system minutes measure is, as defined, only for events >0.05 up to and equal to 0.4 system minutes. An interruption >0.40 system minute does not register as a >0.05 system minute event.

• Interruptions affecting multiple connection points at exactly the same time are aggregated (i.e. system minutes are calculated on the basis of events rather than connection point interruptions).

• TransGrid has not included in its historical performance for these measures any ENS events where the customer's own control system (including under-voltage system) caused the trip of the customer's plant during a supply fluctuation on TransGrid's network.

- Where the return of supply is abnormally or unreasonably delayed by a second party and outside the control of TransGrid, TransGrid reserves the right to adjust the restoration time to a normal or reasonable period.

- Where multiple and unrelated events overlap in time and in their impact on the supply of electricity, the energy not supplied shall be reasonably allocated between the events; the "system normal" arrangement of TransGrid and its customer may be taken into account in determining the allocation.

2.5 Measure 6 - Average Outage Restoration Time

Definition/Formula

$$\text{Measure} = \frac{\text{Aggregate minutes duration of all unplanned plant outages}}{\text{Number of unplanned plant outage events}}$$

The summation of the unplanned outage duration times for the reporting period, divided by the number of unplanned plant outage events during the period, where:

Outage duration time for an item of plant starts when an outage occurs and ends when TransGrid either returns the item to service or the item is repaired, switching instructions are completed and the item is ready for energisation.

2.5.1 Inclusions

Subject to the exclusions specified below, unplanned outages on all TransGrid *regulated* transmission circuits, transformers and reactive plant.

2.5.2 Exclusions

• Transient interruptions less than one (1) minute

• Unregulated transmission assets.

• Any outages due to a 3rd party such as intertrip signals, generator outage, customer installation, customer request or NEMMCO direction.

• Planned outages.

• Outages for capacitor banks and reactors operating at < 66kV

• The portion of outage duration longer than 7 days (168 hours.) That is, each individual outage is capped at 7 days.

• Force majeure events.

3. Reporting Performance Incentive Scheme Outcomes

The ACCC Service Standards Guidelines require TransGrid to report its annual Performance Incentive scheme performance to the ACCC within two months after the end of the calendar year reporting period.

This report will provide the following:

- The targets set and achieved performance for each performance measure
- The S Factor and resulting bonus/penalty for each performance measure, as calculated from the S factor equations set out in Appendix 5 of the ACCC's revenue cap decision.

4. Exclusions

TransGrid has excluded the following events for the purposes of calculating the performance bonus/penalty under its performance incentive scheme, in accordance with its criteria set out in Section 2 above..

4.1 Measure affected = Reliability (Loss of Supply Event Frequency)

4.1.1 All 'NON-TRANSGRID REASON' outages, with one exception, as noted.
These are excluded as described in 2.4.2 "Any outages caused by… customer installation…"

4.1.2 Outage 3-2004-F0033 on 8th February 2004.
(Interruption was > 0.05 system minutes.)
Customer's 66kV line out of a TransGrid substation tripped because of a bushfire under the customer's line which caused correct protection operation by TransGrid.
This is excluded as described in 2.4.2 "Any outages caused by… customer installation…"

4.1.3 Outages 1-2004-F0086 & F0087 on 18th and 21st June 2004 respectively.
(Both interruptions were > 0.05 system minute.)
Two parallel 132kV circuits supply a 3rd Party's substation from a TransGrid 132kV substation. TransGrid owns a short section of each line at the TransGrid substation end, while a DNSP owns the remainder into the 3rd Party's substation.
On each occasion, while one line was out of service for maintenance, the remaining line tripped on protection when a transformer differential protection operation occurred within then 3rd Party's substation.
TransGrid staff were on site at the TransGrid substation to re-energise the tripped line at the customer's request. The duration of the outage (and subsequent loss of supply) was determined by the 3rd Party's operations.
These outages are excluded as described in 2.4.2 "Any outages caused by… customer installation, customer request…" and also "…where TransGrid's protection operates correctly due to a fault on a customer's system."

4.1.4 Outage 3-2004-F0123 on 17th July 2004 on a TransGrid 132kV line.
16MW of customer load was interrupted but was restored within one minute by auto-changeover.
This is excluded as described in 2.4.2 "Transient interruptions less than 1 minute."

4.1.5 Outage 3-2004-F0144 on 5th September 2004 on TransGrid's 132kV line and 132kV substation. (Interruption was > 0.05 system minutes.)
The load interrupted was the pumping load at a pumping station.
This is excluded as described in 2.4.2 "Pumping station supply interruptions (such as Barnard River, Burrawang, Bendeela, Kangaroo Valley and Jindabyne). These interruptions were excluded from historical data used for target setting as there being no effective loss of supply due to their ability to obtain the pumping load at a later time after restoration of supply.

5. Summary of Calculation of 2004 Service Standard Performance Measures

Measure 1 – Transmission Circuit Availability

Average Number of Circuits in year	=	176.96
Sum of all Planned, Forced and Emergency Outages	=	5,090.35 hours
Calculated Availability	=	99.672 %

Measure 2 – Transformer Availability

Average Number of Transformers in Year	=	155.58
Sum of all Planned, Forced and Emergency Outages	=	9,346.40 hours
Calculated Availability	=	99.314 %

Measure 3 – Reactive Plant Availability

Average Number of Reactive Plant in Year	=	100.9
Sum of all Planned, Forced and Emergency Outages	=	5,082.91 hours
Calculated Availability	=	99.425 %

(Note: Number of Reactive Plant obtained from:

Capacitor Banks	= 68		
Reactors	= 24.9		
SVCs	= 6		
Synchronous Condensers	= 2	Total	= 100.9 Reactive Plant)

Measure 4 & 5 – Reliability – Loss of Supply Event Frequency

Number of Loss of Supply Events = 7
Magnitudes in System Minutes: 0.035; 0.004; 1.225; 0.001; 0.003; 0.041; 0.001.
Measure 4 – No. > 0.05 (</= 0.4) system minutes = 0
Measure 5 – No. > 0.4 system minutes = 1

Measure 6 – Average Outage Restoration Time (minutes)

Total Number of Forced and Emergency Outages counted	=	99
Total Duration of all Forced and Emergency Outages (individual outages capped at 7 days = 168 hour)	=	1197.93 (hours)
Average Duration per Outage	=	12.10 (hours)
	=	726.02 (minutes)

6. Results for Calendar Year 2004

					Revenue at Risk Calendar Year 2004			**4,202,700**
Measure	**2004 Result**	**Collar**	**Deadband 2**	**Target**	**Deadband 1**	**Cap**	**Calculated S Factor**	**Bonus/ Penalty**
Availability	%	%	%	%	%	%		$
Transmission Circuit Availability	99.672	99.000	n/a	99.500	n/a	99.700	0.171626253	721,294
Transformer Availability	99.314	98.200	n/a	99.000	n/a	99.700	0.067332290	282,977
Reactive Plant Availability	99.425	97.000	n/a	98.600	n/a	99.300	0.100000000	420,270
Loss of Supply Event Frequency	No.	No.	No.	No.	No.	No.		
Events > 0.05 system minutes	0	8	n/a	5	n/a	3	0.250000000	1,050,675
Events > 0.40 system minutes	1	2	n/a	1	n/a	0	0.000000000	0
Average Outage Restoration	Minutes	Minutes	Minutes	Minutes	Minutes	Minutes		
Circuits, Transformers & Reactive Plant	819.556	1800	1600	1500	1400	800	0.100000000	420,270
					Total S Factor		0.688958543	2,895,486