

27 February 2004

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Regulatory Affairs – Electricity
Australian Competition and Consumer Commission
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By email: sebastian.roberts@accc.gov.au

Dear Sebastian,

Annual Performance Incentive Scheme Report for 2003 Calendar Year

I am pleased to submit with this letter ElectraNet's annual Performance Incentive (PI) Scheme Report for the 2003 calendar year, which has been prepared in accordance with the ACCC's Service Standards Guidelines dated 12 November 2003.

The Guidelines require that ElectraNet report:

- Actual performance against the performance measures decided by the ACCC in ElectraNet's revenue cap decision;
- A list of force majeure events that ElectraNet believes should be excluded from the performance measures, and for each event a description of the event and its impact, quantification of the impact and the reasons for the exclusion request; and
- Calculation of the financial incentive as per the revenue cap decision.

ElectraNet is required to report within two months after the end of the reporting period.

The PI scheme is based on service standard measures that are common to all 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 ElectraNet are defined in the attached paper. These definitions are consistent with the definitions used for submitting data to the ACCC for target setting. ElectraNet's annual performance report has been prepared consistent with these definitions.

ElectraNet's actual performance is shown in the following attachments:

- Annual Performance Incentive Scheme Report – This worksheet summarises actual performance against each performance measure, including calculation of the S factors and financial incentive both with the impact of force majeure events included and excluded;
- Details of Customer Supply Interruptions – This worksheet provides details of unplanned interruptions to customer supply that impact on the Average Outage Duration and Loss of Supply Event Frequency Index performance measures; and
- Transmission Line Circuit Outages – This worksheet provides details of transmission line circuit outages impacting on the Transmission Circuit Availability performance measure.

The latter two more detailed worksheets are provided to assist the ACCC in assessing ElectraNet's performance report. ElectraNet reserves the right to withhold the information contained in these two worksheets from publication by the ACCC.

ElectraNet is requesting a single force majeure exclusion from the Average Outage Duration performance measure.

On 5 June 2003 at approximately 8 pm severe weather conditions including strong winds resulted in equipment damage that interrupted the SA Water Mannum to Adelaide No. 2 pumping station. The duration of the supply outage was 962 minutes.

Restoration of supply was delayed while the extreme wind conditions made it unsafe for personnel to access and replace the damaged equipment.

ElectraNet is requesting that this delay caused by factors outside of its control be excluded from the PI scheme outage duration. Excluding the delay reduces the event outage duration to 257 minutes (the time taken for a response crew to arrive on site and assess the situation as unsafe plus the time taken to replace damaged equipment and restore supply once the extreme weather had subsided making working conditions safe).

Please do not hesitate to contact me on 08 8404 7983 or by email should you require clarification of any of the information provided in this report.

Yours sincerely,



Rainer Korte
NEM DEVELOPMENT AND REGULATION MANAGER

Service Standards Performance Incentive Scheme Implementation for ElectraNet

1. Purpose

In its December 2002 revenue cap decision for ElectraNet, the Australian Competition and Consumer Commission (ACCC) established a Performance Incentive (PI) scheme to provide ElectraNet with additional incentive to maintain and improve service quality.

The PI scheme is based on a number of service standard measures, which are common to all TNSPs. However, the ACCC's November 2003 decision establishing Service Standards Guidelines recognises that there must be flexibility in how these performance measures are implemented for each TNSP:

“For each revenue cap decision in the future, the standard definitions will be modified to align with appropriate information that the TNSP has been collecting in the past. Performance must be measured consistently over time to preserve the incentive for the TNSP to improve.”

The targets in the PI scheme have been set based on ElectraNet's historical performance data. Therefore, the PI scheme is based on the assumption that performance measurement will be consistent with the way in which the historical performance data was derived.

This paper defines the performance measures implemented for ElectraNet consistent with the definitions used for submitting data to the ACCC for target setting and for calculating performance outcomes. The paper also sets out how ElectraNet intends to satisfy its performance reporting requirements.

2. Performance Measures

2.1 Measure 1 - Transmission Circuit Availability

Definition/Formula

$$1 - \frac{\sum (\text{number of interrupted circuit hours})}{\text{total possible circuit hours available}}$$

where:

Circuits include regulated overhead lines and underground cables (each with a designated ElectraNet transmission segment identification number). Transformers, reactive plant and other primary plant are excluded from the performance measure because reliable historical data for these items of plant is unavailable.

number of interrupted circuit 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.

This definition, while expressed differently, is consistent with the definition/formula set out in the ACCC's revenue cap decision. No time, plant type or criticality sub measures have been defined.

Inclusions

Subject to the exclusions specified below, outages on all parts of the *regulated* transmission system from all causes including planned, forced and fault events.

Exclusions

- Unregulated transmission assets.
- Any outages caused by a 3rd party such as intertrip signals, generator outage, customer installation, customer request or NEMMCO direction.
- Outages to control voltages 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 line (e.g. where the transmission line remains energised and available to carry power).
- Transmission lines decommissioned for an extended period of time for major line rebuilding activities, such as restringing, re-insulation or multiple structure replacements.
- Force majeure events (including multiple structure failures)

2.2 Measure 2 - Loss of Supply Event Frequency Index

Definition/Formula

Number of events greater than 0.2 *system minutes* per annum.

Number of events greater than 1.0 *system minute* per annum.

System minutes are calculated for each supply interruption by the "Load Integration Method" using the following formula:

$$\frac{\Sigma (\text{MWh unsupplied} \times 60)}{\text{MW peak demand}}$$

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 and ends when ElectraNet offers supply restoration to the customer.

MW peak demand means the maximum amount of aggregated electricity demand recorded at entry points to the ElectraNet transmission network and interconnector connection points during the financial year in which the event occurs or at any time previously.

Inclusions

Subject to the exclusions specified below, all unplanned customer outages on all parts of the *regulated* transmission system.

Exclusions

- Successful reclose events (less than 1 minute duration).
- Unregulated transmission assets.
- Any outages caused by a 3rd party such as intertrip signals, generator outage, customer installation, customer request or NEMMCO direction.
- Planned outages.
- For supply outages resulting from an interconnector outage, the *Period of the Interruption* is capped at half an hour. This is done to include the impact of automatic under-frequency load shedding, but to exclude the impact of any market failure to respond and restore load within required timeframes (i.e. excluding factors outside of ElectraNet's control).
- Pumping station supply interruptions. These interruptions were excluded from historical data used for target setting due to the highly irregular nature of these loads, which makes accurate estimation of load profiles unreliable.
- Force majeure events.

Notes

The following points further clarify the implementation of the Loss of Supply Frequency Index performance measure:

- The performance measure applies to exit points only.
- An interruption >1.0 system minute also registers as a >0.2 system minute event.
- Where ElectraNet protection operates incorrectly ahead of 3rd party protection, the portion of customer load that would have been lost had ElectraNet protection not operated is removed from the total lost load.

- Where ElectraNet protection operates correctly due to a fault on a 3rd party system no lost load is recorded.
- 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).

2.3 Measure 3 - Average Outage Duration

Definition/Formula

Aggregate minutes duration of all unplanned outages
Number of connection point events

The cumulative summation of the outage duration time for the period, divided by the number of connection point outage events during the period.

where:

Outage duration time for a connection point starts when a loss of supply occurs and ends when ElectraNet offers supply restoration to the customer.

Inclusions

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

Exclusions

- Successful reclose events (less than 1 minute duration).
- 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.
- For supply outages resulting from an interconnector outage, the duration is capped at half an hour. This is done to include the impact of automatic under-frequency load shedding, but to exclude the impact of any market failure to respond and restore load within required timeframes (i.e. excluding factors outside of ElectraNet's control).
- Force majeure events.

Notes

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

- The performance measure applies to exit points only.

- Outage duration extends to the point at which supply restoration is offered to the customer.
- Where ElectraNet protection operates correctly due to a fault on a 3rd party system no outage duration is recorded.

2.4 Measure 4 - Transmission constraints (Intra-regional)

This performance measure has not been implemented at this stage.

2.5 Measure 5 - Transmission constraints (Inter-regional)

This performance measure has not been implemented at this stage.

3. Reporting PI Scheme Performance

The ACCC's Service Standards Guidelines require ElectraNet to report annually on its PI scheme performance, including calculation of the S factor performance outcome.

ElectraNet intends to satisfy its performance reporting obligations as follows:

- All events that fall within the broad definitions of the performance measures as set out in this paper will be reported;
- Force majeure events that ElectraNet believes should be excluded from calculation of the S factor will be identified including the reasons for the exclusion request. The impact of the requested force majeure event on the S factor will be included in the report.

The annual performance report will be submitted to the regulator within two months after the end of the calendar year reporting period, as required by the ACCC guidelines.

4. S Factor Calculation

ElectraNet calculates PI scheme performance in accordance with the S factor equations set out in Appendix 7 of the ACCC's revenue cap decision. These equations are repeated in the following subsections.

The total S factor is equal to the sum of the individual S factors for each performance measure, that is:

$$S=S_1+S_2+S_3+S_4$$

4.1 Circuit Availability

Total circuit availability (%)		Where:	
$S_1 = -0.0035000$		Actual availability	< 98.50
$S_1 = 0.0046667 \times \text{Actual availability} - 0.46317$		98.50 ≤ Actual availability	≤ 99.25
$S_1 = 0.0000000$		Actual availability	= 99.25
$S_1 = 0.0100000 \times \text{Actual availability} - 0.99250$		99.25 < Actual availability	≤ 99.60
$S_1 = 0.0035000$		99.60 < Actual availability	

4.2 Average Outage Duration

Average outage duration (mins)		Where:	
$S_2 = -0.00250000$		190.00 < Actual average outage duration	
$S_2 = -0.00003125 \times \text{Actual average outage duration} + 0.003437$		110.00 < Actual average outage duration	≤ 190.00
$S_2 = 0.00000000$		100.00 ≤ Actual average outage duration	≤ 110.00
$S_2 = -0.00008333 \times \text{Actual average outage duration} + 0.008333$		70.00 ≤ Actual average outage duration	< 100.00
$S_2 = 0.00250000$		Actual average outage duration	< 70.00

4.3 Loss of Supply Event Frequency Index

Loss of supply event frequency index - >0.2 minutes per annum			
Where:			
$S_3 = -0.0010$	Actual frequency	=	10
$S_3 = -0.0007$	Actual frequency	=	9
$S_3 = -0.0003$	Actual frequency	=	8
$S_3 = -0.0002$	Actual frequency	=	7
$S_3 = 0.0000$	Actual frequency	=	6
$S_3 = 0.0000$	Actual frequency	=	5
$S_3 = 0.0002$	Actual frequency	=	4
$S_3 = 0.0003$	Actual frequency	=	3
$S_3 = 0.0007$	Actual frequency	=	2
$S_3 = 0.0010$	Actual frequency	=	1
$S_3 = 0.0010$	Actual frequency	=	0

Loss of supply event frequency index - >1.0 minutes per annum			
Where:			
$S_4 = -0.0030$	Actual frequency	=	5
$S_4 = -0.0015$	Actual frequency	=	4
$S_4 = -0.0005$	Actual frequency	=	3
$S_4 = 0.0000$	Actual frequency	=	2
$S_4 = 0.0008$	Actual frequency	=	1
$S_4 = 0.0030$	Actual frequency	=	0

ElectraNet Annual Performance Incentive Scheme Report

Calendar Year	2003 force majeure events included	2003 force majeure events excluded
S1 - Transmission circuit availability		
Transmission line circuits	107	107
Unavailable hours	3,873	3,873
Availability	99.59%	99.59%
S1	0.337%	0.337%
S2 - Average outage duration (minutes)		
Total connection point duration (minutes)	2,388.00	1,683.00
Connection point outages	24	24
Average Outage Duration	99.50	70.13
S2	0.004%	0.249%
S3 - Loss of supply event frequency index Events >0.2 minutes per annum		
Events > 0.2 System Minutes	2	2
S3	0.070%	0.070%
S4 - Loss of supply event frequency index Events >1.0 minutes per annum		
Events > 1.0 System Minutes	1	1
S4	0.080%	0.080%
Total S Factor = S1 + S2 + S3 + S4	0.491%	0.736%
ARt-2 (2002/2003 financial year)	148,010,000	148,010,000
ARt-1 (2002/2003 financial year)	156,103,395	156,103,395
REVENUE BONUS/ PENALTY (2004/05)	746,541	1,118,748