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Our Ref: NWM-04/0313/005  
Your Ref: e-mail, AER Communication No. 349

4 March 2011

Mr Chris Pattas  
General Manager  
Australian Energy Regulator  
GPO Box 520

Melbourne VIC 3001

Attention: Maria Djopa

Dear Mr Pattas,

## **DISTRIBUTION LOSS FACTORS**

We refer to your e-mail dated 25 November 2010, regarding Distribution Loss Factors (DLFs) and Aurora Energy Pty Ltd's (Aurora) obligations pursuant to the National Electricity Rules (NER) to have approved and submitted DLFs to AEMO for publication by 1 April each year.

In accordance with the provisions of the NER, Aurora's published methodology, and your correspondence, Aurora submits its proposed DLFs for approval and subsequent provision to AEMO.

Aurora engaged ACIL Tasman (ACIL) to assist in the preparation of our proposed DLFs and I have enclosed the ACIL report for your information, as Attachment 1.

DLFs have been calculated for the Tasmanian jurisdiction comprising seven regions. This is consistent with the previous number of regions utilised by Aurora. The seven regions are Hobart, Tamar, East Coast, Derwent, Southern, West Coast, and North West.

These areas have been chosen to account for the variations in the distribution network and the interconnectability of the transmission and distribution systems within greater Hobart and Launceston.

The choice of a Hobart and Tamar regions will require the application of a virtual transmission node for both areas, as agreed in 2005 with the Office of the Tasmanian Energy Regulator (OTTER).

Aurora's forecast DLFs for 2011-2012 for each of the seven regions are shown in the following tables.

**Table 1 – Hobart Region DLFs**

Distribution Network Level	Region	DLF Code	Section DLF (including non-technical losses)	Cumulative DLF (including non-technical losses)
Subtransmission Network	Hobart	PHST	1.0033	1.0033
Zone Substation	Hobart	PHZN	1.0020	1.0053
HV Distribution Network	Hobart	PHHV	1.0090	1.0144
Distribution Substation	Hobart	PHDS	1.0168	1.0373
LV Distribution Network	Hobart	PHLV	1.0260	1.0642

**Table 2 – Tamar Region (incorporating Launceston) DLFs**

Distribution Network Level	Region	DLF Code	Section DLF (including non-technical losses)	Cumulative DLF (including non-technical losses)
Subtransmission Network	Tamar	PTST	1.0000	1.0000
Zone Substation	Tamar	PTZN	1.0000	1.0000
HV Distribution Network	Tamar	PTHV	1.0096	1.0096
Distribution Substation	Tamar	PTDS	1.0193	1.0352
LV Distribution Network	Tamar	PTLV	1.0260	1.0620

**Table 3 – East Coast Region DLFs**

Distribution Network Level	Region	DLF Code	Section DLF (including non-technical losses)	Cumulative DLF (including non-technical losses)
Subtransmission Network	East Coast	PEST	1.0000	1.0000
Zone Substation	East Coast	PEZN	1.0000	1.0000
HV Distribution Network	East Coast	PEHV	1.0176	1.0176
Distribution Substation	East Coast	PEDS	1.0336	1.0580
LV Distribution Network	East Coast	PELV	1.0260	1.0854

**Table 4 – North West Region DLFs**

Distribution Network Level	Region	DLF Code	Section DLF (including non-technical losses)	Cumulative DLF (including non-technical losses)
Subtransmission Network	North West	PNST	1.0000	1.0000
Zone Substation	North West	PNZN	1.0000	1.0000
HV Distribution Network	North West	PNHV	1.0151	1.0151
Distribution Substation	North West	PNDS	1.0298	1.0526
LV Distribution Network	North West	PNLV	1.0260	1.0799

**Table 5 – Derwent Region DLFs**

Distribution Network Level	Region	DLF Code	Section DLF (including non-technical losses)	Cumulative DLF (including non-technical losses)
Subtransmission Network	Derwent	PDST	1.0000	1.0000
Zone Substation	Derwent	PDZN	1.0000	1.0000
HV Distribution Network	Derwent	PDHV	1.0147	1.0147
Distribution Substation	Derwent	PDDS	1.0275	1.0484
LV Distribution Network	Derwent	PDLV	1.0260	1.0756

**Table 6 – Southern Region DLFs**

Distribution Network Level	Region	DLF Code	Section DLF (including non-technical losses)	Cumulative DLF (including non-technical losses)
Subtransmission Network	Southern	PSST	1.0000	1.0000
Zone Substation	Southern	PSZN	1.0000	1.0000
HV Distribution Network	Southern	PSHV	1.0140	1.0140
Distribution Substation	Southern	PSDS	1.0267	1.0464
LV Distribution Network	Southern	PSLV	1.0260	1.0736

**Table 7 – West Coast Region DLFs**

Distribution Network Level	Region	DLF Code	Section DLF (including non-technical losses)	Cumulative DLF (including non-technical losses)
Subtransmission Network	West Coast	PWST	1.0014	1.0014
Zone Substation	West Coast	PWZN	1.0000	1.0014
HV Distribution Network	West Coast	PWHV	1.0081	1.0095
Distribution Substation	West Coast	PWDS	1.0295	1.0571
LV Distribution Network	West Coast	PWLV	1.0260	1.0845

The DLFs have been calculated in accordance with the methodology developed for Aurora by BES (Aust) Pty Ltd in 2004. This methodology is attached for your information, as attachment 2.

Aurora wishes to apply these DLFs to the transmission connection points detailed in Appendix 1.

Site specific DLFs have been calculated for the following customers in accordance with the requirements of the NER.

**Table 8 – Site Specific DLFs**

NMI	Region	DLF Code	DLF
8000000656	North West	PSPU	1.0034
8000003578	West Coast	PBSM	1.0070
8000003585	North West	PACH	1.0000
8000003691	Tamar	PBGM	1.0117
8000003868	West Coast	PHGM	1.0000

Within the Tasmanian jurisdiction the boundary between the transmission and distribution assets is recognised at the load side of the 44kV, 33kV, 22kV and 11kV feeder circuit breakers located within the Transmission Network Service Providers, Transend Networks Pty Ltd's (Transend), terminal substations.

The DLFs have been calculated assuming a network boundary exists between the transmission and distribution assets at the 44kV, 33kV, 22kV and 11kV bus bar located within Transend's terminal substations. This methodology is consistent with the methodology utilised by Transend to calculate the Marginal Loss Factors (MLFs) for each of its terminal substations.

We would be happy to further discuss this methodology with you at any time.

Yours sincerely



Leigh Mayne  
Network Regulatory Manager

## **Appendix 1**

**Table 9 – Hobart Region Transmission Nodes**

<b>Zone Substation</b>	<b>Distribution connection voltage</b>	<b>TNI</b>
Chapel Street	11kV	TCS3
Creek Road	33kV	TCR2
Lindisfarne	33kV	TLF2
North Hobart	11kV	TNH2
Risdon	33kV	TRI4
Rokeby	11kV	TRK2

The Hobart region transmission nodes (TCS3, TCR2, TLF2, TNH2, TRI4 & TRK2) are to be averaged as a single Virtual Transmission Node (VTN) in accordance with the provisions of the NER.

The TNI for this existing VTN is TVN1.

**Table 10 – Tamar Region Transmission Nodes**

<b>Zone Substation</b>	<b>Distribution connection voltage</b>	<b>TNI</b>
Hadspen	22kV	THA3
Mowbray	22kV	TMY2
Norwood	22kV	TNW2
Trevallyn	22kV	TTR2
George Town	22kV	TGT3

The Tamar region transmission nodes (THA3, TMY2, TNW2, TTR2 & TGT3) are to be averaged as a single VTN in accordance with the provisions of the NER.

The TNI for this existing VTN is TVN2.

**Table 11 – Southern Region Transmission Nodes**

<b>Zone Substation</b>	<b>Distribution connection voltage</b>	<b>TNI</b>
Electrona	11kV	TEL2
Kermandie	11kV	TKE2
Kingston	11kV	TKI2
Knights Road	11kV	TKR2

**Table 12 – East Coast Region Transmission Nodes**

<b>Zone Substation</b>	<b>Distribution connection voltage</b>	<b>TNI</b>
Avoca	22kV	TAV2
Derby	22kV	TDE2
Scottsdale	22kV	TSD2
Sorell	22kV	TSO2
St Marys	22kV	TSM2
Triabunna	22kV	TTB2

**Table 13 – North West Region Transmission Nodes**

<b>Zone Substation</b>	<b>Distribution connection voltage</b>	<b>TNI</b>
Burnie	22kV	TBU3
Devonport	22kV	TDP2
Emu Bay	11kV	TEB2
Palmerston	22kV	TPM3
Port Latta	22kV	TPL2
Railton	22kV	TRA2
Smithton	22kV	TST2
Ulverstone	22kV	TUL2
Wesley Vale	11kV	TWV2

**Table 14 – West Coast Region Transmission Nodes**

<b>Zone Substation</b>	<b>Distribution connection voltage</b>	<b>TNI</b>
Newton	22kV	TNT2
Queenstown	22kV	TQT2
Rosebery	44kV	TRB2
Savage River	22kV	TSR2

**Table 15 – Derwent Region Transmission Nodes**

<b>Zone Substation</b>	<b>Distribution connection voltage</b>	<b>TNI</b>
Arthurs Lake	22kV	TAL2
Bridgewater	11kV	TBW2
Derwent Bridge	22kV	TDB2
Meadowbank	22kV	TMB2
New Norfolk	22kV	TNN2
Tungatinah	22kV	TTU2
Waddamana	22kV	TWA2
Wayatinah	22kV	TWY2