# **ETSA** Utilities

a partnership of:
Spark Infinstructure SA (No. 1) Pty Ltd
ABN 54 091 142 580
Spark Infinstructure SA (No. 2) Pty Ltd
ABN 19 091 143 038
Spark Infinstructure SA (No. 3) Pty Ltd
ABN 19 091 143 038
Spark Infinstructure SA (No. 3) Pty Ltd
ABN 50 091 142 562
each incorporated in Australia
CKI Utilities Development Limited
ABN 65 090 718 891
HEI Utilities Development Limited
ABN 82 090 718 951

each incorporated in The Bahamas

13 March 2009

Paul Dunn Network Regulation South Australian Energy Regulator GPO Box 520 Melbourne Vic 3001

Dear Paul,

### **REVIEW OF DISTRIBUTION LOSS FACTORS FOR 2009/10**

As required by clause 3.6.3 (i) of the National Electricity Rules (NER), ETSA Utilities seeks approval from the AER for the distribution loss factors (DLF's) described below to apply in the financial year 2009/10. ETSA Utilities understands that, following the AER's approval, the AER will notify NEMMCO of the distribution loss factors to apply in 2009/10.

The methodology applied to calculate the DLFs for 2009/10 is the same as that applied in previous DLF submissions to both the AER and ESCOSA. We understand that ESCOSA will advise the AER of this submission's compliance with existing policies. ETSA Utilities has forwarded a copy of this submission to the South Australian jurisdictional regulator, ESCOSA.

#### Distribution Losses Outcome 2007/08

Actual distribution losses are calculated by subtracting sales from purchases for energy usage. The resulting distribution losses were calculated to be 706 GWh (5.86% of purchases). However, the distribution losses recovered by the 2007/08 distribution loss factors recovered 737 GWh of losses, 31 GWh above the actual losses (Attachment 1).

The table below details the actual losses over the past seven years and forecasts the 2008/09 and 2009/10 losses. The net over recovery at 30 June 2008 was 73 GWh. The net over/(under) recovery is projected to decline to zero over the coming three to four years if the proposed distribution connection point class and site specific loss factors are used in 2009/10. The zero net over/(under) recovery target is in line with the policy adopted since ESCOSA have been involved in approving DLF's.

	Actual Distribution losses GWh		Losses recovered by DLF's GWh	Losses Recovered as a percentage of purchases	Over (Under) recovery of actual Losses GWh	Balance Over (Under) recovery of actual Losses GWh
1999/00	627	5.95%	670	6.36%	43	43
2000/01	721	6.55%	699	6.35%	-22	21
2001/02	584	5.44%	650	6.05%	66	87
2002/03	642	5.80%	679	6.13%	37	124
2003/04	692	6.19%	637	5.70%	-55	69
2004/05	666	5.96%	641	5.74%	-25	44
2005/06	718	6.15%	706	6.04%	-13	31
2006/07	716	5.98%	727	6.07%	11	42
2007/08	706	5.86%	737	6.12%	31	73
Estimated	1 2008/09	6.00%		6.07%	10	83
Forecast 2009/10		6.00%		5.63%	-45	38

### Site Specific Loss Factors 2009/10

The National Electricity Rules (NER) requires ETSA Utilities to calculate site specific distribution loss factors for all distribution connection points with an annual consumption greater than 40 GWh or forecast peak load greater than 10 MW (clause 3.6.3 (b) (2) (i) B).

These calculations have been performed using typical customer and network load configurations to determine an average loss factor. The site specific distribution loss factor calculations were undertaken in March 2003 for their first inclusion in our loss factors. ETSA Utilities reviews the site specific distribution loss factors for application each year. We propose the same site specific loss factors apply in 2009/10 as there has been negligible change.

Connection points not of a type described in clause 3.6.3 (b) (2) (i) of the NER have been assigned to a class of distribution connection points based on their voltage and location. Typically, this loss-factor allocation is consistent with the distribution tariff used (see the table below).

#### <u>Distribution Loss Factors 2009/10</u>

Site specific distribution loss factors have been tabled below. The actual GWh distribution losses determined at each site is used in the calculation for the overall distribution loss factors.

The distribution loss factors for 2009/10 for each of the distribution connection point classes were calculated with reference to achieving a net over/(under) recovery of losses of approximately zero in the coming three to four years. The historic differential in loss factors between voltage levels has been retained from previous loss factor calculations, representing the average level of losses incurred on each voltage segment in a state-wide distribution system.

Applying these principles to 2007/08 sales data (the latest complete data available) indicates the target level of losses to recover should be 678 GWh (derived as 6.00% of 12,053 GWh purchased less 45 GWh over recovery).

The proposed 2009/10 loss factors to be applied to the distribution connection point classes will decrease from those applied in 2008/09. Attachment 2 contains the detailed calculation of losses to be recovered.

The tables below contain the distribution loss factors to be applied in the 2009/10 financial year.

# **Distribution Connection Point Class DLFs**

Class	Tariff	MSATS DLF Code	2009/10 DLF	2008/09 DLF
	Unmetered	NLV2	1.0740	1.0790
	Residential	NLV2	1.0740	1.0790
Low Voltage	Controlled Load	NLV2	1.0740	1.0790
Voltage	Business Single Rate	NLV2	1.0740	1.0790
	Business Two Rate	NLV2	1.0740	1.0790
Low	Medium LV	NLV1	1.0591	1.0640
Voltage	LV Demand	NLV1	1.0591	1.0640
T/F	Large LV Demand	NLV1	1.0591	1.0640
HV	HV	NHV1	1.0353	1.0401
Substatio	Substation	NZS1	1.0164	1.0211

## Site Specific DLF

Distribution Connection Point	NMI	MSATS DLF Code	2009/10 DLF	2008/09 DLF
BOC GASES AUSTRALIA LTD	2001000378	NBA1	1.0000	1.0000
OI - ACI GLASS ADELAIDE - KILKENNY	2001000608	NAC2	1.0135	1.0135
KIMBERLY CLARK AUSTRALIA	2002112609	NKC4	1.0057	1.0057
GENERAL MOTORS HOLDEN	2002133131	NGM2	1.0115	1.0115
NYRSTAR PT PIRIE SMELTER-ZINC	SAAAAAA018	NPS1	1.0000	1.0000
NYRSTAR PT PIRIE SMELTER-ZINC	SAAAAAA019	NPS2	1.0069	1.0069
NYRSTAR PT PIRIE SMELTER-LEAD	SAAAAAA021	NPS3	1.0069	1.0069
GENERAL MOTORS HOLDEN	SAAAAAA022	NGM1	1.0107	1.0107
ADELAIDE BRIGHTON CEMENT LTD-	SAAAAAA024	NAB1	1.0077	1.0077
OI - ACI GLASS PACKAGING AUSTRALIA	SAAAAAA026	NAC1	1.0218	1.0218
MITSUBISHI MOTORS	SAAAAAA029	NMM1	1.0145	1.0145
GREEN TRIANGLE FOREST PRODUCT	SAAAAAA035	NGT1	1.0048	1.0048
ONE STEEL WHYALLA	SAAAAAA084	NOS1	1.0000	1.0000
INTERCAST & FORGE	SAAAAAA438	NIF1	1.0091	1.0091
ONE STEEL	SAAAAAB557	NOS2	1.0000	1.0000

#### **Embedded Generators**

In accordance with clause 3.6.3 (b) (2) (i) A, ETSA Utilities has previously calculated site specific distribution loss factors to apply to embedded generators at Lonsdale, Starfish Hill, Canunda and Angaston. These individual calculations were reviewed by ESCOSA at that time and approved

ETSA Utilities reviewed all site specific distribution loss factors for Embedded Generators for application in 2009/10 and proposes to the AER that they remain unchanged from the 2008/09 factors.

Distribution Connection Point	NMI	MSATS DLF Code	2009/10 DLF	2008/09 DLF
LONSDALE GENERATION	2001000647	NCL1	1.0226	1.0226
STARFISH HILL GENERATION	2001000734	NSHW	1.0092	1.0092
CANUNDA GENERATION	2002108658	NCDW	0.9721	0.9721
ANGASTON PS 1 GENERATION	2002108660	NAS1	0.9900	0.9900
ANGASTON PS 2 GENERATION	2002108661	NAS2	0.9900	0.9900

The smaller embedded generators (land fill gas, mini-hydro and other plant less than 10MW) are assigned to a distribution loss factor according to the voltage of their connection/metering point. Many of these are connected to high voltage whilst the small photo-voltaic installations are automatically assigned the same low voltage distribution loss factor as the related customer load

If you have any queries on this subject, please call Peter Bucki on (08) 8404 5679.

Yours sincerely,

**Eric Lindner** 

GENERAL MANAGER REGULATION and COMPANY SECRETARY

cc Bob Burgstad, Director Technical, ESCOSA

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### 2007/08 Actual Sales, Purchases and Losses

Purchases From ElectraNet 07/08 11,727.734
Distributed Generation (incl losses) 325.081

Total Purchases 12,052.814

	<b>MSATS DLF</b>			Losses
	Code	Sales	<b>DLF Applied</b>	Recovered
Unmetered	NLV2	109.093	7.99%	8.717
Residential	NLV2	3,638.399	7.99%	290.708
Controlled Load (HW)	NLV2	695.511	7.99%	55.571
Bus Single	NLV2	880.002	7.99%	70.312
Bus 2 rate	NLV2	1,651.861	7.99%	131.984
Med LV	NLV1	6.674	6.49%	0.433
LV T/F	NLV1	1,934.274	6.49%	125.534
Lge LV	NLV1	65.837	6.49%	4.273
HV	NHV1	941.384	4.09%	38.503
S/Stn Non Loc	NZS1	155.776	2.19%	3.411
S/Stn Loc		603.651		6.163
Subtran Loc		664.640		1.493
Total	_	11,347.103	_	737.102

Losses Recovered from DLF's 737.102 % Sales 6.50% % Purchases 6.12%

Losses Actual 705.712 % Sales 6.22% % Purchases 5.86%

		MSATS DLF	Network	Usage	Individual	Individual Losses
Name	NMI	Code	Tariff	2007/08 kWh	DLF 2007/8	GWh 2007/8
BOC GASE	2001000378	NBA1	Subtran	97.56	1.0000	=
KIMBERLY	2002112609	NKC4	Subtran	262.00	1.0057	1.493
PASMINC(SAAA	4AAA018	NPS1	Subtran	148.02	1.0000	-
ONE STEESAA	4AAA084	NOS1	Subtran	131.55	1.0000	-
ONE STEESAA	AAAB557	NOS2	Subtran	25.51	1.0000	-
ACI GLASS	2001000608	NAC2	S/Stn	41.26	1.0135	0.557
GENERAL	2002133131	NGM2	S/Stn	56.18	1.0115	0.646
PASMINC(SAAA	4AAA019	NPS2	S/Stn	26.92	1.0069	0.186
PASMINC(SAAA	4AAA021	NPS3	S/Stn	96.41	1.0069	0.665
GENERAL SAAA	4AAA022	NGM1	S/Stn	55.95	1.0107	0.599
ADELAIDE SAA	4AAA024	NAB1	S/Stn	135.86	1.0077	1.046
ACI GLAS(SAA	AAAA026	NAC1	S/Stn	58.35	1.0218	1.272
MITSUBISISAA	AAAA029	NMMA	S/Stn	32.78	1.0145	0.475
GREEN TF SAA	4AAA035	NGT1	S/Stn	44.87	1.0048	0.215
INTERCASSAA	4AAA438	NIF1	S/Stn	55.07	1.0091	0.501
				1,268.291		7.656
TOTAL LOC			Subtran	664.640		1.493
TOTAL LOC			S/Stn	603.651		6.163
TOTAL LOC				1,268.291		7.656

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# **Distribution Loss Factors for 2009/10**

Total Purchases 2007/08	12,052.81
Losses Forecast 2009/10	6.00%
Underlying Losses	723.169
plus over / (under) recovery	-44.986
Losses recovered by DLF's	678.183

	MSATS DLF Code	Sales 2007/08 (GWh)	New DLF 09/10	Losses Recovered via DLF (GWh)
Unmetered	NLV2	109.093	1.0740	8.073
Residential	NLV2	3,638.399	1.0740	269.241
Controlled Load (HW)	NLV2	695.511	1.0740	51.468
Bus Single	NLV2	880.002	1.0740	65.120
Bus 2 rate	NLV2	1,651.861	1.0740	122.238
Med LV	NLV1	6.674	1.0591	0.394
LV T/F	NLV1	1,934.274	1.0591	114.316
Lge LV	NLV1	65.837	1.0591	3.891
HV	NHV1	941.384	1.0353	33.231
S/Stn Non Loc	NZS1	155.776	1.0164	2.555
S/Stn Loc		603.651		6.163
Subtran Loc		664.640		1.493
Total Sales		11,347.103		678.183

Nome	NMI	MSATS DLF	Network	Usage 2007/08 kWh	Individual DLF	Individual Losses GWh
Name		Code	Tariff		2009/10	2009/10
BOC GASES AUSTRALI			Subtran	97.56	1.0000	-
KIMBERLY CLARK AUS			Subtran	262.00	1.0057	1.493
PASMINCO PT PIRIE SI			Subtran	148.02	1.0000	-
ONE STEEL WHYALLA	SAAAAAA8	NOS1	Subtran	131.55	1.0000	-
ONE STEEL	SAAAAAB55	NOS2	Subtran	25.51	1.0000	-
ACI GLASS ADELAIDE -	2.001E+09	NAC2	S/Stn	41.26	1.0135	0.557
GENERAL MOTORS HC	2.002E+09	NGM2	S/Stn	56.18	1.0115	0.646
PASMINCO PT PIRIE SI	SAAAAAA01	NPS2	S/Stn	26.92	1.0069	0.186
PASMINCO PT PIRIE SI	SAAAAAA02	NPS3	S/Stn	96.41	1.0069	0.665
GENERAL MOTORS HC	SAAAAAA02	NGM1	S/Stn	55.95	1.0107	0.599
ADELAIDE BRIGHTON (	SAAAAAA02	NAB1	S/Stn	135.86	1.0077	1.046
ACI GLASS PACKAGINO	SAAAAAA02	NAC1	S/Stn	58.35	1.0218	1.272
MITSUBISHI MOTORS	SAAAAAA02	NMMA	S/Stn	32.78	1.0145	0.475
<b>GREEN TRIANGLE FOR</b>	<b>SOAAAAA</b>	NGT1	S/Stn	44.87	1.0048	0.215
INTERCAST & FORGE	SAAAAAA43	NIF1	S/Stn	55.07	1.0091	0.501
				1,268.291		7.656
TOTAL LOC			Subtran	664.640		1.493
TOTAL LOC			S/Stn	603.651		6.163
			3/311			
TOTAL LOC				1,268.291		7.656

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