2014/15 Loss Factor Report

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Prepared by: Regulation and Investment Management

Contents

1 Introduction

This report details the loss factors calculated for the 2014/15 financial year as required by section 2.27 of the Market Rules.

To comply with the obligations under section 2.27 of the Market Rules Western Power has:

- Recalculated all transmission loss factors
- Recalculated all average distribution loss factors
- Recalculated all individual distribution loss factors for customers with a CMD greater than 7,000 kVA
- Recalculated all individual distribution loss factors for customers with a CMD between 1,000 and 7,000 kVA located greater than 10 km from the electrically closest substation
- Recalculated the individual distribution loss factors for customers with a CMD between 1,000 and 7,000 kVA located less than 10 km from the electrically closest substation, where an individual distribution loss factor has been elected by the associated retailer
- Recalculated all individual distribution loss factors for distribution connected generation customers

2 Basis for calculation

Western Power calculates loss factors in accordance with the *Market procedure for determining loss factors*. The following sections provide further detail on the methodology used by Western Power in calculating loss factors.

2.1 Transmission loss factors

Western Power has calculated the transmission loss factors in accordance with section 4.1 of the *Market procedure for determining loss factors* using the software package T-price. T-price is also used by the Australian Energy Market Operator in determining loss factors in the National Electricity Market.

2.2 Average distribution loss factors

Western Power has calculated the average distribution loss factors in accordance with section 4.2 of the *Market procedure for determining loss factors*.

The methodology calculates the average distribution loss factors by:

- Determining losses within the zone substation transformers
- Determining HV feeder losses
- Determining distribution transformer losses
- Determining LV feeder losses (allowing separately for residential and commercial losses)

Western Power allocates the average distribution losses based on the usage of the various components of the network. An appropriate basis for this allocation is the reference services (offered in Western Power's access arrangement) and in accordance with the *Market procedure for determining loss factors* Western Power has determined an average loss factor for relevant reference services.

2.3 Individual distribution loss factors

Western Power calculates the individual distribution loss factors in accordance with section 4.2 of the *Market procedure for determining loss factors*.

The methodology used to calculate the individual distribution loss factors uses the formulae and methodology detailed in Schedule 4 of the Electricity Distribution Regulations 1997.[1] Schedule 4 of the Electricity Distribution Regulations 1997 is reproduced below:

1.	To calculate the loss factor for a distribution connection which is an exit point a corporation must follow the following steps:
(a)	the corporation must determine the line losses assuming the distribution connection was not there and assuming feeder maximum load;

[1] For sites supplied from multiple feeders the distribution loss factor has been determined as if the load is evenly split across the feeders. The resultant distribution loss factor is the average of the calculated distribution loss factors.

(b) the corporation must determine the line losses assuming only the distribution connection was there and assuming feeder maximum load;

(c) the corporation must determine the total line losses assuming all the distribution connections are there (including the distribution connection for which the loss factor is being determined) and assuming feeder maximum load;

(d) the corporation must allocate a share of the total line losses calculated under step (c) to the distribution connection for which the loss factor is being determined based on the ratio of the result of step (b) and the sum of the results of steps (a) and (b);

(e) the corporation must calculate the loss factor for the distribution connection by applying the following formula:

$$LFExit = 1 + \frac{A}{B}$$

where —

A (in kW) is the share of the total line losses allocated to the distribution connection under step (d);

B (in kW) is the contract maximum demand for the distribution connection.

2. To calculate the loss factor for a distribution connection which is an entry point a corporation must follow the following steps:

(a) the corporation must determine the line losses assuming the distribution connection was not there and assuming feeder maximum load;

(b) the corporation must determine the total line losses assuming all the distribution connections are there (including the distribution connection for which the loss factor is being determined) and assuming feeder maximum load;

(c) the corporation must calculate the loss decrease or increase for the distribution connection for which the loss factor is being determined by subtracting the result of step (b) from the result of step (a);

(d) the corporation must calculate the loss factor for the distribution connection by applying the following formula:

$$LFEntry = 1 + \frac{A}{B}$$

where —

A (in kW) is the loss increase or decrease calculated for the distribution connection under step (c);

B (in kW) is the declared sent-out capacity for the distribution connection.

3 Transmission Loss Factors

Western Power has calculated the following transmission loss factors for the 2014/15 financial year.

Table 1 - Transmission Loss Factors

TLF Code	Description	Applied in 2013/14	To apply in 2014/15
TAPA	Alcoa Pinjarra (Alcoa)	0.9951	1.0045
TAPL	Alcoa Pinjarra (Alinta)	0.9905	0.9995
TBLB	Bluewaters (BWP)	0.9992	1.0004
TBLS	Boulder (SCE)	1.2002	1.1716
TKRA	Karara Three Springs	1.0409	1.0660
TLWA	Landweir (Alinta)	1.0112	1.0132
TMBA	Mumbida Wind Farm	1.0353	0.9097
TMDP	Merredin Power Station (Nammarkin)	1.0405	0.9629
TMGS	Greenough River Solar Farm (Mungarra)	1.0227	1.0329
TMSK	Mason Road (KPP)	1.0217	1.0222
TOLA	Oakley (Alinta)	1.0131	1.0161
TSAV	Transmission SWIN Average	1.0434	1.0432
TUAV	Transmission Urban Average	1.0404	1.0431
TWKG	West Kalgoorlie GTs	1.1535	1.0821
TWOJ	Worsley (Joint Venture)	0.9846	0.9866
TWOW	Worsley (Worsley)	0.9886	0.9898
WAFM	Australian Fused Materials	1.0241	1.0247
WAKW	Kwinana Alcoa	1.0214	1.0231
WALB	Albany	1.0699	1.0926
WAMT	Amherst	1.0369	1.0398
WAPM	Australian Paper Mills	1.0407	1.0427
WARK	Arkana	1.0418	1.0454
WBCH	Beechboro	1.0419	1.0457
WBDE	Baandee (WC)	1.0969	1.0857
WBDP	Binningup Desalination Plant	1.0109	1.014
WBEC	Beckenham	1.0301	1.0327
WBEL	Belmont	1.032	1.0349
WBGM	Boddingtom Gold Mine	1.0081	1.0098
WBHK	Broken Hill Kwinana	1.0236	1.0261
WBIB	Bibra Lake	1.0312	1.0332
WBKF	Black Flag	1.2030	1.1663

TLF Code	Description	Applied in 2013/14	To apply in 2014/15
WBLD	Boulder	1.1997	1.1607
WBNP	Beenup	1.0270	1.0252
WBNY	Bounty	1.0913	1.0847
WBOD	Boddington	1.0068	1.0088
WBPM	British Petroleum	1.0246	1.0263
WBSI	Marriott Road Barrack Silicon Smelter	1.0121	1.0145
WBSN	Busselton	1.0497	1.0535
WBTN	Bridgetown	1.0131	1.0117
WBTY	Bentley	1.0344	1.0375
WBUH	Bunbury Harbour	1.0160	1.0170
WBYF	Byford	1.0319	1.0347
WCAP	Capel	1.0353	1.0369
WCAR	Carrabin	1.1873	1.1586
WCBP	Mason Road CSBP	1.0227	1.0235
WCCL	Cockburn Cement Ltd	1.0259	1.0280
WCCT	Cockburn Cement	1.0277	1.0299
WCGW	Collgar Windfarm	1.0146	0.9984
WCKN	Clarkson	1.0416	1.0474
WCKT	Cook Street	1.0452	1.0488
WCLN	Clarence Street	1.0402	1.0436
WCLP	Coolup	1.0464	1.0474
WCOE	Collie	1.0198	1.0188
WCOL	Collier	1.0401	1.0433
WCPN	Chapman	1.0520	1.0354
WCPS	Collie PWS	0.9956	0.9969
WCTE	Cottesloe	1.0414	1.0444
WCUN	Cunderdin	1.1068	1.0933
WCVE	Canning Vale	1.0296	1.0323
WDTN	Darlington	1.0404	1.0442
WDUR	Durlacher	1.0507	1.0336
WEDD	Edmund Street	1.0394	1.0418
WEDG	Edgewater	1.0454	1.0507
WEMD	Emu Downs	0.9937	1.0021
WENB	Eneabba	1.0374	1.0596
WFFD	Forrestfield	1.0390	1.0431

TLF Code	Description	Applied in 2013/14	To apply in 2014/15
WFRT	Forrest Ave	1.0470	1.0506
WGGV	Golden Grove	1.0732	1.0724
WGNI	Glen Iris	1.0261	1.0288
WGNL	Gosnells	1.0306	1.0336
WGNN	Newgen Neerabup	1.0379	1.0393
WGTN	Geraldton	1.0507	1.0336
WHAY	Hay Street	1.0451	1.0488
WHBK	Henley Brook	1.0414	1.0452
WHEP	Herdsman Parade	1.0485	1.0521
WHFS	Hadfields	1.0432	1.0473
WHIS	Mason Road Hismelt	1.0226	1.0230
WHZM	Hazelmere	1.0360	1.0394
WJDP	Joondalup	1.0424	1.0471
WJTE	Joel Terrace	1.0451	1.0486
WKAT	Katanning	1.0260	1.0553
WKDA	Kalamunda	1.0412	1.0450
WKDL	Kewdale	1.0318	1.0345
WKDN	Kondinin	1.0620	1.0478
WKDP	Kwinana Desalination Plant	1.0223	1.0236
WKEL	Kellerberrin	1.1067	1.0895
WKEM	Kemerton PWS	1.0079	1.0106
WKMC	Cataby Kerr McGee	1.0362	1.0534
WKMK	Kerr McGee Kwinana	1.0202	1.0210
WKMM	Muchea Kerr McGee	1.0368	1.0428
WKND	Kwinana Donaldson Road (Western Energy)	1.0204	1.0286
WKOJ	Kojonup	1.0283	1.0334
WKPS	Kwinana PWS	1.0201	1.0212
WLDE	Landsdale	1.0443	1.0488
WMAG	Manning Street	1.0447	1.0491
WMBR	Mt Barker	1.0666	1.0744
WMCR	Medical Centre	1.0465	1.0501
WMDN	Maddington	1.0305	1.0334
WMED	Medina	1.0274	1.0291
WMER	Merredin 66kV	1.0975	1.0758
WMGA	Mungarra GTs	1.0353	1.0146

TLF Code	Description	Applied in 2013/14	To apply in 2014/15
WMHA	Mandurah	1.0275	1.0319
WMIL	Milligan Street	1.0444	1.0485
WMJP	Manjimup	1.0192	1.0180
WMJX	Midland Junction	1.0368	1.0406
WMLG	Malaga	1.0395	1.0436
WMOR	Moora	1.0539	1.0575
WMOY	Morley	1.0441	1.0480
WMPS	Muja PWS	1.000	1.000
WMRR	Marriot Road	1.0104	1.0127
WMRV	Margaret River	1.0851	1.0986
WMSR	Mason Road	1.0216	1.0227
WMSS	Meadow Springs	1.0269	1.0308
WMUC	Muchea	1.0386	1.0449
WMUL	Mullaloo	1.0436	1.0488
WMUR	Murdoch	1.0278	1.0305
WMWR	Mundaring Weir	1.0492	1.0506
WMYR	Myaree	1.0451	1.0477
WNBH	North Beach	1.0448	1.0491
WNED	Nedlands	1.0471	1.0505
WNFL	North Fremantle	1.0403	1.0428
WNGK	NewGen Kwinana	1.0224	1.0243
WNGN	Narrogin	1.0494	1.0485
WNOR	Northam	1.0652	1.0643
WNPH	North Perth	1.0453	1.0488
WOCN	O'Connor	1.0433	1.0457
WOPK	Osborne Park	1.0445	1.0488
WPBY	Padbury	1.0452	1.0500
WPCY	Piccadilly	1.2039	1.1660
WPIC	Picton 66kv	1.0157	1.0163
WPJR	Pinjar	1.0312	1.0396
WPKS	Parkeston	1.2012	1.1604
WPLD	Parklands	1.0263	1.0303
WPNJ	Pinjarra	1.0184	1.0226
WRAN	Rangeway	1.0511	1.0339
WRGN	Regans	1.0459	1.0720

TLF Code	Description	Applied in 2013/14	To apply in 2014/15
WROH	Rockingham	1.0276	1.0294
WRTN	Riverton	1.0291	1.0317
WRVE	Rivervale	1.0322	1.0350
WSFT	South Fremantle 66kV	1.0246	1.0246
WSNR	Southern River	1.0299	1.0326
WSPA	Shenton Park	1.0458	1.0493
WSUM	Summer St	1.0458	1.0496
WSVY	Sawyers Valley	1.0460	1.0502
WTLN	Tomlinson Street	1.0333	1.0378
WTSG	Three Springs	1.0481	1.0478
WTTS	Tate Street	1.0341	1.0368
WUNI	University	1.0469	1.0504
WVPA	Victoria Park	1.0352	1.0352
WWAG	Wagin	1.0429	1.0546
WWAI	Waikiki	1.0287	1.0309
WWCL	Western Collieries	0.9956	0.9951
WWDN	Wembley Downs	1.0481	1.0515
WWEB	WEB Grating	1.0373	1.0373
WWEL	Welshpool	1.0317	1.0345
WWGA	Wangara	1.0439	1.0480
WWGP	Wagerup	0.9868	0.9924
WWKT	West Kalgoorlie	1.1819	1.1535
WWLN	Willeton	1.0289	1.0318
WWMG	Western Mining	1.0237	1.0247
WWNO	Wanneroo	1.0385	1.0450
WWNT	Wellington Street	1.0468	1.0505
WWSD	Westralian Sands	1.0298	1.0306
WWUN	Wundowie	1.0671	1.0654
WWWF	Walkaway Windfarm	0.9560	0.9027
WYCP	Yanchep	1.0379	1.0442
WYER	Yerbillon	1.1929	1.1640
WYKE	Yokine	1.0439	1.0479
WYLN	Yilgarn	1.1184	1.0890

4 Average Distribution Loss Factors

Western Power has calculated the following average distribution loss factors for the 2014/15 financial year.

Table 2 - Average Distribution Loss Factors

DLF Code	Description	Applied in 2013/14	To apply in 2014/15
QRT1	A1 - Anytime Energy (Residential)	1.0725	1.0770
QRT2	A2 - Anytime Energy (Business)	1.0444	1.0465
QRT3	A3 - Time of Use Energy (Residential)	1.0725	1.0770
QRT4	A4 - Time of Use Energy (Business)	1.0444	1.0465
QRT5	A5 - High Voltage Metered Demand	1.0195	1.0202
QRT6	A6 - Low Voltage Metered Demand	1.0347	1.0359
QR7Z	A7 - High Voltage Contract Maximum Demand (Zone Substation Connected)	1.0055	1.0055
QZSC	Zone Substation Connections	1.0055	1.0055
QNLF	Transmission Connected (No DLF)	1.0000	1.0000
QNWM	Notional Wholesale Meter	1.0654	1.0698
QAVG	Distribution System Wide Average Loss Factor	1.0512	1.0532
QR13	C1 – Anytime Energy (Residential) Bi-directional	-	1.0770
QR14	C2 – Anytime Energy (Business) Bi-directional	-	1.0465
QR15	C3 – Time of Use Energy (Residential) Bi-directional	-	1.0770
QR16	C4 – Time of Use Energy (Business) Bi-directional	-	1.0465

5 Individual Distribution Loss Factors

Western Power has calculated the following individual distribution loss factors for the 2014/15 financial year.

Table 3 - Individual Distribution Loss Factors

DLF Code	Description	Applied in 2013/14	To apply in 2014/15
QAAL	Air Liquide WA Pty Ltd	1.0091	1.0065
QAAM	AMP Capital Investors Limited (Garden City Shopping Centre)	1.0100	1.0099
QAUS	Auswest Pty Ltd	1.0377	1.0455
QBGB	BGC (Australia) Pty Ltd	1.0120	1.0120
QBGC	BGC (Australia) Pty Ltd	1.0077	1.0073
QBGM	Boddington Gold Mine	1.0488	1.0566
QBGP	BGC (Australia) Pty Ltd	1.0057	1.0057
QBGQ	BGC (Australia) Pty Ltd	1.0418	1.0325
QBLB	Australbricks (WA) Pty Ltd (Bellevue)	1.0072	1.0071
QBLC	Australbricks (WA) Pty Ltd (Cardup)	1.0121	1.0139
QBLM	Australbricks (WA) Pty Ltd (Malaga)	1.0061	1.0062
QBMA	St Barbara Mines (L1)	1.0710	1.0120
QBMB	St Barbara Mines (L1 B)	1.0259	1.0130
QBMC	St Barbara Limited	1.0253	1.0123
QBNB	BGC (Australia) Pty Ltd	1.0095	1.0160
QBOC	BOC Gases (Commonwealth Industrial)	1.0078	1.0078
QBPA	Bunbury Port Authority	1.0062	1.0062
QBTF	Investa Prop & SAS Trustee Corporation (QV1)	1.0060	1.0059
QBUR	Burswood Resort Casino	1.0066	1.0077
QBWE	Bankwest	1.0073	1.0071
QCBC	Cockburn Cement	1.1073	1.0673
QCBH	Cooperative Bulk Handling Ltd	1.0488	1.0549
QCEM	Cockburn Cement Limited	1.0062	1.0063
QCPL	Centro Mandurah	1.0059	1.0063
QCSG	Cable Sands WA Pty Ltd (Gwindiup)	1.0664	1.0623
QCUR	Curtin University of Technology	1.0057	1.0062
QDCS	Department of Corrective Services	1.0265	1.0250
QDMS	Doral Mineral Sands	1.0536	1.0669
QDOD	Dept of Defence - HMAS Stirling	1.0158	1.0153
QFFM	Western Areas NL - Flying Fox Minesite	1.1162	1.1110
QFIE	Fletcher International Exports	1.0607	1.0612
QFLM	La Mancha (Frogs Legs Mine - Coolgardie)	1.0348	1.0351
QFPA	Fremantle Port Authority	1.0061	1.0057

DLF Code	Description	Applied in 2013/14	To apply in 2014/15
QGES	APF Management And Perron Invest (Central Park)	1.0094	1.0085
QGLM	Gunns Limited (Manjimup)	1.0413	1.0348
QGRI	Griffin Coal Mine	1.0279	1.0283
QHFM	Harvey Fresh Milk	1.1455	1.0944
QHMP	Higginsville Mining Pty Ltd	1.0717	1.0754
QHRO	HR Operations Pty Ltd	1.0082	1.0075
QHVI	EG Green & Sons Pty Ltd/Harvey Industries	1.1354	1.1135
QIRG	Iluka Resources Limited	1.0320	1.0192
QIRL	Iluka Resources Limited	1.1276	1.1104
QJJM	Jubilee Mine And Treatment Facility	1.0426	1.0435
QKBG	Kanowna Belle Gold Mines Limited	1.0932	1.0673
QKEM	Kemerton Silica Sand Pty Ltd	1.0892	1.0542
QKUD	Kudana Gold Pty Ltd	1.0177	1.0229
QLJS	Armstrong Jones Management Pty Limited (Joondalup Shopping Centre)	1.0094	1.0104
QLMR	La Mancha Resources	N/A	1.1887
QMGS	Midland Gate Shopping Centre	1.006	1.0059
QMIC	Boral Bricks Western Australia Pty Ltd	1.0313	1.0314
QMID	Midland Brick Company Pty Ltd	1.0183	1.0177
QMIE	Midland Brick Company Pty Ltd	1.0189	1.0151
QNFM	National Foods Milk WA Limited	1.0094	1.0087
QPAG	Paddington Gold Pty Ltd	1.0605	1.0659
QPTC	AMP Capital Investors Limited (Karrinyup Shopping Centre)	1.0195	1.0297
QRCS	Rockingham City Shopping Centre	1.0092	1.0072
QRGP	Integra Mining (Randalls Gold Project)	1.1292	1.1176
QRPH	Royal Perth Hospital	1.0058	1.0058
QRRA	Department of Defence	1.1081	1.1298
QSBC	The Swan Brewery Company Pty Ltd	1.0129	1.0194
QSER	Serco Australia Pty Ltd	1.0374	1.0261
QSIT	Sita Australia Pty Ltd	1.0113	1.0113
QSMP	St Martins Properties Pty	1.0070	1.0064
QTAL	Talison Minerals Pty Ltd	1.0744	1.0697
QTCL	Telstra	1.0070	1.0069
QTMH	Focus Operations Pty Ltd	1.0876	1.0866
QWAC	Westralia Airports Corporation Pty Ltd	1.0147	1.0108
QWAN	Western Areas NL (Cosmic Boy)	1.0806	1.0829
QWCB	Water Corporation (Belmont)	1.0080	1.0081
QWCD	Water Corporation	1.0125	1.0122

DLF Code	Description	Applied in 2013/14	To apply in 2014/15
QWCE	Water Corp (Beenyup Wwtp)	1.0066	1.0074
QWCF	Water Corporation	1.0167	1.0220
QWCG	Water Corporation (Ghooli)	1.0104	1.0110
QWCS	Westfield Carousel Shoppingtown	1.0333	1.0190
QWCT	Water Corporation Sewerage Treat	1.0120	1.0120
QWCW	Water Corporation (Wanneroo GS)	1.0395	1.0307
QWGS	CPM (WA) Pty Ltd (Galleria)	1.0138	1.0094
QWHS	Whitford City Shopping Centre	1.0138	1.0149
QWMD	The Laminex Group	1.0202	1.0263
QANF	Anderson Wind Farm	1.0303	1.0318
QAWF	Albany Winfarm	0.9835	0.9787
QDWF	Denmark Windfarm	1.3282	1.3243
QHLG	Henderson Landfill Gas (Waste Gas Resources Pty Ltd	1.0053	1.0056
QKPS	Kalbarri Photovoltaic System	1.1984	1.2362
QKWF	Kalbarri Wind Farm	1.2145	1.2111
QLGA	Landfill Gas & Power Pty Ltd (Red Hill)	1.0360	1.0378
QLGB	Landfill Gas Power Pty Ltd (Canning Vale)	1.0327	1.0186
QLGC	Landfill Gas Power Pty Ltd (Kalamunda)	1.0270	1.0287
QLGD	Landfill Gas Power Pty Ltd (Tamala Park)	1.0199	1.0187
QMBW	Mt Barker Power Company	1.0265	1.0302
QPEA	LMS South Cardup	1.0121	1.0101
QPEB	AGL Energy Services (Rockingham)	1.0228	1.0120
QPED	LMS Atlas	1.0108	1.0124
QPHG	Pemberton Hydro	1.0670	1.0792
QTCG	Tesla Corporation - Geraldton	0.9931	0.9931
QTCK	Tesla Corporation - Kemerton	1.0049	1.0052
QTCN	Tesla Corporation - Northam	0.9569	0.9565
QTES	Tesla Corporation Picton G1	1.0021	1.0019
QVEW	Verve Energy - Wood Process Charcoal Power Stn	1.0057	1.0057
QWHF	West Hills Farm	1.0443	1.1026

6 Explanation for changes in loss factors

In accordance with clause 2.21(b)ii of the *Market procedure for determining loss factors* Western Power is required to provide an explanation for any changes of more than 0.025 in any transmission or distribution loss factors when compared to the previous year.

In general, loss factors increase with demand at a node and decrease with increasing generation at a node. Loss factors can also be affected by changes in network configuration.

6.1 Transmission Loss Factors

Loss factors for the transmission network are calculated based on half hour data for the whole system over the whole year. Individual transmission loss factors are not only affected by the quantity of usage at a node but also the time the usage occurs, and being a meshed network they are also affected by usage at other nearby nodes.

Table 4 is a list of the transmission loss factors that were affected significantly by a 10% reduction of energy leaving Muja on the 220kV transmission line to West Kalgoorlie.

Table 4 - Transmission Loss Factors changed by more than 0.025 – Muja to West Kalgoorlie

TLF Code	Description	Applied in 2013/14	To apply in 2014/15	Change
WYER	Yerbillon	1.1929	1.1640	-0.0289
TBLS	Boulder (SCE)	1.2002	1.1716	-0.0286
TWKG	West Kalgoorlie GTs	1.1535	1.0821	-0.0714
WBKF	Black Flag	1.2030	1.1663	-0.0367
WBLD	Boulder	1.1997	1.1607	-0.0390
WCAR	Carrabin	1.1873	1.1586	-0.0287
WPCY	Piccadilly	1.2039	1.1660	-0.0379
WPKS	Parkeston	1.2012	1.1604	-0.0408
WWKT	West Kalgoorlie	1.1819	1.1535	-0.0284
WYLN	Yilgarn	1.1184	1.0890	-0.0294
TMDP	Merredin Power Station (Nammarkin)	1.0405	0.9629	-0.0776

Table 5 is a list of the transmission loss factors that were affected as a result of a combination of significant increases in load at some nodes, significant increases of generation at some nodes and system reconfiguration works to facilitate major system augmentations.

It should be noted that with the completion of a 330kV major system augmentation in the Mid-West region expected in 2014, electricity losses in the area should be improved.

Table 5 - Transmission Loss Factors changed by more than 0.025 - Various reasons

TLF Code	Description	Applied in 2013/14	To apply in 2014/15	Change
TKRA	Karara Three Springs	1.0409	1.0660	0.0251
TMBA	Mumbida Wind Farm	1.0353	0.9097	-0.1256

TLF Code	Description	Applied in 2013/14	To apply in 2014/15	Change
WKAT	Katanning	1.0260	1.0553	0.0293
WRGN	Regans	1.0459	1.0720	0.0261
WWWF	Walkaway Windfarm	0.9560	0.9027	-0.0533

6.2 Average Distribution Loss Factors

No average distribution loss factors have changed by more than 0.025 when compared to the previous year.

6.3 Individual Distribution Loss Factors

The following individual distribution loss factors have changed by more than 0.025 when compared to the previous year:

Table 6 - Individual Distribution Loss Factors changed by more than 0.025

DLF Code	Description	Applied in 2013/14	To apply in 2014/15	Change
QBMA	St Barbara Mines (L1)	1.071	1.0120	-0.059
QCBC	Cockburn Cement	1.1073	1.0673	-0.040
QHFM	Harvey Fresh Milk	1.1455	1.0944	-0.051
QKBG	Kanowna Belle Gold Mines Limited	1.0932	1.0673	-0.026
QKEM	Kemerton Silica Sand Pty Ltd	1.0892	1.0542	-0.035
QKPS	Kalbarri Photovoltaic System	1.1984	1.2362	0.038
QWHF	West Hills Farm	1.0443	1.1026	0.058

The following table sets out the reasons for the changes in the individual distribution loss factors:

Table 7 – Reason for Individual Distribution Loss Factors change by more than 0.025

DLF Code	Reason for change in loss factor
QBMA	Significant demand reductions have contributed to the reduced loss factor in 2014/15.
QCBC	The loss factor has improved due to recent network upgrades in the area.
QHFM	Recent work to install capacitor banks in the area has improved the loss factor.
QKBG	Demand reductions have caused the reduction in the loss factor.
QKEM	Recent work to install capacitor banks in the area has improved the loss factor.
QKPS	The loss factor has improved due to recent network upgrades in the area.
QWHF	The site is both a load and a generator. An increase in both demand and generation has caused the change in loss factor.

Appendix A. Individual Transmission Loss Factors by NMI

The following NMIs are for customers connected directly to the transmission system along with the transmission loss factor code Western Power has assigned.

Table 8 - Transmission Loss Factors by NMI

NMI	TLF Code
8001000116	WCCL
8001000118	WKMK
8001000126	WWMG
8001000127	WWMG
8001000128	WWMG
8001000129	WCCL
8001000279	WPKS
8001000291	WAFM
8001000347	WEDG
8001000499	TMSK
8001000500	TMSK
8001000616	WKMM
8001000640	WWCL
8001000641	WWCL
8001000646	WGGV
8001000659	WKMC
8001000732	TAPA
8001000733	WAKW
8001000736	WCBP
8001000741	TBLS
8001000743	TWOW
8001000744	TWOJ
8001000764	WSUM
8001000776	WWSD
8001000823	WTLN
8001000954	TAPA
8001001007	WWGP
8001001211	WWWF
8001001212	WWWF
8001016070	WBEC
8001018020	WKEM
8001018021	WKEM
8001018932	TAPL

NMI	TLF Code
8001019478	TWOW
8001019484	WEMD
8001019485	WEMD
8001019487	WKDP
8001019590	TOLA
8001019784	TLWA
8001019785	TLWA
8001019790	WPLD
8001019791	WGNI
8002013337	TBLB
8002013343	WNGK
8002013364	WMPS
8002013365	WKPS
8002013366	WCPS
8002013368	WPJR
8002013369	WKPS
8002013370	WGTN
8002013371	TWKG
8002013372	WMGA
8002013375	WBGM
8002013379	WKMK
8002013796	TBLB
8002014313	WPKS
8002015326	WGNN
8002016124	WKND
8002016403	WCGW
8002016404	WCGW
8002016407	TWOW
8002016415	WBSI
8002016416	WBSI
8002016417	WBSI
8002016490	TKRA
8002016504	WKPS
8002016505	WKPS
8002016506	TMGS
8002016510	TMDP
8002016519	TMBA
8002112635	WBDP

Appendix B. Individual Distribution Loss Factors by NMI

The individual distribution loss factors calculated for the 2014/15 financial year are associated with the following NMIs.

Table 9 - Individual Distribution Loss Factors by NMI

NMI	DLF Code	Required or Optional[2]
8001000110	QAAL	Required
8001000121	QTAL	Required
8001000122	QPEB	Required
8001000124	QLGB	Required
8001000125	QKEM	Required
8001000130	QCEM	Required
8001000158	QLGA	Required
8001000234	QLGD	Required
8001000268	QBOC	Required
8001000269	QJJM	Required
8001000270	QMID	Optional
8001000274	QBGP	Optional
8001000280	QWCB	Optional
8001000282	QWCE	Optional
8001000284	QWCW	Required
8001000286	QAAL	Required
8001000287	QFFM	Required
8001000300	QNFM	Optional
8001000325	QWMD	Required
8001000329	QBPA	Optional
8001000333	QDOD	Required
8001000345	QHVI	Required
8001000356	QTMH	Required
8001000359	QBMB	Required
8001000428	QCBC	Required
8001000449	QBLC	Optional
8001000451	QHMP	Required
8001000510	QPTC	Required
8001000511	QPTC	Required

[2] Individual distribution loss factors have been assessed as either required or optional in accordance with section 3.2.5 of the *Market procedure for determining loss factors*. The calculation of optional distribution loss factors is at the cost of the retailer.

NMI	DLF Code	Required or Optional[2]
8001000514	QMIE	Required
8001000515	QMIE	Required
8001000519	QSMP	Optional
8001000520	QSMP	Optional
8001000521	QSBC	Optional
8001000527	QWCT	Optional
8001000528	QWCT	Optional
8001000529	QWCF	Required
8001000533	QWAC	Required
8001000534	QWAC	Required
8001000535	QCPL	Optional
8001000536	QCPL	Optional
8001000539	QFIE	Required
8001000541	QBWE	Optional
8001000542	QBWE	Optional
8001000546	QGES	Optional
8001000547	QGES	Optional
8001000612	QFPA	Optional
8001000613	QFPA	Optional
8001000652	QBUR	Required
8001000653	QBUR	Required
8001000661	QIRG	Required
8001000662	QIRG	Required
8001000665	QRPH	Optional
8001000666	QRPH	Optional
8001000667	QLJS	Optional
8001000668	QLJS	Optional
8001000669	QKUD	Required
8001000670	QKUD	Required
8001000673	QAAM	Required
8001000674	QAAM	Required
8001000677	QWGS	Required
8001000678	QWGS	Required
8001000681	QMGS	Required
8001000682	QMGS	Required
8001000687	QRCS	Required

NMI	DLF Code	Required or Optional[2]
8001000688	QRCS	Required
8001000691	QWHS	Required
8001000692	QWHS	Required
8001000693	QWCS	Required
8001000703	QBTF	Optional
8001000704	QBTF	Optional
8001000706	QMIC	Required
8001000707	QAWF	Required
8001000708	QAWF	Required
8001000716	QBMA	Required
8001000717	QBMA	Required
8001000738	QLGC	Required
8001000745	QPAG	Required
8001000780	QCBH	Required
8001000790	QWCG	Required
8001000791	QBLB	Optional
8001000824	QKBG	Required
8001000830	QBMC	Required
8001000831	QTCL	Optional
8001000846	QBLM	Optional
8001000863	QRRA	Required
8001000864	QBGC	Optional
8001000874	QPHG	Required
8001000878	QWAN	Required
8001000916	QPEA	Required
8001001009	QBMA	Required
8001002378	QVEW	Required
8001002460	QAUS	Required
8001003787	QBNB	Optional
8001006864	QSER	Required
8001008631	QDCS	Required
8001011455	QDMS	Required
8001011882	QGLM	Required
8001014748	QHFM	Required
8001016701	QKPS	Required
8001017256	QHRO	Optional

NMI	DLF Code	Required or Optional[2]
8001017284	QGRI	Required
8001018080	QPED	Required
8001019433	QHLG	Required
8001019750	QFPA	Optional
8001020053	QWCD	Required
8001020092	QBGM	Required
8002013336	QKWF	Required
8002013376	QCUR	Required
8002013377	QCUR	Required
8002013378	QCUR	Required
8002016408	QMBW	Required
8002016420	QTES	Required
8002016475	QAWF	Required
8002016499	QWHF	Required
8002016507	QTCG	Required
8002016508	QTCK	Required
8002016509	QTCN	Required
8002016529	QDWF	Required
8002019353	QBGB	Optional
8002027600	QCSG	Required
8002034918	QFLM	Required
8002051925	QCUR	Required
8002055189	QSIT	Required
8002067264	QBGQ	Required
8002098108	QRGP	Required
8002114136	QIRL	Required
8002148204	QANF	Required
8002191360	QLMR	Required

Appendix C. Alternative Presentation of Average DLFs

To enable comparison with distribution loss factors within the NEM the following table presents the average distribution loss factors based on network level. However, for the purposes of the WA market the average distribution loss factors are as per section 4.

Table 10 - Average Distribution Loss Factors by Network Level – For Information Only

Network Level	Distribution Loss Factor	
	Applied in 2013/14	To apply in 2014/15
6.6kV/11kV/22kV/33kV Bus Connected	1.0055	1.0055
6.6kV/11kV/22kV/33kV Line Connected	1.0195	1.0202
LV Bus Connected	1.0347	1.0359
LV Line Connected (Commercial)	1.0444	1.0465
LV Line Connected (Streetlighting/UMS)	1.0654	1.0698
LV Line Connected (Residential)	1.0725	1.0769
Transmission Connected (No DLF)	1.0000	1.0000
Distribution System Wide Average Loss Factor	1.0512	1.0531