

This document relates to WEL Networks Limited's (WEL) obligations under the Electricity (Information Disclosure) Regulations of the Commerce Commission and the new Distribution Pricing Principles and Information Disclosure Guidelines of the Electricity Authority to disclose the methodology used to determine line charges by WEL.

1. General Approach

WEL's pricing philosophy is based on the following pricing principles:

- Long-term stability
- Aim to manage price adjustments to align underperforming tariffs through targeted rebalancing
- Keep the charges in line with industry norms so that charges are not out of alignment with industry averages, and
- Ensure that increased costs are fairly allocated across all customers.

This was undertaken through:

- The development of a cost allocation and tariff design model that is designed to determine the returns from individual tariffs. This model allocates costs to those tariffs that are driving investment, maintenance and Transpower costs.
- A review of the proposed tariffs against industry tariffs is undertaken to ensure that the proposed changes will not take WEL out of alignment with standard industry charges.
- The use of discounts to reduce prices in order to meet our owner's strategic directive to reduce electricity prices. Our discount is a visible sign of our price reduction, which otherwise would be absorbed into the electricity retailers overall charges.

2. WEL Discount (excluding GST)

WEL paid out \$18.5M of discount to its Waikato Customers for 2011/12 and is forecasting a payout of \$18.5M this 2012/13 year. This discount is forecast to be a \$5.7M increase on the \$12.8M discount that WEL has posted and as presented in the attached tariff schedule.

The discount consists of two parts, a proportion comprising 100% of fixed charges plus a proportion of the variable charges.

3. Consumer Groups (Categories)

The network is designed around a 33kV sub-transmission and 11kV distribution system that steps down to a low voltage (400V) distribution system. Seven load groups are defined in the methodology (see the headers in table 1). These groups relate to consumers taking supply according to the following rationale:

- a. UnMtd: Unmetered non-streetlight consumers have 400V connections, use under 250 MWh/year and are connected with a fuse capacity of less than 160 amps.
- b. StLgt: Unmetered Streetlight consumers have 400V connections, use under 250 MWh/year and are connected with a fuse capacity of less than 160 amps.
- c. MASS: Non-TOU Residential consumers have 400V connections, use under 250 MWh/year and are connected with a fuse capacity of less than 160 amps.
- d. 400VD: Demand TOU consumers have 400V connections, use under 250 MWh/year and are connected with a fuse capacity of greater or equal to 160 amps.
- e. 400V: 400V TOU consumers have 400V connections, use over or equal to 250 MWh/year and are connected with a fuse capacity of greater than or equal to 160 amps.
- f. 11KV: 11KV TOU consumers have 11kV connections, use over or equal to 250 MWh/year and are connected with a fuse capacity of greater than or equal to 160 amps.
- g. 33KV: 33KV TOU consumers have 33kV connections, use over or equal to 250 MWh/year and are connected with a fuse capacity of greater than or equal to 160 amps.

4. Revenue

The following table demonstrates by cost component how WEL's budgeted costs have been allocated to each consumer group and shows whether their budgeted revenues fall between WEL's incremental and stand alone costs.

- WEL notes that the budgeted revenue for the 400V & 400VD consumer group is higher than the stand alone cost by \$0.136M and will address this in its proposed Pricing Review during 2012.
- WEL still does not have a clear understanding from the Electricity Authority Disclosure Guidelines of what incremental costs are, so have set them to equal the stand alone cost less the shared costs of the business and apportioned it based on the stand alone cost to each consumer group. All budgeted revenues falling below the incremental costs will require WEL to first achieve its stand alone revenue requirement before rebalancing.
- If the revenue requirement shown in table 1 is adjusted for the \$12.8M posted discount based on the discount tariffs published in the tariff schedule, the return on assets reduces from \$19.3M to \$6.5M.

Table 1: Quantification of key components of costs and revenue

Revenue requirement - 1 April 2012 Pricing										
Revenue Requirement --- Split by Tariff Groups and by Cost Components (\$'000)										
Groups	Revenue Component	33KV	11KV	400V	400VD	MASS incl EN	UnMtd	StLgt	WEL Total	Allocation Method
Assets	Allocated Fixed assets (excl relays)	7,764	68,565	29,652	12,197	347,950	1,385	40,681	508,195	Total Assets (mid point)
Distribution Components	After tax Return on Assets (NPAT)	290	3,753	2,551	1,111	12,537	- 28	- 900	19,314	
	Maintenance	114	1,008	518	213	5,916	1	23	7,792	Total Maintenance
	Accounting Depreciation	357	3,150	1,437	591	16,421	74	2,163	24,193	Total Depreciation
	Admin and OPEX	111	1,002	349	158	15,506	1	22	17,149	
	Operations (Volume based)	78	687	221	91	2,521	1	16	3,613	AMD DT / CMD KW
	Overheads (Customer based)	1	28	36	30	11,931	-	-	12,025	Cust No.
	Overheads (Volume based)	33	287	92	38	1,054	0	6	1,511	AMD DT / CMD KW
	Accounting Tax (Model Calculated)	113	1,460	992	432	4,876	- 11	- 350	7,511	Calculated
Transmission Components	Charge on Relays	-	-	-	-	1,945	-	-	1,945	MASS Only
	Transmission Charges	553	4,652	1,574	635	17,679	3	103	25,198	
	Transmission (Interconnection)	318	2,884	953	401	11,554	2	51	16,164	CMD GXP KW
	Transmission (Avoided Gen)	72	657	217	91	2,633	0	12	3,683	CMD GXP KW
	Transmission (EN)	-	-	-	-	804	-	-	804	MASS Only
	Transmission (Connection & New investment & Voltage)	162	1,111	403	142	2,687	1	41	4,548	Energy MWH
	Levy Passthrough	5	36	14	6	595	0	1	657	
	EC Levys (energy based)	5	34	12	4	83	0	1	140	Energy MWH
	EC Levys (Customer based)	0	0	0	0	17	-	-	17	Cust No.
	CC Levys (Company Based)	0	0	0	0	103	-	-	104	Cust No.
	LBR Levys (Asset based)	0	1	1	1	393	-	-	396	Cust No.
Network	Before tax Required revenue	1,543	15,061	7,433	3,145	75,475	41	1,062	103,761	Revenue is below the
Allowable Network	Incremental costs @ 8.5% rate of return on assets	1,945	16,975	6,993	2,878	93,793	230	6,731	129,545	incremental costs.
limits	Standalone costs @ 8.5% rate of return on assets	2,056	17,943	7,391	3,042	99,140	243	7,115	136,930	Revenue is above the
	Before tax Posted Discount	- 2	- 140	- 178	- 148	- 12,321			- 12,789	standalone costs.

5. Allocation methodology

A cost allocation and pricing design model was developed to ensure the required returns were obtained from each tariff group. This was accomplished by allocating costs to tariffs by way of cost drivers.

Only those network costs and assets relating to the regulated line business were considered in the cost allocation model. These costs included administration, maintenance, return on capital, Transpower charges and depreciation. Costs shared between the regulated line business and other businesses are allocated in accordance with WEL's regulatory disclosure accounts. Asset specific costs relating to the regulated line business were not included in the cost allocation model.

The following design considerations have been applied in WEL's Cost Allocation and Pricing Design Model.

a. External Networks

External networks represent less than 1.4% of WELs total line revenue and because they are not fully occupied their assets and volumes have been included as a cost component in the model and applied to the residential (MASS) consumer group. They are later separated out for tariff design purposes.

b. Relays

Relays have been separated out of the asset costs and applied to the transmission costs as they are primarily installed to reduce transmission charges and therefore are considered transmission costs. Required revenue on relay assets have been included as a residential (MASS) cost component and are based on a three year remaining residual life due to their expected redundancy as smart meters replace the existing non-TOU meters.

c. Required revenue

Required revenue for the lines function of WEL Networks is determined by the sum of all budgeted company costs plus a return on the midpoint between the previous year and the budgeted year assets. Fixed asset values, depreciation and maintenance costs are able to be broken down further at the voltage level allowing these costs to be allocated only to the consumer groups that utilise the assets. The key principle in allocating the asset related costs to the consumer groups is that high voltage customers do not pay for the lower voltage network (see table 3). All other non-asset related costs are allocated independent of how consumer groups utilise assets in the network.

i) Allocation of required revenue requirements

Each component cost is allocated to a consumer group by the most appropriate type of cost driver. These are derived from historical records and volumes used by each consumer group (see table 2).

ii) Asset Drivers

The weighted AMD/CMD cost drivers in table 2 is used to determine the following asset drivers for each consumer group as shown in table 3 below. Here, asset replacement costs, depreciation and maintenance costs are apportioned according to the voltage group that each consumer group utilises. This in turn generates cost drivers for allocating assets, depreciation and maintenance.

Table 2: Historic volumes used for cost allocation

Input Quantities for 1 April 2012 Pricing									
Input Quantities --- Split by Tariff Groups and by Quantity									
Groups	Quantitiy Component	33KV	11KV	400V	400VD	MASS incl EN	UnMtd	StLgt	WEL Total
Asset and Cost	AMD DT KW	9,701	83,988	26,366	10,650	286,771	74	2,214	419,763
Allocation Input	AMD/CMD KW (40.9%)	6,852	60,513	19,432	7,993	222,076	46	1,366	318,278
Quantities	CMD GXP KW	4,877	44,237	14,624	6,151	177,219	26	778	247,912
1 Apr 2009 - 31 Mar 2010	Energy MWH	43,128	295,186	107,157	37,776	727,554	362	10,773	1,221,937
	Cust No.	5	194	246	204	84,321	238	10	85,218

Price Category cost Allocators									
Cost Allocator	Quantity	33KV	11KV	400V	400VD	MASS incl EN	UnMtd	StLgt	WEL Total
AMD DT KW	419,763	2.3%	20.0%	6.3%	2.5%	68.3%	0.0%	0.5%	100.0%
AMD/CMD KW (40.9%)	318,278	2.2%	19.0%	6.1%	2.5%	69.8%	0.0%	0.4%	100.0%
CMD GXP KW	247,912	2.0%	17.8%	5.9%	2.5%	71.5%	0.0%	0.3%	100.0%
Energy MWH	1,221,937	3.5%	24.2%	8.8%	3.1%	59.5%	0.0%	0.9%	100.0%
Cust No.	85,218	0.0%	0.2%	0.3%	0.2%	98.9%	0.3%	0.0%	100.0%

Notes to Table 2:

- Consumer numbers: Where costs are related to the number of consumers then this driver is used
- Energy: Where costs are related to the energy used then this driver is used
- AMD: Any time maximum demand at the distribution transformer. Where costs are related to the AMD of consumers then this driver is used. This value is not measured but is allowed for when building the network where the size of the LV network and capacity of the distribution transformers is based on the number of customers connected to it.
- CMD: Coincident maximum demand at the 100 maximum Network POS demands per annum over two years. Where costs are related to the CMD of consumers then this driver is used. CMD is measured for TOU consumers and the difference between the loss adjusted GXP demands is allocated to the n-TOU consumers. An unmetered portion is then removed to determine the residential market portion.
- AMD/CMD: This driver is a cost weighted sum of the AMD and CMD cost drivers. Where costs are related to the AMD/CMD of consumers then this driver is used. This driver is used to derive the asset related costs drivers such as asset value, depreciation and maintenance cost. The weighting factor is based on the sum of the low voltage asset values divided by the total disclosed asset value. This normalises the effect that LV assets should be allocated by AMD and HV assets by CMD.

Table 3: Cost drivers derived from table 2 and used in table 1

Fixed Asset Cost Allocators									
Asset Voltage Group	Replacement cost allocation of Fixed Assets (\$)	33KV	11KV	400V	400VD	MASS incl EN	UnMtd	StLgt	WEL Total
33KV (incl ZS)	149,100,442	2.2%	19.0%	6.1%	2.5%	69.8%	0.0%	0.4%	100.0%
11KV (incl DT)	211,529,287	2.2%	19.0%	6.1%	2.5%	69.8%	0.0%	0.4%	100.0%
LV (excl Relays)	98,041,563			7.8%	3.2%	89.0%	0.0%		100.0%
StLgt & UnMtd	40,448,534						3.3%	96.7%	100.0%
Total Assets (mid point)	499,119,826	1.5%	13.5%	5.8%	2.4%	68.5%	0.3%	8.0%	100.0%

Depreciation Cost Allocators									
Asset Voltage Group	Replacement Cost allocation of Depreciation (\$)	33KV	11KV	400V	400VD	MASS incl EN	UnMtd	StLgt	WEL Total
33KV (incl ZS)	5,973,156	2.2%	19.0%	6.1%	2.5%	69.8%	0.0%	0.4%	100.0%
11KV (incl DT)	10,594,546	2.2%	19.0%	6.1%	2.5%	69.8%	0.0%	0.4%	100.0%
LV (excl Relays)	5,462,602			7.8%	3.2%	89.0%	0.0%		100.0%
StLgt & UnMtd	2,162,520						3.3%	96.7%	100.0%
Total Depreciation	24,192,825	1.5%	13.0%	5.9%	2.4%	67.9%	0.3%	8.9%	100.0%

Maintenance Cost Allocators									
Asset Voltage Group	Replacement Cost allocation of Maintenance (\$)	33KV	11KV	400V	400VD	MASS incl EN	UnMtd	StLgt	WEL Total
33KV (incl ZS)	1,948,480	2.2%	19.0%	6.1%	2.5%	69.8%	0.0%	0.4%	100.0%
11KV (incl DT)	3,353,647	2.2%	19.0%	6.1%	2.5%	69.8%	0.0%	0.4%	100.0%
LV (excl Relays)	2,490,369			7.8%	3.2%	89.0%	0.0%		100.0%
StLgt & UnMtd	-						3.3%	96.7%	100.0%
Total Maintenance	7,792,496	1.5%	12.9%	6.6%	2.7%	75.9%	0.0%	0.3%	100.0%

6. Tariff design

Tables 4 and 5 below show the allocation of budgeted revenue to each consumer group, their split into transmission and distribution components followed by the allocation to tariffs codes. Using the forecast 2012/13 volumes from WEL's ten year forecast model each tariff is calculated for each Load group.

Each tariff is allocated according to the following tariff design rules.

a. TOU Customers

- i. Fixed Charge: All TOU consumer groups have their fixed charge set at the same rate. The rate was increased by the average distribution price increase.
- ii. Reactive Charge: This charge is calculated based on the cost to WEL networks for customers with power factors less than 0.95 and applied equally to all TOU categories.
- iii. Transformer Rebate: This rebate is calculated based on the cost savings to WEL networks for customers owning their own transformer and is applied equally to all TOU categories.
- iv. Energy charge: This uncontrolled charge is set to recover 45% percent of required revenue of each pricing category.
- v. Demand Charges: Summer and winter charges are determined from the remainder of the revenue requirements in each pricing category and apportioning a total demand benefit of 10 MW to the lower summer tariffs to create the Summer and Winter tariff differential.
- vi. Other charges: Two of the 11KV and 33KV consumers are charged for metering units that WEL own, and another two are charged fixed charges because they generate into WELs network.

b. Non-TOU Customers

- i. Fixed Charge: Fixed charges are set at 15 cents per day, which is the maximum allowed for residential consumers using 8,000 KWh or less.
- ii. Energy charge: Controlled and Uncontrolled charges are determined from the remainder of the revenue requirements of the residential pricing category and differentiated based on a demand benefit of 40 MW that WEL expects from consumer response to the lower control tariff.

c. Transmission component

Tariffs are separated into two parts, distribution and transmission. The transmission part includes Transpower costs, avoided transmission costs, rates, fees, levies and relay costs. The transmission revenue is apportioned to the ratio of only the energy and demand components of the total line revenue.

Table 4: WELs traditional network tariff design

Tariff requirement - WEL Traditional Network								
Full Revenue Requirement								
Tariff Code	33KV	11KV	400V	400VD	MASS	UnMtd	StLgt	WEL Network
Fixed (\$000)	\$4	\$140	\$178	\$148	\$4,502			\$4,971
S Dmd (\$000)	\$439	\$3,808	\$1,744	\$671				\$6,662
W Dmd (\$000)	\$370	\$3,885	\$1,897	\$813				\$6,966
UN (\$000)	\$694	\$6,778	\$3,345	\$1,415	\$65,306	\$41	\$1,062	\$78,641
CN (\$000)					\$4,342			\$4,342
Re-Act (\$000)	\$38	\$410	\$269	\$98				\$814
Xmer (\$000)	-\$9	-\$16						-\$25
Other (\$000)	\$7	\$56						\$64
Total (\$000)	\$1,543	\$15,061	\$7,433	\$3,145	\$74,150	\$41	\$1,062	\$102,435
Transmission Revenue Requirement								
Tariff Code	33KV	11KV	400V	400VD	MASS	UnMtd	StLgt	WEL Network
Fixed (\$000)								\$0
S Dmd (\$000)	\$163	\$1,235	\$397	\$148				\$1,943
W Dmd (\$000)	\$138	\$1,260	\$432	\$180				\$2,009
UN (\$000)	\$258	\$2,198	\$761	\$313	\$18,166	\$4	\$104	\$21,803
CN (\$000)					\$1,208			\$1,208
Re-Act (\$000)								\$0
Xmer (\$000)								\$0
Other (\$000)								\$0
Total (\$000)	\$558	\$4,692	\$1,589	\$641	\$19,374	\$4	\$104	\$26,962
Volume Requirement								
Tariff Code	33KV	11KV	400V	400VD	MASS	UnMtd	StLgt	WEL Network
Fixed	5	194	246	204	82,220			82,869
S Dmd (MW.mths)	55,898	466,160	184,973	79,910				786,941
W Dmd (MW.mths)	34,243	348,777	133,855	61,793				578,668
UN (Mwh)	43,128	295,186	107,157	37,776	571,358	362	10,773	1,065,741
CN (Mwh)					142,840			142,840
Re-Act (Mvarh)	1,360	14,687	9,634	3,509				29,190
Xmer (MW.mths)	47,199	77,596						124,795
Other	3	1						4
Full Tariff Requirement								
Tariff Code	33KV	11KV	400V	400VD	MASS	UnMtd	StLgt	
Fixed (TOU = \$/Mth, Mass & 400VS = c/day)	60.26	60.26	60.26	60.26	15.00			
S Dmd (\$/KW.mth)	7.85	8.17	9.43	8.40				
W Dmd (\$/KW.mth)	10.82	11.14	14.17	13.16				
UN (c/kwh)	1.61	2.30	3.12	3.75	11.43	11.24	9.86	
CN (c/kwh)					3.04			
Re-Act (c/kVarh)	2.79	2.79	2.79	2.79				
Xmer (\$/KW.mths)	-0.20	-0.20						
Other (\$/mth)	205.84	4,691.43						
Transmission Tariff Requirement								
Tariff Code	33KV	11KV	400V	400VD	MASS	UnMtd	StLgt	
Fixed (TOU = \$/Mth, Mass & 400VS = c/day)								
S Dmd (\$/KW.mth)	2.91	2.65	2.15	1.86				
W Dmd (\$/KW.mth)	4.02	3.61	3.22	2.91				
UN (c/kwh)	0.60	0.74	0.71	0.83	3.18	0.97	0.97	
CN (c/kwh)					0.85			
Re-Act (c/kVarh)								
Xmer (\$/KW.mths)								
Other (\$/mth)								

7. WEL External Networks

WEL external networks consumer groups required revenues are allocated based on the previous year's portions. The transmission revenue has been apportioned in proportion to the previous year's transmission revenue requirement.

As they reach full capacity, future tariffs on these networks are likely to be adjusted to reflect the incumbent line company transmission charges and the return on the WEL capital investment of each embedded network.

Table 5: WELs External network tariff design

Tariff requirement - Embedded Networks				
Full Revenue Requirement				
Tariff Code	Mass Taupo Low	Mass Taupo High	Mass Others	Embedded Network Total
Fixed (\$000)	\$1.1	\$20.9	\$83.9	\$105.9
UN (\$000)	\$7.5	\$29.2	\$1,170.2	\$1,207.0
CN & Night (\$000)	\$0.5	\$1.9	\$10.0	\$12.4
Total (\$000)	\$9.2	\$52.0	\$1,264.1	\$1,325.3
Transmission Revenue Requirement				
Tariff Code	Mass Taupo Low	Mass Taupo High	Mass Others	Embedded Network Total
Fixed (\$000)	\$0.8	\$15.2	\$0.0	\$16.0
UN (\$000)	\$5.3	\$21.3	\$751.5	\$778.1
CN & Night (\$000)	\$0.4	\$1.4	\$6.9	\$8.7
Total (\$000)	\$6.4	\$38.0	\$758.4	\$802.8
Volume Requirement				
Tariff Code	Mass Taupo Low	Mass Taupo High	Mass Others	Embedded Network Total
Fixed	20	87	1,993	2,101
UN (Mwh)	93	525	11,868	12,486
CN & Night (MWh)	10	65	796	870
Full Tariff Requirement				
Tariff Code	Mass Taupo Low	Mass Taupo High	Mass Others	
Fixed	15.00	65.39	11.53	
UN (c/kwh)	8.13	5.56	9.86	
CN & Night (c/kwh)	5.20	2.97	1.26	
Transmission Tariff Requirement				
Tariff Code	Mass Taupo Low	Mass Taupo High	Mass Others	
Fixed	10.51	47.76	0.00	
UN (c/kwh)	5.70	4.06	6.33	
CN & Night (c/kwh)	3.64	2.17	0.87	

8. Actions required

In 2012 WEL will be conducting a review on its current pricing methodology and pricing group structure in order to better reflect the assets they utilise. WEL will also consider introducing new tariffs, designed to send better demand signals to its customers especially as smart metering roll out in their network. Any changes will take into account the degree of rate shock that customers may experience. Any change to the pricing methodology would apply from 1 April 2013.

Table 6: Price schedule

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A month is defined as a calendar month.
Peak time demand periods are workdays excluding public holidays from 0800-1100 & 1700-2100 hours.
Winter is defined as the period from 1st May to 30th September (inclusive) and summer is defined as the period from 1st October to 30th April (inclusive).
Additional transformer charges or rebates may apply to large customers.
TOU: (Time of Use meter) - A meter that stores a half hourly record of your electricity use. This is a typical commercial or industrial meter.
TOU: (Non Time of Use meter) - A meter that stores only the total electricity use. This is a typical residential meter.
High User: Customers using greater than or equal to 8,000 KWh per year.
Low User: Customers using less than 8,000 KWh per year.