Customer Impact Analysis

A REPORT PREPARED FOR ERGON ENERGY

April 2014

Introduction

The Network Tariff Strategy Review ("Review") is focused on the economics behind network tariffs and the future options for network tariff structures. The drivers for the Review are:

- Rising electricity prices and affordability issues
- Increasing visibility of Ergon Energy's network tariffs in the regulated retail electricity price (or Notified Prices) and
- Changes in Ergon Energy's operating environment, including advances in technology such as metering, data management and communication.

Implementation of the Network Tariff Strategy Review is proposed to commence in 2014/15, with further changes proposed for 2015/16 and beyond. Changes to network tariffs are being undertaken within the framework of revenue neutrality to increase the relationship between Ergon Energy costs and network tariffs. These changes will not result in increases in over-all revenue, but some customers will pay more and some customers will pay less as a result of the improved cost reflectivity and more efficient cost recovery. Many customers will see network charge benefits as a result of this change and it presents customers with another lever by which they can manage their costs of using the distribution network.

The changes proposed for 2014/15 involve progressing kVA tariffs for ICCs and commencing the process of rebalancing tariffs for SAC Large customers from high variable/usage-related charges to more fixed/ less usage-dependent charges. This is in keeping with the underlying LRMC of increased demand for the network and the desire to transition changes gradually to avoid excessive shocks.

For SAC Small customers, two key change options are proposed: offering optional seasonal Time-of-Use (ToU) energy tariffs, and shifting all customers to an Inclining Block Tariff (IBT) with a higher fixed charge and low rate for the first consumption band.

In summary, the proposed network tariff structural changes are focussed towards better cost reflectivity. However, in order to minimise customer impact, increases due to the structural change have been limited so that SAC Large customers are affected by no more than 10% compared to the 2014/15 scenario calculated on existing tariff structure prices. For small consumption customers, where the increase will be more than 10%, an absolute increase cap of $150 has been applied. Any increase due to the structural change would be additional to the expected annual increase in network charges for 2014/15 (the average annual increase is currently estimated at approximately 15.5%).

This report illustrates the application to example Ergon Energy network customers of the changes proposed for 2014/15 based on the tariff development

and modelling conducted to date. The tariff rates included are final AER proposed rates and are subject to AER formal approval:

- **Standard Asset Customers (SACs)**:
  - **SAC Large customers** – Rebalancing has been from the anytime demand charge to the fixed charge and the application of the minimum demand mechanism has changed so it is now incorporated into the fixed charge. Transition to the rebalancing tariffs has been modelled on the basis of limiting individual customer impact in 2014-15 to no more than 10%. The SAC Large section of this report illustrates how the rebalancing tariff applies to a typical SAC Large customer.
  - **SAC Small customers** – Transition to the IBT tariffs has been modelled on the basis of limiting individual customer impacts in 2014-15 due to restructuring to no more than $150 for small consumption customers. For larger consumption customers the maximum impact from the structural change has been set at 10%. The SAC Small section of this report illustrates how the 2014/15 IBT and ToU energy tariffs apply to an example SAC Small residential and business customer.
- **Individually Calculated Customers (ICCs)**: Analysis has been undertaken to understand the impact on customers of changing the denomination of demand rates to kVA based on use of metering data to calculate power factor and kVA. As rates are calculated on the individual characteristics of customers and each customer has its own circumstances with respect to site power factor, no specific examples are presented.

Connection Asset Customers are not discussed in this report because there are no proposed structural changes for this tariff class in 2014/15.

All tariff rates and annual bills presented in this report apply to DUOS charges only and are based on recovery of the estimated 2014/15 allowed revenue.

SAC Large (>100 MWh pa)

Customers consuming more than 100 MWh per annum who are not otherwise classified as an ICC, CAC or EG can access Ergon's SAC Large network tariff rates.

The tariff structure for SAC – Large (fixed, anytime demand and energy charges) is not proposed to change. However the minimum chargeable demand mechanism that is currently a feature of this tariff is discontinued. In its place the revenue that the minimum charge ensured was recovered each month has been incorporated into the fixed charge. To avoid over-recovery of revenue, each tariff now has a threshold demand applicable to the tariff. The monthly demand charge is only applied to the kW amount by which the customer's actual monthly kW demand is greater than the demand threshold applicable to that tariff.

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To illustrate the impact of the proposed tariff on SAC Large customers, we will consider example East zone Demand Small (DS) customers. For 2014/15, SAC Large tariffs under the current structure and the proposed structure for the East zone DS customers are shown in Table 1.

Table 1: SAC Large East zone Demand Small customer network tariffs

DUOS charge		Current Structure	Proposed 2014/15
Demand	$/kW/month	$34.885	$33.630
Fixed	$/day	$2.427	$38.728
Volume	$/kWh	$0.00553	$0.00553
Monthly Minimum Demand	kW	30	-
Monthly Threshold Demand	kW	-	30

Consider two customers:

- Customer A: a SAC Large East zone customer who has a monthly demand of 60 kW and an annual consumption of 200,000 kWh
- Customer B: a SAC Large East zone customer who has a monthly demand of 100 kW and an annual consumption of 330,000 kWh

For Customer A and Customer B,

Table 2 summarises their annual bills for the current tariff, Table 3 summarises their annual bills for the proposed rebalancing tariff and Figure 1 illustrates the annual bill break down under the current and proposed tariffs. The customer impact, calculated as the percentage change in a customer's annual bill moving from the current tariff to the rebalancing tariff, is a 0.9% increase for Customer A and a 0.8% decrease for Customer B.

This example also shows how the revenue neutrality framework of the proposed tariffs impacts on SAC Large customers. The estimated revenue recovery is the same under both the current and proposed rebalancing tariffs but the proposed changes will result in some customers paying more and some customers paying less on their annual DUOS charges.

Table 2: SAC Large East zone – Example current tariff structure annual bills (14/15 indicative rates) [1]

DUOS charge	Customer A	Customer B
Fixed	2.427 [$/day] × 365 [days] = $886	2.427 [$/day] × 365 [days] = $886
Demand *	34.885 [$/kW/month] × 60 [kW] × 12 [months] = $25,117	34.885 [$/kW/month] × 100 [kW] × 12 [months] = $41,862
Volume	0.00553 [$/kWh] × 200,000[kWh] = $1,106	0.00553 [$/kWh] × 330,000[kWh] = $1,825
Total	$27,109	$44,573

* of which $12,559 is the minimum demand charge for the DS customer class.

Table 3: SAC Large East zone – Example proposed rebalancing tariff annual bills

DUOS charge	Customer A	Customer B
Fixed	38.728 [$/day] × 365 [days] = $14,136	38.728 [$/day] × 365 [days] = $14,136
Demand **	33.630 [$/kW/month] × (60 – 30) [kW] × 12 [months] = $12,107	33.630 [$/kW/month] × (100 – 30) [kW] × 12 [months] = $28,249
Volume	0.00553 [$/kWh] × 200,000[kWh] = $1,106	0.00553 [$/kWh] × 330,000[kWh] = $1,825
Total	$27,349	$44,210

** Note that this charge applies to actual monthly demand above 30 kW with recovery of the threshold demand of 30kW incorporated in the fixed charge.

1 Bill numbers presented in this report are rounded to the nearest dollar.

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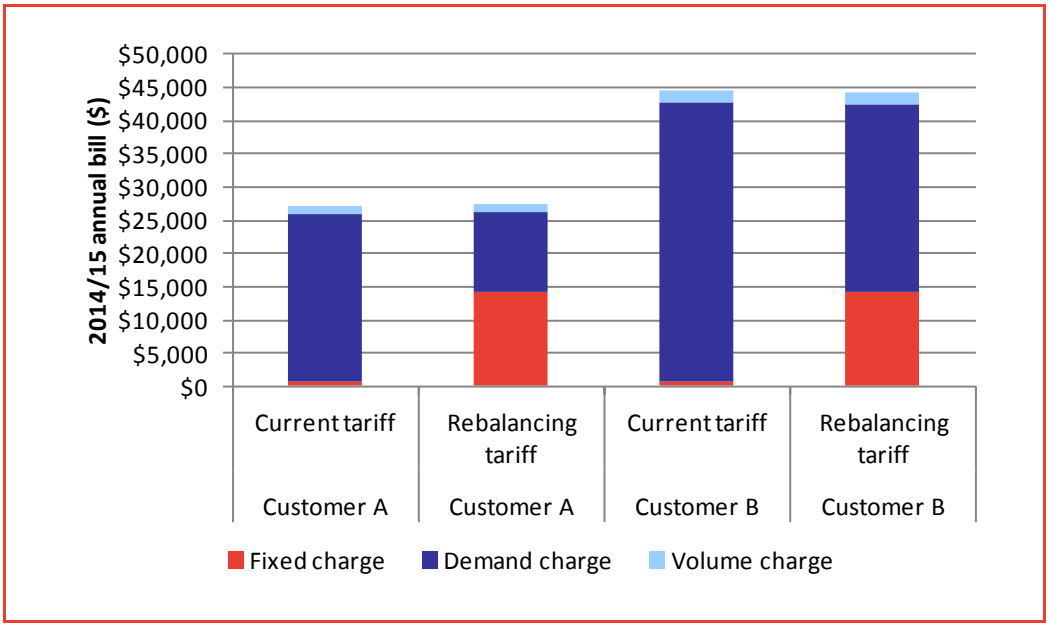
Figure 1: Annual bill for SAC Large East zone example Demand Small customers – current and proposed rebalancing 2014/15 tariffs



SAC Small (<100 MWh pa)

Customers consuming less than 100 MWh per year are charged on Ergon's SAC Small network tariff rates. The proposed changes to SAC Small network tariff rates involve:

- Offering an optional seasonal ToU energy tariff
- Replacing the current single flat energy rate with an inclining block structure with a lower rate for the first consumption band and increasing for subsequent consumption bands.
- Reweighting revenue recovery from consumption (kWh related) charges to the fixed charge
- Introduction of differential residential and business tariffs

To illustrate the impact of the proposed tariffs on SAC Small customers, we will consider example East zone customers.

Table 4 summarises indicative 2014/15 East zone tariffs as currently structured as well as the proposed IBT and ToU tariffs.

Table 4: 2014/15 East SAC Small current and proposed tariffs

Tariff	Charge	Volume Small rate	Volume Large rate	Residential	Business
Current	Fixed charge ($/day)	$1.114	$1.114		
	Volume charge ($/kWh)	$0.15644	$0.15319		
Proposed IBT	Fixed charge ($/day)	-	-	$1.525	$1.525
	Block 1 ($/kWh) 0 - 1,000 kWh per annum	-	-	$0.00000	$0.00000
	Block 2 ($/kWh) Residential: 1,000-6,000 kWh per annum Business: 1,000-20,000 kWh per annum	-	-	$0.15314	$0.15383
	Block 3 ($/kWh) Residential: > 6,000 kWh per annum Business: > 20,000 kWh per annum	-	-	$0.16314	$0.16383
Proposed ToU	Fixed charge ($/day)	-	-	$1.525	$1.525
	Peak ($/kWh) Residential: 4:30-9PM Summer Weekdays Business: 11:30AM - 5:30PM Summer Weekdays	-	-	$0.55194	$0.41395
	Shoulder ($/kWh) Residential: 3-4:30PM & 9-9:30PM Summer Weekdays & 3-9:30PM Summer Weekends Business: 10-11:30AM & 5:30-8:00PM Summer	-	-	$0.26664	$0.30663

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	Weekdays				
	Off Peak ($/kWh) All other times	-	-	$0.09568	$0.12364

Consider three customers:

- Customer C: a SAC Small East zone residential customer who has an annual energy consumption of 3,000 kWh
- Customer D: a SAC Small East zone residential customer who has an annual energy consumption of 11,000 kWh
- Customer E: a SAC Small East zone business customer who has an annual energy consumption of 90,000 kWh (e.g Veterinary Clinic, Retail Store, Childcare Centre)

For Customer C, Customer D and Customer E, Table 5 summarises their annual bills for the current tariff, Table 6 summarises their annual bills for the proposed IBT tariff and Table 7 summarises their annual bills for the proposed ToU tariff. Figure 2 and Figure 3 illustrate the annual bill break down under the current, IBT and ToU tariffs. The ToU annual bill calculations assume that Customer C and Customer D follow the average pattern of consumption of East zone residential customers: 4.58% during peak hours, 4.42% during shoulder hours and 91.00% during off-peak hours. The ToU annual bill calculations also assume that Customer E follows the average pattern of consumption of East zone business customers: 6.33% during peak hours, 3.91% during shoulder hours and 89.76% during off-peak hours.

The customer impact, calculated as the percentage change in a customer's annual bill moving from the current tariff to the IBT tariff is a 1.5% decrease for Customer C, 0.5% increase for Customer D and a 5.3% increase for Customer E.

This example also shows how the revenue neutrality framework of the proposed tariffs impacts on SAC Small customers. The estimated revenue recovery is the same under both the current and IBT tariffs but the proposed changes will result in some customers paying more and some customers paying less on their annual DUOS charges.

Table 5: SAC Small East zone – Example current tariff annual bills

DUOS charge	Customer C	Customer D	Customer E
Fixed	1.114 [$/day] × 365 [days] = $407	1.114 [$/day] × 365 [days] = $407	1.114 [$/day] × 365 [days] = $407
Volume	0.15644 [$/kWh] × 3,000 [kWh] = $469	0.15644 [$/kWh] × 11,000 [kWh] = $1,721	0.15319 [$/kWh] × 90,000 [kWh] = $13,787
Total	$876	$2,127	$14,194

Table 6: SAC Small East zone – Example IBT tariff annual bills

DUOS charge	Customer C	Customer D	Customer E
Fixed	1.525 [$/day] × 365 [days] = $557	1.525 [$/day] × 365 [days] = $557	1.525 [$/day] × 365 [days] = $557
Block 1	0.00000 [$/kWh] × 1,000 [kWh] = $0	0.00000[$/kWh] × 1,000 [kWh] = $0	0.00000 [$/kWh] × 1,000 [kWh] = $0
Block 2	0.15314 [$/kWh] × 2,000 [kWh] = $306	0.15314 [$/kWh] × 5,000 [kWh] = $766	0.15383 [$/kWh] × 19,000 [kWh] = $2,923
Block 3	0.16314 [$/kWh] × 0 [kWh] = $0.0	0.16314 [$/kWh] × 5,000 [kWh] = $816	0.16383 [$/kWh] × 70,000 [kWh] = $11,468
Total	$863	$2,138	$14,947

Table 7: SAC Small East zone – Example ToU tariff annual bills

DUOS charge	Customer C	Customer D	Customer E
Fixed	1.525 [$/day] × 365 [days] = $557	1.525 [$/day] × 365 [days] = $557	1.525 [$/day] × 365 [days] = $557
Peak	0.55194 [$/kWh] × 3,000 [kWh] × 4.58% = $76	0.55194 [$/kWh] × 11,000 [kWh] × 4.58% = $278	0.41395 [$/kWh] × 90,000 [kWh] × 6.33% = $2,358
Shoulder	0.26664 [$/kWh] × 3,000 [kWh] × 4.42% = $35	0.26664 [$/kWh] × 11,000 [kWh] × 4.42% = $130	0.30663 [$/kWh] × 90,000 [kWh] × 3.91% = $1,079
Off-peak	0.09568 [$/kWh] × 3,000 [kWh] × 91.00% = $261	0.09568 [$/kWh] × 11,000 [kWh] × 91.00% = $958	0.12364 [$/kWh] × 90,000 [kWh] × 89.76% = $9,988
Total	$929	$1,922	$13,982

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Figure 2: Annual bill for example SAC Small Residential customers – current and proposed East 2014/15 tariffs

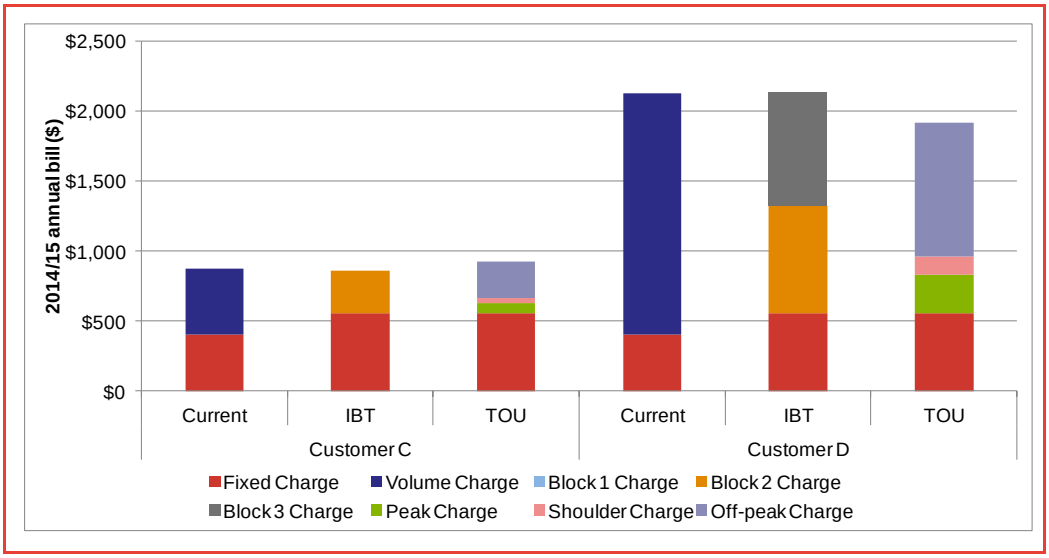
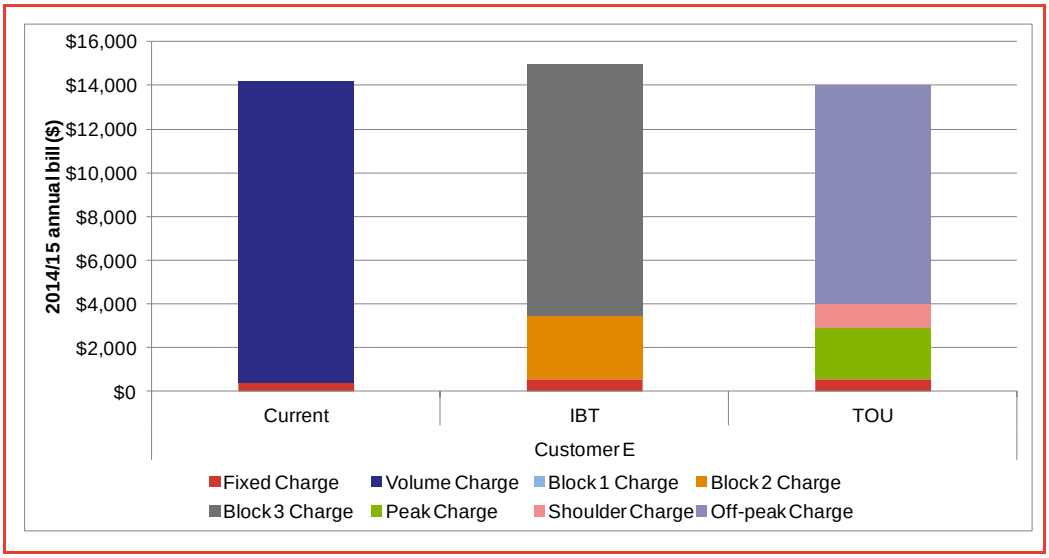


Figure 3: Annual bill for Customer E – current and proposed East 2014/15 tariffs



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