

## Briefing Note

### *Changes to regulated electricity retail prices from 1 July 2012*

**120420**

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## Overview

The Independent Pricing and Regulatory Tribunal (IPART) released a Draft Report on the changes to regulated electricity prices commencing 1st July 2012. IPART determines regulated retail prices for customers who have not signed a contract with an electricity retailer or who have chosen to return to the regulated price. The price adjustments will affect customers of *Energy Australia*, *Integral Energy* and *Country Energy* directly.

The last determination was conducted in March 2010 (to take effect in July 2010) and IPART is currently undertaking its 2012 review.

An assessment of the proposed price changes have highlighted that significant price increases will materialise in NSW with potentially severely consequences for the irrigation industry.

## Executive Summary

- 16.4% average increase in regulated electricity price for 2012/13.
- Higher network costs and continuing carbon emission schemes are the main reasons for the price increase.
  - **Problem 1:** Network costs are determined outside the IPART process.
  - **Problem 2:** Irrigator's price elasticity of demand is low<sup>1</sup>.
- Variable water availability (1. key input) and higher energy prices (2. key input) will severely impact on the financial viability of irrigators.

## Recommendations:

- Urgent review of *National Electricity Rules* (NER) to remove potential bias towards higher network costs and inefficient pricing outcomes.
- Introduction of tailored irrigation tariffs - potential block tariffs - that allow individual irrigators to remain financially viable.

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<sup>1</sup> Price elasticity of demand measures the responsiveness of the quantity demanded to a change in its price. If the price elasticity of demand for electricity is low then this means individuals will consume a similar quantity of energy even if prices change, i.e. the good is a necessity in the operation process.

## 1. Changes to regulated electricity prices from 1 July 2012

Based on IPART's annual review, average regulated electricity prices in NSW will increase by around 16.4% in 2012/13. This change is additional to a 10% and 17% increases in 2010/11 and 2011/12 respectively. The proposed increase (segregated by providers) is given in the table below;

**Table 1.1 IPART's draft decision on regulated retail electricity price increases from 1 July 2012 (nominal, %)**

EnergyAustralia	19.2
Integral Energy	10.3
Country Energy	17.6
<b>NSW average</b>	<b>16.4</b>

**Note:** The increases in regulated retail electricity price increases are based on forecast network price increases which are subject to approval by the Australian Energy Regulator in June 2012.

Whilst these changes only relate to regulated electricity prices, it is often the case that unregulated prices changes accordingly, i.e. market based prices are heavily influenced by changes in the regulated prices.

The main reason for the difference in the Standard Retailers' individual average price increases is the differences in network costs.

## 2. Reason for electricity price adjustments

The main reasons for the price increase are the increased network costs and proposed carbon emission schemes (both federal and state government). Both components contribute approximately equally to the electricity price increase.

**Comment [S1]:** Whilst these policies have not been implemented yet, they have been factored into the electricity price review.

**Table 1.2 Drivers of the increase in average regulated retail electricity prices on 1 July 2012, by Standard Retailer (nominal, %)**

	EnergyAustralia	Integral Energy	Country Energy	NSW average
Network costs <sup>a</sup>	11.0	2.3	9.7	8.4
Carbon price costs	9.5	9.5	7.9	9.0
Wholesale energy costs	-2.6	-2.4	-1.8	-2.3
Other green scheme costs	-0.2	0.1	0.5	0.1
Retail costs and margin	1.4	0.9	1.2	1.2
Total cumulative increases on 1 July 2012	19.2	10.3	17.6	16.4

<sup>a</sup> The network service providers in EnergyAustralia's and Integral Energy's supply area are Ausgrid and Endeavour Energy respectively. The network service provider in Country Energy's supply area is Essential Energy.

**Note:** 'Other green schemes' include all of the Commonwealth and NSW Government schemes designed to reduce greenhouse emissions except for the Commonwealth Government's carbon pricing mechanism. While the \$/MWh cost of carbon is similar between the Standard Retailers, the proportionate increase is smaller for Country Energy because their total retail prices are larger. The increases in regulated retail electricity prices are based on forecast network price increases which are subject to approval by the Australian Energy Regulator in June 2012.

As the table above outlines, the wholesale energy costs and retail costs / margins have a negligible (if not negative) impact on electricity prices.

## 2.1. Network Costs

Retailers must pay charges to use the transmission and distribution networks to transport electricity to their customers. These charges are set outside the IPART framework and are regulated by the Australian Energy Regulator (AER). As IPART cannot avoid or control these costs, it has simply passed these network charges through.

The increase in network costs are driven by capital investments aimed to;

- Cope with rising peak demand and changes in energy use patterns.
- Replace aging assets.
- Meet licensing conditions to improve network security and reliability.

## 2.2 Carbon Cost Pricing

The introduction of the Commonwealth Government's carbon pricing mechanism are planned to commence on the 1st July 2012 with a fixed price of \$23 per tonne of CO<sub>2</sub> emission which will add 9% to average regulated retail electricity prices across NSW in 2012/13.

If introduced, this scheme will have direct impact on wholesale electricity costs (i.e. large component of the Standard Retailers' energy costs). In calculating the impact of the carbon price on regulated electricity prices, PART has used the Long Run Marginal Costs approach as a floor price.

## 3. Problems related to electricity price setting

It is a concern that the network costs are entirely set outside the IPART regulatory framework. As IPART cannot assess the efficiency and cost effectiveness of the new capital investments (i.e. in transmission and distribution networks), it is unable to avoid potential biases in setting regulated electricity prices in NSW. A thorough review of the National Electricity Rules (NER) will be necessary to remove any existing inefficiencies that might have led to potentially unnecessarily high network charges - a move that has been also advocated by IPART.

It should be highlighted that irrigators in NSW have a very low price elasticity of demand for electricity. Electricity, together with water, is a key inputs into irrigation and rising input costs will place a severe financial strain on individual operators. Given the volatility in water availability in NSW, many businesses have taken measures to move to more water saving infrastructure. Whilst substantial water savings have been achieved in some instances, many of the operations in NSW have become more energy intensive in the process. Energy, in form of electricity or otherwise, has become a key component in the operational process and hence irrigator's demand elasticity has become more inelastic - i.e an inability to switch to a substitute good even if prices rise. Such a dependency on electricity will make irrigators especially vulnerable to the proposed price changes.

### Comment [S2]:

On 30th April 2009, the Australian Energy Regulator (AER) released its decision approving increased investment in electricity distribution networks in NSW ( 1st July 2009 to 30 June 2014).

To highlight the higher energy intensity in irrigation the following graph has been provided by the Australian Bureau of Statistics.

**Energy Intensity, by industry - 2008-09 and 2009-10**

Industry	2008-09			2009-10		
	Energy use PJ	IGVA(a) \$m	Energy intensity GJ/\$m IGVA	Energy use PJ	IGVA(a) \$m	Energy intensity GJ/\$m IGVA
Agriculture(b)	107	29 109	3 676	109	28 764	3 783
Mining	519	90 507	5 736	543	96 105	5 651
Manufacturing	1 041	106 363	9 787	1 034	107 707	9 600
Water supply and waste services(c)(d)	22	9 332	2 342	21	9 786	2 129
Construction	144	95 292	1 527	144	95 804	1 529
Transport	531	63 885	8 330	544	65 392	8 291
Commercial and services	433	661 113	651	429	677 380	636
<b>Total</b>	<b>2 797</b>	<b>1 055 601</b>	<b>2 650</b>	<b>2 824</b>	<b>1 080 963</b>	<b>2 613</b>

(a) Industry Gross Value Added

(b) Includes Forestry and fishing

(c) Includes Water supply, sewerage and drainage services and waste collection, treatment and disposal services

(d) Excludes Electricity supply and gas supply

Note: One petajoule (PJ) = 1,000,000 gigajoules (GJ)

source: ABS, Energy Account Australia 2009/10

As the table shows, agriculture has become more energy intensive; a trend which is unlikely to reverse in the future.

#### 4. Impact of electricity price increases

The actual increase in regulated electricity prices for an individual irrigator will depend on the three components ; energy usage<sup>2</sup>, market participation<sup>3</sup> and network charges.

A typical bill by Country Energy for a groundwater pump<sup>4</sup> would consist of the following components (according to the cost shares) ;

Usage	~34% (variable charges divided into peak, shoulder and off peak)
Market Participation	~ 6% (variable charges based on total usage)
Network Charges	~60% (variable and fixed component)

This highlights that network charges are a major contributing factor to the overall electricity bill. These network charges are billed under various regulated tariffs published by the networks. These network charges typically relate to;

- Consumption - how much electricity is used at what particular time it is used (variable).
- Demand/Capacity - the maximum amount of electricity that is used or is allocated at one time (variable).
- Access - a connection fee to the network calculated daily (fixed).

Network costs will vary from tariff to tariff for each of the network providers and according to the time of the connection. This effectively means that newly installed equipment will potentially fall under new tariff structures than older existing equipment. These new tariff

<sup>2</sup> Electricity usage at different time periods - peak, shoulder and off peak energy

<sup>3</sup> Includes End User Advocacy, Ancillary Services, NSW Greenhouse Reduction, NSW Energy Saving Scheme, AEMO etc.

<sup>4</sup> Other on farm irrigation equipment might have different cost shares

structures might include additional network components, i.e. Peak Demand<sup>5</sup> and Shoulder Demand which can have very high unit costs. These high unit costs arise as a result of high investment into expanding infrastructure work that is aimed to cope with increased demand patterns. With increased capital investment for network related purposes, these costs components will be a major driver for electricity use in irrigation in the future.

The dollar value of an individual electricity bill will vary for each irrigator based on the equipment, size and layout of the irrigation operation. As an example, dairy farmers which operate more energy intensive equipment will likely see a greater increase in their electricity costs than broad acre cropping operations. Overall, the rise in electricity prices will have an impact on operational costs of all irrigators in NSW.

The impact will not only have a direct component, i.e. higher operational costs but also an indirect impact on consumption and investment expenditure in regional communities.

The direct impact of rising electricity prices will lead to a rise in input costs for irrigation operations. Assuming revenue from irrigation activities remain reasonably constant, an increase in operational costs will lead to a decrease in economic profits (crucial for financial viability). The assumption on stable revenue is broadly justified given that irrigators are generally price takers in domestic and international markets.

The indirect impact of rising electricity prices will be lower consumption and investment expenditure in regional communities given the lower economic profit margin of irrigators. As most of the industries in regional communities are heavily dependent on irrigation, the indirect impact on these industries can be substantial.

## 5. Recommendations

Given the importance of electricity in irrigation, NSWIC would like to make the following recommendations to optimize electricity prices in NSW;

- Urgent review of the National Electricity Rules (NER) to remove potential bias towards higher than necessary network costs and consequently inefficient pricing outcomes. The cost effectiveness of all planned infrastructure upgrades should be thoroughly assessed and, if necessary, rectified to alleviate the financial burden on customers. Currently, those costs are simply 'passed on' by IPART, without assessing the cost effectiveness of infrastructure investments. This will mean that the efficiency of the pricing outcome cannot be guaranteed.
- Introduction of tailored irrigation tariffs that take into account the operational requirement of a particular irrigation infrastructure. Irrigators are progressively moving towards more energy intensive equipment and hence tailored irrigation tariffs would alleviate some of the financial burden of every increasing electricity prices for these industries. These tailored irrigation prices have to specifically address the Peak, Should and Off Peak Demand Network charges.

Such a specific irrigation tariff can take the form of a block tariff that comprise of the following components;

**Comment [S3]:** Possible for post 2014.

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<sup>5</sup> Peak demand refers to the highest demand during the peak period of the network time-of-use.

- A fixed network access charge component independent of usage.
- A variable Block component, expressed on a c/kWh basis applied to electricity consumption.

Comment [S4]: please comment

These two block components need to specifically address the needs of irrigation in the state.

With the current determination expiring on 30 June 2013, the proposed reviews and drafting of appropriate tariffs are urgently necessary to maintain a resilient irrigation industry.