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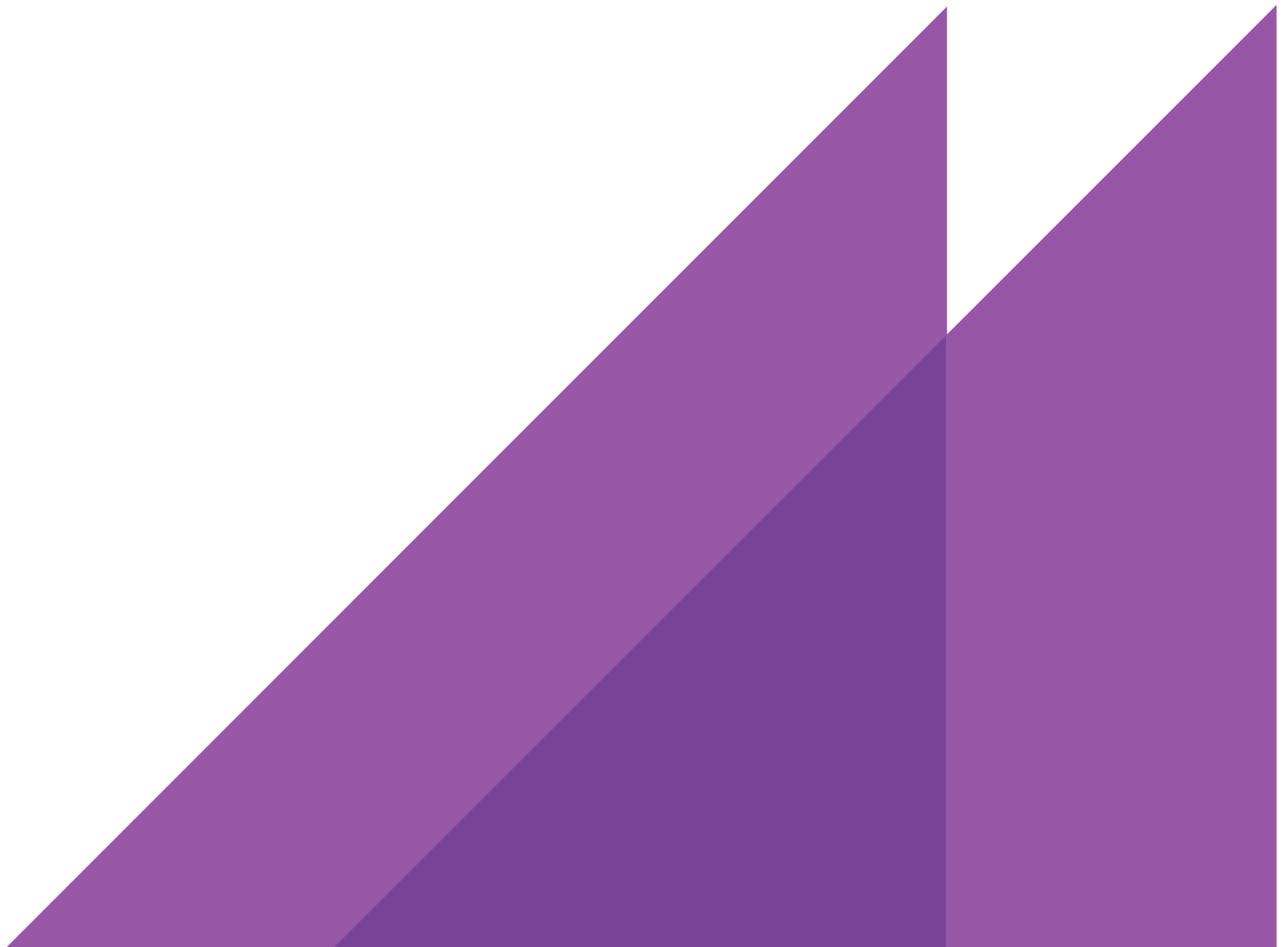
2 DECEMBER 2015

REGULATED RETAIL PRICES FOR 2016-17

ESTIMATING EFFICIENT RETAIL OPERATING COSTS AND MARGIN

METHODOLOGY PAPER

C O N T E N T S

ACRONYMS

ACIL Allen	ACIL Allen Consulting
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AFMA	Australian Financial Markets Association
CARC	Customer acquisition and retention costs
CER	Clean Energy Regulator
CPI	Consumer Price Index
DLF	Distribution Loss Factor
ESC	Energy Savings Certificate
ESS	Energy Savings Scheme
GST	Goods and services tax
GWh	Giga Watthour (10^9 Watthours)
IPART	Independent Pricing and Regulatory Tribunal
LGC	Large-scale Generation Certificate
LRET	Large-scale Renewable Energy Target
MLF	Marginal Loss Factor
NEM	National Electricity Market
NSLP	Net System Load Profile
NSW	New South Wales
PV	Photovoltaic
QCA	Queensland Competition Authority

REES	Retailer Energy Efficiency Scheme
RET	Renewable Energy Target
ROC	Retail operating cost
RPP	Renewable Power Percentage
SRES	Small-scale Renewable Energy Scheme
STP	Small-scale Technology Percentage
VEEC	Victorian Energy Efficiency Certificate
VEET	Victorian Energy Efficiency Target
WEC	Wholesale energy costs

1

INTRODUCTION

Following the introduction of full retail competition in the Queensland electricity market on 1 July 2007, all retail electricity customers in Queensland can choose to either:

— enter into a negotiated retail contract and pay a price determined by the retailer, or

— remain on a standard retail contract and pay a price determined by the Minister or the Queensland Competition Authority (QCA), where that function has been delegated by the Minister under section 90(1) of the *Electricity Act 1994*.

The QCA has received a delegation from the Minister to determine the regulated retail electricity prices for 2016-17.

The QCA is proposing to adopt a similar approach to previous years to determine the regulated retail electricity prices through a build-up of energy, network and retailer costs for a representative retailer. A representative retailer is a retailer that:

— is an incumbent retailer of sufficient size to have achieved economies of scale

— serves small and large retail customers in Queensland and other jurisdictions across the National Electricity Market (NEM)

— has a mix of market and non-market customers

— retails electricity on a standalone basis

— is not vertically integrated with an electricity generator.

Two of the components of the retailer cost are the retail operating cost (ROC) and the retail margin. The QCA has previously defined ROC and the retail margin as follows:

ROC are the costs associated with services provided by a retailer to its customers and typically include the costs associated with customer administration, call centres, corporate overheads, billing and revenue collection, IT systems, regulatory compliance, and customer acquisition and retention (CARC).[1]

The retail margin compensates retailers for their exposure to systematic risk associated with providing customer retail services.[2]

In previous years, the QCA estimated the ROC and the retail margin based on benchmark observations of publicly available data and other regulatory decisions, predominantly those of the Independent Pricing and Regulatory Tribunal (IPART).

With a number of jurisdictions having now deregulated their retail markets, existing sources of benchmark data have aged and are less suitable for the QCA's purposes. For these reasons, the QCA is conducting a comprehensive review of the ROC and retail margin components for the 2016–17 review of regulated electricity tariffs.

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[1] Queensland Competition Authority, *Regulated retail electricity prices for 2015-16, Final determination*, June 2015, page 27
[2] Ibid, page 31

ACIL Allen Consulting (ACIL Allen) has been engaged by the QCA to estimate the efficient ROC and retail margin for a representative electricity retailer serving residential and business customers in Queensland as part of the 2016-17 review of regulated electricity tariffs.

Purpose and overview of this methodology paper

This methodology paper sets out how we propose to estimate the ROC and retail margin for different customer segments. Chapter 2 provides an overview of the proposed methodology, with more detail on the benchmarking approach provided in chapter 3 and more detail on the bottom-up analysis provided in chapter 4. Chapter 5 describes how we propose to index the ROC and retail margin.

The process for estimating the ROC and retail margin, by customer group, is summarised in chapter 6.

2

OVERVIEW OF METHODOLOGY

This chapter provides an overview of the methodology that is proposed to estimate the efficient ROC and retail margin. Further detail is provided in chapters 3 and 4.

2.1 Best practice method for estimating an efficient ROC and retail margin

In 2013 the Australian Energy Market Commission (AEMC) published advice on a best practice method for setting regulated retail electricity prices for small customers.

The AEMC identified two methods for setting an efficient retail operating cost component:

— a **benchmarking** approach, which involves examining publicly available information on retail operating costs, either from publicly listed companies and/or other regulatory decisions

— a **bottom-up** approach, which involves requesting retailers to provide information on their operating costs.[3]

The AEMC recommended that the regulator use both benchmarking and a bottom-up assessment as tools in assessing efficient retail operating costs.

Consistent with this recommendation, we are proposing to use both benchmarking and a bottom-up assessment to estimate an efficient ROC for a representative electricity retailer serving residential and business customers in Queensland in 2016-17.

The AEMC identified three methods typically used to estimate the retail margin:

— an expected returns approach, which determines a margin that compensates retailers for the systematic risk associated with the expected cash flows

— a bottom-up approach, which estimates a retailer's asset base and its estimated cost of capital, and then determines the earnings and revenue that would allow the retailer to earn an expected return equal to its estimated cost of capital

— a benchmarking approach, which examines the reported margins of comparable listed firms by observing public data from stock exchanges.

The AEMC considered that no one method can be relied upon to estimate a retail margin.

The expected returns approach "places high reliance on the economic theory of the Capital Asset Pricing Model and an estimated relationship between profitability of electricity retailers and economic conditions"[4].

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[3] Australian Energy Market Commission, *Advice on best practice retail price methodology*, Final report, page 60
[4] SFG Consulting, *Estimation of the regulated profit margin for electricity retailers in New South Wales*, 4 June 2013, page 2

The bottom-up approach relies on market data to estimate a retailer's asset base, which may be difficult as retailers typically have small tangible asset bases. In 2013, IPART's bottom-up estimate was derived from "just 12 transactions over 14 years"[5].

It may be difficult to identify direct comparators for benchmarking purposes. In 2013, IPART derived an estimate of the retail margin from a sample of listed retailers in industries other than electricity. The sample included retailers in Australia, Canada, New Zealand, UK and USA in the following industry segments – drug retailers, food retail and wholesale, apparel retailers, broadline retailers, home improvements, and specialty retailers. While this approach allowed analysis for a large sample, it was "limited by lack of comparability"[6].

The AEMC therefore recommended that the estimate of retail margin should be guided by a retail margin objective:

The efficient margin is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the retailer in respect of the provision of regulated electricity services.

The decision should be guided by the following principles:

— a range of estimation methods, financial models, market data and other evidence should be considered

— the retail margin should be capable of responding to changes in market conditions

— any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and return on debt should be considered.

2.2 Benchmarking approach

Over the last couple of years, retail electricity prices have been deregulated in NSW and South Australia, and they have been deregulated in Victoria for some years. Across these three jurisdictions, there are nine electricity distribution areas[7], each with at least nine active retailers[8], many of which have multiple tariff offerings publicly available for residential and small business customers.

While retail prices continue to be regulated in Queensland, around 70 per cent of customers in south east Queensland[9] are now on market offers.[10]

There is therefore now a rich set of Australian data available in a competitive market environment that can be used to benchmark an efficient ROC and retail margin.

We will use this data to benchmark the efficient retailer costs (ROC and retail margin) for residential and small business customers in Queensland. This will require careful consideration of:

— the costs incurred in other jurisdictions that are not incurred in Queensland

— the costs incurred in Queensland that are not incurred in other jurisdictions

— differences in the average consumption across jurisdictions

— differences in the rate of churn of customers across jurisdictions

— differences in the timing in setting retail tariffs, which relates to differences in the timing in setting network tariffs – while network tariffs in Queensland, NSW and South Australia are updated each financial year, network tariffs in Victoria are updated each calendar year.

The benchmarking data will not differentiate between the ROC and retail margin, but will provide the aggregate of the two, noting that the ROC and retail margin are closely related. The allocation of costs between the two categories may sometimes be arbitrary and for a given retailer may change over

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[5] Ibid, page 3
[6] Ibid, page 2
[7] Five in Victoria (AusNet Services, CitiPower, Jemena, Powercor and United Energy), three in NSW (AusGrid, Endeavour Energy and Essential Energy) and one in South Australia (SA Power Networks).
[8] We expect that we will use retail tariffs offered by AGL, Origin Energy, Energy Australia, Simply Energy, Lumo Energy, Red Energy, Alinta, M2 Energy and Momentum.
[9] In Energex's electricity distribution area.
[10] The retailers that are active in Queensland are not the same as those that are active in other states. We expect that we will use retail tariffs offered by AGL, Origin Energy, Energy Australia, Click Energy, Lumo Energy, and M2 Energy in south east Queensland.

time. A retailer could, for example, invest in IT and increase the level of automation in the business, which may decrease the ROC and increase the retail margin.

Retail electricity tariffs for large business customers are often subject to negotiation between retailers and customers, and are thus not generally available in the public domain. We will estimate the efficient ROC and retail margin for large business customers based on the benchmarking of retail tariffs for residential and small business customers and bottom up analysis of data provided by the retailers.

Further detail on our benchmarking approach is provided in chapter 3.

2.3 Bottom up analysis

We will also request detailed information from the retailers on their forecast of the ROC and retail margin to be able to assess those estimates on a bottom-up basis.

We will seek financial information as well as a range of metrics, cost allocation methodologies and a reconciliation between the retailers' publicly available ROC and retail margin and their cost estimates, so that we are able to undertake the analysis. We will seek historical information as well as projected information.

We will use the bottom up analysis to:

— disaggregate the retailer costs, as estimated through the benchmarking approach for residential and small business customers, into the ROC and retail margin

— disaggregate the ROC to separately identify the CARC

— validate and cross-check the ROC and retail margin estimated using the benchmarking approach

— identify whether there are any cost drivers which would indicate that the efficient costs for providing retail electricity services in Energex's distribution area are different to the efficient costs for providing retail electricity services in Ergon Energy's distribution area, and if so, the extent to which the costs are different

— identify whether there are any cost drivers which would indicate that the efficient margin required by a retailer for providing retail electricity services in Energex's distribution area is different to the efficient margin required by a retailer for providing retail electricity services in Ergon Energy's distribution area, and if so, the extent to which the margins are different

— identify the appropriate definitions of small, large and very large business customers on the basis of the way in which customers of increasing size are managed by the retailer

— estimate the additional efficient costs required to service large and very large business customers.

Further detail on our bottom-up approach is provided in chapter 4.

2.4 Estimate of the efficient ROC and retail margin

We will estimate the efficient ROC for each class of customers – residential, small business, large business and very large business. The ROC will be estimated based on the benchmarking of retail market offers, a bottom-up analysis of the estimates provided by the retailers, and publicly available information on the retailers' cost to serve. The ROC will be estimated on the basis of an amount per customer.

We will estimate the efficient retail margin for each class of customers – residential, small business, large business and very large business. The retail margin will be estimated based on the benchmarking of retail market offers, a bottom up analysis of the estimates provided by the retailers, and publicly available information on the retailers' margins.

By using several approaches to estimate the ROC and retail margin, we will be able to validate and cross-check our recommendations. The use of multiple approaches is consistent with the AEMC's recommendations.

3

BENCHMARKING RETAILER COSTS

As discussed in chapter 2, we will estimate the efficient retailer costs by deconstructing and benchmarking the components of retail electricity tariffs that are available in jurisdictions with competitive retail electricity markets.

As illustrated in **Figure 3.1**, retail electricity tariffs comprise three broad components – network costs, energy costs and retailer costs (ROC and retail margin). By deducting the network costs and energy costs from the retail electricity tariff, the retailer costs can be derived.

FIGURE 3.1   COMPONENTS OF THE RETAIL ELECTRICITY TARIFF

Total retail costs

| Retailer costs |
| Network costs |
| Energy costs |
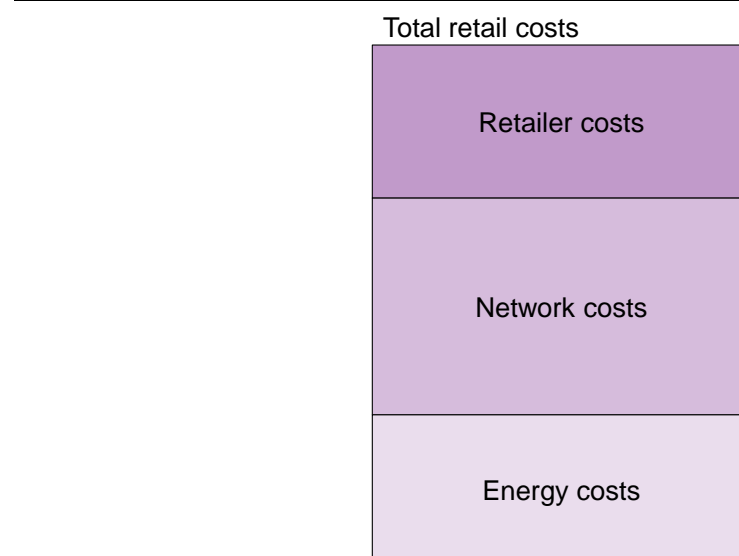
These three broad components, as well as the total retail costs, are discussed in this chapter – the retail electricity tariffs are discussed in section 3.1, the network costs in section 3.2, the energy costs in section 3.3 and the retailer costs in section 3.4.

3.1 Retail electricity tariffs

The starting point for our benchmarking analysis is the market offers that are available in jurisdictions with competitive retail electricity markets. These offers will be used to calculate the annual retail electricity bills for residential and small business customers.

3.1.1 Which retailers will be included in the analysis?

We will use retail tariff offerings by the three largest national retailers (AGL, Origin Energy and Energy Australia), the three largest "non incumbent" retailers (Simply Energy, Lumo Energy and Red Energy), and three smaller retailers (M2 Energy, Alinta and Momentum Energy) in each of the three electricity distribution areas in New South Wales, five electricity distribution areas in Victoria and the one electricity distribution area in South Australia, in our benchmarking analysis.

The retailers that are most active in south east Queensland, are different to those that are most active in other jurisdictions. For south east Queensland, we will therefore use retail tariff offerings by the three largest national retailers (AGL, Origin Energy and Energy Australia), and the largest "non incumbent" retailers in south east Queensland (Click Energy, Lumo Energy and M2 Energy).

These retailers have been selected as they supply most customers in the respective jurisdictions.

The benchmarking analysis will reveal whether the retailer costs vary depending on the size of retailer. If they do vary based on the size of retailer, then we will rely on the data for the six larger retailers.

3.1.2 Which tariffs will be included in the analysis?

We will use the retail electricity tariffs for residential and for small business customers in our benchmarking analysis.

We will use the retail electricity tariffs that were offered for the 2015-16 financial year in NSW, Queensland and South Australia and the retail electricity tariffs that were offered in the 2015 calendar year in Victoria.

The retailers offer a range of competitive market tariffs to residential and small business customers, including single rate tariffs which may have inclining and declining blocks, an off peak rate, conventional time of use (TOU) tariffs and "flexible" tariffs (in Victoria). We will only use the single rate tariffs in our analysis to avoid the complexities associated with differences in the shape of a typical customer's load across jurisdictions. This implicitly assumes that the efficient cost to serve customers will be the same, regardless of the type of tariff that applies to a particular customer.

We will use two retail tariffs per retailer and distribution area in our analysis – one tariff that applies to residential customers and one tariff that applies to small business customers. In many cases, the retailers will have multiple single rate tariffs available. We will use the lowest single rate tariff on the basis that this will be the most efficient tariff.

As a result, we will have approximately 85 data points for residential customers and 85 data points for small business customers.

The cost to serve retail electricity customers is a **fixed cost** – for example, the cost to invoice a customer and the cost to manage customers through the call centre is the same regardless of consumption. This cost will be reflected in the fixed component and/or the variable component of the retail electricity tariff.

Where the cost to serve is reflected in the **variable** component of the retail electricity tariff, the retailer will convert the cost to serve to a per consumption charge. It is expected this conversion will be done based on the average consumption for customers on a particular tariff so that the costs are not over or under recovered.

The average consumption varies across jurisdictions and therefore the rate at which the variable component of the cost to serve is converted to a per consumption charge will vary across jurisdictions. In calculating the total residential customer electricity bills, we will use the average consumption for residential customers in the respective jurisdiction. Similarly, in calculating the total small business customer electricity bills, we will use the average consumption for small business customers in the respective jurisdictions.

The average consumption for residential customers will be calculated based on the customer numbers and energy consumption in the esaa's *Electricity Gas Australia 2015*[11].

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[11] Customer numbers from Table 3.2 and energy consumption from Table 3.3.

The average consumption for small business customers will be calculated based on the number of business customers in the esaa's *Electricity Gas Australia 2015* and by estimating the energy consumption by small business customers. The energy consumption by small business customers will be estimated by deducting the energy consumption by transmission connected customers from the energy consumption by business customers as published by esaa. The energy consumption by transmission connected customers will be the difference between the total energy consumption as published by esaa and the energy consumed by each of the distribution-connected customers in the respective jurisdiction, which will be sourced from the relevant electricity distributor's pricing proposals.

The retail electricity bills will be calculated exclusive of GST.

3.1.3 Treatment of discounts

Many retailers offer incentives and discounts that are not included in the retailers' published electricity tariffs. Retailer incentives can be in the form of cash incentives, vouchers, or percentage discounts on customer bills. Some incentives are unconditional on customer actions while other incentives are contingent on customers paying their bills on time, agreeing to online billing or paying via direct debit. The length of time for which discounts to bills are applied to retail tariffs can be limited and some discounts are only available when the contract is first entered into.

In calculating customers' retail electricity bills we will include all conditional and unconditional discounts that are available to customers. For discounts that are only available once over the contract period, we will amortise the discount over the contract period. Where discounts are available without entering into a contract, we will amortise the discount over a period consistent with the rate of customer switching in that jurisdiction.

3.2 Network costs

Network costs, which are regulated by the Australian Energy Regulator, comprise:

— network tariffs, which recover costs associated with the distribution and transmission networks
— jurisdictional scheme amounts, where these are not included in the network tariffs
— metering charges.

Network tariffs for residential and small business customers are publicly available across the ten distribution network areas we will consider for our analysis.[12]

We will choose the "standard" network tariff that is applied to residential and small business customers on a single rate tariff in the jurisdiction. We will use the network tariffs that apply in 2015-16 in NSW, Queensland and South Australia and in 2015 in Victoria.

Consistent with our approach for calculating overall customer retail electricity bills, we will calculate the network costs based on the average consumption for that jurisdiction, exclusive of GST.

The jurisdictional scheme amounts recover the costs associated with Feed-in Tariff payments made to customers with solar PV systems. If the jurisdictional scheme amounts are not included in the network tariffs, we will include an amount separately.

We will also include the "standard" metering charges that are paid by residential and small business customers in the respective electricity distribution area in 2015-16 in NSW, Queensland and South Australia and in 2015 in Victoria. The metering charges will be higher for customers in Victoria as smart meters have been installed for all customers.

3.3 Energy costs

Energy costs comprise:

— wholesale energy costs for various demand profiles
— costs of complying with the Renewable Energy Target (RET)

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[12] None electricity distribution areas in NSW, South Australia and Victoria, and one in Queensland.

— NEM fees, ancillary services charges and costs of meeting prudential requirements

— energy losses incurred during the transmission and distribution of electricity to customers.

We propose to use the same methodology to estimate the energy costs for NSW, Queensland, South Australia and Victoria, as adopted for the QCA in its determination of regulated retail tariffs for Queensland between 2013-14 and 2015-16.

It is important to apply a consistent approach across the different jurisdictions. Any approach will have an inherent estimation error associated with it – but by using the same approach across the jurisdictions, the estimation error remains largely constant across the jurisdictions and therefore we can make meaningful inter-jurisdictional comparisons since the estimation errors will largely cancel.

The approach to estimating energy costs is designed to simulate the wholesale energy market from a retailing perspective, where retailers hedge the pool price risk by entering into electricity contracts with prices represented by the observable futures market data. Other energy costs are added to the wholesale energy costs and the total is then adjusted for network losses.

Described below is an outline of the proposed approach for each of the energy cost components.

3.3.1   Timing of the analysis

Before considering each component of the energy cost estimate, it is worth considering the timing of the analysis.

As mentioned in section 3.1.2, the analysis will cover retail offers in NSW, Queensland and South Australia for the 2015-16 financial year, and retail offers in Victoria for the calendar year 2015. For internal consistency, we propose to use the market modelling based forecast analysis we undertook at the time for the QCA in estimating the 2015-16 energy costs (for NSW, Queensland and South Australia), and a combination of the forecast for 2015-16 and 2014-15 for Victoria (to give a calendar year forecast), rather than using actual market outcomes (to date) or a more up to date set of market based modelling forecasts.

Although at face value, it may seem appealing to use a more up to date market based modelling forecast to underpin the energy cost analysis, this would create an inconsistency as we are attempting to mimic what retailers were forecasting for the wholesale outcomes at the time they were undertaking their hedging for 2015 and 2016, that is, prior to making their offers available to the retail market.

3.3.2   Wholesale energy costs

As with the 2013-14, 2014-15, and 2015-16 reviews for the QCA, we will use the market hedging approach for estimating the wholesale energy costs (WEC).

We utilised the:

— stochastic demand model to develop 44 weather influenced simulations of hourly demand traces for each of the Net System Load Profile (NSLP) profiles in NSW, Queensland, South Australia and Victoria – using temperature data from 1970-71 to 2013-14 and demand data for 2010-11 to 2013-14

— stochastic outage model to develop 11 power station availability simulations

— energy market models to run 484 simulations of hourly pool prices of the NEM using the stochastic demand traces and power station availabilities as inputs

— analysis of contract data to estimate contract prices

— hedge model taking the above analyses as inputs to estimate a distribution of hedged prices for each NSLP.

We then analyse the distribution of outcomes produced by the above approach to provide a risk adjusted estimate of the WEC for each NSLP.

We rely on the Australian Energy Market Operator (AEMO) as a source for the various demand data (NSLPs) required for the analysis. The QCA will provide access to ASX Energy data for the purpose of estimating contract prices within each region.

The peak demand and energy forecasts for the demand profiles are referenced to the 2013 and 2014 AEMO demand forecasts for each region. The demand forecasting process then links past trends and

relationships between the NSLPs and the corresponding regional demand to produce a forecast of the NSLP profile for each region for 2015-16 (and 2014-15 for Victoria).

This is an important step for Victoria, in particular, as the number of households remaining "in" the NSLP has reduced since 2009 with the roll-out of smart meters. The forecast of the NSLPs also takes into account the projected growth in rooftop PV installations.

3.3.3 Renewable energy policy costs

Energy costs associated with the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES) have been estimated using the latest price information from Australian Financial Markets Association (AFMA) and renewable energy percentages published by the Clean Energy Regulator (CER) at the time of the 2015-16 analysis undertaken for the QCA. Retailer compliance with these schemes operates on a calendar year basis and hence estimates are required for both 2015 and 2016 calendar years, with the costs averaged to estimate the 2015-16 financial year costs for NSW, Queensland and South Australia (and the calendar year estimate can be used for Victoria).

To estimate the costs to retailers of complying with both the LRET and SRES, we use the following elements:

— historical Large-scale Generation Certificate (LGC) market prices sourced from AFMA

— currently legislated LRET GWh targets for 2015 and 2016

— official Renewable Power Percentage (RPP) for 2015 published by CER

— an estimate of the RPP for 2016

— binding Small-scale Technology Percentage (STP) for 2015 and non-binding STP for 2016 as published by the CER

— the fixed clearing house price for Small-scale Technology Certificates.

3.3.4 Contract price and LGC price data collection cut-off dates

We will apply the same data collection cut-off dates, as for the QCA's 2014-15 and 2015-16 determinations for electricity and LGC contract data.

3.3.5 Other energy costs

Market fees and ancillary service costs are estimated based on data and policy documents published by AEMO.

Prudential costs, both for AEMO and to support hedging, are more complex and need to take into account:

— the AEMO assessed maximum credit limit

— the future risk-weighted pool price

— participant specific risk adjustment factors

— AEMO published volatility factors

— futures market prudential obligation factors, including:

  – the price scanning range
  – the intra commodity spread charge
  – the spot isolation rate.

3.3.6 Energy losses

The estimated wholesale energy costs resulting from the analysis are referenced to the corresponding Regional Reference Node. These estimates need to be adjusted for transmission and distribution losses associated with transmitting energy from the Regional Reference Node to end-users. Distribution Loss Factors (DLF), for each DNSP, and average Marginal Loss Factors (MLF), for transmission losses from the node to major supply points in the distribution networks, are applied to the wholesale energy cost estimates to incorporate losses.

The MLFs and DLFs used in the calculations will be based on the final 2015-16 MLFs and DLFs published by AEMO on 1 April 2015 (as well as the final 2014-15 MLFs and DLFs for Victoria).

3.4 Retailer costs

For each retail electricity tariff, we will deduct the energy costs and network costs from the total retail electricity costs to derive the retailer costs.

Before the retailer costs are benchmarked, we will normalise the retailer costs to take into consideration:

— the retailer costs incurred in other jurisdictions that are not incurred in Queensland – these costs will need to be deducted from the retailer costs estimated for those jurisdictions

— the retailer costs incurred in Queensland that are not incurred in other jurisdictions – these costs will need to be added to the retailer costs estimated for each jurisdiction.

These costs are discussed in the following sections.

If there are any additional energy or network costs incurred in a particular jurisdiction, these will be netted out by deducting the energy and network costs from the total retail electricity costs. As a result, they do not need to be separately accounted for in the normalisation process.

3.4.1   Costs incurred in other jurisdictions that are not incurred in Queensland

The costs incurred in other jurisdictions that are not incurred in Queensland relate to state-based energy efficiency schemes, and the rollout of smart meters in Victoria.

State-based energy efficiency schemes

The state based energy efficiency schemes that are in place in jurisdictions other than Queensland are the:

— New South Wales Energy Savings Scheme

— South Australian Retailer Energy Savings Scheme

— Victorian Energy Efficiency Target.

Retailers incur two types of costs under these schemes:

— costs associated with carrying out energy efficiency activities or, in the case of NSW and Victoria, the costs associated with sourcing certificates for these activities

— compliance costs associated with the scheme, including costs associated with auditing, record keeping, reporting and purchasing either certificates or energy savings activities.

We will account for both of these costs in our analysis.

NSW Energy Savings Scheme

The NSW Energy Savings Scheme (ESS) places an obligation on electricity retailers to obtain and surrender Energy Savings Certificates (ESC), which represent energy savings.

In its last review of regulated retail prices and charges for electricity, IPART proposed an indicative allowance of $1.93 per MWh (real 2012-13) for compliance with the ESS for the 2015-16 regulatory period[13].

IPART regarded the spot market for ESS certificates as too thinly traded to arrive at an appropriate market estimate of the cost of an ESS certificate. In arriving at its estimate, IPART used the tax adjusted penalty price under the ESS scheme as a proxy for the cost of an ESC. IPART calculated the overall cost of compliance with the scheme by multiplying the tax adjusted penalty price by the compliance obligation (a percentage of liable electricity sales).

We will obtain market information on the price of ESCs for the 12 month period up to May 2015 to inform an estimated price for certificates.

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[13] Review of regulated retail prices and charges for electricity from June 2013 to June 2016, Page 56

The administrative costs associated with the ESS are not publicly available. However, the costs can be estimated from a series of interviews undertaken with a subset of energy retailers on behalf of the Commonwealth Department of Climate Change and Energy Efficiency. The report estimated that the compliance cost was $0.76 per certificate for the incumbent retailer and $0.77 per certificate for other retailers (in 2012 dollars).[14] We propose to index these costs by the Consumer Price Index (CPI) to June 2015 dollars.

The total retailer costs associated with the ESS will be estimated based on the total number of certificates required to be surrendered in 2015-16, the certificate cost and the compliance cost per certificate. The retailer costs will be converted to a per consumption figure by dividing by the average energy consumption for residential and small business customers, which is estimated using the approach described in section 3.1.2.

As part of the Information Request, we will seek information from retailers on the costs associated with the ESS that will further inform our estimate.

The costs associated with the ESS will be deducted from the retailer costs estimated for retail tariffs in NSW.

South Australian Retailer Energy Efficiency Scheme (REES)

Under the South Australian Retailer Energy Efficiency Scheme (REES), liable electricity retailers[15] have to conduct a set number of energy efficiency audits every year and achieve energy reduction targets by providing energy efficiency activities to customers, with a specific sub target for priority customers. Targets for a specific retailer are set with reference to a retailer's share of energy sales (electricity and gas) in South Australia in the preceding year.

Retailers that fail to meet their obligation under the scheme have to pay a base penalty of $10,000 for failing to achieve their target, a penalty of $500 per energy audit not undertaken, and pay $70 per tonne of greenhouse gas emissions that was deemed to have been emitted as a result of not undertaking energy efficiency measures.

In 2010, the Essential Services Commission of South Australia included an allowance of $12.55 per customer (in 2010 dollars) for the costs associated with REES.[16] For the purposes of our analysis, we will index this allowance based on:

— CPI from December 2010 to June 2015

— the increase in the number of audits required from 2011 to 2015

— the increase in the number of energy efficiency activities required from 2011 to 2015

— the increase in the number of electricity customers in South Australia from 30 June 2010 to 30 June 2014 (from the esaa's *Electricity Gas Australia 2015*)

— the weighted average increase in the certificate penalty price from 2011 to 2015 under the NSW and Victorian schemes (to take into consideration the maturity of the scheme and the likely increase in cost as lower cost activities are saturated).

As part of the Information Request, we will seek information from retailers on the costs associated with REES that will further inform our estimate.

The costs associated with REES will be deducted from the retailer costs estimated for retail tariffs in South Australia.

Victorian Energy Efficiency Target

The Victorian Energy Efficiency Target (VEET) scheme places an obligation on large[17] energy retailers to surrender a certain number of energy efficiency certificates for every unit of energy sold. Each Victorian Energy Efficiency Certificate (VEEC) created under the scheme represents one tonne

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[14] NERA Economic Consultants and Oakley Greenwood, *Analysis of Compliance Costs for a National Energy Savings Initiative, Final Report* for the Department of Climate Change and Energy Efficiency, December 2012, page 21

[15] Electricity retailers that sell to more than 5,000 residential customers or had electricity purchases exceeding 27,000 MWh

[16] Essential Services Commission of South Australia, *2010 Review of Retail Electricity Standing Contract Price Path, Final Inquiry Report & Final Price Determination,* December 2010, page A-89

[17] Electricity retailers selling more than 30,000 MWh or selling to more than 5,000 residential customers are liable under the scheme.

of avoided carbon emissions. The liability to surrender VEECs is expressed as a percentage of relevant electricity acquisitions.

We propose to estimate the costs associated with VEET using the same approach as used to estimate the costs associated with the ESS.

We will obtain market information on the price of VEECs for the 12 month period up to November 2014 to inform an estimated price for certificates.

The administrative costs associated with the VEET are not publicly available. However, the costs can be estimated from a series of interviews undertaken with a subset of energy retailers on behalf of the Commonwealth Department of Climate Change and Energy Efficiency. The report estimated that the compliance cost was $0.76 per certificate for the incumbent retailer and $0.77 per certificate for other retailers (in 2012 dollars).[18] We propose to index these costs by CPI to December 2014 dollars.

The total retailer costs associated with the VEET will be estimated based on the total number of certificates required to be surrendered in 2015, the certificate cost and the compliance cost per certificate. The retailer costs will be converted to a per consumption figure by dividing by the average energy consumption for residential and small business customers, estimated using the approach described in section 3.1.2.

As part of the Information Request, we will seek information from retailers on the costs associated with the VEET that will further inform our estimate.

The costs associated with VEET will be deducted from the retailer costs estimated for retail tariffs in Victoria.

Metering costs

In Victoria, a government mandated roll out of smart metering infrastructure imposes additional costs on retailers. While our analysis will be based on single rate tariffs, which do not require smart meters, retailers will need to maintain the infrastructure necessary to manage smart metering data. The costs for this infrastructure are recovered through retail tariffs and will need to be accounted for in our analysis.

There is no public information available on the additional costs incurred by Victorian electricity retailers due to the installation of smart meters.

We will analyse the difference between the retailer costs for Victoria and the other jurisdictions to estimate the additional costs associated with smart meters incurred by retailers in Victoria in 2015.

The costs associated with the infrastructure for smart metering data will be deducted from the retailer costs estimated for retail tariffs in Victoria.

3.4.2   Costs incurred in Queensland that are not incurred in other jurisdictions

The QCA recovers its costs through regulatory fees that are levied on the retailers.

The QCA will provide a forecast of the regulatory fees to be levied on retailers in 2016-17. These regulatory fees will be added to each of the estimates of the retailer operating costs in NSW, South Australia and Victoria. We will adjust the retailer operating costs for Queensland based on the difference between the actual regulatory fees for 2015-16 and the forecast for 2016-17.

3.5 Benchmarking retailer costs

The analysis described in this chapter will provide approximately 170 data points on the retailer operating costs.

As the retailer operating costs will be for different years, they will need to be indexed to June 2016, so that they are comparable across jurisdictions and with the retailer operating costs that will be forecast

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[18] NERA Economic Consultants and Oakley Greenwood, *Analysis of Compliance Costs for a National Energy Savings Initiative, Final Report* for the Department of Climate Change and Energy Efficiency, December 2012, page 21

by the retailers for 2016-17 for the bottom-up analysis. The method for indexing the retailer operating costs is discussed in section 5.

The data points will be analysed to identify whether there are any outliers, which will be removed from the analysis, and whether there are any systematic differences due to particular characteristics of retailers. The characteristics that we will consider are the size of the retailer, whether the electricity distribution area is predominantly rural or urban, and the jurisdiction, including the rate of churn in each jurisdiction.

If there are systematic differences by jurisdiction, this indicates that there are costs that are either incurred or not incurred, as the case may be, in that jurisdiction that need to be specifically accounted for in our analysis.

4
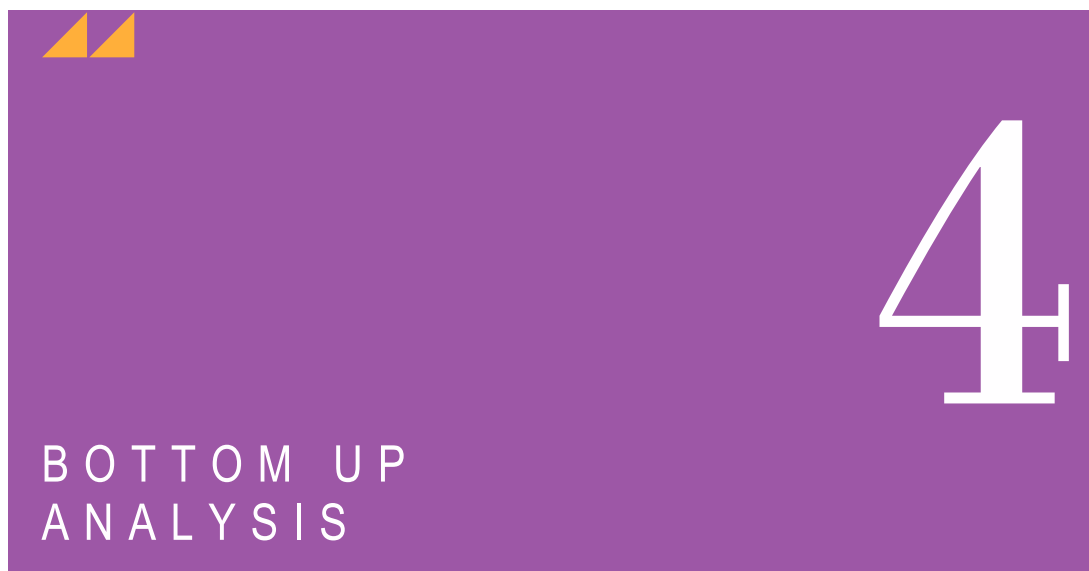
BOTTOM UP ANALYSIS

The bottom up analysis will consider the ROC and retail margin forecast to be incurred by retailers. It will consider:

— ROC – the costs associated with customer service, billing and revenue collection, regulatory compliance, energy trading, customer acquisition and retention, information systems, and regulatory fees as provided by QCA

— retail margin – depreciation of tangible assets, amortisation of intangible of assets, interest, tax and a return on assets.

An information request will be provided to the relevant retailers to collect the information required for the bottom up analysis.

The ROC will vary depending on how a customer is managed by the retailer. For example, the costs for managing a small customer through a call centre are lower than the costs for managing a large customer through a dedicated account manager. The costs for invoicing a small customer quarterly are lower than the costs for invoicing a large customer monthly (or more frequently).

The information request will seek information on the drivers that influence the costs incurred for different groups of customers. This will inform the definition of the customer segments for which we will estimate an efficient ROC and retail margin.

Information will be sought from the retailers on the historical ROC and retail margin by customer segment, and the forecast ROC and retail margin by customer segment. The information will be sought in a number of different cost categories, for example, customer service costs, and billing and revenue collection costs.

For each of the cost categories, the information request will seek information on the allocators that are used to allocate costs to each of the different customer segments identified, including, as a minimum, the energy consumption and the number of customers in that customer segment.

The information provided will identify how the costs vary across different customer segments so that estimates of the ROC and retail margin can be determined for the different customer segments, as relevant.

The information provided by the retailers will be analysed to:

— derive a forecast retailer operating cost that is comparable to that produced through the benchmarking approach

— disaggregate the retailer costs estimated from the benchmarking for a residential and small business customer into a ROC excluding CARC, CARC, and retailer margin

— assess whether the retailer costs estimated from the benchmarking have appropriately considered the costs that are incurred in Queensland and not in other jurisdictions

— assess the additional ROC, CARC and retail margin required for larger customers

— assess whether the ROC, CARC and retail margin will be different in Energex's distribution area and Ergon Energy's distribution area.

5

INDEXING ROC AND RETAIL MARGIN
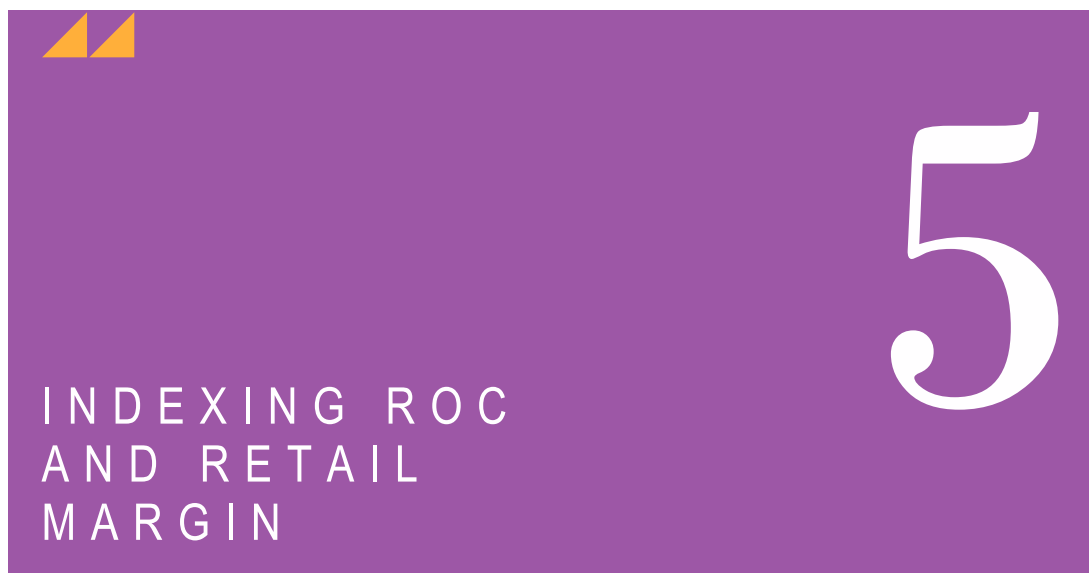
The retailer costs estimated through the benchmarking analysis will be indexed so that they can be directly compared across jurisdictions and with the forecast ROC and retail margin as forecast by the retailers. In addition, part of our brief is to consider methods by which our estimates for the efficient ROC and retail margins for 2016-17 could be indexed to provide estimates for future years.

The approach to indexing the benchmarked retailer is discussed in section 5.1, and the approach to indexing the ROC and retail margin in future years is discussed in sections 5.2 and 5.3, respectively.

5.1 Indexing the benchmarked retailer costs

The retailer costs will vary from year to year based on the increase in input costs and any improvements in productivity.

In its advice on best practice retail price methodology, the AEMC identified several alternatives for how retailer operating costs can be escalated[19]:

— use of a general cost escalator – either the CPI or a wage index
— use of a specific cost index, targeted to electricity retail operating costs.

The AEMC also identified that a productivity improvement factor could also be considered, to take into account that retailers become more efficient in providing services for customers.

The AEMC recommended that costs be escalated using CPI rather than a wage index as it considered that the wage index does not reflect non-labour costs and does not account for improvements in labour productivity. The AEMC considered that it would be administratively complex to develop a specific cost index.

We will not have sufficient information for each of the approximately 170 retailer tariffs used in the benchmarking analysis to index them using a wages index, taking productivity improvements into consideration.

We therefore propose to index the retailer costs estimated for NSW, Queensland and South Australia for 2015-16 and the retailer costs estimated for Victoria for 2015, by CPI. We will use the CPI for all groups, weighted average of eight capital cities.[20]

5.2 Indexing the ROC for future years

There are two broad approaches to index the ROC for future years. One approach is to rerun the models with the latest information on energy costs, network tariffs and retail tariffs. The second

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[19] Australian Energy Market Commission, *Advice on best practice retail price methodology, Final report,* 27 September 2013, page 61
[20] ABS (2015), 6401.0 - Consumer Price Index, Australia, Jun 2015, released 22 July 2015

approach is simply to index the ROC that is estimated for 2016-17. This approach is described further below.

If there is a variable component of the ROC, it will be expressed on a consumption basis based on the forecast average consumption for each customer group in 2016-17.

As the representative retailer has been defined as a retailer that has achieved economies of scale, it is assumed that the ROC (on a per customer basis) will not vary as the number of customers changes. However, as the average consumption per customer varies over time, any variable component of the ROC will need to be adjusted on a year to year basis to account for the change in average consumption.

As discussed above, the ROC can be escalated using CPI, a wage index, or a specific cost index, offset by productivity improvements.

A retailer may choose to invest in information technology to reduce operating costs. As part of the bottom up analysis we will seek information on the expected productivity improvements in the short term (three to five years).

We will also seek estimates of the proportion of the input costs that are labour and non-labour so that we can use different indices for each.

If the retailers provide information on the forecast productivity improvements, we will consider recommending indexing the ROC as follows:

— labour proportion of input costs indexed by a wage index
— non-labour proportion of input costs indexed by the CPI
— offset by the forecast productivity improvements.

As the ROC are primarily for administrative and support services, the appropriate index for the labour costs under this approach is the Australian Bureau of Statistics' Wage Price Index for administrative and support services[21]. The appropriate index for the non-labour proportion of costs will be the CPI for all groups, weighted average of eight capital cities.[22].

If the retailers do not provide information on the expected productivity improvements, we will consider recommending indexing the ROC by the CPI.

5.3 Indexing the retail margin in future years

The retail margin will be expressed as a percentage of the total costs, consistent with previous determinations. While the percentage is unlikely to change materially from one year to the next, the amount that the percentage equates to in dollar terms will change as the other cost components change.

In the longer term, the retail margin will change with:

— changes in economic conditions
— changes to the taxation rate
— changes to the asset base.

The information provided by the retailers will inform our advice to the QCA on an appropriate methodology for indexing the retail margin.

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[21] ABS (2015), 6345.0 - Wage Price Index Australia, released 12 August 2015
[22] ABS (2015), 6401.0 - Consumer Price Index, Australia, Jun 2015, released 22 July 2015

6

ESTIMATING THE EFFICIENT ROC AND RETAIL MARGIN

The benchmarking and bottom up analysis will inform a judgement on estimates of the efficient ROC and retail margin for the relevant customer groups. The ROC will be expressed on a per customer basis based on the forecast average consumption for Queensland customers in 2016-17. The retail margin will be expressed as a percentage of cost.

The way in which the information provided will be considered in assessing the efficient ROC and retail margin is summarised in **Figure 6.1**.

FIGURE 6.1 ESTIMATING THE EFFICIENT ROC AND RETAIL MARGIN
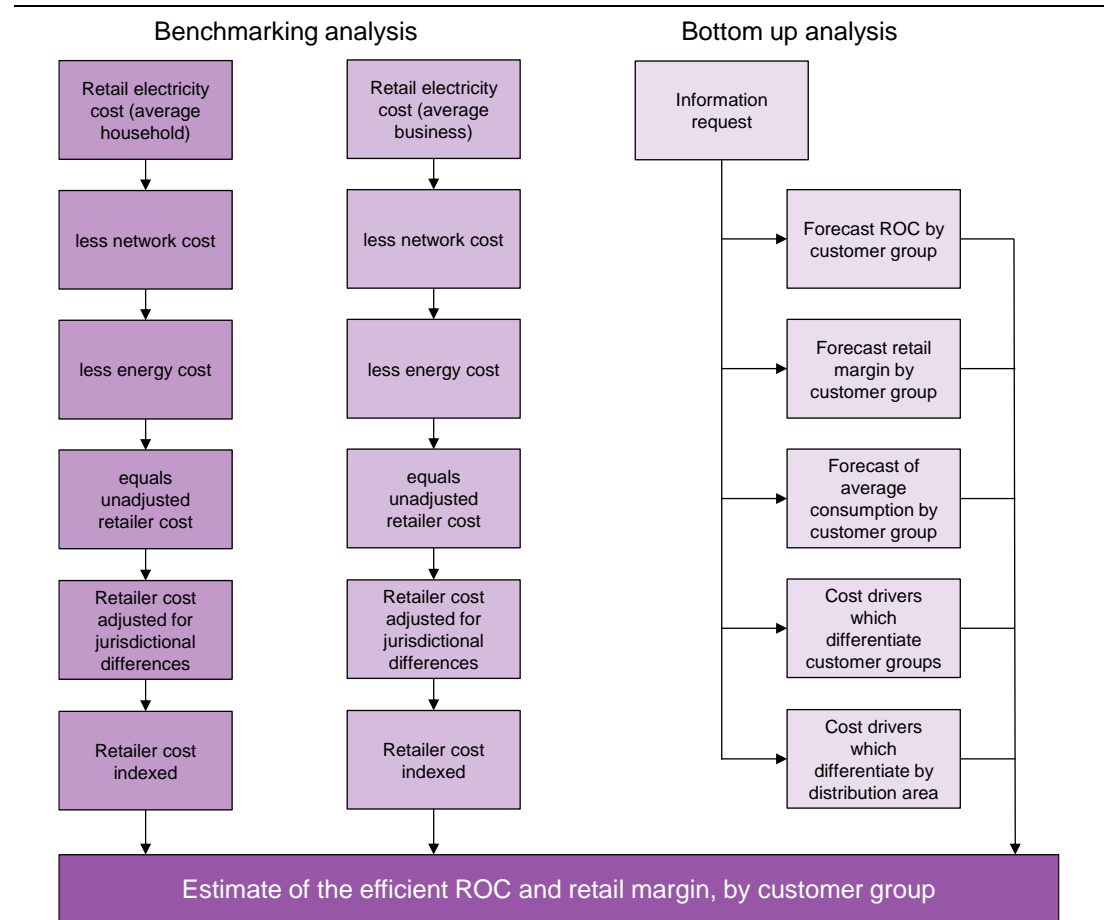
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