

REPORT TO
QUEENSLAND COMPETITION AUTHORITY
8 DECEMBER 2020

UPDATING RETAIL COSTS FOR THE 2021-22 REGULATED ELECTRICITY PRICE REVIEW



METHODOLOGY DOCUMENT





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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:

- negotiate a market retail contract with a retailer and pay a price determined by that retailer, or
- remain on a standard retail contract with the price:
 - for customers in south east Queensland, determined by the retailer, subject to the Australian Energy Regulator’s determination of a Default Market Offer
 - for customers in regional Queensland, 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 regional Queensland for 2021-22.

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 retail costs. The two components of the retail 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

The retail margin has historically been set relative to the retailers’ EBITDA (earnings before interest, tax, depreciation and amortisation) and therefore includes an allowance for tax, depreciation and amortisation, and a return to the retailers.

ACIL Allen was engaged by the QCA to estimate the efficient retail costs as part of the 2016-17 review of regulated retail electricity tariffs. We used a benchmarking approach based on publicly available market data and a bottom-up approach based on confidential data provided by the retailers to estimate a retail cost. The estimated retail cost comprised a variable component (cost per energy consumed) and a fixed component (cost per customer). The retail cost was estimated separately for residential and small business customers.

The retail cost for residential and small business customers was indexed for the 2017-18, 2018-19, 2019-20 and 2020-21 reviews of regulated retail electricity tariffs, with the variable component

¹ Queensland Competition Authority, *Regulated retail electricity prices for 2015-16, Final determination*, June 2015, page 27

² *Ibid*, page 31

remaining the same as a percentage of variable costs and the fixed component escalated by the forecast change in CPI.

The retail cost for large customers (those consuming more than 100 MWh per annum) was also reviewed as part of the 2016-17 review of regulated retail electricity tariffs. However, there was no compelling evidence at that time to change the retail cost from the QCA's previous determinations.

We have been engaged by the QCA to update the existing retail cost estimates, as part of the 2021-22 review of regulated retail electricity tariffs, using approaches similar to those used for the 2016-17 review so that they reflect the retail costs based on current market data. However, there are a couple of key differences. For 2016-17, the benchmarking approach to estimating the retail cost for residential and small business customers drew on:

- Publicly available data on retail market offers in south east Queensland, New South Wales, South Australia and Victoria – with the increase in the number of retail market offers available in south east Queensland, the benchmarking for the update of the retail cost estimate for 2021-22 will be based on retail market offers in south east Queensland only.
- Flat rate tariffs only – with the shift away from flat rate tariffs since 2016-17, the retail cost estimate for 2021-22 will be benchmarked for residential and small business customers on flat-rate, time-of-use, demand and load control tariffs.

In addition, the 2021-22 review will consider:

- updating the retail cost estimate for large customers using a bottom-up approach
- whether the updated retail costs estimated using a benchmarking approach will need to be adjusted further to account for recent developments affecting retail electricity markets. This includes adjustments related to productivity improvements, the effects of COVID-19 and network tariff reforms or other regulatory or operating environment changes that are likely to materially affect retailers' costs to serve customers in 2021-22.

Purpose and overview of this methodology paper

This methodology paper sets out how we propose to update the retail cost estimates.

Chapter 2 provides an overview of the proposed methodology to update the retail cost estimates for residential and small business customers using a benchmarking approach, chapter 3 provides an overview of the proposed methodology to update the retail cost estimate for large customers and chapter 4 provides an overview of the proposed approach to considering the effect of recent developments affecting retail electricity markets.



METHODOLOGY – RESIDENTIAL AND SMALL BUSINESS CUSTOMERS


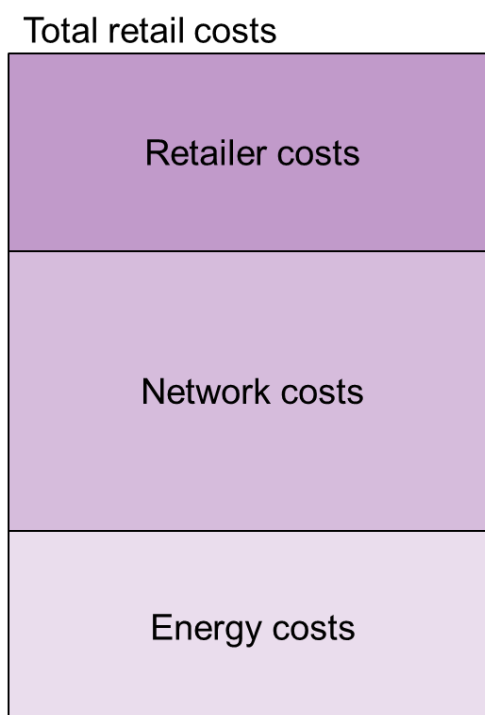
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This chapter describes the methodology that will be used to update the retail cost estimates for residential and small business customers using a benchmarking approach.

We will update the retail cost estimates for residential and small business customers by deconstructing the components of each of the retail electricity tariffs that are available in south east Queensland (flat rate, time of use, demand and load control) and then benchmarking the retail costs.

As illustrated in Figure 2.1, retail electricity tariffs comprise three broad components – network costs, energy costs and retail costs (fixed and variable components). By deducting the network costs and energy costs from the total retail electricity tariffs, the retail costs can be derived.

FIGURE 2.1 COMPONENTS OF THE RETAIL ELECTRICITY TARIFF

SOURCE: ACIL ALLEN

These three broad components, as well as the retail electricity tariffs, are discussed in the following sections – the retail electricity tariffs are discussed in section 2.1, the network costs in section 2.2, the energy costs in section 2.3 and the retailer costs in section 2.4.

2.1 Retail electricity tariffs

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

The retail electricity bills will be calculated separately for:

- residential customers on a:
 - flat rate tariff
 - time of use tariff
 - demand tariff
 - load control tariff
- small business customers on a:
 - flat rate tariff
 - time of use tariff
 - demand tariff
 - load control tariff.

We will use the retail market tariffs that were offered for the 2020-21 financial year in south east Queensland, as published on the Australian Energy Regulator's (AER's) Energy Made Easy website.

The retailers offer a range of competitive market tariffs to residential and small business customers. We will include all published tariffs in our analysis. If our analysis indicates that there are a small number of tariffs that are outliers (resulting in electricity bills that are more than two or three standard deviations from the mean), we will remove those tariffs from our analysis.

Some of the costs to serve retail electricity customers are a fixed cost – for example, the cost to invoice a customer and the cost to manage customers through a call centre are the same regardless of consumption. This cost is expected to be reflected in the fixed component of the retail cost, but may be reflected in the variable component of the retail electricity tariff by some retailers.

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 tariffs and therefore the rate at which the variable component of the cost to serve is converted to a per consumption charge varies across tariffs. We will therefore calculate the total retail electricity bills for each of the tariffs based on the average consumption for residential and small business customers that is relevant to each tariff.

The retail electricity bills are calculated exclusive of GST.

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 over 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 (upfront discounts).

In calculating customers' retail electricity bills, we will factor in all quantifiable conditional and unconditional discounts that are available to customers. We will amortise upfront discounts over a period consistent with the rate of customer switching.

2.2 Network costs

Network costs, which are regulated by the AER, 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. We will use the network tariffs that apply in 2021-22 in Energex's distribution area. We will choose the network tariff that corresponds to each of the tariff types included in our analysis.

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

The jurisdictional scheme amounts recover the costs associated with Feed-in Tariff payments made to customers with solar PV systems. Jurisdictional scheme amounts related to Feed-in Tariff payments are included in the network tariffs.

Our analysis of network costs also includes the "standard" metering charges that are paid by residential and small business customers in 2021-22.

2.3 Energy costs

Energy costs comprise:

- wholesale energy costs (WEC) for various demand profiles
- costs of complying with the Renewable Energy Target (RET)
- NEM fees, ancillary services charges and costs of meeting prudential requirements
- energy losses incurred during the transmission and distribution of electricity to customers.

We will use the same methodology to estimate the energy costs for Queensland as adopted for the QCA in its determination of regulated retail tariffs for Queensland between 2013-14 and 2020-21.

There is a risk of double counting costs or not including costs when estimating the retail cost. By using the same methodology to estimate the energy costs for estimating the retail costs as used by the QCA in determining regulated retail tariffs, this risk is mitigated. If different approaches are used to estimate the energy costs, the energy cost could be higher (or lower) resulting in a lower (or higher) retail cost.

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 approach for quantifying each of the energy cost components. Further details on the approach to calculating energy costs is provided in ACIL Allen's June 2020 report to the QCA, *Estimated Energy Costs, 2020-21 Retail Tariffs*.

Timing of the analysis

We will use the forecasts based on market modelling we undertook for the QCA in estimating the 2020-21 energy costs for Queensland. This modelling includes National Electricity Market (NEM) fees and ancillary service charges, prudential costs and energy losses.

For internal consistency, we will use retail electricity tariffs that would have been set by retailers using similar forecasts of energy. If retail electricity tariffs are used that were set at a different time, there could be variances in the retail cost estimates as a result of timing differences.

2.3.2 Wholesale energy costs

As with the 2013-14 to 2019-20 reviews, ACIL Allen continued to use the market hedging approach for estimating the WEC for 2020-21.

We utilised our:

- stochastic demand model to develop 49 weather influenced simulations of hourly demand traces for each of the tariff profiles – using temperature data from 1970-71 to 2018-19 and demand data for 2016-17 to 2018-19
- stochastic outage model to develop 11 hourly power station availability simulations
- energy market models to run 539 simulations of hourly pool prices of the National Electricity Market (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 tariff class.

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

We relied on the Australian Energy Market Operator (AEMO) as a source for the various demand data required for the analysis. The QCA provided ACIL Allen with access to ASX Energy data and OTC data from TFS Australia for the purpose of estimating contract prices.

The peak demand and energy forecasts for the demand profiles are referenced to the 2018 and 2019 AEMO demand forecasts for Queensland and take into account past trends and relationships between the NSLPs and the Queensland region demand. It was our assessment that the AEMO medium series demand projection for 2020-21 provided in AEMO's 2019 Electricity Statement of Opportunities was the most reasonable demand forecast for the purposes of this analysis.

2.3.3 Renewable energy policy costs

Energy costs associated with the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES) were estimated using price information from brokers TFS, information published by the Clean Energy Regulator (CER) and modelling by ACIL Allen. Retailer compliance with these schemes operates on a calendar year basis and hence estimates were required for both 2020 and 2021 calendar years, with the costs averaged to estimate the 2020-21 financial year costs for Queensland.

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

- historical Large-scale Generation Certificate (LGC) market forward prices for 2020 and 2021 from brokers TFS³
- the published Renewable Power Percentage (RPP) for 2020 of 19.31 per cent, as published by the CER
- estimated RPP value for 2021 of 19.44 per cent⁴
- the binding Small-scale Technology Percentage (STP) for 2020 of 24.40 per cent, as published by the CER
- estimated STP value for 2021 of 22.15 per cent⁵
- CER clearing house price⁶ for 2020 and 2021 for Small-scale Technology Certificates (STCs) of \$40/MWh.

2.3.4 Other energy costs

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

³ TFS data includes prices up to and including 8 May 2020.

⁴ The estimated RPP value for 2021 was estimated using ACIL Allen's estimate of liable acquisitions and the CER-published mandated LRET target for 2021.

⁵ The estimated STP value for 2021 was estimated using ACIL Allen's estimates of STC creations and liable acquisitions in 2021.

⁶ Although there is an active market for STCs, ACIL Allen is not compelled to use market prices. This is mainly because historical prices might not be the best indicators of future prices as the market is designed to clear every year – so in theory prices could be \$40 or at least very close to it. This assumes that the CER provides an accurate forecast of created certificates underpinning the STP for the next year.

Prudential costs, both for AEMO and representing capita used to meet prudential requirements to support hedging 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.

2.3.5 Energy losses

The estimated wholesale energy costs resulting from the analysis is referenced to the Queensland 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 Energex and for the Ergon Energy east zone and average Marginal Loss Factors (MLF) for transmission losses from the node to major supply points in the distribution networks were applied to the wholesale energy cost estimates to incorporate losses.

The MLFs and DLFs used to estimate losses for 2020-21 were based on the final 2020-21 MLFs and the final DLFs published by AEMO on 1 April 2020.

2.4 Retail costs

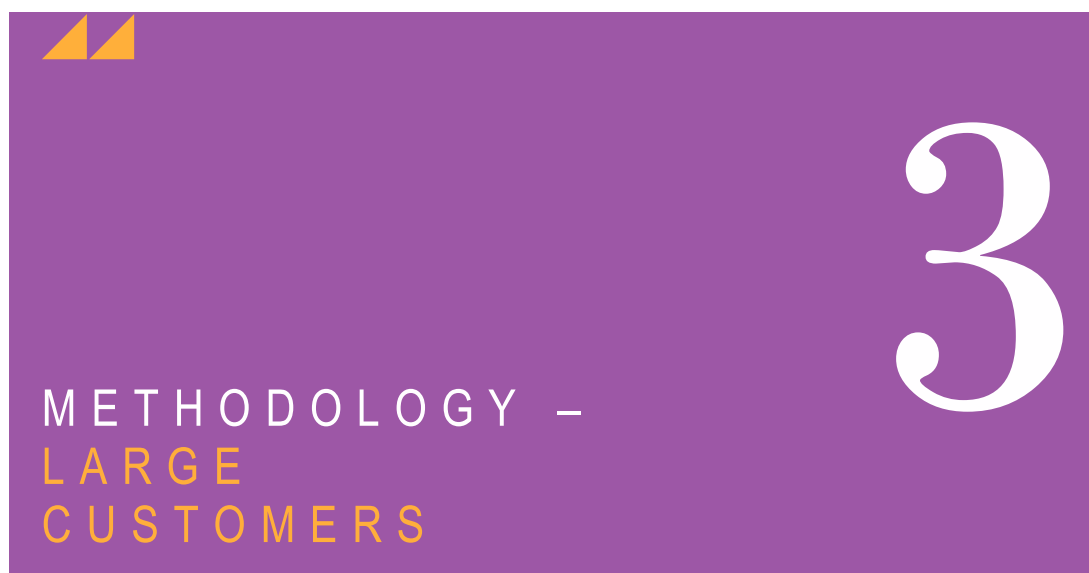
For each retail electricity tariff, we will deduct the energy costs and network costs from the total retail electricity costs to derive the retail costs. We will analyse the benchmarking sample to assess whether there are any outliers, which will be removed from the sample, and whether there are any systemic differences due to particular characteristics of retailers.

In estimating the retail costs in 2016-17, we identified a relationship between the fixed and variable costs using regression analysis. The retail costs were estimated based on:

- fixed component – the mean value of the fixed component in the benchmarking sample for each tariff type
- variable component – the variable component that equated to the fixed component on the line of best fit for the tariff type.

We will use the same approach to update the retail cost estimates. However, we will also calculate the mean value of the variable component in the benchmarking sample for each tariff type and assess the variance between using a mean value and the regression analysis.

We will consider whether any adjustments should be made to the benchmarked retail costs for residential and small business customers based on the adjustments discussed in chapter 4.



This chapter describes the methodology that will be adopted to update the retail cost estimates for large customers using a bottom-up approach.

We will issue an Information Request to retailers to obtain the retail costs that are estimated to be incurred in 2020-21 to supply electricity to large customers. The cost information will be requested by the following cost categories:

- customer service and contract management – call centre, account managers, other customer service costs
- billing and payment – standard billing operations; bad debts, credit and collections; other billing and payment costs
- acquisition and retention – channel costs, back office costs, marketing costs, other acquisition and retention costs
- IT systems (operating cost only) – customer information and billing system, metering data system, other
- energy procurement costs (the costs of procuring energy and excluding the cost of wholesale energy purchased, hedge costs and prudential costs, which are included in the energy costs)
- regulatory compliance costs
- regulatory fees
- support and overheads
- depreciation
- amortisation
- interest, tax, and return on assets
- other.

We recognise that retailers may allocate these costs to large customers using different cost drivers. We will request the cost data on a per customer basis and/or per MWh basis and/or per MW basis.

Where the retailer is not able to quantify the costs in this way, we will collect information to drive an activity-based approach to derive the retail costs for large customers. This will include collecting information on the activities undertaken by the retailers, the number of FTEs undertaking those activities and/or the estimated time to undertake each activity.

The information provided by the retailers will be analysed to derive a fixed and variable component of the retail cost for large customers. To enable us to analyse the data, we will also request the number of large customers supplied by the retailer, the average consumption and the average demand.

We will request information from the retailers on the expected movement in costs from 2020-21 to 2021-22 and will consider whether any adjustments should be made based on the discussion on adjustments in chapter 4.



This chapter describes the methodology for assessing whether any adjustments should be made to the retail costs estimates derived for residential and small business customers using a benchmarking approach (as described in chapter 2) and derived for large customers using a bottom-up approach (as described in chapter 3).

4.1 Assessing productivity improvements

The fixed component of the retail cost has been escalated each year since 2016-17 by the forecast CPI.

We will use publicly available cost to serve data (for example those published by AGL and Origin Energy) and any other similar information that is publicly available to analyse the real movement in the cost to serve over the last five years. This will be used to derive an estimate of the productivity improvements.

4.2 Additional material costs that may be incurred in 2021-22

To estimate additional material costs that are likely to be incurred by retailers in 2021-22, we will adopt the following broad approach:

1. identify the obligations/circumstances that have changed
2. identify the processes and activities that have changed as a consequence
3. quantify the volume of that change in activity
4. estimate a unit cost for that activity
5. estimate the total change in costs associated with that activity.

When assessing potential additional material costs, we will take care to consider the extent to which the costs are:

- additional to those already incorporated in the published retail electricity tariffs for 2020-21
- expected to persist through 2021-22.

An example of a circumstance that has changed is COVID-19. The AER's "Weekly retail market dashboards – COVID-19" provide an indication of the types of activities for which the volume of activity has changed as a consequence of COVID-19. These include:

- disconnections
- customers on payment plans
- deferred debt
- bad debt

- call centre activity.

We will analyse the potential for changes in retail costs as a result of COVID-19, and other obligations/circumstances that have changed, as set out above.

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