

# Queensland Competition Authority

Draft determination

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## Solar feed-in tariff for regional Queensland 2023–24

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March 2023

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## SUBMISSIONS

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Closing date for submissions: 14 April 2023

Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (QCA). Therefore submissions are invited from interested parties concerning our assessment of the solar feed-in tariff for regional Queensland in 2023–24. The QCA will take account of all submissions received within the stated timeframes.

Submissions, comments or inquiries regarding this paper should be directed to:

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[www.qca.org.au/submissions](http://www.qca.org.au/submissions)

### Confidentiality

In the interests of transparency and to promote informed discussion and consultation, the QCA intends to make all submissions publicly available. However, if a person making a submission believes that information in the submission is confidential, that person should claim confidentiality in respect of the document (or the relevant part of the document) at the time the submission is given to the QCA and state the basis for the confidentiality claim.

The assessment of confidentiality claims will be made by the QCA in accordance with the *Queensland Competition Authority Act 1997*, including an assessment of whether disclosure of the information would damage the person's commercial activities and considerations of the public interest.

Claims for confidentiality should be clearly noted on the front page of the submission. The relevant sections of the submission should also be marked as confidential, so that the remainder of the document can be made publicly available. It would also be appreciated if two versions of the submission (i.e. a complete version and another excising confidential information) could be provided.

A confidentiality claim template is available on [our website](#). We encourage stakeholders to use this template when making confidentiality claims. The confidentiality claim template provides guidance on the type of information that would assist our assessment of claims for confidentiality.

### Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at our Brisbane office, or on our website at [www.qca.org.au](http://www.qca.org.au). If you experience any difficulty gaining access to documents please contact us on (07) 3222 0555.

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# 1 ABOUT OUR REVIEW

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## 1.1 What have we been asked to do?

We have been directed by the Minister for Energy, Renewables and Hydrogen (the Minister), in accordance with section 93 of the *Electricity Act 1994* (Qld) (the Electricity Act), to set a flat rate solar feed-in tariff to apply in regional Queensland for 2023–24. This year, in consultation with stakeholders, we are also required to consider if the pricing methodology we usually use remains appropriate.

## 1.2 Scope of this review

The purpose of our review is to set a flat-rate solar feed-in tariff for 2023–24, in accordance with:

- Section 93(3) of the Electricity Act, which requires us to have regard to:
  - the effect of the solar feed-in tariff on competition in the Queensland retail electricity market
  - any other matter in the Minister’s direction
- the Minister’s direction<sup>1</sup>, which includes a terms of reference with details relevant to our review and matters we must consider this year, namely:
  - the period—the solar feed-in tariff is to apply from 1 July 2023 to 30 June 2024
  - timeframes and consultation—stakeholder consultation must occur before the final solar feed-in tariff is published by 9 June 2023
  - the pricing methodology—we are to set a flat-rate solar feed-in tariff using an ‘avoided cost’ methodology and consider if the approach used in previous years remains appropriate, or if a different methodology might better reflect avoided costs for 2023–24
  - the arrangements in place for Origin Energy to provide retail services to Queensland customers connected to the Essential Energy supply network in southern Queensland.

### 1.2.1 Scope of consultation

The scope of our review, including the matters we must consider when setting the solar feed-in tariff, is set out above. As such, broader matters not within the scope of this review include:

- assessing and implementing more complex tariff structures (e.g. a time-varying rather than a flat-rate tariff), or using an alternative methodology (to the avoided cost methodology) to set the feed-in tariff (e.g. benchmarking)
- policy issues, including arrangements for Queensland customers connected to the Essential Energy network, the Queensland Government’s solar bonus scheme and matters relating to the Queensland Government’s Community Service Obligation payments (CSO) to Ergon Energy Retail

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<sup>1</sup> The delegation, including the terms of reference, is provided in Appendix A.

- network and retail issues, including the performance of Energy Queensland’s distribution and retail businesses, inverter size limits and locational network constraints impacting new solar connection requests.

### 1.3 Review process and indicative consultation timetable

Consultation is an important part of our decision-making process, and we invite stakeholders to participate in our review. While this report sets forth our draft position on an appropriate avoided cost methodology, we welcome stakeholder comments on any aspects of this approach.

Information on making a submission, as well as our online submission form, is available on our [website](#).<sup>2</sup> We will consider all submissions received within the stated timeframes before we set the solar feed-in tariff rate.

We encourage stakeholders to [subscribe to our email alerts](#) to keep up to date with the latest developments on our review.



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<sup>2</sup> Our submission policy is available at <https://www.qca.org.au/submission-policy/>. Our online submission form is available at <https://www.qca.org.au/submissions/>.

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## 2 KEY ASPECTS OF OUR DRAFT POSITION

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We intend to set the draft solar feed-in tariff based on the costs retailers avoid when sourcing electricity from solar photovoltaic (PV) customers rather than the National Electricity Market (NEM), namely:

- wholesale energy costs (section 4.3)
- other costs relating to NEM fees, energy losses and irregular avoided cost pass-through items (section 4.4).

This approach is broadly consistent with our previous methodology, updated to reflect recent market developments. The updates include refinements to the wholesale energy cost estimation methodology and the proposed inclusion of irregular avoided cost pass-through items.

Subject to stakeholder views, we consider this methodology is appropriate because it reflects the costs a regional Queensland retailer would avoid by sourcing electricity from customers with solar PV systems, rather than purchasing it from the NEM. It also gives customers fair and reasonable compensation for the electricity they export to the electricity grid.

Based on our draft approach, customers can expect an increase in the solar feed-in tariff, largely due to the significant increase in wholesale energy costs estimates for 2023–24.

The draft regional solar feed-in tariff for 2023–24 is **12.952 c/kWh**.  
This is 39.3 per cent higher than last year (9.300 c/kWh).

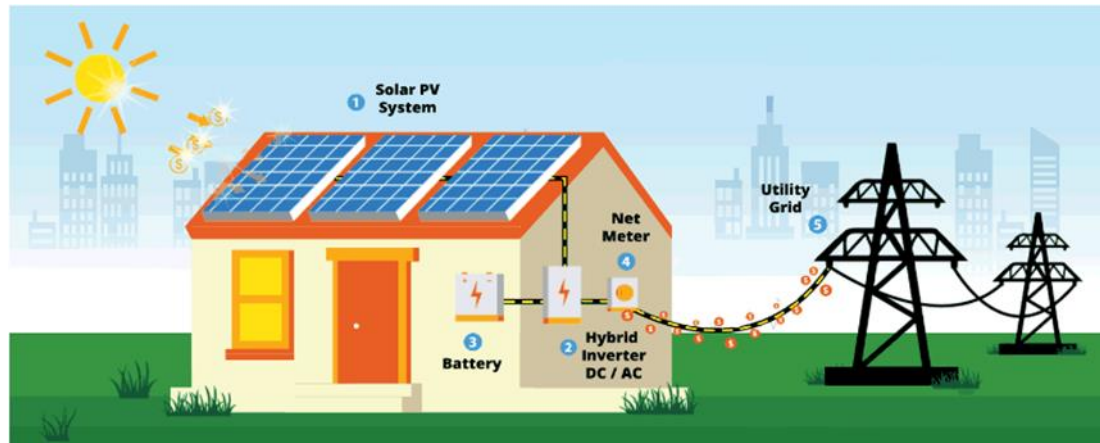
We note the solar feed-in tariff rates offered by retailers in south east Queensland (SEQ) do not necessarily reflect the avoided cost of purchasing electricity from the NEM—which is the methodology we are required to use to determine the regional solar feed-in tariff (discussed further in section 3.3.3).

## 3 BACKGROUND

### 3.1 Solar feed-in tariffs

When a solar PV system produces more electricity than the premises is using, the surplus electricity can be exported, or 'fed', into the electricity network. Figure 1 shows how a simple solar PV system works.

**Figure 1 Solar PV system**



*Note: Batteries are optional add-ons that can store surplus electricity generated by solar PV systems.*

*Source: Climatebiz – How do solar panels work: step by step.*

A solar feed-in tariff is the price in cents per kilowatt hour (c/kWh) that a retailer pays customers for these exports. A flat-rate feed-in tariff pays the same rate throughout the day for surplus electricity exported to the grid.

### 3.2 Solar Bonus Scheme

The Queensland Solar Bonus Scheme is a Queensland Government scheme that pays eligible small customers<sup>3</sup> a prescribed flat-rate feed-in tariff for surplus electricity generated from solar PV systems.

Customers who applied for the scheme before 10 July 2012 and maintain their eligibility receive a feed-in tariff of 44 c/kWh until the scheme expires on 1 July 2028. Customers who applied from 10 July 2012 onwards received a feed-in tariff of 8 c/kWh until this feed-in tariff expired on 30 June 2014. The scheme was then closed to new customers.

The 8 c/kWh feed-in tariff was replaced on 1 July 2014 by a mandatory flat-rate feed-in tariff for regional Queensland, which we determine each financial year under the direction from the Minister.

Reviewing or changing the terms and conditions attached to the scheme, or its expiry date, are not within the scope of this review.

<sup>3</sup> A small customer is a residential customer or a business customer that consumes less than 100 MWh per year (as defined in the National Energy Retail Law, s. 5 and National Energy Retail Regulations, s. 7).



### 3.3 Market context for this review

#### 3.3.1 Rising energy costs

The latter part of 2021–22 was marked by extraordinary volatility and uncertainty in energy markets across the National Electricity Market (NEM). Wholesale energy costs in Queensland reached record highs, because of high network demand events, generation shortfalls, high fossil fuel costs driven by international market conditions, and network constraints.

As a result, wholesale electricity prices in the NEM increased substantially during the March and June quarters of 2022. As reported by the Australian Energy Regulator (AER), Queensland was the NEM's highest-priced region by the end of the 2021–22 financial year, with wholesale energy costs reaching \$344/MWh in the June quarter of 2022.<sup>4</sup>

As outlined in our SEQ retail electricity market monitoring 2021–22 report<sup>5</sup>, a range of international and domestic factors contributed to upward pressure on wholesale energy prices in Queensland during 2022:

- a tighter supply–demand balance in Queensland—driven by a slowdown of renewable energy generators coming online (compared to recent years) and the reduced availability of thermal generators
- thermal generators faced higher gas and coal prices—due to prevailing high domestic gas prices, higher international commodity prices and difficulties sourcing coal
- uncertainties faced by cap contract providers—concerns that existing peaking gas generators would be unable to ramp up their generation fast enough to respond to changes in the market when prices are settled on 5-minute intervals<sup>6</sup>
- weather-related high demand—continuous periods of warm weather coupled with humidity and cloud cover (reducing rooftop PV output) during early February and severe to extreme heatwaves during March in the northern and central parts of Queensland resulted in unusually high daytime demand events. A series of cold fronts in early June extending into north Queensland drove up heating demand and coincided with record maximum demand in Queensland.<sup>7</sup>

In December 2022, the Australian Government announced its partnership with state and territory governments to deliver its Energy Price Relief Plan which proposed a range of measures to address the impacts of price increases due to global energy pressures.<sup>8</sup>

#### 3.3.2 Impact on solar feed-in tariffs

The increase to wholesale energy costs in Queensland directly contributed to a 41 per cent increase in the 2022–23 regional solar feed-in tariff (from 6.583 c/kWh in 2021–22 to 9.300 c/kWh).

However, as reported in our solar 2021–22 SEQ solar feed-in tariff monitoring report, average residential feed-in tariffs in SEQ continued to decrease in 2021–22. By the June quarter of 2022,

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<sup>4</sup> AER, *Wholesale markets quarterly – Q2 2022*, September 2022, p 3.

<sup>5</sup> QCA, *SEQ retail electricity market monitoring 2021–22 report*, December 2022, p 148.

<sup>6</sup> ACIL Allen, *Estimated energy costs*, report to the Queensland Competition Authority, May 2022, p 36.

<sup>7</sup> AEMO, *Quarterly energy dynamics Q2 2022*, July 2022.

<sup>8</sup> Australian Government, *Measures to mitigate global energy price crisis*, energy.gov.au website, 14 December 2022, accessed 2 February 2023.

the market average was 5.7 c/kWh (down from 6.8 c/kWh in the June quarter of 2021). The residential feed-in tariffs ranged from 2 to 12c/kWh in the June quarter 2022.<sup>9</sup>

The Minister's letter highlighted the divergence between the regional solar feed-in tariff and the tariffs available in the SEQ market, noting that:

the average SEQ residential FIT in the June quarter 2022 was 5.7 cents per kilowatt-hour. In contrast the regional FIT for 2022-23 is 9.3 cents per kilowatt-hour ...

### 3.3.3 Comparison to SEQ feed-in tariffs

Customers in the deregulated south-east Queensland electricity market can access a wide range of solar feed-in tariffs. We note the solar feed-in tariff rates offered by retailers in SEQ do not necessarily reflect the avoided cost of purchasing electricity from the NEM—which is the methodology we are required to use to determine the regional solar feed-in tariff.

Retailers in SEQ seek to maximise profits by using various pricing strategies to recover costs and target different customer segments. The solar feed-in tariffs offered in SEQ reflect the strategic imperatives of individual retailers, while operating within the constraints of the DMO, rather than the avoided cost of purchasing electricity from the NEM. Such strategies result in a combination of supply, usage and feed-in tariff rates that are generally customised to each individual retailer.

Given electricity retailers in SEQ are not required to use an avoided cost methodology to determine solar feed-in tariffs, meaningful comparisons with the regional Queensland solar feed-in tariff we set are difficult to make.

## 3.4 Comparing solar feed-in tariffs and retail prices

We are mindful that electricity prices are a primary concern for most stakeholders, along with the level of the feed-in tariff. We frequently receive queries as to why the feed-in tariff is not set at the same level as electricity prices so that it is a 'one-for-one' feed-in tariff.

The actual value of electricity generated by PV units is considerably less than the retail price, because when retailers source energy from PV customers, they only avoid some of their normal business costs (such as the cost of purchasing electricity from the NEM and the value of energy losses).

Retailers still incur normal business costs, including retail operating costs and network charges. Therefore, a 'one-for-one' feed-in tariff would require the retailers to subsidise solar PV customers; and the cost of the subsidy would then need to be recovered through higher electricity prices.<sup>10</sup>

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<sup>9</sup> QCA, *Solar feed-in tariffs in south east Queensland 2021–22*, October 2022, p ii.

<sup>10</sup> For more detail, see Queensland Productivity Commission, *Solar feed-in pricing in Queensland*, final report, June 2016, pp 36–38 (particularly figure 17).

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## 4 ESTIMATION METHODOLOGY

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### 4.1 Methodology overview

When retailers on-sell a unit of electricity from their solar customers to other customers, they avoid having to purchase that unit of electricity from the NEM. The 'avoided cost' methodology estimates the value of an efficient feed-in tariff as the sum of the direct financial costs that a retailer avoids when it on-sells exported electricity from its solar PV customers to other customers. Retailers still incur other normal business costs when sourcing electricity from solar PV customers, including retail operating costs and network costs (for transporting electricity exported into the grid).

In our first report on solar feed-in tariffs (2013), we outlined our rationale for applying the 'avoided cost' methodology to estimate a fair and reasonable feed-in tariff for the electricity exported to the grid by solar PV customers.<sup>11</sup>

The estimates of avoided costs that we use for feed-in tariff determinations are the same estimates developed by ACIL Allen for the purposes of setting some regulated retail prices (notified prices) for regional Queensland.<sup>12</sup> As these are the estimated costs a retailer incurs to purchase electricity from the NEM, we consider they also represent a reasonable estimate of costs a retailer avoids when sourcing electricity from a solar PV customer.

#### Key inputs used in previous determinations

The feed-in tariff value is calculated as the sum of the costs that a retailer avoids when it on-sells a unit of electricity exported by its solar customers. Our recent determinations are based on the avoided costs, being:

- wholesale energy costs
- NEM management fees
- ancillary fees
- value of energy losses—transmission and distribution.

There are other costs retailers incur when on-selling exported PV electricity that it cannot avoid. These unavoidable retailer costs include:

- network costs in transporting exported PV electricity<sup>13</sup>
- costs of complying with green schemes such as the Renewable Energy Target (RET)
- costs of maintaining prudential capital with the Australian Energy Market Operator (AEMO).

As these costs are not avoided, it would not be appropriate to incorporate them into our proposed avoided cost methodology to determine a regional solar feed-in tariff.

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<sup>11</sup> QCA, *Estimating a fair and reasonable solar feed-in tariff for Queensland*, final report, March 2013.

<sup>12</sup> A more detailed explanation of ACIL Allen's wholesale energy costs methodology is available in ACIL Allen, *Estimated energy costs*, report for the QCA, May 2022.

<sup>13</sup> Retailers incur network charges for the electricity they provide their customers (irrespective of whether it was purchased from the NEM or sourced from solar PV systems).

## 4.2 Competition considerations

The terms of reference require that we consider the effect of the feed-in tariff on competition in the Queensland retail electricity market. We have previously considered the policy intent of this requirement is to ensure that the feed-in tariff we decide does not impede the development of retail competition in regional Queensland.

Unlike in south-east Queensland, competition in the small customer market has not developed in regional Queensland, primarily due to the subsidy arrangements with Ergon Energy Retail (the incumbent retailer in regional Queensland) that underpin the Queensland Government's uniform tariff policy.

We consider a mandatory feed-in tariff that is above the avoidable cost associated with on-selling solar PV electricity could make it difficult for other retailers (who are not subsidised by the government) to compete with Ergon Retail, thereby discouraging them from entering the market.

In previous determinations, we have based the feed-in tariff on the avoided costs of supply incurred in the Ergon Distribution pricing region with the lowest average cost of supply (i.e. east pricing zone, transmission region one). This is because using the cost of supply for any other Ergon Distribution pricing region would impose a feed-in tariff that is above the efficient value of PV exports in the east pricing zone, where over 90 per cent of customers in regional Queensland reside.

Given the concentration of customers in the east pricing zone, it is also the area where competition is most likely to develop initially, so implementing a feed-in tariff that is above the efficient level in the east pricing zone area could discourage new market entrants into regional Queensland and influence potential retailers' willingness to supply solar PV customers.

### 4.2.1 Draft position

We propose continuing the use of the avoided cost of supply in the Ergon Distribution east pricing zone, transmission region one as the basis for the draft 2023–24 regional solar feed-in tariff. This approach sets a mandatory feed-in tariff that is not above the avoided cost associated with on-selling solar PV electricity in the region where competition is most likely to develop.

#### Consultation question 1

Do stakeholders have any comments or views on our approach to competition considerations?

## 4.3 Avoided wholesale energy costs

Our proposed approach to estimating avoided wholesale energy costs is to continue to base avoided costs on the hedged wholesale cost of energy, with refinements to aspects of our estimation approach to reflect recent market developments. This is consistent with the methodology used for the purpose of setting notified prices.

### Hedged wholesale energy costs

We use the 'hedged' wholesale energy cost estimates to set regulated retail electricity prices (notified prices) and the solar feed-in tariff. Hedged wholesale energy costs refer to the actual costs that a retailer incurs when purchasing electricity from the NEM and include the costs of managing exposure to wholesale price risk.

The NEM is a volatile market where spot prices are set every 5 minutes and can range from – \$1,000/(MWh) to \$15,500/MWh.<sup>14</sup> Consequently, retailers adopt a range of strategies to reduce or hedge the volatility in spot price movements (i.e. spot price risk) when purchasing electricity from the NEM, including:

- pursuing a hedging strategy by purchasing financial derivatives—such as futures, swaps, caps and options
- entering long-term power purchase agreements with generators
- investing in their own electricity generators.

Generally, pursuing the above strategies enable retailers to lock in a price, or a maximum price (in the case of caps), for the fraction of their load that they assess as prudent, given they sell electricity to consumers at fixed prices.<sup>15</sup> Consequently, the costs that retailers incur when sourcing electricity from the NEM are based on the prices locked in using the above strategies.

Therefore, the hedged wholesale energy cost currently represents a reasonable estimate of the direct financial costs that a retailer avoids when it on-sells exported electricity from its solar PV customers to other customers.

### Methodological refinements

This year, there are some other matters relevant to estimating wholesale energy costs which we consider are necessary to include in our estimates to better reflect latest market developments. These include:

- incorporating smart meter demand profiles to supplement the Ergon NSLP profile
- improving our estimation of the costs that retailers face when trading in ASX options to manage spot price volatility
- assessing the potential impacts of the temporary price caps for gas and coal.

### Smart meter demand profiles

The Ergon net system load profile (NSLP) approximates how much electricity is consumed by customers who use accumulation meters<sup>16</sup> in the Ergon network area. In past reviews, we considered the consumption profile of the Ergon NSLP is the most appropriate basis to estimate the avoided wholesale energy costs for the feed-in tariff for regional Queensland, as around 80 per cent of small customers in regional Queensland remained on accumulation meters.

Recent policy reforms, such as the Australian Energy Market Commission's (AEMC) Power of Choice reforms in 2017, have resulted in an increasing number of smart meter installations.<sup>17</sup>

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<sup>14</sup> The minimum spot price (market floor price) and the maximum spot price (market price cap) are defined in chapter 3 of the National Electricity Rules. The market price cap is published by the Australian Energy Market Commission every February and is effective from 1 July. For more information, see [the AEMC's 2023–24 schedule reliability settings](#).

<sup>15</sup> Given that the future electricity demand of a retailer is not perfectly predictable, it is not always possible for a retailer to perfectly match its demand with hedging strategies.

<sup>16</sup> Unlike smart/digital meters, accumulation meters do not record when during the day electricity was consumed or how much was consumed at that time. To allow for 5 minute settlement within the NEM (with different spot prices and volumes for each 5 minute period), AEMO uses the NSLP to approximate the amount of electricity consumed by customers on accumulation meters in a region, for each 5 minute period of the day.

<sup>17</sup> More information on how these reforms impact regional customers is available on the [Ergon Energy website](#).

The increasing number of smart meters means that demand profiles based on only accumulation meters (i.e., the Ergon NSLP) would likely misrepresent the consumption pattern of electricity, where the penetration of smart meters is material. To address this issue, we have combined the relevant smart meter profiles with the Ergon NSLP when estimating wholesale energy costs.<sup>18</sup>

#### ASX contract prices

The approach we have previously used to estimate ASX contract prices included options traded by using a simplified approach, where options were approximated using the volume of options traded and ASX daily settlement prices for base contracts.

However, recent market volatility has prompted us to consider refining this approach. To reflect the costs of trading in options more accurately, we have incorporated the strike prices, premiums and trade volume of options.<sup>19</sup>

#### Impact of temporary price caps

In December 2022, the Australian and Queensland governments put in place temporary price caps on gas and coal prices.<sup>20</sup> Under the Energy Price Relief Plan, wholesale gas and coal prices for electricity generation would be capped at \$12/GJ and \$125/tonne respectively (for at least 12 months).

Our wholesale energy cost methodology captures the potential impacts of these caps through our spot price analysis and the incorporation of ASX contract prices (until 20 January 2023 inclusive). For our final determination, we will use ASX market data until late April/early May 2023 to estimate contract prices.

Further information on the wholesale energy cost estimation methodology is available in ACIL Allen's draft estimated energy costs report.<sup>21</sup>

#### Draft position

Our draft position is to estimate avoided wholesale energy costs using a methodology that is consistent with that used to set notified prices, which is proposed to be a forecast 'hedged' wholesale energy cost based on a NSLP, supplemented with smart meter demand profile information. For the reasons stated above, we consider this approach reasonably reflects the avoided costs to retailers when sourcing energy from small solar PV customers.

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<sup>18</sup> See section 4.2.1 of the [QCA's draft determination](#) on regulated retail electricity prices for regional Queensland in 2023–24, March 2023 and ACIL Allen, *Estimated Energy Costs*, draft report, prepared for the QCA, February 2023.

<sup>19</sup> Options are a type of financial derivative that gives the holder the right, but not the obligation, to purchase or sell ASX base contracts at a predetermined price (known as the 'strike price') and volume. In exchange for the right to exercise the option, the holder (buyer) will pay a premium to the seller of the option (regardless of whether the holder chooses to exercise the option). For further information see section 4.2.1 of the QCA's draft determination on regulated retail electricity prices for regional Queensland in 2023–24, March 2023.

<sup>20</sup> Australian Government, [Measures to mitigate global energy price crisis](#), energy.gov.au website, 14 December 2022, accessed 2 February 2023.

<sup>21</sup> see ACIL Allen, [Estimated Energy Costs](#), draft report, prepared for the QCA, February 2023.

### Consultation question 2

Do stakeholders have any comments or views on our proposed approach to determining avoided wholesale energy costs?

## 4.4 Other avoided cost components

While avoided wholesale energy costs are the primary driver of the feed-in tariff rate, there are other costs which a retailer avoids when sourcing electricity from solar PV customers rather than the NEM. These are:

- NEM management fees—paid to AEMO to cover operational expenditure as well as costs associated with full retail contestability
- ancillary fees—paid to AEMO to cover the costs of services used by AEMO to manage power system safety, security and reliability
- value of energy losses—incurred during the transmission and distribution of electricity to customers
- irregular avoided cost pass-through items—required to be paid under a regulatory or legislative requirement set out in the regulatory framework for specific, but infrequent, events.

### 4.4.1 NEM management and ancillary services fees

Retailers purchasing electricity from the NEM are required to pay NEM management fees and ancillary services charges to AEMO.

NEM management fees are levied by AEMO to cover its costs related to operating the NEM, full retail contestability and the funding of Energy Consumers Australia. Ancillary services charges cover the costs of services used by AEMO to manage power system safety, security and reliability. These services maintain key technical characteristics of the electricity grid, including standards for frequency, voltage, network loading and system restart processes.

NEM management fees and ancillary services fees are paid based on the net energy purchased by retailers. The net energy purchased is measured by AEMO at the regional reference node. Retailers therefore avoid paying these fees when they avoid purchasing energy from the NEM by on-selling solar PV electricity.

In previous reviews, to estimate these avoided costs, we used the NEM management and ancillary services fees estimated by ACIL Allen in calculating notified prices for the applicable tariff year. ACIL Allen’s methodology estimates:

- the NEM fees using the latest data from AEMO, including historical fees and projected changes in costs
- the ancillary services fees using the average ancillary service payments<sup>22</sup> observed over the preceding 52 weeks.

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<sup>22</sup> AEMO provides data on weekly settlements for ancillary service payments in each interconnected region within the NEM.

### Draft position

Our draft position is to continue using the same approach to include the value of avoided NEM management fees and ancillary services charges when setting the regional solar feed-in tariff.

#### 4.4.2 Value of energy losses

When electricity travels over long distances some of that energy is lost due to electrical resistance and the heating of conductors. One benefit of distributed generation<sup>23</sup>, including solar PV, is that the exported electricity typically travels to the closest household / small business where electricity is demanded and therefore largely avoids energy losses. Retailers are therefore able to avoid energy losses when they on-sell PV exports. The value of these avoided losses should be included in the feed-in tariff.

In previous reviews, to estimate the value of avoided energy losses, we adopted the loss factors for the Ergon area, as used in the applicable tariff year notified prices. These loss factors are:

- the average energy-weighted transmission loss factor—estimated by ACIL Allen, using the loss factors and energy consumed at each of the Transmission Node Identities (TNIs)<sup>24</sup> provided by AEMO
- the distribution loss factor for small customers, published by AEMO.

The distribution loss factor is multiplied by the average weighted transmission marginal loss factor to arrive at the total combined loss factor.

### Draft position

Our draft position is to continue using the same approach to include the value of avoided losses when setting the regional solar feed-in tariff.

#### 4.4.3 Avoided irregular cost pass-through items

We are proposing to include irregular avoided cost pass-through items in our avoided cost methodology. These cost items are levied under a regulatory or legislative requirement set out in the regulatory framework for specific, but infrequent, events. Like NEM management and ancillary services fees, these costs are based on the net energy purchased by retailers from the NEM.

We propose irregular cost pass-through items should be included as avoided costs in our proposed solar feed-in tariff approach where it is reasonable to consider the direct financial cost:

- (1) would be incurred by electricity retailers sourcing electricity from the NEM
- (2) would be avoided by electricity retailers if they purchased energy from solar PV customers rather than the NEM
- (3) has not already been accounted for in our avoided cost methodology.

Satisfying these criteria will ensure potential irregular cost pass-throughs are for costs:

- borne by all retailers as part of normal operations to supply retail electricity
- avoided by sourcing energy from solar PV customers.

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<sup>23</sup> Distributed generation is electrical generation and storage performed by a variety of small, grid-connected or distribution-system-connected devices.

<sup>24</sup> TNIs are metered connection points that link the transmission network to the distribution network.



It will also ensure these pass-through costs are not double counted in other avoided cost inputs.

We intend to assess the value of pass-through events using the associated framework for levying costs and fees, such as those documented transparently by AEMO. This approach enables irregular avoided costs to be assessed in a transparent and simple framework, whereby the process of implementing irregular pass-throughs is mechanistic.

Examples of irregular cost pass-through items include costs associated with the June 2022 events.

### June 2022 events

In June 2022, sustained high spot prices triggered the \$300/MWh price cap for all regions of the NEM. Generators withdrawing capacity from the NEM resulted in a lack of reserve energy in the network, which—if left unchecked—could have resulted in customer load-shedding during peak demand periods to maintain the reliability of electricity supply. AEMO suspended the spot market in all regions of the NEM between 15 and 23 June 2022, so that prices were determined according to the published market suspension pricing schedule.

To maintain sufficient supply of electricity in the NEM, AEMO activated the Reliability and Emergency Reserve Trader (RERT) scheme and directed generators to supply energy into the NEM.

### Reliability and Emergency Reserve Trader scheme

The RERT scheme is a mechanism that allows AEMO to contract for emergency reserves, such as a generation or demand response (not otherwise available in the NEM) when there is a critical shortfall in reserves. This mechanism provides AEMO with flexibility to manage power system reliability when available electricity supply in the market cannot meet forecast demand, while minimising the costs to consumers. When the RERT mechanism is activated, AEMO compensates users who participate in the emergency response.<sup>25</sup>

### Direction compensation

Under the National Electricity Law and clause 4.8.9 of the National Electricity Rules (NER), AEMO can issue 'directions' to generators to maintain or restore power system security or reliability.

Where the cost of supplying electricity was higher than the \$300/MWh price cap during this period, generators were eligible for compensation payments to ensure they did not incur a loss (in accordance with guidelines developed by the AEMC<sup>26</sup>).

### Cost recovery

Retailers incur fees levied by AEMO to cover the costs of these market interventions, which are paid based on the net energy purchased by retailers. The net energy purchased is measured by AEMO at the regional reference node. Retailers therefore avoid paying these fees when they avoid purchasing energy from the NEM by on-selling solar PV electricity.

### Draft position

Our draft position is to include the avoided costs of the June 2022 market events (RERT scheme and direction compensation) when setting the regional solar feed-in tariff. Further, we consider the use of these proposed assessment criteria for future avoided irregular cost pass-through

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<sup>25</sup> We have also included RERT costs for activation events outside of the June 2022 period.

<sup>26</sup> AEMC, [Compensation guidelines](#), 21 October 2021.

items will enable future feed-in tariff determinations to be more reflective of the actual irregular costs retailers avoid when sourcing electricity from solar PV customers.

### Consultation question 3

Do stakeholders have any comments or views on our proposed approach to other avoided costs?

## 5 DRAFT FEED-IN TARIFF AND COST INPUTS

### 5.1 Draft feed-in tariff

We have estimated the draft feed-in tariff for regional Queensland for 2023–24 at 12.952 c/kWh. This is based on the proposed methodology outlined in this report and draft estimates of parameters (that may be subject to change in our final determination).

The draft feed-in tariff has been calculated as the sum of the costs that a retailer avoids when it on-sells a unit of electricity exported by its solar customers. The sum of these avoided costs is estimated to be 3.652 c/kWh higher in 2023–24 than in 2022–23 (Table 1).

To estimate the draft feed-in tariff, we have used the avoided costs of the Ergon NSLP (combined with smart meter profile data)—estimated by ACIL Allen for the draft determination of the 2023–24 notified prices. A detailed explanation of ACIL Allen’s energy costs methodology is available in its 2023–24 report<sup>27</sup> and in our draft determination of the 2023–24 notified prices<sup>28</sup>.

**Table 1 Feed-in tariff for regional Queensland, 2022–23 and draft 2023–24**

<i>Avoided costs</i>	<i>Feed-in tariff (c/kWh)</i>		<i>Change (c/kWh)</i>
	<i>2022–23</i>	<i>Draft 2023–24</i>	
Wholesale energy costs	8.461	11.874	3.413
NEM management fees	0.113	0.115	0.002
Ancillary services fees	0.142	0.060	-0.082
June 2022 market events	N/A	0.089	N/A
RERT scheme <sup>a</sup>	N/A	0.001	N/A
Value of energy losses	0.584	0.813	0.229
<b>Feed-in tariff</b>	<b>9.300</b>	<b>12.952</b>	<b>3.652</b>

*Estimates exclude GST. Totals may not add up due to rounding.*

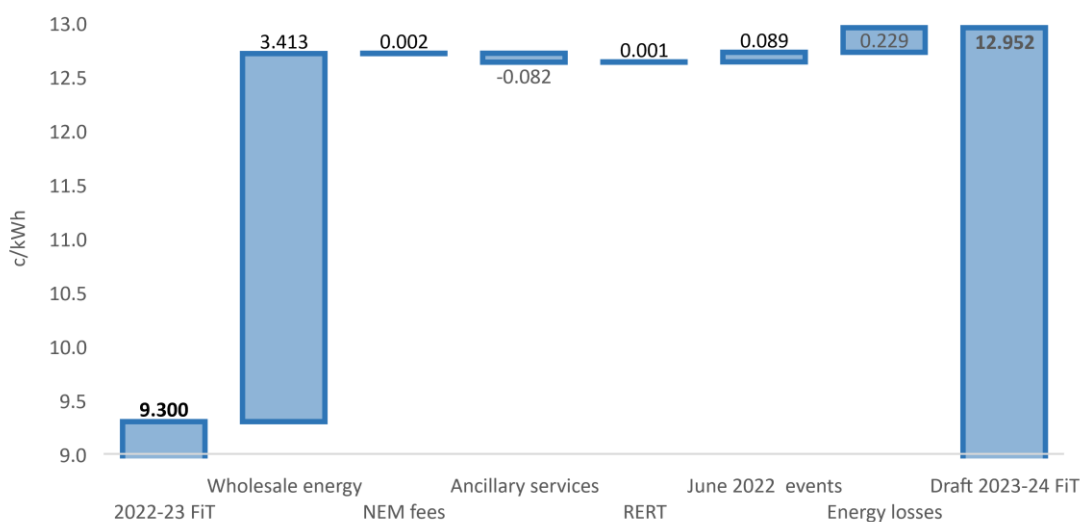
*a: excluding RERT activation costs during June 2022 market events*

*Source: ACIL Allen, Estimated Energy Costs, draft report prepared for the QCA, February 2023; QCA calculations.*

Of these avoided costs, higher wholesale energy costs are the largest contributor to the increase in the draft 2023–24 feed-in tariff (Figure 2).

<sup>27</sup> ACIL Allen, *Estimated Energy Costs*, draft report prepared for the QCA, February 2023.

<sup>28</sup> QCA, *Regulated retail electricity prices 2023–24*, technical appendix B, draft report, 2023.

**Figure 2 Changes in the components of the draft feed-in tariff for regional Queensland**

Estimates exclude GST. Totals may not add up due to rounding.

Source: ACIL Allen, *Estimated Energy Costs, draft report prepared for the QCA, February 2023*; QCA calculations.

## 5.2 Indicative avoided costs

This section outlines our indicative parameters and data sources that underpin our proposed estimation methodology.

### 5.2.1 Wholesale energy

We have estimated the avoided wholesale energy costs to be 11.874 c/kWh, which is 40.3 per cent higher than it was for the 2022–23 determination. This increase primarily reflects a significant increase in the trade-weighted prices for ASX base and cap contracts. The increase in ASX contract prices is driven by market participants expecting higher future spot prices and greater price volatility, which is likely due to:

- higher gas and coal prices. Thermal generators have been facing higher fuel costs due to the war in Ukraine and energy sanctions imposed on Russia. These developments have added further uncertainty to energy markets already impacted by global supply constraints<sup>29</sup> (due to the covid-19 pandemic), which led to high and volatile gas and thermal coal prices<sup>30</sup>
- uncertainties associated with the availability and reliability of coal-fired power plants and their impacts on the supply–demand balance in the Queensland NEM region. For example, Kogan Creek<sup>31</sup> and Callide C<sup>32</sup> have suffered from major outages and delays in their return to service due to unforeseen circumstances.

Our wholesale energy cost methodology also incorporates the potential impacts of temporary price caps for gas and coal, which were implemented by Australian and Queensland governments in December 2022.

<sup>29</sup> See Bloomberg, *Commodities soar as war builds anxiety over supply shortages*, accessed 25 January 2023.

<sup>30</sup> Domestic prices of coal and gas are influenced by international prices because some producers may have the option of exporting these resources and receiving international prices. As such, thermal power stations compete with international buyers, and this affects the fuel costs of these generators.

<sup>31</sup> See CS Energy, *Kogan Creek power station overhaul extended*, accessed 21 January 2023.

<sup>32</sup> See CS Energy, *Updated return to service date for Callide C units*, accessed 21 January 2023.

## 5.2.2 NEM management fees and ancillary charges

Draft NEM fees for 2023–24 are estimated to be 0.115 c/kWh, which is 1.8 per cent higher than the estimates for 2022–23. This increase primarily reflects the increase in costs related to operating the NEM, including costs associated with 5-minute settlement compliance and the distributed energy resource (DER) integration program.<sup>33</sup>

Draft ancillary services charges for 2023–24 are estimated to be 0.060 c/kWh, which is 57.7 per cent lower than the estimates for 2022–23. This decrease reflects lower costs for frequency control ancillary services (FCAS) in Queensland. The completion of upgrades for the Queensland to New South Wales interconnector (QNI) in June 2022 reduced the need for local supply of FCAS in Queensland.

## 5.2.3 Avoided irregular cost pass-through items

Our draft position is to include the costs associated with the June 2002 market events (RERT scheme and generator compensation costs) as avoided irregular cost pass-through items in the 2023–24 regional solar feed-in tariff. Using the latest information regarding the June 2022 NEM events published by AEMO the total cost to date for Queensland is \$44,730,000, which when recovered across the customer load equates to \$0.89/MWh.

We have also included RERT costs for activation events outside of the June 2022 period. Draft costs for these are estimated to be 0.001 c/kWh

A more detailed discussion on this matter is included in ACIL Allen’s report.<sup>34</sup>

## 5.2.4 Value of energy losses

The distribution loss factor is multiplied by the average weighted transmission marginal loss factor to arrive at the total combined loss factor. A total combined draft loss factor of 1.067 translates to an energy loss of 6.7 per cent (Table 2). The calculated losses in this report are based on AEMO’s 2022–23 published loss factors. Although AEMO recently published preliminary loss factor estimates for 2023–24, these have not been included in given their preliminary nature. We intend to estimate losses for the final determination for 2023–24 on the 2023–24 loss factors to be published by AEMO in early April 2023.

The value of avoided energy losses is estimated by multiplying the avoided wholesale energy costs, NEM management fees, ancillary services fees, and irregular cost pass-through items with the percentage energy loss. This results in an estimated value of energy losses of 0.813 c/kWh for the draft 2023–24 feed-in tariff.

**Table 2 Loss factors for small customers in Ergon east pricing zone, 2023–24**

<i>Calculation of total combined loss factor</i>		
<b>Transmission marginal loss factor (A)</b>	<b>Distribution loss factor (B)</b>	<b>Total combined loss factor (A*B)</b>
0.985	1.083	<b>1.067</b>

<sup>33</sup> Further information on the DER program can be found on the AEMO website (NEM Distributed Energy Resources Program, accessed January 2023).

<sup>34</sup> ACIL Allen, *Estimated Energy Costs*, draft report prepared for the QCA, February 2023.

#### Consultation question 4

Do stakeholders have any comments on the parameters and data sources used to determine avoided costs in our proposed methodology?

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## APPENDIX A: MINISTER'S DELEGATION

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### ***ELECTRICITY ACT 1994*** **Section 93**

As the Minister for Energy, Renewables and Hydrogen, pursuant to section 93 of the *Electricity Act 1994* (the Act), I hereby direct the Queensland Competition Authority (QCA) to decide a flat rate feed-in tariff for the 2023-24 tariff year.

The following are the Terms of Reference pertaining to this direction.

#### **Terms of Reference**

##### Matters to consider

In accordance with section 93(2) and 93(3) of the Act, in deciding the feed-in tariff the QCA must consider the following:

1. The flat rate feed-in tariff should be decided using an 'avoided cost' methodology.
2. If the methodology used in previous years remains appropriate or if a different methodology might better reflect avoided costs for 2023-24.
3. The effect of the feed-in tariff on competition in the Queensland retail electricity market.
4. The matters described below:
  - The arrangements in place for Origin Energy to provide retailer services to Queensland customers connected to the Essential Energy supply network in southern Queensland
  - Any other matter the QCA considers relevant.

##### Application of the feed-in tariffs

The flat rate feed-in tariff is to apply for the period 1 July 2023 to 30 June 2024.

##### Consultation

Public consultation to decide the 2023–24 flat rate feed-in tariff should be undertaken by the QCA.

##### Timing

The QCA is to decide the flat rate feed-in tariff and, in accordance with section 94 of the Act, announce the flat rate feed-in tariff on the QCA's website and publish the feed-in tariff via Gazette Notice no later than 9 June 2023.

This delegation is made by **The Honourable Mick de Brenni MP**, Minister for Energy, Renewables and Hydrogen and Minister for Public Works and Procurement:

**Signed:**



The Honourable Mick de Brenni MP  
**Minister for Energy, Renewables and Hydrogen and  
Minister for Public Works and Procurement**

**Dated:** 14/12/2022