

Queensland Competition Authority

Final report

Solar feed-in tariff for regional Queensland for 2017–18

May 2017

Level 27, 145 Ann Street, Brisbane Q 4000
GPO Box 2257, Brisbane Q 4001
Tel (07) 3222 0555
www.qca.org.au

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1 INTRODUCTION

1.1 Minister's Direction Notice

On 17 February 2017, the Minister for Energy, Biofuels and Water Supply (the Minister) directed the Queensland Competition Authority (QCA) under section 93 of the *Electricity Act 1994* (The Act), to determine a feed-in tariff for regional Queensland for 2017–18.

The Direction indicates that, in determining the flat feed-in tariff, the QCA should use the same general methodology applied for the 2014–15, 2015–16 and 2016–17 tariff years and consider the following additional matters:

- the effect of the feed-in tariff on competition in the Queensland retail electricity market
- 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 it considers relevant.

The QCA notes that in the Act (section 93(2)), the Minister's direction may state the following:

- (a) the period for which the feed-in tariff is to apply;
- (b) the time frame within which QCA is to decide the feed-in tariff;
- (c) the matters QCA must consider when deciding the feed-in tariff;
- (d) the consultation requirements QCA must comply with before deciding the feed-in tariff.

The Minister's direction may require the QCA to consider any other matter, including the methodology or structure of a feed-in tariff, but is not able to explicitly direct the QCA beyond those issues listed.

1.2 Background

The Queensland Solar Bonus Scheme (the Scheme), which was closed to new customers on 30 June 2014, is a Queensland Government policy administered by the Department of Energy and Water Supply. The Scheme pays eligible customers a prescribed feed-in tariff for surplus electricity generated from small-scale solar photovoltaic (PV) systems¹ and exported to the Queensland electricity grid.

In the past, the Scheme operated with two feed-in tariff amounts:

- 44 cents per kWh—this is legislated to end on 1 July 2028
- 8 cents per kWh—this ended on 30 June 2014.

The 8 cents per kWh scheme was replaced on 1 July 2014 by a mandatory feed-in tariff for regional Queensland, determined by the QCA each financial year on Direction from the Minister.

¹ Small customers who consume less than 100 megawatt hours (MWh) per year, with grid-connected PV systems not exceeding 5 kilowatt hours (kWh) capacity.

1.3 Matters not addressed in this report

There is a range of issues that the QCA has previously considered, including:

- implementing feed-in tariffs that reflect the market value of electricity at the time of day it is exported
- estimating the financial value of environmental costs and benefits of solar PV
- explaining why fair feed-in tariffs are not the same as the consumption rate
- quantifying the impacts of solar PV on network peak demand and investment
- calculating the effect of solar PV on wholesale electricity prices (the merit order effect).

The QCA set out its position on these matters in 2013 (QCA 2013). At this time, those positions remain unchanged.

However, we note that on 21 May 2017, the Minister issued the QCA with a separate Direction, pursuant to section 253AA of the Act, to provide advice to inform a time-varying solar price. That Direction requires the QCA to produce a draft report by 9 June 2017 and a final report by 28 July 2017.

2 METHODOLOGY

2.1 Estimation methodology

The Direction indicates that the QCA should use the same general methodology for calculating the flat feed-in tariff for regional Queensland as we used for the 2014–15, 2015–16 and 2016–17 tariff years. However, the Act does not specify that the Minister’s Direction Notice may state either the methodology or the structure of the feed-in tariff, as outlined in Section 1.1.

Consequently, we have interpreted the instructions in the Minister’s Direction that relate to feed-in tariff methodology and structure as a requirement that we consider applying the same general methodology we used for the previous three tariff years to calculate a flat feed-in tariff for regional Queensland in 2017–18.

In our first solar feed-in tariff report (QCA 2013), we outlined our rationale for the methodology applied to calculate the feed-in tariff. This methodology has been applied every year since. We consider that it is appropriate for the QCA to maintain this approach to calculate the feed-in tariff for 2017–18.

That methodology estimates the value of the efficient feed-in tariff as the sum of the direct financial costs that Ergon Energy (Retail) avoids when it on-sells a unit of exported electricity from its solar PV customers. These avoidable costs are:

- wholesale energy costs
- National Electricity Market (NEM) and ancillary services fees
- transmission and distribution losses.

These costs are calculated by the QCA for the purposes of setting regulated retail prices for regional Queensland. For the purposes of this report, we have used the most recent estimated values commissioned from ACIL Allen Consulting (ACIL) to inform our final determination on the 2017–18 regulated retail prices for regional Queensland.

Further, as with the previous three reviews, we have determined a single feed-in tariff to apply across regional Queensland. For this calculation, we have selected the Ergon Energy region with the most customers and featuring the lowest average losses and costs of supply—that is, the east pricing zone.

2.2 Competition considerations

The Direction requires that we consider the effect of the feed-in tariff we calculate on competition in the Queensland retail electricity market.²

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

² We consider that the policy intent of this requirement is to ensure that the feed-in tariff decided by the QCA does not adversely impact the development of retail competition in regional Queensland.

As we stated in previous reviews, it is important to find a balance between providing a tariff that is fair and providing a tariff that is not so high that it would discourage potential new entrants to the regional Queensland market. Setting a mandatory feed-in tariff that is above the efficient level—that is, the avoidable cost associated with on-selling PV electricity—might be sustainable for Ergon Energy (Retail), as its loss is underwritten by the Government; however, doing so could make it difficult for other retailers (who are not subsidised by the Government) to compete with Ergon Energy (Retail)—thereby discouraging them from entering the market.

Thus, as was the case with the 2014–15, 2015–16 and 2016–17 reviews, we continue to consider that the feed-in tariff should be based on the avoided costs of supply in Ergon Energy's lowest cost of supply region, which is the east pricing zone.

Given the concentration of customers, this zone is also the area in regional Queensland where competition is most likely to develop initially, which makes it important to implement a feed-in tariff that is not above the efficient level in this area.

2.3 Arrangements for Essential Energy's network

As at April 2017, Origin Energy (Origin) supplies around 5,730 customers³ in the Goondiwindi, Texas and Inglewood areas of southern Queensland who are connected to Essential Energy's New South Wales distribution network.

The terms of reference in the Direction require that we consider this arrangement when deciding the feed-in tariff for 2017–18.

These customers are supplied by Origin at notified prices in much the same way as Ergon Energy (Retail) supplies customers throughout the rest of regional Queensland. Like Ergon Energy (Retail), Origin incurs a financial loss to supply these customers at notified prices (which are lower than the efficient cost of supply) and is subsidised by the Queensland Government to underwrite this loss. While the efficient costs of wholesale energy, as well as transmission and distribution losses, will vary between Ergon Energy (Distribution) and Essential Energy areas, we consider that the single rate feed-in tariff that is applicable in regional Queensland should apply to customers in this area. This is consistent with our approach for the 2014–15, 2015–16 and 2016–17 reviews.

³ Origin Energy 2017.

3 ESTIMATED SOLAR FEED-IN TARIFF FOR REGIONAL QUEENSLAND

We have applied the general methodology from the 2014–15, 2015–16 and 2016–17 reviews in calculating the feed-in tariff for regional Queensland for 2017–18. We have updated the calculation with the most recent data available.

The feed-in tariff is calculated as the sum of the costs that Ergon Energy (Retail) avoids when it on-sells a unit of electricity exported by its solar customers. We have used the following inputs in calculating this value:

- estimated wholesale energy costs for 2017–18
- estimated NEM and ancillary services fees for 2017–18
- estimated distribution and transmission loss factors for 2017–18.

These estimates were also used in the QCA's final determination on 2017–18 regulated retail prices for regional Queensland.

3.1 Wholesale energy costs

When retailers on-sell a unit of electricity from their solar customers, they avoid having to purchase that unit of electricity from the wholesale market.

We have used forecasts developed by ACIL as estimates of the avoided wholesale energy costs in regional Queensland during 2017–18 (ACIL Allen 2017).

For 2017–18, we have estimated avoided wholesale energy costs to be 9.275 cents per kWh (see Table 1)—significantly higher than in previous solar feed-in tariff determinations.

The increase in wholesale energy costs forecasts reflects the projected continuation of the increase in gas prices for gas-fired generation and the continued tightening of the supply–demand balance in Queensland and other regions of the NEM.

ACIL has advised that the tightening in conditions is due to several factors, including increased demand from in-field gas compression associated with the LNG export facilities, little additional renewable capacity in Queensland⁴, and changes in the expected supply–demand balance in Victoria (e.g. the closure of Hazelwood power station).

The reasons for the increases in the wholesale energy costs are discussed in detail in ACIL's 2017 report, and in the QCA's final determination on regulated retail electricity prices for 2017–18.⁵

Table 1 Wholesale energy costs in regional Queensland for 2017–18

<i>Settlement class</i>	<i>c/kWh</i>
Ergon Energy net system load profile	9.275

⁴ While a number of new renewable energy projects are planned or under construction, only a limited amount of new renewable generation will be fully operational in 2017–18, with a number of renewable energy projects likely to commence operation towards the end of, or after, the 2017–18 financial year in mid-2018.

⁵ ACIL Allen 2017; QCA 2017.

Source: ACIL Allen (2017).

3.2 NEM and ancillary services fees

NEM participation fees are levied on retailers by the Australian Energy Market Operator (AEMO) to cover the costs of operating the NEM. Ancillary services charges cover the costs of the services used by AEMO to manage power system safety, security and reliability.

NEM participation fees and ancillary services fees are paid based on net energy purchased, as measured by AEMO at the regional reference node. Retailers therefore avoid paying these fees when they avoid purchasing wholesale energy by on-selling solar PV electricity.

To estimate these avoided costs, we have used the NEM and ancillary services fees estimated by ACIL in calculating regulated retail electricity prices for 2017–18, as set out in Table 2. There have been small increases in these costs since the 2016–17 feed-in tariff was set.⁶

Table 2 NEM and ancillary services fees for 2017–18

	<i>c/kWh</i>
NEM participation fees	0.053
Ancillary services fees	0.034
Total	0.087

Note: Totals may not add due to rounding.

Source: ACIL Allen (2017).

3.3 Energy losses

One benefit of distributed generation, including solar PV, is that it reduces the need to transport energy over long distances and therefore largely removes costs associated with transmission and distribution losses. Retailers are thus able to avoid network losses when they on-sell PV exports, and the value of these avoided losses needs to be included in the feed-in tariff value.

To estimate the value of avoided losses, we have adopted the loss factors for Ergon Energy's net system load profile (NSLP) used in our final determination on 2017–18 notified prices. These loss factors reflect the estimated weighted-average transmission losses for the Ergon Energy east pricing zone (as estimated by ACIL) and distribution loss factors published by AEMO. The distribution loss factor is multiplied by the transmission marginal loss factor to arrive at the total combined loss factor (CLF) for the region. The loss factors we have applied are set out in Table 3.

Table 3 Loss factors—Ergon Energy's east pricing zone, 2017–18

	<i>Loss factor</i>
Transmission marginal loss factor	0.985
Distribution loss factor	1.096
Combined loss factor (CLF)	1.079

Note: Totals may not add due to rounding.

Source: ACIL Allen (2017).

⁶ ACIL Allen 2017.

3.4 Estimated feed-in tariff

Table 4 sets out the feed-in tariff we have determined for regional Queensland for 2017–18, based on the inputs and process discussed above.

We have estimated the efficient feed-in tariff for regional Queensland for 2017–18 to be 10.102 cents per kWh.

Table 4 Feed-in tariff for regional Queensland for 2017–18

<i>Cost component</i>	<i>c/kWh</i>
Wholesale energy costs	9.275
NEM fees	0.053
Ancillary services fees	0.034
Value of network losses	0.740
Recommended feed-in tariff	10.102

Note: Totals may not add due to rounding.

Source: ACIL Allen (2017) and QCA calculations.

The tariff we have estimated for 2017–18 is higher than for 2016–17, due mainly to the increase in the wholesale energy costs estimate (as discussed above, and shown in Table 5).

Table 5 Comparison of feed-in tariff for regional Queensland: 2016–17 and 2017–18

<i>Cost component</i>	<i>c/kWh</i>		<i>Change (%)</i>	<i>Contribution to change in feed-in tariff (%)</i>
	<i>2016–17</i>	<i>2017–18</i>		
Wholesale energy costs	6.569	9.275	41.2	102.0
NEM and ancillary services fees	0.081	0.087	7.4	0.2
Value of network losses	0.798	0.740	-7.3	-2.2
Feed-in tariff	7.448	10.102	35.6	100%

Note: Totals may not add due to rounding.

Source: ACIL Allen (2016, 2017) and QCA calculations.

REFERENCES

ACIL Allen 2017, *Estimated energy costs for 2017–18 retail tariffs*, report prepared for the QCA, May.

ACIL Allen 2016, *Estimated energy costs for 2016–17 retail tariffs*, report prepared for the QCA, May.

ACIL Allen 2015, *Estimated energy costs for 2015–16 retail tariffs*, report prepared for the QCA, June.

ACIL Allen 2014, *Estimated energy costs for 2014–15 retail tariffs*, report prepared for the QCA, May.

Origin Energy 2017, Response to a QCA information request, 18 May.

QCA 2017, *Regulated retail electricity prices for 2017–18*, final determination, May.

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

APPENDIX A: MINISTERIAL DIRECTION



The Honourable Mark Bailey MP
 Minister for Main Roads, Road Safety and Ports
 Minister for Energy, Biofuels and Water Supply

Our Reference: CTS 31808/16

QLD COMPETITION AUTHORITY

17 FEB 2017

24 FEB 2017

DATE RECEIVED

Level 34, 1 William Street Brisbane 4000
 GPO Box 2944 Brisbane
 Queensland 4001 Australia
 Telephone +61 7 3719 7300
 Email energyandwatersupply@ministerial.qld.gov.au
 Website www.dews.qld.gov.au

Professor Roy Green
 Chair
 Queensland Competition Authority
 Level 27, 145 Ann Street
 BRISBANE QLD 4000

Dear Professor Green *Roy,*

I am writing to direct the Queensland Competition Authority (the Authority) under section 93 of the *Electricity Act 1994* (the Act) to decide the feed-in tariff (FiT) rate for the 2017–18 tariff year, and under section 253AA of the Act to monitor and provide advice on South East Queensland feed-in tariffs. I attach my directions and the associated Terms of Reference which impose conditions on the Authority when undertaking these functions.

My section 93 direction in relation to the 2017–18 FiT requires the Authority to decide a flat FiT rate consistent with the existing methodology. A separate request will be forthcoming in relation to a time-varying FiT for regional Queensland as recently announced by the Government.

The Queensland Government has accepted the recommendation of the Queensland Productivity Commission inquiry into a fair price for solar that the Authority monitor solar FiTs in South East Queensland as part of its broader market-monitoring role. Accordingly, I attach my direction, pursuant to section 253AA of the Act for the Authority to undertake FiT monitoring in the Energex distribution area each tariff year. The Authority is to provide a report to me and publish the report on its website by no later than 31 October each year.

Mr Tim Quirey, Director, Strategic Futures in my department will be pleased to assist with any questions about these directions and can be contacted on (07) 3199 4976.

Yours sincerely

Mark Bailey MP
 Minister for Main Roads, Road Safety and Ports and
 Minister for Energy, Biofuels and Water Supply

Encl: Section 93 Direction and Terms of Reference
 Section 253AA Directions and Terms of Reference – SEQ FiT monitoring

ELECTRICITY ACT 1994
Section 93

As the Minister for Main Roads, Road Safety and Ports and Minister for Energy, Biofuels and Water Supply, pursuant to section 93 of the *Electricity Act 1994* (the Act), I hereby direct the Queensland Competition Authority (the Authority) to decide a flat rate feed-in tariff for the 2017-18 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 Authority must consider the following:

1. The flat rate feed-in tariff should be decided using the general 'avoided cost' methodology applied for the 2014–15, 2015–16 and 2016–17 tariff years.
2. The effect of the feed-in tariffs on competition in the Queensland retail electricity market.
3. 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 Authority considers relevant.

Application of the feed-in tariffs

The flat rate feed-in tariff is to apply for the period 1 July 2017 to 30 June 2018.

Consultation

No public consultation is required to decide the 2017–18 flat rate feed-in tariff given that the Authority must apply the same methodology as was applied in previous tariff years.

Timing

The Authority 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 Authority's website and publish the feed-in tariff via gazette notice no later than 31 May 2017.

DATED this 17th day of Feb 2017

SIGNED by the Honourable
Mark Bailey
Minister for Main Roads, Roads Safety and Ports and)
Minister for Energy, Biofuels and Water Supply)

(signature)

