Queensland
Government

Department of
Energy and Water Supply

CTS19672/12

3 January 2013

Mr John Hall
Chief Executive Officer
Queensland Competition Authority
GPO Box 2257
BRISBANE QLD 4001

Dear Mr Hall John,

The Department of Energy and Water Supply (the Department) welcomes the opportunity to comment on the Queensland Competition Authority's (the Authority) draft report on Estimating a Fair and Reasonable Solar Feed-in Tariff for Queensland (the Draft Report).

I appreciate the Authority's efforts in producing the Draft Report within the timeframes set out by the Minister. The final report will play an important role in informing a mid 2013 Departmental review and Government consideration of policy options for the future of solar photovoltaic feed-in tariffs in Queensland. In this context, I provide the attached submission for your consideration in producing the final report. The key concerns I would like to raise on the submission relate to:

- **The value of solar PV energy in Isolated Networks** – to deliver the Government's Terms of Reference, the report would need to interpret a 'fair and reasonable' value for isolated / remote networks in Ergon Energy's distribution area, estimate a represented value or range of values for this interpretation in line with the Government's cost objectives, and report on appropriate implementation mechanisms.

- **Fair value estimates for Mount Isa** – The methodology used to estimate fair value for the Mount Isa Pricing Zone is inconsistent with that applied to other Ergon Energy pricing zones and may understate the true value. The Department supports the Authority working with Ergon Energy to gather actual generation data and recalculate the fair value rate for this location.

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- **Treatment of avoided network charges** – the report attributes avoided Distribution Use of System (DUoS) charges to in-house PV consumption and represents the avoided revenue as a 'cost' and pricing impact of the Scheme, without the evidence base to do so.

- **Cost sharing options** – more detailed analysis would be required to allow a thorough consideration by Government of the options to minimise, or more equitably share Scheme costs.

- **Retailer contribution** – the Authority's final position on a retailer contribution to the ongoing cost of the Scheme is unclear and should be definitive in the final report.

- **Infrastructure costs** – the report would benefit from itemising and explaining the attribution and calculation of identified costs.

- **Funding of the ongoing Scheme** – the issue of which network customer classes ultimately fund the ongoing Feed-in Tariff cost should form part of the broader analysis.

- **Executive Summary** – the report would benefit from an Executive Summary outlining the key positions taken by the Authority.

I note the Authority's reference in the report to the need for further data from distributors in order to estimate fair value in isolated networks and to produce a generation cost based estimate for Mount Isa. Please contact Mr Denis Warburton, General Manager, Fuel and Generation on 3898 0695 if you have any questions about the submission or require further assistance from my Department to obtain relevant data from Ergon Energy for the final report.

I thank you for your consideration of these matters.

Yours sincerely

Jonathan (Jon) PC Black
Director-General
Department of Energy and Water Supply

Att: Submission to the Queensland Competition Authority's draft report on 'Estimating a Fair and Reasonable Solar Feed-in Tariff for Queensland'.

Queensland Government

Department of
Energy and Water Supply

Estimating a Fair and Reasonable Solar Feed-in Tariff for Queensland, Draft Report, November 2012

Submission from the Queensland Department of Energy and Water Supply

Introduction

The Department of Energy and Water Supply (DEWS) welcomes the opportunity to provide feedback to the Queensland Competition Authority (the Authority) on its draft report 'Estimating a Fair and Reasonable Solar Feed-in Tariff for Queensland'. The Department raises the following key concerns with the draft report:

- In estimating fair and reasonable values, the Terms of Reference (ToR) require the Authority to consider the geographical location in which the solar photovoltaic (PV) energy is generated and the value of that energy in the local network. The report estimates a value for National Electricity Market (NEM) connected solar PV and for Ergon Energy regional pricing zones, but not for the remainder of Ergon Energy's isolated networks. To meet the ToR, the final report should:
  - interpret 'fair and reasonable' for isolated / remote networks in the Ergon Energy distribution area
  - estimate a value (representative, or high/low range) for these networks
  - report on the mechanism by which a fair and reasonable value in isolated networks could be implemented.
- The methodology used to estimate fair value for the Mt Isa Pricing Zone is inconsistent with that applied to other Ergon Energy pricing zones and may understate the true value. The Department supports the QCA working with Ergon Energy to gather actual generation data and recalculate the fair value rate for this location.
- The report attributes avoided Distribution Use of System (DUoS) charges to in-house PV consumption and represents the avoided revenue to the networks as a 'cost' and pricing impact of the Scheme, without the evidence base to do so.
- A more detailed analysis of cost sharing options is needed to allow a full consideration by Government of the issues.

- The attribution and calculation of network infrastructure costs is not clearly explained.
- The issue of which network customer classes ultimately fund the feed-in tariff (FiT) cost from the ongoing Scheme is undecided between key stakeholders, and should form part of the broader analysis in section 6 of the report.
- The report would benefit from an Executive Summary outlining the key positions taken by the Authority.

A detailed discussion of the Department's concerns is listed under each key section of the report.

3 Defining a fair and reasonable value for PV exports

Fair and reasonable value is defined in this section entirely in a NEM context. However, the ToR requires the Authority to have regard in its investigations into a fair and reasonable value 'to the geographical location at which the solar PV energy is generated and value of that energy in the local network'. 'Fair and reasonable' is likely to be interpreted differently for non-NEM isolated networks in the Ergon Energy distribution area due to differences in the energy supply chain, network profile and load characteristics, leading to differences in the potential avoided costs or financial benefits of PV.

To meet the ToR, the final report needs to provide an interpretation of fair and reasonable value for solar PV energy in Ergon Energy isolated networks.

4 Estimating the fair and reasonable value of PV exports to the retailer

The report should consider mentioning that the carbon price is included in the Net System Load Profile (NSLP) wholesale price estimates, to clarify how it figures within the calculations. The issue of complementarity of the fair and reasonable FiT with the carbon price is not explicitly addressed.

4.11 Value of PV Exports in the Ergon Energy Distribution Area

Isolated and Remote Networks

To meet the ToR, the final report would need to include an estimation of a fair and reasonable value for PV generation in isolated communities. The Department rejects the Authority's assertion that Ergon Energy is best placed to calculate this value, noting that this conflicts with the Authority's position in recommending a regulated tariff in the Ergon Energy distribution area. There is little competitive drive for Ergon Energy to develop products in this market for its NEM and non-NEM customers.

While the Department acknowledges the work and complexity in calculating a value for all Ergon Energy isolated networks, an alternative may be for the Authority to

calculate representative values for a selection (high to low range) of networks. Investigations should also examine the cost/benefit to the Community Service Obligation (CSO). The Department again refers to the Horizon Power Renewable Energy Buyback Scheme, which provides a helpful guideline on effectively managing the technical limitations of solar PV in isolated networks, and sets a precedent for examining the localised value of solar energy, including with a CSO in place.

The approach taken to calculate fair and reasonable value in the Mt Isa Zone uses Ergon Energy NSLP wholesale price estimates at the regional reference node rather than the actual cost of generation in the Mt Isa Network. Given the higher values expected for the West Zone, the Department is concerned that this approach may understate the true value of solar PV in the Mt Isa Zone. The Department supports the QCA intention to recalculate this rate following further consultation with Ergon Energy to determine actual cost of generation in the local network using accurate wholesale pricing data.

5 Implementing a fair and reasonable solar feed-in tariff

5.1 Form of Regulation in South East Queensland

The final report should establish the Authority's position on whether, in the absence of a mandated value, it would be necessary or desirable in the South East Queensland market to publish a benchmark price range for customers, or to leave the setting of the feed-in tariff rate entirely to that market.

5.2 Form of Regulation in the Ergon Energy Distribution Area

The Authority has recommended mandating a fair and reasonable value in the Ergon Energy distribution area due to a lack of competitive pressure. Consistent with this position, it is the Department's view that this should be extended to include Ergon Energy's isolated networks.

5.5 Processes for ongoing review

The methodology for calculating a fair and reasonable value may require review as technology changes, or due to data availability, changes in market settlement processes, or price setting methodologies. Consideration should be given to whether there is a need to review the methodology for calculating the fair and reasonable value for PV exports, and when this may be appropriate.

6 Equitably sharing the on-going costs of the Solar Bonus Scheme

6.3 Options for the Equitable Sharing of Costs

The report discusses the potential to reduce cross subsidies inherent in the ongoing Scheme through more appropriate funding arrangements involving a retailer contribution to the 44 cents FiT. The Authority notes this would require a regulated

retailer contribution, but does not come to a position on this option weighed against its position that a fair and reasonable value not be regulated in South East Queensland.

Table 6.2 should clarify whether cost savings from a retailer contribution to the ongoing FiTs are real or nominal.

Aside from a retailer funding arrangement, the report focuses cost sharing options on cost reflective network charges for solar PV customers, to recover avoided network revenue that results from in-house PV consumption and to reflect the infrastructure and administration costs specific to PV installations.

The Department is concerned about the current level of analysis in the report and recommends that a more rigorous analysis of options be undertaken to allow a full consideration of the issues by Government.

The distributor funded 44 cents Scheme imposes cross subsidies on non-PV customers where its various associated costs pass through to network pricing (e.g avoided DUoS, FiT, and network 'costs'). Each 'cost' involves a different level of cross subsidy and therefore opportunity to minimise total Scheme costs. Important interdependencies and trade-offs also exist between them (for example between FiT costs and avoided DUoS charges). Careful analysis is required to ensure that the options put forward do not create perverse incentives for PV owners (and therefore total Scheme cost outcomes), or reinforce cross subsidies. It is also important to ensure that the benefits are considered in light of potential implementation costs.

The Department suggests that in presenting options for more equitably sharing total Scheme costs, the final report should give full consideration to who funds each cost, whether the current arrangements are appropriate / equitable, what a more equitable arrangement might look like, and the most suitable mechanisms to achieve that outcome. To do otherwise may result in impractical or inappropriate options that perpetuate inequities. Detailed comment is provided below.

Avoided Distribution Use of System charges

Avoided DUoS charges are a pricing impact associated in part with the self-use of energy produced from embedded generation. As electricity from embedded generation does not come from the distribution network, volume based network charges are not paid on the electricity under the current pricing framework. Within current network pricing structures, solar PV owners may be seen as 'underpaying' for their use of the network due to self-use of the electricity from their system.

The report suggests that avoided network revenue due to in-house consumption by PV owners could be more equitably shared by improving the cost reflectivity of network pricing for PV owners. Section 5.3 raises the option of a network charge to address the issue of avoided DUoS charges.

The Department raises a number of concerns with the analysis, for consideration in the final report.

Avoided DUoS is not entirely a cross subsidy caused by solar PV. The Australian Electricity Market Operator (AEMO)[1] has acknowledged that annual energy

[1] http://aemo.com.au/AEMO%20Home/Electricity/Planning/Forecasting

consumption is projected to be lower than forecast under a "medium" economic growth scenario across the NEM. It cites the main influencing factors as changes in the economic outlook, reduced manufacturing consumption in response to the high Australian dollar, significant penetration of rooftop PV systems, and consumer response (commercial and residential) to rising electricity costs and energy efficiency measures.

There is little data available to quantify the extent of avoided DUoS charges that are attributable to the Scheme. In-house consumption of solar PV energy is not metered in Queensland, according to the Authority's submission, making it difficult to characterise the relationship between lower Queensland electricity network demand and household usage of solar PV energy. Therefore it is difficult to build this value into a proposal for more cost reflective pricing for PV owners (see comments under 7.2).

For residential customers in Queensland, avoided DUoS charges are partly a function of cross subsidies inherent in the current Tariff 11 structure, where fixed charges are lower than cost reflective levels and variable charges higher. The poor cost reflectivity of general tariffs means that small customers without PV (such as customers with large air conditioner loads) are also contributing disproportionately (less than their fair share) to the costs of their network usage, resulting in cross subsidy. The Department questions the appropriateness of recouping these avoided charges from some but not other contributing customers when costs cannot be isolated between categories.

For the reasons above, the Department is strongly of the view that to charge only solar PV owners for avoided DUoS revenue would perpetuate pricing inequities. At a minimum, this option appears to be inconsistent with COAG national FiT principle 3(c):

> *"assignment of network tariffs to small renewable consumers should be on the basis that they are treated no less favourably than customers without solar PV, but with similar load on the network".*

Given recent decreases in electricity use across the NEM, the impact this has on utility revenue is an issue more appropriately dealt with through broader network tariff setting and pricing reviews, rather than via charges that target PV users. As the issues and inequities affect Queensland small customers broadly, they can be more appropriately addressed through the rebalancing of general tariff structures as the state transitions to more cost reflective tariff pricing over the next 3 years.

FiT costs

Under a distributor funded Scheme, FiT costs are subsidised by non PV electricity customers via their pass through to higher network pricing. The amount of this cross subsidy is a function of the volume of electricity exported to the grid, the FiT rate and the customer base that funds it.

Because customers can manipulate their exports to some extent, the interdependencies and trade-off between cost sharing options must be carefully considered to avoid perverse overall cost outcomes. For example, levying a fixed charge on 44 cent FiT customers for their avoided DUoS revenue may create an incentive for them to recover these costs by maximising their exports, such as through

load shifting. This may increase the total cost passed through to electricity customers because the FiT unit cost is higher than the DUoS charge avoided per kilowatt hour from in-house consumption. It may also place more stress on the network at critical peak times.

Conversely, greater self-use of solar energy by these customers may reduce total Scheme costs because the 'per kilowatt hour cost' to the network is lower than the FiT cost. Assuming these customers are connected to Tariff 11, the cost to the network is lost revenue of 10.2c/kWh[2] representing the variable charge avoided by these customers. Therefore each kilowatt hour of solar energy these customers use in their home avoids a net cost to the network of 33.8c/kWh (in 2012-13).

While the FiT rate is locked-in under legislation to 2028, there may be some flexibility to minimise FiT costs by influencing or better managing how solar PV customers utilise their solar energy. Options that result in in-home consumption of PV electricity by 44 cent FiT customers may provide a better total cost outcome than options to incorporate avoided DUoS charges into pricing for PV customers. The Authority should weigh up these factors in the final report, including the suitability of different types of tariffs or tariff designs such as time of use and volume based signals; regulatory mechanisms such as daily export caps; or any other options the Authority deems relevant to achieving the cost objective.

The question of who funds FiT payments clearly impacts the equitable sharing or minimising of this cost, however this matter is not discussed beyond a retailer contribution. The report should consider whether there is an argument for sharing the FiT costs across a broader base of network tariff classes, to ease the per-unit pricing impacts. The Authority's own calculations in September 2012 and in this draft report suggest that spreading these costs across the broadest possible base would approximately halve the annual bill impacts on Tariff 11 customers.

Network costs

Network costs (also referred to in the report as infrastructure costs) include costs for the remediation of the network infrastructure as a direct result of PV impacting on network power quality and other performance factors. They include the operating and capital costs of remediating voltage, load and other network issues. They also include connection costs, or the cost of interconnection studies, metering costs, and site visits for technical issues.

The report suggests cost reflective network charges for solar PV customers, to reflect the infrastructure costs specific to PV installations. In contrast to this, the Authority's proposed calculation of fair value for solar PV energy returns any network benefits from solar PV to all network users. The Department is concerned that the recovery of 'network costs', such as remediation costs, from solar PV owners would represent an inconsistent approach between the treatment of network costs and benefits. Were any charges imposed on Scheme participants to recover infrastructure upgrade/ remediation costs, at a minimum they should be net of the network benefits the Scheme creates.

[2] Energex Tariff Schedule 2012-13, page 8
http://www.energex.com.au/__data/assets/pdf_file/0019/106165/2012-13-Tariff-Schedule_.pdf

The Department questions whether the impacts of PV on network infrastructure are measured and accounted for outside of standard infrastructure upgrades (see comments under section 7). It would be inappropriate to impose cost reflective pricing on solar PV owners to reflect the infrastructure costs from the Scheme where causation and accurate calculation is not established.

7 Projected cost of the Solar Bonus Scheme

7.1 Solar Bonus Scheme Costs Incurred by Distributors

The final report should clarify whether the $2.2 billion figure is nominal or real. If nominal, a real cost should also be provided and applied consistently throughout the report.

The final report would also benefit from stating the projected peak installed capacity (for each of the 44 cents and 8 cents tariffs), for this total cost.

Infrastructure and Administrative costs

The Department is concerned that the grouping of infrastructure costs reported in Table 7.2 is misleading.

While metering and connection equipment costs can be calculated from existing data, it is unclear how the infrastructure values for Table 7.2 are calculated and attributed to solar PV. The Department understands that the impact of solar PV on the network is not comprehensively measured and that capital expenditure associated with remediation of the network due to solar PV impacts is not explicitly captured by distributors. It would therefore be difficult to isolate expenditure on infrastructure upgrades directly associated with PV (and return on and return of this expenditure) from general infrastructure upgrade costs.

It is also unclear as to whether the infrastructure costs (total or in-part) identified for the current regulatory control period are in addition to AER approved Capital Expenditure (CAPEX), or a component of the approved CAPEX. The final report should clarify these matters, and the Department suggests that connection costs and infrastructure remediation /upgrade costs are itemised separately in Table 7.2.

The Department queries how the distributors have isolated Scheme administration costs from general day-to-day administration costs. The Department understands that these costs are not explicitly captured within reporting systems. Table 7.2 should distinguish any actual costs incurred from estimated 'costs' based on the broader return on and return of total assets allowed by the Regulator. It should also discuss how these estimates are made.

The Department is concerned that Ergon Energy's annual administrative costs are markedly higher than Energex costs in the years until 2016/17, without explanation. The report would benefit from a narrative to explain why Ergon Energy's administrative costs peak significantly higher than Energex costs at $8 million in 2012-13 and then steadily decrease to $0 from 2016/17 onwards.

7.2 Impact of the Solar Bonus Scheme on the Distributor's Prices

Figure 7.1 models the impact of FiT costs passing through to network pricing via current regulatory mechanisms, with a 2 year lag and Figure 7.2 depicts annual pricing impacts.

The Authority should note that the National Electricity Rules may allow some flexibility in the passing through of FiT payments to network pricing, in line with National Electricity Objectives to consider the long term interests of customers with respect to pricing.

The Authority should note that the graph as depicted in Figure 7.1 represents a 'high impact' scenario with no smoothing of Scheme pricing impacts. Where alternative pass through approaches are utilised, this may result in a different cost and pricing paths over time than those presented in Figures 7.1 and 7.2.

In-house consumption of PV energy

Because net metering arrangements only record exports and imports from the grid rather than the power generation of the PV system, the in-home consumption of PV generation is not measured. Without appropriate metering arrangements, the Authority notes in its draft report that it is difficult to distinguish between the self-consumption of PV electricity and any other demand management practices which reduce metered network consumption. Therefore avoided DUoS price impacts can not be wholly attributed to in-house consumption of PV.

Current pricing structures are such that a number of different customer profiles (such as those with high air-conditioner loads) are not contributing the true cost of their network connection. Cost reflective network pricing is an issue with broader application than solar PV.

Total distribution price impacts

Table 7.3 'Contribution from the solar bonus scheme to distribution prices' lists in-house consumption of solar PV as a factor contributing to price increases, referring to the avoided DUoS charges that result from reduced network consumption of PV owners. Given in-house consumption of solar PV energy is not metered this item cannot be attributed as a pricing impact from the Scheme in isolation of other demand reducing factors. The Department suggests that the value given is supported with detailed reasoning and strong justification, itemised alongside estimates of other demand reduction factors, or preferably removed from Table 7.3.

7.3 Impact of Solar Bonus Scheme Costs on Retail Electricity Prices

The Department is of the view that the calculation of a fair and reasonable value for solar energy is separate from the calculation of Scheme costs (and therefore inherently of its benefits), due to the various factors (technology, market and financial settlement processes) that constrain whether and where financial value from the energy is realised.

There are Retail ('R') side benefits from PV acknowledged by the Authority but that have been excluded from the Authority's calculations of fair and reasonable value. It is important that these benefits are represented in this section because they contribute

to an overall understanding of the Network (N) + R electricity price impacts of the Scheme. For example, to the extent that solar PV is a contributing factor in lower persistent wholesale energy costs in the NEM, the financial benefit should be realised in future retail price setting, offsetting some of the N side price increases reflected in Table 7.3. Where possible the Authority should consider quantifying, or estimating, these R side benefits from the Scheme. Set against Table 7.3, this level of analysis would allow a balanced consideration of the Scheme's net electricity pricing impacts.