



**Regulated Feed-in Tariff for Tasmanian Small
Customers**

Draft Report

September 2013

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INVITATION TO PROVIDE SUBMISSIONS

The Tasmanian Economic Regulator (Regulator) invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

It is the Regulator's policy to publish all submissions on the Office of the Tasmanian Economic Regulator's (OTTER) website unless the author of the submission requests confidentiality in relation to the submission (or any part of the submission). Those parts of a submission that are requested to be confidential should be submitted as an attachment to that part suitable for publication.

The Regulator will not publish submissions which contain material that the Regulator believes is, or could be, derogatory or defamatory.

Submissions should be received by close of business on **2 October 2013**.

To facilitate the publication of submissions on OTTER's website, submissions by email are preferred. Submissions and enquiries may be made to:

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A copy of this Draft Report may also be found on OTTER's website:
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1 INTRODUCTION

Under section 9 of the *Electricity Supply Industry Act 1995* the Minister for Finance may request a special report from the Regulator. On 15 August 2013 the Minister requested the Regulator prepare a report investigating and recommending to the Government a ‘fair and reasonable’ value for net exported electricity that is fed into the Tasmanian electricity network by residential and small businesses customers. The Regulator received the request on 20 August 2013.

Specifically these customers:

- have grid-connected renewable generation system, up to a maximum total installed capacity of 10 kilowatt (kW);
- consume less than 150 megawatt hour (MWh) per annum; and
- are located on mainland Tasmania (including Bruny Island).

1.1 Matters to be considered

In accordance with the Terms of Reference (Attachment A), in investigating and reporting on the fair and reasonable value of electricity exports from these customers, the Regulator is to take into account:

- the net financial benefits to retailers of exported electricity with respect to retailers’ controllable costs, including, but not limited to:
 - the price that the retailer pays for wholesale electricity; and
 - the costs a retailer incurs in running its retail electricity business;
- consistency with the operation of a competitive Tasmanian retail electricity market;
- the principle that feed-in tariffs should not result in any cross-subsidies between customers or customer classes;
- the Commonwealth Government’s current carbon pricing arrangements;
- the Council of Australian Governments’ National Principles for Feed-in Tariff Arrangements and the concept of ‘fair and reasonable’ value reflected therein;
- approaches, methodologies, findings and/or recommendations from other jurisdictions the Regulator considers relevant; and
- any other matter the Regulator considers relevant.

The Regulator is also to consider and report on, where it considers it relevant or appropriate:

- any material costs and benefits of micro distributed generation to the Tasmanian transmission and/or distribution networks;
- any other material direct or indirect costs or benefits of micro distributed generation; and
- how any such material costs or benefits identified by the Regulator would be most appropriately captured (for example the potential for different feed-in tariff arrangements based on generation technology/or grid location).

1.2 Investigation process and timing

Table 1.1 below outlines the investigation process and timing. In preparing its Draft Report the Regulator:

- considered a submission it received before the request was received from the Minister;
- undertook initial consultation with Aurora Distribution and Transend Networks;
- considered decisions made in other jurisdictions; and
- considered the specific circumstances in Tasmania.

The release of this Draft Report signifies the completion of this first phase of work, as highlighted in grey in the table below.

Table 1.1 Investigation timetable

Milestone	Date
Receipt of Terms of Reference	20 August 2013
Release of Draft Report	11 September 2013
Submissions due	2 October 2013
Final Report provided to the Minister	31 October 2013

This Draft Report discusses a range of costs and issues the Regulator has considered in calculating a 'fair and reasonable' Feed-in Tariff (FiT) for Tasmania. Proposed recommendations are included in this Draft Report. The Regulator appreciates that this is an important issue for stakeholders and, despite the short timeframe for the investigation, considered it vital that stakeholders were able to provide their input.

The Regulator therefore invites all interested parties to make submissions on the issues highlighted in this paper (and summarised in Section 1.4), as well as any other matter relevant to the Terms of Reference in Attachment A.

1.3 Structure of this Draft Report

The Regulator has produced this Draft Report after taking into account:

- the Terms of Reference;
- approaches in other jurisdictions;
- one submission received on the Government's issues paper and subsequently provided to the Regulator; and
- direct consultation with operators of the Tasmanian electricity network.

The Regulator is conducting this investigation as requested by the Minister and it is not intending to pre-empt parliamentary consideration of legislation in relation to this issue.

The Draft Report is structured as follows:

- Chapter 2 provides background for the investigation, including the Council of Australian Government's (COAG's) agreed principles and the Tasmanian Government's recent policy decision with respect to FiT arrangements.
- Chapter 3 provides a summary of decisions made by regulators in other jurisdictions.
- Chapter 4 considers the direct financial impacts on retailers as a result of purchasing excess electricity generated by micro distributed generation systems and the implications for a 'fair and reasonable' FiT for Tasmania.
- Chapter 5 considers the indirect impacts of micro distributed generation systems and the implications for a 'fair and reasonable' FiT for Tasmania.
- Chapter 6 outlines the proposed formula for calculating a 'fair and reasonable' FiT for Tasmania, the proposed value of the FiT from 1 January 2014 and the suggested process for updating the FiT.

1.4 Summary of issues on which comment is sought

Whilst the time available to the Regulator to conduct the investigation was limited, the Regulator encourages public participation and invites submissions on the following matters:

Chapter 4

In relation to the direct financial benefits retailers receive from the FiT the Regulator is seeking comment on:

- the proposed inclusion of wholesale electricity costs, network losses and National Electricity Market (NEM) fees in calculating a 'fair and reasonable' FiT;
- estimating wholesale electricity costs using the regulated wholesale price in regulated retail prices rather than the market price method; and
- the proposed exclusion of all other direct impacts.

Chapter 5

In relation to the indirect impacts of micro distributed generation systems, the Regulator is seeking comment on the proposed exclusion of these impacts in calculating a 'fair and reasonable' FiT.

Chapter 6

In relation to the implementation of a fair and reasonable FiT the Regulator is seeking comment on:

- the mathematical formula used to calculate the fair and reasonable FiT; and
- the proposed timing and process for updating the FiT.

2 BACKGROUND

A FiT is a pricing mechanism whereby an electricity utility pays a customer for the excess electricity generated by the customer's micro distributed generation systems and exported (i.e. 'fed-in') to the grid. Historically, FiTs have been based on a price being paid to the customer that is in excess of the normal wholesale cost of electricity generation, and sometimes in excess of the retail price of electricity.

The electricity produced by grid-connected customers is generally referred to as 'distributed generation', the most common form of which is small-scale, solar Photo Voltaic (PV) panels. Distributed generation systems are typically connected to the grid through 'import/export' meters. These meters record the quantity of electricity drawn from the grid separately from the amount that the micro distributed generation system feeds into the grid.

The current FiT offered by Aurora on a voluntary basis is called the net metering buyback scheme (NMBS) which offers customers a 'one-for-one' (1:1) FiT at the regulated light-and-power tariff (Tariff 31 for residential customers) or general supply tariff (Tariff 22 for small business customers) for their net exported electricity.

In December 2012 the Council of Australian Governments (COAG) agreed to revised National Principles for Feed-in Tariff Arrangements (see Attachment B). These revised principles outline, amongst other issues, that all premium FiT arrangements are to be closed to new participants by 2014. Furthermore, all other FiT customers are to receive a 'fair and reasonable' value for their exported electricity. Consistent with this, most Australian jurisdictions have closed their premium FiT schemes and have determined new 'fair and reasonable' values for exported electricity for new FiT customers.

Consistent with the COAG reforms, and as part of the Tasmanian Government's electricity reform process, the Government recently reviewed the FiT rate for Tasmania. Following the release of an issues paper on 16 May 2013 and consideration of submissions received on that paper, the Government announced the following policy position on 18 August 2013:

- the current one-for-one FiT arrangement will be closed at midnight on 30 August 2013 and will be grandfathered for existing (or contracted) installations until 1 January 2019;
- customers applying to install eligible micro distributed generation systems on or after 31 August 2013 will be entitled to a 'transitional feed-in-tariff' of 8 c/kWh from 31 August 2013 until 31 December 2013;
- the Regulator will be required to determine the FiT rate to apply from 1 January 2014 for all new installations occurring on or after 31 August 2013; and

- the Regulator will be required to review the FiT rate on an annual basis.

As outlined in Chapter 1, on 20 August 2013 the Regulator received a Terms of Reference from the Minister for Finance to conduct an investigation and provide a special report under section 9 of the ESI Act on the 'fair and reasonable' value of a FiT to apply from 1 January 2014.

The Department of Treasury and Finance (Treasury) has advised the Regulator that the Government intends introducing legislation in September 2013 (and subsequently having regulations made) which will, amongst other things, provide the legal power for the first FiT determination to be consistent with the Regulator's recommendation as to the minimum FiT rate, or the method for determining the minimum FiT rate, which was made in a report that the Minister requested before the legislation commenced.

The Regulator understands that the legislation and regulations are scheduled to take effect in November 2013.

2.1 Scope and structure of the FiT

The Terms of Reference require the Regulator to investigate a 'fair and reasonable' FiT for micro distributed generation systems, as defined in Chapter 1. The Terms of Reference also require the Regulator, after investigating any material costs and benefits of micro distributed generation systems, to determine how such costs and benefits would be most appropriately captured, including for example, the potential for different FiT arrangements based on generation technology and/or grid location.

The Regulator understands that solar PV systems are by far the most common source of micro distributed generation system in Tasmania. Given this and considering the costs and benefits of determining different FiT rates for different generation technology types, the Regulator is proposing to determine a single FiT rate. As a consequence, much of the analysis in this report focuses on solar PV systems, though not exclusively. This approach is largely consistent with the approach adopted in other Australian jurisdictions.

That said, the Regulator understands that other forms of eligible micro distributed generation systems exhibit similar characteristics to solar PV. Specifically, this includes how it is used by customers, how it is exported and the impact on the electricity network more broadly. Furthermore, based on the analysis in this report, the conclusion reached with respect to a 'fair and reasonable' FiT would, at present, be similar irrespective of the electricity generation technology source.

However, should conditions materially change in the future the Regulator may consider differential FiT arrangements based on generation technology.

Given the above, the terms micro distributed generation and solar PV are interchangeable throughout the report.

3 DECISIONS MADE BY REGULATORS IN OTHER JURISDICTIONS

This Chapter provides an overview of recent FiT decisions in other jurisdictions with respect to calculating a 'fair and reasonable' value. The information from this Chapter will be used to inform decisions for Tasmania in subsequent sections of this Draft Report.

3.1 New South Wales

In 2012¹, in response to a request from the New South Wales (NSW) Government, the Independent Pricing and Regulatory Tribunal (IPART) examined what it called the 'subsidy free FiT'. IPART estimated an appropriate FiT using two methodologies:

- the direct financial gain to retailers method; and
- the wholesale market method.

Each of these methods are discussed below.

3.1.1 Direct financial gain to retailers method

Under this method, IPART considered the changes in a retailer's costs and revenues arising from the export of excess electricity generated from solar PV systems to the grid. Specifically, IPART calculated the direct financial gain to retailers to be:

the revenue per kilowatt hour (kWh) (i.e. the retail price paid by customers)

minus

unavoidable costs per kWh of PV electricity imported

equals

financial gain per kWh

The financial gain per kWh can also be considered to be the costs avoided by retailers as a result of purchasing excess electricity generated by solar PV systems instead of purchasing energy from large-scale generators in the NEM. Based on this analysis, IPART considered that the only costs that could be avoided by retailers are as follows:

¹ IPART (2012) "Solar feed-in tariffs, Setting a fair and reasonable value for electricity generated by small scale solar PV units in NSW", final report.

- wholesale electricity purchases – since retailers are purchasing from solar PV customers and not from large-scale generators;
- NEM market and ancillary fees – because these are levied on a retailer’s net purchases through the NEM as measured by the Australian Energy Market Operator (AEMO); and
- electricity network losses - since solar PV exports are consumed close to where they are exported.

IPART assessed all other costs incurred by a retailer to be unavoidable and, therefore, excluded those costs from the direct financial gains flowing to retailers as a result of purchasing excess electricity generated by solar PV systems.

3.1.2 Wholesale market method

Under the wholesale method IPART assumed that solar PV customers are like the large-scale generators who sell electricity to energy retailers in the NEM. Importantly, under this method IPART considered the price paid to the solar PV system owner for solar PV system exports taking into account the time when the excess electricity is exported.

To assist in calculating an appropriate FiT under this methodology, IPART engaged Frontier Economics Pty Ltd to provide advice. In summary Frontier Economics adopted the following approach:

- obtained historical data on the market spot price on a half-hourly basis;
- obtained historical data on the times of the day in which solar PV systems tend to be exporting to the grid;
- forecast the spot price for the times of the day when solar PV systems are exporting to the grid.

Frontier Economics adjusted the historical and forecast wholesale market value of solar PV exports for electricity network losses on the basis that solar PV exports are consumed close to where they are exported.

3.1.3 IPART’s estimate

Table 3.1 contains IPART’s estimate from its 2013 report² to apply for the 2013-14 financial year. The Regulator notes that IPART identified a benchmark range rather than a mandatory value. IPART considered that publication of the benchmark range would exert competitive pressures on those retailers who do not currently offer a FiT.³

² IPART (2013) “Solar feed-in-tariffs, the subsidy-free value of electricity from small-scale solar PV units from 1 July 2013”,p.4.

³ IPART (2012) “Solar feed-in tariffs, Setting a fair and reasonable value for electricity generated by small scale solar PV units in NSW”, Final report, p.3.

Table 3.1: IPART’s estimate of the value of solar PV system exports (\$2013-14, c/kWh)

Method Used	2012-13	2013-14
Direct financial gain to retailers	7.9 – 13.2	6.6 – 11.2
Wholesale market method	7.9 – 10.1	8.3

Source: IPART (2013).

3.2 Queensland

The Queensland Competition Authority (QCA) adopts the direct financial gain to retailers method for estimating a fair and reasonable FiT. The QCA determined the revenue that can be earned by retailers from on-selling solar PV system exports, by determining the appropriate tariff that the exported electricity can be sold for. Following this, the QCA subtracts all costs that it deems cannot be avoided. Similar to IPART’s findings, this led to the following avoided costs being taken into account:

- wholesale electricity purchased from the NEM;
- NEM market and ancillary fees; and
- network losses.

Based on this method, the QCA estimated a fair and reasonable FiT of 7.553 c/kWh for 2013-14 for customers in South East Queensland.⁴ The QCA also estimated a range of between 7.064 c/kWh and 14.053 c/kWh for other areas covered by Ergon Energy’s distribution network reflecting the differential loss factors applying across the state.⁵

3.3 Victoria

In 2012 the Victorian Competition and Efficiency Commission (VCEC) undertook an inquiry for the Victorian Government on the FiT scheme in Victoria. As well as reviewing pricing, VCEC was asked to:

- review the design, efficiency and effectiveness of feed-in tariff schemes, including market-based gross FiT schemes, in the context of a national carbon price;
- provide a recommendation as to whether existing FiT arrangements should be continued, phased-out or amended. Where phase-out of existing arrangements is proposed, the appraisal should give consideration to whether any transitional arrangements may be necessary. Any changes to existing arrangements would not be applied retrospectively; and

⁴ QCA (2013) “Estimating a fair and reasonable solar feed-in-tariff for Queensland”, p.30.

⁵ Ibid, p.42.

- identify any State, and/or local regulatory, and/or other barriers, to the development of a network of distributed renewable and low emission generation in Victoria, including co-generation and tri-generation.⁶

The VCEC recommended to the Victorian Government that a new FiT for new distributed generated customers be established on the basis of the wholesale price of electricity (including the carbon price) adjusted for reduced network losses. The VCEC also noted that, based on advice it received, the efficient and fair market price for 2013 should be at a minimum, in the range of 6 c/kWh to 8 c/kWh.⁷

3.4 South Australia

In 2011 the Essential Services Commission of South Australia (ESCOSA) reported its findings for South Australia's FiT, which was to apply from January 2012.⁸ ESCOSA calculated the FiT for South Australia with respect to the benefit to retailers in terms of what it defined as a retailer's 'controllable costs', being wholesale electricity purchases and the cost the retailer incurs in running its business. ESCOSA considered that network fees could not be avoided by retailers and it is therefore appropriate that these costs be passed on to consumers in full. Table 3.2 presents ESCOSA's decisions for 2011-12 to 2013-14. Similar to the outcomes in other jurisdictions, ESCOSA considered that the avoided costs are limited to wholesale costs, network losses and NEM fees.

Table 3.2: ESCOSA regulated FiT (\$nominal, c/kWh)

	2011-12	2012-13	2013-14
Reduced wholesale cost	6.4	8.9	10.2
Avoided losses	0.6	0.8	0.9
NEM fees	0.1	0.1	0.1
Total	7.1	9.8	11.2

Source: ESCOSA

ESCOSA is currently conducting an updated review of its current FiT arrangements and is considering whether it should continue to set a regulated FiT.⁹

⁶ VCEC (2012) "Power from the people, inquiry into distributed generation", p.VII.

⁷ Ibid, p.XXI.

⁸ See ESCOSA (2012) "2012 Determination of solar feed-in-tariff premium, final price determination".

⁹ See ESCOSA (2013) "Review of the solar feed-in tariff premium, issues paper".

4 DIRECT IMPACTS TO CONSIDER

This Chapter analyses the direct impacts to consider in assessing a fair and reasonable FiT for Tasmania.

4.1 Introduction

In accordance with the Terms of Reference, in determining what is a fair and reasonable FiT the Regulator is required to consider the net financial benefits to retailers of exported electricity with respect to retailers' controllable (i.e. avoidable) costs. This is effectively the same methodology adopted by other jurisdictions in Australia as outlined in Chapter 3.

In examining the net financial benefit to retailers the Regulator has considered the ability of a retailer to avoid the following costs:

- the wholesale cost of purchasing electricity through the NEM;
- transmission network charges;
- distribution network charges;
- transmission and distribution losses;
- NEM fees;
- Renewable Energy Target (RET) costs;
- retail operating costs; and
- retail margin.

Whilst the Regulator notes that each of these items has been considered in other jurisdictions with similar conclusions, the Regulator considers it important to consider each item on its merits in the Tasmanian context.

4.2 Wholesale electricity costs

Wholesale electricity costs are the costs of purchasing electricity through the NEM in the spot market that is transmitted to customers through the transmission and distribution networks. When a retailer purchases electricity from roof top solar PV systems this reduces the amount of electricity that must be purchased through the NEM. Similar to the conclusions reached in other jurisdictions, the Regulator considers that this is an avoided cost that delivers a net financial benefit to retailers and should be included in the estimate of the FiT. The challenge is to determine the appropriate method to measure the amount of the avoided costs. Two methods have typically been adopted in other jurisdictions to estimate the avoided costs.

4.2.1 Market price method

Under the market price method, a specific market price is determined at the actual time when rooftop solar PV systems tend to be exporting excess electricity to the grid. As discussed in Section 3.1.2, in NSW, this involves determining the historical half-hourly times of solar PV system electricity exports and the spot price in the NEM at the time those exports occurred and then consider what future spot prices might be. ESCOSA has adopted this approach in South Australia and IPART adopted this approach in NSW in deriving its lower benchmark estimate.

4.2.2 Regulated wholesale price method

Under the regulated wholesale price method the wholesale price is simply the price adopted under the standard offer price for regulated prices set by the relevant regulator. In this sense, the avoided cost is an average price throughout the day rather than specific prices for the time of day when solar PV systems are exporting excess electricity to the grid. The QCA has adopted this approach and IPART adopted this approach as the basis for its upper benchmark estimate.

4.2.3 Regulator's draft conclusion on wholesale electricity costs

The Regulator considers that the regulated wholesale electricity price method to be the most appropriate when setting the FiT for Tasmania. Under the wholesale market regulatory arrangements (to commence in Tasmania on 1 January 2014), Hydro Tasmania is required to offer regulated contracts to retailers to enable retailers to hedge their risk as they would in other jurisdictions. The prevailing prices under these hedge contracts is regulated using the same methodology that is used to determine the regulated wholesale electricity price in regulated standing offer retail prices. The Regulator therefore considers that the cost avoided by retailers in purchasing excess energy generated by solar PV systems is most likely the regulated wholesale electricity price rather than the spot prices available through the NEM.

The Regulator notes the market price approach may appear to be theoretically more consistent with the recently amended COAG National Principles for Feed-in Tariff arrangements. Specifically, Principle 1 states that:

Governments agree that residential and small business consumers with grid connected micro generation¹⁰ should have the right to export energy to the electricity grid and market participants should provide payment for exported electricity which reflects the value of that energy in the relevant electricity market and the relevant electricity network it feeds in to, taking into account the time of day during which energy is exported.

¹⁰ These national principles apply to grid connected micro generation compliant with the relevant Australian Standard (AS4777).

However, the Regulator considers that the regulated wholesale electricity price approach is more appropriate because:

- all small customers will initially be paying regulated prices, therefore the financial gain to retailers is the regulated price;
- it is unclear what contracting arrangements retailers will make in the new wholesale regulatory environment; and
- the use of the regulated price would appear to be more consistent with the Terms of Reference in terms of considering the net financial impact on retailers since the majority of small customers are likely to be on regulated prices in the short-term.

In its submission to the Government’s review, Save Our Solar Tasmania (SOST), a lobby group representing the solar PV industry in Tasmania, considered that the carbon price incurred by retailers (which is passed on to customers) should be credited to solar PV system owners. SOST states that given that renewable power does not attract the carbon price it would be inherently unfair for that cost to be borne by a solar PV system owner and considers it would be profiteering if the carbon price component was not credited to solar PV system owners.¹¹

The Regulator notes the regulated wholesale electricity price determined in the 2013 Standing Offer Determinations¹² was based on the output from a wholesale pricing model developed by Concept Consulting Limited for Treasury. As part of the 2013 Standing Offer Investigation, the Regulator accepted Treasury’s advice that the model complied with the principles outlined in a Wholesale Contract Regulatory Instrument signed by the Minister on 29 July 2013¹³. The Regulator understands that the model takes into account Victorian contract prices which, in turn, account for the impact of the carbon price. The use of the regulated wholesale electricity price therefore effectively passes back to solar PV system owners the value of the carbon tax that would otherwise be incurred by retailers through purchases in the spot market. Furthermore, as discussed above, since the regulated price is likely to be similar to the actual price paid by retailers, retailers are unlikely to be impacted positively or negatively.

4.3 Transmission costs

Transmission costs are the costs of operating and maintaining the transmission network. In terms of whether or not this cost can be avoided by retailers, there has been much debate in other jurisdictions between what is theoretically achievable and what can practically be achieved through the existing transmission charging structure.

¹¹ See Save our Solar Tasmania (2013) “Tasmanian Energy Reform, feed-in-tariffs submission, p.15.

¹² Tasmanian Economic Regulator (2013) “Report on the investigation of maximum prices for interim price-regulated electricity retail services for small customers on mainland Tasmania”.

¹³ Ibid, p.28.

Conceptually, transmission costs can be avoided through the purchase of excess electricity generated by solar PV systems as less electricity is purchased from large-scale generators and consequently less electricity is transmitted through the transmission system to customers. This view is supported by SOST.¹⁴

However, regulators in other jurisdictions have considered that these costs are not avoidable and therefore should not be taken into account in calculating the FiT. Specifically, ESCOSA considers that retailers include transmission (and distribution) charges on a customer's bill as a way of collecting amounts due to distribution and transmission entities and retailers do not have any ability to influence the amount that is charged.¹⁵ The QCA considers that "excess electricity exported by PV customers is ultimately used by other customers on the network and will therefore register as metered consumption. As retailers are charged a variable network charge according to metered energy consumption, any excess electricity generated by a solar PV system which is exported to the grid and on-sold by a retailer to other customers will still attract the full variable network charge. As such, network costs are unavoidable when a retailer on-sells solar PV exports and should therefore be excluded from the estimated export value."¹⁶ Similarly, IPART noted that due to current metering and billing arrangements in NSW retailers do not avoid any network costs.¹⁷

The Regulator consulted with Aurora Distribution and Transend Networks to determine the nature of the charging structure in Tasmania and whether costs could be avoided. Based on these discussions and similar to other jurisdictions, the Regulator understands that transmission charges are based on the amount of metered consumption at a customer's property. This means that transmission charges are imposed on customers regardless of where energy is sourced, be it from hydro generation through the NEM or from a neighbouring rooftop solar PV system. Furthermore, these transmission charges are passed directly to Aurora Distribution and ultimately Transend Networks. Hence a retailer cannot derive a financial benefit from avoided transmission charges due to the purchase of excess solar electricity exported to the grid by solar PV customers.

Section 9.1.3 of Aurora Distribution's approved pricing proposal outlines the case in which Aurora Distribution may need to pay embedded generator's avoided TUoS charges. Specifically, Aurora notes that "the National Electricity Rules require Aurora to pay avoided TUoS usage charges to embedded generators who have generated electricity and transmitted this energy into Aurora's distribution network"¹⁸. This would suggest that a payment should be made for roof top solar PV systems for

¹⁴ Ibid, p.15.

¹⁵ ESCOSA (2012) "2012 Determination of solar feed-in-tariff premium, final price determination", p.19.

¹⁶ QCA (2013) "Estimating a fair and reasonable solar feed-in-tariff for Queensland", p.22.

¹⁷ IPART (2012) "Solar feed-in tariffs, Setting a fair and reasonable value for electricity generated by small scale solar PV units in NSW", final report, p.6.

¹⁸ Aurora Energy (2012) "Aurora Energy pricing proposal 1 July 2013 – 30 June 2014", p.59, as approved by the AER.

avoided TUoS charges. However, Aurora Distribution also considered that avoided TUoS payments reflect the avoided costs of upstream transmission network reinforcements in Tasmania. Aurora also considers that this benefits all customers and does not impact solely on the embedded generators connection point. Consequently Aurora assigns avoided TUoS to all tariff classes and not just to embedded generators.¹⁹ Additionally, even if this changed in the future, Aurora Distribution, not retailers, would make direct payments to customers.

Based on the above the Regulator considers that transmission charges are not avoidable costs to a retailer and therefore should not be taken into account when calculating a fair and reasonable FiT.

4.4 Distribution costs

Distribution costs are the costs of operating and maintaining the distribution network. The debate is similar to that for transmission charges as to whether or not this cost can be avoided by retailers.

SOST considers that PV system owners should only pay a demonstrated fair share of the costs of distribution. SOST also notes that power from roof top solar PV systems that is fed into the grid is used locally. Furthermore, the electricity is already refined and processed and does not need to be transformed into a useable state (as occurs between the transmission and distribution system). Given these factors, SOST considers that solar PV system owners should only be charged for local usage of the distribution network with the unused portion credited to solar PV system owners and added to the FiT.²⁰

Other Australian regulators have concluded that distribution charges do not represent an avoidable cost for retailers and, therefore, should not be included in the calculation of the FiT. For example, in NSW, IPART noted that retailers are required to pay variable network distribution charges based on the gross amount of electricity they supply to customers. Charges are therefore incurred for electricity supplied regardless of where and by whom it was exported to the grid.²¹ IPART also acknowledged that whilst electricity produced from solar PV systems is often consumed in close proximity to where it is generated, such that very little of the distribution network is used, due to the current metering and billing arrangements retailers do not avoid distribution costs in respect of excess electricity generated by solar PV systems.

The Regulator consulted with Aurora Distribution to determine the nature of the Tasmanian distribution charging structure and whether distribution costs could be avoided. Based on these discussions the Regulator understands that retailers

¹⁹ Ibid, p.60.

²⁰ Save our Solar Tasmania (2013) "Tasmanian Energy Reform, feed-in-tariffs submission, p.15.

²¹ IPART (2012) "Solar feed-in tariffs, Setting a fair and reasonable value for electricity generated by small scale solar PV units in NSW", final report, p.52.

cannot make a financial gain on distribution charges when purchasing and on-selling excess electricity generated by solar PV systems. That is, as distribution charges are based on metered consumption regardless of the source of generation, these charges are passed by retailers directly to Aurora Distribution.

Based on the preceding discussion the Regulator proposes that distribution charges should not be taken into account when calculating the 'fair and reasonable' FiT.

4.5 Network Loss factors

As electricity flows through the transmission and distribution systems, energy is lost due to electrical resistance and the heating of conductors. Due to these losses the amount of electricity generated must be greater than forecast demand to ensure that the network can meet forecast demand. Retail prices charged to customers include an amount for energy lost in the electricity network. There are two loss factors, the Distribution Loss Factor (DLF) and the Marginal Loss Factor (MLF).

The DLF represents the average energy loss incurred when electricity is transmitted over the distribution network.

The MLF represents the average energy loss incurred when electricity is transmitted over the transmission network. Distribution Network Service Provider's determine the DLFs to apply in each financial year and, after approval from the AER, provide the DLFs to AEMO for publication. AEMO determines and publishes MLFs for each NEM region for each financial year.

Other Australian regulators include loss factors when calculating their respective FiTs. This is because when electricity is purchased from roof top solar PV systems it is consumed nearby. This means that the electricity does not travel long distances across the transmission and distribution networks and the quantity of electricity lost is, therefore, negligible.

The Regulator agrees with this position and proposes that loss factors should be taken into account when calculating the 'fair and reasonable' FiT.

4.6 NEM fees

NEM fees are the market and ancillary fees charged to retailers based on the amount of wholesale electricity they purchase through the NEM. When a retailer receives solar PV exports from its customers the amount of wholesale electricity that it needs to purchase from large scale generators through the NEM is reduced. This means that the retailer's liability for market fees and ancillary service fees is also reduced as it is calculated on a lower volume of wholesale electricity. Given this, the Regulator proposes taking NEM fees into account in calculating the 'fair and reasonable' FiT, which is consistent with the position of regulators in other jurisdictions.

4.7 Renewable Energy Target costs

The Australian Government has committed to a national RET scheme aimed at ensuring 20 per cent of Australia's electricity supply is generated from renewable sources by 2020.

By law, electricity consumers pay for this government requirement through obligations imposed on wholesale electricity purchasers (including retailers) who then pass through the cost of complying with the obligations to customers.

The RET charge is made up of two schemes:

- the Large-scale Renewable Energy Target (LRET); and
- the Small-scale Renewable Energy Scheme (SRES).

The LRET supports development of large projects such as wind farms and solar power stations. Electricity retailers must purchase and surrender a set number of Large-scale Generation Certificates (LGCs) each year. The number of LGCs to be surrendered each calendar year is calculated using the Renewable Power Percentage (RPP) which is determined by the Clean Energy Regulator (CER).

The SRES supports investment in smaller technologies such as rooftop solar panels and solar hot water heaters through the generation of Small-scale Technology Certificates (STCs). The SRES is an uncapped scheme therefore all STCs created must be purchased by electricity retailers. The number of STCs electricity retailers must purchase and surrender over the course of each calendar year is calculated using the Small-scale Technology Percentage (STP) determined by the CER.

The RPP and STP are applied to the amount of wholesale electricity purchased by the retailer in a calendar year adjusted for the applicable distribution loss factors.

The Regulator understands that given that RET costs are calculated on the amount of electricity purchased each year by a retailer, be that from roof top solar PV systems or from large-scale generators through the NEM, retailers are unable to avoid RET costs. This is consistent with the findings of other regulators and the advice provided by the CER as part of the FIT reviews conducted in other jurisdictions.²²

Given this, these costs are unavoidable to the retailer and the Regulator proposes not taking RET costs into account when calculating the fair and reasonable FIT.

²² See IPART (2012) "Solar feed-in tariffs, Setting a fair and reasonable value for electricity generated by small scale solar PV units in NSW", final report, p.53, . ESCOSA (2012) "2012 Determination of solar feed-in-tariff premium, final price determination", p.42 and QCA (2013) "Estimating a fair and reasonable solar feed-in-tariff for Queensland", pp.23 and 24.

4.8 Retail operating costs

Retail operating costs are those costs incurred in running a retail electricity business. These include:

- costs associated with billing and revenue collection;
- call centre costs;
- customer information costs;
- corporate overhead costs;
- regulatory compliance costs; and
- marketing costs.

These costs tend to vary in proportion to the number of customers and are not avoided by purchasing excess electricity generated by solar PV systems rather than electricity produced by large-scale generation through the NEM.

Regulators in other jurisdictions also considered whether retailers operating costs for serving solar PV system customers would be higher than the cost of serving other customers. Other regulators have noted that whilst different customers incurred different retail costs there was insufficient evidence to suggest solar PV customers were more expensive to serve than non-solar PV system customers. Moreover, IPART considered that the cost to serve solar PV system customers would likely fall over time as these customers become more familiar with their solar PV systems and that there could be cost savings in terms of reduced bad debt risks.²³

The Regulator agrees with these views and proposes not taking retail costs into account when calculating a 'fair and reasonable' FiT.

4.9 Retail margin

The retail margin is intended to compensate an electricity retailer for investing in the business and the risks it assumes in providing retail services. It is calculated in terms of a net margin on earnings before interest, tax, depreciation and amortisation (EBITA). Practically, it is a percentage applied to the sum of the retailer's costs as reviewed and approved by the Regulator.

The method adopted to measure the value of the FiT is the net financial benefit to a retailer. Under this method the costs avoided by retailers by purchasing excess electricity generated by rooftop solar PV systems is passed on to rooftop solar PV

²³ See IPART (2012) "Solar feed-in tariffs, Setting a fair and reasonable value for electricity generated by small scale solar PV units in NSW", final report, p.51, . ESCOSA (2012) "2012 Determination of solar feed-in-tariff premium, final price determination", pp.43 and 44 and QCA (2013) "Estimating a fair and reasonable solar feed-in-tariff for Queensland", pp.27 and 28.

system owners in the price they receive for that electricity. Hence, the net impact on the retailer is zero. Given this, the retail margin the retailer earns will not change.

The retailer does not therefore gain additional profit through the retail margin and the Regulator proposes not taking the retail margin into account in calculating the 'fair and reasonable' FiT. This is the same conclusion reached by regulators in other jurisdictions.

4.10 Regulator's draft conclusions on direct impacts

Based on the above analysis, the Regulator proposes that the following direct items should be considered when calculating a 'fair and reasonable' FiT for Tasmania:

- wholesale electricity costs
- network losses; and
- NEM fees.

In relation to the direct financial benefits retailers receive with respect to the FiT, the Regulator is seeking comment on:

- the proposed inclusion of wholesale electricity costs, network losses and NEM fees in calculating a fair and reasonable FiT;
- estimating wholesale electricity costs using the regulated wholesale price in regulated retail prices rather than the market price method; and
- the proposed exclusion of all other direct impacts.

5 INDIRECT IMPACTS TO CONSIDER

This Chapter considers indirect costs and benefits associated with micro distributed generation systems and the appropriateness of including those costs and benefits when determining a fair and reasonable FiT.

5.1 Introduction

This Chapter examines the impact of increased installation of rooftop solar PV systems on:

- average network loss factors;
- wholesale electricity prices;
- potential deferral of network augmentation costs; and
- the potential for network reinforcing costs.

5.2 Average network loss factors

As discussed in Section 4.5 given that electricity exported from solar PV systems is consumed close to where it is generated, the energy losses that normally occur when electricity is transported across the transmission and distribution network are avoided. The Regulator proposes taking these specific energy losses into account as a direct financial impact for retailers when determining a 'fair and reasonable' FiT.

However, all other electricity users in Tasmania may derive an indirect benefit through a reduction in the average network loss factors. The more electricity produced and used from roof top solar PV systems (be it used directly by solar PV system owners or exported to the grid), the less is purchased from large-scale generators across the NEM. This means that less electricity is transported across the transmission and distribution networks resulting in lower average network loss factors. Lower loss factors mean lower costs and prices for all customers when loss factors are updated annually.

However, similar to other jurisdictions, network loss factors are averaged across the network for all customers. Furthermore, it is unclear as to the extent to which losses within the network may have changed. It is difficult therefore to estimate what the impact would be and what amount, if any, should be transferred to solar PV system owners.

Given this, Regulator considers that any reduction in average network loss factors should not be redirected to solar PV system owners in calculating the FiT. This is consistent with decisions of other Regulators.

5.3 Impact on wholesale electricity prices

Regulators in other jurisdictions have also considered the benefit that solar PV generation can provide in lowering the wholesale spot price for electricity through the 'merit order effect'. In the wholesale market, generators offer to supply electricity at designated prices every five minutes of every day. AEMO stacks these bids from lowest to highest (a merit order), with the aim of meeting prevailing demand in the market in the most cost effective way. Solar PV generation reduces the amount of electricity that retailers need to purchase from the wholesale market. This means that the generation market can be settled at a lower bid in the merit order thereby lowering spot prices (the merit order effect). As such, retailers, and subsequently customers, receive the benefits of lower wholesale electricity prices.

Whilst this is the case, the Regulator does not consider it appropriate to provide an additional return to roof top solar PV system owners through the FiT. The lower spot price is a normal part of the competitive market process which occurs when the supply of a good or service increases. In the electricity sector, this could occur through additional solar PV systems, additional wind farms or additional hydro supply. In a competitive market, no individual firm can seek compensation for causing lower spot prices. The Regulator also considers this to be the most appropriate outcome for the Tasmanian electricity market.

Given this, the Regulator proposes not taking into account any potential decrease in the spot price from the merit order effect when calculating the FiT. This is consistent with regulators' decisions in other jurisdictions.

5.4 Potential deferral of network augmentation costs

On the face of it the increased uptake of roof top solar PV systems may potentially lead to a reduction in future network costs. As demand for electricity increases so too does the need for electricity generation. Typically electricity is sourced from new large-scale generating plants. In addition, the transmission and/or distribution network may need to be extended to connect to the new power plant or be upgraded to handle the extra capacity. Since roof top solar PV systems do not use the transmission network or require electricity to travel long distances along the distribution network, some of this investment could potentially be deferred which avoids additional network costs for all customers.

However, the Regulator notes that there may be several other reasons why a network extension or augmentation may not occur. This may include for example:

- investment in energy efficient technology by some customers reducing overall demand;
- changes in economic conditions; and
- government policy changes with regards to network standards.

Under these circumstances, no individual party is compensated for their potential contribution towards the avoided network investment. All parties benefit from the

avoided network expenditure, similar to how all parties benefit from reduced average loss factors and wholesale electricity prices through the merit order effect as discussed in Section 5.3. Individual parties would be compensated through lower charges as a result of their lower consumption. This is similar to the outcome for solar PV system owners who are charged less when they consume more of the electricity generated by their own solar PV system. The Regulator considers that this is an appropriate market outcome and proposes not taking into account the value of any potential deferred network investment/augmentation when calculating the FiT.

Additionally, the Regulator understands that networks are built to supply customers at peak demand times, which are typically during the early morning in Tasmania during the winter period. However, as solar energy is generated only during daylight hours and peaks during the summer months, it does not make any significant contribution to supplying peak demand. Consequently, networks still need to be built to meet peak demand and operated regardless of whether solar energy is generated or not, hence costs would not appear to be avoided.

This is consistent with conclusions reached by regulators in other jurisdictions that suggest that potential benefits from deferred network investment are either small or difficult to measure.²⁴

SOST considers that rooftop solar PV system owners should be compensated for their contribution to the network. In particular, SOST considers increased installation of rooftop solar PV systems reduces the need for Hydro Tasmania to sell electricity to the local market and frees up capacity to sell more power to the mainland at a premium price through its retail arm Momentum Energy. SOST also considers that rooftop solar PV owners should be able to capture some of this benefit through increasing the FiT rate and passing the cost back to wholesalers (i.e. generators).

However, the Regulator notes that this view assumes that Hydro Tasmania does not have the capacity to supply the Tasmanian market as well as the maximum possible exports over Basslink. Hydro Tasmania often exports a significant amount of electricity across Basslink to mainland customers whilst continuing to serve the local Tasmanian market. Hence, increased uptake of rooftop solar PV systems will not necessarily lead to increased Basslink exports as the interconnecting cable may have already reached its operational capacity.

Given this, the Regulator considers that the benefit of avoided network investment should accrue to all parties and proposes not taking this factor into account when calculating a 'fair and reasonable' FiT.

²⁴ See VCEC (2012) "Power from the People: Inquiry into distributed generation, Summary Report", p.1., ESCOSA (2012) "ESCOSA (2012) "2012 Determination of solar feed-in-tariff premium, final price determination", p.48 and See IPART (2012) "Solar feed-in tariffs, Setting a fair and reasonable value for electricity generated by small scale solar PV units in NSW", final report, p.66.

5.5 Potential network reinforcement costs

The Regulator also understands that increased installation of roof top solar PV systems has the potential to add additional costs and risks to the operation of electricity networks. Solar energy is recognised as an intermittent energy source. Unlike hydro, coal fired plants and other historical forms of generation, the primary energy/fuel source e.g. water and coal, cannot be stored and used when required. Solar energy must be converted into electrical energy as it becomes available, and consequently, solar generated electricity does not constantly flow into the electricity grid.

A side effect of this characteristic is that solar energy is not able to respond, with reasonable certainty, to the ongoing needs of the power system. As an example, solar energy cannot be relied upon to assist with the control of frequency deviations within the power system. Furthermore, because most solar inverters have been designed to disconnect themselves from the network if power system frequency does not meet a pre-defined operating band, there is the potential for many inverters to simultaneously disconnect from the system. A large volume of exported solar electricity may suddenly drop with little warning, which may worsen the effects of any initial system frequency deviation. This adds risks to the network in terms of maintaining a continuous stable flow of electricity to customers.²⁵

However, whilst this is the case, it is important to note that frequency control issues can potentially arise due to the connection of other generation sources including traditional synchronous generators, wind farms and HVDC (High Voltage Direct Current) interconnections such as Basslink. The present issue with solar generation is that its potential impacts are not well understood and therefore cannot be accurately taken into account by power system operators.

Frequency issues are currently managed by AEMO. AEMO is responsible, under the National Electricity Rules (NER), for ensuring that the power system is operated in a safe, secure and reliable manner. In order to fulfil this obligation, AEMO controls key technical characteristics of the power system such as frequency, voltage and system restart services through ancillary service markets. The NER provides AEMO with mechanisms to purchase required services, and recover a proportion of the costs from retailers according to a set of recovery rules. The increased installation of solar PV systems therefore has the potential to increase some ancillary fees, which would be passed on to all customers.

The Regulator understands that at present, it is difficult to predict when system frequency issues may arise due to the exportation of excess electricity generated by solar PV systems. The precise nature of the risks, and any resultant costs to rectify identified issues, are therefore matters for future consideration. This is an ongoing

²⁵ The Regulator also understands that Standards Australia is currently undertaking a consultation to revise minimum performance and safety standards for the design, construction and operation of inverters intended for use in inverter energy systems used for the injection of electric power through an electrical installation connected to the electricity distribution network. This includes AS/NZS 4777.1 Grid connection of energy systems via inverters - installation requirements, and AS/NZS 4777.2 Grid connection of energy systems via inverters - inverter requirements.

issue which the Regulator understands is being investigated not only in Tasmania, but in other mainland jurisdictions. It is relevant to note that the mainland regions of the NEM have solar PV system capacities that are now comparable with installed wind generation capacity.

The Regulator considers this to be a system wide issue, in which roof top solar PV systems play an increasing role. Given this, the Regulator considers this issue is best considered at a system wide level rather than being incorporated in a FIT for rooftop solar PV owners.

5.6 Regulator’s draft conclusion on indirect impacts

Based on the above analysis, the Regulator proposes that none of the indirect impacts discussed in this Chapter should be taken into account in calculating a fair and reasonable FIT for Tasmania.

In relation to the indirect impacts of the export of excess electricity generated by micro distributed generation systems, the Regulator is seeking comment on the proposed exclusion of the various indirect impacts in calculating a ‘fair and reasonable’ FIT.

6 IMPLEMENTATION OF A FAIR AND REASONABLE FEED-IN TARIFF FOR TASMANIA

This Chapter outlines the Regulator’s proposed formula to be used in calculating the FiT for micro distributed generation systems to apply from 1 January 2014 together with the Regulator’s proposed approach to updating the FiT.

6.1 Calculating the FiT

Based on the analysis in the previous Chapters, the Regulator considers that the FiT should be calculated as follows:

$$\text{FiT}_y = \text{WEP}_y \times \text{MLF}_y \times \text{DLF}_y + \text{AEMO}_y$$

Where:

FiT_y is the regulated fair and reasonable feed in tariff in c/kWh

y is the period

WEP_y is the wholesale electricity price in c/kWh from the 2013 Standing Offer Determinations.

MLF_y means the load weighted average marginal loss factor at the regional reference node for Tasmania for the relevant period as approved by the Regulator in the 2013 Standing Offer Determinations.

DLF_y means the load weighted average distribution loss factor for the relevant period as approved by the Regulator in the relevant 2013 Standing Offer Determinations.

AEMO_y means the forecast charge in c/kWh, as billed by AEMO for market participant and ancillary services fees presented in the 2013 Standing Offer Determinations.

The proposed FiT to apply for the period from 1 January 2014 to 30 June 2014 would be 8.282 c/kWh based on the components specified in Table 6.1.

Table 6.1: Regulated FiT

1 January 2014	
Wholesale electricity cost (c/kWh)	7.497
multiplied by	x
Transmission loss factor	1.071
multiplied by	X
Distribution loss factor	1.017
plus	+
NEM fees (c/kWh)	0.116
Total FiT (c/kWh)	8.282²⁶

Source: 2013 Standing Offer Determination for Retailer A and Retailer B.

6.2 Updating the FiT

The Regulator considers that the FiT should be updated each time regulated standing offer prices are updated. The Regulator notes that the Terms of Reference requires the Regulator to take into account the net financial benefits to retailers of exported electricity, among other things, when determining the FiT. This financial benefit will change each time the regulated retail price is updated because the elements that make up the estimated FiT are based on the same variables that are used to determine the regulated price. The Regulator considers therefore that updating the FiT when regulated retail prices change is consistent with the Terms of Reference.

Consequently the FiT calculated in Table 6.1 will apply from 1 January 2014 until 30 June 2014. The FiT will be updated effective from 1 July 2014 and 1 July 2015 for the 2014-15 and 2015-16 financial years respectively in conjunction with the annual standing offer price approval process referred to in the 2013 Standing Offer Determinations made on 29 July 2013 and as explained in the 2013 Standing Offer Investigation Report published by the Regulator on 30 July 2013.

In relation to the implementation of a 'fair and reasonable' FiT the Regulator is seeking comment on:

- the proposed mathematical formula used to calculate a 'fair and reasonable' FiT; and
- the proposed timing and process for updating the FiT.

²⁶ The FiT has been calculated to three decimal places in line with the existing regulated tariff structure of Aurora and approved by the Regulator.

ATTACHMENT A: TERMS OF REFERENCE

A Fair and Reasonable Feed-in Tariff for Tasmanian Small Customers

Terms of Reference

As the Minister for Finance, pursuant to section 9 of the Electricity Supply Industry Act 1995, I hereby require the Tasmanian Economic Regulator to complete a report investigating and recommending to the Government a 'fair and reasonable' value that should be placed on net 'exported' electricity that is fed into the Tasmanian electricity network by residential and small business customers who:

- have a grid-connected renewable generation system, up to a maximum total installed capacity of 10kW;
- consume less than 150MWh per annum; and
- are located on mainland Tasmania (including Bruny Island).

1) Matters to be considered

In investigating and reporting on the fair and reasonable value of electricity exports from these customers, the Regulator is to take into account:

- the net financial benefits to retailers of exported electricity with respect to retailers' controllable costs, including, but not limited to:
 - the price that the retailer pays for wholesale electricity; and
 - the costs a retailer incurs in running its retail electricity business;
- consistency with the operation of a competitive Tasmanian retail electricity market;
- the principle that feed-in tariffs should not result in any cross-subsidies between customers or customer classes;
- the Commonwealth Government's current carbon pricing arrangements;
- the Council of Australian Governments' National Principles for Feed-in Tariff Arrangements and the concept of 'fair and reasonable' value reflected therein;
- approaches, methodologies, findings and/or recommendations from other jurisdictions the Regulator considers relevant; and
- any other matter the Regulator considers relevant.

The Regulator is also to consider and report on, where it considers it relevant or appropriate:

- any material costs and benefits of micro distributed generation to the Tasmanian transmission and/or distribution networks;
- any other material direct or indirect costs or benefits of micro distributed generation; and
- how any such material costs or benefits identified by the Regulator would be most appropriately captured (for example the potential for different feed-in tariff arrangements based on generation technology/or grid location).

2) Consultation

The Regulator must undertake such consultation as is considered appropriate.

3) Timing

The Regulator is to complete its investigation and produce its report as soon as is practicable, and no later than by 31 October 2013.

ATTACHMENT B: COAG NATIONAL FEED-IN-TARIFF PRINCIPLES

Council of Australian Governments Meeting

Canberra, 7 December 2012

National Principles for Feed-in Tariff Arrangements

Micro generation to receive fair and reasonable value for exported energy

1. Governments agree that residential and small business consumers with grid connected micro generation²⁷ should have the right to export energy to the electricity grid and market participants should provide payment for exported electricity which reflects the value of that energy in the relevant electricity market and the relevant electricity network it feeds in to, taking into account the time of day during which energy is exported.

Any premium rate to be jurisdictionally determined, transitional and considered for public funding

2. That any jurisdictional or cooperative decisions to legislate rights for micro generation consumers to receive more than the value of their energy must:
 - a) be a transitional measure (noting that a national emissions trading system will provide increasing support for low emissions technologies), with clearly defined time limits and review thresholds and be closed to new participants by 2014;
 - b) for any new measures, or during any reviews of existing measures, undertake analysis to establish the benefits and costs of any subsidy against the objectives of that subsidy (taking into account other complementary measures in place to support micro generation consumers);
 - c) give explicit consideration to compensation from public funds or specific levies rather than cross-subsidised by energy distributors or retailers; and
 - d) not impose a disproportionate burden on other energy consumers without micro generation.

SCER to ensure fair treatment of micro generation

²⁷ These national principles apply to grid connected micro generation compliant with the relevant Australian Standard (AS4777).

3. That the Standing Council on Energy and Resources (SCER) should maintain regulatory arrangements for micro generation customers, consistent with the objectives of the relevant electricity legislation, whereby the:
 - a) terms and conditions for compliant micro generation customers should be incorporated into the regulation of the minimum terms and conditions for retail contracts such that they are no less favourable than the terms and conditions for customers without micro generation;
 - b) connection arrangements for micro generation customers should be standardised and simplified to recognise the market power imbalance between micro generation customers and networks; and
 - c) assignment of network tariffs to micro generation consumers should be on the basis that they are treated no less favourably than customers without micro generation but with a similar load on the network.

FIT policy to be consistent with previous COAG agreements (particularly the Australian Energy Market Agreement and COAG complementary principles)

4. That the arrangements for micro generation consumers by SCER and jurisdictions:
 - a) should not deter competition for their business from electricity retailers in jurisdictions where there is full retail contestability and innovation in the tariff offerings available to micro generation customers;
 - b) in relation to jurisdictions in the National Electricity Market (NEM), should not interfere with the regulation of distribution tariffs or operation of the NEM under the National Electricity Law or duplicate the regulatory arrangements that are part of that Law;
 - c) should be subject to independent regulatory oversight according to clear principles; and
 - d) should be consistent with implementation of other intergovernmental agreements relating to energy, competition policy or climate change.