



**DETERMINATION OF SOLAR
FEED-IN TARIFF PREMIUM
ISSUES PAPER**

August 2011

ELECTRICITY

REQUEST FOR SUBMISSIONS

The Essential Services Commission of SA (the Commission) invites written submissions from interested parties in relation to the issues raised in this paper. Written comments should be provided by **Friday 23 September 2011**. It is highly desirable for an electronic copy of the submission to accompany any written submission.

It is Commission policy to make all submissions publicly available via its website (www.escosa.sa.gov.au), except where a submission either wholly or partly contains confidential or commercially sensitive information provided on a confidential basis and appropriate prior notice has been given.

The Commission may also exercise its discretion not to exhibit any submission based on their length or content (for example containing material that is defamatory, offensive or in breach of any law).

Responses to this paper should be directed to:

Determination of Solar Feed-in Tariff Premium

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Public Information about ESCOSA's activities

Information about the role and activities of the Commission, including copies of latest reports and submissions, can be found on the ESCOSA website at www.escosa.sa.gov.au.

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GLOSSARY OF TERMS

COMMISSION	Essential Services Commission of South Australia
CPRS	Carbon Pollution Reduction Scheme
ELECTRICITY ACT	Electricity Act 1996
ESC ACT	Essential Services Commission Act 2002
FIT	Feed-in Tariff
FRC	Full Retail Contestability
kWH	Kilowatt Hour
kVA	Kilovolt Ampere
MW	Megawatt
MWh	Megawatt Hour
NEM	National Electricity Market
PV	Photo-Voltaic
REES	Residential Energy Efficiency Scheme
RET	Renewable Energy Target

1 INTRODUCTION

1.1 Purpose of this Paper

The Parliament of South Australia has recently enacted legislation to change the feed-in tariff scheme. The new scheme has been introduced via the Electricity (Miscellaneous) Amendment Bill 2011, which was proclaimed on 28 July 2011.

The new scheme changes the feed-in tariff that can be earned by future customers that install eligible solar photo-voltaic (PV) generators.¹ The feed in tariff (currently 44c per kWh) will be phased out for new customers over the next two years. However, all customers with eligible PV generators will be entitled to an additional amount (hereafter called the FIT premium), which is to be determined by the Essential Services Commission (the Commission). The amount determined by the Commission is to reflect the fair and reasonable value to a retailer of electricity fed into the network, and all retailers selling electricity to customers eligible to receive the feed-in tariff would be required to pay the amount.²

The Commission is releasing this Issues Paper as a first step in determining the amount of the FIT premium. The Commission is eager to engage with stakeholders at an early stage in this review, to obtain feedback on the key issues that should be considered by the Commission in making its determination.

1.2 Background to the current feed-in scheme

Both State and Commonwealth governments have made public commitments that they intend to prepare Australia for a low carbon pollution future through various programs and initiatives, research and development of clean energy, and measures to help households, businesses, communities and regions transition to a low carbon future.

At the Commonwealth level, these programs include: the Renewable Energy Target scheme (RET), Australian Greenhouse Information System, Solar Cities, Carbon Farming Initiative, Low Carbon Communities, Home Insulation Program and Solar Hot Water Rebate.³

At the state level, these programs include the Residential Energy Efficiency Scheme (REES) and the South Australian PV generation plant feed-in scheme.⁴

¹ Refer Electricity Act, section 36AD.

² Refer Electricity Act, section 35A(2a).

³ A more complete list of the Commonwealth Government's current programs is available on the Department of Climate Change and Energy Efficiency website at <http://www.climatechange.gov.au/government/initiatives.aspx>.

⁴ The South Australian Strategic Plan includes a target to achieve the Kyoto target by limiting the State's greenhouse gas emissions to 108% of 1990 levels during 2008-12, as a first step towards reducing emissions by 60% by 2050. On 7 December 2010, the South Australian Government released its Draft Climate Change Adaptation Framework for consultation. A copy of the Draft Framework is available at <http://www.climatechange.sa.gov.au/uploads/Adaptation/Draft%20CC%20Adaptation%20Framework.pdf>. For



The South Australian Strategic Plan identified the Government's policy intention to introduce a "feed-in law" to pay households that install PV generation units for the electricity fed back into the electricity grid as part of its broader strategy to tackle climate change.⁵

At the time of introducing the feed-in scheme in 2008, the South Australian Government stated that its proposed feed-in scheme aimed to fill the gaps left by declining Commonwealth Government support for residential PV generation units and allow the South Australian Government to pursue its objective of leadership in solar power.⁶

The proposed scheme was a means of promoting de-centralised renewable energy generation by providing a specific bonus for owners of small-scale grid-connected PV generation units. Domestic customers⁷ would receive 44 c/kWh, (or roughly double the retail price of electricity as it was at that time), for all electricity returned to the grid after supplying the household's own consumption needs at any point in time.

The South Australian feed-in scheme came into effect on 1 July 2008 and will expire on 30 June 2028.

1.3 The operation of the current feed-in scheme

The feed-in scheme is set out in Division 3AB of the Electricity Act 1996 (Electricity Act) and, in summary, operates as follows:

ETSA Utilities is required, as a condition of its electricity distribution licence authorising the supply of electricity to customers, to:

- ▲ permit those of its customers who qualify under the terms of the feed-in scheme to feed electricity generated by those customers' PV generation units into its electricity distribution network; and
- ▲ credit against the charges which a customer who qualifies would otherwise be required to pay it a price of 44c / kwh for the supply of electricity which is fed-into its electricity distribution network.⁸

details of the various South Australian Government programs and initiatives, refer <http://www.climatechange.sa.gov.au/> and <http://www.renewablessa.sa.gov.au/>.

⁵ "Objective 3: Attaining Sustainability" outlines a number of key initiatives to achieve that goal. The introduction of a feed-in scheme sits within the broader Target T3.5 which states: "Greenhouse gas emissions reduction (existing – modified): achieve the Kyoto target by limiting the State's greenhouse gas emissions to 108% of 1990 levels during 2008-2012, as a first step towards reducing emissions by 60% (to 40% of 1990 levels) by 2050" and Target T3.12 which states: "Support the development of renewable energy so that it comprises 20% of the State's electricity production and consumption by 2014". The South Australian Strategic Plan, as last reviewed in 2007, is available at http://www.saplan.org.au/system/pdf/South_Australia_Strategic_Plan_2007.pdf.

⁶ Government of South Australia, *South Australia's Feed-in Mechanism for Residential Small-Scale Solar Photovoltaic Installations*, Discussion Paper, February 2007, available http://www.climatechange.sa.gov.au/uploads/pdf/Feed-in_Discussion_Paper_submissions_closed.pdf

⁷ While the feed-in scheme was originally proposed to apply only to residential customers, the scheme was extended to all "small customers" (that is, those customers consuming less than 160MWh of electricity annually) to ensure the Bill's passage through the Parliament.

⁸ Refer Electricity Act, section 36AD(1).

Each electricity retailer which has a contract with a customer who qualifies for the feed in tariff is required, as a condition of licence, to:

- ▲ reflect the credit provided by ETSA Utilities in the charges payable by each relevant customer for the supply of electricity; and
- ▲ provide information to each relevant customer as to the amount of electricity which has been fed-into the electricity distribution system and the amount which has been credited for the benefit of that customer in respect of that electricity.⁹

To be a customer who qualifies under the scheme, a person must:

- ▲ be a customer in respect of premises (that is, have a supply of electricity available to the person for consumption) directly connected to an electricity distribution network which supplies electricity to more than 10,000 customers (presently, only the network operated by ETSA Utilities meets this requirement);
- ▲ consume less than 160MWh of electricity per annum;
- ▲ operate a PV generation unit which is compliant with Australian Standard AS 4777 and which has a generation capacity of no more than 10kVA (where there is a single-phase connection) or 30kVA (where there is a three-phase connection);
- ▲ have the PV generation unit installed in a manner which permits the export of electricity into ETSA Utilities' electricity distribution system; and
- ▲ have installed appropriate metering so as to allow the separate recording of electricity imports and exports at the person's connection point to ETSA Utilities' electricity distribution system.

Under those arrangements, any customer who qualifies is entitled to receive the amounts described below.

⁹ Refer Electricity Act, section 36AD(2).



Table 1. Credits payable under Feed-in Tariff Scheme

Solar PV Cell Installation/ Approval Date	Credit Amount	Period Payable
Before 1 October 2011	FiT Premium* + 44c/kWh	FiT Premium*: Ongoing 44c/kWh: Until 30 June 2028
1 October 2011 to 30 September 2013	FiT Premium* + 16c/kWh	FiT Premium*: Ongoing 16c/kWh: 1 October 2011 to 30 September 2016
From 1 October 2013	FiT Premium*	Ongoing

*To be determined by the Commission.

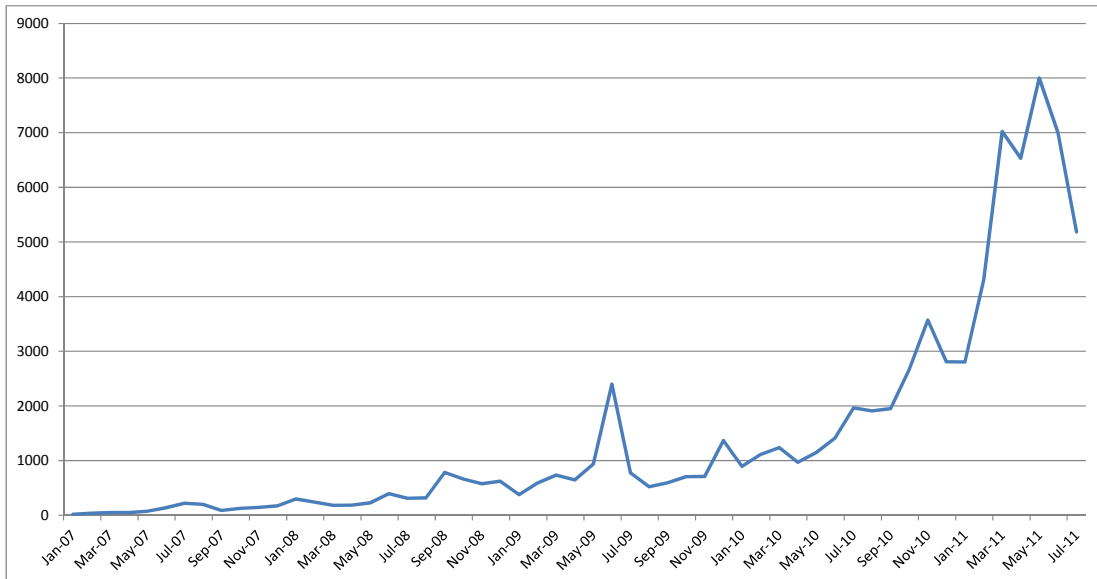
1.4 Current levels of uptake in South Australia

The Commission has obtained data from ETSA Utilities on the number, capacity and output from both installed PV generation units and units approved for installation.

ETSA Utilities advised the Commission that it does not know the installed capacity of each PV generation unit connected to its network, only the average capacity approved, as there is no link created in its systems from the approval to the actual installation of the PV system. Consequently, ETSA Utilities is only able to estimate the capacity of the units connected to its network. As at 13 May 2011, ETSA Utilities estimated that there was around 60 MW currently connected, with a further 35 MW approved and awaiting connection.

Figure 1 shows the rapid increase in customer approvals since around early 2010, off a low base in the early years of the scheme. The number of customer approvals peaked in May 2011, at around 8,000 for the month. Approvals have fallen in June and July 2011, which coincides with a reduction in the rebates available under the Commonwealth Small-scale Renewable Energy Scheme.

Figure 1. Number of new PV systems connections approved monthly by ETSA Utilities



Source: ETSA Utilities

1.5 Legal Framework

1.5.1 The Essential Services Commission

The Commission is an independent economic regulator of elements of the electricity, gas, rail, ports and water supply industries in this State. The functions of the Commission are set out in section 5 of the Essential Services Commission Act 2002 (ESC Act) as follows:

The Commission has the following functions:

- (a) to regulate prices and perform licensing and other functions under relevant industry regulation Acts;*
- (b) to monitor and enforce compliance with and promote improvement in standards and conditions of service and supply under relevant industry regulation Acts;*
- (c) to make, monitor the operation of, and review from time to time, codes and rules relating to the conduct or operations of a regulated industry or regulated entities;*
- (d) to provide and require consumer consultation processes in regulated industries and to assist consumers and others with information and other services;*



- (e) *to advise the Minister on matters relating to the economic regulation of regulated industries, including reliability issues and service standards;*
- (f) *to advise the Minister on any matter referred by the Minister;*
- (g) *to administer this Act;*
- (h) *to perform functions assigned to the Commission under this or any other Act;*
- (i) *in appropriate cases, to prosecute offences against this Act or a relevant industry regulation Act.*

1.5.2 Objectives of the Commission

Parliament has prescribed statutory objectives for the Commission in the performance of those section 5 functions, as set out in section 6 of the ESC Act:

In performing the Commission's functions, the Commission must—

- (a) *have as its primary objective protection of the long term interests of South Australian consumers with respect to the price, quality and reliability of essential services; and*
- (b) *at the same time, have regard to the need to—*
 - (i) *promote competitive and fair market conduct; and*
 - (ii) *prevent misuse of monopoly or market power; and*
 - (iii) *facilitate entry into relevant markets; and*
 - (iv) *promote economic efficiency; and*
 - (v) *ensure consumers benefit from competition and efficiency; and*
 - (vi) *facilitate maintenance of the financial viability of regulated industries and the incentive for long term investment; and*
 - (vii) *promote consistency in regulation with other jurisdictions.*

Section 5(1)(a) of the ESC Act sets out the price regulation requirements in respect of regulated industries. By reason of section 14D of the Electricity Act, the electricity supply industry (which includes the retail sector) is a regulated industry and the Commission therefore has a price regulation role in relation to the electricity retail sector.

The Commission will have regard to its ESC Act statutory objectives when setting the initial credits payable by the retailer under the feed-in tariff scheme.

1.5.3 Electricity Act 1996

The feed-in scheme is set out in Division 3AB of the Electricity Act.

Section 35A(1)(ba) of the Electricity Act provides that the Commission may make a determination under the Essential Services Commission Act 2002 regulating prices, conditions relating to prices and price-fixing factors for the feeding-in of electricity into a distribution network under Division 3AB. The Commission must have regard to the fair and reasonable value to a retailer of electricity fed into the network by qualifying customers within the meaning of Division 3AB.

Transitional provisions in Section 4 of Schedule 1 set out the following requirements relating to the initial determination of prescribed amounts by the Commission:

- (1) The Commission must, after commencement of this clause, make an initial determination in relation to the credits payable by a retailer for the feeding-in of electricity into a distribution network under section 36AD of the Electricity Act 1996 (as to be inserted into that Act as part of new Division 3AB).*
- (2) Despite the amendments effected by Section 6 of this Act and the provisions of the Essential Services Commission Act 2002, an initial determination-*
 - a. will be made after the Commission has adopted such processes as the Commission thinks fit; and*
 - b. may be based on such principles, policies and other factors as the Commission thinks appropriate; and*
 - c. will be made by the Commission by notice in the gazette; and*
 - d. will be binding on the electricity entities to which it is expressed to apply; and*
 - e. must be made within 6 months from the commencement of this clause.*
- (3) An amount determined under this clause will be taken to be an amount determined under section 35A of The Electricity Act 1996 for the purposes of the definition of prescribed amount in new Division 3AB.*

2 ISSUES

The Commission invites submissions from interested parties on the various issues discussed below, and on any other matters considered relevant to this determination.

An initial key issue that the Commission will need to consider is the methodology that it will use for determining the FiT premium. The Electricity Act requires the Commission to determine a “fair and reasonable” value to retailers of the electricity fed into the network. The Commission will need to develop a methodology that can quantify the net benefits to retailers of the energy exported from eligible PV generators.

What is the most appropriate method to calculate the fair and reasonable value to a retailer of electricity fed into the network by solar PV systems?

The following sections invite comment on issues of a more specific nature but these should not deter stakeholders from providing comment on issues that that this paper has not specifically raised providing they assist in informing the Commission in meeting its objective outlined above.

2.1 Value of Energy

In the National Electricity Market (NEM), South Australia is considered a single region and as such a uniform wholesale price applies across the state. This means that the value of electricity reflected in the wholesale price and therefore the retail price, does not vary by geographic region within the state.

The value of electricity does, however, vary seasonally as it is generally more expensive in summer, when demand is greater. The wholesale electricity price also varies throughout the day as a new spot price (based on supply and demand in the region) is calculated by the market operator every 5 minutes.

Given these factors, the value to retailers of electricity fed into the network by customers with solar PV systems is likely to vary at different times.

Consideration may also need to be given to the degree that peak solar PV output correlates with peak electricity demand. Research suggests there is a strong correlation with commercial demand but this is less pronounced in terms of residential demand.¹⁰ The level of net exports also depends on the size of the PV system relative to load.

¹⁰ SKM MMM, *Value of Generation from Small Scale Residential PV Systems Final Report for the Clean Energy Council*, July 2011, Page 22. <http://www.cleanenergycouncil.org.au/cec/resourcecentre/reports.html>

Customers who have the capacity to feed electricity into the network during peak demand times may be considered more valuable by retailers.

How should the variability in the value of energy be reflected in the approach that the Commission takes in determining a FiT premium?

Should the value be linked to wholesale electricity prices? If so, how?

Are there any other approaches to determining the value of energy exported from solar PV systems?

2.2 Other Issues

The primary task of the Commission is to determine the value to retailers of solar PV exports. In addition to the value of energy generated by solar PV customers, retailers may gain other indirect benefits such as avoidance of market fees, investment deferral and diversification of supply. Furthermore, there is also the potential for retailers to incur additional costs as a result of selling to customers with a solar PV system.

Are there any other potential costs or benefits to retailers from solar PV exports?

How should the Commission quantify these costs or benefits in the derivation of a FiT premium?

As discussed in section 1.4, there has been a rapid increase in the number of new PV systems approved since early 2010, off a low base in the early years of the FiT scheme. A high degree of penetration of solar PV systems may result in further costs and benefits to retailers.

One such benefit may be a decrease in the amount of electricity lost through network transportation due to the close proximity of solar PV generation and consumption in a particular region. This could reduce the amount of electricity that the retailer needs to purchase from the wholesale market.

Should the FiT premium incorporate the benefits of any avoided loss factors?

Are there any extra costs and benefits that retailers may incur as a result of increased uptake of solar PV systems?



Some of the benefits may reduce a retailer's overall costs such that it becomes less costly for the retailer to supply all of its customers, not just those customers with solar PV systems.

Should some of the benefits to retailers be shared with all electricity customers or just those customers with a solar PV system?

Full retail contestability (FRC) commenced in South Australia in January 2003 and since that time consumers have been able to choose their retailer and select the electricity contract that best suits their needs. Over time, the number of customers choosing to install solar PV systems has increased and retailers have developed market contracts that account for the feeding-in of electricity into the network. Some retailers currently offer a voluntary FiT premium under their market contracts (in the order of 6 to 8 cents per kWh of energy exported).

Does the level of the current voluntary FiT premium on offer from some retailers in SA accurately represent the value of the energy to that retailer?

The tariff structure for a FiT premium can be set in a variety of ways. It may be paid as a flat rate or on a scale. It may change over time or prescribe different rates for different customer segments. In determining a FiT premium, the Commission will consider how the tariff will be applied now and into the future.

Should residential customers have a different FiT premium to business customers?

How should the feed in tariff be updated over time?

What are the implications of setting the FiT premium too high or too low? How would this impact on competition in the retail market, particularly competition for solar PV customers?

3 NEXT STEPS

Submissions to this Issues Paper should be provided to the Commission by Friday 23 September 2011. Details on how to make submissions are provided on the opening page of this Issues Paper.

Following its consideration of those submissions, the Commission will prepare a Draft Report, to be released in November 2011. Following further public consultation, the Commission will release its Final Report in January 2012. An indicative timetable for the review is set out below.

TIMETABLE	
ACTION	BY
Release Issues Paper	26 August 2011
1 st round stakeholder submissions due	23 September 2011
Release Draft Report	7 November 2011
2 nd round stakeholder submissions due	9 December 2011
Release Final Report	late January 2012