



**ACT**  
Government

# 2016-17 ANNUAL FEED-IN TARIFF REPORT

DECEMBER 2017

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# CONTENTS

<b>Executive Summary</b>	<b>1</b>
Small and medium-scale Feed-in Tariff (FiT) scheme	1
Large-scale FiT scheme	1
Progress towards 100% by 2020 Renewable Electricity Target	1
Cost of renewable energy schemes	1
<b>1. Introduction</b>	<b>3</b>
100% by 2020 Renewable Electricity Target	3
<b>2. ACT Government FiT schemes</b>	<b>4</b>
What is a premium feed-in tariff?	4
Small and Medium-scale FiT scheme	4
Retailer market offers (non-premium FiTs)	5
Large-scale FiT scheme	5
<b>3. Small and medium-scale FiT scheme performance</b>	<b>6</b>
Capacity (32.53 MW)	6
Generation (40,355 MWh)	7
Impact on electricity bills (90.2 cents per week)	7
Retailer market offers (non-premium FiTs)	8
<b>4. Large-scale FiT scheme performance</b>	<b>10</b>
Capacity (240 MW)	11
Generation (273,583 MWh)	11
Impact on electricity bills (71.7 cents per week)	11
<b>5. Progress towards 100% by 2020 Target</b>	<b>13</b>
2015–16 - Contribution of Renewable Energy to ACT Electricity supply – 29.1%	13
<b>Appendices</b>	<b>16</b>
Appendix A – Additional data on the small and medium FiT scheme	16
Appendix B – Outcomes of the large-scale FiT auctions	17
Appendix C – How does the Large-scale FiT – Contract for Difference work?	18



Hornsdale Wind Farm, photo by Siemens-Gamesa

# EXECUTIVE SUMMARY

## Small and medium-scale Feed-in Tariff (FiT) scheme

- » Renewable generators supported by the small and medium FiT scheme generated 40,355 megawatt hours (MWh) of electricity in 2016–17, from a total installed capacity of around 32.5 megawatts (MW), consisting of 10,394 solar photovoltaic systems.

## Large-scale FiT scheme

- » Renewable generators supported by the large-scale FiT scheme generated 273,583 MWh of electricity in 2016–17 from a total installed capacity of 240 MW delivered from three solar farms and three wind farms. Generation was 4.8 times higher than the 57,423 MWh of electricity produced by renewable generators supported by the large-scale FiT scheme in 2015–16.
- » This increase is due to new wind and solar generation capacity coming online during 2016–17. Generation from large-scale FiT supported generators will continue to increase significantly each year until 2020–21.

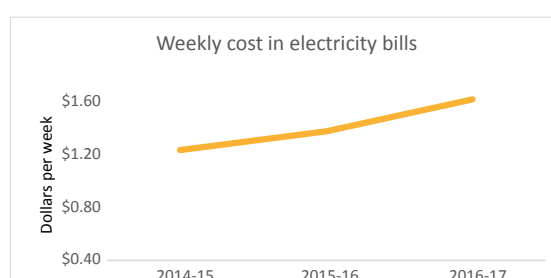
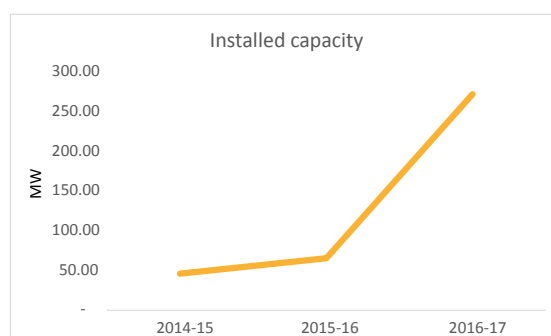
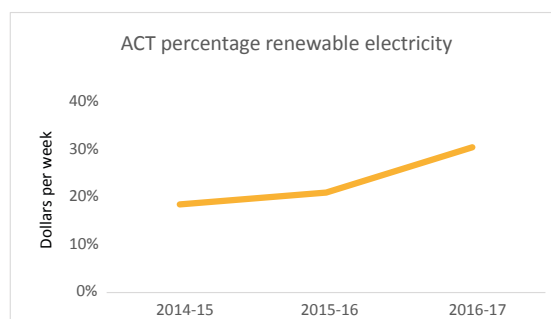
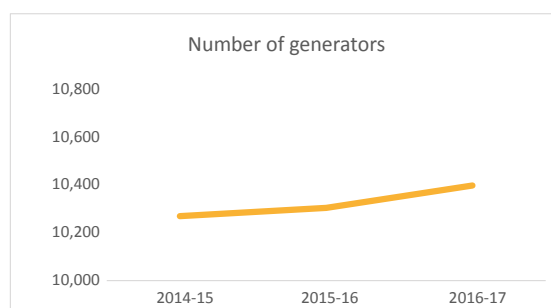
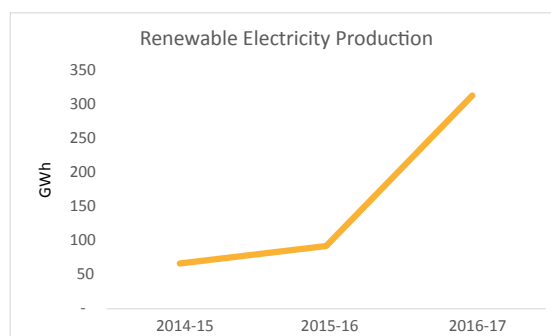
## Progress towards 100% by 2020 Renewable Electricity Target

- » In 2016–17, the contribution of renewables to electricity supply in the ACT was 29.1%. This is an increase from 21% in 2015–16. The proportion of renewable electricity will significantly increase between 2017 and 2020 to achieve the 100% by 2020 renewable electricity target, as new large-scale generation capacity comes online.

## Cost of renewable energy schemes

- » The small and medium-scale FiT scheme, and the large-scale FiT scheme combined contributed \$84.18 to an average annual electricity bill for a four person ACT household in 2016–17.
- » The small and medium-scale FiT scheme accounted for approximately 56% of this cost (\$46.91), while the large-scale FiT scheme contributed 44% (\$37.27).

Figure 1: Summary of ACT Feed-in Tariff scheme trends







# 1. INTRODUCTION

This report is the third annual report on the ACT small and medium feed-in tariff (FiT) scheme under section 11A of the *Electricity Feed-in (Renewable Energy Premium) Act 2008*, the legislation governing the scheme.

This report provides information on the small and medium FiT scheme as required by legislation; it also provides information on the large-scale FiT scheme and progress towards the Territory's 100% by 2020 renewable electricity target.

## 100% by 2020 Renewable Electricity Target

Action Plan 2 (AP2), the ACT Government climate change strategy released in 2012, commits to reducing greenhouse gas emissions to 40% below 1990 levels by 2020 and to carbon neutrality by 2050. To achieve these reductions, in April 2016, the ACT Government set a revised target of 100% renewable electricity supply by 2020. These targets are the most ambitious targets for any jurisdiction in Australia and amongst the most progressive in the world.<sup>1</sup>

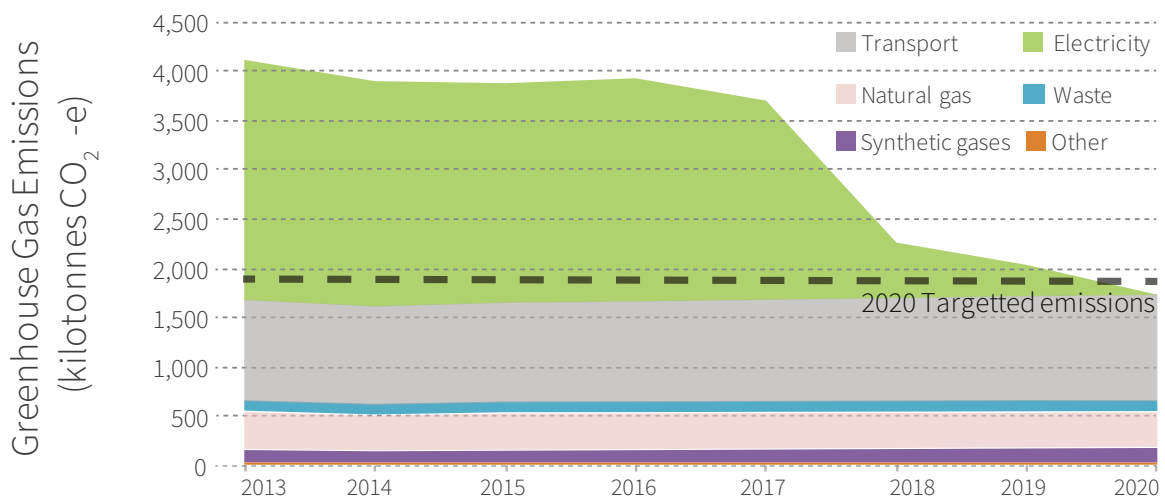
Electricity continues to contribute the majority of ACT greenhouse gas emissions at approximately 52% in 2016–17, down from 55% in 2015–16.<sup>2</sup> However, the switch to renewable electricity will account for over 90% of greenhouse gas emission reductions by 2020. This reduction in greenhouse gas emissions is driven primarily by the support provided by the large-scale FiT scheme.

Figure 2 shows the projected emission reduction contributions from different sectors, with the largest share coming from the electricity sector.

In addition to reducing greenhouse gas emissions, the 100% by 2020 renewable electricity target is also creating new clean technology jobs, local investment and research opportunities contributing to economic growth.

More information on the ACT Government Renewable Energy Industry Development Strategy is available at [www.environment.act.gov.au](http://www.environment.act.gov.au).

Figure 2: Projected contribution of sectors to meet 2020 emission target



1 <https://www.theclimategroup.org/news/compact-states-and-regions-2016-disclosure-report>.

2 ACT Greenhouse Gas Inventory for 2015–16 (pitt&sherry) - Based on tonnes of carbon dioxide equivalent (CO<sub>2</sub>-e).

## 2. ACT GOVERNMENT FiT SCHEMES

### What is a premium feed-in tariff?

A premium feed-in tariff (FiT) is a premium payment (higher than the market value) for electricity generated by a renewable electricity generation system. The payments encourage the uptake and development of renewable electricity.

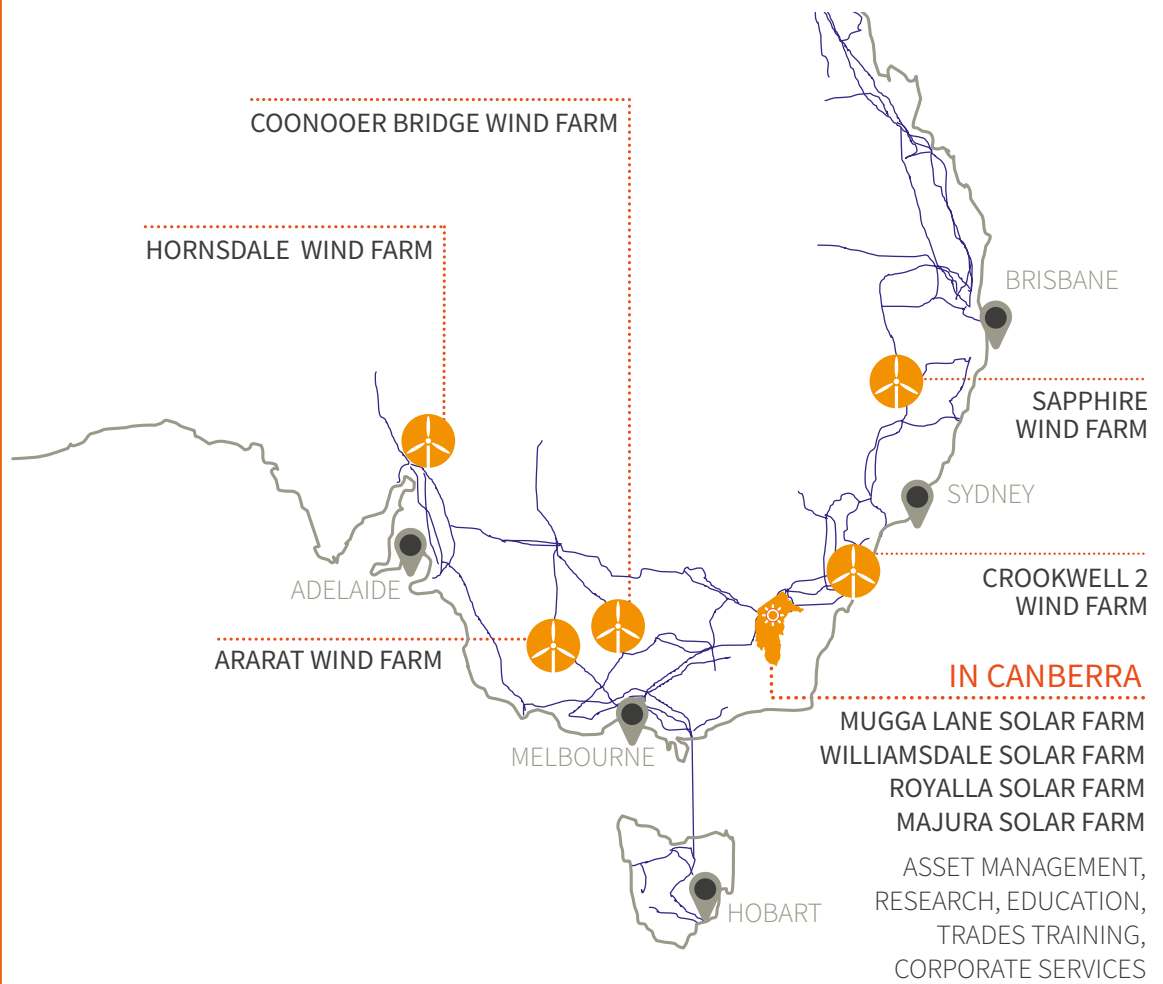
In the ACT, renewable electricity generators can receive premium FiT payments from an electricity retailer (under the small and medium-scale FiT scheme) or the ACT electricity distributor (under the large-scale FiT scheme). These costs are then recovered from all electricity consumers that use the ACT electricity network through network charges included in electricity bills. A description of these premium FiT schemes is provided below.

### Small and Medium-scale FiT scheme

The *Electricity Feed-in (Renewable Energy Premium) Act 2008* established a scheme for payments to ACT households and businesses generating renewable electricity. While this scheme was open to any form of small and medium sized renewable electricity generator (with capacity below 200 kilowatts (kW)), only rooftop solar photovoltaic system applications were successful, so the scheme also became known as ‘the rooftop solar scheme’.

The small and medium-scale FiT scheme opened for applications on 1 March 2009 and was closed to new entrants on 13 July 2011.

### LOCATION OF CANBERRA'S WIND AND SOLAR FARMS WITHIN THE NATIONAL ELECTRICITY MARKET







Successful applicants receive FiT payments for 20 years from the date their system was connected to the electricity network. Successful applicants are paid by their electricity retailer for the total kilowatt hours (kWh) their system generates, including any generation used at the same premises where it was generated. The FiT rate depends on the system's capacity and date of application to the scheme (See Appendix A - Additional data on the small and medium FiT scheme). Retailers pass on the cost of FiT payments to the electricity distributor who incorporates this cost into network charges.

### Retailer market offers (non-premium FiTs)

While the ACT Government small and medium-scale FiT scheme is now closed, households can still access solar support schemes offered voluntarily by electricity retailers that extend payments for excess generation from rooftop systems installed by households. Unlike the ACT Government small and medium FiT scheme, which offers a FiT for all generation ('gross'), market offers by retailers only make payments for 'net' generation exported to the grid, left over after any consumption at the premises. The tariffs offered under these retailer schemes are generally more closely aligned with the value of this electricity in the market, which is significantly lower than the FiTs offered under the small and medium-scale FiT scheme.

### Large-scale FiT scheme

The *Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011* allows the ACT Government to grant FiT entitlements to large-scale renewable energy generating systems, like large-scale wind farms and large solar farms, with a generating capacity above 200 kW. Under the scheme, 639.9 MW of entitlements have been awarded to date, which is sufficient to meet the target of 100% renewable electricity by 2020. These large renewable energy generators can be located anywhere in the National Electricity Market (NEM). This allows the ACT to source competitively priced sources of renewable electricity across the NEM.

The ACT Government has held four auctions to award large-scale FiT entitlements: one solar auction over 2012 and 2013, followed by two wind auctions in 2014 and 2015.

The Next Generation Renewables program, in 2016, combined a wind and solar auction, with the provision of funding for a rollout of distributed battery storage across the ACT. Auction outcomes are provided in Appendix B Outcomes of the Large-scale FiT Auctions. Successful proponents receive a 2-year FiT entitlement to receive FiT support payments from the ACT electricity distributor.

Under the scheme, the FiT support payments represent the difference between the wholesale market earnings of electricity generated and the FiT price bid by the proponent (See Appendix C - How does the Large-scale FiT – Contract for Difference work?).

ACT large-scale FiT generation grew strongly in 2016–17, generating 4.8 times more electricity than in 2015–16. By the end of June 2017, three large-scale solar farms and three wind farms were generating ACT large FiT supported electricity: Mugga Lane, Royalla and Williamsdale solar farms and Coonooer Bridge, Hornsdale and Ararat wind farms. All successful auction projects will be generating large FiT supported output by October 2019.

# 3. SMALL AND MEDIUM-SCALE FIT SCHEME PERFORMANCE

The table below provides the performance of the ACT Government small and medium-scale FiT scheme in 2016–17. The table also includes data from previous years for comparison.

## Capacity (32.53 MW)

In 2016–17, there were 10,394 generators under the small and medium FiT scheme with a total installed capacity of around 32.53 MW. This 19% increase from 2015–16 was driven by the 31 December 2016 cut-off date for generator installation under the scheme which provided an incentive for the realisation of previous entitlements within the 2016–17 reporting period. The increase was mostly achieved by the Mount Majura and Williamsdale solar farms that acquired previous entitlements from other parties and consolidated them into larger-scale solar arrays. These solar farms alone accounted for 5.89 MW of new capacity.

The remaining increase was due to the installation of nearly 300 kW of rooftop small solar generation installed by households making use of previously acquired FiT entitlements. Since the scheme cut-off date occurred in 2016–17, there should be no more growth in the small to medium FiT capacity in future reporting periods. Minor adjustments may be made due to improvements in data completeness over the 2017–18 financial year. It is worth noting that the final scheme capacity is under the maximum of 35 MW set by the Minister by way of the Electricity Feed-in (Renewable Energy Premium) Total Capacity Determination 2012 (No 1). Figure 3 shows the change in installed capacity under the small and medium FiT scheme for the last three years.

Additional data on generators under the ACT Government small and medium FiT scheme, categorised by capacity and tariffs, is included in Appendix A (Table A2 - Capacity and number of generators by tariff in 2016–17).

Ararat Blade Assembly



**Table 1: Small and Medium FiT Scheme Performance**

	2014-15	2015-16	2016-17
Number of generators	10,270	10,304	10,394
Installed Capacity (Megawatts)	26.2MW	26.35MW	32.53MW
Electricity Production (Megawatt Hours)	33,373 MWh	34,910 MWh	40,355 MWh
Total FiT Paid	\$13,704,878	\$14,562,165	\$15,496,627
Cost (\$/Megawatt Hours)	\$5.52/MWh	\$6.21/MWh	\$6.30 <sup>1</sup> /MWh
Cost in electricity bills (\$/ Per week)	78.9 cents	88.9 cents	90.20 cents <sup>2</sup>

1 Calculated as the 2015-16 costs increased by the Australian Energy Regulator’s estimated consumer price index rise of 1.51% allowed by way of the ActewAGL Distribution 2017-18 Network Pricing Proposal, <https://www.aer.gov.au/system/files/ActewAGL%202017-18%20Annual%20Pricing%20Proposal%20-%2031%20March%202017.pdf>

2 Based on 4 Person HH consumption in ACT of 7.441 MWh annually - Table 13, Electricity Bill Benchmarks for Residential Customers - A report to the Australian Energy Regulator by ACIL Allen Consulting (March 2015).

## Generation (40,355 MWh)

A total of 40,355 MWh was generated under the small and medium-scale FiT scheme during 2016–17. This represents an increase of approximately 13% from 2015–16, which is slightly lower than the 19% increase in capacity. The difference is most likely a result of aggregated medium FiTs (especially solar farms) starting to generate electricity only around the middle of the financial year.

Variation in generation over time can also be driven by variability in the amount of solar insolation between different years. A small degradation in the output can be expected as solar photovoltaic systems age and decline in performance over time. Historical generation data since the commencement of the small and medium FiT scheme is provided in Appendix A (Table A3 - Long term generation data).

In 2016–17 ActewAGL Distribution was one of a group of energy distributors that sought a Limited Merits Review of the Australian Energy Regulator’s 2015 determination of maximum network revenues that they could earn.<sup>4</sup> One result of the appeal was that AER did not require ActewAGL’s annual pricing proposal for 2016–17.

The impact of the small-medium FiT schemes on 2016–17 electricity has been calculated based on the 1.51% consumer price index (CPI) adjustment set out in the Australian Energy Regulator’s enforceable undertaking that ActewAGL Distribution agreed in May 2016.<sup>5</sup> This results in the cost of the small-medium FiT scheme being around \$6.30 per MWh in 2016–17. Based on a typical annual consumption of 7.441MWh<sup>6</sup> for a four-person household in the ACT, the passthrough cost of the small and medium-scale FiT scheme to an average annual electricity bill in 2016–17 was \$46.91 (excluding GST). This equates to approximately 90.2 cents per week. For smaller households, these costs would be lower.

## Impact on electricity bills (90.2 cents per week)

The impact on electricity bills was calculated differently for 2016–17 than for previous years. Past practice was that the Australian Energy Regulator (AER) required ActewAGL Distribution to submit an annual pricing proposal. This was applied by the Independent Competition and Regulatory Commission (ICRC) in their annual publication of detailed FiT cost data, disaggregated for the small-medium and large-scale FiT schemes.<sup>3</sup>

4 See <https://www.aer.gov.au/news-release/federal-court-judgement-on-aer-electricity-and-gas-price-decisions-disappointing-outcome-for-nsw-and-act-consumers>

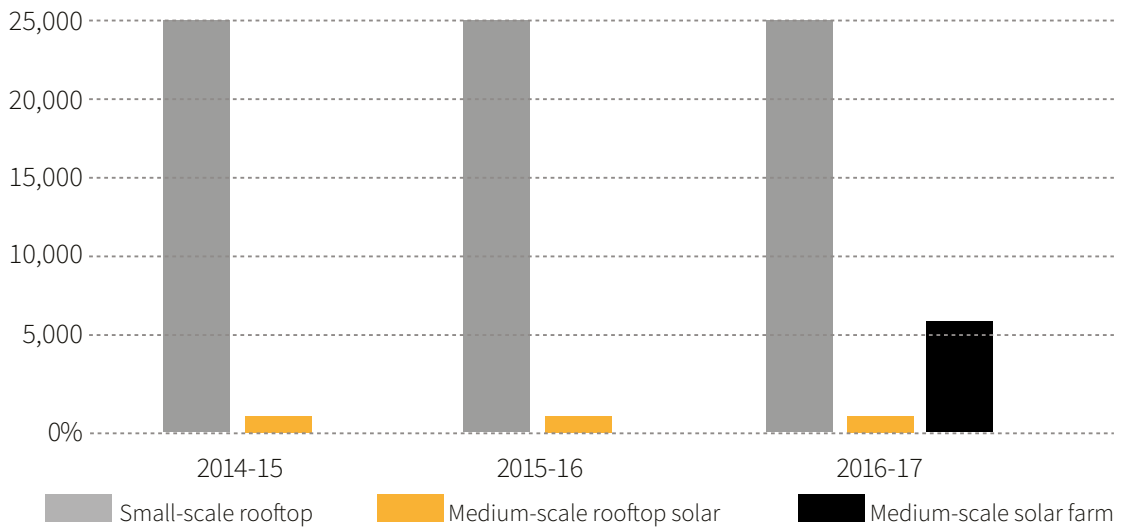
5 <https://www.aer.gov.au/system/files/ActewAGL%202017-18%20Annual%20Pricing%20Proposal%20-%2031%20March%202017.pdf>, p. 19

6 Table 13, Electricity Bill Benchmarks for Residential Customers - A report to the Australian Energy Regulator by ACIL Allen Consulting (March 2015). This figure represents the annual typical electricity consumption of a four person household with a gas connection but no swimming pool. Note this is higher than the most common household type consisting of 2 persons.

3 See <http://www.icrc.act.gov.au/wp-content/uploads/2016/06/Report-2-of-2016-June-20161.pdf>



### Solar generation capacity from small and medium generators on Feed-in tariffs



### Retailer market offers (non-premium FiTs)

While the Government is only required to report on its small and medium FiT scheme, this report also includes information on solar support schemes offered by retailers. This is intended to provide a more complete picture about rooftop solar generation in the ACT.

As retailers' market offers for solar are not regulated, there is no mandatory reporting of installation and generation rates. This creates problems for data completeness and accuracy and much data has to be derived from a range of sources. Alternative methodologies for reporting on retailers market offers will be considered in future reports. Data reported here should be regarded as best estimates only.

In 2016–17, retailer supported systems generated an estimated 35,791 MWh of electricity. There was a total of around 7,774 generators installed under these schemes with a combined capacity of approximately 34.1 MW.

The ACT Government small and medium FiT scheme and retailer solar support schemes combined represent around 66.7 MW of installed solar capacity in the ACT. Table 2 provides the combined number of generators, capacity and generation for these schemes. Figure 4 breaks these figures down by numbers of generators and capacity.

Figure 3: Comparing number of generators, capacity and output in the small and medium FiT scheme

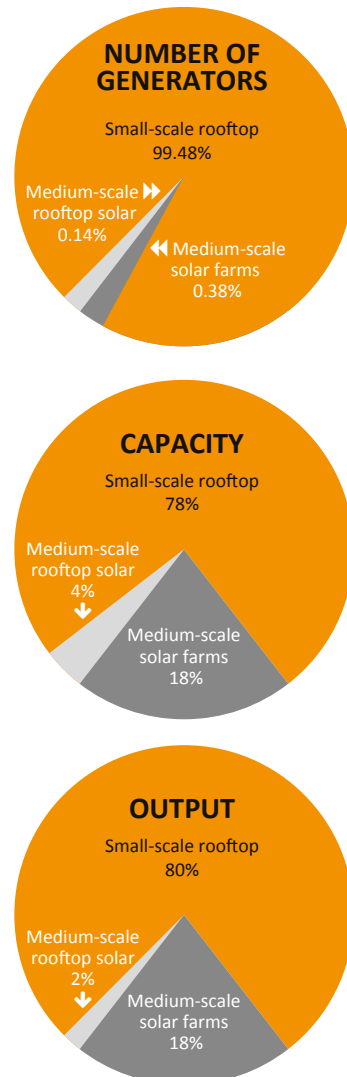




Table 2: 2016–17 Aggregated solar capacity in the ACT

	ACT Govt small and medium FiT scheme	Retailer solar support schemes	Total
Number of generators	10,394	7,774	18,168
Installed Capacity	32.53 MW	34.12MW	66.65MW
Electricity Production	40,355 MWh	42,298 MWh	82,653 MWh

### Revisions to 2015-16 data

As with the 2015–16 report, some revisions have been made to previously published results based on corrections issued by ActewAGL Distribution and updated installation data from the Clean Energy Regulator<sup>7</sup> (CER):

- » 16,940 solar generators were installed in the ACT in 2015–16. This is lower than the 17,710 that were previously reported. Non-FiT data cannot be measured directly and instead is derived by subtracting FiT data from the totals reported by the CER. As a result, it is now understood that the total number of non-FiT generators in 2015–16 was 6,636, down from 7,406 reported previously.
- » total installed capacity of FiT and non-FiT solar generation in 2015–16 was 53.3 MW, higher than the 51.5 MW that was previously reported. As a result, the non-FiT capacity for that year is understood to have been 26.9 MW, up from 25.2 MW previously reported.

<sup>7</sup> <http://www.cleanenergyregulator.gov.au/DocumentAssets/Pages/Postcode-data-for-small-scale-installations.aspx>



Battery storage system, photo by SolarHub

### Box 1 NextGen Renewable Storage Scheme

Batteries allow households and businesses to store their solar energy for later use rather than exporting it to the grid. This can lead to bill savings for electricity customers while improving power system reliability and security.

The \$25 million Next Generation Energy Storage Grants program will support the roll out of up to 5,000 smart-controlled solar battery storage systems to 2020 in Canberra homes and businesses. These systems will also collect critical data to inform industry research and development. Around 400 installations are expected by the end of 2018.

The battery installations are provided via eight battery installers that were selected through a competitive process. This ensures the best value for money for the Territory and that batteries are only installed by skilled and accredited tradespeople. The process also favoured installers that are committed to contributing to the local renewable energy industry.

Following the success of the first two grants rounds, a third round was announced on 20 September 2017. This grants round will allocate up to a further \$4 million to the battery roll-out. The round closed in October 2017 and the successful installers are expected to be announced in December 2017.

The 2016–17 subsidy is \$825 per kilowatt (kW) of Sustained Peak Output. For the average household solar photovoltaic and battery system this equates to around a \$2,900 rebate bringing the total installed cost of a typical solar PV and battery system to around \$12,000 to \$16,000. The cost and rebate varies between systems depending on specifications. Grants are paid on successful installation following an inspection by Access Canberra.

Over the summer of 2017-18, the smart features of these batteries will be employed by ActewAGL Distribution and local business Reposit Power to test their ability to provide support to Canberra’s electricity grid. The ACT Government understands that this is the largest demonstration of a residential Virtual Power Plant in the world to date.

## 4. LARGE-SCALE FIT SCHEME PERFORMANCE

The table below provides the performance of the large-scale FiT scheme in 2016–17. The table also includes data from the previous year for comparison.

Table 3: Large-scale FiT Scheme Performance

	2014–15	2015–16	2016–17
<b>FiT Output</b>			
Number of generators	1	2	6
Installed Capacity (Megawatts)	20MW	39.4MW	240MW
Electricity Production (Megawatt Hours)	33,397 MWh	57,423 MWh	273,583 MWh
<b>FiT Cost</b>			
Total FiT Cost Allowance	\$7,866,000	\$8,402,000	\$14,602,000
FiT Electricity Bill Cost	\$3.11/MWh	\$3.41/MWh	\$5.01/MWh
Weekly FiT Electricity Bill Cost	44.5 cents	48.8 cents	71.7 cents

The total FiT cost allowance equals the large-scale FiT cost that ActewAGL Distribution passed through to electricity retailers each year. The FiT electricity bill cost equals this cost divided by total electricity sales for the year. The weekly cost equals the cost per Megawatt hour multiplied by typical household annual electricity consumption, divided by 52.

### Box 2 – Innovative Solutions Award

In 2017, the ACT Government's large-scale feed-in tariff auction scheme won the Innovative Solutions category of the Institute for Public Administration's Public Sector Innovation Awards. The award recognised the scheme's new approach to tackling climate change through the ACT's nation-leading commitment to achieving 100% renewable electricity by 2020.

ACT was the first jurisdiction in Australia to use the reverse auction mechanism to support the construction of new renewable energy projects.

Through the ACT's reverse auction process, companies were invited to submit proposals for the construction of new renewable energy projects, such as wind or solar farms, with a focus on completing the project at the lowest possible support cost. The competitive auction process used by the ACT Government to allocate feed-in tariff support meant it was able to select the renewable energy projects with the lowest cost to consumers and greatest benefit to the ACT economy.



From left: Arthur Sinodinos, Kathy Leigh, Dave Pepper, Jon Sibley, Hugo Temby, Jawad Shamsi, Stephen Bygrave, Greg Buckman



### Capacity (240 MW)

Total installed capacity of renewable energy generation reached 240 MW in the large-scale Feed-in-Tariff scheme during 2016–17. This was six times higher than large-scale renewable capacity in 2015–16.

By the end of June 2017, the reverse auction process had also delivered contracts for 639.9MW of installed capacity of renewable electricity that will all commence large Feed-in Tariff supported generation by the end of October 2019. This will deliver renewable electricity equivalent to 77% of the ACT's estimated electricity demand in 2020. Appendix B shows the details of each of the renewable energy auctions.

### Generation (273,583 MWh)

The combined generation of the six large-scale renewable electricity farms operating in the 2016–17 financial year was 273,583 MWh. This was 4.8 times higher than large-scale renewable generation in 2015–16. The increase was due to new large feed-in tariff supported generation from the large wind farms at Ararat and Hornsdale as well as two new solar farms: the Mugga Lane Solar Park and the large feed-in tariff supported part of the Williamsdale Solar Farm.

### Impact on electricity bills (71.7 cents per week)

The reporting of electricity bill impacts from the large-scale FiT was subject to the same constraints in 2016–17 as for the small-scale FiT. In its annual standing offer price decision for small customers for 2016–17, the ICRC did not provide large feed-in tariff cost data because the AER had not required ActewAGL Distribution to submit its usual annual pricing proposal to it.<sup>8</sup> As a result, the scheme's FIT cost has been estimated based on the large feed-in tariff cost allowance by ActewAGL Distribution for 2016–17 and ACT electricity sales for the same year.

Based on a typical annual consumption of 7.441MWh<sup>9</sup> for a four-person household in the ACT, the passthrough cost of the large-scale FiT scheme in 2016–17 (excluding GST) was \$37.28.

This equates to an average of approximately 71.7 cents a week for each household. These costs will be lower for smaller households.

<sup>8</sup> <http://www.icrc.act.gov.au/wp-content/uploads/2016/06/Report-2-of-2016-June-20161.pdf>

<sup>9</sup> Table 13, Electricity Bill Benchmarks for Residential Customers - A report to the Australian Energy Regulator by ACIL Allen Consulting (March 2015). This figure represents the annual typical electricity consumption of a four person household with a gas connection but no swimming pool. Note this is higher than the most common household type consisting of 2 persons.





### Over-recovery of costs

These costs represent an over-recovery for the large-scale FiT scheme in 2016–17 by ActewAGL Distribution. The large-scale FiT costs recovered from customers by the electricity distributor was \$14.6 million and exceeded the actual FiT payments to generators (\$6.1 million) by \$8.4 million. An over-recovery also occurred in 2015–16 when the large-scale FiT costs recovered from customers by the electricity distributor (\$8.4 million) exceeded the actual FiT payments to generators (\$5.8 million) by \$2.4 million. Payments to generators in 2014–2015 were also over-recovered by \$2.8 million.

The costs recovered by the distributor are determined in advance based on estimated generation. While the distributor overestimated the generation for 2014–15, 2015–16 and 2016–17, it should be noted that overrecovered amounts will be adjusted in following years resulting in lower passthrough costs. This process will be assisted by new arrangements legislated in 2017 that enable the Minister to set the maximum amount that can be passed onto ACT electricity retailers for each forthcoming financial year taking into account any over or under recoveries in previous years.

### Online reporting

In addition to this report, detailed quarterly reports on the large-scale FiT scheme are published on the Environment, Planning and Sustainable Development Directorate website<sup>10</sup>. As well as total electricity generated, and the FiT payments made to generators, these quarterly reports also include detailed daily market interval settlement data for generators on a 30 minute basis. This settlement data consists of the generation during the 30 minute interval, the wholesale market price and the FiT support payment. These reports enable greater transparency of the large-scale FiT scheme.

<sup>10</sup> <http://www.environment.act.gov.au/energy/cleaner-energy/renewable-energy-target,-legislation-and-reporting>



# 5. PROGRESS TOWARDS 100% BY 2020 TARGET

The ACT Government Climate Change Strategy sets out the approach to be taken to reach the Territory’s legislated greenhouse gas emission reduction target of 40% below 1990 levels by 2020. The most significant part of this strategy is a commitment to achieve 100% renewable electricity supply by 2020.

Around 77% of the contribution to the 100% by 2020 target is expected to be made by the large-scale wind and solar generators under the large-scale FiT scheme. Considerable progress has been made toward this target with the allocation to date of 639.9 MW of FiT supported generation capacity through the successful large-scale wind and solar auctions (Appendix B - Outcomes of the Large-scale FiT Auctions).

## 2015–16 - Contribution of Renewable Energy to ACT Electricity supply – 29.1%

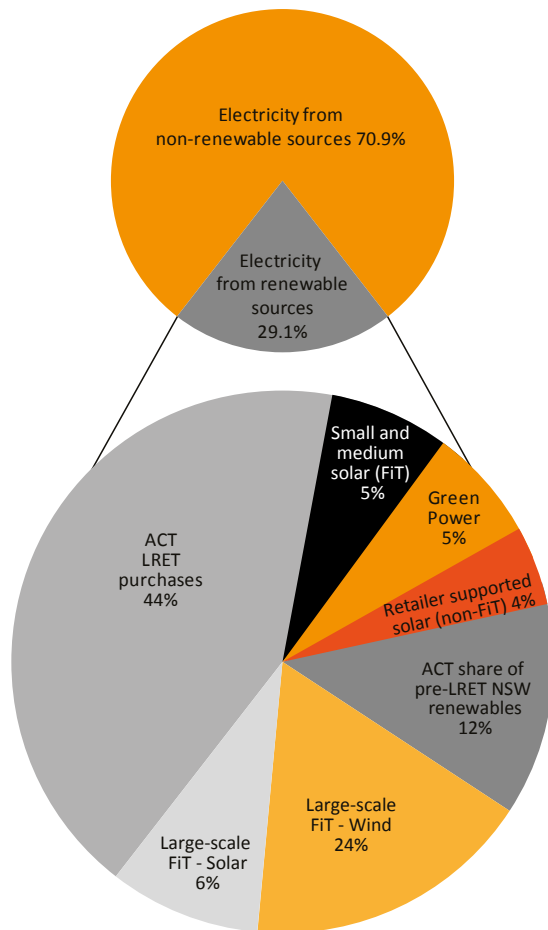
The 2016–17 ACT Greenhouse Gas Inventory report will be published in December 2017.<sup>11</sup> The report will show that renewable sources made up 29.1% of ACT electricity supply in 2016–17. This is an increase from 21% in 2015–16, 18.5% in 2014–15 and 19.8% in 2013–14, mostly driven by increases in the generation from the large-scale FiT scheme during 2016–17.

Figure 5 shows the breakdown of renewable energy sources in the electricity supply in 2016–17 for the ACT.

The overall renewable electricity share of 29.1%, is well below the 100% by 2020 target these proportions have significantly increased over the last year. Further new generation capacity from successful projects in the ACT large-scale wind and solar auctions will be completed in coming years and will significantly increase this share.

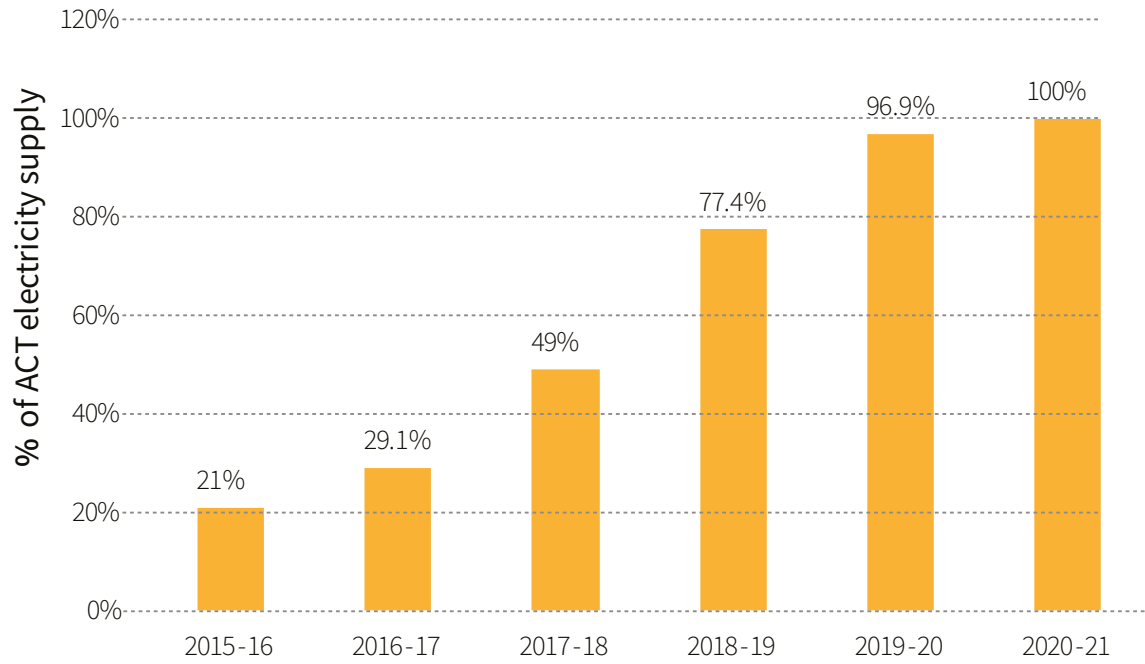
Figure 6 shows the past, and expected progress towards the target.

Figure 4: Breakdown of renewable electricity sources in the ACT, 2016–17



<sup>11</sup> Pitt & Sherry Report: ACT Greenhouse Gas Inventory for 2016–17 (<http://www.environment.act.gov.au/cc/acts-greenhouse-gas-emissions>)

Figure 5: Future Progress towards 100% Renewable Electricity Target



It should be noted that while this escalation is based on latest data available, future years are estimated and actual progress between different years may vary from estimates from 2017-18 onward.



# APPENDICES

## Appendix A – Additional data on the small and medium FiT scheme

The following FiTs were available to eligible renewable energy generators from the date of scheme opening on 1 March 2009 to its close on 13 July 2011.

Table 4: A1 – FiT rates

Gross FiT Rate	Eligible generation capacity and date of application
50.05/kWh	Generator capacity up to 10kW for applications approved 1 March 2009 to 30 June 2010.
45.7/kWh	Generator capacity up to 30kW, applications approved 1 July 2010 to 31 May 2011
40.04c/kWh	Generator capacity between 10 to 30kW, applications approved 1 March 2009 to 30 June 2010.
34.27c/kWh	Generator capacity between 30 to 200kW for applications approved 7 March 2011 to 11 July 2011
30.16c/kWh	Generator capacity up to 200kW for applications approved 12 July 2011 to 13 July 2011

Source - Review of the Electricity Feed-in (Renewable Energy Premium) Act 2008 (August 2015)

It is important to note that the ACT Government small and medium FiT scheme was a ‘gross’ scheme. This means that the FiT was paid for all the electricity generated by a renewable energy generator, rather than only the net generation left after consumption – as is the case for retailer solar support schemes.

Table 5: A2 – Capacity and number of small-scale generators

Gross FiT Rate	No of generators	Installed Capacity (MW)
\$50.05/kWh	2,466	4.98
\$45.7/kWh	7,861	20.40
\$40.04/kWh	1	0.03
\$34.27/kWh	2	Not reported
\$30.16/kWh	9	0.04
Total	10,339	25.44

Source – ActewAGL Distribution (November 2017)

Table 6: A3 – Capacity and number of medium rooftop solar and medium solar farm generators

Gross FiT Rate	No of generators	Installed Capacity (MW)
\$50.05/kWh	1	0.10
\$45.7/kWh	9	0.56
\$40.04/kWh	2	0.06
\$34.27/kWh	8	1.60
\$30.16/kWh	35	6.88
Total	55	9.19

Source – ActewAGL Distribution (November 2017)

Table 7: A4 – Long term generation data

MWh	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
Output	202	2,409	7,670	20,947	33,717	35,342	33,373	34,910	40,355

Source – 2014-15 Annual Feed in Tariff Report and ActewAGL Distribution (November 2016)



## Appendix B – Outcomes of the large-scale FiT auctions

Table 8: B1 – Outcomes of the Large-scale Solar Auction

Successful Proponents	FiT Rate	Capacity (MW)	% of 2020 Electricity demand	FiT start date	Location
FRV Royalla Solar Farm Pty Limited	\$186/MWh	20	1.20%	18-Aug-14	Royalla, ACT
Mugga Lane Solar Park	\$178/MWh	13	0.70%	18-Nov-16	Mugga Lane, ACT
Williamsdale solar farm	\$186/MWh	7	0.50%	03-Feb-17	Williamsdale, ACT

Table 9: B2 – Outcomes of the First Large-scale Wind Auction

Successful Proponents	FiT Rate	Capacity (MW)	% of 2020 Electricity demand	FiT start date	Location
Ararat Wind Farm Pty Ltd	\$87/MWh	80.5	8.90%	14-Apr-17	Ballarat, Victoria
Coonooer Bridge Wind Farm Pty Ltd	\$81.50/MWh	19.4	2.70%	29-Feb-16	Bendigo, Victoria
Hornsedale Wind Farm Pty Ltd Stage 1	\$92/MWh	100	13.60%	16-Feb-17	Port Augusta, South Australia

Table 10: B3 – Outcomes of the Second Large-scale Wind Auction

Successful Proponents	FiT Rate	Capacity (MW)	% of 2020 Electricity demand	FiT grant start date	Location
Hornsedale Wind Farm Stage 2	\$77/MWh	100	13.20%	1-Dec-2018	Port Augusta, South Australia
Sapphire Wind Farm	\$89.10/MWh	100	11.50%	1-May-2018	Glenn Innes, New South Wales

Table 11: B4 – Outcomes of the Next Generation Auction

Successful Proponents	FiT Rate	Capacity (MW)	% of 2020 Electricity demand	FiT grant start date	Location
Crookwell 2 Wind*Farm* Farm*	\$90.40/MWh	91	10.00%	17-Sep-2018	Crookwell, New South Wales
Hornsedale Wind Farm* Stage 3	\$78/MWh	109	13.60%	1-Oct-2019	Port Augusta, South Australia

\* FiT rate includes the Energy Savings Contribution to the \$25 Million Next Generation Energy Storage Program

The wind farms successful under the Next Generation Renewables Auction will be financing the rollout of 36 MW of distributed battery storage in up to 5,000 ACT homes and businesses under the Government's Next Generation Storage program.

Source – [www.environment.act.gov.au/energy](http://www.environment.act.gov.au/energy)

## Appendix C – How does the Large-scale FiT – Contract for Difference work?

Under the large-scale FiT scheme, renewable electricity generators receive the difference between the wholesale market price of electricity at the time of supply into the National Electricity Market (NEM) and the fixed FiT rate bid by winning generators during the auction.

This provides revenue stability to generators by reducing their exposure to volatile wholesale prices, and contributes to attracting lower FiT rates to ACT auctions. This has resulted in winning FiT prices in the ACT wind and solar auctions being lower than those expected by industry experts, resulting in some of the cheapest sources of renewable electricity in the NEM being secured by the ACT.

Additionally, this strategy also benefits ACT electricity users over the long term by protecting them from potentially higher wholesale prices in the future. This is because as wholesale market prices rise, due to future government policies or other effects, the difference between these prices and the FiT rate applicable to the generator will become smaller, reducing overall FiT payments. This will result in reduced FiT pass-through costs to ACT electricity consumers.



