

Saved by the bench

How the Senate crossbench saved Australia's renewable energy industry

The Abbott Government's attempts to abolish key renewable energy policies were foiled by Labor and the Senate crossbench. These efforts have supported \$23.4 billion worth of clean energy projects during a period that saw renewable investment fall by up to 48% in some years.

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Summary

Between 2013 and 2016, the Coalition Government attempted to abolish Australia’s three key renewable energy policies: the Renewable Energy Target (RET), the Clean Energy Finance Corporation (CEFC) and the Australian Renewable Energy Agency (ARENA).

These three policies were saved in the Senate, where the government was defeated by the Labor Opposition and various members of the ‘crossbench’ of Greens, minor party and independent senators.

As a result, the CEFC continued financing, ARENA continued providing grants and other assistance and the RET continued encouraging renewable energy generation. In total \$7.8 billion in government support has been provided to projects worth \$23.4 billion, as shown in Figure 1:

Figure 1: Total clean energy support saved by Labor and crossbench (2013–2018)

	Funding and investment (\$m)	Total project value (\$m)
CEFC investment	\$6,652	\$19,000
ARENA grants	\$1,187	\$4,371
Total	\$7,839	\$23,371



In addition, the RET has assisted the installation of 806,000 solar panel systems and 226,000 solar hot water systems between 2013–2018 and the generation of 85m MWh of electricity from large-scale generators.

Saving the RET and CEFC has resulted in emissions reductions of at least 334m tonnes CO₂-e. This is more emissions reduction than the government’s policy, the Emissions Reduction Fund, is likely to deliver over its six years of operation (92m tonnes from its creation in 2014 to 2020).

Projects made viable through ARENA funding will also reduce emissions but since ARENA supports early stage technologies, it is not possible to confidently predict the future performance of those projects in reducing emissions.

This support for renewables in Australia occurred at a time of great uncertainty for the industry.

On 17 October 2017, then Prime Minister Malcolm Turnbull proposed a new energy policy for Australia, the National Energy Guarantee (NEG). The NEG was supposed to solve the 'energy trilemma': improve security, reduce emissions and cut the consumer price of electricity. However, following events that ended in the toppling of Turnbull's leadership and the installation of Scott Morrison as Prime Minister, the NEG was declared "dead". This means that significant uncertainty continues to threaten investment in electricity in Australia.

In 2014 and 2015, while worldwide investment in the sector grew, Australian renewable energy investment fell by half. If the Senate crossbench had failed to save the CEFC, ARENA and RET, the decline would have been much greater and the rebuilding of the industry much more difficult. The future of Australia's renewable sector was saved by the (cross) bench.

Introduction

After the Coalition Government was elected in 2013, Prime Minister Tony Abbott sought to wind back climate action and renewable energy policy.

Labor Prime Minister Julia Gillard had negotiated the Clean Energy Future (CEF) package with the Greens and crossbench Senators (and crossbench Members of the House of Representatives). The CEF consisted of two main measures: a national carbon price and a renewable industry support package, centred on the creation of the CEFC and ARENA.

Prime Minister Abbott succeeded in repealing the national, economy-wide carbon price. However, he failed to dismantle the CEFC and ARENA. He also failed to repeal the RET, which, significantly, had been created by former Liberal Prime Minister John Howard in 2000, with a target of 2% or 9,500 GWh by 2010.¹ The current policy is for the RET target to remain flat between 2020 and 2030 and then lapse with no replacement.²

Australia's climate and energy policies are again under a cloud of uncertainty, with Tony Abbott continuing his attacks from the backbench in 2018.³ Tony Abbott and the controversially-named 'Monash Forum' of backbenchers propose withdrawing from the Paris Accord, repealing the RET, dismantling the CEFC and ARENA and subsidising the construction of new and economically unviable coal-fired power stations.

What has saved the RET, CEFC and ARENA in the four years since the Coalition came to power is one thing: the Labor Opposition in both houses and the crossbench of the Senate.

It is rare for Australian governments to have a majority in the Senate. For 35 of the past 37 years, governments have required the agreement of either the opposition or independents and minor parties on the crossbench to pass legislation.

¹ St John (2014) *The Renewable Energy Target: a quick guide*, Research Paper Series, p 2

² Clean Energy Regulator (2018) *When does the Renewable Energy Target end?*, <http://www.cleanenergyregulator.gov.au/RET/Pages/About%20the%20Renewable%20Energy%20Target/When-does-the-Renewable-Energy-Target-end.aspx>

³ Grattan (2018) *Exit Paris climate agreement: Tony Abbott*, <http://theconversation.com/exit-paris-climate-agreement-tony-abbott-99319>

When the Abbott Government was elected, the balance of power in the Senate was held by the Australian Greens, with independent senator Nick Xenophon and Democratic Labour Party senator John Madigan also on the crossbench. The government had 34 senators⁴ and required 39 in order to pass or repeal legislation,⁵ which is the hurdle necessary for ending the RET and dismantling the CEFC and ARENA.

The new Senate that sat between July 2014 and May 2016 saw the crossbench grow to include the Palmer United Party (including senators Jacqui Lambie and Glenn Lazarus, who would leave the party to become independents), Ricky Muir of the Motoring Enthusiast Party, David Leyonhjelm of the Liberal Democrats and Bob Day of Family First. The government had 33 senators in this Senate.⁶

Having been typecast as ‘conservative’ or ‘right-wing’, the new minor parties on the crossbench were widely expected to vote with the Abbott Government – and, indeed, Day and Leyonhjelm proved to be fairly reliable votes for the government. But Xenophon, Wang, Lambie, Lazarus, Muir and Madigan, along with the Greens, ensured that the Senate crossbench served as an important check on the government’s power.

Labor’s opposition and the crossbench’s scrutiny of the government’s policies have thus far saved the CEFC, ARENA and RET. Thanks to these senators, investment in renewable energy has continued through a time of great uncertainty for the energy sector.

This report quantifies the contemporary and ongoing benefits of the crossbench’s protection of Australia’s renewable energy policy infrastructure. Quantifying these benefits is difficult as different parts of the policies produce different benefits measured in different ways at different times. Some of the policies also interact and overlap. As a result, we have focused on the various kinds of financial support these policies have provided to clean energy projects.

⁴ Parliament of Australia (2011) *Senate composition*, http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1112/12rp02/12rp02-17

⁵ The Guardian (2015) *Senate calculator*, <https://www.theguardian.com/australia-news/ng-interactive/2016/jul/04/senate-calculator-legislation-pass-after-australian-election-2016>

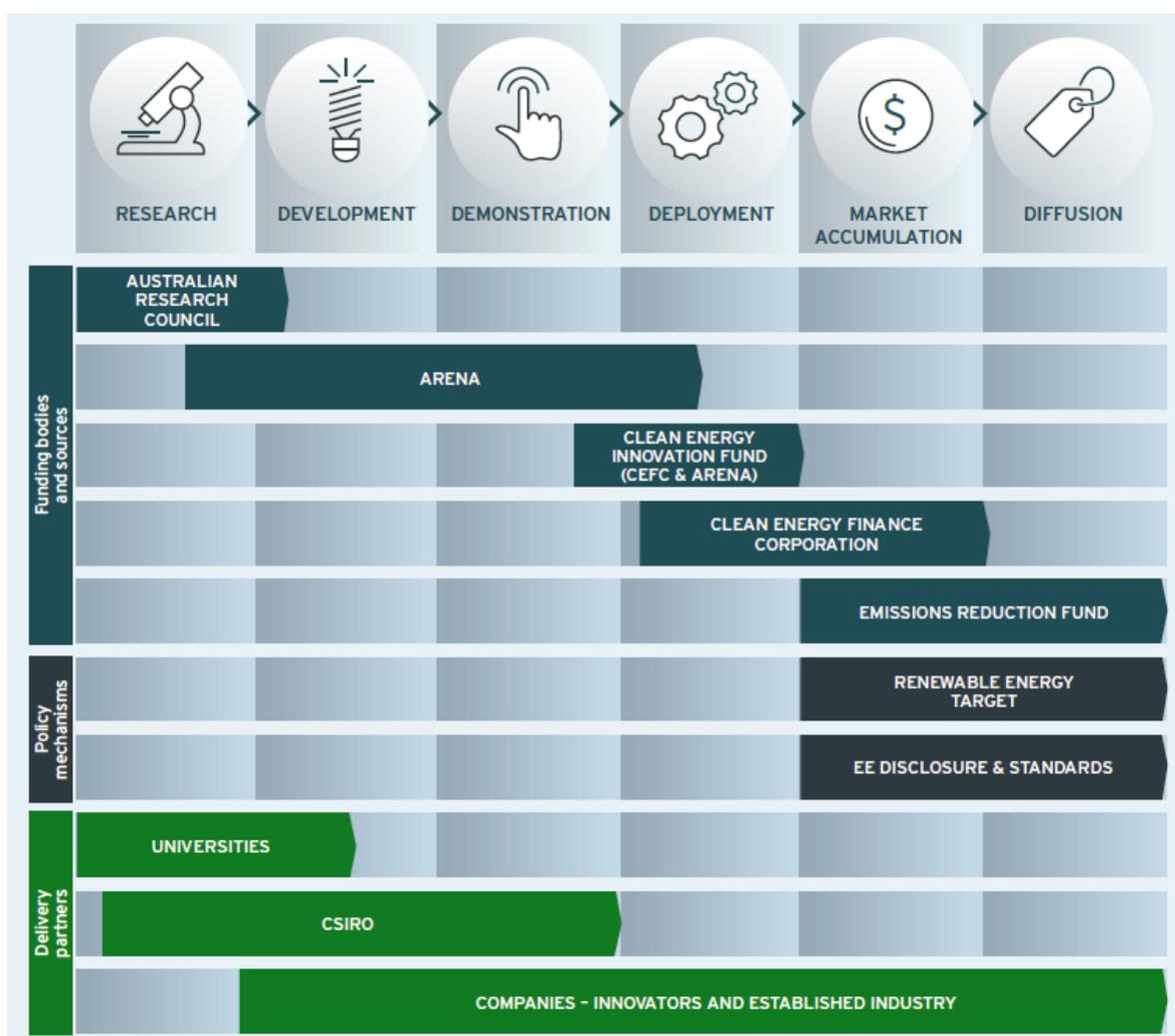
⁶ Parliament of Australia (2016) *Senate composition*, http://www.aph.gov.au/Senators_and_Members/Senators/Senate_composition

Australian Renewable Energy Agency (ARENA)

ARENA and Australian energy innovation

ARENA and the CEFC were carefully designed to fit into existing institutions and markets, to accelerate innovation in clean energy in Australia.

Figure 2: Clean energy innovation chain in Australia



Source: ARENA Annual Report 2015–2016, p 17

At the earliest stage of innovation, basic scientific and engineering research is done by universities and the CSIRO and funded through the Australian Research Council (Figure 2 above). ARENA then steps in to support desktop studies and later stage research and

development of the scientific and engineering underpinnings of a technology, demonstration through trials, and deployment sees the technology implemented at-scale in the field, prior to it reaching full commercial viability. ARENA provides up to 50% of project funding, mostly as grants.

ARENA is an independent agency of the Australian federal government that was established in 2012 as part of the Clean Energy Future package. It has two stated objectives:

- To improve the competitiveness of renewable energy technologies;
- To increase the supply of renewable energy in Australia.⁷

ARENA provides funds for specific, competitive R&D Program tenders – such as the Demand Response Round delivered with AEMO – and the larger Advancing Renewables Program (ARP) which awards funds if projects meet merit criteria.

ARENA's investment priorities are:

- Delivering secure and reliable electricity
- Accelerating solar PV innovation
- Improving energy productivity
- Exporting renewable energy⁸

It primarily disperses grants,⁹ but it is able to purchase equity or give contingent loans.

ARENA and the crossbench

In June 2014, in anticipation of the new Senate, a bill to abolish ARENA was introduced. When it became clear that the Palmer United Party,¹⁰ Ricky Muir,¹¹ Nick Xenophon¹² and others supported ARENA, the bill was not pursued and was allowed to

⁷ ARENA *Annual Report 2016–2017*, p 14

⁸ ARENA (2017) *Innovating Energy: ARENA's Investment Plan 2017*, p 8–9

⁹ Woodley (2016) *Nick Xenophon Team's decision to block ARENA cuts puts pressure on Labor*, <http://www.abc.net.au/news/2016-09-10/labor-under-pressure-amid-renewable-energy-funding-cuts/7832656>

¹⁰ Palmer United Party (2014) *Media Release*, <https://palmerunited.com/palmer-united-party-supports-government-arena-funding/>

¹¹ Kenny and Cox (2014) *Ricky Muir and Palmer United Party strike deal to save Australian Renewable Energy Agency*, <http://www.smh.com.au/federal-politics/political-news/ricky-muir-and-palmer-united-party-strike-deal-to-save-australian-renewable-energy-agency-20140709-3bmqq.html>

¹² ACF (2016) *Nick Xenophon Team*, <https://scorecard.acf.org.au/xenophon>

lapse when Parliament was prorogued for the 2016 election.¹³ After Malcolm Turnbull replaced Tony Abbott as Prime Minister, abolishing ARENA and the CEFC remained government policy, with Environment Minister Greg Hunt saying:

Well there's been no change in the long-term position. However we realise that the Senate has a very clear view.¹⁴

However, moving ARENA from the Department of Industry to the Department of the Environment later that month was interpreted as an indication that ARENA was now not likely to be abolished by the Government.¹⁵

The crossbench's strong support for ARENA's continued existence allowed ARENA to continue dispersing grants worth \$864 million, as shown in Figure 3 below:

Figure 3: ARENA total grants saved by the crossbench

Financial year	\$m grants
2013–2014	\$239
2014–2015	\$216
2015–2016	\$113
2016–2017	\$161
2017–2018	\$135
Total	\$864



Source: ARENA *Annual Report 2017*, p 100; ARENA *Annual Report 2016*, p 105; ARENA *Annual Report 2015*, 'Statement of Comprehensive Income'; ARENA (2018) *Projects*, <https://arena.gov.au/projects/>

Figure 3 shows grants actually dispersed to projects by ARENA in the years 2013–2018.

Also important are the financial assistance commitments that ARENA makes to fund projects either in that year or in later years. Figure 4 shows ARENA financial assistance

¹³ Parliament of Australia (2014) *Australian Renewable Energy Agency (Repeal) Bill 2014*, [http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;page=0;query=Australian%20Renewable%20Energy%20Agency%20\(Repeal\)%20Bill%20SearchCategory_Phrase%3A%22bills%20and%20legislation%22;rec=0;resCount=Default](http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;page=0;query=Australian%20Renewable%20Energy%20Agency%20(Repeal)%20Bill%20SearchCategory_Phrase%3A%22bills%20and%20legislation%22;rec=0;resCount=Default)

¹⁴ Hunt (2015) *ABC RN Breakfast Interview With Fran Kelly*, <http://www.greghunt.com.au/Home/LatestNews/tabid/133/ID/3495/ABC-RN-breakfast-interview-with-Fran-Kelly.aspx>

¹⁵ Taylor (2015) *Turnbull government signals new approach to climate policy*, <https://www.theguardian.com/australia-news/2015/sep/21/turnbull-government-signals-new-approach-to-climate-policy>

commitments and the total value of the projects as they stood at the time of writing in November 2018, broken down by category.

These projects have received funding or ARENA has committed to provide them with funding in later years (or both).

Figure 4: ARENA funding provided by category, as of November 2018

Category	ARENA funding	Total project value
Advanced biofuels	\$23.9	\$49.7
Advancing renewables	\$430.1	\$2,050.2
Australian Solar Institute initiatives	\$339.8	\$910.3
Emerging renewables	\$107.4	\$284.8
Past programs	\$6.5	\$16.7
Regional Australia's Renewables – community (CARRE)	\$46.5	\$92.1
Regional Australia's Renewables – industry (I-RAR)	\$77.7	\$186.7
Research and development	\$70.1	\$217.3
Second generation biofuels R&D	\$4.2	\$4.2
Undefined	\$80.6	\$558.8
Total	\$1,186.8	\$4,370.8



Source: ARENA (2018) *Projects*, <https://arena.gov.au/projects/>

Figure 4 shows that ARENA has committed \$1.2bn in funding to renewable energy projects in Australia. In total, those projects are worth \$4.4bn, meaning that each dollar of ARENA support leverages about 2.7 dollars of private funding.

ARENA’s funding for later years is set by its legislation. By preventing the repeal of that legislation, the crossbench has secured not just ARENA’s current funding, but also its funding through to 2022.

In 2016 the Government proposed to take \$1.26 billion from ARENA’s future appropriations from 2017–18 to 2021–22.¹⁶ The Labor Opposition opposed this cut but agreed to a reduction of \$461 million over the same period. The amended appropriations amounts are shown in Figure 5: this represents over \$700 million of clean energy funding remaining for 2018–2019 to 2021–22.

¹⁶ St John (2016) *What's happening with ARENA?*, https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/FlagPost/2016/September/ARENA-changes

Figure 5: ARENA funding profile

Financial year	Amount for financial year \$m
2013–2014	\$581
2014–2015	\$194
2015–2016	\$90
2016–2017	\$57
2017–2018	\$258
2018–2019	\$235
2019–2020	\$255
2020–2021	\$134
2021–2022	\$132
Total	\$1,937



Source: St John (2016) *What's happening with ARENA?*,
https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/FlagPost/2016/September/ARENA-changes

Clean Energy Finance Corporation (CEFC)

CEFC background

The CEFC is a government owned, taxpayer funded 'green bank' that was established in 2012, as part of the Clean Energy Future package, to support investment in the commercialisation and deployment of renewable energy, energy efficiency and low-emissions technologies.

The CEFC is expected to perform 'above the cost of funds', that is to say, to invest in such a way that it makes a profit for the government. The CEFC provides loans to 'crowd in' private funding for projects that are ready to be deployed at commercial scale.

CEFC and the crossbench

Following its election in September 2013, the Abbott Government made two attempts to abolish the CEFC – blocked both times by Labor, Madigan (abstaining), Xenophon and the Greens in the Senate.¹⁷ The repeal bills were re-introduced in June 2014 in anticipation of the Senate changing the next month, but were not brought to a vote after the Palmer United Party made their support for the CEFC clear¹⁸ and Muir resisted being courted by the Coalition.¹⁹

By saving the CEFC, the crossbench ensured it continued to invest under its mandate. Investments made by the CEFC and leveraged in the private sector during this period are tallied in Figure 6 below:

¹⁷ Parkinson (2014) *Abbott launches new assault on clean energy*, <http://reneweconomy.com.au/abbott-launches-new-assault-on-clean-energy-51552/>, Vorath (2014) *CEFC repeal bill rejected – again – by Senate after Greens force vote*, <http://reneweconomy.com.au/cefc-repeal-bill-rejected-again-by-senate-after-greens-force-vote-19165/>

¹⁸ Parliament of Australia (2014) *Clean Energy Finance Corporation (Abolition) Bill 2014* <http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22legislation%2Fbillhome%2Fr5288%22>

¹⁹ Aston (2014) *Ricky Muir's vote to keep energy agency alive*, <http://www.smh.com.au/federal-politics/political-news/ricky-muir-s-vote-to-keep-energy-agency-alive-20140619-3ah35.html>

Figure 6: CEFC investments saved by the crossbench

Financial Year	CEFC cumulative commitments \$m	Total project value \$m
2013–14	\$931	\$3,200
2014–15	\$484	N/A
2015–16	\$837	\$2,500
2016–17	\$2,100	\$5,300
2017–18	\$2,300	\$6,700
Total	\$6,652	*\$19,000



Source: CEFC *Annual Report 2018*, p 4–5, 16; CEFC *Annual Report 2017*, p 12, 13; CEFC *Annual Report 2016*, p 4, 46, 187; CEFC *Annual Report 2015*, p 2, 23, 45; CEFC *Annual Report 2014*, p 4; CEFC (2017) *Quarterly Investment Report 30 September 2017*, p 1–2; CEFC (2017) *Quarterly Investment Report 31 December 2017*, p 1–2; CEFC (2018) *Quarterly Investment Report 31 March 2018*, p 1; CEFC (2018) *Quarterly Investment Report 30 June 2018*, p 1

Note (*): The project values for each year sum to \$17,700 million. However, the most recent CEFC report gives a total project value of \$19,000 million, which is the figure we have used. The difference may be because past projects have increased in value.

Note: 2014–2015 funding only went to existing projects already accounted for in the \$3.2 billion for 2013–2014.

Note: As of 30 June 2018, the CEFC investment portfolio was \$5.3 billion, which reflects loans fully amortised, repaid or exited and expired or cancelled undrawn commitments.

Figure 6 shows that the CEFC committed to invest \$6.7 billion in clean energy projects during this period, finance that played a key role in facilitating further investment mainly from the private sector – for a total project value of \$19 billion in this period.

As at 30 June 2018, the projected abatement of the CEFC’s current portfolio is 190m CO₂-e over the lifetime of those projects.²⁰

²⁰ CEFC *Annual Report 2018*, p 17

Renewable Energy Target (RET)

RET background

The Renewable Energy Target requires wholesale purchasers of electricity to purchase certain amounts of energy from large-scale renewable energy generation. By 2020, 33,000 GWh of large-scale renewable energy will need to be purchased, ensuring that renewable energy makes up about 20% of Australia's electricity generation.

The Renewable Energy Target was introduced by the Coalition Government in 2000 to require 9,500 GWh (an estimated additional 2%) of electricity to be generated from renewable sources by 2010, from 1997 levels. It was expanded by the Labor Government in 2008 to be 41,000 GWh by 2020, which was estimated to represent an additional 20%.²¹

The Liberal Party was a world leader in renewable energy policy in 2000. By 2017 there were renewable energy targets in 150 of the world's 193 countries.²² In 100 national and sub-national jurisdictions these targets require that a percentage of generation to be met by renewable energy, much like Australia's RET. For thirty countries the mechanism allows for the tradeable Renewable Energy Certificates which Australia uses.

During the 2013 election campaign, Tony Abbott and Greg Hunt both committed to keep the RET, unchanged. After becoming Prime Minister, in February 2014, Tony Abbott appointed climate sceptic and former oil executive Dick Warburton to conduct a review into the RET.²³

The Warburton Review recommended either closing the large-scale RET to new entrants or making it a target of '50% of growth' and to abolish or scale back the small-scale RET. However, modelling provided to the Review demonstrated that the RET

²¹ Parliament of Australia (2014) *The Renewable Energy Target: a quick guide*, http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1314/QG/RenewableEnergy

²² IRENA, IEA & REN21 (2018) *Renewable Energy Policies in a Time of Transition*, p 60–61

²³ White (2014) *The ten worst environment decisions in Abbott's first year*, <https://www.theguardian.com/environment/southern-crossroads/2014/sep/05/abbott-first-year-environment-climate-ten-worst-decisions>

would depress wholesale electricity prices, leading to net savings of up to \$91 per year by 2030.²⁴

The Palmer United Party 'vowed to block any change to the RET until after the 2016 election',²⁵ but in June 2015 the Labor and Liberal parties negotiated to reduce the target from 41,000 GWh to 33,000 GWh. A couple of factors contributed to the 33,000 GWh compromise target:

- The 41,000 GWh by 2020 target was set on the assumption that this would represent 20% of generation. However, electricity consumption fell, so 41,000 GWh would actually overshoot 20%.
- Although the Abbott Government could not convince the Senate crossbench to abolish the RET, the threat that they might do so was enough to suppress renewable investment. Labor struck the compromise deal of 33,000 GWh in an attempt to bring certainty back to the market.

RET mechanism

Renewable energy generators are allocated certificates based on how much electricity they produce each year, with one certificate allocated for every MWh generated.

There are two types of certificate, each with their own mechanism for creation: large generators are covered by large-scale generation certificates (LGCs) and household and small commercial installations (up to 100 kW) are covered by small-scale technology certificates (STCs).

LGCs are created as a result of actual generation over the life of the project. STCs are deemed, after installation, for the projected lifetime output of the system. The installer rebates the purchaser, and handles the on-selling of the certificates.

Wholesale electricity purchasers (mostly electricity retailers) have to buy a number of certificates, based on a percentage of how many MWh of electricity they buy from the grid.

The large-scale RET (LRET) percentage is set so that in 2020, an additional 33,000 GWh (originally 41,000 GWh) of renewable electricity will be generated by large-scale generators.

²⁴ E.g., Hopkin (2014) *Review calls for Renewable Energy Target cuts: What it means*,

<https://theconversation.com/review-calls-for-renewable-energy-target-cuts-what-it-means-29787>

²⁵ Coorey (2014) *Abbott's plan to axe RET*, <http://www.afr.com/business/energy/electricity/abbotts-plan-to-axe-ret-20140817-j8hpu>

STCs are interchangeable with large-scale ones, but do not count towards the 33,000 GWh target. This means that households or businesses buying solar panels do not reduce demand for commercial solar and wind farms.

The sale of certificates to wholesale energy purchasers provides an extra income stream to renewable generators. This is a transfer from retailers to renewable energy generators, largely passed on to consumers.²⁶

Assessing the value of this transfer is difficult as there is very limited data on REC prices. The proponents of many renewable energy projects are 'gentailers' (generator-retailers) who both earn certificates and are required to purchase them.

In other cases, a retailer will contract for certificates at prices that are not publicly disclosed, with estimates from some analysts around the \$30 to \$35 per REC mark.²⁷ This is similar to the spot price for RECs before 2016.

The spot prices for RECs more recently have often much higher, exceeding \$90 at times.²⁸ Only a small minority of RECs are publicly-traded in this way, with the market described as 'notoriously thin' by respected analysts.²⁹ Times of policy uncertainty have often coincided with rises in REC spot prices.

The Climate Change Authority estimated the RET would contribute a small amount to retail electricity prices, with the average household paying an extra \$250 in total over the five years 2015 to 2020. After 2020, the RET was expected to reduce retail prices.³⁰ The authority's finding is supported by the Warburton review, which found that the RET pushes down wholesale energy prices by increasing supply, increasing prices to 2020 but lowering them from 2020 to 2040.³¹

²⁶ ABC Fact Check (2014) *Fact file: How does the Renewable Energy Target affect your power bill?* <http://www.abc.net.au/news/2014-03-07/how-does-the-renewable-energy-target-affect-your-power-bill/5253136>

²⁷ Stadler (2016) *Understanding the forces that are driving LGC prices now – and into the future*, <https://www.energetics.com.au/insights/thought-leadership/understanding-the-forces-that-are-driving-lgc-prices-now-and-into-the-future/>

²⁸ Green Markets (2017) *LGC market prices*, <http://greenmarkets.com.au/resources/lgc-market-prices>

²⁹ Leitch (2017) *Know your NEM: Renewable energy certificates in free-fall*, <http://reneweconomy.com.au/know-nem-renewable-energy-certificates-free-fall-51497/>

³⁰ Climate Change Authority (2014) *RET review report*, p 21–22, <http://www.climatechangeauthority.gov.au/sites/prod.climatechangeauthority.gov.au/files/files/CCA-RET-Review-published-updated.pdf>

³¹ ACIL Allen Consulting (2014) *RET Review Modelling*, p 36–37, http://www.acilallen.com.au/cms_files/ACILAllen_RETReport2015.pdf

The lack of information and the countervailing effect of lower wholesale prices makes it very difficult to work out the value of the transfer. Attempts to do so have used spot prices, resulting in dramatic overestimates.

For example, a report released by the Minerals Council of Australia earlier this year noted that ‘a reliance on spot price information would overestimate the LRET burden on consumers’, but then proceeded to use spot price information. As such, their estimate of a \$1.4bn LRET and \$0.6bn small-scale RET subsidy in 2016 is an overstatement and ignores the wholesale price effect of renewable supply.³²

RET and the crossbench

Without the crossbench, the RET would have likely been abolished and the assistance it provides to households and large scale renewable energy generators lost entirely. Figure 7 below shows that the Large Scale Renewable Energy Target was responsible for the generation of millions of megawatt hours of electricity each year of the Abbott and Turnbull Governments:

Figure 7: Large-scale renewable energy market

Year	Large-scale renewable energy certificates created
2013–14	15.6m
2014–15	13.8m
2015–16	15.9m
2016–17	19.4m
2017–18	20.0m
Total	84.7m



Source: Clean Energy Regulator *Annual Report 2018*, p 25, 69; Clean Energy Regulator *Annual Report 2017*, p 61, 67; Clean Energy Regulator *Annual Report 2016*, p 29, 70; Clean Energy Regulator *Annual Report 2015*, p 58, 59; Clean Energy Regulator *Annual Report 2014*, p 42, 45

Note: A fraction of these certificates will have been created for GreenPower initiatives or voluntary surrender, rather than trade in the market created by the RET.

³² BAEconomics (2017) *Electricity production subsidies in Australia*, p 1, http://www.minerals.org.au/file_upload/files/reports/MCA_electricity_subsidies_3March17.pdf

In February 2018, the Clean Energy Regulator estimated that there would be 24m large scale renewable energy certificates validated in 2018 and 34m in 2019.³³

The existence of the REC market is a key factor in driving investment in renewable energy in Australia.

Note that 1 certificate = 1 MWh. Trade in these certificates can lag, but remains a useful proxy for the MWh of large-scale electricity generated in each that year. Aside from this lag issue, the RECs sold represent 85 million MWh of electricity generated. At Australia’s average emission intensity of 0.8 tonnes per MWh,³⁴ this represents 68m tonnes of CO2-e not emitted over these five years.

The small scale RET has also assisted hundreds of thousands of households during this time. Investments are shown in Figure 8 below:

Figure 8: Small-scale renewable energy certificate (STC) sub-markets

Year	Solar PV	Solar hot water	Air source heat pumps	Small-scale wind and hydro	STCs
2013–14	180,955	48,132	9,950	7	3
2014–15	165,844	49,564	9,018	10	-
2015–16	130,349	47,704	12,626	16	
2016–17	149,478	45,034	18,307	9	
2017–18	178,981	35,884	16,787	4	-
Total	805,607	226,318	66,688	46	3



Source: Clean Energy Regulator *Annual Report 2018*, p 25, 71; Clean Energy Regulator *Annual Report 2017*, p 63, 64; Clean Energy Regulator *Annual Report 2016*, p 29; Clean Energy Regulator *Annual Report 2015*, p 59; Clean Energy Regulator *Annual Report 2014*, p 43

Figure 8 shows that over five years, the RET has assisted the installation of 806,000 solar panel systems. Rooftop PV’s best performance coincides with the times when it is most needed, helping to reduce costly peaks in demand.

³³ Clean Energy Regulator (2018) *Large-scale generation certificate market update – February 2018*, <http://www.cleanenergyregulator.gov.au/RET/Pages/About%20the%20Renewable%20Energy%20Target/How%20the%20scheme%20works/Large-scale%20generation%20certificate%20market%20update%20by%20month/Large-scale-generation-certificate-market-update-February-2018.aspx>

³⁴ Climate Institute (2016) *What the CCA’s own modelling shows an emission intensity scheme will need to do*, <http://www.climateinstitute.org.au/articles/media-releases/what-the-ccas-own-modelling-shows-an-emission-intensity-scheme-will-need-to-do.html/section/397>

Air source heat pumps heat water or a building by transferring and concentrating heat from outside. Small-scale wind installations, also known as micro-turbines, can power homes, farms and small industry in places where the wind is 'clean' (strong and non-turbulent).

Using a rough NEM-wide emissions intensity of 0.8 tonnes CO₂-e per MWh,³⁵ small-scale installations between 2013 and 2018 will save 76m tonnes CO₂-e over their lifetimes.

³⁵ Climate Institute (2016) *What the CCA's own modelling shows an emission intensity scheme will need to do*, <http://www.climateinstitute.org.au/articles/media-releases/what-the-ccas-own-modelling-shows-an-emission-intensity-scheme-will-need-to-do.html/section/397>

Aggregating crossbench renewable energy benefits

Some renewable energy projects receive benefits from two or all three of the RET, CEFC and ARENA. Certainly many projects that have received loans from the CEFC go on to generate RECs under the RET.

A handful of projects received funding from ARENA and have a CEFC debt. Analysis provided to The Australia Institute by ARENA in late 2016 estimated that at that point three projects it had made grants to also had a debt to the CEFC, totalling \$81 million.³⁶

Total of CEFC loans and ARENA grants going to renewable energy projects during this period is totalled in Figure 9 below:

Figure 9: Total clean energy support saved by Labor and crossbench (2013–2017)

	\$m in funding and investment	\$m in project value
CEFC investment	\$6,652	\$19,000
ARENA grants	\$1,187	\$4,371
Total	\$7,839	\$23,371



Combining the estimates of emissions prevented by five years' worth of the small-scale RET, large-scale RET and CEFC policies gives a total of 334m tonnes CO₂-e, with 68m saved during the five financial years 2013–18 (and the remainder saved over the life of the projects). Because ARENA operates mostly at the research and development and demonstration phases, the technological performance of these projects is unknown and it is not possible to confidently calculate their impact on emissions.

By contrast, the Emissions Reduction Fund is estimated to abate 192m tonnes, of which about 92m tonnes will be abated between its creation in 2014 and 2020, and the remaining abatement happening after 2020.³⁷

³⁶ Data provided by ARENA on request.

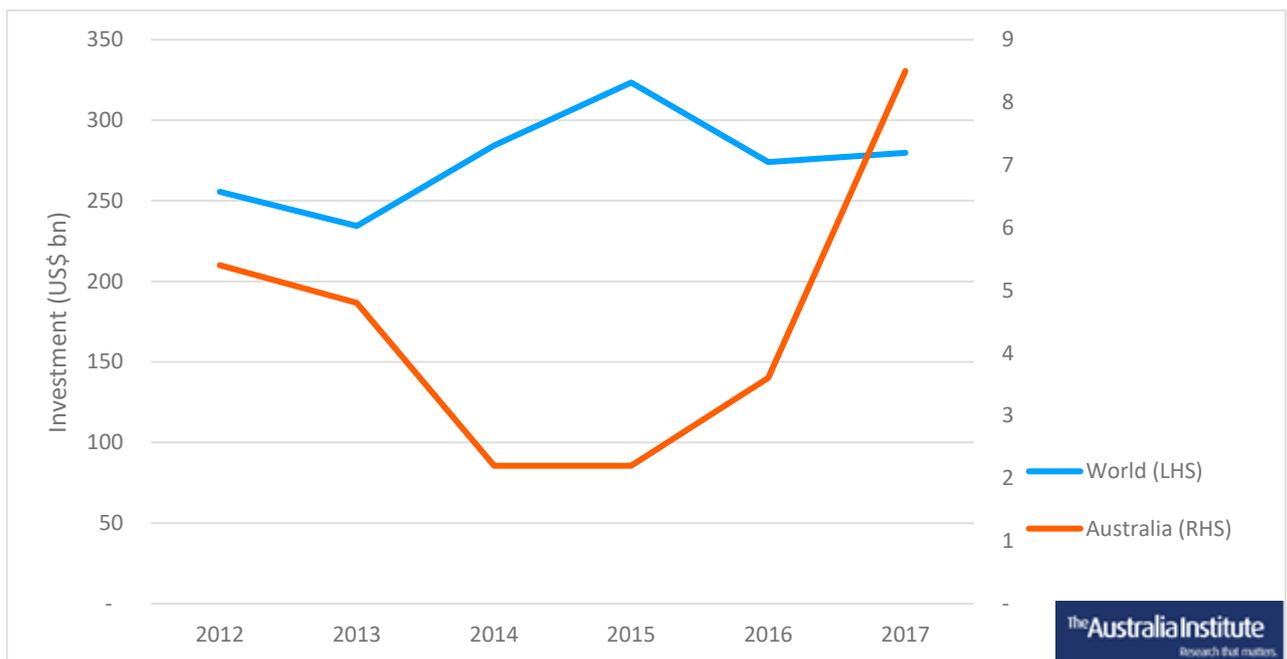
³⁷ Department of the Environment and Energy (2017–2018) *CER announces seventh Emissions Reduction Fund auction results* and *CER announces fifth ERF auction results*, <http://www.environment.gov.au/climate-change/publications/emissions-reduction-fund-update>; St

Australia bouncing back

The Abbott Government's attempts to dismantle the RET, CEFC and ARENA created enormous uncertainty for renewable energy investment in Australia. This uncertainty saw investment in renewables decline in Australia from 2012 to 2015, when international investment was growing.

Figure 10 below shows this decline – investment in Australia fell 46% over three years – from US\$4.5bn per annum in 2012 to US\$2.4bn in 2015 – at the same time that world investment rose by 11% – from US\$257bn to US\$286bn. Australia's renewable investment has since rebounded dramatically, to a record high of US\$8.5 billion in 2017.

Figure 10: Australian and global investment in renewable energy 2012–2017 (US\$ billions)



John (2015) *Emissions reduction fund finally springs into (direct) action*, [http://www.aph.gov.au/About Parliament/Parliamentary Departments/Parliamentary Library/FlagPost/2015/April/direct-action-plan-auction-results](http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/FlagPost/2015/April/direct-action-plan-auction-results); Department of the Environment and Energy (2015) *Tracking to 2020*, <http://www.environment.gov.au/climate-change/publications/factsheet-emissions-projections-2015-16>; Department of the Environment and Energy (2016) *Tracking to 2020 – April 2016 Update*, <https://www.environment.gov.au/climate-change/publications/factsheet-tracking-to-2020-april-2016-update>

Sources: Frankfurt School–UNEP Centre/BNEF (2018) *Global Trends in Renewable Energy Investment 2018*, p 12, 26; Louw (16 January 2018) *Clean Energy Investment Trends 2017*, Bloomberg New Energy Finance, p 27

The survival of ARENA, the CEFC and the RET, thanks to the intervention of the crossbench, kept Australia from falling behind even more dramatically and contributed to the return of investment in 2016 and 2017.

Conclusion

The Senate crossbench has been important in ensuring Australia's key renewable energy policies and institutions remain in place and the sector thrives. Despite the politicisation of renewable energy, it has been a great success story. According to a report in *The Australian Financial Review*, 'Australia can regain its former position as a cheap energy superpower... by embracing cheap wind and solar energy backed by battery, hydro storage and gas'.³⁸

During a time of immense uncertainty for the renewable energy industry the crossbench and Labor Opposition ensured that government grants, loans and revenue worth \$7.8 billion flowed to the sector, as well as the contribution made by the RET. Projects assisted by ARENA and the CEFC in that time are worth a total of \$23.4 billion. These policies and organisations are playing a significant role in Australia meeting its climate targets.

In the year to June 2018 renewable energy supplied a record 15.7% of generation in the NEM.³⁹ The RET plus state based targets in Victoria and Queensland are on track to achieve 37% renewable energy in the NEM by 2030 and the CEFC and ARENA will help achieve that level of generation and lower the price of getting there.⁴⁰

The crossbench's achievements in retaining these institutions highlights the valuable role that the Senate plays as a house of review. It also highlights the importance of engagement with independents and minor parties in Australian politics.

³⁸ Potter (2018) *Australia can be superpower in clean energy*, p 10

³⁹ Saddler (2018) *National Energy Emissions Audit – Electricity Update July 2018*, p 4

⁴⁰ Saddler (2018) *National Energy Emissions Audit – Electricity Update July 2018*, p 14. Note that South Australia also has a state RET of 50% by 2025, but as it is close to being or has already been achieved it will not be a major contributor to 2030 renewables share unless it is increased: Harmsen (2018) *SA election: 75pc renewables achievable with or without Weatherill's target, analyst says*, <http://www.abc.net.au/news/2018-02-21/sa-to-be-powered-by-75-per-cent-renewables-by-2025/9470408>