



Review of Next Generation Renewables Auction and the Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011

Australian Capital Territory (Environment, Planning and Sustainable Development Directorate)

Final summary report - NGR and large FiT Act Review

RO068600 | Ver. 4

15 May 2017

EPSDD - NGR and large FiT Act Review



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Project no: RO068600
 Document title: Final summary report - NGR and large FiT Act Review
 Document No.: RO068600
 Revision: Ver. 4
 Date: 15 May 2017
 Client name: Australian Capital Territory (Environment, Planning and Sustainable Development Directorate)
 Client no: EPSDD - NGR and large FiT Act Review
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 File name: C:\Users\RZauner\Documents\SKM Projects\ACT Govt review of next generation auction and FIT\21 Deliverables\ACT NGR Auction Review - Summary Report v4.docx

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Document history and status

Revision	Date	Description	By	Review	Approved
Ver. 0	31.3.2017	Final	R Zauner	R Zauner	W Gerardi
Ver. 1	3.4.2017	Final (minor changes)	R Zauner	R Zauner	W Gerardi
Ver. 2	6.4.2017	Final (minor changes)	R Zauner	R Zauner	W Gerardi
Ver. 3	3.5.2017	Final (minor changes)	R Zauner	R Zauner	W Gerardi
Ver. 4	15.5.2017	Final (minor changes)	R Zauner	R Zauner	W Gerardi

Contents

Executive summary	1
Nomenclature	4
Introduction	5
Part A: Next Generation Renewables Auction	7
1. Review method	8
2. Description of the Next Generation Renewables Auction	9
2.1 Documentation provided	9
2.2 Governance and administration.....	9
2.3 Evaluation processes	10
2.4 Eligibility assessment	10
2.5 Bid stack shortlisting	12
2.6 Evaluation criteria and value for money assessment.....	12
2.7 Conditions of entitlement.....	13
3. Evaluation of the Next Generation Renewables auction	14
3.1 Appropriateness.....	14
3.2 Value for money.....	16
3.3 Efficiency and effectiveness	19
3.4 Risk allocation.....	23
4. Conclusions and recommendations	26
4.1 Introduction.....	26
4.2 Recommendations	27
Part B: Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011	28
1 Review method	28
2 Evaluation of the Act	29
2.1 Objectives under the Act	29
2.2 Progress of construction.....	31
2.3 Scheme costs and impact to ACT electricity consumers	32
2.4 Integrity of the emission offsets under the scheme.....	35
3 Conclusions relating to the Act	35
3.1 Introduction.....	35
3.2 Recommendations	36

Executive summary

Introduction

Jacobs Group (Australia) Pty Ltd (Jacobs) has been engaged by the Australian Capital Territory (ACT) represented by the Environment, Planning and Sustainable Development Directorate (EPSDD) to review the Next Generation Renewables Auction (NGR) process and the Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011 (the Act).

With respect to both the NGR Auction and the FiT Act itself Jacobs has found that these have met their objectives and have been well received by the renewable energy industry. In general, comments made by Jacobs in this review reflect recommendations for consideration in any future auction under the Act or in any proposed program of renewable energy procurement that might consider using the FiT Act as a reference. Jacobs' findings are summarised below.

Next Generation Renewables auction review

The review of the Next Generation Renewables auction has been conducted as required by Section 22 of the Act.

With respect to the specific issues required to be addressed under the Act, Jacobs finds:

- Value for money has been achieved in the outcome of the auction except with regard to the value for money within the Energy Storage Contribution element of the auction. Under the Energy Storage Contribution element, by which a financial contribution is made to the ACT Government to support the separate but related energy storage program under the Next Generation Renewable program in return for an increase of 5.7% in the average feed-in-tariffs paid by customers, Jacobs does not consider that value for money has been demonstrated with respect to this element of the NGR Auction.
- Administration of the NGR auction has been considered to be both effective and efficient. This is also the consensus of opinions gathered in interviews with stakeholders.
- The auction, like its predecessors, has generated strong competition amongst renewable energy developers and projects and this has led to a value for money outcome.
- In allowing both wind and solar (and other renewable) projects to compete in the same auction the ACT has produced additional competition and price disclosure between the main renewable technologies.

With respect to other factors considered:

- The application of largely the same procedures, transaction documents, evaluation criteria and weightings within the NGR as previous auctions has resulted in a consistent and well-understood process and efficient administration.
- The risk allocation is generally appropriate and effective and is substantially the same as in previous auctions.
- No concerns have been raised that probity was not managed appropriately in the NGR auction process.

Jacobs have made some recommendations for consideration in any future application of the Act to other auctions or to other similar auction processes that might be considered. In summary:

- Where concentration risk arises across auction tranches to a single proponent or a single NEM region other than the customers' NEM region, a specific evaluation should be made as to whether this is acceptable relative to the benefits achieved by the relevant project selection. In the case of the NGR auction outcome, the exposure of the overall FiT auction program to the Hornsdale project and to the South Australian NEM region has not been separately evaluated.
- The inclusion of the Energy Storage Contribution payment into the NGR auction process should have been explicitly called up in the Act to support its inclusion into the NGR auction for recovery from customers under the FiT process

- The selections of the Energy Storage Contribution amounts and evaluation of the value-for-money of this aspect against alternative sources of finance should be explicitly considered by specialist financial consultants and should have been fully evaluated by the Advisory Panel.
- The selection of the final combination of successful projects by the Minister was made to achieve both a capacity and an energy target (to meet, in conjunction with other non-FiT Act renewables, ACT's 100% renewable policy by 2020). Another combination of projects was assessed by the Advisory Panel to have a better value-for-money outcome (though a higher FiT) and the shortfall in estimated energy output for this combination was small (approximately 1.5%) and immaterial when considering the uncertainties in both the ACT's load and the likely variations in renewable energy generation by all of the FiT plants in any particular year. As it eventuated, with the subsequent withdrawal from the Auction of one of the projects by its proponent, this combination would not have ultimately been the best combination anyway. In any future Auction clarity should be provided regarding the importance placed on various criteria (if there are more than one) and assessments made of the confidence within any uncertain parameter used to measure the success of meeting a criterion.
- In selecting the make-up of the specialist panels for the evaluation criteria assessment, it is recommended that panel members have both subject matter and industry expertise rather than just subject-matter expertise where tight time-frames for evaluation make it difficult for panel members to come-up-to-speed.

Review of the Act

The review of the Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011, reproduction 5, has been conducted as required by Section 22 of the Act.

The findings with respect to the Act are:

- The Act has achieved its four objectives of:
 - Objective (a) Promote the establishment of large-scale facilities for the generation of electricity from a range of renewable energy sources in the Australian Capital Region.
 - Objective (b) Promote the development of the renewable energy generation industry in the ACT and Australia consistent with the development of a national electricity market.
 - Objective (c) Reduce the ACT's contribution to greenhouse gas emissions and help achieve targets to reduce the ACT's greenhouse gas emissions.
 - Objective (d) Address the need for urgent action to be taken to reduce reliance on non-renewable energy sources while minimising the cost to electricity consumers.
- The Act has been successful in stimulating wind and solar projects in the NEM. The Act and the program of auctions under the Act are highly regarded in the renewables industry and have resulted in strong competition for FiT entitlements.
- The Act has reduced the ACT's greenhouse gas emissions and progressed the renewable electricity percentages towards the legislated targets.
- A review of the progress of construction of the projects that have been awarded FiT entitlements under all four auction tranches has been undertaken. Apart from two missed milestones, which are only intermediate milestones, the construction progress appears to be on-track according to the reports provided by the generation plant proponents. The two departures are not considered material.
- A review of the scheme costs and its impact on ACT consumers has been undertaken. Using forecasts of NEM electricity prices for a single base-case scenario used by Jacobs against expected generation profiles of the FiT projects, the costs are forecast to rise to \$47.4M (real \$2017) in 2020, or \$16.22/MWh on the average expected ACT demand of 2920 GWh (after network losses), and to then fall. The cost per residential customer in 2020 can be estimated as \$114/year, or \$2.18/week (in \$2017). This is lower than the cost presented on the ACT Government's website of "*Total costs per household of achieving 100% renewables are expected to peak in 2020 at around \$5.50 per household per week*".

- It is considered reasonable to benchmark the FiT scheme costs against a Jacobs' forecast price for LGCs (being a representation of the cost of renewable electricity over and above the cost of non-renewable electricity). Such a comparison between expected costs under the FiT with expected LGC prices appears favourable in all years evaluated other than 2014/15 and 2015/16 where the FiT scheme costs have a higher percentage of solar generation than other years.
- This does not include the cost impact of the Energy Storage Contribution financing scheme added to the NGR Auction and discussed under the NGR Auction review sections of this Report. The estimated impact of this component of the program is \$1.11/MWh and the additional impact on residential customers would be \$0.15/week on the same basis as the calculations presented above (in \$2017).

Some recommendations have been provided for consideration in any future programs anticipating use of similar legislation, or should the FiT Act be extended. These include:

- Consideration should be given to shifting the spot price reference node used in the FiT settlements to the local regional reference node relevant to the customers (the NSW regional reference node in the case of ACT customers). This would transfer some risk from the customers to the successful project developers but this allocation is considered common in the NEM and it should be evaluated whether this can be done without adverse impact on the outcome of auctions by way of competition or FiT pricing.
- An assessment should be made of the inclusion of Clause 14 of the Act allowing FiT entitlement holders to surrender the entitlement. This provision may result in surrender of entitlements earlier than the full term, and this early surrender is a plausible outcome given the structure of the tariffs as constant in nominal terms, potentially rising electricity prices, future programs such as carbon pricing in the electricity sector, and upon the expiration of the current Australian large-scale mandatory renewables program (LRET) presently scheduled for 2030.
- The Energy Storage Contribution aspects of the NGR FiT auction should have been explicitly included in the Act republication number 5, or at least into Disallowable Instruments under the Act, to make transparent that this aspect has been considered by Parliament and found to be within the scope of the Act and the intentions of Parliament in the legislation.
- The Act should make clear that LGCs transferred to the ACT under the program must be voluntarily surrendered and not on-sold.

Nomenclature

ACR	Australian Capital Region
ACT	Australian Capital Territory
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CFD	Contract For Differences
EPSDD	Environment, Planning and Sustainable Development Directorate
EV	Evaluation criterion
FiT	Feed-in-Tariff
LGCs	Large-Scale Generation Certificates
LRET	Large-scale Renewable Energy Target (the colloquial name for the program under the Renewable Energy (Electricity) Act 2000 (Cwth))
MW	Megawatts
MWh	Megawatt-hours
NEM	National Electricity Market
NER	National Electricity Rules
NGR	Next Generation Renewables
PPA	Power Purchase Agreement
RET	Renewable Energy Target
RFP	Request for Proposals
TFG	Treasury Financial Guarantee
WF	Wind Farm

Introduction

The Australian Capital Territory (ACT) Government established the Large-scale Feed-in-Tariff (FiT) Scheme under the Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011 ('the Act'), passed on 8 December 2011. The current Republication of the Act is R5, dated 14 May 2016. The Act enables the Minister for Climate Change and Sustainability ('the Minister') to grant FiT entitlements for large-scale renewable energy generators.

Under the Act, the ACT has released four tranches of FiT entitlements as listed in Table 1.

Table 1 Summary of the FiT entitlement projects

Project	Solar Auction (two rounds)			Wind Auction I			Wind Auction II		Next Generation Renewables auction	
	Royalla	OneSun Capital	Mugga Lane	Coonoor Bridge	Hornsedale 1	Ararat	Hornsedale 2	Sapphire 1	Hornsedale 3	Crookwell 2
Proponent	FRV	Elementus Energy ¹	Zhenfa ²	WindLab	Neoen	RES	Neoen	CWP	Neoen	Union Fenosa
MW	20	7	13	19.4	100	80.5	100	100	109	91
GWh/y indicated	37	15	22	81	414	271	404	350	414	304
FiT, \$/MWh fixed	186	186	178	81.50	92	87	77	89.10	73 ³	86.60 ³
Est. completion	Aug. 2014	2017	2016	Feb. 2016	Feb. 2017	Apr. 2017	Dec. 2018	May 2018	Oct. 2019	Sep. 2018

Jacobs has been engaged by EPSDD to review the Next Generation Renewables Auction process and to review the Act.

The requirements for the two reviews and the legislated scope of the reviews are provided within the Act at:

22 Review of Act

- 1) *The Minister must review a FiT capacity release within 6 months after the last FiT entitlement under the release is granted.*
- 2) *A review under subsection (1) must include—*
 - a) *an evaluation of the outcomes in relation to achieving value for money; and*
 - b) *in relation to a competitive process for a FiT capacity release—an evaluation of the process, including the administration of the process and its effectiveness in generating competition.*
- 3) *The Minister must review the operation of this Act after the end of its 5th year of operation, and at least once every subsequent 5 years of its operation.*
- 4) *A review under subsection (3) must include—*
 - a) *an evaluation of the progress of construction of large renewable energy generators; and*

¹ Now developed by Impact Investment Group

² Now developed by Maoneng

³ An additional amount will be payable under the FiT for the Energy Storage Contribution element

- b) a consideration of the effectiveness of the operation of this Act in achieving the objects of this Act; and*
- c) a consideration of the impact of costs under this Act on electricity consumers.*
- 5) *The Minister must present a copy of a review to the Legislative Assembly not later than 6 months after the end of the period for undertaking the review.*

Jacobs has reviewed these aspects separately in this report:

- Review of the NGR auction process under Clause 22(1) and (2) of the Act Part A: Next Generation Renewables Auction
- Review of the Act under Clause 22(3) and (4) of the Act Part B: Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011

The last FiT entitlement under the NGR was granted on 18 August 2016⁴ and hence the review of the NGR is due on or before 18 February 2017. The Act became effective on 15 December 2011 and hence the review of the Act must be undertaken after 15 December 2016 and is due on or before 15 June 2017.

⁴ Announced on 23 August 2016

Part A: Next Generation Renewables Auction

The Australian Capital Territory (ACT) Government established the Large-scale Feed-in-Tariff (FiT) Scheme under the Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011 ('the Act'), passed on 8 December 2011. The Act enables the Minister for the Climate Change and Sustainability ('the Minister') to grant FiT entitlements for large-scale renewable energy generators.

The Next Generation Renewables (NGR) Auction - opened on 1 April 2016 and 109 MW of capacity became available for the grant of FiT capacity by a competitive process. On 29 April 2016, the Minister notified that a further 91 MW would be made available by either a competitive process or direct grant in order to meet a 100 per cent Renewable Energy Target in ACT announced on that date (the former target was for 90% renewables). The reverse auction offered the opportunity of 20-year FiT entitlement for wind or solar projects (or any other notified renewable technology), with a minimum of 9 MW of generating capacity, that are located within the ACR or a participating jurisdiction in the National Electricity Market (NEM).

Fifteen proposals were submitted to the Auction with a total capacity of 1,078 MW and FiT prices ranging from \$73/MWh to \$139/MWh. Nine of the proposals were for wind generation plants, five were for solar generators and one for a combined wind and solar generator.

The results of the NGR auction were announced in August 2016, with two successful projects being granted a FiT entitlement:

- Neoen's 109 MW Hornsdale Wind farm Stage 3, located north of Jamestown in South Australia
- Union Fenosa's 91 MW Crookwell 2 Wind Farm, located south-east of Crookwell in New South Wales

The timetable was

- 1 April 2016 RFP released
- 7 April 2016 Notification date of Disallowable Instrument DI2016-31 releasing the 109 MW tranche
- 29 April 2016 Additional 91 MW tranche released
- 12 May 2016 Notification date of Disallowable Instrument DI2016-48 releasing the 91 MW tranche
- 25 May 2016 Proposals received in response to the RFP
- 7 June 2016 Ministerial brief recommending shortlisting issued
- 14 June 2016 Minister formally accepted the shortlisting recommendations
- 16 June 2016 Advisory Panel provided its recommendations to the Minister
- 23 August 2016 Minister announced the successful projects under the NGR auction

Jacobs has been engaged by the Environment, Planning and Sustainable Development Directorate (EPSDD) to conduct an independent review of the Next Generation Renewables Auction process and outcomes in accordance with section 22 of the Act, which requires the Minister to "review a FiT capacity release within 6 months after the last FiT entitlement under the release is granted".

1. Review method

To inform the Review, a desktop assessment of information relating to and underpinning the Auction process and all of the submitted proposals was undertaken. Jacobs also conducted interviews providing the opportunity for participants to give feedback on the process. The parties interviewed included the former Minister for the Environment and Climate Change, Advisory Panel members, EV-2 and EV-3 sub-panel members, the Auction Secretariat, proponents, and a representative from ActewAGL Distribution. In total, eighteen people were interviewed.

Based on the assessment of information provided from the relevant documentation and the interviews, the Next Generation Renewables Auction process and outcomes were assessed against five themes, as summarised in Figure 1.

Figure 1 Next Generation Renewables Auction evaluation framework

Appropriateness	Does the Auction align with the objectives of the Electricity Feed-in-Tariff Act?
Value for Money	Did the process deliver "value-add" outcomes for the Territory that are aligned with the priorities of the ACT Government?
	Did the process deliver value for money outcomes for the Territory based on the assessment of the FIT price against other ACT Government priorities?
Efficiency	Was the administration of the Next Generation Renewables Auction process commensurate with ACT Government capability and capacity?
	Was there certainty and predictability in the costs of the process?
	Were governance and management practices effectively used to carry out the process and manage risks, transparency and accountability?
Effectiveness	Did the process stimulate an appropriate level of industry participation and competition?
	Was the quality of proposals consistent with government expectations?
Risk Assignment	Did the NGR auction process appropriately attribute risk between industry and the Territory?

The results of that evaluation are given in section 3.

In conducting the review Jacobs noted the matters raised in reviews of the previous auctions, and noted the Government's responses. Jacobs has not re-raised issues that have been previously addressed.

2. Description of the Next Generation Renewables Auction

The ACT's Climate Change Action Plan 2 (AP2) sets the framework for the Next Generation Renewables Auction, and seeks to achieve:

- 100% renewable energy mix by 2020
- 40% reduction in greenhouse gas emissions on 1990 levels by 2020
- Zero net emissions (carbon neutrality) by 2050

The FiTs awarded under the reverse auction mechanism are to be firm, fixed and flat over a 20 year period.

2.1 Documentation provided

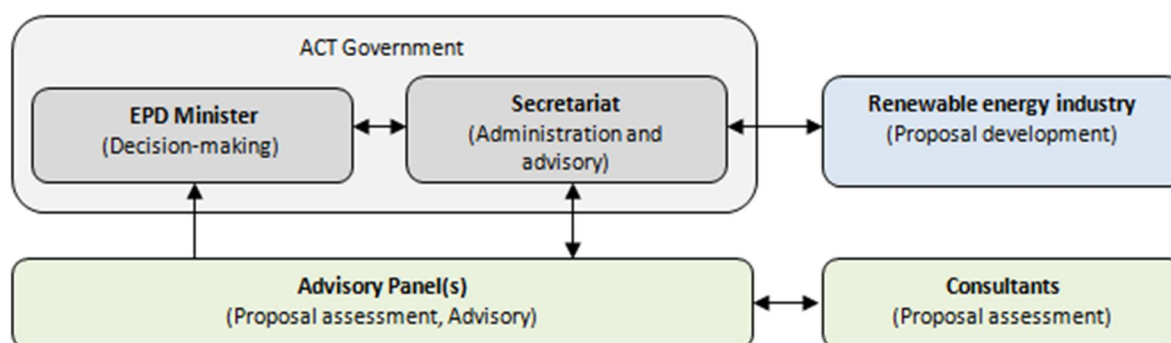
On May 2016, the Secretariat of the Next Generation Renewables Auction released the RFP documentation detailing the auction process and outlining the eligibility and evaluation criteria. The documentation included:

- Australian Capital Territory Next Generation Renewables Auction RFP
- Attachment A – Next Generation Renewables Proposal Form
- Attachment B – Financial model template
- Attachment C1 - Draft Deed of Entitlement
- Attachment C2 - Draft Deed of Entitlement - Group and Trust Structure
- Attachment D - Renewable Energy Local Investment Framework
- Attachment E - Best practice community engagement in wind development
- ActewAGL Distribution Large Scale Renewable Generation Settlement Procedure-Aug 2015
- Next Generation Renewables Auction Questions and Answers
- Next Gen Renewables Auction Industry Briefing

2.2 Governance and administration

The key governance arrangements for the evaluation and decision making under the Next Generation Renewables Auction was set out in the RFP document and is shown in Figure 2.

Figure 2 Next Generation Renewables Auction Governance and Administration



The final decision for the grant of the FiT entitlements was undertaken by the Minister of the Environment and Climate Change after taking into consideration the recommendations of an Advisory Panel made up of senior advisors.

The Advisory Panel conducted the eligibility assessment of the proposals submitted and was also responsible for ranking the eligible proposals by FiT price from lowest price to highest.

Separate advisory sub-panels were formed to undertake the review of proposals against the evaluation criteria EV2 and EV3 and provide specialist advice to the Advisory Panel.

Consultants were also used to review and evaluate proposals against the EV1 criterion, and provide their recommendations to the Advisory Panel.

Finally, the Advisory Panel reviewed all the eligible proposals and, based on its members' experience and the consultants' and sub-panels' evaluations, assigned scores to the proposals and conducted a value for money assessment as described in paragraph 3.2. The result of this assessment provided the base of the recommendations to the Minister.

The process was supported by the Next Generation Renewables Auction Secretariat that provided a point of contact with Proponents as well as administrative support and a range of functions related to the evaluation of Proposals.

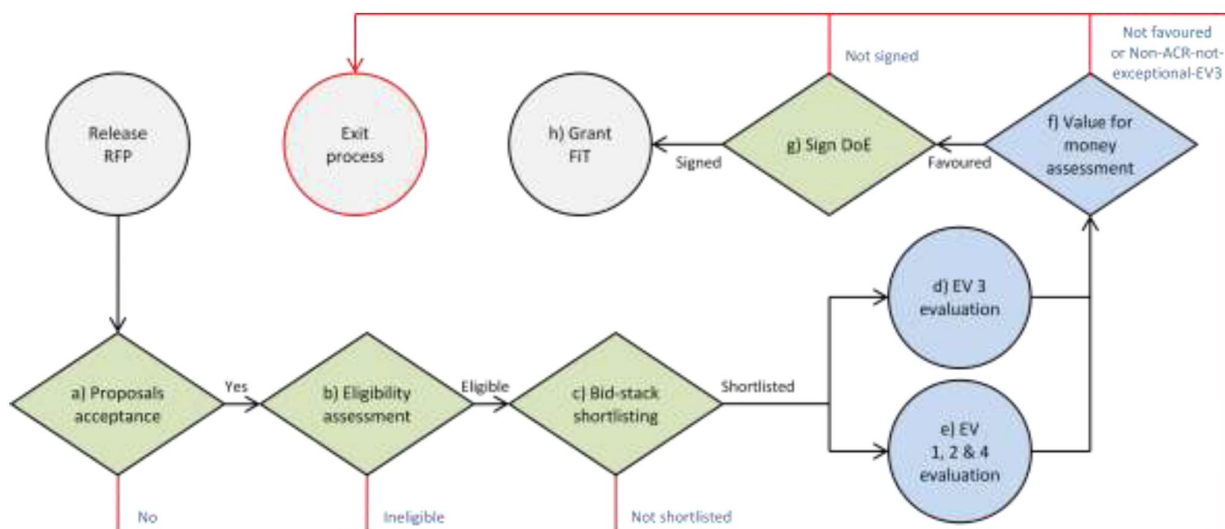
2.3 Evaluation processes

The five stages prior to signing a deed of FiT were:

1. Proposals accepted
2. Eligibility assessment
3. Bid stack shortlisting
4. EV1,2,3 and 4 evaluation; and
5. Value for money assessment

A summary of that process is given in Figure 3.

Figure 3 Next Generation Renewables Auction proposal evaluation process



2.4 Eligibility assessment

The Request for Proposals (RFP) which governed the auction process was released by the Secretariat, and set the parameters for the eligibility and evaluation of bids.

Eleven eligibility criteria relating to the entity putting forward the project and the generating system proposed had to be met for the bid to proceed to full assessment (Table 2).

Table 2 Eligibility criteria

Proponent eligibility criteria	EL1. A Proponent must be a non-tax exempt Australian company incorporated under the Corporations Act 2001 or a wholly or majority owned Commonwealth or Australian state or territory government body.
	EL2. Proposals will only be accepted from a single legal entity .
	EL3. A Proponent must not be insolvent , or become subject to an Insolvency Event.
	EL4. A Proponent must not have had a judicial decision relating to employee entitlements made against it (not including decisions under appeal) and not have paid the claim.
	EL5. A Proponent must not have been named as an organisation that has not complied with the Workplace Gender Equality Act 2012 (Cth).
Proposal eligibility criteria	EL6. A Proponent must submit a completed Proposal Form (Attachment A) and all required attachments by the specified closing date and time.
	EL7. Proposals must be for a Renewable Energy Generator .
	EL8. Proposals must be for the establishment of a single generating system that has no less than 9MW and no more than 109MW generating capacity as determined at its point of connection to an interconnected national electricity system. These capacity amounts also apply to Alternative Capacities nominated in part F of the Proposal Form.
	EL9. Generating systems must be connected to the interconnected national electricity system (as defined in the Act).
	EL10. Proposals must be for a new (yet to be constructed) generating system.
	EL11. Proposals must nominate the additional FiT payment required against each prescribed Energy Storage Contribution band, and proponents must be prepared to pay up to \$230,000 per megawatt in the following installments (or before): <ul style="list-style-type: none"> 5% on signing the Deed of Entitlement; 5% within 6 months of signing the Deed of Entitlement; 45% on reaching Financial Close; and 45% one year after reaching Financial Close.

The eligibility assessment was conducted by the Advisory Panel that recommended that all 15 proposals would be considered eligible.

Project type and location

Pursuant to section 11 of the Act, the Auction sought bids for renewable energy projects located either in “the Australian capital region; or outside of the Australian capital region if the Minister is satisfied that the person’s proposal –

- i. offers exceptional economic development benefits to ACT renewable energy industries; and
- ii. minimises costs to electricity consumers”

Multiple proposals from one Proponent

Proponents were permitted to submit more than one proposal (to a maximum of two), provided that they were not mutually exclusive – i.e. two alternative generating systems could not be proposed for the same site. Multiple proposals would be assessed independently and could be granted separate FiT entitlements.

Alternative Capacities

Proponents were allowed to nominate different capacities and corresponding FiT prices for their proposals that could be mutually exclusive. Where Proponents nominated Alternative Capacities and FiT prices, the bid-stack shortlisting was only based on the FiT price in the Primary Proposal and not on any of the alternative FiT prices.

The alternative capacities gave some additional flexibility to the Advisory Panel members that needed to evaluate the best value for money proposals that also, when aggregated, met the ACT 100% energy target.

Energy Storage Contribution

The Next Generation Renewables Auction is part of the ACT Government's Next Generation Renewables strategy that aims to stimulate the rollout of distributed energy storage in the Territory. The successful proponents in the Next Generation Renewables Auction are required to make a financial contribution (an Energy Storage Contribution) of up to \$230,000 per MW of renewable energy generation capacity towards the rollout.

2.5 Bid stack shortlisting

The proposals that were deemed eligible were ranked by FiT price from lowest price to highest and shortlisted on the basis of this ranking. The purpose of this stage was to avoid delays in undertaking evaluation of proposals that had high bids. Where Proponents nominated alternative capacities with corresponding FiT prices, the shortlisting was only based on the FiT price of the primary proposal. The shortlisting resulted in the Advisory Panel further considering 12 of the 15 proposals.

2.6 Evaluation criteria and value for money assessment

The proposals were assessed against the evaluation criteria shown in Table 3 and defined in the RFP. Expert consultants and sub-panels provided their recommendations to the Advisory Panel. The consultants and sub-panels' recommendations used broadly based metrics (for example the financial consultant's metrics were "Strong", "Moderately Strong", "Moderate", "Moderately Weak" or "Weak". The EV2 sub-panel used "High", "Medium" and "Low", the EV3 sub-panel used "Weak", "Moderate", "Strong" and "Very strong"). The Advisory Panel considered the grades provided by the consultants and sub-panels and applied a value out of 10 to each proposal for each criterion.

Table 3 Evaluation criteria

Evaluation Criteria	EV1 Risks to timely project completion (Weighting - 50%)
	EV2 Local community engagement (Weighting - 20%)
	EV3 ACT economic development benefits (Weighting - 20%)
	EV4 Reliance on Treasury Financial Guarantee (Weighting - 10%)

The EV4 criteria score was calculated based on the level of reliance on the Treasury Financial Guarantee on a linear basis from 0 (full reliance at the maximum allowable level specified in the RFP) to 10 (no reliance).

The Advisory Panel applied the scores against those evaluation criteria with the weightings identified in Table 3 and formed a value-for-money score as the weighted score from the evaluation criteria divided by the FiT price. The criteria evaluation and the value for money assessment are discussed in more detail in paragraph 3.2. Based on that assessment and taking into consideration the requirement to achieve the ACT's 100% renewable energy target by 2020, the Advisory Panel provided to the Minister its recommendations along with a summary of the FiT prices, scores for the evaluation criteria and the value-for-money score.

The Energy Storage Contribution (ESC) component was not evaluated within the selection of the recommended developers under the value-for-money criterion. The Advisory Panel noted that this did not have a material impact on the recommendation.

2.7 Conditions of entitlement

The Act also provides the Minister with the power to impose conditions on FiT entitlements regarding key milestones and the implementation of Proponents' proposals. For example, successful Proponents must submit quarterly progress reports during the construction of their project and annual reports thereafter for the duration of the period of FiT entitlement (20 years). The format of these is specified in successful bidders' "Deed of Entitlement". Additionally, the holders of FiT entitlements are obligated to comply with off-take arrangements, including:

- Arranging their own network connection and registering with AEMO to sell on the spot market.
- Arranging their own access to land for the wind or solar farm.
- Creating and registering Large-scale Generation Certificates (LGCs) for all eligible generation, transferred at no cost to the ACT.
- Registering the generating system as a GreenPower generator, and
- Obtaining any necessary authorisations or approvals required to deliver their proposal in accordance with applicable laws and policies such as development approval.

3. Evaluation of the Next Generation Renewables auction

The purpose of the evaluation is to consider the impacts and outcomes of the Next Generation Renewables Auction process and determine whether:

- The objectives of the Act have been met (i.e. **appropriateness**)
- A **value for money** outcome has been attained
- The Next Generation Renewables Auction process was **efficient** and **effective**
- The assignment of **risk** outcomes between proponents and the Territory was appropriate and effective

3.1 Appropriateness

The appropriateness of the Next Generation Renewables Auction process was assessed by analysing whether it aligned with the objectives of the Act. The four objectives of the Act and the evaluation as to whether the Auction was aligned with each one of them is given below.

Objective (a): Promote the establishment of large-scale facilities for the generation of electricity from a range of renewable energy sources in the Australian Capital Region.

As the fourth and potentially final auction release of capacity under the Act, the Next Generation Renewables Auction allowed for proposals for wind or solar or any other renewable source that is not currently provided under the Act or even a combination of the above. The shortlisting process result included only wind generators since this was the lowest cost renewable energy source to achieve the given targets.

The Hornsdale project will not be built within the ACR, however such projects are required to provide substantial economic development investments into the ACR including ACR-based research and development, training and businesses. A summary of the commitments of the successful proponents is provided in Table 4. The relevant sub-panel (EV3) also considered other factors, such as the longevity of various commitments, when reaching its conclusions and recommendations.

Table 4 Local investment benefits of the successful proposals

Project	Hornsdale 3	Crookwell 2
Stated local investment benefit ⁵	\$55M	\$125M
Nature of the local benefits committed to:	<ul style="list-style-type: none"> • Increasing staffing in the proponent's existing Canberra-based operations management centre and • Development of a Renewables-to-Hydrogen electrolyser and purchase of twenty hydrogen powered vehicles 	<ul style="list-style-type: none"> • The establishment of the Asia-Pacific Renewable Energy Centre (APREC) in the ACT to manage Australian wind asset and operations; and, • A Renewable-Power-to-Gas (or ReP2G) partnership with ANU and ActewAGL

The location of the successful projects is consistent with the outcomes of previous auctions, and provided strong benefits in terms of both the FiT provided and the value-for-money scores relative to other projects.

Jacobs considers that the objective is achieved.

⁵ "200 MW Next Generation Renewables auction factsheet", at http://www.environment.act.gov.au/_data/assets/pdf_file/0006/918528/200-MW-Next-generation-Renewable-Factsheet.pdf

Objective (b): Promote the development of the renewable energy generation industry in the ACT and Australia consistent with the development of a national electricity market.

The Next Generation Renewables Auction, as for the previous auctions, is considered to provide a financially stable mechanism for renewable projects to secure financing and commence construction. Many of the proponents' projects were essentially "shovel ready" and only needed such a mechanism to reach financial closure. For many the Auction was still the "only game in town" and the timing of the auction was particularly important given the lack of viable contracting arrangements and supporting policy available through other Australian governments (state and Commonwealth) or local merchant options

The Next Generation Renewables Auction has further consolidated the ACT's reputation as a hub for renewable energy, while other states (like Victoria and Queensland) are following ACT's example by investigating reverse auctions as a potential mechanism for the competitive procurement of renewable energy.

Jacobs considers that the objective has been achieved.

Objective (c): Reduce the ACT's contribution to greenhouse gas emissions and help achieve targets to reduce the ACT's greenhouse gas emissions

The successful renewable generators are required to create Large-scale Generation Certificates (LGCs) based on the amount of eligible energy produced above their baseline. They are also required to transfer these LGCs to the ACT through the FiT entitlement.

The development of the 200 MW of wind power projects under the NGR was expected to displace 852,000 tonnes per year of greenhouse gas emissions in 2020⁶. The National Greenhouse Accounts do not separately indicate the stationary energy contribution of the ACT to Australia's emissions (they are counted within the NSW total)⁷, and in terms of "Scope 1" (or direct emissions) the change in emissions consequent on the development of the NGR projects will be reflected at the location of the fossil fuelled generation that is displaced by the NGR projects. In terms of "Scope 2" emissions (being result of activities that consume electricity, heat or steam at the facility), the NGR outcome will have the effect of reducing the greenhouse gas intensity of electricity consumed by ACT residences and businesses. Since the development of the NGR projects can be said to have been stimulated by the access to the FiT provided, it can be said that the NGR auction has contributed to reducing the ACT's contribution to Australia's greenhouse gas emissions.

The ACT has its own target for emissions reductions of 40% below 1990 levels by 2020⁸. This is a legislated (interim) target within the Climate Change and Greenhouse Gas Reduction Act 2010⁹. Under this Act, the ACT's emissions are calculated by a method provided in a Determination¹⁰ by the Minister and which recognises the renewable energy amounts paid for by ACT consumers as being credited to the ACT when calculating the ACT inventory. By this measure the NGR will help to achieve the targets to reduce the ACT's greenhouse gas emissions.

Therefore, Jacobs finds that the objective is achieved.

⁶ Factsheet, op. cit. EPSDD have since conducted additional modelling incorporating the effect of closure of Hazelwood Power Station and the current expected displacement is 652,000 tonnes/year

⁷ Commonwealth Department of the Environment, "State and Territory Greenhouse Gas Inventory 2014", at

<http://www.environment.gov.au/system/files/resources/319ea5f4-e3d9-4af1-97eb-2a4ba661713e/files/state-territory-inventories-2014.pdf>

⁸ <http://www.environment.act.gov.au/cc/acts-greenhouse-gas-emissions>

⁹ <http://www.legislation.act.gov.au/a/2010-41/default.asp>

¹⁰ Climate Change and Greenhouse Gas Reduction (Greenhouse Gas Emissions Measurement Method) Determination 2016, Disallowable instrument DI2016-257 at <http://www.legislation.act.gov.au/di/2016-257/current/pdf/2016-257.pdf>

Objective (d): Address the need for urgent action to be taken to reduce reliance on non-renewable energy sources while minimising the cost to electricity consumers

The Next Generation Renewables Auction is considered to provide a financially stable mechanism for renewable projects to secure financing and commence construction. Many of the proponents' projects were essentially "shovel ready" and only needed such a mechanism to reach financial closure. For many the Auction was still the "only game in town" with respect to offering a long-term PPA, and the timing of the auction was particularly important given the lack of viable alternative contracting arrangements and supporting policy available through other Australian governments (state and Commonwealth) or local merchant options.

Comments received from stakeholders interviewed, particularly the proponents of projects, strongly supported this position.

The Next Generation Renewables Auction has further consolidated the ACT's reputation as a hub for renewable energy, while other states (like Victoria and Queensland) are following ACT's example by investigating reverse auctions as a potential mechanism for the competitive procurement of renewable energy.

With regard to the incorporation of the energy storage contribution into the NGR auction, the Advisory panel members interviewed considered that the energy storage contribution was aligned with the scope and objectives of the Act and provided an efficient and effective way of funding the energy storage program.

Therefore, Jacobs finds that the objective is achieved.

3.2 Value for money

The Next Generation Renewables Auction process was expected to deliver 'value-add' outcomes for the Territory that are aligned with the priorities of the ACT Government. In order to achieve that outcome the process applied evaluation criteria that clearly communicated the ACT Government's priorities to industry, and enabled the assessment to consider the risks and costs associated with each proposal in making a value for money decision. The process recognised and encouraged innovation and leading practice in local community engagement, secured strong investment in the ACT as a hub for renewable energy skills and research, and selected projects that were assessed as having relatively low risks to timely project completion. However benefits accruing to local ACT businesses associated with construction and operation of the wind farms were limited where the successful projects are based outside of the ACR (Hornsedale in the case of the NGR auction).

The priorities of the Government were specified through the four evaluation criteria EV1, 2, 3 and 4 while their importance to the Government was indicated through the assigned weights. The weightings to be applied to each criterion, and the means of producing a value-for-money index from the weighted scores and the FiT process, was disclosed to the bidders in the RFP. The four evaluation criteria are discussed below.

EV1 Risks to timely project completion

Expert consultants were assigned to provide due diligence advice to the Advisory Panel and showcase the strengths and weaknesses of the submitted proposals against that criterion. EV1 was considered to be the most significant of all the evaluation criteria and was assigned the greatest weighting (50%). After considering the expert consultants reports, the Advisory Panel made its own assessment and settled scores for each proposal against this criterion.

Both successful proposals displayed high scores as they both demonstrated a very low risk of project completion difficulties.

EV2 Local community engagement

The ACT Government had a direct interest in promoting good community engagement process and outcomes for the projects participating in the Next Generation Renewables Auction since adverse community impact is a risk not only to the proponent but also to the Territory. To ensure that the Proponents would demonstrate a high community engagement, a detailed Community Engagement Plan was requested by the Proponents as an attachment to their proposal. They were also supplied the ACT's "Best practice community engagement in wind development" paper to help inform their understanding of the range of community engagement approaches and practices that could potentially be applied at various stages of their proposal. This criterion had a 20% weighting at the value for money evaluation, same as in the previous auctions, and that was considered by most people interviewed to have served the Act's objectives.

The EV2 sub-panel was assigned with the task to evaluate the Proponents submitted Community Engagement Plans and provide their recommendations to the Advisory Panel. The sub-panel noticed that between proposals there were significant differences in the degree of leadership, innovation and responsiveness to local concerns. However, the members were satisfied with the assessment results and felt confident in their recommendations.

EV3 ACT Economic Development Benefits

The ACT Government was committed to develop an ACT-based renewable energy industry, create jobs and grow and diversify the ACT economy through the Next Generation Renewables Auction. The guidelines for that criterion was given to the Proponents through the Renewable Energy Local Investment Framework that included the priority areas for renewable energy business development and investment attraction to stimulate sustained renewable energy industry development and job creation in the Territory. The RFP also provided some illustrative examples of initiatives that were valued highly as part of previous auctions. This criterion was also weighted with 20% as in the previous auctions, while non-ACR proposals that did not score at least 7 out of 10 for this criterion were not considered further in the evaluation process.

The EV3 sub-panel was assigned with the task to evaluate the proposals against the EV3 criterion and provide its recommendations to the Advisory Panel. The members of the EV2 sub-panel were impressed with the quality of most proposals put forward although it was acknowledged that there was some variation between them.

Both the Hornsdale Wind Farm (Stage 3) and the Crookwell Wind Farm showcased very high local investment benefits and they were rated accordingly. Table 4 provides a summary of their commitments.

EV4 Reliance on Treasury Financial Guarantee (TFG)

The Auction provided Proponents with the option of varying the extent of their reliance on the Treasury Financial Guarantee (TFG) by proposing a year 1 Proposed Guarantee Cap Multiplier (PGCM) between \$0 and \$1,230,000 per MW_{AC} of generating capacity.

Low reliance on the TFG reduces the risk or liability of the ACT Government regarding the 20-year FiT entitlement, but increases the risk to Proponents as financial institutions perceive this as a significant sovereign risk. Consequently, Proponents and their financial institutions consider this risk in financial terms, which results in a low reliance on the TFG leading to higher FiT costs and vice-versa.

The Proponents mentioned that the Treasury Financial Guarantee introduced a commercially balanced risk between the parties, by alleviating some of the risk to the projects of a potential amendment of the Act by the Minister.

The evaluation of this criterion, with weighting 10%, was a straightforward calculation that was undertaken by the Advisory Panel.

Value for Money Assessment

Based on the previous criteria evaluation, the Advisory panel assigned a total score for each proposal that was the result of each individual criterion score multiplied by the criterion weighting:

$Total\ score = EV1\ score \times 50\% + EV2\ score \times 20\% + EV3\ score \times 20\% + EV4\ score \times 10\%$

The Advisory Panel used the total score of each proposal and the proposals were ranked according to the relationship of the total score to the FiT price nominated in each proposal to arrive at a value for money index (weighted score/FiT price).

The net FiT price of each proposal, including its regional wholesale market price, the regional wholesale price discount or premium applicable to its energy source, and its marginal loss factor, was also considered in the context of final pass-through costs to consumers. As provided for in the RFP, the additional FiT required at varying Energy Storage Contribution bands was also considered in each proposal's value for money assessment but were not used in the ranking process.

Five projects were identified to the Minister as having the highest overall value for money. These five included the two successful projects as well as one project that was highly ranked but was withdrawn from the auction by its proponent prior to the Minister's decision. These five projects also included all but one of the lowest FiT price projects.

The Advisory Panel recommended two projects that had the best value-for-money and low overall risk to project completion but which was noted to be marginally (1.45%) short of the 690GWh per annum assessed as required under the NGR Auction to achieve the Territory's 100% renewable energy target in 2020. Other combinations that met the energy target were identified but these could not be arranged to include one of the high ranked bids due to size inflexibility. The combination with the next highest ranking project that did meet the energy target was the combination ultimately selected by the Minister.

The projects awarded the FiT entitlement through the Auction were the Hornsdale Wind Farm (Stage 3) with a FiT of \$73/MWh and, for Crookwell Wind Farm, a 91 MW capacity was finally accepted with a FiT of \$86.6/MWh (in both cases the FiT stated is prior to the adjustment for the Energy Storage Contribution).

Value for Money Assessment – Energy Storage Contribution

The energy storage contribution arrangements are a purely financial mechanism for the financing of the roll-out of 36 MW of distributed battery storage in over 5,000 ACT homes and businesses under the Government's Next Generation Storage program¹¹.

The energy storage contributions to be made were announced as \$25M¹². This is payable in four tranches over the time to the first anniversary of Financial Close for the project(s). Using the expected amount of eligible generation from each of the two successful bids and the ESC component added to the FiT prices, the weighted average FiT impact is \$4.49/MWh on expected generation of 718,229 MWh/year. As the FiT price does not escalate these contributions are effectively constant in nominal terms. The indicated costs of the ESC components are thus \$3.227M/year nominal for 20 years. A detailed financial model including timings of payments has not been developed however approximate analysis indicates the effective cost of these funds is approximately 12.2% nominal or 9.6% real.

Prima-facie this represents a relatively high cost of funds.

While the amount of contribution received from the successful developers is known, the amount that ACT customers will pay in the future is uncertain due to the uncertainty in the actual generation that will be produced by the two plants. If the generation amount is higher than the estimated amount upon which the assessment was made then the ACT customers will pay more for the ESC facility than has been anticipated (and vice versa). The maximum amount of generation the successful developers can claim in a year is capped under the Deeds.

Jacobs recommends that the value-for-money and uncertainties of the ESC aspect should be specifically evaluated in any future auction.

¹¹ <http://www.environment.act.gov.au/energy/cleaner-energy/next-generation-renewables>

¹² Fact sheet op.cit.

3.3 Efficiency and effectiveness

Participation and competition

The ACT Next Generation Renewables is considered to have considerably stimulated the industry participation and competition and even attracted international interest. The success of the previous three ACT Auctions (Solar, Wind I and Wind II) established a high level of awareness and confidence amongst industry. Also the timing of the Next Generation Renewables Auction was highly favourable as it was widely seen by many involved as “the only game in town”. Another reason for the high participation was the attractiveness of the 20 year tenure of the FiT from the ACT Government that had a very strong credit rating. With the inclusion of solar and other renewable sources in this auction the interviewees acknowledged that there were no perceived barriers to participation apart from the barriers already built in to the process (i.e. value for money shortlisting, minimum ACT economic development benefits).

As a result, the Next Generation Renewables Auction attracted wind and solar generation capacity at a variety of scales and locations from fifteen different Proponents with very competitive prices.

Proponents interviewed said that the renewable energy industry was well aware of the Next Generation Renewables Auction as they closely monitor government policy related to renewable energy investment and had followed the progress of the previous Auctions. It was also noted that the success of the previous auctions helped the NGR Auction promotion while the ACT Government’s policy was well broadcast. In addition, the policy and investment climate at the time of the ACT Auction meant that there were not many other mechanisms in Australia for funding the development of renewables, with the exception of the Victoria Government’s 100 MW tender. According to the Clean Energy Council, investment in clean energy in Australia totalled around \$4.2 billion in 2016 and the ACT’s 100% renewable energy target should be credited for driving almost half of the large-scale clean energy investment¹³.

Additionally, this Auction was open not only to wind but also to solar as well as other renewable generation sources¹⁴. This attracted nine proposals for wind projects, five from solar projects and one for a combination of wind and solar with a wide range of proposed capacities. The Advisory Panel considered that there was sufficient number of proposals ensuring an increased competitive pricing and value for money. This is also shown in Table 5 depicting the lower weighted FiT price achieved in the Next Generation Renewables Auction compared to the previous Wind Auctions.

¹³ <https://www.climatecouncil.org.au/clean-energy-investment-cracks-4-2-billion-in-australia>

¹⁴ The Act indicates that the Minister may declare an energy source to be a renewable energy source. A prospective bidder wishing to bid a non-wind or solar proposal would have to apply for a declaration.

Table 5 Comparison of winning FiT prices from wind auctions

Wind Auction I			Wind Auction II			Next Generation Renewables Auction		
Project	FiT (\$/MWh)	Annual Generation (MWh/yr)	Project	FiT (\$/MWh)	Annual Generation (MWh/yr)	Project	FiT (\$/MWh)	Annual Generation (MWh/yr)
Coonoer Bridge	\$81.50	81,000	Hornsdale S2	\$77.00	404,000	Hornsdale S3	\$73.00	414,200
Ararat	\$87.00	271,000	Sapphire	\$89.10	349,700	Crookwell ¹⁵	\$86.60	304,099
Hornsdale S1	\$92.00	414,000						
Weighted FiT price	\$89.12			\$82.61			\$78.76	

The interviews with Proponents indicated that nearly all would be willing to consider participating in future auction processes based on their experience with the Next Generation Renewables Auction and were supportive of the reverse auction mechanism.

Administration process

The Secretariat successfully leveraged experience from the previous three Auctions and built lessons learned into the administration of the Next Generation Renewables Auction process. The process had a similar structure to the previous auctions but was more refined and with a greater level of clarity to Proponents.

The Secretariat conducted an opening industry briefing session that gave an opportunity to the stakeholders to discuss the Auction process and answer their questions. The documentation provided to proponents during the Auction tender period was similar to that of the previous auction and clearly set out the evaluation process. There was also a transparent communication in the form of the questions and answers document between the Secretariat and those who had registered interest in the process.

Advisory Panel and most sub-panel members interviewed stated that the organisation and preparation conducted by the Secretariat appeared to be highly efficient. There was a high level of clarity around the scope of their roles and responsibilities and timelines for the Next Generation Renewables Auction process. They also noted that materials to inform their assessment were well-structured and organised, as Proponents had been provided with response templates for each criterion and the financial details, enabling them to efficiently review and compare proposals individually and as a panel.

The EV2 sub-panel, although it did not have any major issues with the administration process overall, suggested that a more detailed briefing regarding their scope of work would make their work more efficient.

The Proponents interviewed generally found that the Secretariat provided comprehensive and high quality advice, both in the level of detail outlined in the Next Generation Renewables Auction process documents, and in responses to questions raised by Proponents during the process.

¹⁵ Calculations and rankings for value-for-money evaluation were done on the proponent's main offering which for Crookwell was a 100 MW plant. In order to match the capacity and energy targets for the NGR auction the Crookwell project was selected at 91 MW capacity with an adjusted FiT.

In some cases, unsuccessful Proponents felt that the feedback that was provided to them after the outcome of the Auction was limited and did not clarify the weaknesses in their proposals so that they could invest in these areas for future auctions.

Administration process – Energy Storage Contribution

The Energy Storage Contribution (ESC) aspect of the RFP auction represents significant cash flow impacts to ACT customers.

The ESC aspect was not found to have been referenced in the FiT Act, its explanatory statements nor the two disallowable instruments relating to the NGR auction. Jacobs has not verified if the ESC aspect has been the subject of review by the legislature. This would have made it clear that the means of financing the ESC through the NGR Action was considered by Parliament to have been within the scope of the FiT Act.

The ESC aspect was not reviewed by the financial consultant (excluded from scope) and was not discussed in any detail in the Advisory Panel minutes or briefing. No specialist advice was obtained to verify the financial and taxation consequences of the payments from the developers to the ACT Government and the payments of the components of the FiT from ActewAGL (on behalf of customers) to the developers.

Jacobs recommends that such advice should be obtained in any future process and that the ESC aspect be incorporated into the financial consultant's scope for review and should be part of the recommendations from the Advisory Panel to the Minister.

Quality of proposals

The Advisory Panel and sub-panel members interviewed noted that the majority of proposals were of high quality and provided the ACT Government with several value-for-money propositions. The knowledge transferred from the previous auctions, and the refinement of the process, resulted in high quality proposals regarding the feasibility of the proposed projects, the engagement to local communities and the ACT economic development benefits they offered.

The Secretariat communicated a robust evaluation framework to Proponents, clearly describing the weighting attributed to each evaluation criterion and the process by which proposals would be assessed. Proposal forms, a financial template, and guidance on expectations around Community Engagement and Economic Investment to the ACT were provided which reduced uncertainty over what Proponents had to demonstrate in their proposal. As a result, bid documentation was clearly organised and compliant, leading to consistency in the look and feel of key sections of the bid documentation, which facilitated comparison across projects.

The Territory's expectations for the EV1 criterion regarding the risks to timely project completion were clearly communicated and that meant that the majority of the Proponents put forward genuine and realistic projects, while they also provided sufficient information in their submissions to allow a comprehensive evaluation of their proposals.

The submitted proposals varied in performance against the EV2: Local Community Engagement criterion. Whilst many proposals put forward strong community consultation plans, some struggled to demonstrate strong community engagement. The Advisory Panel noted that they would have liked to see more innovative proposals. Proponents were generally of the opinion that the Territory's expectations were clear.

Predictability of costs

The Wind Auction process appropriately balanced industry proposal preparation costs with level of assurance to Government. The process was streamlined, with the ACT Government achieving implementation cost savings compared to previous auctions and no unnecessary steps or requirements perceived by industry. Most of the stakeholders interviewed said there was appropriate level of certainty and predictability in the costing and resourcing of the process.

Proponents commended the Territory for repeating a known and effective process and did not find the process excessively burdensome, particularly as many projects were at a relatively advanced stage of development so much of the work involved had already been completed, was underway, or would need to be undertaken in the near term to progress the project through other future options. Some of the proponents found the energy storage contribution added a complexity to the financing and the fact that some of it had to be paid upfront was creating a bias against smaller companies with limited financing options.

Overall, the ACT Government appears to have achieved significant efficiencies in the delivery of the process, with the level of resourcing used similar to that used for the Solar Auction and expenses falling by around 32 percent.

Under the Act, ActewAGL Distribution is required to establish an offtake arrangement with the successful Proponents of the Next Generation Renewables Auction in order to pay the Proponent for their FiT entitlement under the Deed of Entitlement. These costs are ultimately passed through to consumers. AER has made a regulatory determination for ActewAGL distribution for the 2014/15 to 2018/19 period though this is presently under appeal. AER's Final Decision did not cover the current FiT program in the listed pass-through events. This does not preclude recovery by ActewAGL if it has not yet been incorporated, as they can apply for regulatory change pass-through under the NER. ActewAGL has historically been using an approved cost-pass-through system for the Electricity Feed-in (Renewable Energy Premium) Act 2008.

In the lead up to the release of the ACT Wind Auction II, there was an increased level of communication between the relevant stakeholders. In particular, ActewAGL Distribution commended the Secretariat's co-operative approach. Over regular meetings, a good understanding of the settlement process was established which led to further transparency as demonstrated by the additional information in the RFP documentation. Whilst the auction process can now be considered to be established, the continuation of regular communication between the Secretariat and relevant stakeholders will be important. As such, it is recommended the Secretariat maintain regular dialogue with relevant stakeholders including ActewAGL Distribution, the Advisory Panel and sub-panel members. It will be important in the lead up to future auctions to ensure resources are available to allow time for further fine tuning.

To simplify this aspect of the process, there is a need for early and close engagement with ActewAGL Distribution regarding their role in arranging and managing the offtake arrangement aspect of the process and the building pass through costs into their pricing forecasts for the AER.

Whilst there was an appropriate level of certainty and predictability in the process, some unsuccessful proponents noted that the feedback provided was not very useful in providing clarity on where to improve and what was required to provide a winning bid.

Governance and management practices

The evaluation framework was transparent and well received by Proponents. The evaluation process was structured in a way that ensured each criterion was reviewed independently, reducing the risk of proposal bias. Furthermore, the information provided to participants was consistent throughout the process, not giving undue advantage to any Proponent.

However the process could be improved by communicating the application of qualifying criteria for non-ACR projects more clearly, and by providing a more comprehensive debriefing to unsuccessful proponents at the conclusion of the evaluation process. In addition, accountability and authority for determining scores for EV2 and EV3 criteria vested in more than one area, caused some inefficiency.

The evaluation framework comprised four weighted evaluation criteria which were scored and then compared with the proposal's FiT price to determine best value for money. The criteria and weightings were transparent and well-received by Proponents, with many Proponents commenting that they would be disappointed if any changes were made to the framework under potential future auctions as they now feel reasonably comfortable and familiar with the structure. This was based on the premise that whilst there could be improvements made regarding the interpretation of the criteria, the overarching framework was clear and aligned with industry expectations, and enabled proponents to gauge the level and direction of effort to put into their bids.

Proponents also suggested that feedback on proposals would be helpful to improve the competitiveness of their proposal and increase confidence in future releases. Unsuccessful Proponents did not receive feedback on their proposals unless they specifically requested it, and those who did found that the level of information provided was insufficient to clearly understand what aspects of their proposal were competitive or not. This was because ACT Government probity requirements limited the amount the feedback that was able to be provided.

Also, some subpanel members suggested that feedback of the final assessment would help them become more engaged with the process and make their evaluation more efficient in future assessments.

3.4 Risk allocation

The evaluation of risk assignment was based on reviewing project documentation, focusing on commercial (non-legal) issues which may affect a project's viability. The review does not cover legal issues and does not provide any legal advice.

Timely project development

While a financial and technical valuation by independent consultants was implemented to assess the feasibility of all the proposed projects and their risk of timely completion, no basic mechanism exists in case the successful proponent does not deliver the project or deliver it with substantial delays. Though this exposes the Territory to some risk that the interim renewables and emissions targets might not be met this is consistent with the treatment in the Act that FiT entitlements can be handed back by proponents (other than the LGC quantities). Project developers have a high incentive to proceed vigorously with their projects in order to access the FiT entitlements.

The selected projects are each well progressed in their developments and scored highly on the EV1 criterion.

Implementation of ACT economic development benefits

A risk identified by many interviewees was the possibility of not having the ACT economic benefits offered by the successful proponents implemented. A publicly available annual monitoring of the EV3 benefits offered would alleviate this risk and add to the transparency and the credibility of the auction process.

Repeal or amendment of the Act

Many proponents noted that one of the highest risks they were facing was a potential repeal or amendment of the Act by the Minister or ACT Parliament.

The Treasury Financial Guarantee is alleviating some of that risk and both successful Proponents under the NGR auction requested a guarantee.

The inclusion of the Treasury Financial Guarantee facility within the auction can therefore be considered as an important risk allocation mechanism.

Foreign exchange and interest rate risk

Many Proponents did not consider the foreign exchange and interest rate risk as a significant one since they had fixed and agreed prices with Australian based suppliers and subcontractors.

Those Proponents that had not locked prices noted they were tied to the offered FiT price for quite a long time and would prefer having a two stage process. At the first stage the evaluation of criteria EV1-4 would be completed, while at the second phase the proponents would submit the FiT prices and the value for money assessment would be done.

Spot price

As described in the Act the FiT support payments the proponents will receive (or pay) for a 20 year period is:

$$\text{FiT support payment} = (\text{FiT-SP}) \times \text{quantity of electricity}$$

Where:

SP is the spot price value for the FiT entitlement holder's eligible electricity for the period, being the amount that would have been paid for the electricity by the AEMO if the electricity had been sold on the spot market, and

Quantity of electricity means the quantity of the FiT entitlement holder's eligible electricity for the period and where eligible electricity is electricity generated from a renewable energy resource that is eligible for LGCs under the Renewable Energy (Electricity) Act 2000 (Cwlth) and is supplied to the NEM interconnected system and market.

This is a Contract-For-Differences (CFD) structure. This form, which is a financial derivatives contract, is common within the NEM for trading of electricity between wholesale participants. The effect of the CFD arrangement in the NGR Auction is that the electricity seller (the wind farms) receive a fixed agreed price (the FiT price) for eligible electricity supplied to the NEM. The electricity buyer (ActewAGL on behalf of the Territory customers) pays (or receives) a varying amount depending on the spot price value.

The risk of the spot price variability rests with the Territory customers. Spot price variability incorporates spot price variation within the NEM region the generator is located, inter-regional variability between that region and the ACT's NEM-region (which is NSW) and changes in marginal loss factors (MLF) assigned to the generators over time by AEMO.

To minimise that risk the ACT Government is undertaking electricity modelling forecasting but it should be noted that the conditions in the market are very dynamic and unpredictable at the moment (lack of comprehensive federal emission reduction policy after 2020, state based renewable targets etc.) and hence it will generally be difficult to assess this risk.

Surrender of FiT entitlement

The Act allows the holder of a FiT entitlement to surrender the entitlement at any time without any repercussions. That poses a risk to the Territory in case a successful proponent decides that can benefit more by participating in the broader market instead of keeping the FiT entitlement. In this case, the ACT would lose its claim to the relevant emissions reduction and renewable electricity quantity as well as needing to make-up the cost of the electricity from other sources, which maybe be more expensive at that time.

If the project developer feels at any time that the FiT is out-of-the-money through to its 20 year term then the developer would logically surrender the FiT. On the other hand if the developer believes it is in-the-money it would logically retain the FiT. The surrender provisions are thus a put-option over the FiT entitlement in the hands of the developer.

There are several factors that increase the likelihood of surrender occurring, especially beyond 2030 when the LRET scheme finishes. These include:

- The FiTs are constant in nominal terms, meaning they become less attractive to the developer in real terms with time
- After 2030 (under the present LRET scheme) the value of the LGCs that the successful developers have to surrender regardless of whether they have surrendered the FiT become zero
- Electricity market prices are expected to rise in real terms, and more so in nominal terms, over the 20 year period of the FiT

- The potential introduction of other mechanisms such as carbon pricing would make the value of the renewable electricity provided by the NGR plants more valuable in the broader electricity market

On the other hand, where the developer's finance was predicated on the FiT entitlement, the need to re-finance would make the surrender of the FiT less likely.

The provisions allowing surrender of the FiT are contained within the Act and hence it is not open in the auction process to change this risk.

The likelihood of surrender, and the effective value of the put option held by the developer, should be considered in any future auction. Requiring the FiTs escalate with inflation would have reduced the risk of future surrender and should be considered in future auctions (by adjustment of the Act for instance).

4. Conclusions and recommendations

4.1 Introduction

The findings of the review of the NGR auction are:

- Section 22(2)(a) of the Act: *Evaluation of the outcomes in relation to achieving value for money; and*

With respect to the feed-in-tariffs and the value-for-money scores that include the feed-in-tariffs and the scoring on the evaluation criteria, value for money was achieved.

FiT prices achieved were low relative to previous auctions and are low relative to current market values of wholesale electricity plus LGCs.

With respect to the Energy Storage Contribution value for money of this element has not been demonstrated and Jacobs recommend (below) that in any future auctions further demonstration of value for money be required in the evaluation
- Section 22(2)(b) of the Act: *In relation to a competitive process for a FiT capacity release—an evaluation of the process, including the administration of the process and its effectiveness in generating competition*

Administration of the NGR auction has been considered both effective and efficient. This is also the consensus of opinions gathered by Jacobs in interviews with stakeholders.

The auction, like its predecessors, has generated strong competition amongst renewable energy developers and projects and this has led to the strong value for money outcome achieved.

In allowing both wind and solar (and other renewable) projects to compete in the same auction, the ACT has produced both additional competition and price disclosure between the main renewable forms being developed in Australia at present.
- Consistent and well-understood process and administration

In applying largely the same processes, transaction documents, evaluation criteria and weightings, the NGR auction process has been well understood by stakeholders and this has added to the efficiency and effectiveness of the process.
- Risk allocation

The risk allocation is generally appropriate and effective and is substantially the same as in previous auctions.
- Probity

The administration of the process included a probity advisor. No concerns have been raised that probity was not managed appropriately in the NGR auction process.

4.2 Recommendations

The following recommendations are made with respect to any future auctions (or similar processes adopted under other programs):

Recommendation 1

- Concentration risk should be explicitly recognised by evaluating commercial exposure to a single entity (Neoen Australia Pty Ltd, the developer of the Hornsdale projects) over the three tranches when considering a grant and when undertaking the EV1 review. In the case of the NGR auction, the exposure of the scheme to South Australia (in this case) and the concentration of inherent basis risk in this selection (that is the risk that South Australian market conditions that are the basis of settlement of the FiT payments may diverge from the ACT market conditions) should be recognised. The exposure to the South Australian market on single tranches has already been noted in reviews of previous tranches and has been partly addressed by the NGR process in a manner that Jacobs considers adequate. However Jacobs suggests that given that 48% of the capacity and 53% of the energy over the four tranches have been released to one developer in one location, a particular evaluation of this was warranted. Given that Hornsdale 3 represented the clear leader in terms of value-for-money and FiT, it may nevertheless have been the case that it would have been a selected project if such further evaluation were applied in the NGR auction.

Recommendation 2

- The inclusion of the Energy Storage Contribution payment into the NGR auction process should have been explicitly called up in the Act to support its inclusion into the NGR auction for recovery from customers under the FiT process

Recommendation 3

- The selections of the Energy Storage Contribution and its value-for-money impact on the ACT customers should be explicitly considered by specialist evaluators in taxation and finance and should be included within the scope of the EV1 specialist consultants and be fully evaluated by the Advisory Panel in any future auction.

Recommendation 4

- The selection of the final combination of successful projects by the Minister was made to achieve both a capacity and an energy target (to meet, in conjunction with other non-FiT Act renewables, ACT's 100% renewable policy by 2020). Another combination of projects was assessed by the Advisory Panel to have a better value-for-money outcome (though a higher FiT) and the shortfall in estimated energy output for this combination was small (approximately 1.5%) and immaterial when considering the uncertainties in both the ACT's load and the likely variations in renewable energy generation by all of the FiT plants in any particular year. As it eventuated, with the subsequent withdrawal from the Auction of one of the projects by its proponent, this combination would not have ultimately been the best combination anyway. In any future Auction clarity should be provided regarding the importance placed on various criteria (if there are more than one) and assessments made of the confidence within any uncertain parameter used to measure the success of meeting a criterion.

Recommendation 5

- In selecting the make-up of the specialist panels for the evaluation criteria assessment, it was recommended by a stakeholder that panel members have both subject-matter expertise and industry expertise rather than just subject-matter expertise. This would make operation of the sub-panels more efficient where tight time-tables apply as occurred in the NGR auction. Jacobs agrees with this recommendation.

Part B: Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011

The Australian Capital Territory (ACT) Government established the Large-scale Feed-in-Tariff (FiT) Scheme under the Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011 ('the Act'), passed on 8 December 2011. The Act enables the Minister for Climate Change and Sustainability ('the Minister') to grant FiT entitlements for large-scale renewable energy generators.

The Republication of the Act that is current at the time of this review is R5 with an effective date of 14 May 2016.

The Act has enabled the ACT Government to undertake four auction processes to secure FiTs for renewable electricity generation. The four auction processes were:

- First Solar Auction
- Wind Auction 1
- Wind Auction 2
- Next Generation Renewables

As noted in the Introduction above, the Act (at Section 22) requires a review of the operation of the Act with at least the following matters to be reviewed:

- 3) *The Minister must review the operation of this Act after the end of its 5th year of operation, and at least once every subsequent 5 years of its operation.*
- 4) *A review under subsection (3) must include—*
 - a) *an evaluation of the progress of construction of large renewable energy generators; and*
 - b) *a consideration of the effectiveness of the operation of this Act in achieving the objects of this Act; and*
 - c) *a consideration of the impact of costs under this Act on electricity consumers*

This is the first such review of the Act to be conducted.

1 Review method

Jacobs has sought feedback from selected stakeholders on the Act through an interview process. Jacobs has sought status reports on the successful projects from EPSDD (who receive progress reports from successful project developers), and from those developers interviewed who were successful and from public domain sources.

Jacobs has observed the operation of the Act in the conduct of the four auction tranches released under it and in the reviews of the NGR auction and earlier tranches.

The impact of the costs to consumers has been assessed by Jacobs using a comparison of FiT prices received and the resulting expected cash flows from ActewAGL on behalf of ACT customers against forecasts of wholesale electricity prices and corresponding LGC prices. The forecast applied is a single scenario representing a "base case" incorporating Jacobs' current best expectations for the NEM and Australian renewables markets. The base-case view incorporates current policies enacted in the various jurisdictions plus a \$25/t carbon price commencing in FY2022, but without the "QRET" or "VRET" enhanced renewables schemes being planned in Queensland and Victoria respectively but which have not yet been developed into legislation. The base case uses "medium" economic growth outcomes and is generally presented at the "50th percentile" or "best-expectation" level. This scenario has been modelled by Jacobs for other customers including Jacobs' work for AEMO.

The fixed nominal feed-in-tariffs have been deflated to real terms using an assumed future CPI rate of 2.25% in the analysis.

Marginal Loss Factors (MLFs) have been estimated for each plant for the analysis and these are assumed to remain constant.

The generation profile, adjusted for MLF, for each plant has been estimated on an hourly basis for each year assuming average estimated production as listed in Table 1 and compared against the forecast hourly NEM Regional reference Price (pool price) for that hour and year and the cash flows summed accordingly for each hour of the year.

2 Evaluation of the Act

2.1 Objectives under the Act

By reference to the outcomes in the four renewables auction tranches undertaken, the achievement of the Acts' objectives are assessed as:

- Objective (a) Promote the establishment of large-scale facilities for the generation of electricity from a range of renewable energy sources in the Australian Capital Region. **Achieved**
- Objective (b) Promote the development of the renewable energy generation industry in the ACT and Australia consistent with the development of a national electricity market. **Achieved**
- Objective (c) Reduce the ACT's contribution to greenhouse gas emissions and help achieve targets to reduce the ACT's greenhouse gas emissions. **Achieved**
- Objective (d) Address the need for urgent action to be taken to reduce reliance on non-renewable energy sources while minimising the cost to electricity consumers. **Achieved**

Objective (a): Promote the establishment of large-scale facilities for the generation of electricity from a range of renewable energy sources in the Australian Capital Region.

Four of the ten projects accepted under the FiT Act are located within the Australian Capital Region defined under the Act:

- Royalla PV
- OneSun Capital PV
- Mugga Lane PV, and
- Crookwell 2 wind farm

The auctions conducted promoted generation within the Australian Capital Region within the value-for-money scoring criteria in that projects outside the region were required to have substantial economic development investments in the ACR. For example the commitments made by the successful proponents in the Next Generation Renewables Auction are shown in Table 4 in Section 3.1 of Part A of this report.

Jacobs considers that the objective is achieved.

Objective (b): Promote the development of the renewable energy generation industry in the ACT and Australia consistent with the development of a national electricity market.

The auctions provided a financially stable mechanism for renewable projects to secure financing and commence construction. Many of the proponents' projects were essentially "shovel ready" and only needed such a mechanism to reach financial closure. For many proponents the auctions under the Act were considered the only pathway available at the time for development of their renewable energy projects.

The auctions under the Act established and enhanced the ACT's reputation as a hub for renewable energy, while other states (like Victoria and Queensland) are now following ACT's example by investigating reverse auctions as a potential mechanism for the competitive procurement of renewable energy. The projects developed under the FiT Act all operate within the National Electricity Market (NEM) and the NEM rules. The FiT Act is consistent with the National Electricity Objective (other than that the FiT Act calls specifically for renewable electricity sources rather than being technology-neutral) which is¹⁶:

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to – price, quality, safety, reliability, and security of supply of electricity; and the reliability, safety and security of the national electricity system.

Jacobs considers that the objective has been achieved.

Objective (c): Reduce the ACT's contribution to greenhouse gas emissions and help achieve targets to reduce the ACT's greenhouse gas emissions

The ACT has its own targets for emissions reductions of 40% below 1990 levels by 2020¹⁷. This is a legislated (interim) target within the Climate Change and Greenhouse Gas Reduction Act 2010¹⁸. Under this Act, the ACT's emissions are calculated by a method provided in a Determination¹⁹ by the Minister and which recognises the renewable energy amounts paid for by ACT consumers as being credited to the ACT when calculating the ACT inventory. By this measure the projects developed under the FiT Act will help to achieve the targets to reduce the ACT's greenhouse gas emissions.

The renewable electricity produced by the ten successful projects under the Act is expected to meet 76% of the ACT's electricity needs in 2020. In combination with other renewables developments outside the FiT Act this is targeted to achieve the ACT's 100% renewable target in 2020. Renewable energy quantities provided under the Auctions were over and above the LRET and hence the additional renewable energy would probably not have occurred in the absence of the FiT Act and therefore the abatement would not have occurred (at least in the short to medium term).

Therefore, Jacobs finds that the objective is achieved.

Objective (d): Address the need for urgent action to be taken to reduce reliance on non-renewable energy sources while minimising the cost to electricity consumers

The auction tranches under the FiT Act are considered to provide a financially stable mechanism for renewable projects to secure financing and commence construction. Many of the proponents' projects needed such a mechanism to reach financial closure in the timeframe. For many the auctions were the "only game in town" with respect to offering a long-term PPA, and the timing of the auctions was particularly important given the lack of viable contracting arrangements and supporting policy available through other Australian governments (state and Commonwealth) or local merchant options.

¹⁶ <http://www.aemc.gov.au/Australias-Energy-Market/Markets-Overview/National-electricity-market#NEO>

¹⁷ <http://www.environment.act.gov.au/cc/acts-greenhouse-gas-emissions>

¹⁸ <http://www.legislation.act.gov.au/a/2010-41/default.asp>

¹⁹ Climate Change and Greenhouse Gas Reduction (Greenhouse Gas Emissions Measurement Method) Determination 2016, Disallowable instrument DI2016-257 at <http://www.legislation.act.gov.au/di/2016-257/current/pdf/2016-257.pdf>

The renewable electricity produced by the ten successful projects under the Act is expected to meet 76% of the ACT's electricity needs in 2020. This timeframe is significantly in advance of any comparable objective by any other administrative region as large as the ACT.

The auction processes applied under the Act produced competitive outcomes with a large number of projects offered. By arranging the auctions on a reverse-auction basis, allowing projects outside the ACR to bid (provided substantial economic benefits are also provided to the ACR), and structuring the settlement arrangements around a contract-for-difference arrangement on the NEM pool price (which is very well accepted in the electricity industry), the cost to ACT electricity consumers was minimised in meeting the objectives.

Therefore, Jacobs finds that the objective is achieved.

2.2 Progress of construction

A review of the progress of construction of the projects that have been awarded FiT entitlements has been made. This review covers projects that were selected in each of the auction rounds under the Act:

- First Solar Auction
- Wind Auction 1
- Wind Auction 2
- Next Generation Renewables

Schedule 7 of the Deed of Entitlement of ACT wind large-scale feed-in tariff entitlement holders and Schedule 5 of the deeds of solar feed-in tariff entitlement holders requires that they provide a Quarterly Construction Report for each three-month period from the execution of their Deed until their Completion Date.

Once a feed-in tariff entitlement holder completes construction of its generator, the quarterly reports are no longer required, instead an Annual Generation Report is required for each financial year. The Annual Generation Reports are due within three months of the close of each financial year and must include data specified in Schedule 7 of the deeds of ACT wind large-scale feed-in tariff entitlement holders and Schedule 5 of the deeds of solar feed-in tariff entitlement holders.

The Royalla solar project, the Coonooer Bridge Wind Farm, the Mugga Lane solar project, the OneSun Capital solar project and the Hornsdale 1 Wind Farm are each past their completion dates. For Coonooer Bridge WF, construction work ceased on 31 March 2016 upon Commencement of Commercial Operations. Royalla Solar Farm first started generating on the 18th of August 2014 and it was officially opened by then Minister Simon Corbell on the 3rd of September 2014. In addition, the Mugga Lane solar project commenced FiT supported generation on 18 November 2016, the OneSun Capital solar project commenced FiT supported generation on 3 February 2017, and the Hornsdale 1 Wind Farm commenced FiT supported generation on 16 February 2017.

In accordance with the Deed of Entitlement, the Royalla Solar Farm and Coonooer Bridge Wind Farm are currently providing to the Territory an Annual Generation Report for each financial year in which the generating system is operational, within three months of the end of the financial year. The other completed wind or solar farms are due to commence providing Annual Generation Reports in 2017.

Amongst the eight plants under the scheme two intermediate milestones were not achieved on the agreed dates however these delays are not considered to be material.

Besides reporting on the progress of construction of the relevant plants, the Progress Reports also include advice on the status of Community Engagement programs and the ACT Investment Plans (where applicable).

No matters of concern were raised with respect to the status of these objectives in the proponents' reports.

2.3 Scheme costs and impact to ACT electricity consumers

The costs of the scheme are the net costs of the difference payments under the deeds with the successful proponents. Jacobs has applied the method described above in Section 1 to estimate the net cash flow paid by (or to) ActewAGL to each project for ACT customers.

The key parameters and calculations applied are:

- A “base-case” best-estimate or 50th percentile view of the forecast pool prices in the relevant NEM regions over the term of the FiT contracts
- Calculations incorporate current policies enacted in the various jurisdictions at the time of the forecasting analysis, plus a \$25/t carbon price commencing in FY2022, but without the “QRET” or “VRET” enhanced renewables schemes being planned in Queensland and Victoria respectively but which have not yet been developed into legislation. The base case uses “medium” economic growth and 50th percentile ambient temperatures²⁰. This scenario has been modelled by Jacobs for other customers including Jacobs’ work for AEMO. The forecast pool prices are estimated for each hour of each year for use in the calculation
- Calculations are on a financial year basis in real (\$2017) terms
- The expected output in MWh of each wind or solar generator is distributed to each hour of the year using historical generation levels or estimates
- The FiT payment is calculated for each hour using the formula in Clause 17A(4) of the Act:

$$\text{FiT support payment} = (\text{FiT-SP}) \times \text{quantity of electricity}$$

Where:

SP is the spot price value for the FiT entitlement holder’s eligible electricity for the period, being the amount that would have been paid for the electricity by the AEMO if the electricity had been sold on the spot market. This value is the NEM pool price for the relevant region in the hour x MLF x DLF; and

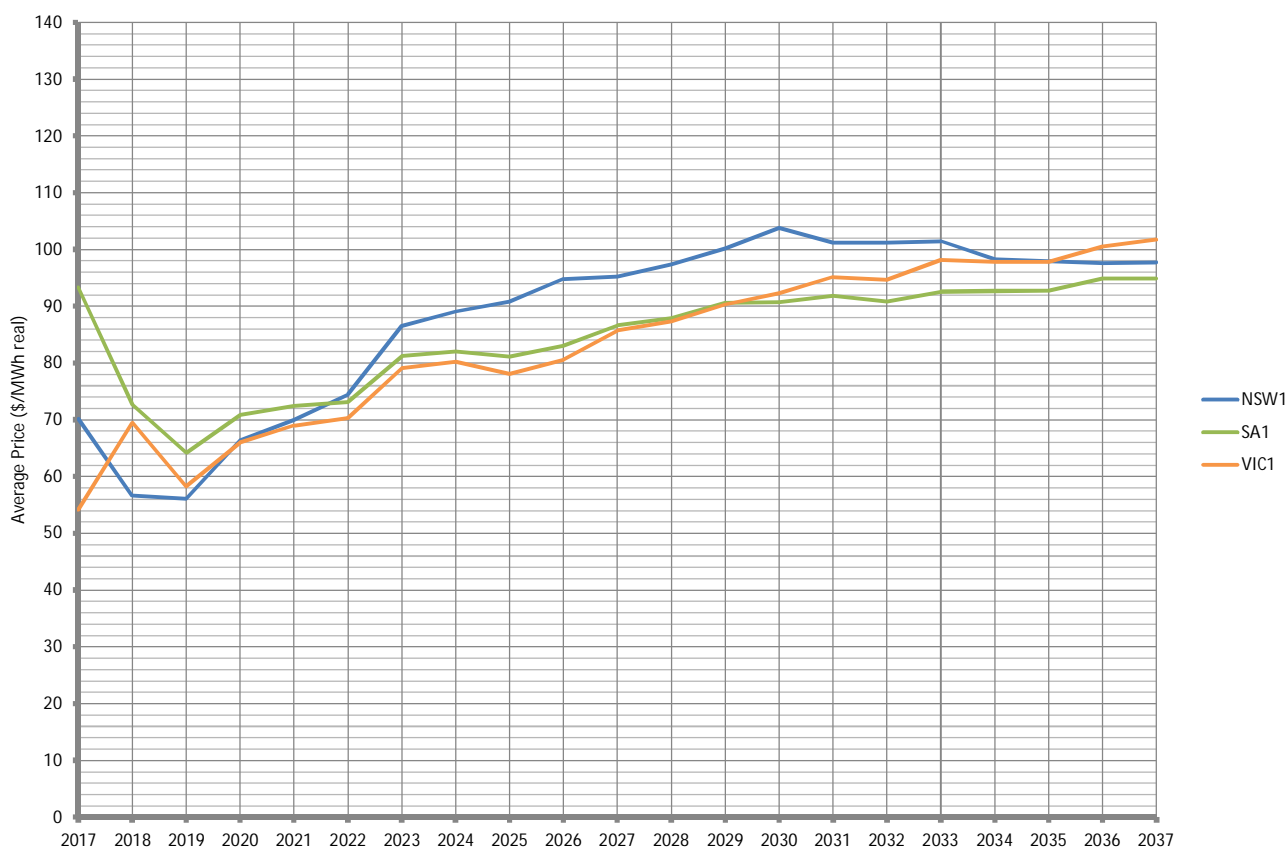
Quantity of electricity means the quantity of the FiT entitlement holder’s eligible electricity for the period and where eligible electricity is electricity generated from a renewable energy resource that is eligible for LGCs under the Renewable Energy (Electricity) Act 2000 (Cwlth) and is supplied to the NEM interconnected system and market.

- The Energy Storage Contribution amounts received from Hornsdale 3 and Crookwell 2 windfarms, and the corresponding uplifts in the feed-in-tariffs paid to these two projects over the term, are not included
- The FiT payments, which can be positive or negative, are summed over each hour in the year

The annual time-weighted averages of the forecast pool price profiles are shown in Figure 4. The calculation method described above, which calculates a FiT payment separately for each hour in the year, reflects that the yearly average pool price received by the generator when weighted by the varying output of the generation plant over the year differs from the time-weighted pool price over the year.

²⁰ Ambient temperatures and changed economic conditions significantly affect electricity usage and hence have a significant effect on prices for electricity in the market.

Figure 4 Forecast time-weighted average pool prices (real)



The total forecast cash flow is shown in Table 6, where a positive cash flow represents a payment to the project proponents and a negative cash flow represents a payment from the project proponents.

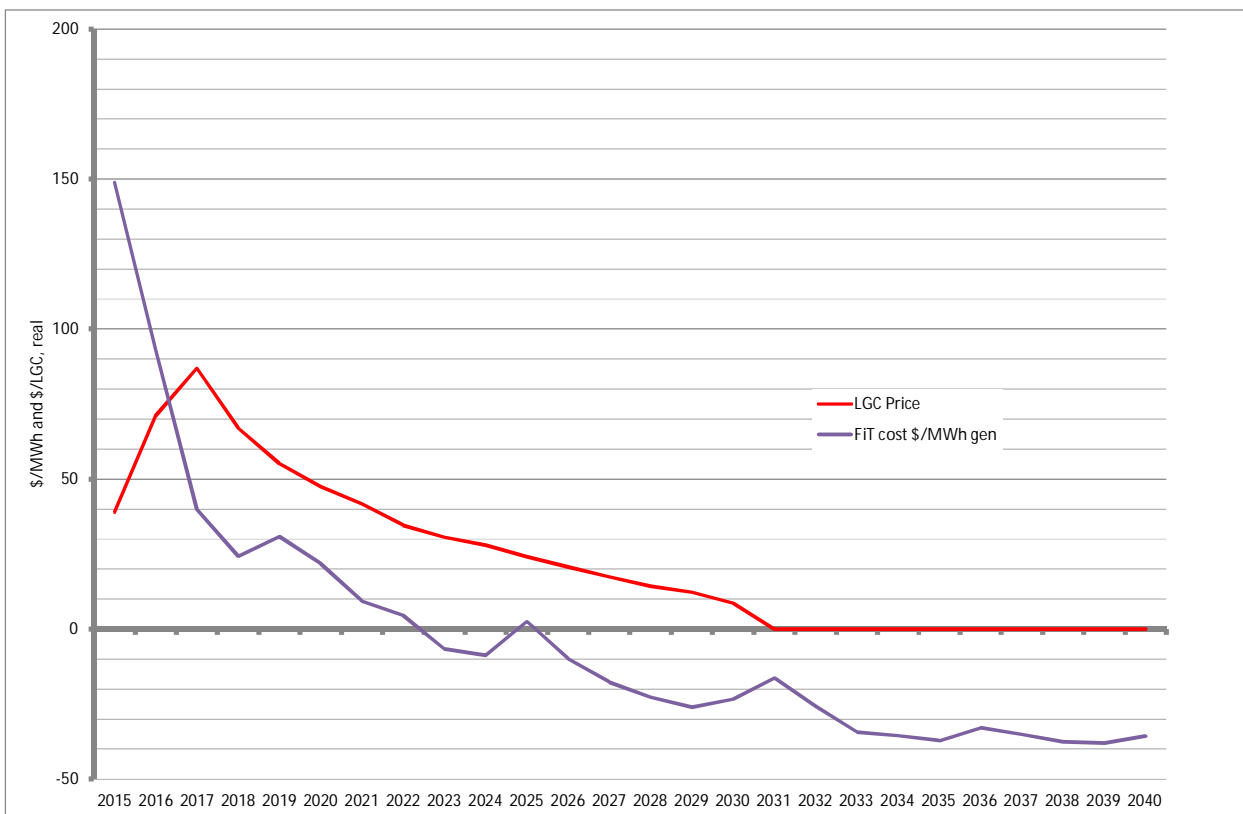
Table 6 Forecast of net cash flow, \$M/y real

FY	Total Annual Payment, \$M/y	FY	Total Annual Payment, \$M/y
2015	5.02	2028	-52.31
2016	5.81	2029	-60.09
2017	8.40	2030	-53.82
2018	20.29	2031	-37.46
2019	49.32	2032	-59.63
2020	47.36	2033	-79.14
2021	21.55	2034	-81.74
2022	10.64	2035	-84.31
2023	-15.21	2036	-73.24
2024	-20.37	2037	-71.80
2025	6.03	2038	-46.17
2026	-22.56	2039	-23.96
2027	-40.81	2040	-5.47

Based on an approximate electricity consumption in ACT in 2020 of 2920 GWh (after network losses), the approximate average per-unit cost impact on electricity tariffs in 2020 using the forecast data would be $\$47,360,000/2,920,000 = \$16.22/\text{MWh}$ in \$2017. Alternatively the cost per residential customer in 2020 can be estimated as $\$16.22 \times 7.01 = \$114/\text{year}$, or $\$2.18/\text{week}$ (in \$2017). This is based on an estimate of 7.01MWh/y/residential customer in the ACT²¹. This is lower than the cost presented on the ACT Government’s website of “Total costs per household of achieving 100% renewables are expected to peak in 2020 at around \$5.50 per household per week”²².

In terms of the cost of procuring renewable electricity to the extent it is more expensive than electricity generally in the market, the FiT cost per unit of renewable electricity can be compared to the LGC price. The FiT cost is lower than the corresponding forecast LGC price in in all years other than 2014/15 and 2015/16 when the FiT electricity has a higher percentage of solar electricity than in other years. The scheme costs per unit of renewable electricity are forecast to be lower than the forecast LGC costs in all other years as shown in Figure 5. This is despite that the three solar projects tend to increase the average FiT price relative to the market LGC price which is dominated by less-expensive non-solar renewable technologies at present.

Figure 5 Comparison of forecast scheme costs against forecast LGC prices (real)



The costs shown in Table 6 assume all the relevant generation plants continue to operate for the duration of the deed twenty-year period, and also that they do not surrender their FiT entitlements. Under the forecast trend in NEM prices the cash flows can operate in the reverse-direction when pool prices rise, as they are forecast to do. Under the forecast applied, each of the wind farms might surrender their FiT entitlements in the 2020’s (subject to their financing arrangements).

²¹ ACTEWAGL recover jurisdictional scheme charges (which includes the FiT costs) across all sectors on a cents/kWh basis. Based on “ActewAGL Distribution 2017/18 Network Pricing Proposal” <https://www.aer.gov.au/system/files/ActewAGL%202017-18%20Annual%20Pricing%20Proposal%20-%202031%20March%202017.pdf> at Table 3-8 the residential sector contributes 41% of the cost of jurisdictional scheme charges in the ACT in 2017/18, and the average consumption across residential tariff classes is 7.01 MWh/customer/year (2015/16).

²² <http://www.environment.act.gov.au/energy/cleaner-energy/renewable-energy-target.-legislation-and-reporting>

Until 2030 the proponents of the successful projects under the Wind Auction 2 and the Next Generation Renewables Auction have to transfer the LGCs representing the renewable power value regardless of whether they surrender the FiT. This will maintain the connection between the ACT procurement and the green credits from those projects and these green credits should be able to be applied against the ACT's emissions until that time.

A high degree of uncertainty necessarily applies to forecasts of NEM price outcomes and hence the outcome that many or all of the wind farms may surrender their FiT entitlements is only one credible scenario. It is recommended that this possibility be monitored in each subsequent five-year review of the Act in case the Territory considers that any surrendered FiT requires some additional procurement after 2030.

Nevertheless, in interpreting the potential costs to ACT consumers in Table 6, the values from approximately 2025 onwards suggesting continuing payment back from FiT entitlement holders to ACTEWAGL for the benefit of customers should be discounted (i.e. be given little weight in any evaluation). This also applies to the advantage shown for the scheme over the LGC price indicated in Figure 5.

The costs noted do not include the cost of the uplift in FiT paid to Hornsdale 3 and Crookwell 2 under the NGR Auction to fund the Energy Storage Contribution element of the ACT Government's Next Generation Renewables strategy. The cost of this aspect is discussed separately under the value-for-money assessment of the NGR Auction review at Section 3.2 of Part A of this report. The presence of this extra FiT price within the deeds of the relevant two projects will reduce the risk of early FiT surrender (or delay it) for those two plants. The expected additional costs of this scheme in 2020 are \$3.227M/y which would increase the cost to ACT customers by \$1.11/MWh and the additional impact on residential customers would be \$0.15/week on the same basis as the calculations presented above (in \$2017).

2.4 Integrity of the emission offsets under the scheme

Under the Deeds, the projects must provide the relevant number of LGCs generated after the Completion Date to the Territory. Under the *Climate Change and Greenhouse Gas Reduction (Greenhouse Gas Emissions Measurement Method) Determination 2016*²³, the ACT may deduct "total metered electrical energy sent out from all renewable generators contracted by the ACT Government under Action Plan 2" from its emissions inventory. Purchased LGCs along with the associated electricity contract-for-differences under the FiT Act are considered to meet this requirement. The Determination does not instruct that the LGCs must be voluntarily surrendered by the Territory rather than be re-sold at some later date. This surrendering in due-course is considered important by Jacobs in maintaining the bona-fides of the FiT Auctions and the Action Plan.

Two projects have so far provided LGCs to the Territory under the program. According to the REC Registry²⁴ maintained by the Clean Energy Regulator, the LGCs that have been registered by Royalla are all listed as presently owned by "ACT Environment and Planning Directorate" or Royalla itself (which would be pending later transfer). The Royalla LGCs held by the Territory have not yet been surrendered.

Likewise the LGCs from Coonooer Bridge are similarly held by the Territory and the proponent other than 1407 LGCs from 2016 which are listed as held by AGL. Jacobs understands that this project produces slightly more LGCs than it is required to surrender to the ACT due to its connection arrangement. Jacobs has not conducted an audit of the disposition of electricity or LGCs under the program within this review.

3 Conclusions relating to the Act

3.1 Introduction

The Act has been successful in stimulating wind and solar projects to competitively bid for FiT entitlements and for the successful bidders to consequently proceed to, and towards, commercial operation.

²³ Disallowable instrument DI2016-257 made under the Climate Change and Greenhouse Gas Reduction Act 2010

²⁴ <https://www.rec-registry.gov.au/rec-registry/app/public/lgc-register> accessed 15 March 2017

The auction processes have been well regarded and understood by industry and this has assisted in generating the competitive outcomes found in the auctions. The frameworks included in the Act have enabled the administration of the auction processes to proceed with a high degree of efficiency and effectiveness.

The use of the Contract for Differences (CFD) arrangement to settle the FiT payments is well-known in industry and is the usual mechanism in the NEM for settlement of wholesale electricity acquisitions. That the FiT settlement formula is settled at the generator's dispatch point in the NEM rather than at the NEM market node relevant to the ACT (the NSW regional node in Sydney), does impose additional (basis) risk on ACT consumers. Several of the plants are inter-State (outside the NSW NEM region) and there is inter-regional basis risk involved in contracting on this basis. Similarly there will be variations in marginal loss factors of the generators the risk of which is borne by the ACT customers. However in accepting this risk, the ACT has lessened the development and financing risk of the generators and consequently will have achieved greater competition and may have stimulated some projects that may not have been able to otherwise proceed.

Given the way the ACT greenhouse gas assessments are made, the FiT Act has clearly reduced the ACT's greenhouse gas emissions and progressed the renewable electricity percentages towards the legislated and policy targets.

3.2 Recommendations

The following additional comments are made for consideration in any extension of the Act or any future program considering using the FiT Act as its basis:

- The inclusion of Clause 14 of the Act allowing the holder to surrender the entitlement has potential consequences that should be explicitly considered. In conjunction with the FiT amounts being constant in nominal terms (non-escalated), the expectation that the wholesale electricity price will rise with time, and that the value of LGCs surrendered will fall to zero in 2030 all lead to a significant likelihood that the entitlement holders could surrender the entitlements before the end of the term. This would be at a cost to the ACT customers that should be estimated and factored into the estimated cost of the scheme in any future implementation of the Act
- The inclusion of the Energy Storage Contribution aspects of the NGR FiT auction should have been explicitly included in the Act republication number 5. The effect of the treatment of the Energy Storage Contribution has not been presented to Parliament to our knowledge through the FiT Act Explanatory Statements nor associated Minister's speech. The current treatment did not provide any coverage of the Energy Storage Contribution aspect in a disallowable instrument for consideration by Parliament that we could discern²⁵.
- Consideration should be given to shifting the spot price reference node used in the FiT settlements to the local regional reference node relevant to the customers (the NSW regional reference node in the case of ACT customers). This would transfer some risk from the customers to the successful project developers but this allocation is considered common in the NEM and it should be evaluated whether this can be done without adverse impact on the outcome of auctions by way of competition or FiT pricing.
- The Act should make clear that LGCs transferred to the ACT under the program must be voluntarily surrendered and not on-sold

²⁵ There is no reference to the Energy Storage Contribution in Disallowable Instruments No DI2016-31 nor DI2016-48