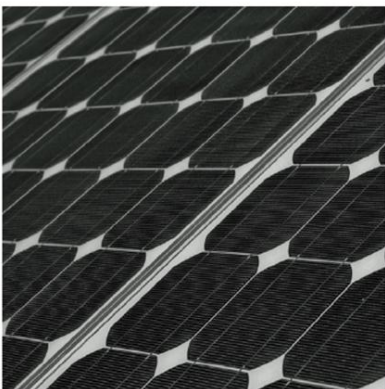
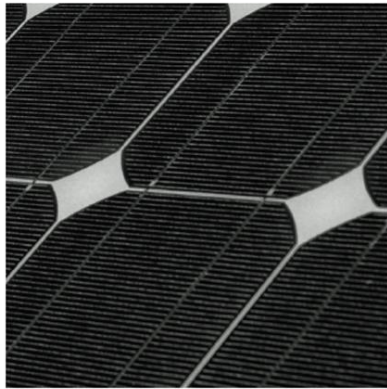


# ACT Solar Auction Review

SUMMARY REPORT

ACT Government, Environment and Sustainable Development Directorate | October 2013



## ACT Solar Auction Review – Summary Report

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## Introduction

The *Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011* (the Electricity Feed-in Act) was passed on 8 December 2011, enabling the Minister to grant Feed-in-Tariffs (FiT) to large-scale renewable energy generators for up to 210MW of generation capacity. On 6 January 2012, the Minister made 40MW of capacity available by competitive process, giving rise to the ACT Large-scale Solar Auction (Solar Auction) and a Request for Proposals (RFP) was issued. The Solar Auction Secretariat (the Secretariat) was established within the Environment and Sustainable Development Directorate (ESDD) to manage the Solar Auction process.

The Solar Auction process is now complete, with three proposals being granted a FiT entitlement:

- Fotowatio Renewable Ventures’ (FRV) 20MW Royalla Solar Farm
- Zhenfa’s 13MW Mugga Lane Solar Park
- Elementus Energy Pty Limited’s 7MW OneSun Capital Solar Farm

The Secretariat engaged Sinclair Knight Merz (SKM) to conduct a Review of the Solar Auction to assess its efficiency and effectiveness in achieving value-for-money outcomes, and the potential for the process to be scaled up and / or applied to other types of renewable energy generators. This report provides a summary of the findings of the Review. A more detailed technical companion report (confidential) was also prepared for the ACT Government.

## Review methodology

The approach to Review was consistent with the requirements of the Electricity Feed-in Act, Terms of Reference set by the Government, and the *ACT Government Evaluation Policy and Guidelines*. The program evaluation framework is provided in Figure 1.

The Review was informed by:

- Desktop research
- Online survey developed and distributed to all Solar Auction proponents (ten proponents completed the survey)
- Interviews (in person and via phone) with representatives of: four industry proponents; five of the expert technical and financial consultants responsible for reviewing proposals; Land Development Agency, Economic Development Directorate (EDD); ACT Planning and Land Authority (ACTPLA); Chief Minister and Treasury Directorate; Secretariat; ActewAGL Distribution; and the Minister for the Environment and Sustainable Development

A comparison was also conducted with other schemes in Australia (Solar Flagships Program, Regional Australia’s Renewables-Industry Program, and Sunshine Coast Council Solar Farm) and overseas schemes (Californian Renewable Auction Mechanism in the USA, Non Fossil Fuel Obligation in the UK, and Stromeinspeisungsgesetz in Germany).

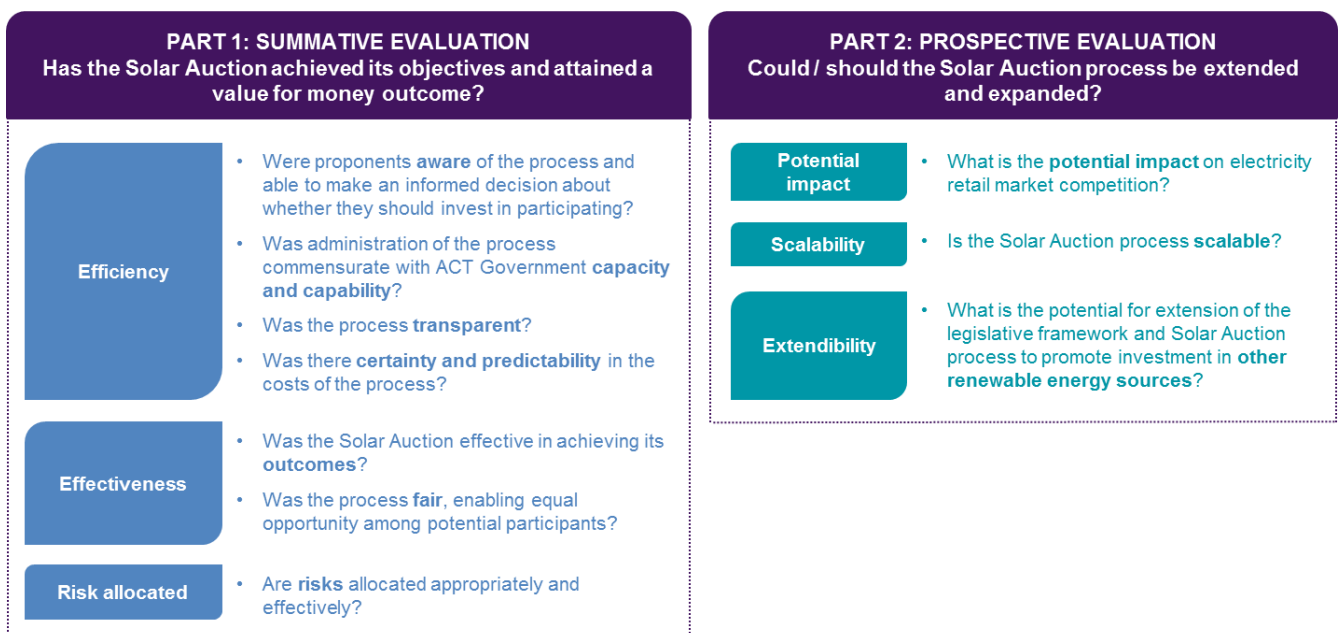


Figure 1: Solar Auction evaluation framework

## Description of the Solar Auction

The Solar Auction supports the implementation of Climate Change Action Plan 2 (AP2)<sup>1</sup> – the ACT’s climate change strategy – and the achievement of its legislated greenhouse gas (GHG) reduction targets as illustrated in Figure 2.

The Solar Auction process was managed by the Secretariat, with an Advisory Panel of independent industry advisors established to assess and recommend proposals to the Minister. Technical and financial consultants were engaged to assist the Advisory Panel to review, verify, and analyse information provided by proponents. Other key stakeholders critical to the success of the Solar Auction process included ACTPLA, EDD, and ActewAGL Distribution.

The Solar Auction process comprised three key stages:

- Stage 1 prequalification:** proponents had approximately two months to prepare their prequalification proposals and the assessment was focused on proposal eligibility and risk, and proponent capability and experience. FIT prices were not considered at this stage.

- Stage 2 fast-track stream:** proponents could self-nominate for the fast-track stream, which required them to submit their final proposal within four weeks after completion of Stage 1.
- Stage 2 regular stream:** all prequalified proponents could submit a proposal in regular stream (including those who were unsuccessful in fast-track), which required proposals to be submitted within eleven months after completion of Stage 1. Additional criteria to discourage requests for financial guarantees were introduced in regular stream.

At each stage, proposals were to be developed in accordance with the requirements of the RFP and templates / forms provided by the ACT Government. Proposals were reviewed against eligibility criteria by the Secretariat, and against evaluation criteria by contracted consultants. Following these reviews, the Advisory Panel assessed the proposals and gave them a weighted score against each of the evaluation criteria, and compared these scores (in Stage 2) to the proposed FIT rates. Based on this assessment, they then recommended proposals for further consideration and / or grant of FIT entitlement by the Minister.

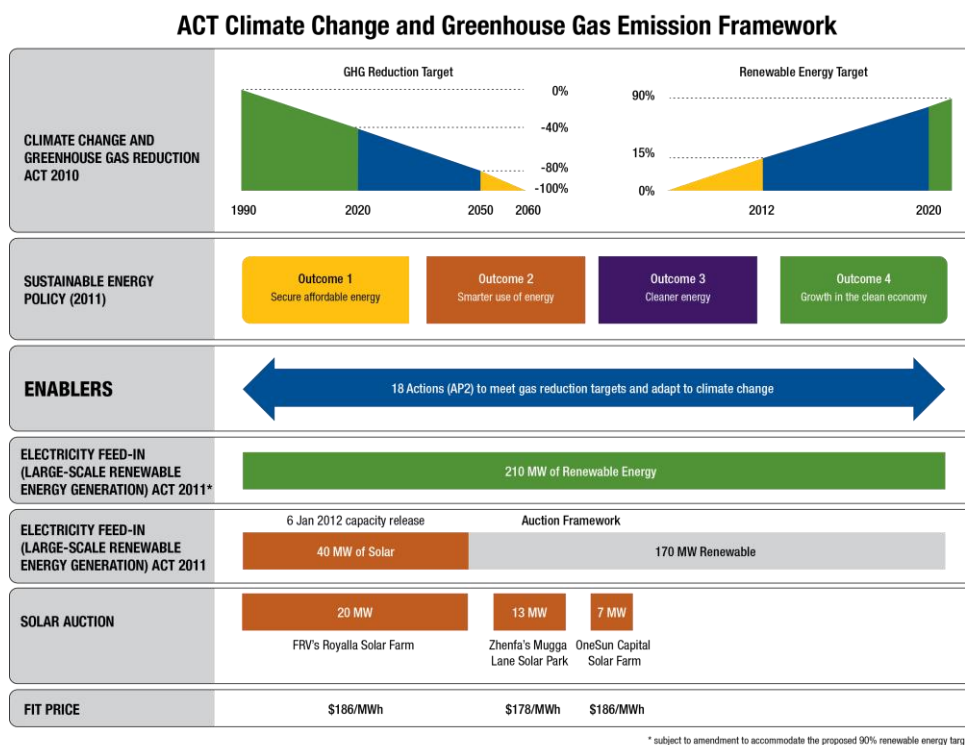


Figure 2: ACT Climate Change and Greenhouse Gas Reduction Legislative Framework

<sup>1</sup> Australian Capital Territory (2012), AP2: a new climate change strategy and action plan for the Australian Capital Territory, Environment and Sustainable Development Directorate, Canberra.

## Summative evaluation

The purpose of the summative evaluation is to assess the impacts and achievements of the Solar Auction process and to determine whether a value for money outcome has been attained (ie a retrospective review of the process).

### Efficiency

**Were proponents aware of the process and able to make an informed decision about whether they should invest in participating?**

**Overall, proponents had a high level of awareness of the process, commenting that it was well promoted and that sufficient information was available and accessible in order to make their investment decision.**

#### Most efficient

The Solar Auction was well promoted, which was reflected in feedback from the proponent survey and interview results. Proponents stated that they had a high level of awareness of the process leading up to its announcement and that they perceived strong government commitment to the process and associated legislation. Some proponents had even invested in preliminary work in anticipation of the capacity release.

#### Least efficient

Communicating the extent and type of information required of proponents to demonstrate appropriate compliance with eligibility and evaluation criteria was a challenge for the Solar Auction process. Some proponents also had difficulty in understanding the process for engaging with other stakeholders involved in the Solar Auction (eg ActewAGL Distribution, ACTPLA).

Overall, the quality of proposals was considered to be high, representing considerable investment by proponents in the process. However Advisory Panel members and consultants also commented that the quality and extent of information provided by proponents varied greatly in some instances. Common areas of variance or errors were:

- No consideration of de-rating (AC-DC conversion) in proposal calculations
- Not including appropriate due diligence reports in order to demonstrate project feasibility
- Poor consideration of local requirements, particularly in relation to cost estimates

- High level budgets that did not enable thorough interrogation of the cost estimates
- Little explanation on the arrangements for raising capital at the proposed rates of return

**Was administration of the process commensurate with ACT Government capacity and capability?**

**Administration of the process was commensurate with ACT Government capacity and capability, with the Secretariat engaging consultants and independent advisors (Advisory Panel) to fill any potential capability gaps. However administration could be further improved by closer engagement and planning with the agencies / organisations responsible for administering the land and network connection arrangements.**

#### Most efficient

Proponent feedback on the Solar Secretariat's administration of the process was unanimously positive, with many proponents commenting on the high quality of documentation provided and minimal variance from the original timelines. The Secretariat's capacity and capability was further supported and complemented by the establishment of the Advisory Panel and appointment of technical and financial consultants.

#### Least efficient

The most critical gap in capacity related to government agencies and organisations indirectly involved in the process, particularly with regards to administering the land and network connection arrangements. The demand upon their services and resources resulting from the Solar Auction exceeded expectations and appropriate arrangements were not implemented in some cases. Consequently, some proponents perceived processes regarding these two aspects of the Solar Auction as difficult, complex, and costly.

Earlier involvement of the financial advisor would have also benefited the process, particularly in setting more specific financial criteria and identifying the type and format of information to be requested (eg pro forma excel spreadsheet, sensitivity analyses etc).

### Was the process transparent?

The process was conducted in a transparent way, with no undue advantage provided to any proponents. Greater transparency could be achieved by making the weightings placed upon each evaluation criterion public with the release of the RFP.

#### Most efficient

Information provided to proponents was consistent and did not provide undue advantage to any proponents. Strict probity requirements were enforced throughout the process, with the Solar Secretariat coordinating and communicating with each of the relevant parties in accordance with the established protocols throughout the RFP process. Feedback provided by proponents agreed the combination of RFP documents and industry briefing provided detailed and clear information on the process.

#### Least efficient

Proponents and consultants both stated that the lack of information about the weighting placed upon each evaluation criterion was a significant problem. It meant that they were unclear where to focus their efforts (in preparing and evaluating proposals), and caused some proponents to question the transparency of the process.

Some concern was also expressed regarding the introduction of the financial guarantee mechanism after the completion of Stage 2 fast-track stream, as there was a perception that this may have altered the approach proponents took in preparing their proposals.

### Was there certainty and predictability in the costs of the process?

The ACT Government and proponents bared the major costs involved in implementing the process, and these costs generally met budget and investment planning expectations. However organisations indirectly involved in the process (through their role in supporting land and network connection arrangements) were relatively unprepared for the impact on their resources.

#### Most efficient

Indicative costs of the process show that the Secretariat and proponent costs were reasonably certain and predictable, particularly in the cases

where proponents had strong local knowledge (proponent views on the cost to participate varied greatly, with 50% stating that the costs were similar or better than other schemes, and 40% stating that they were worse or much worse). The requirement for proponents to invest significantly in bid preparation was implemented to ensure only strong and committed proponents came forward.

#### Least efficient

There were significant costs involved in the process for ActewAGL Distribution and LDA, placing additional burden upon their resources which had not been appropriately forecast. The additional risks and costs associated with this may have been avoided with greater engagement, collaboration, and planning.

## Effectiveness

### Was the Solar Auction effective in achieving its outcomes?

**The Solar Auction effectively achieved all of its outcomes, resulting in a competitive process that provided the ACT Government with a number of high quality proposals to select from that offered relatively low FiT rates (thus providing value for money).**

#### Most effective

A summary of SKM's analysis of performance against expected outcomes<sup>2</sup> is outlined below, reporting that the Solar Auction has achieved its outcomes:

- **Up to 40MW of large-scale solar energy generating capacity within the ACT – achieved.** Projects representing a total of 40MW of generating capacity have been granted entitlements through the Solar Auction.
- **At least 2 winning proposals – achieved.** There were 3 winning proposals – 20MW Royalla Solar Farm, 13MW Mugga Lane Solar Park, and 7MW OneSun Capital Solar Farm.
- **Best value for money for the Territory – achieved.** FiT rates proposed ranged from \$178/MWh to \$325/MWh, with the weighted average FiT rate dropping from \$252/MWh in the fast-track stream to \$203/MWh in the regular stream. The three proposals selected

<sup>2</sup> As defined in the Industry Briefing (10 February 2012)



had relatively low FiT rates (\$178/MWh, \$186/MWh, \$186/MWh) and relatively high weighted scores when assessed against the evaluation criteria.

There were also other proposals that offered value for money for the Territory (but had slightly higher FiT rates or slightly lower weighted scores), which indicates that the process resulted in strong competition.

- Revenue certainty for bidders with strong incentive to build to proposed project timelines – achieved.** Proponents interviewed and surveyed perceived a strong government commitment to the scheme. Major risks (eg financial) associated with not building to proposed project timelines will fall on the proponent, so they have a strong incentive to meet their timelines. Government mostly faces political risk (ie reputational damage) if timelines are not met. Also, volume (level of production) and technical risks are borne by the proponent (and not the government as in other subsidy based schemes) under the FiT arrangement, so they have an incentive to appropriately manage the technical risks.
- Approximately 2% of total ACT electricity consumption – achieved.** The proposed solar energy generation capacity is capable of producing approximately 60 GWh per annum. Based on 2013 consumption value of 2,900 GWh<sup>3</sup> this reflects 2.1% of ACT electricity consumption.
- Around 14% of minimum ACT electricity demand – likely to be achieved based on average demand data.** Based on average ACT MW demand, the 40MW of capacity would contribute approximately 12% of average demand. As minimum demand would be lower than the average, it is likely that the percentage contribution would exceed 14%.

Much of the Solar Auction’s success in achieving its outcomes was due to its effectiveness in:

- Generating strong competition among proponents and resulting in highly competitive FiT rates
- Applying and weighting evaluation criteria focused on feasible and realistic project development
- Utilising the Advisory Panel, which had members with experience and expertise highly

relevant to the critical aspects of proposal evaluation

Feedback from proponents, Advisory Panel members, and consultants indicated that the Solar Auction resulted in a very competitive process. Analysis of the proponents identified a mixture of strong local and international companies bidding, and an overall generally high quality of proposals to select from. Subsequent to announcement of the fast-track stream, the quality and financial competitiveness of proposals increased again, with lower FiT rates being offered. The signalling to the market from the fast-track appears to have contributed to the delivery of more consistent and more competitive bidding by the proponents.

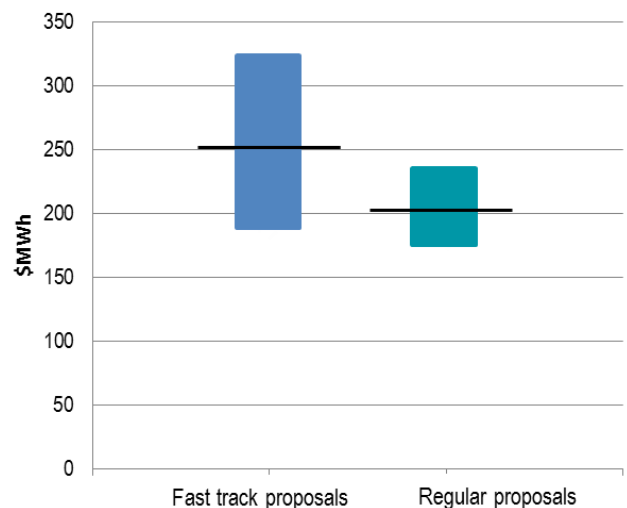


Figure 3: Range and average FIT rates proposed in Stage 2

**Least effective**

As FiT payments are only given for actual performance, there is a strong incentive to obtain an understanding of the legal and regulatory requirements – however, subsequent to the granting of the successful bids, there have been some issues arising from development approvals at sites due to local opposition.

Most of the consultants involved with reviewing proposals stated that their ability to inform the Advisory Panel would have been improved if they had more engagement with the Secretariat, Advisory Panel, and each other. However, of the assessments reviewed, the ratings reported by the Advisory Panel appear to have been generally consistent with the advice provided by consultants.

<sup>3</sup> ActewAGL; AER



### Was the process fair, enabling equal opportunity among potential participants?

**The process enabled equal opportunity among potential proponents, noting that its requirements (demonstrated through the evaluation and eligibility criteria) were high due to the relatively large scale and long timeframe associated with the potential developments.**

#### Most effective

The process attracted a strong response from industry, with 49 proposals being submitted by 27 proponents at Stage 1. Twenty-seven proposals prequalified to apply for Stage 2 (fast-track and / or regular streams), with three proposals proving successful in receiving the FiT entitlement.

While most stakeholders stated that a fast-track and regular stream were not necessary for future auction processes, they did comment that it was important for the “pilot” process as it enabled proponents to refine their market understanding of competition, understand what was expected by the ACT Government, and then reapply accordingly in the regular stream if they were unsuccessful in the fast-track stream.

#### Least effective

The requirements of the bid process may have deterred smaller entities from incurring the cost of putting in a bid. The cost of preparing a legitimate bid is likely to be high and affect the financial viability of smaller companies if their bids did not succeed.

### Were risks appropriately allocated among the parties involved?

**Risks have been appropriately allocated among the parties involved, with the ACT Government’s key risks limited to those that are political / reputational in nature, and the proponent bearing greater risks associated with delays or failures in delivery the project.**

The risk allocation was reviewed against standard industry practice (based upon power purchase agreement models) for completeness. The formal risk allocation between the parties is documented in the Deeds between the successful proponents and the ACT Government<sup>4</sup>, the Electricity Feed-in Act, and in the payment agreements with ActewAGL Distribution.

#### Most effective

The risk allocations proposed by the ACT Government were in line with general industry practice and mitigated risks to the ACT Government associated with delivery of the project as proposed by the proponents. Furthermore, the obligations on the developer were not considered excessively onerous or detrimental to the competitiveness of the Solar Auction.

#### Least effective

Based on the review of documents against standard industry practice, SKM identified four key commercial risks:

- **Project development** – As the counter-party with the revenue payment obligation, the distributor may have a disincentive to cooperate with and connect the generator ahead of its other uses of resources. This is a risk to project development and the auction process which has not been adequately addressed. Some protection is provided by the obligations placed on the distributor by regulatory codes governing network service operators. But ensuring adequate connection agreements are entered into which encourages the distributor to maintain connection could become an evaluation criterion (say by aligning payments to performance), although possibly at the expense of reducing the number of bids.
- **Revenue security** – There is a lack of clarity in payment details, which reduces the generator’s security of revenue. This could be addressed through the development of guidelines as provided for under the Electricity Feed-in Act, however there is uncertainty for proponents regarding the details of the potential guidelines (refer Act ss18-20).
- **Force majeure** – The limited scope of the force majeure clause may restrict its operation as it is not clearly open to events other than those listed, even in cases where the events are outside a proponent’s reasonable control (refer Draft Deed ss17.13(a) and 17.14).
- **Change in law** – Change in law is only available as relief similar to force majeure. It is not available in the usual manner to pass-through a change in cost structure due to a change in law (refer Draft Deed s17.13(b)).

<sup>4</sup> SKM reviewed the Draft Deed of Entitlement



## Conclusion – has the Solar Auction achieved its objectives and attained a value for money outcome?

### Alignment with the objectives of the Act

A summary of the Solar Auction’s contribution to and alignment with the objectives of the Electricity Feed-in Act is provided as follows:

- Promote the establishment of large-scale facilities for the generation of electricity from a range of renewable energy sources in the Australian capital region – partially achieved.** As the first release of capacity under the Act, the Solar Auction has focused solely on the establishment of solar energy generation. Thus, while it has made a substantial and significant contribution to this objective, it has not delivered generation from “a range” of renewable energy sources.
- Promote the development of the renewable energy generation industry in the ACT and Australia consistent with the development of a national electricity market – achieved.** Has brought new players to the ACT and Australia, with industry stating confidence in the ACT Government’s renewable energy commitment and policy.

It may be possible to generate additional benefits through future capacity releases through greater engagement with the Business Development agency and by seeking clearer information from proponents about the proportion, volume, and scale of worked to be carried out locally.
- Reduce the ACT’s contribution to greenhouse gas emissions and help achieve targets to reduce the ACT’s greenhouse gas emissions – achieved.** LGCs to be transferred (voluntarily surrendered) to the ACT as part of the FiT entitlement conditions. Around 1.2 million tonnes of GHG abatement could be achieved over 20 years from the 40MW of generation capacity developed under the Solar Auction, especially if the solar generation displaces coal-fired generation.<sup>5</sup>
- 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.** The proposed projects offer the ability to displace non-renewable energy and the cost to consumers has been minimised through a competitive process which resulted in relatively low FiT rates. Impact of the costs upon consumers is minimised due to the long timeframe of the FiT entitlement (20 years).

### Value for money evaluation

The value for money evaluation completed by the Advisory Panel was based on: (a) the proposed FiT rate; and (b) the ability of the proponents to successfully deliver and operate the projects. Criteria used to assess the ability of proponents to deliver the project are:

- FPEV 1 – Demonstrate understanding of legal and regulatory environment that will impact the successful implementation of the proposal;
- FPEV 2 – Access to funds and commercial viability of the proponent and the proposal
- FPEV 3 – Capacity to maximise National Electricity Market (NEM) sales
- FPEV 4 – Realistic and timely implementation schedule
- FPEV 5 – Proposal financial guarantee (only applicable in the regular stream)

These criteria were given a score out of 10 and then weighted to provide a final value, which was compared with the proposed FiT rate. The Advisory Panel’s weightings for the evaluation criteria are provided in the table below.

Table 1: Weighting for evaluation criteria

	FPEV 1	FPEV 2	FPEV 3	FPEV 4	FPEV 5
<b>Fast-track</b>	30%	50%	10%	10%	NA
<b>Regular stream</b>	27%	45%	9%	9%	10%

These weightings align with the critical aspects of development, allocating 80% of the weighting to regulatory (FPEV 1) and funding/commercial capability (FPEV 2) in the fast-track stream, and 72% in the regular stream. Good capability and management of these two criteria will also assist with achieving FPEV 3 and FPEV 4. Although it should be noted if the weightings were equal the relative outcomes/scores for the successful proposals would still be similar.

<sup>5</sup> ACT Government. This assumes an average emission intensity of grid supplied electricity of around 1.0 t/MWh. The level of abatement may be lower if the displaced emission intensity is lower

While the above criteria were important, strong consideration was also given to the FiT value. This was demonstrated by proposals offering the lowest FiT rates being among the successful proposals in the fast-track and regular streams, even though other proposals had similar or slightly higher evaluation criteria scores.

The other aspect of value for money is how the FiT achieved in the Solar Auction compares with other solar projects announced in Australia. Two benchmarks were examined, and based on standard equity/debt parameters and capacity, energy and cost information released to the public, their equivalent FiT or levelised cost of energy (LCOE) would be in the order of:

- Greenough Solar Farm (10 MW) ,WA – LCOE – \$240/MWh
- AGL Nyngan/Broken Hill Solar farm<sup>6</sup> (153 MW), NSW – LCOE – \$180/MWh<sup>7</sup>

In comparison to these two projects, the FiT achieved in the Solar Auction process is very competitive and represents the lower end of current expected costs within Australia.

From the information presented it would appear that value for money has been obtained. This is based on three considerations:

- Low FiT offers were selected
- Successful projects had high scores against each of the evaluation criteria
- The FiT values obtained are likely to be lower than external benchmarks from other solar projects recently built or that have been announced.

While the long term value for money cannot be clearly evaluated as none of the projects have yet been completed and operated successfully in the NEM, the criteria included in the assessment (that try to capture long term viability as well as constructability of the project) coupled with the FiT, is likely to see the Solar Auction process deliver good value for money for the ACT Government from solar PV generation.

<sup>6</sup> This project has received significant Government funding from the Office of Energy, Royalties for Regions Program through the WA Department of Regional Development and Lands, and Mid West Regional Development Commission

<sup>7</sup> The scale of these projects would help with economies of scale and hence lower costs/MWh

## Prospective evaluation

The purpose of the prospective evaluation is to assess the Solar Auction's expected impact and its potential to be scaled up and / or extended to other types of renewable energy generation.

### What is the potential impact on electricity market competition?

The scheme could impact on two electricity markets, being the wholesale and retail markets.

#### Wholesale market

The most relevant wholesale market would be the NSW wholesale market of the NEM. At the sizes being considered, and even if the scheme expands to the existing 210 MW FiT capacity in the legislation<sup>8</sup>, it is expected to have no to minimal impact on competition. This is largely due to the scale of the NSW wholesale market, which is in the order of 14,000 MW peak generation and 8,000 MW average generation.

#### Retail market

In terms of retail competition, the structure of the FiT, and the allocation of the liable party being ActewAGL Distribution, the scheme should not impact on retail contestability. The FiT cost should be passed onto all customers by ActewAGL Distribution, in a similar way to a network tariff. It is estimated that with the current three projects the increase in residential bills may be in the order of 1 %<sup>9</sup> to cover the cost of the FiT and may increase to 5-6<sup>10</sup> % by 2020 under a hypothetical scenario of 210 MW of predominantly solar capacity being developed.<sup>11</sup>

No retailer is disadvantaged from offering in a project / proposal to the process and there would appear to be no advantage gained in the current projects by any retailer.

<sup>8</sup> Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011

<sup>9</sup> Assumes 7750 kWh per household, annual ACT demand of 3000 GWh in 2013/2014 ActewAGL retail prices, wholesale price of electricity \$50/MWh

<sup>10</sup> Assumes flat growth to 2020 in demand, lower carbon price, wholesale price of electricity of \$50/MWh

<sup>11</sup> AP2 estimates a total retail price increase of 16% to achieve 690 MW of large-scale renewables based on a blend of solar, wind and biomass energy generation.

## Is the Solar Auction process scalable?

The general Solar Auction framework is open to expanding to other technologies. However the existing Act has a 210 MW limit of which 40 MW has already been allocated, so this would need to be significantly increased to allow for 90% renewable energy as foreshadowed in AP2. Furthermore, distributors would need to be more engaged in any scaling up of the Solar Auction, particularly where outcomes may be impacted by network capacity constraints in the ACT or Australian Capital Region. Opening the process to developments being located in the Australian Capital Region (rather than only within the ACT as was the case for the Solar Auction) will also be important to address land availability issues, particularly for larger scale developments like wind energy.

There is some advantage to spread the future auctions over time to capture potential cost de-escalations of technologies, although this needs to be balanced by short term market opportunities as they emerge.<sup>12</sup> In the case of solar, capital cost reductions are likely to continue<sup>13</sup> and hence a delay in implementation may see further reduction in costs and lower FIT outcomes (ie lower cost to ACT electricity customers).

### Alignment with policy and legislation

The Solar Auction appears to be complementary to other greenhouse or renewable deployment policies. There is some uncertainty over whether future project proponents could also obtain funding under the Coalition's proposed Emission Reduction Fund, although the intent of this fund is to support additional abatement opportunities (that is, abatement that would not have occurred in absence of the fund) so we would expect minimal double dipping would be allowed.

### Use of financial guarantees

Industry and investor confidence in renewable energy project development in Australia has been somewhat weakened by the "start-stop" nature of a number of government schemes. Longevity of the reverse auction process is likely to improve this, and many proponents stated that the outcomes of the

Solar Auction so far have significantly improved negative perceptions of Australia's renewable energy market.

The use of financial guarantees or other loan measures to support greater and faster private sector investment in clean energy is not uncommon. For instance, the US Department of Energy has established the Loan Programs Office to administer loans which help proponents and lenders mitigate the financing risks associated with clean energy projects.<sup>14</sup> These programs have received mixed reviews due to a number of failed projects, particularly associated with clean energy start-ups and less established technologies, and the US Department of Energy now has a \$34 billion portfolio of loan guarantees to renewable and nuclear energy, with about 2% of the portfolio representing losses.

However the Financial Guarantee offered by the ACT applies only to a change in law and there is no liability for the ACT Government associated with failure of proponents to successfully implement a project.

While the use of financial guarantees appears an important factor in proponents' considerations at this point in time to enable them to gain investor confidence, this may change once projects are built and operating, and much larger proponents potentially purchase and aggregate projects to reduce risk and increase diversity across their renewable energy portfolio.

## What is the potential for extension of the legislative framework and Solar Auction process to promote investment in other renewable energy sources?

Expansion to other technologies should be possible, although it would be beneficial to explore the potential of each technology type prior to expanding the auction to any specific technology. This is to avoid the potential of an ineffective process costing time, money and damaging confidence. The framework should enable expanding of the auction, particularly to wind<sup>15</sup> and solar, which are supported by relatively established technology.

However, it should be noted that this type of auction lends itself to already developed technologies with minimal technical risks. This is because financiers

<sup>12</sup> For example, recently costs of wind turbines have been subdued due to high exchange rates and depressed markets for turbine manufacturers

<sup>13</sup> Modelling indicates a 2% reduction per annum in solar capital cost could be expected and if the remainder of the capacity was spread over the period to 2020 would reflect a FIT in the order of \$160/MWh

<sup>14</sup> US Department of Energy, "About the Loan Programs Office (LPO)", <http://lpo.energy.gov/about/>

<sup>15</sup> It is understood that an analysis of wind potential in the Australian capital region has been performed.

supporting renewable energy projects face two sorts of risks:

- **Capital cost risk** – in developing a project based on novel technologies. This can be covered under the FiT arrangements if proponents were able to grant other sources of concessional funding (say through government grants) to cover upfront costs.
- **Volume risk** – the FiT locks in the price paid for the output but does not lock in the volume of generation. For new technologies, the volume of generation may not be as high as anticipated and this poses a significant risk to the anticipated revenue streams.

## Wind

While there is no doubt that including wind farms into the mix will reduce the FiT cost, the available wind resource, connection issues, and land availability / visual amenity impacts may limit the size and number of wind farms. A typical large scale wind farm (ie 100-200 MW) is likely to have an LCOE less than \$100/MWh. Smaller scale wind projects impacted by poor economies of scale and added cost such that their LCOE may exceed \$100/MWh, is still likely to be less than solar projects at least in the short term (ie next 5 years).

Key considerations in regard to wind projects include:

- Adjusting the evaluation criteria (eg capacity to maximise NEM sales will be limited based on site layout and design, legal and regulatory requirements may become more important due to greater environmental and community requirements)
- Larger scale of projects may require proponents to access the financial guarantee (eg 100-200MW project may require up to \$400m in capital)
- Synchrony of wind and solar project outputs, as this may reduce the variability of overall renewable generation

## Other

Capacity would need to be set aside for less established technologies like biomass (based on pyrolysis or fluidised bed technologies), solar thermal, and geothermal, as they are unlikely to be able to compete with more established technologies due to the associated costs and risks. This also means it is likely to be more difficult to obtain finance for these projects. To mitigate some of this risk, the

evaluation criteria would need to include a greater focus on technical due diligence and project plans should incorporate technology-focused milestones. But the nature of FiT payments means that projects with significant technical risks would be unlikely to participate in the auctions without supplementary financial support (potentially through existing Commonwealth funding opportunities).

Biomass (energy-from-waste) is seen as relatively feasible, particularly if it is large scale (as this will improve pricing) and the location / source of fuel is known, although there are still some technical risks associated with new generation technologies such as gasification.

## Recommendations

### Recommendation 1: Amend the Territory Plan to consider renewable energy developments in accordance with future releases of capacity

Although the definition of development for Power Generation Station was recently changed to allow for renewable energy generation, the Territory Plan has not specifically been updated to consider renewable energy developments within zone development tables, development codes and precinct plans and codes, so should be reviewed to enable more certainty around land use and availability for proponents and potentially affected communities. This review may result in a draft plan variation to amend the Territory Plan.

The type of variation required will depend on the specifications of the future capacity releases (ie type and location of development). A draft plan variation is prepared by ESDD and published for public comment. It can take 12 to 18 months to complete and requires Legislative Assembly approval.

### Recommendation 2: More broadly communicate the separation between the grant of FiT entitlement and project development approval stages

Communication regarding the phases involved in a proponent developing renewable energy generation capacity in the ACT should be clarified to improve the public's understanding of the whole process (from competing for the grant of FiT entitlement to building and operating the developments). This is also important to communicate to proponents so that they are fully aware of the potential risk of their project not proceeding if it cannot obtain development approval. The process should be presented as comprising two stages:

- **Grant of FiT entitlement** – is the proposal constructible, economic and feasible, and does it offer value for money?
- **Development approval process** – is the site suitable for the proposed development?

These two stages are clearly presented as separate in the RFP and Deed of Entitlement documents, but this could be more broadly and openly communicated.

### Recommendation 3: Undertake a more collaborative planning phase prior to future releases of capacity

All affected stakeholders could be more engaged in the planning phase for future releases of capacity. Strong engagement with these stakeholders will help to better prepare for and address any implications, risks, and challenges involved in developing renewable energy generation capacity in the ACT. It will also assist them to gain a clearer understanding of the likely budget and resource impact that implementation of future processes may have on their respective organisations.

The mechanism to undertake collaborative planning should be the establishment of an Advisory Working Group that works with the Solar Secretariat to provide advice (no decision making power) regarding issues like land and network planning, financial guarantees etc. The Advisory Working Group should include representatives from EDD, ACTPLA, ActewAGL Distribution, and the Chief Minister and Treasury Directorate

### Recommendation 4: Incorporate lessons from the Solar Auction into future evaluation design

There are a number of lessons from the Solar Auction which should be incorporated into evaluation design to improve its clarity and robustness. These include:

- Share the weightings assigned to each evaluation criterion with proponents and consultants
- Provide more detail on what evidence is required to demonstrate fulfilment of each evaluation criterion to improve the overall quality of proposals and help proponents make a more informed decision about investing in the process
- Greater guidance and coordination given to the consultants to increase the effectiveness, transparency, and consistency of proposal evaluation

### Recommendation 5: Strengthen program design to support the ACT and Australia renewable energy industry development objective

While many of the proponents (including the successful proponents) have partnering strategies that include large numbers of local firms and staff, future program design should seek to require proponents to demonstrate the proportion, volume, and scale of work to be carried out locally and advantage proposals that deliver greater local economic development benefits.

### Recommendation 6: Clarify payment agreement details to provide more confidence for proponents

Payment agreement details are to be negotiated between the generator and distributor. There is little detail provided on how these will work, which means that proponents take on more commercial risk when compared to other schemes and initiatives.

If not already specified, we recommend that the following be specified for payments by the distributor, to reduce ambiguity and potential for the distributor to dispute the payment:

- Acceptable methods for giving the notice for payment
- Addressee for the notice for payment
- Information required to be included with the notice (refer to technical report for details)
- Above numerical information be provided in a Microsoft Excel 2010 file

Concerning matters of payment, we recommend a prompt and binding dispute resolution process be implemented rather than the court system. For example, the Australian Energy Regulator's wholesale electricity market dispute resolution advisor could be used.

### Recommendation 7: Refine Force Majeure and Change of Law clause in the Deed of Entitlement

In the Draft Deed of Entitlement, the *Force Majeure and Change of Law* clause (ss17.3 and 17.14) is unreasonably limited, which could make project financing unnecessarily difficult for proponents or deter them from bidding.

The clause should be better structured to capture a reasonable exemption for the generator from performing its obligations under conditions of force majeure. We recommend seeking legal advice to draft improved clauses incorporating solutions to the issues raised in the risk allocation section.