



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

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Dear Mr Traves

The Australian PV Association (APVA) welcomes the opportunity to comment on the 'Options for an Expanded ACT Electricity Feed-in Tariff Scheme' paper published by the ACT Department of the Environment, Climate Change, Energy and Water (DECCEW) in December 2009.

Background on the APVA

The APVA is an association of companies, government agencies, individuals and universities with an interest in solar photovoltaic electricity research, technology, manufacturing, systems, policies, programs and projects. In addition to Australian activities, we provide the structure through which Australia participates in an International Energy Agency (IEA) program called PVPS (Photovoltaic Power Systems), which in turn is made up of a number of activities concerning various aspects of PV performance and implementation. Further information is available from www.apva.org.au and is provided in Attachment A.

Overview and general comments

The Australian PV Association (APVA) commends the ACT Government for the *Electricity Feed-in (Renewable Energy Premium) Act 2008* which is meeting the objectives of:

- a) promoting renewable generation;
- b) reducing the ACT's contribution to human-induced climate change;
- c) diversifying the ACT's energy supply; and
- d) reducing the ACT's vulnerability to long-term price volatility in relation to fossil fuels.

Use of a Feed-in Tariff (FiT) is certainly a successful mechanism to develop renewable energy markets and is used in various countries and states, as also stated in the report 'National Capital to Solar Capital'. To make it successful a FiT requires well defined long-term targets, a detailed analysis and implementation plan, a mechanism to adjust the tariffs on a regular basis and long-term commitment to provide or facilitate the funding. We know that a FiT scheme provides investment security for private or commercial entities and creates jobs mid to long term. However,



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

there is a thin line in succeeding with a successful FiT benefitting the administrator, the local industry and the public. If a FiT level is too low, limited up-take will result and the program may fail because the targets have not been achieved; if the FiT level is too attractive the program goes into a 'bust' cycle and generates windfall profits and burns out quickly (e.g. Spain, Luxembourg).

In our opinion, a FiT scheme (for any kind of renewable energy power generator) should be implemented coupled with an Energy Saving scheme. Energy efficiency (EE) is almost always the least-cost measure and complements a conducive mechanism to implement Renewable Energies (RE). A holistic strategy – in the report envisioned as a 'Clean Economy' transition – (encompassing market growth, industry development and capacity building for the public and many other stakeholders) for RE and EE is needed to achieve impact and leverage of the funds invested, and develop the capabilities and build capacity to groom the local industry across a broad range of segments.

Policies with multiple objectives, such as this one, can be difficult to deliver and to evaluate, due to the potential for conflict and the difficulty in assessing outcomes. Objectives without quantifiable targets are also difficult to evaluate. Ultimately any decision to alter the design of ACT's Feed-in Tariff (FiT) should be based on the government's assessment of how much distributed renewable generation is optimal to be installed in the next 5 years in the ACT, given the 4 objectives cited. Unfortunately the Discussion Paper does not provide sufficient information to make this assessment.

The discussion paper forecasts long-term job losses due to higher electricity prices caused by the FiT. This forecast fails to acknowledge the fundamental point that, presently, a significant proportion of the purchase price of every kWh of electricity consumed in the ACT leaves the Territory and creates jobs elsewhere. The FiT actually reduces this flow of funds out of the ACT and will increase economic activity and jobs in the ACT.

Recommendation 1

The ACT government should announce a renewable MW installed target (or % of annual load) for the ACT for the end of 2014-15 and 2019-20.

Recommendation 2

The ACT government should publish the KPMG Econtech modelling report.

In addition, some graphs and analysis of daily and seasonal load profiles, breakdowns of load data by sector, predicted growth rates and forecast network upgrades and price paths would have been useful. This information may already be available but consolidating it in one, user-friendly, document would assist informed debate on energy issues in the ACT. It would also provide important detail to allow distributed generation, such as PV, to be targeted to areas of the network where it could provide the most value in supplying load and deferring network upgrades.

Recommendation 3

The ACT government should publish an annual 'Energy in the ACT' document that aims to improve community understanding of energy and greenhouse issues, figures, economics and forecasts.



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

Current Scheme

The current scheme is forecast to result in 27 MW of solar distributed generation to be installed by 'the end of the first five year period'. Unfortunately, there is no explicit definition of what this date is, the annual install and growth rates or the assumptions used. From the limited data in the Discussion Paper, the annual install of MW to achieve this may look something like Table 1.

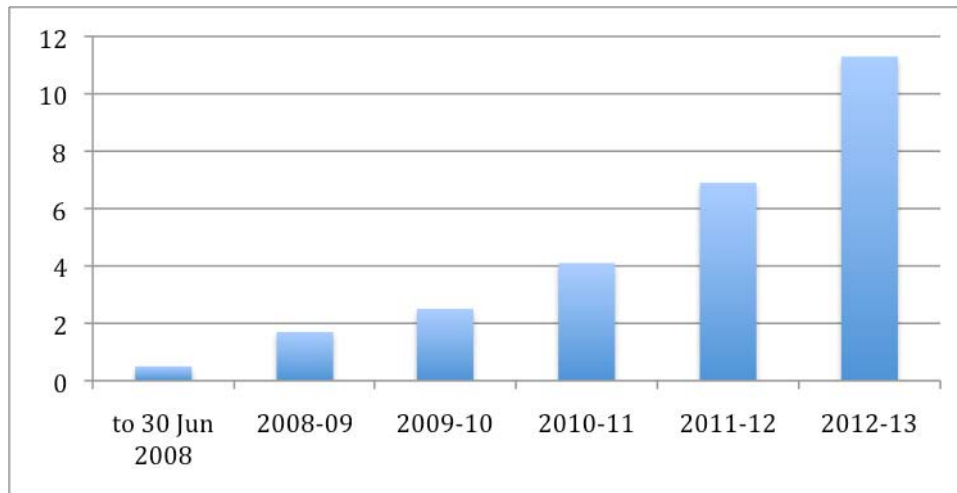


Table 1: Illustrative annual installs to achieve 27 MW in 5 years.

To achieve this, the annual growth rate for MWs installed is approximately 35%. If this rate of growth is extrapolated out, the ACT could achieve more than 100 MW by 30 June 2018, (with 28 MW installed in 2017-18). The APVA believes that this extrapolated forecast will be difficult to achieve under the parameters of the current scheme, due to installation size limits, skilled labour shortages, network constraints and other issues, but it is shown to illustrate the need for more detailed analysis. The effect of the Federal government's rebate program and its change to 'Solar Credits' also make interpretations of historical trends not straightforward. The 27MW forecast does not appear to factor in any reductions in the Premium Price, (although assumptions regarding this are not specified). Interestingly, it appears from the figures quoted that the 27 MW forecast is what has been accepted by the Australian Energy Regulator to approve an increase in ACT electricity prices by a total of \$49.7m in the period to 30 June 2014.

Recommendation 4

The ACT government commissions and publishes detailed economic modelling on forecast annual MW installed for a range of Premium Price decline scenarios that includes analysis of skilled labour availability, training requirements, grid hot spots and constraints.



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

Responses to specific questions posed

Do you believe there should be a cap on the Scheme if it is expanded? If so, what form should the cap take? Do you believe an annual cap is appropriate? If so, do you believe it can be administered equitably?

NO - The APVA supports sustainable growth in the Australian PV sector. Annual caps are inappropriate as they lead to boom-bust cycles, stop-start work for those employed in the sector and a panic to install before the cap is reached. This latter is evident in NSW at present, where there is a rush to install before the 50MW cap and that limit is expected to be reached within a few months of the scheme commencing. In other countries, caps have been reached within hours or days of schemes being announced. The cap problem was clearly illustrated in Spain last year, where the ramifications impacted the entire global PV industry.

In a capped market, cost reductions often do not follow the same learning curve as in an uncapped market. In markets such as Luxembourg, Switzerland, Austria, Italy, system costs peaked because of limited market penetration by the developers. Project developers with site and project approvals packaged their products and approvals and sold them often to the highest bidder, which triggered a price increase. To implement a capped scheme will be difficult to administer equitably, as experiences show from capped PV markets. The administrator of the FiT scheme is flooded with application within the first hours or days and the application pipeline becomes difficult to manage, and also misuse of non-genuine FiT project developers has resulted. For instance, in Thailand and India, after few weeks a 'black-market' for FiT permits emerged and created a different business, which was not foreseen by the implementer. The administrator started introducing an application fee to prevent misuse and get serious proposals only. Thus, to administer a capped FiT scheme equitably is difficult and requires sound and sensitive planning and consulting with the involved stakeholders to prevent misuse and still provide the sustainable environment for investment and implementation.

An uncapped scheme provides a long-term perspective for the industry to grow in a sustainable way and very little misuse has been reported from uncapped markets. However, the administrator of such a scheme needs to carefully design the FiT rates to achieve benefit for the local industry and to stimulate a 'realistic and moderate' market growth following a realistic learning curve, and not creating a 'boom' market. An uncapped market with FiT rates which are too attractive will 'bust' the local market and may trigger increasing system costs instead of declining cost. This is illustrated in Figure 1 below. The exploding FiT cost may change the public perception and may put the administrator under (political) pressure, e.g. today in Germany.

The optimal way to manage the FiT is to avoid significant unplanned step changes in the Premium Price by publishing planned reductions over time. An uncapped scheme needs to incorporate a FiT degression mechanism to enforce cost reduction in the market, following a sliding scale. For example up to 50 MWp/annum the FiT degression could be 9%, from 50 to 200 MWp/annum 11% and > 200 MWp/annum e.g. 13%. Another option would be to reduce the time period over which the Premium tariff is available from its current 20 years to say 15 years, 10 years, 5 years, again depending on market uptake.



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

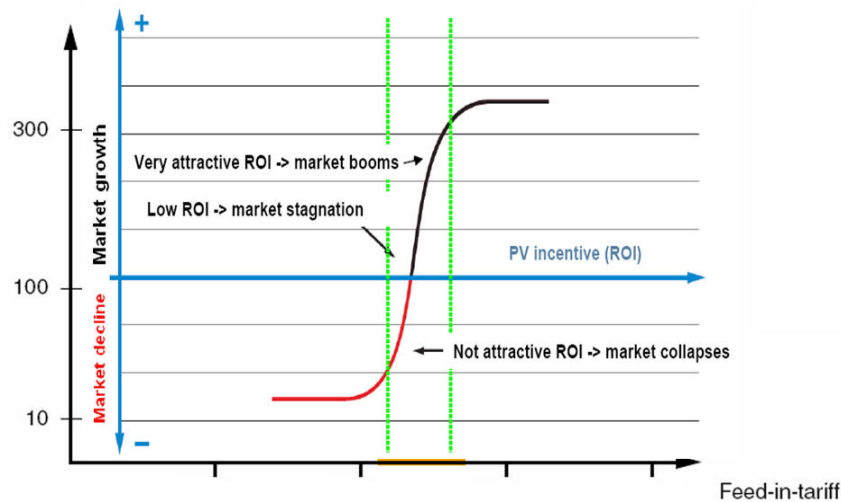


Figure 1: Finding the optimal Feed in Tariff rate

Including a flexible but known tool to adjust the FiT scheme and the growth will result in cost reductions and ultimately lead to grid-parity and market competition. Long term market certainty about the scheme prevents boom-bust cycles and facilitates orderly development of an industry which will remain sustainable after the tariff ends. For Government, this also provides a clear exit strategy and limits the cost of the scheme to the community.

Recommendation 5

The ACT Government should develop and publish a forward projection of Premium Tariff price, capacity or time reductions but should not introduce a capacity cap.

What do you think is the most appropriate level of retail price cap? What are your views on the short and long term job impacts?

While providing an interesting analysis for the Government, it is difficult to understand how a retail price cap could be used to develop appropriate Premium tariffs over time. PV take-up rates will be dictated by current PV prices, prevailing electricity tariffs, the size of the Premium tariff and general environmental and self-sufficiency concerns.

The modelling reported in the Discussion Paper suggests 49 MW of additional installations over two years under a Premium Price 55% of the current one. The assumptions used to arrive at this figure are not clear, but this would appear to be an unrealistically high projected uptake compared to current levels, since the tariff would be 27.5c/kWh.

Reading the document, we have difficulty understanding how a retail price cap (e.g. \$150 threshold) can be applied to all electricity consumers and used to model the mid to long-term impact of a FiT scheme. The annual FiT expenses are passed-through to all electricity customers by:

$$\text{FiT Cost Individual} = \frac{(\text{Total Annual FiT Cost of the Program} * \text{Electricity Consumption Individual})}{\text{Total Annual Electricity Consumption ACT}}$$



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

The individual FiT cost (e.g. retail cap) is dependent on individual consumption, which could trigger energy savings in the household and benefit the program's other aims: CO₂ emissions and industry development.

For the modelling, a target level (and not cap) should be defined by assessing the local industry capabilities (what can be realistically installed in any one year by the existing local industry and new companies establishing business in ACT), a realistic growth scenario (25% to 35% CAGR) and the level of acceptance for the FiT levy for the electricity customers. For example, in Germany the level of FiT (over 20 years) impacts the residential electricity customers by 1.5% to 3% in their annual bills, depending on their consumption.

In summary; no retail price cap should be adopted. A cap hampers the development of the PV (or RE) industry and doesn't complement the ultimate goal of a transition towards a Clean Economy. An uncapped scheme will be the fastest way to reach the desired sustainable catalyst of new green-collar jobs and will also drive technology cost reductions towards grid-parity.

Do you consider the Clean Economy opportunity to be a significant factor in considering the potential expansion of the Scheme? Would you support the Government taking action to sustain the short-term employment growth arising from that expansion? What sort of actions would you support?

Yes. Transition to a Clean Economy is an important goal and one fully supported by the APVA. The research, development, manufacture and use of PV is fully consistent with this goal. The ACT is well placed to leverage all these aspects of PV implementation.

Extending the size cap to 100 kW is supported to access the current FiT, for consistency with the small generation provisions of the RET.

A separate FiT to encourage larger installations should be developed, based on current and projected costs, if the ACT wishes to attract larger developments and hence enhance the prospects of significant industry development and jobs.

The ACT should develop long term targets for renewable energy contribution to electricity and general energy use.

Recommendation 6

The ACT Government should extend the current FiT to systems in the size range 30 to 100 kW at a Premium Tariff set at 60% of the base rate.

Recommendation 7

The ACT Government should examine the introduction of a suitable FiT for systems in the 100 kW to 30MW size range in order to attract industry to the ACT and to begin a serious transition to a Clean energy economy



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

If a solar power facility based in the ACT became operational, should only those units of electricity actually sold into and used within the ACT electricity network be considered as potentially eligible for a Premium Price under the ACT Scheme. Should the sale of electricity to an interstate user or on-seller be deemed ineligible.

If the >30 MW Solar Power Facility is built it should not access the FiT unless the scheme is altered to allow all MW sized installations to access the FiT. In the absence of a general FiT for systems larger than 30MW, the ACT government should purchase the electricity from the Solar Power Facility at a premium and transparently identify this.

Where the electricity is sold is irrelevant as this is just a financial arrangement which may well change with time. The ACT network and, potentially, ACT based businesses, remain the beneficiary of the installation.

Do you think access to the Scheme should be extended to community-owned generation sites? Should owners or occupiers of unsuitable properties be able to access the Scheme through alternative means? Do you have any views on how the issues identified by the ICRC could be addressed?

Yes. For equity reasons, renters, households with limited solar access and strata titles should be able to benefit from the scheme via installations placed elsewhere or jointly owned.

Should ACT and Commonwealth Government agencies be allowed access to the Tariff? If so, which ones? Both Commonwealth and ACT?

No - government agencies should be required to purchase 100% GreenPower.

For the ACT, all agencies or only certain agencies such as health facilities or ACT Housing properties? If granted, do you think access should be limited and, if so, on what basis.

No – ACT Housing should be investing its limited funds into energy efficiency and solar hot water systems as well as building energy efficient public housing using proven passive solar design principles.

Should there be restrictions or conditions on the use of funds by agencies such as redirecting the monies to health or community services?

ACT Government agencies should not be eligible for the FiT and should be required to purchase 100% GreenPower. This may provide an opportunity to facilitate the proposed >30 MW Solar Power Facility, or other large-scale public PV installations, that can sell their generation as GreenPower.



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

Attachment A: The Australian PV Association

The objective of the Australian PV Association is to encourage participation of Australian organisations in PV industry development, policy analysis, standards and accreditation, advocacy and collaborative research and development projects concerning photovoltaic solar electricity.

APVA membership provides:

Information

- Up to date information on new PV developments around the world (research, product development, policy, marketing strategies) as well as issues arising
- Access to PV sites and PV data from around the world
- International experiences with strategies, standards, technologies and policies
- Australian PV data and information
- Standards impacting on PV applications

Networks

- Access to international PV networks (PV industry, government, researchers) which allow personal relationships to develop and can be invaluable in business, research or policy development or information exchange generally
- Opportunity to participate in international projects, with associated shared knowledge and understanding
- Opportunity to meet regularly and discuss specific issues which are of international, as well as local interest. This provides opportunities for joint work, reduces duplication of effort and keeps everyone up to date on current issues.

Marketing Australian Products and Expertise

- Opportunities for Australian input (and hence influence on) PV guidelines and standards development. This ensures both that Australian products are not excluded from international markets and that Australian product developers are aware of likely international guidelines.
- Using the information and networks detailed above to promote Australian products and expertise.
- Working with some of the network partners to further develop our/their products/services to an overall better product.
- Using the network to enter into new markets and/or to open new business opportunities in Australia.

The International Energy Agency PV Power Systems Programme (PVPS)

One principal activity of the APVA is to manage Australian participation in the PVPS. This work is arranged by Tasks, each with its own commitments of time and resources. At present Australia participates in:

Task 1 – PV Information Exchange and Dissemination

Task 11 – PV Hybrid Systems within Mini-grids

and is considering:



Options for an Expanded ACT Electricity Feed-in Tariff Scheme

Task 9 (extension): PV in Developing Countries

Task 10 (extension): PV in Urban Environments

Task 13: - PV System Performance

Task 14: - High Penetration of PV in (Smart) Electricity Grids

PV2030

The APVA has developed an 8 point strategy for PV development and deployment in Australia by 2030 and works with all the relevant sectors to achieve the long term aim of a vibrant PV sector in Australia. The Association believes that successful policy support requires a coherent set of long term strategies covering all 8 aspects.



For further information on the Australian PV Association visit: www.apva.org.au
For further information on the IEA-PVPS visit www.iea-pvps.org.