Environmental Defender's Office ACT Inc.

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Ms Pam Davoren
Deputy Chief Executive, Policy
Chief Minister's Department
GPO Box 158
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Dear Ms Davoren

Feed-in Tariff Discussion Paper

The Environmental Defender's Office of the A.C.T welcomes the opportunity to provide comment on the ACT Government's Feed-in Tariff Discussion Paper. This Office is of the view that Feed-in Tariff (FiT) laws are the most effective ways of encouraging the production of electricity from renewable sources, which in turn is an integral part of tackling climate change by reducing greenhouse gas emissions. This is recognised by the 41 countries, states and provinces around the world who have already introduced FiTs.[1]

The benefits of a feed-in-tariff are:

(i) environmental benefits - increased take up of renewable energy systems[2] with a consequent reduction in green house gas emissions;

(ii) economic benefits through:

(a) job creation;[3]
(b) investment in technology and encouraging technology innovation;
(c) protecting the economy from the risks associated with relying on a limited suite of energy technologies and fuels;
(d) providing fair market conditions for renewables which, without a FiT, compete with subsidised conventional energy.

The Office is of the view that the following elements are essential for an effective feed-in-tariff system:

[1] Figure as at 2007 taken from Miguel Mendonca *Feed-in-Tariffs: Accelerating the Deployment of Renewable Energy* World Future Council, Earthscan, 2007

[2] Miguel Mendonca concludes that 'The most successful policy instrument yet devised for speeding the comparative low-cost deployment of renewable energy technologies is the Feed-in-tariff model' (Miguel Mendonca, op cit 1)

[3] The renewable energy sector generates more jobs per megawatt of power installed, per unit produced, and per dollar of investment, than the fossil fuel-based energy sector (Daniel M. Kammen, Kamal Kapadia, and Matthias Fripp (2004) *Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate?* RAEL Report, University of California, Berkeley, p.3)

an obligation on distributers to connect renewable energy systems to the network as a priority;
a guaranteed reasonable rate of return over a set 20 year period.[4] This period provides renewable energy producers certainty in the long-term which will encourage investment and take up;
payment for renewable energy generated to be calculated on gross, not net, production. As the discussion paper highlights, a net export model will only be effective in promoting the take up of large renewable energy systems. This is not likely to be attractive to the majority of consumers due to the large up-front costs; and
a tariff to be paid according to consumption, rather than at a flat rate.

The Office is also of the view that an exemption for low income earners from the tariff would ensure that they are not disproportionately disadvantaged by increased electricity costs.

The Office has provided comments below on the specific issues raised in the Discussion Paper.

Renewable Energy Sources in the ACT

1. *What other renewable energy technologies are utilised in the ACT?*

This Office does not have figures on the types of renewable energy technologies utilised in the ACT. However the Office is of the view that a feed-in-tariff scheme should enable a range of renewable energy sources to be utilised.

As there is greater demand for renewable energy sources and increased research into this area, it is inevitable that new technologies will emerge or existing technologies will adapt in a way that would render their inclusion in a feed-in-tariff scheme desirable. It will be necessary for any scheme to include a level of flexibility to adapt to the changing circumstances of the technologies.

2. Are these technologies commercially viable?

See comments above.

3. Should FiT be extended to commercial and industrial premises?

This Office is of the view that to encourage the greatest take up of renewable energy sources, it is preferable to extend the feed-in-tariff to all premises. The objective of a FiT is to increase the amount of electricity generated from renewable sources. This can be best achieved by allowing all premises to participate in a FiT scheme. The size of commercial and industrial premises often make them well suited to utilising renewable energy systems, such as photovoltaic arrays.

In addition to residential, commercial and industrial premises this Office also recommends that the Government consider extending a FiT to other premises such as community premises, for example schools and scout halls. This could enable cooperative arrangements to be established whereby persons who could not otherwise participate in a FiT scheme, for example renters or home owners whose premises would

[4] The German model, which is widely recognised as a very successful FiT scheme, operates on a 20 year period. In South Australia the *Electricity (Feed-In Scheme – Solar Systems) Amendment Bill 2008* also provides for a 20 year period (see proposed new s36AE of the *Electricity Act 1996* (SA), to inserted by clause 4 of the Bill).

not support a renewable energy generator, would have the opportunity to participate in and benefit from the scheme.

Cost issues

1. Is there a need to limit the size of the systems that are entitled to receive the FiT?

This Office is of the view that the size of the systems that are entitled to receive the Feed-in-tariff should not be limited. As the aim of the FiT scheme is to increase the amount of electricity generated from renewable sources, the best way of achieving this would be by not placing limits on the size of systems that are entitled to receive the FiT. Clearly larger renewable energy systems have the capacity to generate more electricity than smaller systems. Consequently not limiting the size of renewable energy systems that are entitled to receive the FiT would lead to a greater amount of electricity being generated from renewable sources. This would assist in achieving the desired aim of a FiT.

If a size limit were imposed, this may limit the effectiveness of extending a FiT to non-residential premises, as the benefit of the size of the premises (eg greater roof space) would be mitigated against by the size limit of the system.

It is noted that if a size limit were introduced then clearly different approaches for different technologies would be required.

2. Is it appropriate to set a maximum net investment in a PV system?

See our comments above in relation to limiting the size of systems. In our view, similar reasons apply for not setting a maximum net investment in a PV system.

3. Is a ten year payback period appropriate?

To ensure that a FiT is effective it is necessary to ensure that there is financial security and long term certainty to ensure take up. Without long term financial security, the initial up-front costs of installing renewable energy generators, combined with a lack of certainty on the return will discourage rapid take up of green power. In this Office's view the appropriate period for a FiT is 20 years. This is the time frame adopted in Germany, and more recently in South Australia.

In determining an appropriate payback period it is clearly necessary to ensure that there is sufficient financial certainty for consumers to invest in renewable energy systems. If a FiT scheme operated for a 20 year period, a payback period of 10 years would appropriately enable consumers to recover the installation costs for the systems, whilst enabling a period for profit.

Review of Tariff rate

1. Is an annual review sufficient/excessive?

To ensure that people will invest the considerable amount of money necessary to install renewable energy systems it is the view of this Office that it is necessary to guarantee a certain price for a set period. For the reasons outlined in the above question, it is our view that there should be a guarantee that renewable energy producers will be paid the feed-in-tariff for 20 years. However, in determining the appropriate tariff rate, it will be necessary to ensure that if a rate were fixed for a set period (for example a rate attached to the current price of electricity) that this rate would need to ensure a reasonable rate of return for the entire 20 year period (ie reflect the potential price increases over the relevant period). This Office is concerned that if there were regular

reviews of the tariff rate and an ability for the Minister to amend the tariff rate, this would not provide sufficient certainty to consumers and would limit the take up of renewable energy systems.

Equity issues

1. *What options are available to ensure that there is no unacceptable impact on those less able to pay or install network connected renewable energy systems?*

One way of minimising the initial up-front payment of installing renewable energy systems would be to provide low interest 'green' loans to enable those less able to pay for these systems to do so. It would be desirable that based on the premium paid for the green power generated from the system this would in time pay for the loan. Therefore in the long term there would be no cost to the purchaser. This would enable those people who could not afford the initial up-front cost of a system to participate in the scheme.

In addition this Office would recommend that low income earners should be exempt from having to pay any tariff.

In addition, it is the view of this Office that the tariff should be based on consumption rather than a flat rate. This would have the benefit of encouraging consumers to use less electricity. It is also likely to assist low income households who are likely to consume less electricity, as a result of living in smaller houses without the same amount of high energy consumables such as large plasma televisions.

In some instances people may have the funds to pay for a renewable energy system but may not be in a position to install such a system. For example because they rent, own in a block of flats where body corporate rules prohibit their installation, or own a building that does not support a renewable energy system, for example because of orientation or roof size. In these cases it is suggested that the Government consider mechanisms for enabling cooperative systems to be established that would enable those persons not in a position to install such systems to still participate in the scheme.

Environmental Impacts

1. *Is a FiT a cost effective and/or efficient method of reducing greenhouse gas emissions?*

The evidence from overseas suggests that a FiT is a cost effective method of reducing greenhouse gas emission. In Britain, in his report on the economics of climate change, Sir Nicholas Stern compares FiTs with another method of reducing greenhouse gas emissions through increasing renewable energy production, tradable quotas. Sir Nicholas Stern concludes that a FiT scheme achieves larger deployment at lower costs, because it assures a long term price guarantee, while prices are lower than comparable tradable support mechanisms.[5] The benefits of FiTs compared to other options are discussed in the answer to the regulatory option question below.

2. *Is the FiT a cost-effective way of increasing solar energy use?*

The evidence from overseas suggests that a FiT is a cost effective method of increasing solar energy use. Evidence from experiences of feed-in-tariffs in European countries suggests that FiTs have been successful in promoting a substantial increase in the

[5] Stern, Sir N, *The Stern Review: The Economics of Climate Change* (2006), Chapter 16 at page 366

generation of renewable electricity. See also the answer to the question above relating to the cost effectiveness of this method.

Regulatory Issues

1. Are there any other options could be used instead of, or to complement a FiT?

There are a number of options available to promote renewable energy. The two main options used around the world are:

(a) feed-in-tariff mechanisms; and
(b) tradable quota schemes (such as the green certificate system in the UK) - where the supply of renewable energy is achieved by requiring suppliers to deliver to consumers a portion of their electricity from renewable energy sources.

In the European Union there are a number of different approaches taken by Member States for promoting renewable energy. The primary methods have been broadly categorised by the European Council as FiTs (which exist in most Members States) and green certificate systems (which exists in the UK and several other Member States).[6]

The European Council has analysed the different approaches of the Member States and concluded that the disadvantages of green certificates are that:

they may pose a higher risk for investors,
long-term currently high cost technologies are not easily developed under such schemes, and
they present higher administrative costs.[7]

In his report on the economics of climate change, Sir Nicholas Stern also favors feed-in tariff instruments. He notes in this report that while both tradable quotas and feed-in tariffs have proved to be effective, the latter achieves larger deployment at lower costs, because it assures a long-term price guarantee, while prices are lower than comparable tradable support mechanisms. Stern concludes that

> ...analysis suggests that competition is greater than in the UK Renewable Obligation Certificate scheme. These benefits are logical as the technologies are already prone to considerable price uncertainties and the price uncertainty of tradable deployment support mechanisms amplifies this uncertainty. Uncertainty discourages investment and increases the cost of capital as the risks associated with the uncertain rewards require greater rewards.[8]

One fundamental problem with quota schemes is this lack of long-term certainty. When a quota is set either for a period of time or for a quantity of power, once that goal is reached there is no incentive for ongoing investment in renewable energy sources and producers of green power become uneconomic in the face of fossil fuel based electricity. This can lead to a reluctance to invest in the first place.

These conclusions support the view that electricity feed-in laws are the most successful policy mechanism for stimulating the rapid use of renewable energy.

In addition to feed-in-tariff laws, this Office supports the following additional measures to support FiTs to achieve the aim of promoting an uptake of renewable energy:

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[6] A number of other methods are also used: tendering procedures (used in two Member States) and tax incentives (used primarily as an additional policy tool). Communication from the Commission of the European Communities: *The support of electricity from renewable energy sources* COM (2005) 627, available at http://ec.europa.eu/energy/res/biomass_action_plan/doc/2005_12_07_comm_biomass_electricity_en.pdf, accessed on 20 February 2008

[7] Communication from the Commission of the European Communities: op cit 6

[8] Stern, Sir N, op cit 5 at page 366.

establishing a binding target for a proportion of renewable energy electricity generation and consumption;
tax incentives; and
low interest 'green' loans to cover the up-front costs of installing renewable energy systems.

To further assist in reducing greenhouse gas emissions this Office believes it is essential to introduce measures that encourage users to decrease electricity consumption.

2. *By reducing the upfront costs associated with installation, are direct subsidies a more attractive option to encourage the adoption of renewable energy technologies?*

This Office is of the view that direct subsidies could be an additional measure undertaken to encourage the uptake of renewable energy technologies.

The EDO looks forward to the ACT Government taking action to introduce feed-in-tariff laws so as to encourage the production of energy from renewable sources. This Office notes that an exposure draft of a Private Member's Bill containing a model for an ACT feed-in-tariff has been released for public comment and welcomes this initiative. The EDO will provide a copy of our comments on this draft Bill to your Office for your information.

Please do not hesitate to contact me if you would like to discuss this submission further.

Yours sincerely

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Principal Solicitor