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Senate Standing Committee on Environment, Communications and the Arts
Department of the Senate
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15 August, 2008

To whom it may concern,

RE: Environment Victoria's submission to the Senate Inquiry into Renewable Energy (Electricity) Amendment (Feed-in Tariff) Bill 2008.

Please find a submission from Environment Victoria to the Senate Inquiry into Renewable Energy (Electricity) Amendment (Feed-In Tariff) Bill 2008. Environment Victoria is the peak environment non-government organisation in Victoria and has over 120 member groups and 1000's of individual members and supporters across the State.

Thank you for the opportunity to comment on this prospective legislation. Environment Victoria has been promoting the use of renewable energy and the need for policy support for renewable energy for over a decade. Environment Victoria believes that its widespread adoption is essential for Australia to lead the way in emissions reductions. A feed-in tariff will act as a strong mechanism to encourage this.

Please contact me on the number below if you require any further information or clarification on Environment Victoria's submission.

Yours sincerely,

A handwritten signature in red ink that reads "LWK." with a period at the end.

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Advantages of a Renewable Energy Feed-In Tariff

The advantages of renewable energy generation over other forms of energy generation, namely fossil fuels, are numerous. The greenhouse gas emission reductions from renewable energy generation are significant and will play a major role in Australia's commitment to reduce emissions to avoid dangerous climate change.

However there are a number of other advantages of renewable energy that will stem from the introduction of a renewable energy feed-in tariff.

Put briefly, a feed-in tariff is a mechanism that provides an incentive for the uptake of renewable energy. By paying the renewable energy system owner a higher tariff (that values the full benefits of the renewable energy) on the entire output of their system, the system owner can achieve payback on the cost of purchase and installation within 10 years. It is this 10 year payback on investment that has been proven to drive investment in renewable energy overseas.

The broader benefits of a renewable energy feed-in tariff are well documented. In addition to incentivising a clean source of electricity generation, a feed-in tariff has the additional benefits of:

- Increasing energy security and supply. Renewable energy is inherently lower risk in the long term than fossil fuel based energy.
- Creating new green collar jobs. The solar photovoltaic (PV) industry generates at least 30 jobs per MWh – more than three times that of coal-fired generation¹
- Developing new high-tech industries with export potential
- Allowing for greater economies of scale through the expansion of the solar industry that will enable solar PV and other technologies to reach parity in the Australian market.

A renewable energy feed-in tariff also has significant financial benefits to Australian consumers as it:

- Can reduce wholesale electricity prices. The output of solar PV closely reflects the peak period of energy consumption when electricity prices are highest due to high demand. Increased generation from solar PV will increase energy supply at peak times, thus enabling the price to fall.
- Allows for savings from avoided electricity network augmentation. As a feed-in tariff encourages energy generation at the point of consumption, the need for new power stations and the associated transmission infrastructure is significantly reduced. Australia is set to spend approximately \$24 billion over the next five years on network upgrades² – a feed-in tariff encouraging small scale generation at the point of consumption has the ability to create significant savings from these network costs.

The Federal Government's proposed Mandatory Renewable Energy Target and Carbon Pollution Reduction Scheme should drive the development of large scale renewable energy generation. However small scale distributed systems and the associated benefits listed above, will require additional incentives. A feed-in tariff is the most appropriate and cost effective way of providing this.

In recent years, Australian governments have encouraged householders and communities to install small scale solar PV systems through rebates (eg the Australian Commonwealth Government's Solar Homes and Communities Plan) and

¹ Navigate Consulting, Inc., *Survey of Predicted and Actual Renewable Energy Job Creation* Presented at 'POWER-GEN Renewable Energy and Fuels 2007' conference, March 7, 2007

² AER 2007, *State of the Energy Market 2007*, Australian Energy Regulator, Melbourne

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promises of feed-in tariffs. The rebates have been important in assisting with the capital investment. However, the level of investment seen thus far has been relatively small in comparison with what could be expected following the introduction of a feed-in tariff (based on the experience of other countries). Furthermore rebates are subject to the whim of budgetary decisions- since the introduction of the Federal Government's Photovoltaic (PV) rebates programs scheme rules and rebates have changed constantly, failing to provide a stable investment environment for anyone considering investing in PV. Legislated feed-in tariffs provide longer term, consistent policy support for renewable energy.

The Model:

To be effective a feed-in tariff scheme would need to guarantee system payback times in the order of 10 to 15 years. To do this a feed-in tariff should:

- ⇒ be mandated at a minimum of 60 cents per kWh for systems of up to 10 KW and at 48 cents for systems of 10-100 KW (to take into account economies of scale);
- ⇒ be offered for at least 15 years;
- ⇒ be paid on the entire output of a system via gross production metering;
- ⇒ incorporate a 5% digression rate (reduction in tariff rate each year); and
- ⇒ be indexed with inflation.

Further, a feed-in tariff should be made available to all those who wish to install renewable energy – homeowners, community buildings and workplaces.

Gross Vs. Net:

The experience of over 40 nations with a feed-in tariff shows that gross generation metering is the only model that will actually provide the above listed benefits of a feed-in tariff.

A number of Australian states have recently implemented feed-in tariffs based on 'net' (or more accurately 'import-export') metering. This means that those eligible are only paid the higher feed-in tariff rate on the excess energy that they produce, rather than valuing the total generation at it's full worth.

A gross production metering system properly values the full amount of 'green' energy produced by the renewable system. A 'net' production metering system distorts this by only placing the value on the excess. Without a tariff to value the full amount of energy produced, the system owner will not be able to achieve their investment payback within a 10 year period, thus destroying the incentive and original purpose of the feed-in tariff.

Not only does this net model destroy the incentive, but it also discriminates against those system owners who use energy during the day – retirees, stay-at-home parents, people who work from home, workplaces, community buildings etc. This is because under a net system, the owner would only be paid when their energy production is greater than their energy use. The system's output is likely to be greatest during the day (when the sun is shining brightest), however those who are using energy at this time will rarely produce more energy than they are consuming. It has been suggested that the only people to reap any benefit at all (although not system payback within 10 years) from a 'net' model will be professional couples with no-one at home in the day, or those able to afford solar panels on their holiday house.

The Garnaut draft report released in July of this year recommends a feed-in tariff based on gross production metering as a more accurate model for valuing small scale renewable energy generation than 'net' metering:

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"For small embedded generation systems installed by households or firms that are consuming electricity throughout the day, it is likely that no exports to the grid will be possible. However, the benefits of embedded generation (lower transmission losses, deferred costs for network augmentation, and displacement of high-cost generation during peak periods) are present for every unit of electricity produced, not just the amount exported. A feed-in tariff based on gross metering is thus a more accurate means of pricing these benefits³.

Professor Garnaut also notes that:

"Some argue that a gross-metered feed-in tariff is undesirable because, from a sustainability perspective, it does not encourage embedded generators to consume less electricity, whereas under a net-metered scheme profits can only be made by exporting more to the grid. This reasoning is erroneous because the incentives to consume should come through the retail tariff paid for electricity, not through the feed-in tariff system" (Endnotes: 9)

Overseas Experience:

Much is made of Germany's success growing the share of its renewable energy, particularly through solar panels. Germany offers a feed in tariff based on the gross amount generated, calculated at four times the market rate, and guaranteed for 20 years. Through this process it has significantly grown its manufacturing and installation employment. The German model has formed the basis of that used in over 40 countries worldwide.

Their success has not been dampened by excessive rises in consumer costs:

*"In Germany, the Feed in Tariff has only added about 1 cent per kilowatt hour or an extra \$1 - \$2 per user per month. It reduces the payback on the technologies to less than 10 years and offers a Return on Investment of 8 - 9%."*⁴

The German renewable industry has created over 250,000 jobs, half of these as a consequence of the feed-in tariff. These numbers are expected to grow to 400,000 by 2020. The current employment figures for Australia's renewable energy industry sit at approximately 6,000.⁵

The Nicolas Stern Review compared the feed-in tariff to other support mechanisms such renewable energy targets:

*"Both sets of instruments have proved effective, but existing experience favours price-based support mechanisms. Comparisons between deployment support through tradable quotas and feed-in tariff price support suggest that feed-in mechanisms achieve larger deployment at lower costs. Central to this is the assurance of long-term price guarantees. The German scheme...provides legally guaranteed revenue streams for up to twenty years if the technology remains functional. Whilst recognising the importance of planning regimes for both PV and wind, the levels of deployment are much greater in the German scheme and the prices are lower than comparable tradable support mechanisms (though greater deployment increases the total cost in terms of the premium paid by consumers)."*⁶

³ Garnaut Climate Change Review 2008, *Draft Report June 2008*, pg. 437

⁴ <http://cpd.org.au/article/2020-vision-feed-tariff-australia>

⁵ <http://www.renewableenergyworld.com/rea/news/story?id=52089> (Germany)

<http://www.mretreview.gov.au/report/index.html> (Australia)

⁶ http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_Report.cfm pg. 366

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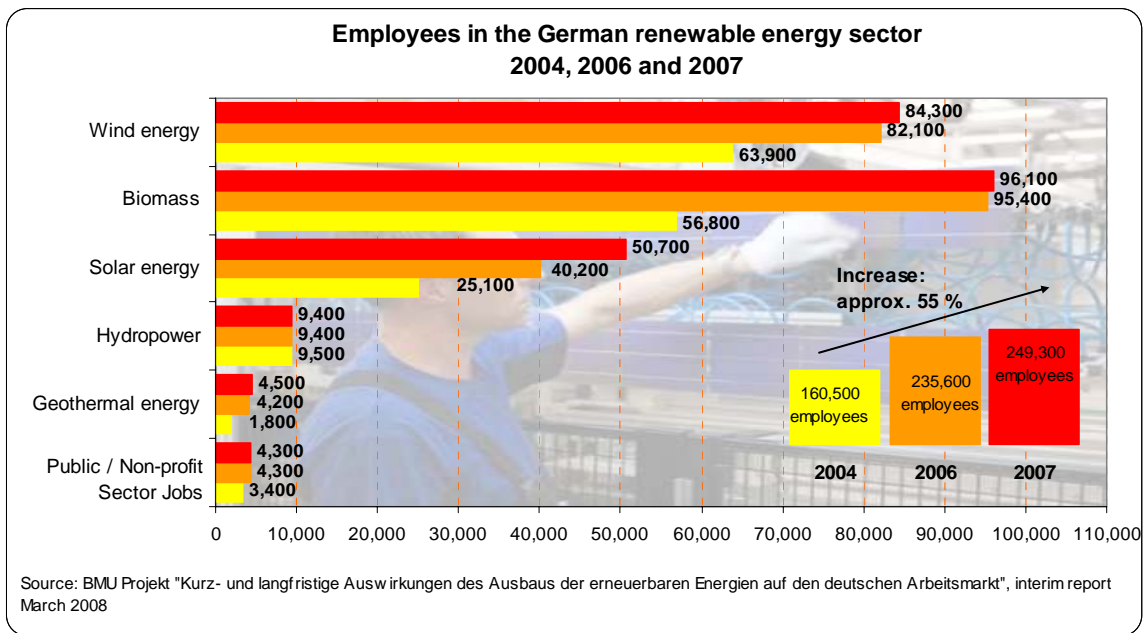
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Figure 1: German job creation in renewable energy as a consequence of an effective feed-in tariff



State Government Activity on Feed in Tariffs

As mentioned above, a number of state governments have announced or implemented a feed-in tariff. These have been mixed in their value, depending on the duration of the tariff for system owners, whether the tariff is based on gross (ACT) or net (South Australia, Queensland and Victoria) generation metering, what level the tariff is set at, eligibility to participate beyond homeowners, and the system size allowed.

While Victoria's proposed scheme has the highest 'price' for the power, it is the ACT's approach of paying the tariff based on gross metering that provides the best model. The ACT feed in tariff uses gross metering, sets the tariff at 3.88 times the retail tariff, and is guaranteed for a period of 20 years. It covers systems of up to 10KW at the full tariff, then reduces this to 80% of the 'premium' tariff for systems of 10-30KW capacity, and 75% for systems of greater than 30KW capacity.

The proposed Victorian model is particularly disappointing in that it is only offered to homeowners, is capped at a system size of 2kW, and is metered on 'net' production.

The Proposed Commonwealth Legislation

Environment Victoria supports the general approach through the proposed legislation - in particular that it:

- applies for a period of 20 years for each 'generator';
- is measured and paid on the gross amount of electricity generated;
- does not include any generators that are under the MRET scheme.
- states that owner of generator must provide a return to the regulator each year.

Environment Victoria has reservations with the approach as it is stated:

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Relationship with State-based Feed in Tariff systems: We assume that this scheme would supersede all state-based systems, which makes it so important that a Federal scheme uses as its benchmark the strongest State scheme (the ACT scheme) rather than encouraging a race to the bottom.

Section 17 – definition of renewable power: Environment Victoria is concerned that 'wood waste' is counted as renewable energy. In some situations, whole forests can be cut down and are then found to be 100% waste and burnt to generate 'green power'. We do not want the waste 'tail' wagging the forest products 'dog'.

Should you require any further information about this submission, please do not hesitate to contact Environment Victoria.

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