



**Submission by**

**Alternative Technology Association**

**on**

**ACT Government Feed-In Tariff Discussion Paper**

**25<sup>th</sup> February 2008**

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# Feed-In Tariff Discussion Paper

The Alternative Technology Association (ATA) welcomes the opportunity to provide comment on the *Feed-in Tariff Discussion Paper* (the Discussion Paper), released in December 2007 by the ACT Government.

ATA is a not-for-profit organisation established in 1980 to promote the uptake of sustainable technologies in order to protect our environment. The organisation provides service to over 4000 members, who are actively promoting sustainability in their own homes by using good building design and implementing water conservation and renewable energy technologies. ATA advocates in both the government and industry arena for ease of access and continual improvement of these technologies, as well as the production and promotion of information and products needed to change the way we live.

ATA would like to offer our broad support for the introduction of a feed-in tariff in ACT, and many of the recommendations made in the Discussion Paper. Feed-in tariffs are universally recognised as the incentive mechanism of choice for delivering large-scale, low-cost and rapid roll-out of renewable energy technologies internationally. They have been instrumental in many countries in not only the deployment of renewable technologies but also the creation of jobs and establishment of local high-tech industries.

The ACT is in the position to lead the country in the implementation of an effective feed-in tariff which will lead to a genuine accelerated uptake of renewable energy technologies. ATA believes flaws in the design of the recent feed-in tariff legislation introduced in South Australia – the low tariff level and the use of net metering – will render the measure relatively ineffective, as payback times will remain in the order of 20 years and beyond for the majority of systems. Such long payback times will not result in a sufficient incentive for widespread adoption of renewables by a broad cross-section of the community. We urge the ACT Government to ensure any mechanism introduced is both efficient and effective in achieving the goal of increased adoption of solar photovoltaic electricity and other renewable energy technologies.

## Comment on Discussion Paper and Responses to Questions

This section of ATA's submission comprises both general comment on the Discussion Paper content as well as specific responses to the Discussion Paper's questions, and is structured under headings used throughout the Discussion Paper.

### Policy Rationale

There can be little argument that, in purely greenhouse gas emission reduction terms, there are cheaper alternatives to the widespread adoption of a broad range of renewable energy technologies. Energy conservation measures and energy efficiency offer the cheapest emission abatement available, and ATA encourages the ACT Government to implement a range of energy conservation and efficiency measures to ensure that all opportunities in this area are realised.

However, when confronted with the challenge of climate change on the scale we are now beginning to appreciate, it will simply not be sufficient to concentrate our efforts in one or two areas to tackle the challenges before us. In the wake of the recently released Garnaut Climate Change Review Interim Report, and the suggestion of the need to adopt a 90% reduction in greenhouse gas emissions by 2050 in order to avoid dangerous climate change<sup>1</sup>, it is clear that we will need to employ all measures available to us to achieve these targets. With electricity generation contributing to 35% of Australia's greenhouse gas emissions<sup>2</sup>, and 72.3% of ACT's emissions<sup>3</sup>, it is essential that we modify our generation mix to reduce its

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<sup>1</sup>Garnaut Climate Change Review - Interim Report to the Commonwealth, State and Territory Governments of Australia February 2008

<sup>2</sup> Australian Greenhouse Office *National Greenhouse Gas Inventory*, available from:  
<http://www.greenhouse.gov.au/inventory/>

emission intensity. The key sustainable, practical and efficient method for doing this is the adoption of available renewable energy technologies.

Further, the increased uptake of distributed renewable energy technologies which will arise from the adoption of an effective feed-in tariff in ACT will have a range of additional benefits other than purely greenhouse emission reductions, and as such, distributed renewable energy cannot be thought of in purely these terms. As pointed out in the Discussion Paper, the increased uptake of distributed renewable energy technologies, will result in not only a decreased emission intensity of the territory's electricity supply but also reduced transmission losses, lower wholesale electricity prices and, in the longer term, reduced need for expensive network infrastructure augmentation.

Recent studies from the EU have shown that feed-in tariffs are the most efficient and effective mechanism for the deployment of renewable energy, resulting in lower cost roll-out than mandatory renewable energy targets favoured by Australian Governments<sup>4</sup>. Indeed, a recent progress report on the German feed-in tariff scheme shows that the financial benefits in reduced wholesale electricity costs, fuel imports costs and avoided damage resulting from climate change outweigh the cost of the feed-in tariff by a factor of approximately two-to-one<sup>5</sup>. Clearly, in such circumstances the benefits to the community far outweigh the costs and as such, ATA supports the rapid adoption of a feed-in tariff mechanism in the ACT.

An additional benefit to arise from the adoption of small-scale distributed renewable energy is the increased awareness of energy consumption behaviour and energy conservation options in the homes of those adopting these technologies. A recent study by the ATA found that around 85% of grid-connected PV system owners took or were planning to take additional energy efficiency and energy conservation measures after acquiring their PV system<sup>6</sup>.

While the benefits to the community as a whole may be positive, the impact of any retail electricity price increases on low-income and vulnerable consumers needs to be carefully considered. ATA addresses these concerns under *Equity Issues*, below.

### **Renewable Energy Sources in the ACT**

ATA disputes the claim that electricity exported to the grid by distributed, small-scale renewable energy generators is so small that it does 'not make a significant difference to emissions'<sup>7</sup>. A 2kW rooftop solar PV system, for example, would produce more than 7.5kWh per day on average across the year. This figure is sufficient to run an entire energy efficient home – hardly an insignificant quantity of electricity.

Distributed electricity generated at the point of consumption can be considered equivalent to demand reduction, as less electricity needs to be brought in from outside the local network areas. Where demand in the home closely matches production from a renewable energy system, it may be considered that there is little *excess* available for on-sale by a retailer. However, this argument fails to take into account the avoided demand from the home generating electricity, and thus the reduced greenhouse gas emission from that home. It fails to recognise that the production being bought by the retailer may actually be on-sold back to the homeowner. This quantity of electricity is hardly insignificant, and represents a sizeable greenhouse gas emission saving.

Further, extrapolating the argument that electricity generated by a small-scale renewable energy system is insignificant to energy efficiency and other demand reduction measures, it would seem there is hardly a case

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<sup>3</sup> Department of Territory and Municipal Services, *Weathering the Change: The ACT Climate Change Strategy 2007-2025*, ACT

<sup>4</sup> Lipp, J. (2007) 'Lessons for effective renewable energy policy from Denmark, Germany and the United Kingdom' *Energy Policy* 35 (2007) pp 5481-5495

<sup>5</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) *Renewable Energy Sources Act Progress Report 2007*, BMU, Germany, 2007

<sup>6</sup> Alternative Technology Association *The Solar Experience – PV System Owners' Survey*, available from:

<http://www.ata.org.au/about/projects/the-solar-experience-pv-system-owners-survey/>

<sup>7</sup> Page 6 of the Discussion Paper

for encouraging more efficient appliances. After all, the 0.5Wh to 1kWh to be saved daily by purchasing a more efficient fridge or reducing heating demand pales into insignificance when compared with the 7.5kWh which can be generated by a 2kW solar PV system daily. Patently, this is not true. Energy efficiency and energy conservation are important measures in reducing the demand on unsustainable and polluting existing electricity supply, and equally small-scale distributed renewable generation has an important role to play.

**Questions:**

1. What other renewable energy technologies are utilised in the ACT?
2. Are these technologies commercially viable?
3. Should the FIT be extended to commercial and industrial premises?

It is acknowledged that, at present, renewable energy adoption levels in the ACT are low. The latest figures from the Australian Greenhouse Office's *Photovoltaic Rebate Programme (PVRP)* put the number of grid-connected systems at 134, with an average size of 1.88kW<sup>8</sup>. In addition to these approved systems, there may be a handful of additional systems installed prior to PVRP or without access to the rebate.

A mandated feed-in tariff has the ability to dramatically increase this number, and capture the range of benefits from distributed renewable electricity generation as outlined above. In order to maximise these benefits, and in light of the urgency to take action on climate change and dramatically reduce our greenhouse gas emissions, it is important to bring all sectors of the community on board and enable action across the board. As such, ATA encourages the ACT Government to extend the feed-in tariff to commercial and industrial premises. The scale of roll-out enabled when engaging this sector will enhance the above benefits as well as enabling further cost reductions in the installation of renewable technologies. The larger the scale of technology adoption, the greater the potential for economies of scale in technology manufacture, distribution and installation, and thus the wider the benefits for the whole community.

ATA acknowledges that these economies of scale would lead to slightly lower installation costs than for small-scale systems, and as such, proposes that there be differing feed-in tariff levels depending on the size of the system. This is explored further under *Cost Issues* below.

**Cost Issues**

*Cost of Systems*

ATA questions the figures used by the ACT Government for calculating the output per day for a given system size in the Discussion Paper<sup>9</sup>. The figures by the Office of the Renewable Energy Regulator for calculating RECs for small photovoltaic systems uses a value of 1.382 RECs per year for each 1kW system installed<sup>10</sup>. As each REC is the equivalent to 1MWh of electricity, this equates to 3.79kWh per day for each kW installed<sup>11</sup>. Using this figure, the following table would seem more accurate:

<b>System Size (Watts)</b>	<b>Average Output per day (kWh)</b>
1050	3.98
1750	6.63
3150	11.93
4200	15.90
5250	19.88

<sup>8</sup> Australian Greenhouse Office *Watts Installed By Month*, December 2007, downloaded from: <http://www.greenhouse.gov.au/renewable/pv/index.html#statistics>

<sup>9</sup> Page 8 of the Discussion Paper

<sup>10</sup> Office of the Renewable Energy Regulator *Fact Sheet - Calculating Renewable Energy Certificates (RECs) For Small Solar (Photovoltaic) Systems* available from: <http://www.orer.gov.au/publications/photovoltaic.html>

<sup>11</sup> Calculated by: 1.382MWh / 365days X 1000 = 3.786kWh/day/kW

It is also difficult to understand the significant variations in average output per system size, as quoted on the table on page 8 of the report. According to the figures, a 1.75kW system would produce 35% more electricity per kilowatt of installed capacity than a 1.05kW system, yet a 4.2kW system produces 11.5% less per kW than a 3.15kW. This is seemingly inexplicable. While there may be some very slight efficiency gains to be achieved by larger inverters, these would not explain the sorts of results witnessed in the table on page 8, and certainly not the reduction in production capacity from a 3.35 to a 4.2 kW system. We encourage the ACT Government to use the above, independent figures calculated from the Office of the Renewable Energy Regulator in determining the expected output from solar PV systems.

#### Payback Period

ATA has concerns with the linking of Renewable Energy Certificates with the cost of a renewable energy system. While many adopters of renewable energy systems may choose to sell the RECs generated by their system, this is by no means universal. Indeed, many actively choose not to claim the available RECs from their system in order to obtain the full greenhouse benefit from their system.

In the absence of a decent feed-in tariff for micro-generation, the majority of individuals installing small renewable energy systems are doing so for the environmental benefits. However, by surrendering or selling the RECs from a system, the system owner is effectively offering the avoided greenhouse gas emission to a third party, typically for a price or a reduced cost on system installation. Many choose not to do this, wishing to retain the full environmental benefits of their investment. As such, we believe that the issue of selling or retaining RECs should not be confused with the up-front capital cost of an investment in renewable energy, and thus the potential financial gain from RECs be removed from any calculation of this cost.

#### Questions:

1. Is there a need to limit the size of systems that are entitled to receive the FIT?
2. Is it appropriate to set a maximum net investment in a PV system?
3. Is a ten year payback period appropriate?

As mentioned above, ATA firmly believes that to gain the full benefits from the large-scale roll-out of distributed renewable energy, and to effectively address the emission intensity of our electricity supply, the broadest possible roll-out of renewable technologies should be encouraged. This would mean providing an incentive for a broad range of system sizes, without an upper limit. However, in an acknowledgement of the greater economies of scale achieved by larger systems, and to ensure the equity and integrity of the scheme, it is essential to have a range of tariff rates apply to systems of differing size.

ATA strongly supports the Discussion Paper's proposal to calculate payback periods based on a ten year timeframe. Our research has shown that payback periods much longer than 10 years are unlikely to result in a significant increase in adoption of renewable energy technologies, and beyond 15 years will result in the maintenance of the status quo. As such, ATA encourages the ACT government aim for a payback period centred around 10 years. To that regard, we support a feed-in tariff of 67c/kWh as proposed in the Discussion Paper.

#### Level of Tariff

We support the ACT Government's position that only a gross export metering model will have an impact on demand for PV systems in the ACT. The effectiveness of any feed-in tariff depends primarily on the certainty of payback generated by the scheme. Whilst it is essential to set the tariff level at a point at which payback is achieved within a defined period of time, it is equally important for a potential adopter of a renewable energy technology to have some certainty surrounding the amount to be achieved over the length of the scheme. Without this, the certainty required to ensure uptake cannot be achieved.

A feed-in tariff scheme based on net export metering creates significant uncertainty in the market, both in terms of potential financial return from the feed-in tariffs for system owner, and in the cost of the system for the government and wider community. The introduction of gross metering allows for far clearer estimates of ongoing costs and benefits of the tariffs due to the relative predictability of gross electricity production for a given sized installation over a given time frame.

In addition, a net export metering regime discriminates against both owners of smaller grid-connected systems and those who are more likely to consume electricity during the day, such as senior citizens or stay-at-home parents. In cases such as these, where instantaneous system production rarely exceeds household consumption, system owners rarely exporting electricity to the grid would not be able to receive the benefit for premium feed-in rates offered, and thus would gain very little financial return on their investment.

ATA's modelling suggests that a feed-in tariff level for solar PV set at around the 67c proposed will result in paybacks between 10 and 12 years depending on system size. As mentioned, we support such a level, as proposed in the Discussion Paper, to be adopted for small-scale installations, say, less than 30kW installed capacity. This tariff should continue for 15 years to ensure that full payback is achieved by the system proponent.

For systems larger than this, we propose staggered feed-in tariff levels in three categories, again for 15 years, as follows:

System Size	Feed-in tariff
30kW	67c/kWh
30kW – 100kW	64c/kWh
Larger than 100kW	63c/kWh

Such tiering of a feed-in tariff has been adopted with great success in Germany, resulting in the widespread development of large-scale facilities as well as widespread adoption of small-scale distributed solar PV generation. The lower feed-in tariff levels for larger systems takes into account both the economies of scale able to be achieved by such systems, as well as the capacity for larger corporations to take on slightly longer payback times than individuals, being in part off-set by the marketing and reputation benefits able to be captured by these businesses.

#### Review of Tariff

As mentioned above, and acknowledged in the Discussion Paper, the uptake of solar PV and other technologies under a feed-in tariff depends greatly on the certainty of return generated by the scheme. ATA strongly believes that any tariff rate review takes this into consideration. Any alterations to feed-in tariffs arising out of a tariff rate review should only apply to subsequent installations, and all systems installed prior to any rate review should remain on the previous tariff level.

Failure to implement such a system of tariff guarantee would result in significant uncertainty for system proponents and hence act as a significant disincentive to installation. Without certainty of returns on investment, ensured by adopting gross metering and a guaranteed tariff level for a set period of time, a feed-in tariff scheme is rendered impotent to deliver the widespread uptake it sets out to achieve.

#### **Equity Issues**

Our modelling shows that the adoption of a typical 1.6kW system installed on 10% of homes in the ACT over 10 years would result in a cost per household comparable to those outlined in the Discussion Paper<sup>12</sup>, equating to a maximum of roughly \$1.80 per week for a house with an average consumption of 22kWh per day, or less than \$1 per week over the life of the scheme. Even given these relatively low costs for the

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<sup>12</sup> Cost of \$91 per average household maximum in the 15<sup>th</sup> year of the scheme, assuming an average inflation rate of 2%

significant roll-out of renewable energy (over 20MW across the ACT), we believe that, in an environment where energy prices will be threatened by price increases associated with carbon pricing and climate change, the considerations of low-income and disadvantaged consumers must be taken into account.

Questions:

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?

Whilst it must be remembered that the impact of climate change will be greatest to those least able to respond, invariably low-income and disadvantaged consumers, ATA agrees with the concerns expressed in the Discussion Paper regarding the potential impact of increases in electricity prices on low-income households. ATA supports the adoption of a range of measures to ensure that climate change is mitigated to the greatest extent possible, and the impacts on the most disadvantaged members of society are minimised.

We support financial compensation to concession card holders as the most suitable mechanism for ensuring the threat of increased electricity prices are diminished for certain classes of consumers. In addition, we fully support the adoption of demand reduction programs such as the roll-out of energy conservation measures for low-income households and support for the adoption of greater energy efficiency for disadvantaged consumers.

Further, we urge the ACT Government to ensure that the cost of implementing a feed-in tariff is borne by all sectors of the community, and not concentrated in the residential / household sector. The table provided on page 11 of the Discussion Paper outlines the increased costs to households of exempting businesses from recouping the tariff. This concurs with our modelling which shows an increase in the order of two-and-a-half times the cost to consumers if businesses are exempt. ATA strongly believe all sectors need to share the responsibility for mitigating climate change. Further, as businesses are set to reap the rewards of lower wholesale electricity prices and reduced transmission costs following on from the widespread adoption of distributed renewable energy technologies, it is only fair that they too should carry some of the costs.

We also support the implementation of low-interest green loans, similar to those announced by the federal Labor Party, to enable access for low-income households to sustainable technologies. Coupled with a progressive feed-in tariff, low interest loans have the ability to increase the uptake of renewable technologies in all sectors of community. ATA urges the ACT Government to work in conjunction with the Federal Government to implement low-interest loans beyond the scope of those proposed by Federal Labor to ensure that sufficient finances are available for all members wishing to access these technologies.

### **Environmental Impacts**

As outlines under *Policy Rationale*, above, ATA accepts that there are certainly lower cost emission reduction strategies than the adoption of small-scale renewable energy. However, when considering distributed renewable energy technologies embedded in the distribution network, the full scope of benefits arising from the adoption of these technologies must be considered – benefits which are not gained by other electricity generation alternatives, renewable or otherwise.

Embedded micro-generation technologies have a true value to the market higher than is currently able to be captured. Peak output of solar PV systems corresponds closely with times of peak demand across the National Electricity Market (NEM) – sunny summer afternoons, typically times of high air-conditioner use. At these times, the wholesale electricity price frequently rises well above the average NEM price of \$35/MWh, reaching the hundreds, even thousands of dollars per MWh. This pushes the overall average higher, and hence increases the cost of power to the consumer. By generating electricity at these times of peak demand, solar PV effectively acts as a form of consumption abatement, reducing the demand on remote wholesale generators and thus lowering the peak wholesale price of electricity.

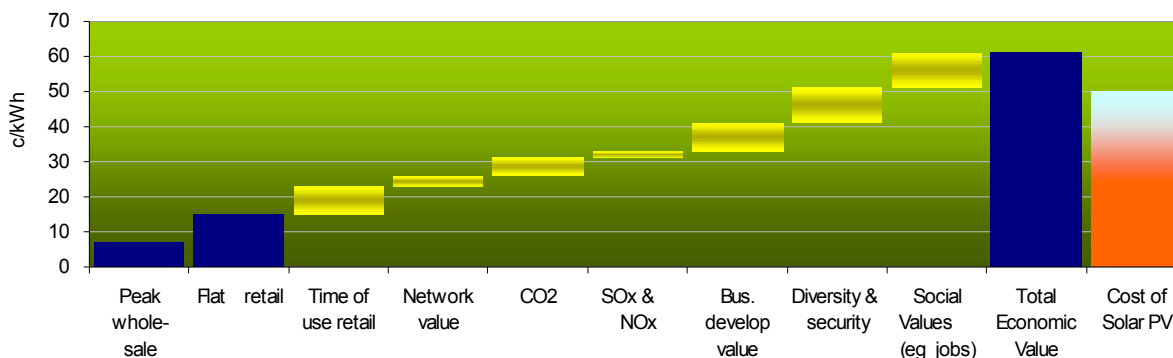
Further, by generating electricity close to the point of consumption, embedded generation technologies avoid the need for expensive transmission and distribution network augmentation. It has been calculated that Australian network services providers are committed to spending in the order of \$24 billion dollars over the next 5 years on upgrades to networks in order to meet growing peak demand. A feed-in tariff offers an opportunity to reward embedded generation for its contribution to avoiding this network augmentation, and the associated cost which is ultimately borne by consumers through electricity prices.

Further, when considering an incentive for solar PV it is important to also consider the economy-wide benefits of the development of a solar manufacturing, distribution and installation industry in Australia. Solar PV generates about 40 jobs per MW installed<sup>13</sup>, significantly higher than the fossil fuel sector, with all small-scale renewable projects undoubtedly creating more jobs per MWh of electricity produced than conventional energy sources.

Not only would jobs be created immediately, but the development of a high-tech solar industry in Australia, with enormous export potential, would negate the present trend of locally-developed innovations, intellectual property and industry exports heading off-shore in search of markets. Further, the expansion of the solar industry locally will lead to economies of scale and reduced real costs, eventually enabling solar PV to reach parity in the Australian market without the need for financial incentives.

Finally, in addition to the greenhouse implications of our electricity supply, emissions of sulphur dioxide (SO<sub>2</sub>) and nitrous oxides (NO<sub>x</sub>) have a significant environmental, social and associated economic cost, and as such are subject to emissions reduction legislation, emissions trading and taxation in many countries internationally. A study by the European Commission places the cost of SO<sub>2</sub> and NO<sub>x</sub> emissions from electricity supply at roughly \$25/MWh for black coal and up to \$50/MWh for brown coal fired generation<sup>14</sup>. As such, economy-wide savings in these emissions must also be considered when evaluating the benefits of renewable energy.

The below graph shows that, by combining the many economic and environmental benefits of embedded renewable energy generation outlined above, the total economic value of solar PV exceeds the installed cost of the technology.



**Figure 1: Cumulative benefit of distributed solar PV generation<sup>15</sup>**

<sup>13</sup> Andrew Birch (BP Solar) in a presentation to the Business Council for Sustainable Energy's Clean Energy Conference 2007, Melbourne, Victoria

<sup>14</sup> Rabl, A & Spadaro, J (2005), *Externalities of Energy: Extension of accounting framework and Policy Applications*, ExternE, European Commission

<sup>15</sup> Graphic courtesy of BP Solar

Questions:

1. Is a FiT a cost effective and/or efficient method of reducing greenhouse gas emissions?
2. Is the FiT a cost-effective way of increasing solar energy use?

Again, there can be little argument that, in purely greenhouse gas emission reduction terms, there are cheaper alternatives to the widespread adoption of a broad range of renewable energy technologies. However, when collating the range of additional benefits outlined above, it is clear that the range of additional benefits, as well as the a recent studies from Germany showing the financial benefits from a feed-in tariff outweigh the cost of the feed-in tariff by a factor of approximately two-to-one<sup>16</sup>, as discussed above.

Further, when considering the scale of the challenge of climate change challenge which confronts us, it will simply not be sufficient to concentrate our efforts in one or two areas. We need a broad range of effective policy measures which act to reduce greenhouse gas emissions across all sectors in order to achieve the kinds of emissions reductions we are increasingly recognising are necessary.

Feed-in tariffs offer a proven mechanism for increasing the adoption of renewable energy, with recent studies confirming, as a mechanism, they are the most efficient and effective means of deploying renewable energy<sup>17</sup>. This view was echoed by Sir Nicholas Stern whom in his review of the economics of climate change, where he stated that "comparisons between deployment support through tradable quotas and feed-in tariff price support suggest that feed-in mechanisms achieve larger deployment at lower costs"<sup>18</sup>.

As mentioned under *Policy Rationale* above, a recent progress report on the German feed-in tariff scheme shows that the financial benefits outweigh the cost of the feed-in tariff by a factor of approximately two-to-one<sup>19</sup>. Clearly, such a finding supports the view that feed-in tariffs are not just a, but *the* cost effective mechanism for increasing the adoption of solar energy.

### FiT Models

ATA supports the distribution model of feed-in tariff adoption, with feed-in tariff payments take the form of a credit on the DUoS charges passed on to consumers, via the retailer, at the billing stage. The cost distribution across all the retail customers within the distribution area makes this model preferable to the retailer model, as the territory's single distribution business is in the best place to ensure that the cost of a feed-in tariff is successfully shared across a broad customer base.

Costs within a retailer model are potentially concentrated within the group of customers belonging to one particular retailer exposed to a large proportion of renewable energy system owners. This potentially creates a perverse incentive whereby retailers are encouraged not to take on customers with renewable energy system for fear of an increase in their cost base.

Additionally, by preferring this model over the retailer model, ATA points to the fact that it is the system of choice in both Germany and South Australia, and it is best place to be effective in a competitive retail market where the entry of new retailers is to be encouraged. The adoption of the retailer model provides a potential barrier to entry into the market for additional retailers fearful of winding up in this situation, reducing the effectiveness of retail competition on the ACT electricity market.

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<sup>16</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) *Renewable Energy Sources Act Progress Report 2007*, BMU, Germany, 2007

<sup>17</sup> Lipp, J. (2007) 'Lessons for effective renewable energy policy from Denmark, Germany and the United Kingdom' *Energy Policy* 35 (2007) pp 5481-5495

<sup>18</sup> Page 366 of: *STERN REVIEW: The Economics of Climate Change* Sir Nicholas Stern

<sup>19</sup> Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) *Renewable Energy Sources Act Progress Report 2007*, BMU, Germany, 2007

## Regulatory Issues

### Questions:

1. Are there any other options could be used instead of, or to complement a FIT?
2. By reducing the upfront costs associated with installation, are direct subsidies a more attractive option to encourage the adoption of renewable energy technologies?

International experience tells us that feed-in tariffs are the single most successful policy measure for increasing the uptake of small-scale distributed energy such as solar PV, as outlined above. Whilst it is true that Japan has had success via a heavy subsidisation model, providing financing for installation, R&D and industry development, this, unlike feed-in tariff schemes, has come at considerable expense to the government.

The Discussion Paper points out that a doubling of the PVRP to a maximum of \$16,000 would cost about half of the cost of a feed-in tariff. However this cost would have to be raised by the government through an increase in the tax base. One of the attractions of feed-in tariffs to governments is that they are essential revenue-neutral to the government of the day. There is no need for governments to increase taxes to fund feed-in tariff schemes, as the cost is recovered from all electricity consumers.

Further, there is no evidence that simply increasing the up-front rebate will have the same effect as the introduction of a progressive feed-in tariff scheme. The key ingredient to the success of feed-in tariff schemes internationally is the creation of certainty of return on investment and the reduction of payback times down to a realistic level.

Increasing the Photovoltaic Rebate Programme (PVRP) and not introducing a feed-in tariff scheme – effectively continuing the present ‘one-for-one’ buyback situation – will not create certainty or significantly reduce payback times. For example, with a doubling of the PVRP to \$16,000 a typical 1.6kW system will take 25 years to pay back (assuming a discount rate of 8%); even longer than this when excluding from calculations income derived from the sale of RECs. Such lengthy payback times are highly unlikely to result in the wide-scale roll-out of small-scale distributed renewable generation as could be achieved by the introduction of a world-class feed-in tariff – as evidenced internationally.

Further, the PVRP is structured as an \$8 per watt rebate, capped at 1000 watts. As such, it disproportionately encourages proponents to adopt smaller systems due to the fact that the lowest ‘cost-per-watt’ level is achieved at 1kW. Doubling the PRVP rebate to \$16/watt would have the affect of further encouraging smaller systems, effectively making 1kW systems free (instantaneous payback), extending out to a 25 year payback for a 1.6kW system, and even longer again for 2kW and larger systems, discouraging these larger systems.

Another, more equitable way of doubling PVRP would be to increase the cap from 1kW to 2kW whilst keeping the rebate at \$8 per watt. However, for a 1kW system the situation under this regime would be exactly as it is now. While one would expect a slightly higher uptake of larger systems under this regime, possibly resulting from a shift away from smaller systems rather than an increase in uptake across the board, as the economics of payback would be unchanged for these smaller systems, and only slightly improved for larger systems where costs-per-watt is a little lower. However, we need to encourage the broad-scale adoption of the largest possible systems to achieve the full benefits of distributed renewable generation. Neither of these above options will achieve this result.

ATA would however support the implementation of low-interest green loans, similar to those announced by the federal Labor Party, to enable access for low-income households to sustainable technologies, as mentioned under *Equity Issues*. This would broaden the availability of renewable energy technologies to all sectors of community and would overcome a significant barrier to adoption for low-income and

disadvantaged consumers. However, we firmly believe that such loans need to be coupled with a progressive feed-in tariff to result in the best outcome for all consumers.

ATA strongly believes, and the international evidence overwhelmingly supports the view, that feed-in tariffs are the single most effective, efficient and desirable mechanism for increasing the adoption of distributed renewable energy. Whilst reducing the upfront costs of installation would of course be welcome, particularly to lower-income sectors of society, a progressive feed-in tariff is the most significant means for achieving broad uptake of these technologies and hence to achieve the widespread benefits.

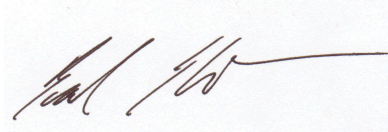
ATA encourages the ACT Government to seriously consider the content of this submission and to support the adoption of the first real progressive feed-in tariff mechanism in Australia.

### **Further Contact**

ATA commends the ACT Government for investigating feed-in tariffs in the ACT and encourages the Government to give careful consideration to the points presented in this submission.

We would welcome the opportunity to discuss any aspect of this submission further. Please direct any questions or further correspondence to Brad Shone, Energy Policy Manager, on (03) 9631 5406 or via email: [Brad.Shone@ata.org.au](mailto:Brad.Shone@ata.org.au)

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'Brad Shone', with a long horizontal flourish extending to the right.

Brad Shone  
Energy Policy Manager  
ATA