*Senate Standing Committee on Environment, Communications and the Art*s

Inquiry into Save Our Solar

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This submission is my private capacity

This submission relates primarily to

g. the economic and environmental modelling underpinning the decision to impose the means test
i. the future viability of, and effects on, the solar industry as a result of the means test;
k. other relevant matters.

1) **What is the objective of solar rebates**?

The objective of solar rebates should be to encourage the uptake of photovoltaic electricity as a means to:

a) Encourage the ongoing development of photovoltaic technology as a long-run potential solution to fossil energy dependence and global warming
b) Reduce the pressure on electricity networks by supporting electricity generation that is close to demand and production that correlates with demand peaks (i.e. very hot days)
c) Reduce greenhouse gas emissions by offsetting 'dirtier' generation methods

In priority terms, reducing greenhouse gas emissions should not be the prime target of photovoltaic rebates, as they are not efficient in this purpose compared to energy efficiency or alternative electricity generation methods such as natural gas or wind. This objective should be achieved by the emissions trading scheme. Instead the primary effectiveness of the solar rebate should be determined in terms of increasing generation capacity in the short-run and in encouraging the ongoing development of technology.

2) **Selection of $100,000 household income threshold**.

There are numerous thresholds that now identify 'wealthy' households in Australia, the Labor government recently selected $150,000 as the threshold for removing eligibility for Family Tax Rebate B. In fact rather than representing 'wealthy' or 'rich' households, the $100,000 income fundamentally represents those households that are likely to have the minimum financial means to seriously consider putting in photovoltaic panels as a lifestyle choice.

Investing in photovoltaic electricity is a 'luxury' for most urban households as the investment does not meet economic criteria, however as a long-run infrastructure and technology investment there is considerable social benefit. By setting the threshold for

the rebate at $100,000 the government is effectively denying the rebate to the main target market, undermining the objectives of the strategy.

A solution would be to raise the threshold to $150,000 and at that level (as those households are still critical customers) allow a one-off tax deduction for photovoltaic investments up to $20,000.

3) **"An investment bubble"**

The reasons put forward by the government for capping the rebate are that they wished to avoid an 'investment bubble' in photovoltaic technology. Technology evolution is generally about scale and hitting price points that enable mass adoption. Once a price point is hit that enables a large section of the target market to be able to afford the technology, if the non-price based value proposition is good (*saving the world for example!*) then large numbers of people will buy. This might look like a bubble, but is a required step for mass adoption. Once a mass market is established (*crossing the chasm*) then the product can then evolve to meet lower price points with increasing production scales and once the early technology development costs have been depreciated.

Previous mass technology adoptions, mobile phones, cars, colour televisions, would appear as bubbles at the start of the mass adoption phase as the product moves from being adopted only by 'techno-geeks' to an early adopting upper-middle class. However, once the product becomes established in Main Street the entire scale of assessment changes. If we wished to cover 50% of roofs in photovoltaic generation by 2050, how many installations do we need each year? According to the ABS there are projected to be 10.4 million households in 2026. Assuming 90% of these people will be living in houses and that the number is constant to 2050, Australia needs 4.68 million photovoltaic installations by 2050. This is approximately 110,000 per year, each year, for the next 42 years. At $8000 per unit, the government should budget $880 million per year. While the goal of 50% of houses may seem ambitious, these calculations show it is achievable.

The subsidy may not be required for the next 40 years, but shows the scale of response that is appropriate in the initial phase of mass adoption.

The fundamental problem is not the subsidy or the goal, but the government's budget allocation.

The rate of adoption, 50% over 40 years is also substantially lower than has been experienced by mobile phones, the internet, cars or colour televisions. Claims of a 'bubble' imply that the government's intention was not to support the start of a new industry for the main street. Was it instead niche tokenism?

4) **Solar electricity as an investment**

The sum of $880 million a year as a feasible pathway for the mass adoption of solar photovoltaic technology, while affordable, is a substantial sum of money. Is it a prudent investment?

I would suggest that spending less than 0.1% of GDP to support a technology that improves both the reliability of electricity supply, improves the quality of air, reduces future inputs and is likely to lead to ever cheaper renewable electricity is a fair investment. Increasing fuel prices is likely to lead to increased dependence on the electricity grid as cars move to 'plug-in' hybrid technology, while global warming reduces the capacity of expansion in coal and the political will does not exist to move quickly with nuclear. Photovoltaic electricity is clear and present technology that increases grid capacity when and where we need it most.

The financial rate of return on photovoltaic electricity is likely to be low in the initial years, hence the need for an initial public subsidy to support mass adoption. However it is not low if the assumed price of electricity is high (for example 20 cents per kwh) or if the value is compared to other long-life infrastructure investments such as roads or bridges. Investment is the only true form of saving. Encouraging baby boomers and others to save by investing in photovoltaic technology means that fewer inputs will be needed in future to generate electricity and that future retirees will have more disposable income after energy costs. The government should therefore see such subsidies as an appropriate way to support private saving and investment activity, if necessary reducing the surplus rather than curtailing the future of the industry.[1]

[1] Although it would be more fiscally prudent to fund an increased allocation to the photovoltaic rebate by returning tax rates on high income earners ($150,000 +) to pre-Howard-Costello levels.