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Submission for the Senate Standing Committee on Environment, Communications and the Arts

in regards to the

RENEWABLE ENERGY (ELECTRICITY) AMENDMENT (FEED-IN-TARIFF)  
BILL 2008

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Beyond Zero Emissions is a not for profit Climate Change Awareness and Advocacy group operating globally and based in Melbourne Australia. - <http://beyondzeroemissions.org>

Beyond Zero Emissions consists of 20 core team members.. the group operates a number of divisions.

Produces weekly national Climate Change Radio show "Beyond Zero"  
Runs Monthly discussion groups in Melbourne with international experts on climate science and solutions

Produces and creates positive climate change media outcomes through education of the mainstream government and corporate media.

Develops solutions plans for transitioning sectors of our economy to zero emissions and drawing down our existing standing "carbon debt" which is now approaching 10 gigatonnes.

Educates politicians and senior bureaucrats in government departments on the direction of climate change solutions related to the serious leading science of Nasa and the US Navy.

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**Why we need an effective Feed-in tariff for Climate Mitigation not just humoring the green/enviro concerned set.**

The Problem:

Climate Change is serious and it needs addressing now, a comprehensive response to climate change given the complete loss of arctic ice which is imminent in less than 5 years (Wieslaw Maslowski – Lead US Navy Oceanographer)

<http://beyondzeroemissions.org/2008/03/24/Dr-Wieslaw-Maslowski-ice-free-summer-arctic-2013-or-sooner-loss-of-reflectivity-non-linear>

And there is already too much carbon in the atmosphere

Dr James Hansen – NASA and  
Dr Ken Caldeira – Carnegie Institute of Washington at Stanford

Given the seriousness of complete loss of arctic ice which will bring on considerable sea level rise this century – greater than 3 metres according to James Hansen, we need to seriously reduce carbon emissions (and equivalents) to near zero and then actively drawdown atmospheric carbon into forests, soils and oceans including the use of Bio Char (Agri char or Terra Preta)

The Solution:

A diverse mix of 100% renewable Clean Electricity production to power all of our stationary energy needs and electric transport (Predominately Fixed electric rail, Plug-in hybrid and pure plug in vehicles) using,

1. demand side reduction (Passive Solar Houses, Insulation retrofits, fuel switching, Heat Pumps, Induction cooktops, direct solar industrial steam, draft proofing double glazing etc)
2. Solar thermal power stations with salt thermal storage, ammonia thermochemical storage and
3. Wind Power plants with Adiabatic Compressed Air Energy Storage (General Electric type). Hydrogen storage.

All of the above are better than baseload solutions (They are not so inflexible to give us huge amounts of electricity in the middle of the night when we don't even need it.

### **And Distributed solar photovoltaic power.**

The Grid Interactive Solar Photovoltaic part of the solutions

It's cheap – it only has to compete with the retail delivered price of electricity as measured at the customers premises meter not the wholesale price at a generator.

It is predicted that in most industrialised OECD countries this point known as Grid Parity will be reached before 2020, in most of these countries between 2012 and 2015.

This is the view of international semiconductor (commuter industry) analysts, business analysts and global establishment management consultants such as Mckinsey, the world watch institute, promethious institute and others.

In Germany last year they installed 1300MW of Photovoltaic panels. They grew 30% on the year prior. This 30% growth rate has been the growth rate for the last 10 years.

Germany, it is predicted will install 2800MW of Solar Photovoltaic on roofs by 2010, the price by that stage it is predicted will be 30% less than today. 2800MW is bigger than any coal power plant or other electricity generating facility in Australia. This will be happening in 2 years time.

In Germany the average solar panel produces 66% less electricity than one installed in Australia – and yet their government sees it as a good value proposition to invest in. Who needs economic modelling when Australian's will get 3 time the electricity per annum than

Germans who install solar systems.

1300MW of Photovoltaic would have avoided the big blackouts that occurred in Victoria earlier this year. It is more peak capacity than Basslink provides.

In Spain it has been shown that the addition of significant wind and solar power onto the national electricity grid has actually reduced electricity rates. This has occurred for many customers of electricity utilities in parts of the United States also.

Electricity can provide all of a household's energy needs and the equivalent amount of what a household requires can be produced onsite – at a time when there are peak power and industry requirements for power – during sunny days.

All electric houses utilise high efficiency heat pumps that use 30 – 20% of the electricity of conventional bar radiator / oil filled heater type resistive heaters. And use 30 – 40% of the energy of burning gas directly in a house (If instead that gas was burnt in a modern 59% efficient CCGT gas turbine Rankine combined cycle plant)

1. We need enough trained installers to take advantage of the point where grid parity has been passed – at the moment the industry is on the cusp of moving beyond hobby size. Subsidies such as Solar Homes and Communities Plan and proposed and operating Feed-in tariffs are required to create this environment.

2. We need to actually achieve serious reductions in Greenhouse gas emissions – rooftop solar PV in this country could achieve around 20% of our electricity needs if all available and viable north facing roof top space is utilised.

3. Along with the other aforementioned approaches to comprehensively reducing emissions Solar photovoltaic over the next 13 years (The time it would take to roll out panels on every roof generating around 20% of Australia's electricity) will make very substantial and serious reductions in carbon emissions. Once we have our carbon emissions in each sector at near Zero Carbon, we can concentrate on restoring the atmosphere /biosphere through drawing down carbon and removing our carbon debt.

To provide enough support based on today's price of electricity, and the cost of solar photovoltaic panels we need to give the public the right signals to be able to adopt these technologies on mass.

This means consistent with common investment payback models we need systems that pay themselves off for the consumer in 10 years. -- Solar Photovoltaic systems last longer than 25 years. (The first PV systems in the space program 50 years ago still work today at a slightly reduced output).

**THIS WILL NOT BE ACHIEVED BY AN ETS.**

An ETS will only achieve reductions easily in the short term while failing to build capacity to make the more structural changes such as photovoltaic and large scale solar thermal adoption that is required as part of a total end game solution. By just relying on an ETS we will just put off the hard decisions and delay the actual change required.

An ETS in the short to medium term will just cause a simple obvious business as usual

switch of our energy infrastructure from Coal to gas. This is simple and predictable and does not require any learnings or knowledge about a carbon constrained future. This is a very risky consequence of a simple and naive approach to solve the global climate emergency we are facing. (This does not reduce the need for tools such as ETS but it just states that they will fail our community industry and country if used in isolation).

This will be achieved by targeted structural programs and ongoing funding.

For the Solar Photovoltaic industry this MUST look like either.

A. \$8000 upfront rebate available per watt. Reducing at most \$1000 per year from 2009. This should not have any limits on who may access this scheme. We are spending double digit millions on our subsidy while Spain is spending 3.5 Billion Euro's on theirs each year. Our's is barely worthy of being called a green wash at present it's scope is so narrow and limited and the numbers of systems so tiny.

And a feed in tariff of 60 cents per kwh starting now and from 2010 reducing by no more than 5% per annum. The rate is locked in based on the year that a system is installed and lasts for at least 15 years.

B. Or without the support of the \$8000 upfront rebate reducing at no less than \$1000 per year from 2009.

We must opt for a higher startup feed in tariff of \$1 per kwh.

To put this in perspective, the cost of electricity at the time of a peak power day when everyone's air conditioning is on rises on many occasions to \$10 per kwh.. at these times grid interactive solar customers will still be short changed \$9 per kwh on their power bill. The \$1 feed in tariff is set a bit lower as a way of averaging the benefit they provide to all electricity consumers.

If the intention is to drive the adoption of renewable energy and create serious installations that bump old dirty conventional coal off the grid, then a feed in tariff should have no size limits. Which is our preferred position. If the intent is just to offer net zero electricity bills to small electricity customers such as householders a system size limit no less than 10kw should be imposed. This is similar to the ACT feed in tariff law that is a national leader.

1 last point on social equity.

After Solar PV has reduced everyone's power bills by removing the need to provision super expensive peak power – often required from Hydro dams that due to drought are no longer able to secure our supply there has been some confusion which has occurred in the State of Victoria with information spread by Peter Batchelor's office about a feed in tariff being regressive.

Well despite the savings to all electricity consumers including the poor. 80% of the subsidy will be paid by Business/industrial/commercial consumers as they consume roughly 80% of our electricity. Electricity consumers deemed to be poor get a state government energy concession which could be extended to cover any net increase if it were to be proven. And that the benefits to the nation by putting solar systems on roofs are available to everyone as the poor and helpless are the most vulnerable and the ones who will be hit hardest by Climate Change.

