

Submission No:58

**House of Representatives Standing Committee on Industry and
Resources:**

Inquiry into the development of the non-fossil fuel energy industry in Australia:

Case study into selected renewable energy sectors.

Submission from Marion Kavanagh

To: ir.reps@aph.gov.au

My submission will address solar energy, wind energy and energy consumption.

We have recently built a new house. In the designing of the house we placed priority on being low users of electricity. There were two reasons for this. One was to limit our contribution to the increasing problem of carbon emissions, and the second was to reduce our future electricity bills.

1: solar energy:

We have invested in a solar photovoltaic power system. We received an Australian Government rebate to install this system. The rebate was partly an incentive for us to choose this path but it was not sufficient encouragement on its own. Installing a photovoltaic system is very expensive. If our decision was purely an economic one, we would not have chosen a solar photovoltaic system.

Since installing our system our power bills have decreased by almost 1/2. Our carbon emissions have also decreased by 1/2.

To encourage increased use of solar energy the Australian Government and its agencies should:

- Support the installation of solar photovoltaic power systems by making them financially attractive to the individual household through a more substantial rebate system. The rebate provided when we installed our system was an encouragement. This rebate has been abolished. It should be reintroduced at a more significant amount.
- Support the Australian solar sector by investing in research and development programs to develop even more effective solar photovoltaic power systems, solar hot water systems and other solar energy innovations for Australia. Australia had a leading role in the development of solar technology and production until recently. Overseas companies and

governments have taken the lead and you can no longer buy solar panels made in Australia.

- Allow individual households the capacity to generate enough power from solar panels to provide a 'surplus' to the grid. Currently the present regulations allow individual households to generate a limited (minimal) amount of power, equivalent to a household's consumption. We probably would have installed more solar panels if we were able to do so. This would have provided another 1/3 more carbon free electricity onto the grid than we do now.
- Compel all new houses and businesses to install solar hot-water services and encourage existing households and businesses to convert to solar hot water heating. The energy savings to be gained from these actions would be enormous.
We live in southern Victoria and in winter our solar water heating capacity is only limited by long periods of cloud cover in winter. We installed a 3 panel solar hot-water service with a large tank with a manual booster switch. On patchy sunny days in winter we generate enough solar energy to heat sufficient hot water for our needs without using grid power. We only need to switch the booster on during the days when there is complete cloud cover all day. The system was made more efficient by tilting the panels higher to make them more effective when catching the low winter sun. Manufacturers should be more aware of the increased winter effectiveness that can be achieved by aligning the panels to favour the lower, less frequent winter sun. Our hot water needs require minimal grid power. In total we use the grid supply to heat our hot water on average about 15 times a year (15x 2hrs = 30 hours per year)
- Solar hot water heating is efficient (even in Victoria)
- Solar power is effective.
- Solar power is passive and quiet.
- Solar power does not destroy landscapes.
- Solar power does not threaten future generations through storage of waste materials.
- Solar power does not kill birds.
- Solar power does not involve additional cost after the initial expense of installation.
- Solar power is sustainable power.

The solar power industry does not have powerful lobby groups and large company interests advocating the expansion of the industry. It is an industry based on small individual installations and developments. There are no large capital works programs involved in developing and installing solar energy systems. The solar industry does not have a huge visual project (like a wind turbine) for politicians to stand in front of for a press release and a photo opportunity to reassure the voters they are taking action. There are not the powerful lobby groups of the coal nuclear and wind energy sectors advocating huge capital investment in large projects. The solar industry suffers because a solar panel is not a huge visual icon.

2: wind power:

There is increasing evidence, both here and overseas, that wind power is not going to solve the world's energy problems. There are two wind power developments in our area. Wonthaggi and Toora. There are no figures available showing the actual power efficiency of either facility. We are only given theoretical figures (spin). One would think that if Wind power was so efficient the companies would be very keen to give that information to the public. The reality is that the wind companies are secretive about the actual generation of power from the turbines. There was a small window of information about the efficiency of Wonthaggi available last year which actually showed how inefficient the Wonthaggi wind turbines were in delivering power to the grid. It appears there were, in that period, times where the system actually consumed more power than it generated.

There are proposed turbine developments at Bald Hills and Dollar. The existing and proposed developments are very controversial within the community.

- Wind power is being exposed as an ineffective source of energy.
- Wind power is intrusive and noisy.
- Wind as a source of energy survives because of Government support.
- Wind turbines destroy landscapes and are likely to be in place long after becoming obsolete.
- Wind turbines kill birds.

If support for wind as a source of energy is an economic decision it fails to deliver.

If it is a decision about reducing carbon emissions it fails there also.

If wind energy is a decision based on addressing community concern about 'global warming' it fails there also.

Wind turbines are not the answer.

3: energy consumption:

Our house was designed to minimise energy consumption.

- We have double glazing on most windows. This has proven to be very effective in winter and summer.
- We have strategically placed windows to take advantage of summer breezes. In summer we can always find a breeze to effectively cool the house.
- Our house is fully insulated (walls and ceilings).
- We have installed a brick heat absorbing wall inside the house.
- The house is north facing and benefits from winter sun and summer shade through the design placement of windows and eaves.

As a result of these design features we have little need for winter heating except on very cold nights and no need for summer air conditioning - and we have just been through a very long and hot summer.

Our experience illustrates what can be achieved through building design and materials. Just having the right width of eave on our north wall gives us shade inside in summer and a cool house, and sun inside in winter and a warm house. There are many design features that can be implemented in new buildings that can achieve huge energy savings.

Reducing energy consumption is a vital part of any inquiry into alternative energy sources. This inquiry shouldn't be just about the business and economics of energy. It should be about conserving energy also.

It is irrefutable common knowledge that huge advances in reducing carbon emissions can be achieved through good design and energy saving building materials and actions. This must be the first line of attack in addressing our future energy needs and consumption. The second is to promote sustainable and efficient renewable energy sources. Solar is not a stand alone answer but it is an effective and efficient power base. It should be the basic first step on which to build other power sectors.

Marion Kavanagh