Background

I write as someone with a very long term interest in energy matters and in both conservation and renewable energies in particular.

In a former life i was an electrical power engineer, who worked on major generation and transmission projects all over the world with Swedish & Swiss transnational electricity companies for 10 years (1965-1974). Since then i have been an environmental scientist, trained in Sweden (Lund Uni.), 1974-5 and Melbourne Uni. From 1978 i have been lecturer, senior lecturer, a/prof & professor in environmental science/sustainability studies at both Monash Uni (25 years) and Swinburne Uni. (some 8 years). In addition to my primary teaching in the social contexts of the "environmental problematique" (see Club of Rome) i have, and still do, run graduate courses in "Energy for the Future" for environmental scientists and engineers.

I instigated the Challicum Hills 52.5MW windfarm in about 1998, on my partner's Ararat farm. That wind farm, built by Pacific Hydro as its first inland wind farm, commenced operation in approx. 2003. It involved a close to $M100 investment in the Ararat area and was welcomed with universal acclaim. I have lived with it since that time. My partner, MairiAnne Mackenzie, farmer and environmental scientist is making a separate submission to this inquiry.

Intention of this submission.

My primary aim is to bring the wider enviro-social context of electricity generation - as it relates to windfarming to the attention of the committee. Note that virtually all existing and planned farms are rural! [I cannot imagine large scale urban windfarms.]

This submission does not dispute that there are problems of both substance and perception with wind farms. However, it intends to remind the committee of some energy context matters. In particular that per MWh generated, the environmental and human health related costs of windfarms is orders of magnitude less than those associated with the existing basis of most of the planet's transport and electricity generation: fossil fuels.

It should not be beyond the wit of our politico-legal planners to ensure Australians, in this vast and relatively empty country, that their personal lives are not literally and metaphorically shadowed by wind generators! At worst, the few lives that may be unavoidably threatened by the proposed advent of a wind farm, should be the subject of generous compensation arrangements.

The contexts of concern:

Current world energy use is based on fossil fuels: peat, coals, oils and gas. It should be borne in mind that while a lot of good can be attributed to access to cheap power (i.e. world "development" in general) the number of deaths directly attributable to fossil fuel mining and burning puts deaths in combat into the shade. Here i refer to accidental deaths in mining and handling fossil fuels and deaths from diseases associated with ingesting the various and profoundly toxic effluents from fossil fuel combustion. Noting of course that in most countries fossil fuels are the prime source of both electricity and transport.

C.f., in the 1990s a major EPAVict. study showed that the number of deaths attributable to the health impacts of the car was equivalent to the deaths by crash. Therefore today one can say, roughly, that 1500 people in Australia die by crash while the same number die from illnesses related to the pollution from our fossil-fuelled transport.

I refer the committee to the work of the US Physicians for Social Responsibility's remarkable paper COAL'S ASSAULT ON HUMAN HEALTH, 2009. Its contents are truly devastating.

Beyond the human costs of fossil fuel use are the manifest and hugely ramified environmental costs: ecological, meteorological and geological. Details on request.

It should never be forgotten that the rise of fossil fuels is due in good part to the fact that virtually all its costs have always been and remain still, unpriced. These health and environmental costs are so vast that they can never be repaid and had we attempted to levy them in terms of re-instating health and environment as it was prior to the advent of fossil fuel burning, these fuels would never have got off the ground.

Finally, it is worth noting that, beyond the low embodied energy and pollution costs of windfarm generated MWh compared to fossil fuel generated MWh, the large scale use of windfarms brings a profound benefit to our greenhouse effected atmosphere.

The very fact of wind generation is the removal of energy from the atmosphere. In a greenhouse effected atmosphere where the energy stored in the atmosphere is increased - thereby exacerbating climatic swings - the reduction of atmospheric energy can only be of benefit!

Options:

a) conservation mining: our most powerful energy SOURCE! This involves socio-economic changes to our personal and soclal lives that seek to dematerialise them. Everything from putting on a pullover rather than turning up the heating to doing away with the myriad perverse incentives that dog our attempts to live sustainably. These proliferate in formal political and economic structures as well as in our social and personal aspirations for the good life. See e.g. my articles in the Melbourne AGE newspaper (a selection is attached).

b) efficiency innovation - useless on its own because of the Jevons' or rebound effect which tends to nullify and even exacerbate energy use as efficiency innovation is implemented (further details on request).

c) other renewables such as large-scale solar thermal, wave-energy and small-scale photovoltaics - to be included AS roofing and cladding materials in future buildings.

d) long-term non-renewables such as geothermal heat sources.

A note on biofuels.

With the possible future exception of algae-based fuels, as yet still unproven on a commercial scale, the use of plant-based fuels is a truly obscene use of potential foodstuffs. A lot has already been written about the inefficiencies associated with converting plants (corn and other cereals, sugars etc.) into ethanol and biodiesel. In many current cases it can be shown that overall, these conversions barely cover their energy costs and therefore are chimerical (of illusory benefit).

What ultimately takes the cake and forces me to use the word obscene here, is that we are feeding human foodstuffs to a process that is less than 1% efficient. I.e. in feeding corn or sugar to cars the Americans or Brazilians are spending over 99% of these foodstuffs to move the empty cars and their infrastructures. Less than 1% of the fuel is actually used to move the drivers. See attachments.

Conclusion:

While no energy source other than conservation mining has no detrimental effects on people or environment, wind-based electricity occupies a unique category minimal in all but its aesthetic impact.

I urge senators not to handicap this valuable renewable energy - its the best of the major renewables accessible to us today.

Frank Fisher