

Committee Secretary
Senate Standing Committees on Community Affairs
PO Box 6100
Parliament House
Canberra ACT 2600
Australia

3 March 2010

Dear Sir

Submission to Inquiry into the Social and Economic Impact of Rural Wind Farms

I wish to make a submission to the above Inquiry with reference to wind farms. I understand the Inquiry is focusing on the noise, vibration, and economic impacts of wind farms on rural communities. The focus of my submission falls in the "Any other relevant matters" part of its Terms of Reference, in reference to the visual impact of wind farms.

I am concerned about the location of any further wind farms. In essence, I believe that wind farms should not be located near Australia's coast because of its high scenic quality, and that there are many suitable inland areas where they could be located.

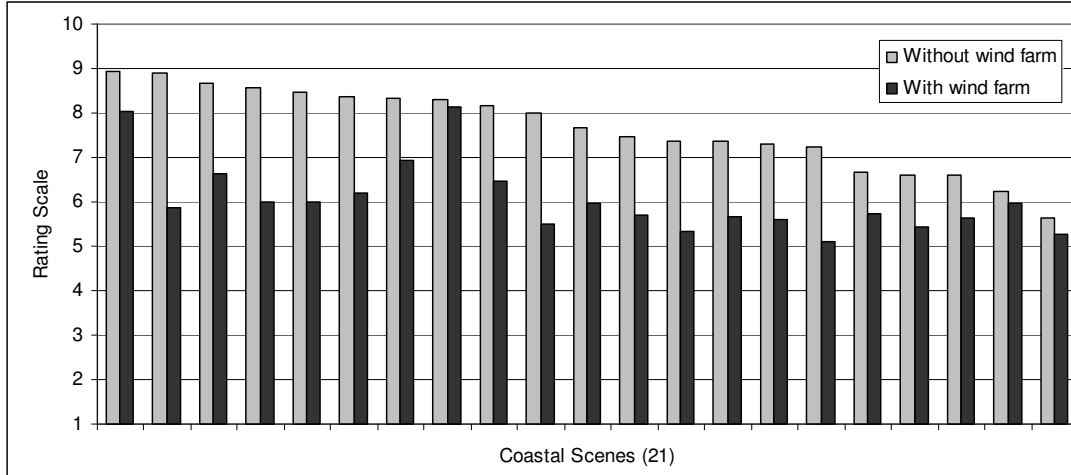
In 2003, I carried out research in South Australia of potential wind farms on the coast and agricultural regions of the State. I selected 21 scenes on the coast and 47 inland on agricultural land. Images of wind farms were inserted into these, scaled appropriately for distance. A set of scenes with the wind farms and without them were assembled and placed in random order so that the same scene did not appear in sequence. The scenes were shown to over 400 people who were asked to rate their scenic quality on a 1 (low) to 10 (high) scale.

Analysing the 311 completed responses indicated that in all of the coastal scenes, the presence of the wind farms lowered scenic quality, from an average of 7.4 without the wind farm to 5.9 with the wind farm. This is a change of 1.5 which is quite substantial on this scale.

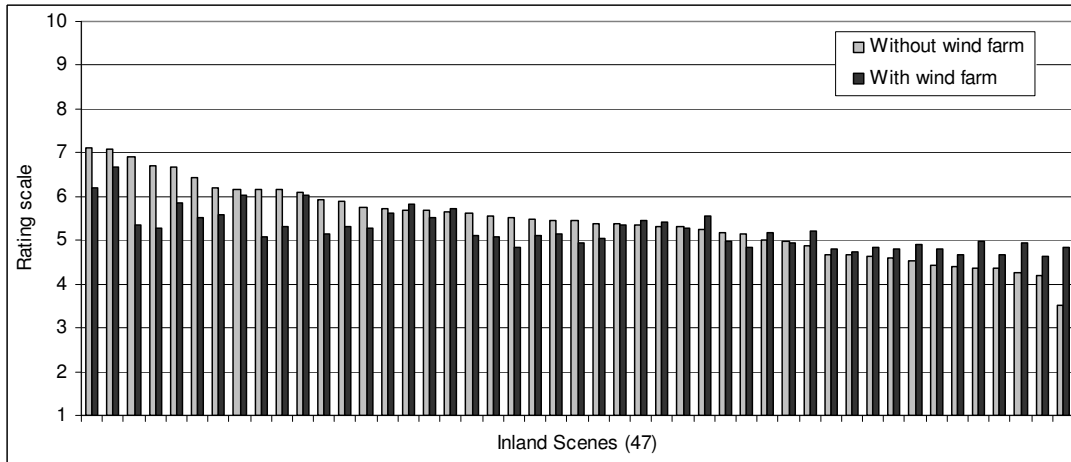
For the wind farms on agricultural land, I found that where the scenic quality was moderately high (say 5.5 to 7) that the presence of the wind farm lowered scenic quality. However where the scenic quality was moderate or low (below 5.1) the presence of the wind farm actually increased the scenic quality. I believe that this

was because the wind farm added interest into an otherwise dull or mediocre landscape.

The following graphs display these result.



Coastal scenes – arranged in descending order of rating difference



Rating of inland scenes in descending order

Note: On the LHS of the graph, the ratings of scenes without the wind farm are higher than the scene with the wind farm. This indicates that the wind farm lowers the scenic quality of the scene. However on the RHS the opposite occurs. The scenic quality is lower (<5.1) and the scenes with the wind farm rate higher than the scene without the wind farm. Thus the presence of the wind farm enhances low and moderate quality landscapes.

The results are significant for the future location of wind farms. The coast often represents the region with highest and most consistent wind velocities and hence the best returns for wind farms. Inland sites tend to have lower wind velocities and therefore lower returns. However, this ignores the environmental externality of lowered scenic quality on the coast.

I believe it is the Government's role to balance the competing needs for renewable energy (which I strongly support) and the protection of Australia's high scenic quality coast and to guide wind farms to areas where the industry will gain viable winds but not at the expense of Australia's landscape.

I propose:

1. Wind farms should not be located close to the coast. The distance from the coast will vary:
 - In areas of low coastal landforms where scenic quality tends to be low they could be located a kilometre inland.
 - In areas with dunes, low cliffs and headlands, scenic quality tends to be moderate and the wind farm could be located two kilometres inland
 - In areas with high land forms including cliffs and headlands, scenic quality tends to high and the wind farm should not be visible from the coast - three kilometres inland should be the minimum.

2. In agricultural areas, wind farms could be located on flat land or along low hills and ridges, providing trees are not removed to enable their positioning in such localities. Wind farms should avoid areas of high landscape value, and should be located at distance from farm houses and towns.

The Appendix contains photographs of examples of wind farms in these localities.

I attach a copy of my paper on the wind farm study for your information.

Yours sincerely

APPENDIX IMAGES OF WIND FARMS IN COASTAL AND INLAND LOCATIONS**Coastal locality, low quality landscape**

Wattle Point, Southern Yorke Peninsula, South Australia

Coastal locality, moderate scenic quality

Wind farm near Albany, Western Australia

Coastal locality, high quality landscape

Starfish Hill wind farm, near Cape Jervis, South Australia

Coastal locality, high quality landscape

Woolnorth wind farm, north west Tasmania

Coastal locality, some of the highest landscape quality in South Australia

West of Whalers Way, Cathedral Rocks wind farm has since been installed adjacent to the cliffs in the distance.

Agricultural landscape, moderate scenic quality

Challicum Hills, Victoria

Agricultural landscape, moderate – low scenic quality

Snowtown area, turbines being installed.