

While refreshing to see the current intense government and media focus on the reality of climate change, there needs to be a re-evaluation of a large range of related issues. I will briefly overview just two of my own concerns and the effect each has in this debate.

HOUSING

Each new house built has a roof with a heat signature greater than the harshest desert. Additional to this, many homeowners are now 'educated' to accept that lawn is environmentally unfriendly. This has resulted in widespread use of concrete, paving and artificial turf. I have also observed for several years now that high pressure systems tend to linger over southern Australia for longer periods than in the past. These have, in my observation, tended to 'fend off' the weaker low pressure systems. I have often wondered as to the contribution the increased domestic heat signature has impacted on this recent phenomena. It has become apparent that BOM is using older models when predicting rainfall in the south east as the 'weather mans' predictions of showers are frequently wrong.

I believe lawns are in fact environmentally very friendly for the following reasons;

- (1) Even a small lawn will produce enough oxygen to supply an average size family.
- (2) Turf filters the water entering the groundwater. The public is uninformed as to groundwater issues. Many aquifers are facing depletion and/or pollution, the Botany aquifer for example.
- (3) Turf filters airborne pollutants.
- (4) The heat signature of turf is substantially lower than that of concrete or paving.
- (5) Turf, through transpiration, contributes to a less harsh environment.
- (6) The turf root system is very dense and assists carbon sequestration.
- (7) Turf provides a safe recreational area, particularly for children.

The alternative surfaces being popularized do little if anything to contribute to a better environment. I believe a review needs to be undertaken to determine as to just what factually constitutes an environmentally friendly house and house block. Current housing regulations address energy efficiencies only and I know of many houses that are both energy efficient and environmentally damaging. I believe that a person maintaining a lawn of drought resistant turf being watered from harvested rainwater should not be unfairly seen as doing the environment an injustice and in fact should be encouraged. The planting of other carbon sequestering plants should also be encouraged through public education.

WIND FARMS

My research has shown that the current method of wind harvesting is inefficient for several reasons.

- (1) When applying principles of fluid mechanics to the flow of wind over hills, it would appear that many turbines are mostly placed high up in 'free air' and have a decreased advantage of the increased airflow. Any increased airflow they are subjected to would merely 'brush past' the lower blade and the overall wind force distribution may not be equal.

(2) They are unable to concentrate flow during periods of light breezes.

(3) They are often forced to shut down during periods of heavy wind.

I have been working on a possibly more efficient method that involves the capture and funnelling of wind to tunnels that house several turbines. Advantages are;

(1) Ability to generate power during light breezes.

(2) Effective capture and 'reuse' of premium wind flow.

(3) Ability to continue generating capacity during high wind events as internal pressure sensors would activate pressure relief vanes to regulate desirable tunnel pressures.

(4) Concentration of turbines in a dedicated area.

A different turbine to those currently used may be necessary. Research so far has concentrated on the domestic housing market but does not appear feasible to this application due to the need to build a high vertical tunnel/tower, but an up scaled version using horizontal ground capture and turbine housings looks interesting, on paper at least. Due to other projects, the building of a micro model prototype is on a 'do when time permits' basis, but the concept may be of interest to others.

Thanking you,
Dennis Boon.