

Submission to Climate Change Summit

from

Woodend Integrated Sustainable Energy Association (WISE)

Prepared by Peter Hansford

With Regional Victoria likely to be more exposed to the impacts of climate change the Summit heard the need for large scale landscape re-design with government having a role in driving market innovation and leadership.

The Summit noted the need to increase the resilience of our regions, communities and environment to prepare for unexpected impacts of climate change.

This submission from the Woodend Integrated Sustainable Energy Association (WISE) provides some policy and program options to facilitate a Community response to Climate Change.

Background

In the midst of a drought and confronting the realities of peak oil and climate change, communities across Australia are pondering their future.

As the world is forced to become energy and carbon conscious so must residents of the Macedon Ranges. Peak oil and climate change provide another order of magnitude of change to the lifestyles of recently arrived hobby farmers, young families, “tree changers”, new commuters as well as longstanding residents.

The Macedon Ranges Shire has an area of approximately 1750km and is located midway between Melbourne and Bendigo. It has a population of around 38,000.

The Shire has a diverse economic base. Townships in the Shire’s south, including Gisborne, New Gisborne, Riddells Creek, Romsey, Woodend, Macedon and Mt Macedon, are a focus for commuters to Melbourne.

In the north, the townships of Kyneton, Romsey, Lancefield, Malmsbury and Tylden are characterised by more agricultural enterprises and manufacturing operations.

Given the strong middle class demographics, the high community participation rate and the strong interest in the environment it is perhaps surprising that the Shire is seen as laggardly in relation to the embrace of social, economic and environmental sustainability.

The greenhouse effect is now considered a scientific certainty. Predicted changes that will affect Macedon Ranges include:

Temperature changes. By 2030 a temperature increase of between 0.4°C and 2°C is predicted. This will result in the average number of days over 35°C from 8 to 9-12 by 2030 and 10-20 by 2070.

Rainfall. It is predicted that there will be substantial variations in rainfall. Overall, in most of Victoria, including the Macedon Ranges' area, rainfall is likely to decrease by up to 11% by 2030 and 36.5% by 2070. The seasonality of rainfall is also likely to change. (Macedon Ranges Shire Council Natural Environment Strategy 2002).

As a net exporter of food, the environmental ravages of climate change will bring great challenges and change and will particularly impact on agriculture and horticulture industries in the region. In combination with peak oil (the excess of consumption growth compared with exploitation of known reserves) - feeding into transport fuel, packaging and many farm and pharmaceutical inputs – many parts of rural and regional Australia will become similarly afflicted.

The number of days over 35 degrees has increased between 10% to 30%, Temperature increases, reduced annual rainfall, increased frequency and depth of droughts, combined with peak oil will impact greatest on rural communities with a high dependence on agriculture and food and wine tourism.

(Garnaut Interim Report 2008).

In the Macedon Ranges drought has already been responsible for: the closure of one of the regions largest employers (Frew's Meat works); tree and plant deaths in famous Mt Macedon gardens; domestic water restrictions due to critically low water reserves; lost bio diversity as a consequence of habitat destruction from fire; and mineral water springs are drying up.

The "knock on" effects have broader economic, social and environmental effects. But there is more change to come.

From the ACF Consumption Atlas the average resident in the Macedon Ranges area has an ecological footprint (6.07 Ha); in excess of the State Average (6.03). The high level of car transport, the burning of wood fires and the cold climate are all contributing factors. But apathy and naïveté are enemies of improved environmental performance. (ACF Consumption Atlas)

The average annual electricity usage, measured at the Woodend interchange, has increased from 225,549 MgW hours (2004) to 23,891 MgW hours (2007); an increase of 5.9%. (Powercor supplied figures).

The demand for power will continue to grow with residential developments attracted to the region due to good train access to Melbourne and the semi-rural lifestyle opportunities.

Recognising potential housing demand, property developers are investing in prospective sites. In search of growing workforces, new businesses such as TOLL Holdings Equine Centre at Tylden, and the AAMI call centre in Gisborne are providing employment opportunities.

Amidst the breaking up of farm lands, the filling up of trains and cars and development of shopping centres, few stop to think where the new arrivals will source water and power.

Whilst natural gas has recently been connected to some of the towns and there is significant reliance on wood fires, the predominant form of heating is electricity generated in the Latrobe Valley and transmitted more than 250 kilometers, resulting in a transmission loss of approximately 30%.

"The amount of CO₂ emitted by this region far exceeds our ability to absorb it through a carbon sinks strategy. The energy footprint provides a clear message on the need for a region-wide strategy for the adoption of alternative energy sources". (The Energy Footprint for North Central Victoria: An Initial Step Toward Addressing Climate Change. Maureen Rogers Published in Sustaining Regions 2002).

Energy in the form of electricity will be required to light our workplaces and houses, warm our offices and homes and power our computers, machinery and potentially our vehicles. Access to emission free, locally generated power will underscore the economic, social and environmental sustainability of communities.

Renewable energy is a major economic opportunity for the region. Wind prospectors and developers have been actively seeking out sites. Simultaneously WISE (Woodend Integrated Sustainable Energy) has been investigating a community owned wind power project.

Using estimated average wind speeds and current electricity and renewable energy certificate prices, small wind farms can break even financially in 10 years and can provide healthy revolving profits to local investors and future renewable energy and sustainability projects.

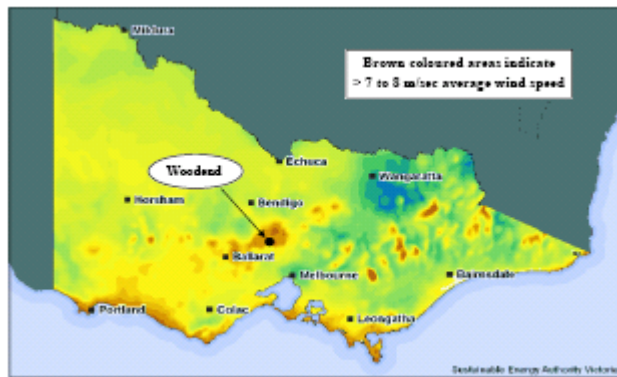
Community Owned Renewable Energy Projects.

Of particular note in terms of potential impact on local wind power generation is the demonstration effect of the Hepburn Community Wind Co-operative. Formed by the Hepburn Renewable Energy Association in combination with Future Energy Pty Ltd and Sustainability Victoria, the Leonards Hill community wind park has provided the inspiration for local consideration of smaller scale wind power developments.

In the Macedon Ranges WISE (Woodend Integrated Sustainable Energy Inc) has been investigating the technical and financial viability and the community acceptability of community owned wind parks.

By referencing the Wind Atlas of Victoria (2004) the Macedon Ranges region contains the best in land wind resource in Victoria making it an attractive location for wind power developers.

The region possesses average wind speeds greater than 7 metres per second (7 m/sec) with some prospective locations rated at 8m/sec+; - 4 m/sec is generally regarded as the minimum for producing wind power.



2X2 MgW turbines generate equivalent electricity to power 2300 households. In the Macedon Ranges wind power is an immediate opportunity for a community response to Climate change.

In other parts of Victoria solar, geothermal and biodiesel opportunities are the predominant opportunity.

Community owned renewable energy projects provide additional renewable energy infrastructure combined with comprehensive cultural and behavioural change and should therefore be considered a critical component in building regional community resilience.

In the Macedon Ranges drivers of community owned wind power infrastructure include:

- Increasing interest in renewable energy generation in light of state and national targets
- Increased understanding of the myths and facts in relation to wind power
- Likelihood of strong community support
- Local modelling of community owned wind power infrastructure
- Financial attractiveness of the project

- Community Ownership – popular in Europe and North America but embryonic in Australia.
- Potential retailing of locally generated wind power
- Impact on regional green house gas emissions
- Impact on ecological footprint

The WISE project seeks to build on the experience of HREA by exploring financial models and partnership arrangements which ensure that future profits are available to further projects.

The demonstration effect and experiences of WISE and other groups will help transition rural communities, such as the Macedon Ranges, from net exporters of food and fibre to net energy exporters.

Renewable Energy Association Portal

There is a real need for advice about how community groups can create action for change without having to re-invent the wheel. It is tremendously heartening to see so many groups starting across Victoria, creating change from the ground up. Their likelihood of success and the opportunity for fast tracking the efforts of volunteers would be greatly enhanced through an information portal providing diagnostic tools, references and proven pathways.

Toolkits and a roadmaps can make a considerable contribution to the effectiveness of otherwise under-resourced organisations.

There is an opportunity to capture the Lessons Learned for Renewable Energy Associations through the development of a Renewable Energy Association Portal. Importantly the portal / tool kit could be a lightning rod for the development of an Association of Renewable Energy Associations, where among other things collaboration could lead to the development of major events to keep groups abreast of developments globally.

Renewable Energy Association Portal headings could include key knowledge areas and link with the renewable energy system.

Key knowledge areas could include:

- identifying renewable energy projects - scoping wind, solar, biodiesel, domestic, community and large scale projects (ref Hopetoun SV Project?) and developments in the renewable energy market
- community engagement - including membership recruitment, events, communication; media; lobbying
- governance and registrations - structure incorporation, DGR and Non Profit Tax registrations and environmental registration
- building bankable projects - stakeholder management, business case development, prospectus development

- Funding, Revenue streams and Financial models - debt, equity, community private partnerships, patrons, donations

The Portal could also feature

- a guide to relevant government departments and funding programs
- a guide to community based renewable energy groups around the state (country, international?)
- a guide to government planning processes (local, state, federal).

Smart Energy Zones

Local Governments are key social institutions in rural and regional Victoria.

It has been calculated that local government has the capacity to influence 50% of the greenhouse gases produced in Victoria through Council business and residents (Sustainable Energy Authority Business Plan 2001-2002).

The shire council manages 160 buildings through the Macedon Ranges, employs in excess of 300 people and, through rates and public notices, is in contact with all residents.

Macedon Ranges Shire Council is working towards reducing the Council's greenhouse gas production by 20% from 1996 levels by 2010. Council is involved in the international Cities for Climate Protection program and was the first rural Council in Australia to achieve the final milestone of the five milestone program in December 2002.

The Council is also integrally involved in the Central Victorian Greenhouse Alliance which seeks to develop innovative regional solutions to reducing greenhouse gas production and development of greenhouse friendly industries.

Notwithstanding these memberships and alliances the Council's environmental performance, like many across the State is modest. Councils need to be incentivised to take on the climate change challenge beyond commitments to the Sustainability Accord.

An effective way to demonstrate and participate in local response is the creation of Smart Energy Zones. Smart Energy Zones have the capacity to offset the cost of solarising clusters of public buildings generating power for street-lighting and swimming pool heating.

Previously the Victorian Government (Sustainability Victoria) provided \$4 million over 4 years for Smart Energy Zones. This program is oversubscribed and needs significant expansion to facilitate the community, economic and environmental benefits.

Greenhouse pollution abatement

Integrating demand and sustainable energy supply will slash greenhouse gas emissions.

Distributed generation

Surplus energy can be put back into the grid and contribute to the sustainability of our urban infrastructure.

Generating community demand

Demonstrates that combining innovative energy technologies delivers secure, clean, renewable power to local communities.

Driving change

Establishes a model for communities across Victoria to follow.

Influencing policy

Informing the development of policy and regulatory frameworks to accelerate the uptake of sustainable development

Conclusion

The significant contribution that local communities can make to meet their own energy needs is largely untapped and comes with a host of benefits for consumers, governments and business.

However a community response is muted by lack of understanding of opportunities, lack of resources to implement projects and lack of encouragement and support from all tiers of government.

Through the provision of programs which: support knowledge creation and transfer as well as through place based demonstration projects, community responsiveness can be greatly accelerated and amplified.

At the Climate Change Summit Dr. Penny Whetton's posed the question: " How can responsibilities for mitigation and adaptation be shared among different levels of government as well as the public and private sectors?"

Support for renewable energy associations and local government projects can provide the answer.