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## **INFRASTRUCTURE AUSTRALIA SUBMISSION OCTOBER 2008**

Ararat Greenhouse Action Group (AGAG) IS a regionally based climate action group, one of many now operating throughout Australia. We are positive that our region has much to offer the economy of Australia, but we also have a lot to at stake if current climate change trends continue.

Ararat Rural City Council supports the aims of the Ararat Greenhouse Action Group and has contributed to this report. Council shares the goals of the group in seeking a reduction of greenhouse gas emissions for the region and increased development of renewable energy.

The municipality depends to a large extent on agriculture, which is already feeling the effects of climate change due to reduced rainfall, serious bushfires and extreme weather patterns.

However it also has a lot to offer as a center for manufacturing, being well positioned relative to transport. Ararat is located on the junction of the Melbourne - Adelaide and Ararat - Hamilton - Portland and Ararat - Maryborough standard gauge lines as well as the Ararat - Ballarat - Melbourne broad gauge line.

Ararat is also a significant wind energy locality with major potential for further development. We have one wind farm (Challicum Hills) already operating with three more within or adjoining the municipality under development. Ararat Rural City Council is developing a Renewable Energy Park to facilitate the development of renewable energy industries.

There are several physical infrastructure related issues which AGAG and Council would like to see addressed, both of which would have direct positive impacts on our local economy.

## **1. Road versus Rail Transport from Melbourne.**

There is a long term proposal for a duplication of the Western Highway from Ballarat to Ararat and beyond which we see as making very little sense given the changing nature of availability of fuel, relative costs and potential savings in greenhouse gas emissions. According to the Australian Greenhouse Office rail freight is 3 times more energy efficient than road freight. Transport represents 14.4% of all Greenhouse Gas Emissions in Australia but rail is only 0.37% (*Greenhouse Inventory 2005*).

Currently over 1600 trucks per day pass through Ararat on the Western Highway carrying both perishable and non-perishable goods. Vicroads estimate that this freight task will double in the next 10 years. The volume of freight transported far outweighs the volume of passenger traffic, and the Western Highway is principally a freight conduit. In order to maintain capacity for growth in freight movement VicRoads has proposed that the highway be duplicated, at a cost of \$500-600 million dollars for the Ballarat-Ararat section alone. The highway follows the Melbourne-Ararat railway for the full distance from Melbourne to Ararat, and we see the cost of duplicating 90 km of highway as being a very poor investment when there are distinct advantages in upgrading the rail system instead.

Cartage of bulk goods by rail is inherently cheaper than by road. According to a 2006 report by CRA International, road freight is 50% more expensive than rail freight even when terminal costs are included.

The 1600 trucks per day could be replaced by 10 trains with a daily saving of around 400,000 litres of diesel and 400 tonnes of greenhouse gas emissions. With the approach- or perhaps already the passing- of peak global oil production, we should all be supporting the use of more sustainable transport planning, and an addition to the standard gauge rail network would have excellent potential for fuel savings. The route from Melbourne to Adelaide would be shortened and a freight hub at Ararat –already existing- could service the Portland and Maryborough lines, using a common rail gauge. There is potential for export of wood chips via Portland from existing plantations along the rail route, and better utilization of Portland's deep water harbour for freight out of Melbourne.

The availability of a containerised freight capacity at the Ararat hub would allow it to act as a staging point for shorter road trips, thus reducing the long distance road travel required. Such a hub would also allow the centralisation of containerised waste delivery to a regional waste to energy facility. There is already space existing for a freight depot at most cities along the rail route, remaining just as they were when bypassed by road freight during a period of cheap "abundant" fossil fuels.

The social impacts would be considerable. There would be more local employment in the freight depot, as there was before the event mentioned in c. above. Perhaps more importantly, the potential reduction in traffic accidents would save numerous lives. The Australian Transport Safety Bureau 2007 report on rail safety statistics showed in 2006 there were 14 fatalities for rail transport in Victoria compared to 336 road fatalities.

With road freight becoming more expensive, the goods that are carried are becoming less affordable in some regional areas so any improvements in efficiency should lead to more stable prices.

Also, the focus for transport industry employment would change from long-haul to local distribution, with consequent less family dislocation.

It would even be possible to introduce double height trains, with even greater efficiencies, if the only low bridge on the Melbourne –Adelaide line (a minor road bridge at Great Western) were to be upgraded. Appropriately located passing bays would enable trains to be scheduled closer together and reduce energy losses caused by stop-start activity. There is also a need to lengthen rail passing sidings to cater for longer trains.

Maintenance costs for a rail network are also lower than an equivalent road network. According to the Queensland Transport (2003) Rail Studies, "Land Freight External Costs in Queensland" the cost per tonne kilometre for road freight is nearly 18 times more than rail.

The rail passenger service on the Melbourne –Ararat line is undergoing a renaissance with increasing passenger numbers and customer satisfaction rising. This could also benefit from further, better links with Adelaide, Ballarat, Portland and Maryborough.

Overall then, we submit that there is no sense in duplicating a road system which is essentially a freight conduit, and is best left to passenger traffic and localised, lightweight freight distribution. On the other hand there is much to commend an upgraded and improved rail freight network.

## **2. Electric Power Grid Capacity.**

The Ararat region has considerable scope for wind farms, with one already existing and several more already proposed. The region is located on the southern edge of the Great Dividing Range so has very good potential for reliable wind energy, and the wind industry is seen more as an asset to the region than has been the experience in coastal areas to our south.

We are keen to see a greater uptake of wind power and there is huge demand for "green power" from all types of consumers as individuals and businesses wean themselves off fossil fuels.

Installation of wind farms is a very effective way of meeting Mandatory Renewable Energy Targets, with very effective embodied energy payback figures and practically zero greenhouse gas emissions. Wind turbines recoup the carbon emissions produced during their manufacture and installation in a few months and are then carbon negative for their working life of around 25 years.

However, even the first wind farm to be established in the area - Chalicum Hills- has had to limit its size due to a lack of grid-connect capacity. There were sites for up to 52 turbines but a lack of grid capacity limited the farm to 35.

This problem is due to the grid capacity being steadily diminished in proportion to distance from large population centres such as Melbourne, as well as with distance from the traditional power generation regions such as Latrobe Valley. The 220 kV line to Mildura is already fully committed to the Crowlands Wind farm currently under development.

It is likely that the same problem exists for a number of potential wind farm sites throughout Australia.

With a relatively inexpensive upgrade to regional power transmission infrastructure it would be possible to encourage further decentralisation of the country's power generation. Consideration should be given to the adoption of DC transmission technology for long distance grids.

### **3. Decentralisation of Power Generation and Increased Peak Power Capacity.**

With decentralised power generation there would be overall reductions in transmission line power losses, more security of supply and consequently fewer power outages.

Ideally such decentralisation would include systems to provide peak power generation. This could be provided by solar power generators, waste to energy plants, natural gas plants and other relatively small-scale generator systems. This will minimise the issues relating to brown outs in some rural areas, especially on high heat days where air-conditioning is being used extensively. By providing peak power production, the development of additional new major power stations can be avoided.

Waste for power generation is available in most small communities and offers a significant potential decentralised power source. The development of optimum plant size, cartage distances and distribution will require tailored research.

The same rationale can be applied to linking up remote areas with geothermal hot-rock power generation potential.

**Summary.**

Investing in rail transport and rail freight in particular will result in reductions in greenhouse gas emissions, increased road safety and reduced costs for agriculture and regional businesses. This will have long term benefits for rural and regional communities.

Improving our electricity grid capacity will allow increased development of renewable energy while reducing our greenhouse emissions and providing employment and prosperity to the Ararat district.

The development of regional renewable energy industries will provide increased security of electricity supply by utilising a range of energy sources and support local economies.