

Submission to Victoria's Air Quality Statement
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Fire prevention and agricultural burning have a major impact on Victoria's air quality but there are cost effective alternatives to these practises. A US program call *Fuels for Schools and Beyond* used mechanical harvesting systems as an alternative to burning. The harvested material is then supplied at cost to local public institutions such as schools and hospitals for use as heating fuel. The end result is fire hazards are removed at little or no cost, local air quality is improved, local institutions lower their heating costs and CO2 emissions and local jobs are created. An article on the program can be viewed at: <http://biomassmagazine.com/articles/1230/fuels-for-schools-and-beyond/>

One of the technologies used for harvesting fire hazards is the Biobaler. A trial of this technology can be found at: https://www.srs.fs.usda.gov/pubs/ja/2009/ja_2009_klepac_001.pdf

This approach would not be suitable for all hazard reduction programs but would be applicable in strategic locations close to residential areas. Using alternatives to burning was one of the recommendations of the 2015 Lancefield-Cobaw Fire Inquiry.

Removing cropping residues (stubble) prior to planting is essential in many cereal growing areas and without suitable markets for this material, burning is the only cost effective alternative. Elsewhere in the world this unwanted biomass is used to produce renewable energy creating additional income for farmers and eliminating the need for burning. An example of this technology can be viewed at: http://www.volund.dk/References_and_cases/Biomass_energy_solutions/Avedorevaerket The EU Clean Air Policy was the catalyst for this type of development.

The Pyrenees Shire is currently working with local cereal growers to develop markets for their unwanted straw and investigate suitable technologies to process it into high value products. Initial research suggests that straw can be produced for \$85/tonne which equates to \$5.90 per GJ. Straw appears to be a cost effective replacement for natural gas use in industry and straw pellets could be used in highly efficient pellet heaters to replace natural gas or LPG for home heating. While solar PV and solar hot water has received significant government funding to support their uptake by home owners, bioenergy has remained both unsupported and largely unacknowledged by government.

The use of wood heating was sited number of times in the supporting documents but wood is a renewable energy source and the emissions from wood fires are usually a combination of poor fuel quality (usually high moisture), poor heater design and incorrect heat operation. The alternatives are natural gas (if available), LPG or electric heat pumps. Natural gas is an increasingly expensive fossil fuel that Victoria is running out of. According to Energy Quest, Victoria has less than 10 years reserves left, see: <http://www.energyquest.com.au/insightsandanalysis.php?id=267> LPG is an even more expensive fossil fuel and Victoria's electricity network is under stress in many areas so increasing power use through reverse cycle heating will only add to the problem. Modern biomass heating systems have very low particulate emissions and offer a practical alternative to fossil fuel heating (three quarters of our electricity still comes from fossil fuels).

Recommendations:

- That the Victorian Government introduces a program similar to *Fuels for Schools and Beyond* using mechanical harvesting of fire hazards and supporting the installation of biomass heating in public buildings.
- That the Victorian Government both introduces legislation to phase out stubble burning and provide support to develop a straw to energy industry.
- That the Victorian Government replace fossil fuel heating systems in all regional public buildings with biomass heating, eg. http://biomassproducer.com.au/project/beaufort-hospital-heat-from-sawmill-residue/#.WxTyx_ZuldU