

SUBMISSION No. 106

Inquiry into the Australian forestry industry



Committee Secretary
House of Representatives Standing Committee on
Agriculture, Resources, Fisheries and Forestry
PO Box 6021
Parliament House
CANBERRA ACT 2600
AUSTRALIA

Submission to the House of Representatives Agricultural Committee inquiry into the Australian forestry industry

Attached is a submission to the above inquiry.

The Oil Mallee Association (OMA) is pleased to have the opportunity to address the terms of reference and can contribute more to the inquiry if requested. Given the focus of new forestry activity in the WA Wheatbelt, we would encourage the committee to visit some of the key sites of oil mallee activity and see what progress is being made. In particular, we would suggest a visit to Narrogin and Kalannie, two important nodes of oil mallee activity and broad adoption of the trees into the cropping programs of local farmers. The scale of activity and the diversity of approaches make it advisable to visit both centres and drive between them.

The membership of Management Committee of the OMA has several prominent farmers and early innovators and they can provide significant insights into the progress and promise of the oil mallee project.

The Committee members are:

President: Lex Hardie

Immediate Past President: Mike Kerkmans (State Landcare Award recipient 2010)

Committee: Ian Stanley (former President, State and National Landcare Award recipient), Keith Parnell (Nursery owner), Dustin McCreery (Nursery owner), Maxine Whitely (Chair of the Upper Great Southern Oil Mallee Association), Elva Rolinson (farmer) and Phil Andrew.

The OMA would welcome the opportunity to address the committee in person.

Yours sincerely,

Simon Dawkins
GENERAL MANAGER



Submission to the House of Representatives Agricultural Committee inquiry into the Australian forestry industry

This submission will take the form of a brief overview of the Oil Mallee Industry which forms a small but growing portion of the Australian forest industry. The overview will be undertaken through the addressing of the particular terms of reference for the inquiry.

Background

The Oil Mallee industry was initiated in the mid 1990's by collaboration between the forestry agency of the western Australian Government (CALM) and a small number of grain growers in the northern Wheatbelt of WA. The prime motivation was the protection of land through the integration of deep rooted perennials into the copping programs of dryland agriculture and to develop commercial products that would compensate the land owner for the investment in the trees and environmental services provided by them.

While this collaboration between science and rural interests is typical of the way in which advances are made in agriculture in WA, differences in opinion about the level of government support required for the still emerging industry have emerged. It is hoped that this inquiry can highlight some of these differences in approach and bring to the discussion a fresh and balanced perspective. Indeed the terms of reference for the inquiry mirror many of the issues that the industry feels need to be addressed in an evaluation of this essentially contemporary approach to tackling a drying climate and the inherent desire by its participants to build agricultural and community resilience.

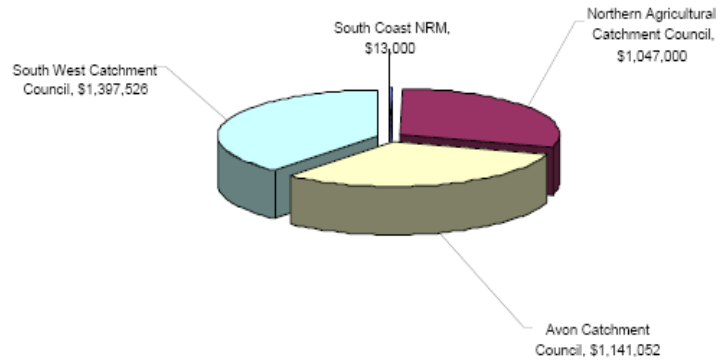
The industry was supported in its development through public investment in research and infrastructure through;

- Research into progeny development and improvement in cineole (eucalyptus oil) production and by the State Government (hence the "oil mallee" nomenclature),
- direct subsidy for seedlings through the Commonwealth Government National Action Plan for Salinity and the NHT, and
- through investment in technology for production of eucalyptus oil, activated carbon and energy by the State Government (the Narrogin IWP).

The change in Commonwealth support for NRM activities to the Caring for Our Country Program was associated with a significant switch from significant "on the ground work" including seedling incentive programs to a range of different strategies. This change was accompanied by or linked to an adoption by several public companies of a cost effective model of carbon sequestration utilising mallees as the tree of choice and the use of low cost land. Many in the industry thought that the policy signal had been effective and that no more direct support was required to get mallees established.

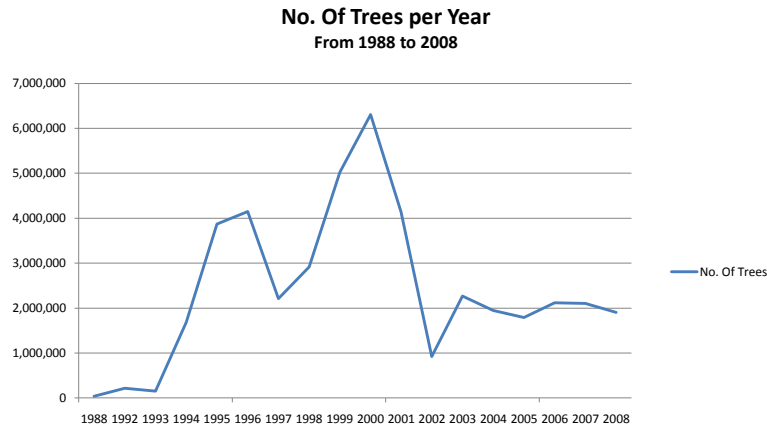
The history of support for mallee establishment is reflected in the graph below. The level of commercial establishment of mallee plantings for carbon is not adequately recorded and may have increased the estate from around 14000 hectares achieved up to 2008 to 20,000 hectares or even more by 2010. It is anticipated that the rate of establishment rapidly declined following the demise of the CPRS.

**Public NRM investment into WA mallee industry through NRM groups
July 2005-June 2008**



Source: Oil Mallee Industry Development Plan

The pattern of mallee planting



Source: OMA

However, the difference in intent between the early adopters and the commercial carbon companies is not evident from this change in growth of mallee plantings. In addition to purchasing environmental services, the motivation of the farmers in planting oil mallees was as much to do with engaging in a potential new crop as it was to establish a potentially permanent carbon forest. It appears that farmers have started to resist entering into long term contracts and covenants with carbon companies required to secure "permanence". However, some farmers were willing to have carbon plantings and fully appreciated the benefits and obligations implicit in such a move.

The emphasis of the Oil Mallee Association (OMA) has been to investigate opportunities for commercial cropping of mallees that might return to the farmer the same level of return they might receive from traditional cropping activity. This has tended to focus on production of biomass for bioenergy (localised or grid connected), biofuels, eucalyptus oil and biochar. However to this point, the only commercial return to farmers from mallee plantings has been through contracting with a carbon sequestration company for use of their land as a carbon sink.

The CPRS design included the capacity for harvested forests to identify carbon sequestered in the long run cumulative average sequestration which comprised the below ground portion of the trees and a portion of regrowth accumulated over time. This model enabled the potential development of a hybrid commercial regime of forest revenues and carbon. It is hoped that the CFI will also enable such a model to be adopted, largely because the carbon revenue paid in advance, enables the cost of forest establishment to be spread over the life of the forest and avoids costly financing arrangement while waiting for the first harvest.

The CPRS also enabled for securitisation of “future growth” in existing trees which gave those growers who already had trees to consider the merits of forward selling carbon in their trees from the time of formal declaration of the scheme. It is not yet clear if such opportunities exist in the CFI, but as a voluntary and project based regime, it is unlikely except where the carbon rights have already been contracted under another scheme.

Addressing the Terms of Reference:

- **Opportunities for and constraints upon production;**

There are significant opportunities for greater plantings of oil mallees based on a combination of carbon and harvest revenues. The combination of a price on carbon, a scheme such as the CFI and potential for a mandated emissions trading scheme will set the circumstances for a rapid growth in low rainfall carbon plantings. The current trend appears to be that whole properties are purchased and “block plantings” to be undertaken for large emitting companies on a voluntary basis or in accordance with undertakings in the environmental approval process.

Some of these large scale block plantings have become controversial and several local governments in Western Australia have placed planning regulations to both monitor and limit the growth of such activity at the expense of agricultural land. The WA Planning Commission is also reviewing the planning regulations of agricultural land in light of this concern. Political concern at the Commonwealth level has also been expressed, largely around the possible displacement of good farming areas with dedicated permanent carbon forests. A recent key note presentation by Professor Richard Harper at the 2011 Oil Mallee Industry Conference, referred to a recent study which anticipated only a small impact of carbon plantings on the rural sector.

- **Opportunities for diversification, value adding and product innovation;**

The oil mallees can provide a range of returns including a range of products of different value, from low volume and high value to high volume and low value. The main interest in identifying these products is to enable more secure financial options for the industry and lead to more and widespread plantings – to improve sustainable farming practices without imposing that cost on the landowner.

The lack of public funding for establishment has meant that the objectives of achieving more trees on farms has to be funded through commercial returns combined with regulations that encourage renewable energy, carbon sequestration and new generation liquid fuels. All of these products are being explored with significant investment by governments and private interests.

Research at Curtin University has moved close to optimising the production of fuels from mallee biomass combined with a biochar as a potential additive to soils. Other commercial investment in the area of biochar and energy production is proceeding with small scale production already underway in WA. The Future Farm Industries CRC has

been a leading influence in the search for a range of products for exploitation from mallee plantings and has produced a prototype harvester in the move towards an efficient and cost effective logistics or this new form of agroforestry.

- **Environmental impacts of forestry, including:**
 - **impacts of plantations upon land and water availability for agriculture; and,**

The impact of oil mallees is likely to be one of reducing the water table in dryland agricultural areas where the removal of trees has caused the water table to rise. The integration of the trees into the landscape has enabled the trees to intercept water that might otherwise gather in the lower catchments areas and potentially reduce cropping returns.

- **the development of win-win outcomes in balancing environmental costs with economic opportunities;**

There is an opportunity advanced by the OMA whereby the environmental services provided by oil mallees can be accompanied by the utilisation of the biomass for purposes as discussed above. The fragility of wheatbelt land has been increased and rainfall is expected to fall across the whole region. However agriculture is still viable in most of the region and there is some speculation and research that additional trees can modify or even increase rainfall.

The holy grail of the oil mallee industry is the commercial transformation of mallee biomass in order that the growing of mallees, preferably in an integrated form with existing agriculture, can become another agricultural crop. This system would neither subsidise the farmer's other activities nor depend on additional direct support or subsidy from the land owner or government.

- **Creating a better business environment for forest industries, including:**
 - **investment models for saw log production;**

While not connected with traditional saw log production the oil mallee industry believes that the CFI can trigger carbon investment which might support the establishment cost of trees by farmers with the option to harvest in the future. This model might apply to other forestry but it does require the forests to be secured for about 100 years as a reflection of permanence.

- **new business and investment models for plantation production; and,**

The Oil mallee industry believes that the pooling of carbon and biomass across many properties may provide the right sort of aggregation to stimulate establishment and reduce transaction costs with a strong ownership of the shared risks by the pool members.

- **superannuation investment in plantations;**

Superannuation funds may wish to establish a foothold in new green businesses which can offer a potential return for the fund managers once the right regulatory signals are in place.

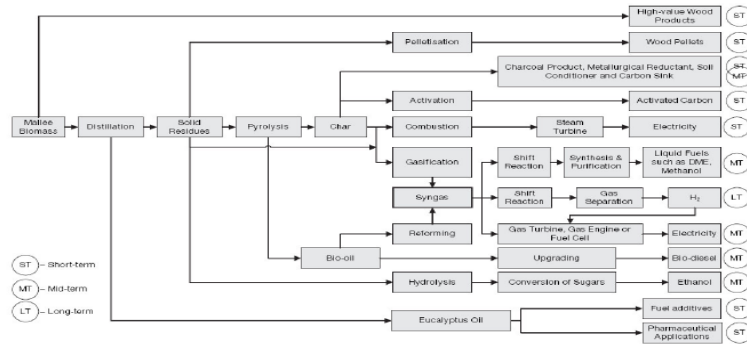
- **Social and economic benefits of forestry production;**

There is a an abiding desire by the OMA to encourage social and community benefits through regional production centres and the building of related industries around these hubs of new commercial activity. Many early adopters of the mallee program have had community and social benefits as a core reason for involvement, along with acquisition of environmental services and commercial return.

- **Potential energy production from the forestry sector, including:**
 - **biofuels;**

Oil Mallees are a good source of biofuels as varied as bio oils, diesel, syngas and other derivatives which are obtained through pyrolysis and separation. The research being undertaken at the Center for Energy at Curtin University under the leadership of Professors Li and Wu has made significant progress in new technology approaches with new provisional patents being applied for and a commercialisation pathways being investigated.

Technical options for mallee biomass utilisation

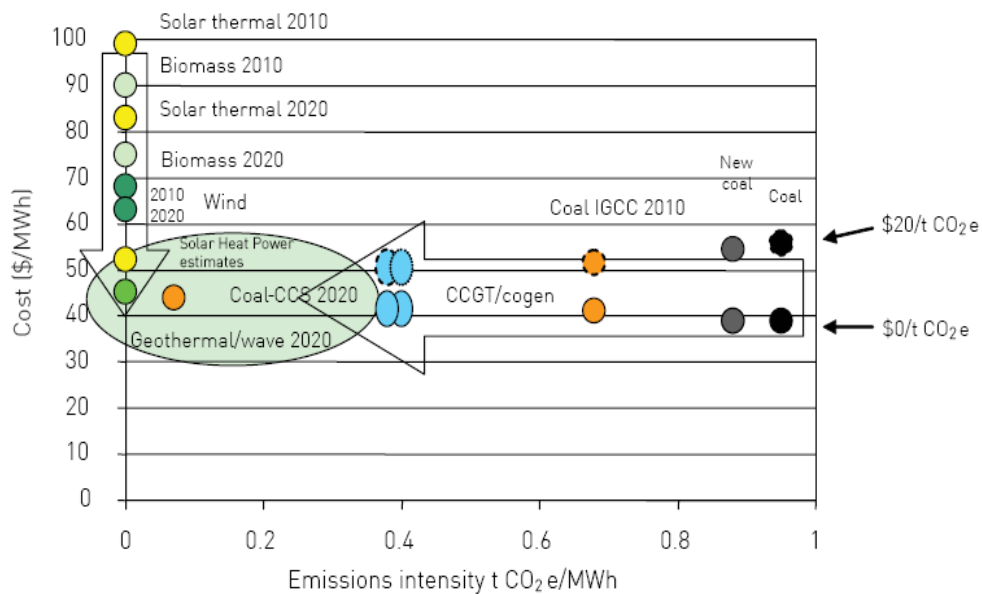


Source: Wu et al Curtin University

- **biomass;**

Good sources for biomass exist throughout the WA Wheatbelt with the distance of cartage being the critical factor in its commercial exploitation. Studies such as the Oil Mallee Industry Development Plan have assessed the level of potential biomass available and the economics of the future industry development.

Diagram showing the impact of a carbon tax on uptake of biomass.



Source: WA Greenhouse and energy Taskforce 2007

- **biochar;**

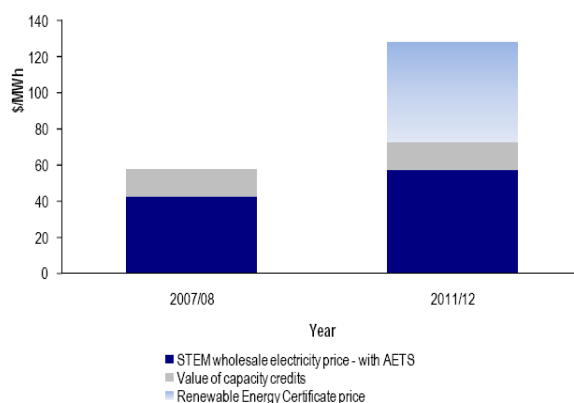
Good experimentation is happening in biochar with Professor Syd Shea, a leading advocate and researcher in the area. The company with which Professor Shea is associated (Rainbow Bee Eater) is both developing the technology application locally and undertaking research into the benefits of biochar when applied to cropping programs in the dryland agricultural zones.

- **cogeneration; and,**

Co generation of biomass with coal has had a varied response and success in WA, but the OMA is investigating the use of mallee biomass with other wood for use as a reductant in the processing of minerals. The chart below shows the impact of an emissions trading scheme on the price of renewable energy on the SWIS (South West Integrated System), the electricity grid across south west WA.



Figure 2 Potential wholesale prices for firm renewable generation capacity on the SWIS



Data source: ACIL Tasman analysis and Frontier Economics 2008, *Electricity Retail Market Review – Electricity Tariffs*, www.energy.wa.gov.au.

- **carbon sequestration;**

Oil Mallees have been used as the most popular form of carbon bio sequestration over many years and it is most likely that this dominance will continue. As the NCAT is developed as the definitive determinant of carbon sequestration, and the defaults for various different types of forestry, it is most likely that mallees will become the most reliable and cost effective of all forms of forestry. The OMA has undertaken research funded under the Forest Industries Climate Change Research Fund (a Department of Agriculture, Fisheries and Forestry program) and with CSIRO to move towards a more reliable record of carbon accumulation once developed it will provide the confidence to stimulate investment. A particular advantage of mallees over other forms of forestry is that there are many examples of plantings of many configurations over many different agricultural districts providing a large sample base for achieving a reliable record of growth. Most, if not all, the plantings have been developed to achieve maximum growth results in a carbon market environment.

- **Land use competition between the forestry and agriculture sectors:**
 - **implications of competing land uses for the cost and availability of timber, food and fibre;**

The adoption of integrated method of planting, with around ten percent allocated to trees, avoids the competition between investment in food and carbon and fuel. This integrated method of planting is the preferred option proposed by the OMA. The growth of the trees under these conditions ensures that they produce at least twice as much biomass as those grown across a whole landscape.

- **harmonising competing interests; and,**

The integrated model seems to offer the possibility of harmonisation of interests and leaves the challenge of logistics and delivery to the industry not at the cost of agriculture.

- **opportunities for farm forestry.**

The OMA believes that significant opportunities exist for farm forestry through the integrated form of plantation establishment.

Author: Simon Dawkins

The Oil mallee Industry development Plan:

<http://www.oilmallee.org.au/index.php/site/industry-development>