

Narrogin Integrated Mallee Plant: What's happening?

Western Power is currently commissioning its prototype bioenergy plant, located in the Western Australian wheatbelt town of Narrogin, which is designed to generate renewable electricity, activated carbon and eucalyptus oil from locally planted oil mallees.

Partners in the project include Western Power, Enecon Pty Ltd, the Australian Greenhouse Office, the Dept of Industry Science and Resources, Department of Transport and Regional Services, CSIRO, the Dept of Conservation and Land Management, the Oil Mallee Co (OMC), the Oil Mallee Association, Murdoch University and the Rural Industries Research and Development Corporation.

Oil Mallee Association representatives are optimistic that the prototype plant will be a success and that in the future similar operational versions will be established at seven other sites across the south west corner of W.A. The existing and future oil mallee plantings will provide potential salinity benefits if strategically located, as well as the bioenergy providing a significant greenhouse gas abatement contribution.

Some Technical details:

Biomass Feed: 20,000 tonnes oil mallee

Plant design:

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|-----------------------|----------------------|
| Generation Plant: | 1MW steam turbine |
| Carbonising Plant: | Fluidised Bed |
| Distillation Plant: | Steam Distillation |
| Spent Leaf Combustor: | Thermal Gasification |

Output:

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|-------------------|------------------|
| Electricity: | 7.5 GWh/annum |
| Activated Carbon: | 690 tonnes/annum |
| Eucalyptus Oil: | 210 tonnes/annum |

There has been a great deal of hope and long term commitment invested in this project by all the project partners. The activated carbon component of the venture seems to be the keystone to sustainable & profitable operations.



Photo: Harvesting coppiced *E. loxophleba subsp. lissophloia* (lox liss) near Narrogin, April 2005

First Loads of Biomass for Narrogin Plant

After many years on the drawing board the Narrogin Integrated Mallee Plant (IMP) entered a component testing phase in mid 2005. As part of the commissioning process the first loads of biomass were harvested and delivered by the Oil Mallee Company in April, 2005.

Dave McFall, Regional Manager OMC at Narrogin, oversaw the operations on two properties where new harvest systems were trialed.

"Many mallees are overdue for harvest so we have been using traditional plantation harvest methods including separate cutting and chipping operations. This involves a hydro-ax harvesting machine and trailable chippers as used for clearing under power lines.

"We are also testing other harvest systems designed for oil production and the OMC are continuing to develop the prototype harvester designed especially for full scale operation in the future.

"It is anticipated that we need to deliver around 5,000 tonnes of biomass from a number of sites over the next six months."

The first payments to growers has also commenced after 50 tonnes of biomass was delivered to the plant recently. Although a small beginning, a system for tracking loads of biomass, weighing and sampling the loads, ensuring compliance with a Code of Practice and establishing an audit trail is now in place.

Tym Duncanson of the OMC, which will be coordinating the deliveries, said "We have a few more logistical and chipping issues to resolve but we are on track to make deliveries when the plant opens for operations. One of those is starting harvest in early spring when cereal crops are maturing and soils are wet. We have a large range of sites to choose from due to many growers planting oil mallees prior to 1998 so have some flexibility which will be important."



Photos: First Biomass delivery to Narrogin IWP Plant—April 2005

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