

Bio-energy opportunity explored

When Don Faulkner, part time project coordinator for the YP Alkaline Soils Group, read that Syngas Limited was doing some test drilling at Clinton for coal to produce premium diesel, he decided to contact them. He wondered if the local production of premium diesel might provide the region's grain growers with an opportunity to diversify.

It transpired that Syngas was already looking for sources of biomass to use as a supplementary feed stock to reduce carbon dioxide emissions.

About 6 months later, the financial and technical viability of a clean premium diesel production plant at Clinton is being more extensively investigated, and a memorandum of understanding (MOU) has been signed by YPASG and Syngas Limited.

"Syngas are keen to work with the YP Alkaline Soils Group as we can provide them with one point of contact that represented many growers in the region," explained Don Faulkner, who also farms at Stansbury.

The basis of the MOU is to explore mutually desirable outcomes for both the suppliers and users of the biomass.

Syngas recently stated in a press release that:

'The Clinton Project will use waste biomass as supplementary feedstock to the plant. By feeding waste biomass at 10 per cent levels, emission will be significantly reduced. Long term, with 30 per cent waste biomass feed, a 40 per cent reduction in CO₂ emission levels could be achieved. This approach has the potential to lead to the Clinton Project having an overall carbon footprint better than many conventional oil refineries.

'Waste biomass is expected to be sourced from within the immediate area. The Company has identified a number of suitable biomass sources within the neighbouring communities, such as residual cereal straw, chicken manure and vineyard cuttings.'

While growers are well aware of the value of returning straw to their soil or it use as stock feed, the MOU has been written with the view to exploring its asset value as a supplementary feed in the Syngas process.

A 10 per cent feed would equate to 600,000 tonnes/annum of biomass being required., assuming the biomass source had a similar energy content to that of the primary lignite feed stock material. One of the research objectives will be to ascertain the energy content of straw relative to that of the primary feed stock with results expected to show higher energy yields in the straw, reducing the tonnages required in the processing plant.

As part of the MOU, the YP ASG is aiming to establish grower sentiment about the removal of straw from their paddocks. As part of this the YPASG is working to secure funds to calculate the cost/benefit of removing stubble and to identify critical amounts of stubble to be retained to protect varying soil types, landscapes and biology.

'The Clinton Project' timeline indicates full operation by 2015, so this gives the group and growers time to explore the ramifications and possibilities such a project might offer. However, the outcomes are likely to be highly reliant on government legislation on carbon emissions and carbon permits.

In an industry producing bulk commodities, Don Faulkner is keen to support emerging diversified income streams that have potential for large local need and demand.

In December 2008, with support from YPASG and AgEx, Don attended a bio-energy conference in Melbourne. The presentations at the conference helped him anticipate that potential synergies could exist between YPASG and Syngas.

“As with any form of diversification, farmers will only be interested if it will be profitable; in this case we have to consider the short and long-term profit from removing versus returning organic matter to the soil.”

Breakout

Clean premium diesel

The Clinton Project will produce clean premium diesel, which is low in particulate content, has ultra low sulphur content and is clean firing; it fits within the context of rising demands and awareness of cleaner fuels. Engines that are optimised to run on Fischer-Tropsch diesel have demonstrated up to 10 per cent higher efficiencies than are achievable with conventional petroleum driven diesel, resulting in lower CO₂ emissions per delivered mechanical power unit.

Clean premium diesel production at Clinton will involve the processing of coal/lignite and waste biomass to produce a synthetic gas (syngas), which contains energy, mainly in the form of hydrogen gas. From this synthetic gas, liquid fuel will be produced along with enough power for the plant to be self-sufficient.

In excess of 150 million bbl of oil equivalent in fuel is forecast to be produced over the life of the Project between 2015 and 2048.