

Creating a clean energy economy in Cape York

Farming bio fuel crops in Cape York has the potential to grow local jobs and dramatically reduce reliance on increasingly expensive polluting fossil fuels.

It is a little known fact that the people of Cape York are among the largest per capita producers of carbon dioxide in Australia. Generators consume millions of litres of diesel each year to produce power on the Cape, resulting in 10,000 tonnes of carbon dioxide. The cost of this is four times higher than grid-supplied power.

With fossil fuel prices likely to increase due to carbon taxes, increasing demand and volatility of supplies, a pre-feasibility study outlining the promising capacity for *Pongamia pinnata* crops to provide a sustainable and profitable bio fuel solution to Cape communities has brought welcome news.

At the instigation of Balkanu a concept plan to develop renewable energy sources was produced in collaboration with Westpac Treasury, Ergon Energy and W2 Power which gained support from the Queensland Government's Office of Clean Energy to conduct a pre-feasibility study.

At a glance:

- Pre-feasibility illustrates viability and sustainability of biofuel cropping in Cape York
- 100 Hectares of *Pongamia* will produce 500 tonnes of oil each year when in full production
- The crop thrives on marginal areas keeping free prime agricultural areas for food crops
- Technologies that allow for the crushing and processing of the crop are possible in Cape York
- Smaller-scale and rural/remote-based production and processing will benefit poor indigenous communities, and reduce reliance on welfare
- It will help meet rural energy needs and reduce the energy needed to transport bulky fossil fuels.
- Freehold land has been identified in Hope Vale for immediate pilot cropping
- A nursery for seed stock would be established at the pilot site
- Corporate partners have expressed interest in funding a pilot crop in 2011

INDIGENOUS SPECIES

Pongamia is native to Australia, is a fast-growing tree and produces a seed that can be harvested and crushed to produce bio oil. It has the potential for high-oil seed production and flourishes on marginal land.

The tree can live for up to 100 years, with the potential to not only produce oil to replace fossil fuels, but also to absorb carbon dioxide from the atmosphere. The waste produced from processing of *Pongamia* seeds is a nutritious feed for cattle, sheep and poultry.



Balkanu, W2 Power, and Congress of Clans representatives inspect a pongamia plant nursery at Caloundra, Qld.



SEED FUNDING NEEDS

Indicative Establishment Costs

The indicative establishment cost for a 100HA pilot farm is in the order of \$550,000 plus management costs. This overall cost includes:

- Purchase of Pongamia seedlings
- Offsetting and leveling of site
- GPS grids for planting
- Hand planting
- Weed mats and pins and installation
- Extra water if no rain in first month after planting
- Tree pruning – once per year for 3 years
- Weed spray prior to planting
- Weed spray after planting – 4 times per year
- Fencing of site
- Mobilisation of equipment
- Coordination and management of the overall project - yet to be quantified



THE TECHNOLOGY

A number of technological processing options, converting seeds into oil then biodiesel, will need to be assessed to determine which is the most viable. Options include large-scale bio diesel production, a convenient mobile 'Bio Cube' processor, and a flexible system producing both bio oil and bio diesel.



Research published by Australian Research Centre for Integrated Legumes suggests that biodiesel produced from Pongamia oil stands favourably against other vegetable oil based sources in terms of production cost and environmental impact.

LAND AVAILABILITY

It is recognised that the availability of land and legal ownership of land is critical to establishment of the project. Suitable land has been identified near the Aboriginal township of Hope Vale and preliminary talks have taken place with traditional landowners. Freehold land has been inspected in this area which would be ideal for a 100 hectare pilot plantation.

The year ahead

Balkanu and its partners will seek further funds to:

- Finalise the land and leasing opportunities for planting
- Select the most appropriate genetic stock for planting
- Develop a detailed corporate structure and business plan for a Special Purpose Vehicle to manage the project
- Finalise the technological requirements
- Seek joint venture funding to implement the project

Hope Vale is currently the most likely location for the plantation(s) and Balkanu and partners hope to build a nursery in 2011 and establish a trial plantation in 2012.

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