

The Secretariat  
Senate Environment, Communications, Information Technology and the Arts Legislation  
Committee  
Parliament House  
Canberra ACT 2600



By email to: [ecita.sen@aph.gov.au](mailto:ecita.sen@aph.gov.au)

11<sup>th</sup> October 2002

Dear Secretary,

**re: Inquiry into The Renewable Energy (Electricity) Amendment Bill 2002**

Greenfield Resource Options Pty Ltd would like to present this submission for consideration in the captioned inquiry. Our submission relates to the clarification of definitions related to eligible renewable energy sources.

## Submission

We note that there are proposed amendments to Section 17 of the Act; "What is an *eligible renewable energy source*?". The subject of the amendments to this Section is a clarification and simplification of the eligible renewable energy sources which are further prescribed by the regulations. We believe that there is an anomaly in the definition of 'energy crops' in the regulation which requires clarification in the Act, and in Section 17 in particular. We suggest that the Senate take this opportunity to amend Section 17 of the Act.

In Section 9 of the Renewable Energy (Electricity) Regulations 2001, special requirements for energy crops are stated as: "...an agricultural or horticultural crop and its biomass byproducts must be grown as an energy source for the primary purpose of energy production." We believe that energy crops as defined in the regulation should include woody perennial crops and their biomass grown for the primary purpose of energy production.

**We submit that, in Section 17 of The Renewable Energy (Electricity) Amendment Bill 2002, the definition of energy crops should be clarified to include biomass from all crops grown as an energy source for the primary purpose of energy production, including woody perennials.**

## Justification

Woody perennial crops (trees) grown at very high stocking (6,000-8,000 stems/ha) have the ability to capture solar energy at a rate similar to that of sugar cane over a two year period. From experiments conducted in the Bundaberg region of Queensland we have found that such crops produce biomass at rates comparable to that of sugar cane production in the region. We believe that it is a failure of both logical process and of scientific thinking to discriminate between energy crops on their physiognomy when they have similar Net Primary Production capacities. Currently one crop is accepted as an energy crop for the purpose of renewable energy (sugar cane), but the other is not (short rotation tree crops).

## Sustainable management

Woody perennial energy crops grown in plantations under very short rotations can be grown in a verifiably sustainable manner in the same way as other energy crops. As woody perennials (trees) they can also be managed according to the Montreal Process Criteria which include criteria concerning:

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- Biological diversity
- Productive capacity
- Ecosystem health and vitality
- Soil and water resources
- Global carbon cycles
- Socio-economic benefits, and
- An effective legal and institutional framework.

Maintenance of a sustainable cropping system will be dependent on management of cropping lands on a rotational basis not dissimilar to other plantation crops. In such cropping systems the biomass crop replaces volunteer weed biomass which is otherwise controlled with weedicides in long rotation sawlog forest plantation management systems.

## ***International context***

Sustainable and continuously cropped woody plantation energy crops are a feature of biomass power generation plants such as at Tracy in California, and other overseas plants including Varnamo BIGCC plant in Sweden, ARBRE in York UK, FERCO/Battelle in Vermont USA, and AMER Centraal in the Netherlands<sup>1</sup>. Such woody plantation energy crops are in their infancy in Australia, but there is very real potential to capitalise on the ability of such crops to accumulate Net Primary Production (biomass accumulation) at very high rates of capture.

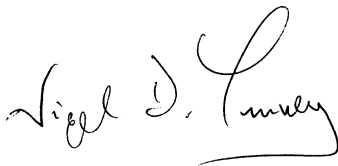
## ***Queensland context***

The combustion of bagasse by the Sugar Industry in Queensland currently supplies the largest quantity of renewable electricity from the combustion of biomass in Australia. Additional biomass can potentially be supplied to sugar mills, thereby allowing them to increase their boiler capacities and to operate their boilers over a twelve-month period, instead of the normal 6 months sugarcane-crushing period. This will result in sugar mills supplying additional renewable electricity to the grid and assisting the economic sustainability of the industry. Such an extension of their power generating window will increase the efficiency and commercial viability of sugar mills as generators of renewable energy.

The additional biomass required to extend the power generating activities of sugar mills can be supplied from purpose-grown woody plantation energy crops. Tropical tree plantations grown in very high stocking densities (8,000 stems/ha) and very short rotations (2-3 years) can provide a sustainable system of biomass production through coppicing. Such systems can be grown by primary producers in areas in close proximity to sugar mills, but on land that is not used for cane production. Such activities would also assist in diversifying the income streams of these producers, as well as increasing overall biodiversity and crop and landscape sustainability in the region.

We submit these matters for your consideration.

Yours sincerely



Nigel D Turvey (Dr),  
Managing Director

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<sup>1</sup> Shuck, Stephen 2001 Status of Bioenergy Technologies and Future Directions. Bioenergy Australia 2001 Conference, Broadbeach, Queensland 3<sup>rd</sup> December 2001.