

## **FUTURE VISION BIOCHAR PRODUCTION CENTRES**

### **Biochar Production Centres to be set up in Adelaide Hills and Country Regions:**

Biochar Production Centres in the Adelaide Hills and Country Regions will provide the following benefits:

- Production of valuable biochar for local horticulture and agriculture;
- Reduction in green waste collection;
- Reduction in landfill;
- Production of carbon credits;
- Whole of community participation;
- Local carbon offset scheme;
- Local administration of carbon crediting process.

Local Councils and Community Groups in the Adelaide Hills and Country Regions are embracing an idea proposed by the **Adelaide Hills Biochar Initiative (AHBI)** to make biochar from local green waste, package it and sell it and simultaneously create carbon credits.

AHBI has established a demonstration Carboniser project for biochar production and application using agricultural, industrial and garden waste feedstocks. A summary of the initial production results from the demonstration Carboniser is available at [www.ahbi-blog.com/makingbiochar](http://www.ahbi-blog.com/makingbiochar). The demonstration Carboniser is a relatively small unit that holds up to 0.25 cubic metres of waste.

AHBI's longer term vision is to see biochar production become an established fact of life in all Adelaide Hills communities using locally made Carbonisers for the benefit of local industry and agriculture. These Carbonisers will typically have a holding capacity of at least 1 cubic metre of waste. So the need to trim the waste material to size will be minimized.

The Production Centres will be set up and operated by the local Council on council land such as existing waste collection areas or other areas specially set aside for the purpose where Council trucks, farmers, individuals and businesses can all bring organic woody waste for conversion into biochar.

Examples of Council use include street tree prunings; roadside tree windfall debris; park litter; etc.

Farmers will be able to take forest thinnings, tree debris, some crop waste, etc for conversion to biochar and receive carbon credits.

Individuals living in town centres where burning is no longer permitted will be able to take their garden woody waste and free up much needed space in their green bins.

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Businesses such as sawmillers, furniture manufacturers, crate and pallet makers, post makers, carpenters & joiners, builders, wood products suppliers etc will be able to take their offcuts (provided they are untreated and still purely organic) to the Centres.

Fees and charges will be set by the Councils to cover the costs of operating the Centres. Costs include labour to operate the Centre; start-up fuel; packing materials; maintenance; administration etc.

The incoming waste will be initially checked for moisture content and loaded into skips. Dry material will be moved straight to the Carboniser. Wet material will be moved to a drying zone adjacent to the Carboniser.

Waste suppliers will need to be registered so that the claims they make for the organic nature of the waste can be verified and penalties imposed for false claims.

The operation of the Carboniser will be largely automated so as to ensure that any emissions comply with EPA requirements; and the resulting biochar complies with the latest biochar methodology approved by the Climate Change Department for the creation of carbon credits.

Biochar production will be strictly controlled for safety, health and quality of the final product. Periodically samples of the biochar will be taken for analysis of carbon content, ash content, volatiles content, moisture content, water holding capacity, etc.

Packaging of the biochar for use in soil and compost improvement will be carried out on site and the biochar will be crushed to a particle size that is suitable for soil addition.

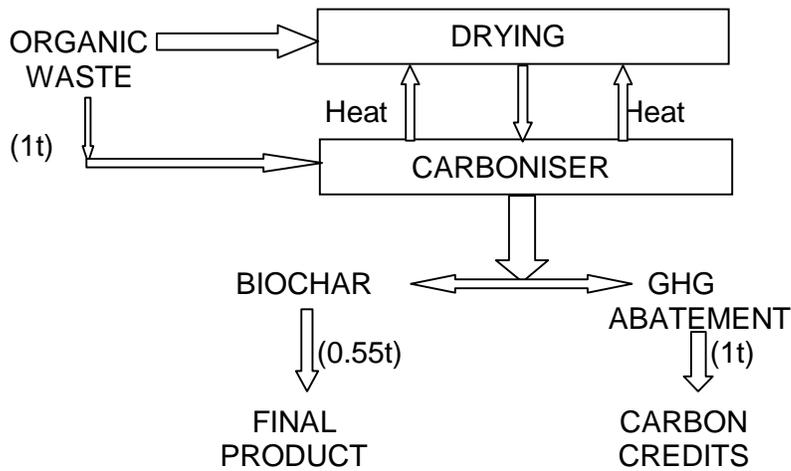
If any of the output from the Carboniser is used as cooking charcoal (which may be appropriate at times) then it would not be classified as biochar and would not be eligible for carbon credits.

The weight of biochar produced will be used together with the analysis of carbon content etc to compute the weight of greenhouse gases avoided. One carbon credit will be claimed for each tonne of greenhouse gas abatement achieved.

A representation of the process is shown in Figure 1 below.

The waste heat from the Carboniser is used to pre-dry the incoming waste when needed so that the Carbonisation process uses the minimum amount of start-up and supplementary fuel and maximizes the amount of carbon that is captured.

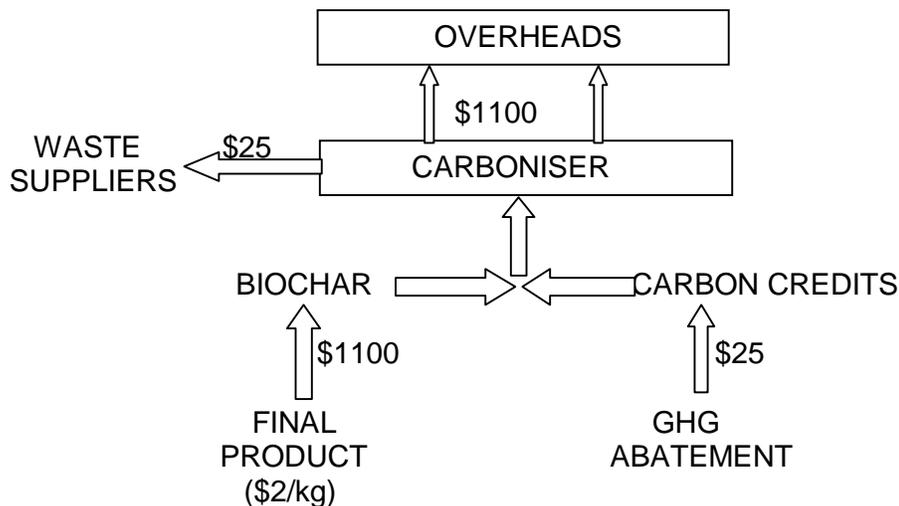
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*Fig. 1. Mass Flow block diagram per tonne of dry organic waste*

The suppliers of organic waste will be recompensed indirectly from the carbon credits based on the current price of carbon. Council will administer the process of claiming and trading all carbon credits arising from the scheme and the process of paying the registered suppliers.

A probable cash flow scenario is depicted in figure 2 based on a carbon emissions price of \$25 per tonne.



*Fig. 2. Cash Flow block diagram per tonne of GHG abatement*

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An open invitation is extended to all Councils to participate in discussion and critical appraisal of this Future Vision by either responding by email to the undersigned or by commenting on the AHBI website.

Arrangements can also be made to witness on-going tests and biochar production at the demonstration site near Echunga in the Adelaide Hills.

Brian Lewis  
Convener, Adelaide Hills Biochar Initiative (AHBI).  
[www.ahbi-blog.com](http://www.ahbi-blog.com)  
Member, International Biochar Initiative.  
Email: [strongbold@adam.com.au](mailto:strongbold@adam.com.au)

### References:

[www.csiro.au](http://www.csiro.au) Biochar Fact Sheet.

[www.biochar-international.org](http://www.biochar-international.org) International Biochar Initiative.

[www.climatechange.gov.au](http://www.climatechange.gov.au) Australian Department of Climate Change and Energy Efficiency.

18/7/2011.