Transcript: "Biochar and Energy from Trees"

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Slide Alcoa Foundation Advancing Sustainability Research Initiative

Biochar and Energy from Trees

Alcoa Foundation Greening Australia

Institute of International Education

Slide Greening Australia is researching how trees can be burned to produce syngas

and biochar.

Syngas is used for energy generation.

Biochar enriches the soil while sequestering carbon.

Brendan Foran, Greening Australia Greening Australia and Alcoa have been partnering together for nearly 30 years. Supporting the Bio-4 Project with funding from the Alcoa Foundation gives us the opportunity to work together to jointly address what is a problem for both

communities and industries alike.

Genevieve Ackland, Greening Australia

Greening Australia's overall mission is transforming our landscapes, and the very key, whole-grain approach to that is putting trees in the ground.

Doug Phillips, Greening Australia This investigation, if successful, has enormous potential in terms of building a business case that effecively integrates bioenergy and biodiversity gain into the farming system.

Dave Warne, Greening Australia What we're doing is we've selected a range of native tree and shrub species and we're having a look at their growth potential and their energy yield potential. We're able to extrapolate how many tons of material we can grow per hectare, like you would any other commercial crop, and how much energy you can extract from those species.

Doug Phillips

So, it's a relatively simple process. Materials Is harvested, it's wood-chipped, and then it's a straightforward exercise of converting that material to what we call "syngas", which is derived through burning material in an extraordinarily low-oxygen scenario. Syngas is then produced and can be burnt for energy outputs including biofuels and the byproduct of those thermal processes is biochar. And the definition of biochar is quite simple: that ordinarily charcoal is utilized for burning basically and the differentiation with biochar is that it's used as a soil amendment.

Genevieve Ackland

It's effectively charcoal mass that's made out of biomass, so any kind of vegetation from the trees. You can store it in soil, and you can grow trees on top of it. The trees grow better, faster, stronger, and they also sequester carbon into the soils.

Doug Phillips The utilization of biochar beneath our revegetation would give us a double

outcome in terms of carbon storage in the soil as well as carbon storage in trees.

Dave Warne We don't know of anyone else who is tying all these things together to drive that

landscape restoration. No one else has been out there to go out and assess the

economic potential of what's growing in our backyards.

Doug Phillips The full implications of the successful research around the integration of mixed

native species bioenergy plantations on farms is the potential to produce significant renewable energy outputs such as syngas for the production of biofuels. We're talking about the production of biochar has a carbon storage potential that can extend to thousands of years in the soil, so what we have is a potential to look at a carbon negative approach in terms of drawing CO2 actually

down from the atmosphere.

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