



Biochar Facility

Elmsdale Lumber Co.

Public information session presented to the
Municipality of East Hants

Presented by: Elmsdale Lumber Company &
RDA Atlantic Inc.

Elmsdale Lumber Company

- Est. 1917
- Currently employs 50 full-time individuals
- Direct response to Northern Pulp closure
 - Market for displaced chips
 - Opportunity for green tech growth
- www.elmsdalelumber.com





RDA Atlantic (Research, Develop and Apply)

- RDA focuses on thermal and marine technology
- Close affiliation with engineering firm DUMAC Energy Ltd. : Est. 1983 (dumac.ns.ca)
- RDA team of over 30 specialists with expertise in the fields of engineering, marketing and logistics.
- www.rdaatlantic.com

Biochar =

Terra Preta: Black Earth

- Around for thousands of years, **biochar is responsible for the lush, dark soils of the Amazon.**
- The unique structure of biochar **attracts and holds on to moisture, nutrients and fertilizers.**
 - Holding difficult nutrients like nitrogen and phosphorous.
 - Less water and fertilizer usage.



Photo credit: allotment-garden.org/terra-preta/

Biochar =

Created through high temperature pyrolysis of organic materials



Made from organic materials – in our case wood chips from sawmill wood operation

+



Feedstock is roasted at high temperatures in the absence of oxygen (pyrolysis) to produce a stable carbon product

=



A product with a high carbon content that looks a lot like crushed charcoal

Biochar is an exciting material that can have a profound and positive impact on reducing carbon emissions while increasing the health of our soil and food production.

Carbon Negative



Carbon Capture or **Carbon Sequestration**



C

Carbon capture technology

Storing carbon in the soil or integrating it in materials - reduces the amount of CO₂ released into the atmosphere.

- Adapting the carbon cycle to capture and sequester CO₂ produced in the decomposition of biomass.
- When used in the soil proven to sequester carbon dioxide at the same time accelerating plant growth to increase the production of oxygen.
- Potential to be worked into other materials for greater carbon capture.

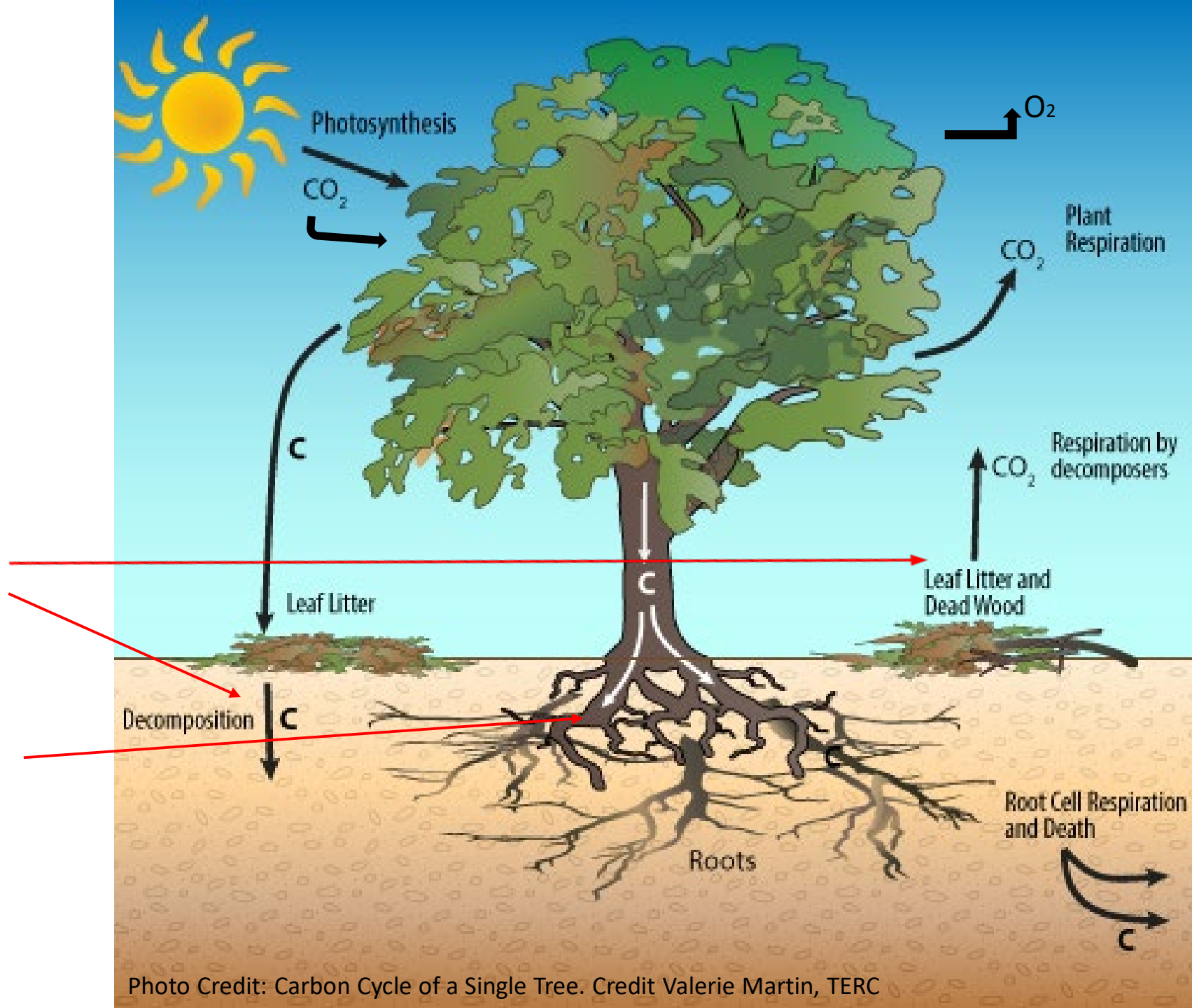


Photo Credit: Carbon Cycle of a Single Tree. Credit Valerie Martin, TERC



C

Renewable, innovative material

Biochar is a material that can easily integrate as a substitute for existing materials or in new, innovative applications.

- Frequently used in agriculture, biochar has many application possibilities covering a range of industries.
- Biochar is opening the door to innovative and sustainable development in materials production, incorporating itself into new and existing technologies.



What is the process?

- Woodchips are loaded on conveyors



- Fed into four pyrolysis roasters



- Roasted at a temperature above 500 c for approx. 15 minutes



- Cooled and Packaged



What does the operation look like?



A new **4800 square meter building** will be constructed to house the processing equipment.



produce **8400 tonnes** of high-grade biochar.



Four roasters to process **45,000 – 50,000 tonnes** per year of green chips



The plant will produce **excess energy** in the form of **electricity and/or low-pressure steam** to supplement the lumber drying process of the ELCO kilns.



Biochar will be **packaged in bulk bags** for markets currently being developed by the project team and its consultants.

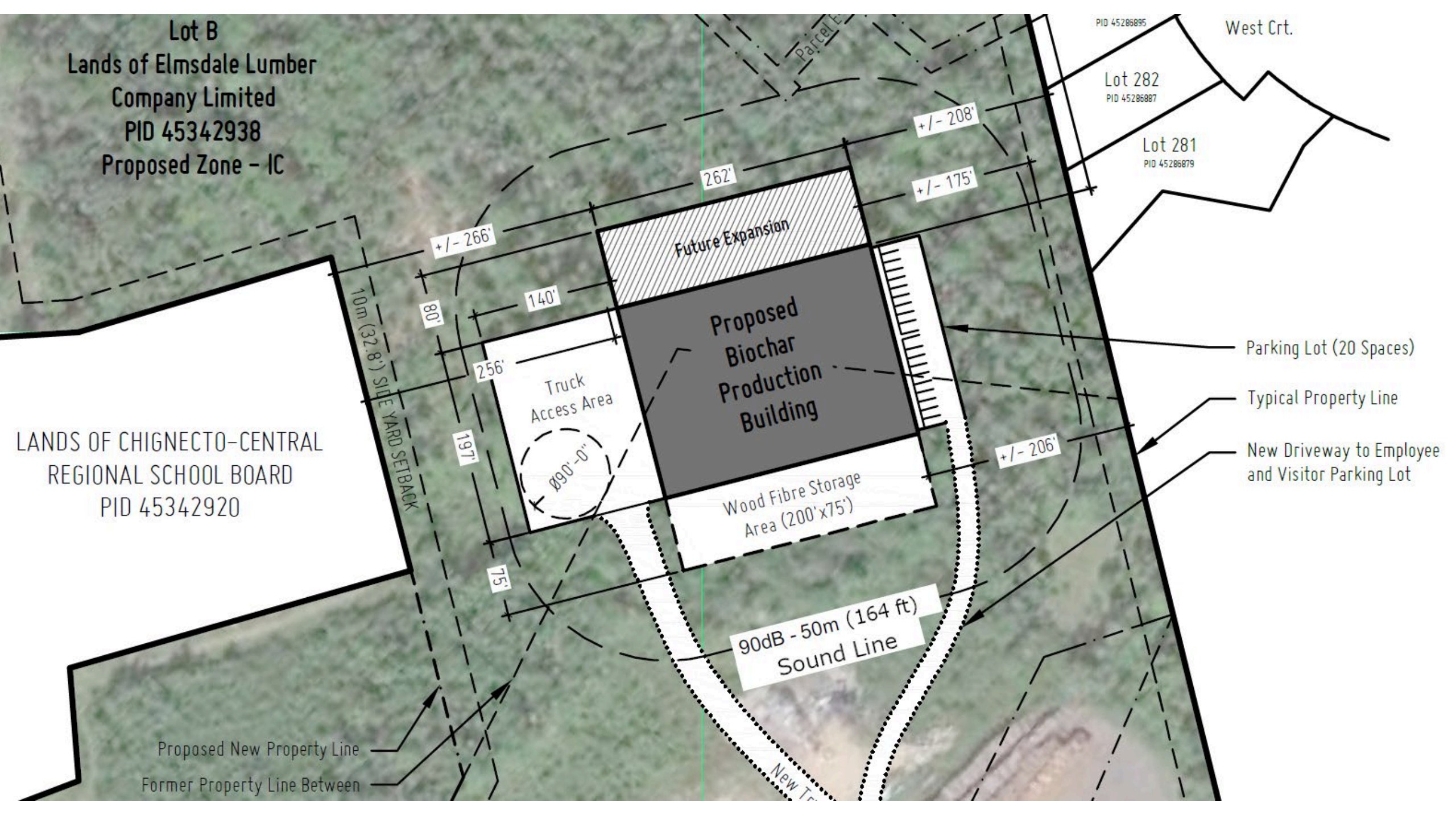


Lot B
Lands of Elmsdale Lumber
Company Limited
PID 45342938
Proposed Zone - IC

PID 45286895
West Cr.
Lot 282
PID 45286887
Lot 281
PID 45286879

LANDS OF CHIGNECTO-CENTRAL
REGIONAL SCHOOL BOARD
PID 45342920

Proposed New Property Line
Former Property Line Between



Parking Lot (20 Spaces)
Typical Property Line
New Driveway to Employee
and Visitor Parking Lot

90dB - 50m (164 ft)
Sound Line

+/- 266'

262'

+/- 208'

+/- 175'

140'

10m (32.8') SIDE YARD SETBACK

80'

256'

197'

75'

+/- 206'

New Tr

Biochar Facility Day-to-Day



Truck traffic

For every 5.5 truckloads of wood fibre, one truckload of biochar is produced, 1:5.5 ratio



Noise

Approx. 90 dB at 50 m (164 ft) equal to a typical lawn mower)



Smell

Limited smell – similar to what is produced by Elmsdale sawmill



Emissions

Building and process air emissions will be handled through engineered ventilation systems



Szkola Podstawowa nr 2 im. św Floriana w...

Kotlo-Rem. Zakład remontu kotłów

Przemysłowa

Przemysłowa

Tomi Autokosmetyka

Meble na wymiar
MebloTIM Maxkuchnie
Furniture store

Przemysłowa

Polska Dystrybucja
Alkoholi Sp z oo

Pardela, Musiał
Sklep spożywczy

Konstruktor

Przemysłowa

Spółdzielcza

Jasminowa

Jarzębinowa

Kasztanowa

Akacjowa

Jarzębinowa

Zakład Przemysłu
Drzewnego

Spółdzielcza

Klimontowa

European Facility

Gor-Tran
transport
Warehouses



Google



European Facility

- Community:

- 170 people living within 250 m radius of facility
- 250 people living with a 500 m radius of facility
- School + Kindergarten 130 m distance from facility
- Total: 2500 people living in 1000 m radius of facility

- Area:

- SEFAKO Boiler Manufacturing Plant

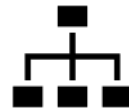
Employment & New Markets



Employment



- Facility to hire 25 full time employees



- Additional marketing, sales and administration opportunities

New markets

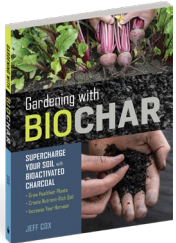


- Home for displaced woodchips
- New 100% N.S wood-based product

Resources



- International Biochar Initiative (IBI)
biochar-international.org



- *Gardening with Biochar: Supercharge Your Soil with Bioactivated Charcoal* – Jeff Cox



- *Biochar: A chance for sustainable development* – Jan Gladki