



Carbon Footprint TwinN product

For

Mapleton Agri Biotech Pty Ltd

137 Obi Obi Road

Mapleton Qld 4560

Initial Life Cycle Assessment

By

Chris Lee

Carbon Associates

29th August 2011

Revision V3.00

UPDATE

Suite 2, 2 Nelson Street, Ringwood, Vic, 3134

Phone: +61 (0)3 9876 0000

Fax: +61 (0)3 98794822

Email: info@carbonassociates.com.au

Web: www.carbonassociates.com.au

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2) LETTER OF COMPLIANCE

To The General Manager,
Mapleton Agri Biotech Pty Ltd
137 Obi Obi Road
Mapleton Qld 4560

September 20th, 2011

I hereby certify that, based on Carbon Assessment for the 2011 financial year the Greenhouse Gas Calculations have been completed in accordance with recognized international standards and offsets have been purchased and surrendered on behalf of the company, accounting for and offsetting the CO₂-e emissions caused from the production and distribution of **MAB's TwinN** .

In March 2010, Carbon Associates completed a Carbon Inventory and Life Cycle Assessment of Mapleton Agri Biotech Pty Ltd (MAB). The total Carbon Footprint for the TwinN Product was determined in units equal to TwinNs application per five (5) hectares. It was calculated that **TwinN accounts for 7.2 Kg CO₂-e per 5 ha** with an **annual emissions figure for TwinN of 78 Tonnes CO₂-e**.

The Life Cycle Assessment was qualified to consider "Delivery to Farm Gate" and discounts the mode of application to the crop. The assessment does however, apply the longest international transport route ensuring complete coverage of its worldwide distribution.

The table below reports the conditions for offsetting in the current year as follows:

Full disclosure is available upon request to MAB.

Regards

Christopher J Lee

*Post Graduate Certificate in Sustainable Business (UniSA)
Carbon Accounting (National Centre For Sustainability, Swinburne University)
Certified with The Global Reporting Initiative (GRI Amsterdam, Holland)
Life Cycle and Risk Assessment (Harvard, Boston 2011)*

*Carbon Associates
Suite 2, 2 Nelson St, Ringwood, Vic, 3134*

*P 03 9876 0000 F 03 8456 6459 M 0418 595893
E christopher.lee@CarbonAssociates.com.au W www.CarbonAssociates.com.au*

References Used:

GREENHOUSE GAS REDUCTION SCHEME (GGAS) (<http://www.greenhousegas.nsw.gov.au/>)

Centre for Sustainability Accounting (CenSA) (UK) - Supply Chain (Scope 3) Greenhouse Gas Emission Factors (<http://www.censa.org.uk/scope3.html>)

Department of Climate Change - National Greenhouse Factors
 (http://www.climatechange.gov.au/~media/publications/greenhouse-gas/national-greenhouse-factors-june-2009-pdf.ashx)

Audit Date	Annual Emissions (Estimated)	Annual Emissions (Actual)	Offsets Purchased	Balance
11th Jun 2010	78	63.36	100	36.64
	t co2-e	t co2-e	t co2-e	t co2-e

In June 2010 MAB purchased and surrounded 100 Tonnes CO2-e through the New South Wales GREENHOUSE GAS REDUCTION SCHEME (GGAS) (<http://www.greenhousegas.nsw.gov.au/>)

Audit Date	Annual Emissions (Estimated)	Annual Emissions (Actual)	Offsets Purchased	Balance
11th Jun 2011	64	TBA	30	66.64
	t co2-e		t co2-e	t co2-e

In August 2011 MAB purchased and surrounded 30 Tonnes CO2-e through the New South Wales GREENHOUSE GAS REDUCTION SCHEME (GGAS) (<http://www.greenhousegas.nsw.gov.au/>)

It was decided at a Management Meeting that a number of factors will be considered towards the calculation of the required offsets for Mapelton Agri Biotech for the year 10/06/11 to 10/06/12. These are:

- Production, Distribution and Product mix has not changed and therefore the calculations from the previous year remain authentic. It was calculated that TwinN accounts for 7.2 Kg CO2-e per 5 ha with an annual emissions figure for TwinN of 78 Tonnes CO2-e.
- Significant over purchase of Carbon Offsets in previous year
- Offsets to a minimum of 27 t CO2-e will need to be purchased during the 2011/12 Financial Year.
- 30 t CO2-e Have been purchased. See Section 9(b) for surrender documentation.

3) GOAL AND SCOPE DEFINITION

The goal of this LCA Study is to calculate a value for the Carbon Dioxide equivalent emissions caused by the Manufacturing and Distribution of the biological soil improver called TwinN. The information arrived at from this study is to assist the TwinN producer to estimate Twinn's CO₂ impact on the environment and to evaluate the usefulness of reduction and offsetting programs as well as product labeling and reporting frameworks.

The System Boundary for this study begins with allocations for **a) Input Materials, Consumables and Waste, b) Manufacturing Processes, Water and Energy Use,** and is deemed to conclude at **c) Transport and Distribution up to the Farm Gate**

4) INVENTORY ANALYSIS

The Carbon Footprint, in kgCO₂-e values, has been calculated with allowances for every known process step in the Life Cycle Assessment of the TwinN product. Wherever possible the Australian Greenhouse Gas Factors (June2009) have been used to calculate Scope 1, 2 and 3 emissions. Where the data has been provided only in terms of Dollar Value the UK Department for Environment, Food and Rural Affairs (Defra) categories are based upon the Standard Industrial Classification (SIC 2003) has been used. The principles of whole of Life Cycle Assessment have been adopted in part as described by ISO14067 – Carbon Assessment of Products.

Evaluation of the Manufacturing Process was considered by looking at data provided by the manufacturer in Albury NSW which included input chemicals, consumables, process equipment along with energy and fuels. Much of this information was tabled in the form of annual accounts where the value of purchase was provided.

Transport and Distribution was included by determining assumptions surrounding the transport profile of distribution from the Manufacturer to the Distributor and two destinations in the Supply Chain. a) Freight forwarded to Melbourne Victoria (50%) and b) to a UK Distributor that included 200kms of final delivery. It is deemed that these two profiles represented sufficient coverage to allocate emissions to this part of the process.

5) IMPACT ASSESSMENT

Published Emission Factors: All published emissions factors are updated from time to time. The availability of newer assessment data and more appropriate method of detailing the processes, changes in production, production levels, batch size and manufacturing processes could change these results. Refinements made to the assumptions would also be subject to evaluation and review.

The study has been a complex process of assessment and judgment based on a number of assumptions. These assumption; like the percentage of annual power devoted to TwinN manufacturing process, can be interpreted in various ways leading to differing results. It is therefore important to recognize that such Carbon Footprints are based on a set of reasonable assumptions to determine the final value and that those assumptions my change over time.

The major emissions come from Electricity in the manufacturing process and from Aviation fuels used in overseas distribution. There are no significantly large emissions to offer reduction opportunities other than generic recommendations.

This study has reveals an annual emissions of **77.98 t CO₂-e** resulting from the creation and distribution of TwinN product which, in itself, requires consideration regarding mitigation and offsetting before any marketing claims of Carbon Neutrality can be made.

6) INTERPRETATION

See attached Carbon Inventory for full details.

7) RECOMMENDATIONS

Improve Reporting and consider audits: Most Carbon Footprints of this nature are subjected to a peer review and a program of continuous improvement where at least annual reviews are conducted. Benchmarking year on year reductions is a key feature to establishing a Sustainable Business and identification of improvements to data recording will facilitate increased accuracy.

Provide Offsetting: It is recommended that voluntary offsets be purchased in the form of suitably recognized Renewable Energy Certificates to the level of 80 t CO₂-e per annum. Once these certificates are officially surrendered they provide validity to Carbon Zero claims.

Identify and apply some reductions: No readily identified emission reductions were noted. There are further offsetting opportunities that if implemented would contribute towards overall reduction through the purchase of Renewable Energy for the manufacturer.

Align to a recognized Green Labeling system: It is recommended that alignment with Carbon Trust (<http://www.carbon-label.com/index.htm>) as a framework and internationally recognized labeling system be used to create final product labeling and assurance of compliance.

Establish accountability and internationally recognized reporting: There are two levels of recognized reporting frameworks that I recommend as well. As a starting point the Good Business Register (<http://www.goodbusinessregister.com.au/>) is an ideal and free way to get started. The GBR is an Australian recognized Small Business Sustainability Register that guides companies towards a Sustainable future.

The second are more international is the Global Reporting Initiative. This voluntary register contains many companies sustainability reports measuring their progress towards Carbon Reduction, more environmentally friendly products and companies.

8) NEXT STEPS

A complete TwinN – LCA Report including a detailed inventory will be completed by Carbon Associates during the April - May 2010 period. **Completed May 12th 2010 CJL**

Carbon Associates can assist you with provision of 80 t CO₂ –e Offsets to establish a Carbon Zero (through Offsets) Status for TwinN. **Completed June 15th 2010 CJL**

It is recommended that either the GBR (Australian) and GRI (International) reporting frameworks be implemented to add further weight and acceptance and discuss further these options with Carbon Associates.

Decide options about

Improved record accuracy,

policy on annual auditing of the process and discuss.

9) PROVISION OF OFFSET (11TH JUNE 2010 TO 10TH JUNE 2012)

On the 11th Jun 2010 the equivalent of 100 Tonnes of CO₂ abatement purchased by MAB to be used as offsets against emissions from the production of its TwinN Product. The calculated emission of 78 Tonnes CO₂-e per annum caused through the Materials, Manufacturing and Transportation to the Farm Gate have now been off 128% adequately covering emission for a one year period.

a) CERTIFICATE FROM GREENBANK



Mapleton Agri Biotech Pty Ltd

GGAS, the NSW Greenhouse Gas Abatement Scheme is one of the first emissions trading schemes implemented in the world and is administered by Independent Pricing & Regulatory Tribunal (IPART) in NSW.

Under the GGAS scheme you can create NSW Greenhouse Abatement Certificates or NGACs, one NGAC is the equivalent to one tonne of CO₂ emitted. NGACs can be created through demand side abatement or the avoided use of energy.

On behalf of the Australian Crime Commission, Computers Off and Greenbank Environmental we have surrendered 400 NGACs in the IPART registry, as this is the equivalent of 100 tonnes of CO₂ emitted.

They were surrendered on the 11/06/2010; surrender number SUR0900323 and can no longer be used or sold in the GGAS system and therefore are voluntarily extinguished.



b) THE NSW GREENHOUSE GAS REDUCTION SCHEME (GGAS)

i) Proof Of Surrender Document

ii) Commenced on 1 January 2003. It is one of the first mandatory greenhouse gas emissions trading schemes in the world. GGAS aims to reduce greenhouse gas emissions associated with the production and use of electricity. It achieves this by using project-based activities to offset the production of greenhouse gas emissions.


iii) Ref: <http://www.greenhousegas.nsw.gov.au/>

GGAS & ESS Registry - Surrender Certificates - Acknowledgement

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Acknowledgement

 Thank You. Your certificates have been successfully surrendered.

If required, please print and keep a copy of acknowledgement screen and transaction records.


Owner Name	Compliance Regulator	Date of Surrender	Certificate Type	Quantity	Trans Num
Green Bank Australia Pty Ltd	GGAS Scheme Administrator	11/06/2010 2:41 PM	DSA	100	Sur090

c) 2011 OFFSET PURCHASE.

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Acknowledgement
? Help

 Thank You. Your certificates have been successfully surrendered.

If required, please print and keep a copy of acknowledgement screen and transaction number for your records.

Owner Name	Compliance Regulator	Date of Surrender	Certificate Type	Quantity	Transaction Number	Status
Green Bank Australia Pty Ltd	GGAS Scheme Administrator	16/09/2011 1:14 PM	DSA	30	Sur1100008	Success

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