

July 2007

Carbon Trading – what does it mean for farmers?

Rachel O'Neill

Carbon Solutions Group, Institutional Banking

nabCapital Carbon Solutions Group

- Formed in 2006 as a specialist group to identify the risks and opportunities within the evolving carbon finance market.
- Working with different parts of the Bank and our customers to develop appropriate products and services to meet the needs of our clients.
- Experience in energy and utilities financing, credit risk assessment, and financial markets.
- Current focus is on the impacts of climate change and emissions trading for large corporates and SME's.

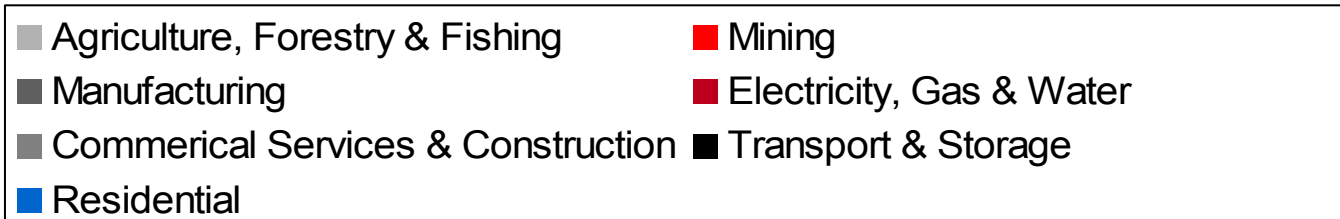
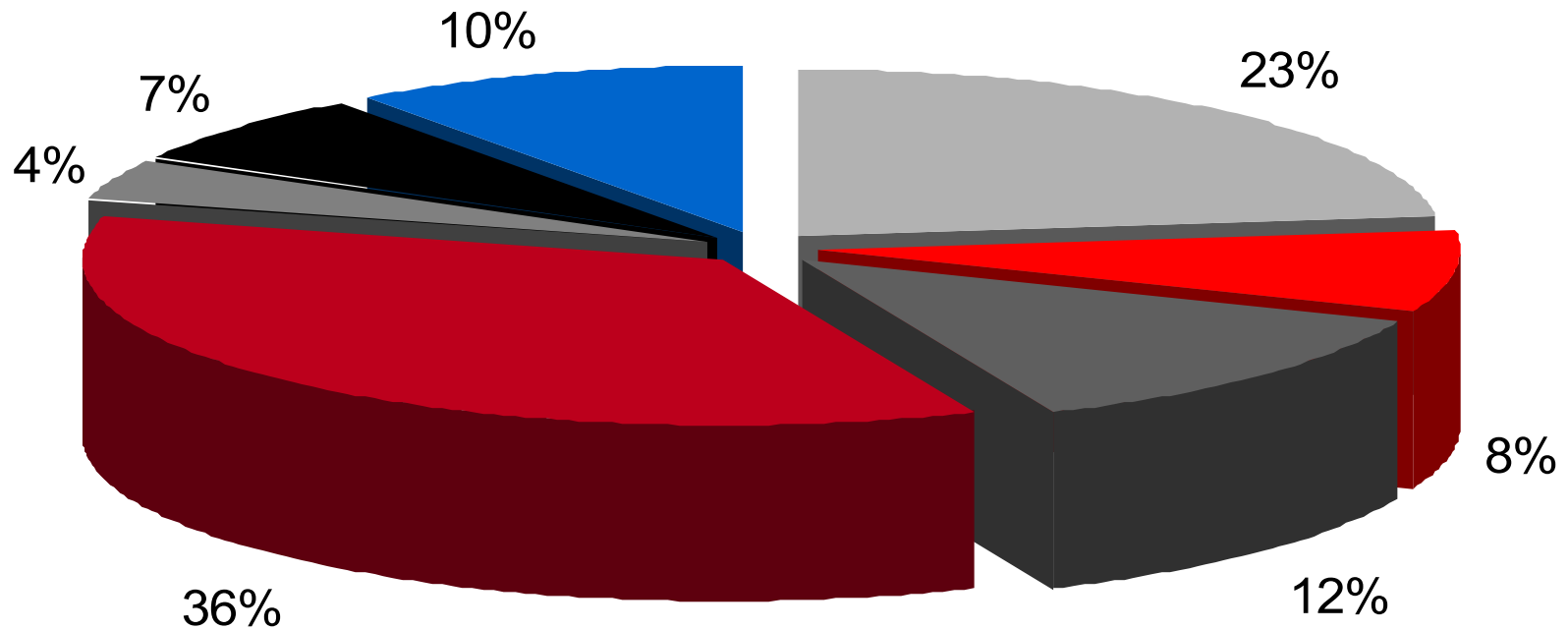
Global Warming Potentials

Source: Australian Greenhouse Office

Greenhouse Gas	Global Warming Potential (100 years)
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	21
Nitrous Oxide (N ₂ O)	310
Sulphur Hexafluoride (SF ₆)	23,900
Hydrofluorocarbons (HFCs)	140 - 11,700
Perfluorocarbons (PFCs)	6,500 - 9,200

Australian Greenhouse Gas Emissions by sector – 2005

Source: Australian Greenhouse Office



Agricultural Sector & Carbon Emissions

- Enteric fermentation in livestock
- Manure management
- Rice cultivation (methane)
- Agricultural soils
- Prescribed burning of savannas
- Field burning of agricultural residues

What is emissions trading?

- Cap & Trade
 - Emitters hold permits that provide the right to emit a certain amount of greenhouse gases
 - Ability to buy and sell permits in an open market
 - Requires an emissions cap to be set
- Carbon offsets:
 - An activity that compensates all or part of the GHG emissions of an emitting entity, by reducing the emissions (or increasing the CO₂ absorption) of another entity.
- Influencing investment flows:
 - Price impact on carbon – set by market
 - Existing business options – improve own efficiencies, pay fee, buy offsets
 - New technologies now become commercially viable

Report of the Task Group on Emissions Trading

- Benefits for Australia from adopting an emissions constraint for the period beyond 2012.
- Implement a “cap and trade” emissions trading scheme to assist in meeting this constraint at least cost. Implement by 2011/2012.
- Complementary measures will be required to support technology development and energy efficiency.
- Aim to develop a comprehensive global agreement by continuing to engage with key global players.

Australia's Climate Change Policy & Agriculture

- Policy released July 2007
- Non-energy related GHG emissions for the agriculture and forestry sectors will not be included in the emissions trading scheme in the short-term
- Practical reasons for exclusion – measurement uncertainties and the high administration costs of capturing many small sites
- Bring the sector into the scheme once measurement and other technical issues are resolved
- ***The sector can still participate by generating “offsets” for use in the scheme***

Offsets and the Agricultural Sector

- Agricultural based offsets (regulatory or voluntary)
 - Enables income diversification
 - Promotes sustainable agriculture
 - Provides an environmental benefit
- No till farming practice can increase carbon sequestered in soil
- Changes to fertilising practices may have a positive effect (nitrogen emissions)
- Land use change / decreased land clearing / reforestation
- Sequestration of carbon in soils
 - Measurement issues / permanence issues
- Methane emissions reduction
- Green agri products – consumer demand

Agriculture & the Kyoto Protocol

Article 3 – Land Use, Land Use Change and Forestry

- Article 3.3
 - Establishment of new forests on land that was unforested in 1990
 - Countries can obtain carbon credits for this activity
 - Carbon debits are calculated for land that is deforested after 1990
 - All countries that have ratified the Kyoto protocol must comply

- Article 3.4
 - Greenhouse gas emissions resulting from forest management, grazing land management, crop land management, and revegetation.
 - Country participation is voluntary

Chicago Climate Exchange – Offset Examples

Chicago Climate Exchange (CCX) is a voluntary, legally binding, rules based greenhouse gas emissions allowance trading system based in the USA.

- Approved agricultural offset methodologies:
 - Rangeland soil carbon management offsets
 - Soil carbon management
 - Forest carbon emission offsets
 - Agriculture methane emissions
- 2006 total trading volume: 10.27mt CO₂-E; (1H 07 – 11.85mt CO₂-E)
- CCX carbon credits currently trading at approx US\$3.80

CCX Offsets – Methane Capture Example (USA)

- American Electric Power (AEP) to purchase 4.6m carbon credits between 2010-2017 from livestock farms capturing methane
- Capturing and destroying methane from approx 400,000 head of cattle
- Covers installed on manure storage lagoons to capture and flare methane
- Other benefits include odour reduction, and providing an additional source of revenue
- Eg - A farm with 2,000 head of cattle could receive US\$105,000+ during a 10yr agreement

Conclusion

- Opportunity for innovation and the development of new offset methodologies
- Revenue diversification opportunity
- Voluntary markets are emerging
- NAB is building capability in carbon financing and risk management to assist clients manage the associated risks, and take advantage of the opportunities that may arise

Further information ...

Carbon Solutions Group

Rachel O'Neill
Director, Carbon Solutions Group
Institutional Banking, nabCapital
Ph: 03 8641 4486
Email: Rachel.M.O'Neill@nab.com.au

Alison Read
Associate, Carbon Solutions Group
Institutional Banking, nabCapital
Ph: 03 8641 5369
Email: Alison.C.Read@nab.com.au

Disclaimer

NAB Agribusiness Awards for Excellence 2007

Recognising excellence, innovation and leadership

While every care has been taken in the preparation of this document, National Australia Bank Limited makes no representation or warranty as to the accuracy or completeness of any statement in it. The document does not purport to contain all of the information that clients or prospective investors may require or should obtain. To the maximum extent permitted by law, National Australia Bank Limited expressly disclaims all or any liability which may arise out of the provision to or use by any person of the information contained in this presentation.

This presentation has been prepared for the purpose of providing information only without taking account of any person's objectives, financial situation or needs.

The information in this presentation is confidential and should not be disclosed to any other person without the prior consent of National Australia Bank