



CARBON MANAGERS

CARBON MANAGERS Pty Ltd

Capability

To turn the challenge of carbon into improved profitability.

To recognise the increased cost of energy & that alternate technology has to be implemented.

To manage the process, the cost/benefits & the economics

This can be divided into 6 ‘Rs’.

May, 2010



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- **Policy makers, reacting to scientific data create regulation and compliance.**
- **Energy research has found medium term shortages of traditional fossil fuels such that energy will be core to growth.**
- **Communities demand better corporate behaviour so that production must be achieved without excessive use of resources and future generations ask for enjoyment of similar assets as are now.**
- **These issues have been unnecessarily complicated and there are gaps in environmental regulations.**
- **Our mission is to map a clear path, relate this to efficiency and profits, and provide a management process that sets goals, provides benchmarks and offers reporting that is observable.**



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1. Capacity of the Product/Service Supplier

Carbon Managers provide a 'one stop shop' and national leadership in carbon management.

The software that we call **AMS** is populated with all the relevant aspects so that a corporation can manage the diverse areas through one web based control setting benchmarks, providing information and reporting to head office in a standardised fashion making multi site management possible at the least cost

The expertise of Carbon Managers is the management of carbon according to the **6 "Rs"** that are set out in our mission statement.

Driven by the need to solve the perceived complexity of carbon management into understandable and resolvable issues, we offer clients all the answers in segments enabling them to maintain a strategic focus.

Carbon Managers understand that the first issue to be resolved is the need to **record** the size of the organisation's carbon footprint and **report** it confidently to stakeholders. Carbon Managers has searched for the best software to record carbon footprints in a cost effective way and identified CARBONcontrol as a highly effective solution. Importantly the software has the 'Factors and Workbook' calculations imbedded within, so all results are automatic.

Carbon Managers are able to obtain **reductions** in carbon output and, where available, utilize **rebates** and research funding for so doing. There are Government rebates for certain rectification and retro fits but these are not easy to find nor easy to obtain.

Our **research** into reductions technology is on going. We are aware of cost effective methods, such as better driver training and staff education as a first step in the process before expensive technology. Investigation into technology reveals that many abatement solutions and alternative technologies are not yet ready for commercialisation and 'scaling up' has realistic problems. Fortunately many are available, and we can provide solutions in easy steps, often with 'pay back' periods of three years or less. Until there are better tax deductions and rebates or the cost of fossil power become more expensive to more industry pay backs will be longer; some measures are more than 2 years pay back but are very effective



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Through related companies, Carbon Managers is actively engaged in researching alternative low use carbon technologies. These include LPG into diesel and hydrogen into diesel. We are aware of the research being undertaken by Universities into Biochar, low heat energy sources, methane gas, solar power, biofuels, ceramic storage and other energy generation and storage alternatives. By wind tunnel testing we are also examining the advantages of installing aerofoil's on trucks to reduce air flow over semi trailers, "B" doubles and passenger coaches.

Against this background we have a sound understanding of:-

- the GHG protocols and GRI reporting
- the Standards--14064,
- the International Local Government Carbon Protocols ,
- Australian Legislation, EPA Regulations of each State, emissions under ADRs,
- comparative international CPRS legislation,
- NGERs
- The price of carbon and the economics of abatement, the International Energy Agency Report [2008],the Grattan Report, the CarbonWorks Report.
- The spot price of electricity and the futures price of both,
- The Kyoto Protocol for CDMs and CERs that arise.

Our executive team includes a publisher of books on environmental management and speakers at international conferences on the forward price of carbon, the GRI protocols, the grid connection problems of all alternative energy generation and the International Energy Agency Report [2008] on energy needs to 2050. We have attended COP 15 and are known to both Federal and State agencies and our energy engineers are DECC accredited. We have the qualifications to become accredited under the NGERs regulations. A partner is the largest independent REC trader in Australia and is known to the CEOs of both the energy retailers and suppliers of abatement materials.

Carbon Managers have gathered the expertise on as many issues as possible through collaborations and working relationships with companies that retro fit, calculate engineering solutions for methane conversion, installations of alternate power and process engineering for reductions in energy use



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2. Team Leadership

We draw on our network of experts to undertake particular industry sectors. For example-

Steven Pringle is a team leader in local council and University applications. He is a Lieutenant Commander RANR, former Mayor of Hornsby, Hawkesbury MP and Director Community Engagement Macquarie University. Currently he is seconded to the Asia Pacific Civil-Military Centre of Excellence from the Department of Defense.

The team includes lawyers, chartered accountants, economists, electrical engineers and, by way of strategic alliances, the providers of carbon footprints, the supply of devices that reduce electricity use through NABERS driven retrofitting, refrigeration energy reduction device suppliers, and driver training programs that improve fuel efficiency and suppliers of LNG and CNG. The experience is in excess of 20 years.

The IT developer of the AMS software that CMs has populated has extensive business experience and includes Dr John Troughton, the retired head of the equivalent New Zealand CSIRO.

Our IT partner for the development of the footprinting is CARBONcontrol, which designs, develops and supports technical solutions for Carbon Managers and has developed an entity-level -carbon -accounting solution modeled on the GHG Protocol for Entity Level Emissions Reporting, International Standard ISO14064 and the National Greenhouse Energy Reporting Act.

Experience

By way of example-Carbon Managers and CARBONcontrol (The Team) has recently conducted projects for a major Queensland Department , which has equipped us with the operational processes required handling a variety of deployments so as to deliver a quality, cost effective solution to a set timeframe.

The Team can work to:

1. Conduct a carbon accounting gap analysis based on ISO 16064 using ISO 9001 for quality, and NGERs (Audit) Determination 2009 criteria.
2. Conduct a high level carbon strategy formulation workshop utilising the outcomes of the gap analysis to set up the contextual framework of operational boundaries, materiality thresholds, methods of dealing with organizational structural changes , abatement strategies and actions to be managed that have arisen from the gap analysis



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3. Integrate and configure the IT system based on outcomes and discussions from the strategy workshop
4. Install and commission the technology, reference data and load historical data
5. Train users and system administrators in the use and management of the system and provide a help desk
6. Provide expertise in targeting, footprinting and abatement planning

The material below documents our capability and experience to meet the specific functional requirements identified, and the added benefits that we can bring to bear in a Carbon Management System solution.

3. Gap Analysis

Carbon Managers uses 'facilitated self audit' review gap analysis undertaken to work through and place a rating based on quality principles on policy and procedures, operational boundaries, calculation methods, tracking emissions over time and the quality aspect of a GHG inventory management system. Clarification on technical issues is conducted as necessary with engineers. The data collected is aggregated and aligned with an individual's understanding of the project prior to strategy formulation meetings.

4. Action Management (GRI-AMS) through Strategy Workshop

Actions will be defined at a strategy workshop, after the gap analysis has been reviewed. Actions are identified and organised and then set into a web based action management system. Actions are allocated to the responsible party and supported by the specific knowledge required on that action. Risks associated with the action are defined and project managed. Ideas are collected and audit trails established.

This is a one stop shop for the management of carbon. It is software which has been populated with "Business DNA" including:

1. All relevant legislation.
2. All the Standards applicable.
3. The Global Reporting Initiatives, its protocol and reporting requirements to Amsterdam.
4. Links to important relevant internet sites established by governments, regulators and other key national and international Institutions.
5. Standardised reporting systems that enable across cultures comparisons to be made for benchmarking.
6. Transparent management of abatements projects.



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7. Capture of ideas from stakeholders and the community to change behaviour.
8. Central server and hierarchy security.
9. Codify action priority, risk profile and key performance indicators.
10. Dovetail into our web based carbon measurement tool.
11. Trains people in sustainability, carbon management and maintains continuity on action management

Our offering is unique and innovative.

Carbon Managers partners with CARBONcontrol for the data 'mousetrap'. This IT solution provides medium to large organisations with the ability to track, monitor and manage their entire carbon footprint, including products, plant, facilities, fleet, personnel and water usage. Systems compliance is detailed in section 6 of this submission (see attachments).

5. Reductions and Abatement Projects

Carbon Managers facilitates cost effective energy efficiency and abatement projects.

Examples of Carbon Managers activities in reduction and abatement projects include the following:

5.2 Energy Efficiency Improvements in Refrigeration

Carbon Managers has sourced a simple unit which can be fitted to most commercial refrigeration plant and is guaranteed to save energy by at least 15% (Australian results achieving 25% to 35%). It gives more consistent temperatures, capacity increase of 10%, increased shelf life of 66% with reduced maintenance costs and defrosts cycles. Return on investment of between 9 to 36 months at a very low capital cost is achieved.

5.3 Process engineering

Through our associates we have identified process engineering analysis as a way of reducing energy use. This often involves a refit to a furnace or boiler so that any lost energy is saved and converted into usable energy, mainly electricity. Co-generation uses the process to create 2 forms of energy and tri generation creates cooling as well.



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5.4 Green Buildings.

Building owners need to improve their NABERS Ratings:

Our partners reported on identified potential energy saving opportunities in lighting, hot water system timers, PC and visual server use, and motion sensors for vacant rooms. It included estimated savings in GJ and dollars per annum, capital cost and payback periods (all within 0.4 to 4.5 years) and the CO2 tonnes reduced. By implementing the recommended actions, energy consumption would be reduced and an increase in the NABERS tenancy rating from 2.5 to 3 stars be achieved. Reports also evaluate re-negotiating the contract between the client and its energy supplier to take full advantage of energy market variables.

5.5 Biogas

Newcastle University Centre for Clean Energy has been researching biogas and coal seam methane conversion as well as low energy conversion from sources produced by diesel engines. Carbon Managers maintains a strong link with the University.

5.6 Solar

The CSIRO in Newcastle is undertaking extensive solar energy conversion of major industrial buildings and we are discussing with TAFE a solar installation and management training course developed in conjunction with the Clean Energy Council for the correct installation and management of roof top energy power.

6 Revenue

The above activities are in the commercialisation phase and organisations may be able to use them as a revenue stream as they develop.

Revenue after tax: We are particularly aggressive in writing to as many policy makers and industry groups as will listen to support the tax deductibility of carbon reduction devices and in supporting policy that uses a carbon tax. The Government delay in CPRS in the way it was structured was an unworkable solution and a disruption to Australia economy where as many learned writers now believe that a tax is a simple workable method if Governments have the belief in practical methods as opposed to those of economic text books. CPRS provides no certainty for commerce but enormous compliance and as with other Government inspired programs, such as insulation, RECs and Ngats it won't work.



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7 Council Operations (RFI Section 2.1)

The following is an example of a Request for Information for a Council:

The tables below are a direct extract from the RFI document, with a Y or N indicating if the required functionality is a component of our approach along with any comments.

Data

Req. Id	Requirement description	Core Function	Comment
2.1.1.1	Identify sources of council emissions	Y	<i>The solution offers a full organisational structure / hierarchy model.</i>
2.1.1.2	Manual and automatic data upload functionality.	Y	<i>CARBONcontrol has multiple methods that support data upload including, text file import, webservices data interchange, direct ODBC load, etc. .</i>
2.1.1.3	The ability to separate leased property emissions.	Y	
2.1.1.4	Receive multiple types of carbon-related data and convert this to CO2-equivalent (CO2-e) units.	Y	<i>NGERS factors are always kept up to date in an online, real-time way.</i>
2.1.1.5	Perform standard carbon accounting	Y	<i>Fully compliant.</i>



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2.1.1.6	Tracking of changes	Y	<i>The system offers FULL audit tracking on each and every database table.</i>
2.1.1.7	Water consumption capability.	Y	<i>With further configuring</i>

Analysis

Req. Id	Requirement description	Core Function	Comment
2.1.2.8	Information that supports the reduction initiatives, a	Y	
2.1.2.9	Facilitate the setting and modeling of abatement targets.	Y	<i>GHG Inventories are both time-based, allowing linking of targets to timelines.</i>
2.1.2.10	Ability to analyse corporate data.	Y	<i>Fully compliant.</i>
2.1.2.11	Capacity for consistency across councils.	Y	<i>Fully compliant</i>
2.1.2.12	Capacity for aggregation of data at the regional level.	Y	<i>Fully compliant.</i>

Comprehensive reporting capability

Req. Id	Requirement description	Core Function	Comment
2.1.3.13	a. Reporting on the performance over time of the organisation and of its divisions and individual assets	Y	<i>Fully Compliant.</i>
2.1.3.13	B .Reporting on the performance over time of individual assets	Y	<i>Fully Compliant.</i>
2.1.3.13	C .Reporting on the performance over time of individual assets	Y	<i>Fully Compliant.</i>
2.1.3.13	d. Generation of reports.	Y	<i>Complaint with further configuration</i>
2.1.3.13	e. Flexible reporting of emissions.	Y	<i>Fully Compliant.</i>



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2.1.3.13	f. Predominantly graphics-based reporting.	Y	<i>Fully Compliant.</i>
2.1.3.13	g. Reporting that alerts users to significant changes.	Y	<i>Fully Compliant..</i>

Community

Req. Id	Requirement description	Core Function	Comment
2.2.1	Identify and record community emissions.	Y	<i>Fully Compliant for combination of footprints across different sectors, etc.</i>
2.2.2	Use data that is estimated or derived based on assumptions.	Y	<i>Fully Compliant. Includes the capacity to record assumption notes, electronic documents, etc, right across the GHG Inventory</i>
2.2.3	Additional reporting functionality:	Y	<i>Fully Compliant.</i>
2.2.4	Functionality via councils' websites to enable residents and businesses to assess their own carbon footprints.	Y	<i>Fully Compliant. The system, including ALL reports, is a 100% web-based solution.</i>

8 Non-Functional Requirements – Security and Auditing

Carbon Manager's system offers a sophisticated user access and role-based security model that allows each and every element from each and every view to have one of four security levels for both read and write access. Moreover, multiple portals can be deployed and configured specifically for the intended audience, thus including or excluding various functional capabilities.

As for auditing, every user is logged and recognised on access to the system and has their usage of the system audited, including the change to ANY data element that is logged to an audit table (each database table has a corresponding audit table for this purpose).



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9 Pricing

The estimates presented below are high-level indicative values only and would be subject to understanding requirements in more detail, following which we could provide a fixed price quotation for both the cost and timeline.

Option 1. Install Onsite

System Licenses

Description	(exc. GST)
GRI-Action Management system acquisition and implementation for a "Large" deployment (once-off, up-front cost)	
Software License for 10 seats	\$35,000

Description	(exc. GST)
CARBONControl System acquisition and implementation for a "Large" deployment (once-off, up-front cost)	
Software License	\$120,000

Support and Maintenance

Description	(exc. GST)
Indicative Software Support and Maintenance (annual cost payable after go-live)	\$35,000
Synchronise NGA factors (per annum)	\$15,000

Option 2. External Hosting System License, Support, Maintenance and Hosting

Description	(exc. GST)
GRI-Action Management System acquisition and implementation for a "Large" deployment (once-off, up-front cost)	\$7,400
Software License (per annum) for 10 seats	
1. Total 1 st year	\$20,360
2. 2nd and subsequent years	\$12,960



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Description	(exc. GST)
CARBONControl System acquisition and implementation for a "Large" deployment (once-off, up-front cost)	
Software License (per annum) Includes site license, hosting support, maintenance 4. Environment Software (ie; SQL, Windows Server, etc) 5. Backup	\$50,000
Synchronise NGA factors (per annum)	\$10,000

Timelines

Description	Duration (elapsed)
Workshops + Specification	1 month
Configuration	1-3 months
Training and System Commissioning	1 month
Total elapsed timeline	3-5 months

Deployment Costs

Description	Duration (elapsed)
40 – 120 Days of Service Depending on Detailed Requirements	Up to \$156,000

Indicative Totals

Number of Councils	Total per Council
9 participating Councils	\$34,555

10 Summary



CARBON MANAGERS

Carbon Managers have a proven track record and offer a unique one stop carbon management program that is tailored to the needs of each organization in a cost effective manner. Through established links with research institutions, Carbon Managers are able to access practical, cutting edge technology and combine it with existing expertise.

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