Balancing act

When Victoria's Environment Protection Authority decided to go carbon neutral in mid-2006 it was a groundbreaking move with huge challenges around formulating rigorous and transparent processes.

Last year was book-ended by climate change tipping points. First came Al Gore's An Inconvenient Truth with its dire warning that we've got 10 years to avert a major global warming catastrophe. Then Nicholas Stern's Review on the Economics of Climate Change gave us another grave warning that global warming could shrink the global economy by 20 per cent. However the costs of reducing greenhouse gas emissions could be 1 per cent of global GDP if the world acted now. These two high profile events along with the swelling zeitgeist forced consumers to look not just at their own sustainable living but that of governments and corporations.

The response from Victoria's Environment Protection Authority (EPA) was to draft its own Carbon Management Principles, prepare an emissions inventory and appoint an external auditor to validate all work. It's now ready to share its strategy and learning with anyone who wants to listen.

EPA Chairman Mick Bourke and Director of Sustainable Development Terry A'Hearn oversaw a project team that drew on staff expertise from the Environmental Management Committee (EMC) as well as the facilities, finance and greenhouse policy units. Two staff members were put to work fulltime and an external auditor was brought in to verify data sources and calculations and ultimately ensure the integrity of EPA's carbon neutral claims. Six months of research and strategy development followed.

"Because this concept was relatively new, there was a real lack of agreed strategies, tools and frameworks," A'Hearn says. "Everybody had their own take on it and while the Greenhouse Gas (GHG) Protocol seemed like the gold standard, there were a lot of different paths for reducing and neutralising emissions."

The EPA adopted the GHG Protocol developed over a decade between the World Resources Institute and the World Business Council for Sustainable Development. Its goal is a common standard for business reporting on GHG emissions and its international endorsements read like a who's who of leading organisations – the EU Emissions Trading Scheme, Chicago Climate Exchange, the International Organisation for Standardisation and the Carbon Disclosure Project.

The GHG Protocol's Corporate Accounting and Reporting Standards provide methodologies for organisations to build inventories and report on their GHG emissions. It features three scopes for developing their inventories: 1. Direct emissions; 2. Indirect emissions from purchased electricity; 3. Indirect optional emissions.

Scope 1 and 2 are clearly defined and should be included in any corporate inventory but there is no clear agreement on which emission sources should be part of scope 3. According to A'Hearn the Australian Greenhouse Office's Factors and Methods Workbook developed for Australian conditions and organisations is the best source of default emission factors.

During its research phase, EPA's project team looked at which emissions sources had been included by best practice organisations. It then collected activity data like facility electricity, natural gas, fleet fuel, tonnages of waste disposal and expenditures and documentation related to business travel in planes, taxis and trains. Staff in the

facilities or finance units provided the data and the EPA also made direct measurements of refrigerant systems in buildings and vehicles, and contacted landlords, travel agents and taxi companies for information.

The EPA is committed to including two new scope 3 indirect emissions sources each year as they become measurable, including embedded energy in paper, staff transport to and from work and emissions by sub-contractors.

"The biggest challenge was determining which indirect sources to include in the inventory," says Beth McLachlan, EPA's Environmental Management Systems Co-ordinator. "We based our decisions on the expected size of emissions sources relative to other sources in the inventory, how critical the source was to the business and if it was possible to accurately measure the emissions."

The EPA utilised its external assurer, Net Balance Management Group, to assist in evaluating available data and emissions calculation methodologies. However, as the GHG Protocol was never designed to guide energy and GHG management decisions, the EPA needed a framework for improvement that gave the best environmental outcomes, ideally at the lowest cost.

It therefore developed its own Carbon Management Principles, which were refined after industry consultation (see graphic for more detail). The draft principles and 2005–06 emissions inventory have been posted on EPA's website and distributed to members of the newly-formed Carbon Innovators Network. **Measure:** calculate your direct and indirect GHG emissions. **Set objectives:** such as energy reduction targets or carbon neutrality. **Avoid:** can you avoid generating emissions? **Reduce:** can you modify processes, buy equipment with high efficiency ratings, recover energy or emissions from a pre-existing process? **Switch:** can you use renewable energy sources, or less GHG-intensive sources. **Sequester:** can you sequester emissions through new technology? **Assess:** what are your residual emissions, do you need to reassess your strategy? **Offset:** offsetting residual emissions is an important final step to carbon neutrality, however offsets should meet accreditation requirements.

"We had a lot of questions about the processes. Particularly in relation to setting up an inventory and how we went about it, our assurance process and whether we saw value in it," says A'Hearn. "Also the avoidance strategies we implemented before purchasing green power and offsets, and the offset market itself. EPA had done a lot of work over the past six years, and the 2005–06 inventory reflected the emissions avoidance and reduction efforts. The only remaining reduction option was to expand our purchase of green power and offsets to cover 100 per cent of our emissions."

The EPA wanted only green electricity products approved by GreenPower the national quality accreditation body, but never factored in the volatility of the marketplace. "By the time we settled on a Victorian wind power project, demand had pushed up the price considerably so we ended up paying the higher price," McLachlan says. "So my advice is to buy green power through an energy contract. While you'll pay a little more, at least the price is assured."

Purchasing offsets can get very complex as there is no single national accreditation system and offset products don't need accreditation. The EPA wanted accredited, independently verified products backed up by detailed credit calculation methodologies and assumptions and this took a lot of time and research.

The three products finally purchased were accredited through the Gold Standard (a New Zealand wind power project), NSW Government Greenhouse Gas Reduction Scheme (Easy Being Green's energy efficiency projects) and Australian Greenhouse Office Greenhouse Friendly program (National Recovery Systems' in-vessel composting project).

CONSIDER THE QUALITY

However, accreditation is not the only challenge in the offset market with prices ranging from less than $10 per tonne up to $40 per tonne. "Organisations should consider price in selecting offsets, but they also need to consider the quality of the product, their own organisational values and any additional benefits or negative impacts associated with it," McLachlan says.

So now that it's carbon neutral, what's next for EPA Victoria? "Our project team is now evaluating and implementing viable avoidance and reduction strategies," reveals A'Hearn. "This includes more monitoring

Carbon Innovators Network

With the growing corporate concern about strategic responses to climate change, EPA Victoria has launched a Carbon Innovators Network for business leaders and climate change experts. "It became apparent last year that there was a clear need for strategic and practical assistance, as well as sharing of information," says Krista Milne, Manager of EPA's Life Cycle Unit. "By stimulating debate and innovation in carbon management and by providing the support and tools organisations need, we hope to assist them transform climate change from a business cost to a business opportunity," Milne says.

Network founding members were City West Water, Plastics and Chemicals Industries Association, Pilkington Australia and Origin Energy. Membership now stands at around 140 and is rapidly growing. A recent member survey about key issues involved in introducing carbon management programs showed the challenges were: quantifying the business benefit or establishing a business case for carbon management programs; changing the organisation's culture, particularly in engaging senior management or other personnel; influencing carbon management across the life cycle of products and finding expert guidance on topics such as inventory compilation and purchasing offsets. EPA is planning an electronic newsletter and a series of events in response to members' requests for industry-specific working groups on carbon management, more network meetings and regular communications.

of energy use, formal energy audits and evaluation of costs against a payback period of four years, which we feel is realistic as a business case.

"An analysis of costs of the carbon neutral program shows it accounted for just 0.17 per cent of our annual expenditure. This provides a basis for EPA staff to make cost-benefit evaluations of proposed emission reduction measures, as EPA has an established internal carbon cost of $22 per tonne."

While there is a common perception that carbon neutral programs can be expensive, A'Hearn says that active carbon management actually creates cost savings and better risk management by its focus on internal business improvements.

EPA also plans to introduce schemes to involve and incentivise staff, such as trialling a cap and trade scheme in regional offices where electricity, gas and vehicle use can be quantified. Offices would be given a cap, say between 5 and 10 per cent less energy than the previous year. They could then trade their savings with other units, with a financial reward that could be invested in other energy-saving initiatives to help maintain their advantage.

Asked to list EPA's biggest challenges in its carbon neutral program, A'Hearn nominates the lack of a clearly defined concept of carbon neutrality and the task of accurate data collection. The evolving markets for green power and offsets can also be problematic, particularly price fluctuations in the green power market and the lack of regulation for offset products.

"This is still an emerging area and organisations really need to do their own offsets' research into technical documentation, external verification and accreditation," says A'Hearn.

The EPA decided an external assurer was essential to the integrity of its processes, and appointed Net Balance Management Group because it of its significant experience in assurance and verification. "Net Balance's impartial double check of data gave us confidence in our strategy and assured our stakeholders of the robustness and rigour of our program," explains A'Hearn. "Carbon neutrality is a new and evolving area for us and for most other organisations. We don't pretend to have all the answers, but we're very keen to work with other organisations to enhance our knowledge and theirs."

EPA Victoria (comprehensive information on the carbon neutral program and other greenhouse issues) www.epa.vic.gov.au/greenhouse/

Greenhouse Gas Protocol (guidelines for corporate inventories and calculation tools) www.ghgprotocol.org

Australian Greenhouse Office Factors and Methods Workbook December 2006 www.greenhouse.gov.au/workbook/pubs/workbook2006.pdf

US EPA's Climate Leaders Reporting Guidelines (checklist for inventory management plan) www.epa.gov/climateleaders/resources/reporting.html