

Developing partnerships can help meet **Garnaut's 2050 target**

Modelling is showing that smart climate mitigation in Australia and carbon credits for project partnerships with developing countries under the UN Clean Development Mechanism could help get Australia to net greenhouse emissions neutrality by 2050. **Mike Smith and Karlson Hargroves** provide a second instalment on the opportunities for Australia in working with developing nations.

After the recent UN Framework Convention on Climate Change summit in Bali, there is now great interest in how OECD countries, such as Australia, can assist developing countries to reduce their emissions significantly.

Now that Australia has ratified the Kyoto Protocol, the Australian Government and businesses¹ can qualify for involvement in developing-country projects under what is called the Clean Development Mechanism (CDM) – a scheme run by the UN Framework Convention on Climate Change to stimulate both improved and environmentally effective initiatives in developing nations through the provision of internationally tradeable carbon credits.

Modelling by CSIRO and research partners² commissioned by the Climate Institute shows that through smart approaches to climate change mitigation in Australia³ and utilising the CDM, Australia

can achieve net climate neutrality by 2050, while maintaining strong economic growth. This is a highly topical result as it suggests meeting or even exceeding the 90 per cent by 2050 emissions reduction target, recommended by the Garnaut Review's recent Interim Report,⁴ is technically feasible.

CDM credits offer Australia another flexible way to help meet interim 2020 greenhouse reduction targets cost effectively – through sponsoring very economical energy efficiency aid projects similar to those previously discussed (see p. 16, *Ecos* issue 141). CoolNRG,⁵ an Australian NGO, is already initiating projects to increase the uptake of millions of compact fluorescent light globes in Mexico and China. These projects are being funded by Clean Development Mechanism credits.

A recent 2007 study by McKinsey & Company has found that, through investing in energy efficiency, global emissions could be reduced by 20 per cent by 2020 without harming economic growth.⁶ Australia has expertise in all areas of energy efficiency opportunity to offer, and it has begun to deploy it.

Improving the conversion efficiency of coal-fired power stations in developing countries, for example, would count for CDM credits. In early March, CSIRO announced that it had commenced a clean coal expertise partnership to assist China to equip its many coal power stations with anti-greenhouse technology.

Beginning at home

Australia could lead by example through adopting means to cut its own domestic emissions, as we have suggested in earlier articles.⁷ Our government could also help bring about rapid change globally in energy efficiency by setting higher energy



performance standards here for common everyday household appliances and banning energy inefficient products.

When the previous federal government announced that it would phase out inefficient lighting by 2012, the European Union, California and even the Philippines rapidly followed suit. This is having a significant flow-on effect by driving a change among global manufacturers in China, Europe and North America to focus on more energy efficient lighting products.

The same concept could be applied tactically to other appropriate household, office, catering/hospitality and industry appliances or equipment.

Potential deforestation CDM projects

Australia is also well placed to make a difference by creating a model of how OECD countries can work with developing countries to reduce deforestation significantly. The Stern Review states: 'A study commissioned for the Review looking at eight countries responsible for 70 per cent of emissions from deforestation found that ... emission savings from

¹ Environment Business Australia (2002). The business case for ratifying the Kyoto Protocol. <http://environmentbusiness.com.au/templates/template2/images/pdfs/Kyoto%20-%20business%20case.pdf>

² Hatfield-Dodds S, Jackson EK, Adams PD and Gerardi W (2007). Leader, follower or free rider? The economic impacts of different Australian emission targets. The Climate Institute, Sydney. http://www.climateinstitute.org.au/images/stories/CI058_ER_FullReport_NEW.PDF

³ Smith M, Hargroves K, Stasinopoulos P, Stephens R, Desha C and Hargroves S (2007). *Energy Transformed: Sustainable Energy Solutions for Climate Change Mitigation*. The Natural Edge Project, Australia. http://www.naturaledgeproject.net/Sustainable_Energy_Solutions_Portfolio.aspx

⁴ <http://www.garnautreview.org.au/CA25734E0016A131/pages/reports-and-papers>

⁵ See CoolNRG's Phil Cohn on the Clean Development Mechanism at <http://www.coolnrg.com/browse.asp?page=332>

⁶ McKinsey & Company (2007). Curbing global energy demand growth: the energy productivity opportunity. www.mckinsey.com/mgi/publications/Curbing_Global_Energy/index.asp

⁷ See The Natural Edge Project's *Ecos* articles at <http://www.naturaledgeproject.net/TNEArticles.aspx>



Left: Simple and inexpensive solar cookers are making life a little easier in parts of Africa and reducing demand for firewood.

The Solar Cooking Archive

to 10 year period just through these two strategies alone.

This may be the incentive the world community needs to get serious about addressing barriers to sustainable forestry, such as corruption. If the world does get serious, and adequately compensates developing countries for stopping deforestation, this would yield a significant biodiversity dividend as well. Indonesia contains two of the world's biodiversity hotspots and has the second highest recorded biodiversity in the world after Brazil.



A Guatemalan girl does her homework with the help of super-efficient LED lighting provided by Australian company Barefoot Power.

More sustainable transportation

Another area where Australia is assisting is in transportation. In 1999, two Australian professors, Peter Newman and Jeff Kenworthy, published ground-breaking research in a major report for the World Bank⁹ demonstrating that cities which pursue sustainable transport options have better quality of life and higher economic growth than cities dependent largely on freeways. Previously the World Bank had assumed that investing in freeways and cars was the road to economic growth. As a result of the 1999 report more government aid is now being invested in sustainable transport such as through the Global Environment Facility.¹⁰

With oil prices reaching record highs, there is great interest currently from developing countries for ideas on how to meet local transportation needs without oil. Model sustainable cities such as Curitiba¹¹ in Brazil and Bogota¹² in Colombia are showing the way by demonstrating how sustainable transport – cycling, walking and buses – can comfortably manage over 50 per cent of all commutes, with better health and economic outcomes. In Bogota, 85 per cent of residents now live within 500 metres of a bus service. Both Curitiba and Bogota achieved their sustainable transportation transformation within 10 years.

Potential renewable energy CDM projects

Probably the greatest opportunity for developing countries to 'leapfrog' the West is in renewable energy initiatives. Developing nations can give the two billion people currently lacking access to electricity the energy they need, relatively cost effectively, with for example ultra energy efficient lighting and renewable energy programs, compared to building large, centralised power stations and a grid from scratch. This is partly because the cost of the electricity grid is typically about one-third the overall cost of setting up a centralised electricity system.

One more promising project in this direction is the distribution of inexpensive solar cookers in Kenya by Solar Cookers International. Costing just \$10 each, these devices cook slowly, but efficiently, much like a crockpot. Requiring less than two hours of sunshine to cook a complete meal, they can greatly reduce firewood use at little cost.

Rapid advances in ultra efficient lighting, such as LED, over the last eight years creates another significant opportunity to combine energy efficiency improvements with renewable energy projects. Australian company Barefoot Power is already working on such LED projects in developing countries, but there are other significant global energy efficient lighting initiatives with which Australian organisations could partner.¹³

More information:

Smith M, Hargroves K, Stasinopoulos P, Stephens R, Desha C and Hargroves S (2007). *Energy Transformed: Sustainable Energy Solutions for Climate Change Mitigation*. The Natural Edge Project, Australia. www.naturaledgeproject.net/Sustainable_Energy_Solutions_Portfolio.aspx

avoided deforestation could yield reductions in CO₂ emissions for under \$5/tCO₂, and possibly for as little as \$1/tCO₂.⁸

Deforestation accounts for 18 per cent of global emissions, so it is likely that under the developing Post-Kyoto Framework, compensation schemes to stop large-scale deforestation will count for CDM credits. In March, Prime Minister Kevin Rudd and his Papua New Guinea (PNG) counterpart, Sir Michael Somare, signed off on a carbon partnership to reduce emissions from deforestation. PNG's forestry related annual greenhouse emissions may exceed 100 MtCO₂, a quarter of Australia's total emissions.

A similar agreement could be reached with Indonesia, which currently produces five times Australia's total CO₂ greenhouse gas emissions, with over three-quarters of that from deforestation.

Given that global emissions could be reduced by 20 per cent through energy efficiency, and up to 18 per cent through stopping deforestation, it could be possible, in theory, to achieve over 30 per cent global greenhouse gas reductions within a five

⁸ Stern N (2006). Identifying the costs of mitigation. In *The Stern Review: The Economics of Climate Change*. pp. 244–247. Cambridge University Press, Cambridge. http://www.hm-treasury.gov.uk/media/F/0/Chapter_9_Identifying_the_Costs_of_Mitigation.pdf

⁹ Newman P and Kenworthy J (1999). *Sustainability and Cities*. Island Press, Washington, DC.

¹⁰ See http://www.gefweb.org/interior_right.aspx?id=17566

¹¹ Hawken P *et al.* (1999). Human capitalism. In *Natural Capitalism: Creating the Next Industrial Revolution*. Earthscan, London. <http://www.natcap.org/images/other/NCchapter14.pdf>

¹² Runyan C (2008). Bogotá designs transportation for people, not cars. World Resources Institute. http://archive.wri.org/newsroom/wrifeatures_text.cfm?ContentID=880

¹³ See the Lumina Project at <http://light.lbl.gov/>