Scientific approach to an emotional – and political – issue

Mark Diesendorf is a highly credible figure in the climate change arena. Formerly Professor of Environmental Science at the University of Technology, Sydney and now teaching Environmental Studies at the University of NSW, Diesendorf was a principal research scientist with CSIRO for several years, where he was involved in early research on integrating wind power into electricity grids in the 1980s.

In his latest book, *Greenhouse Solutions with Sustainable Energy*, he argues that the solutions to reducing emissions already exist – efficient energy use, solar hot water, gas, bioenergy, wind power, improved public transport and fuel efficient vehicles. These solutions are not expensive compared to the cost of not meeting greenhouse targets and are also less expensive than coal with CO_2 capture and burial or nuclear power. The main barrier to their implementation, says Diesendorf, is that federal and state government policy has been significantly influenced by powerful lobby groups such as the coal and nuclear industries.

The book is structured in three sections:

- Introduction to the basic concepts and latest scientific evidence regarding the greenhouse effect.
- Assessment of energy technologies, including coal, nuclear and more sustainable alternatives.
- Discussion of policies and strategies needed to overcome the market failures and other barriers to renewable energies and energy efficiency uptake.

Diesendorf told *Ecos* he wrote it because he saw a gap in resources for 'those who want to make the case'.

'One of my aims was to dispel objections to wind and solar,' explains Diesendorf.

'Renewable energy sceptics or "contrarians" are creating a false impression that these technologies are not viable. But renewables are cleaner than coal and nuclear and their variability is manageable.'

'For example, wind power reliability can be improved with geographically dispersed sites. In the 1980s at CSIRO, we showed that wind could replace coal-fired power stations, nationally and globally.

'Pushing energy efficiency and developing coal power are contradictory – those who want to recoup investment on coal power stations will push increased energy use, with cheap off-peak hot water, for example.'

Banning the construction of new conventional coal-fired power stations is one of the emission-reduction policies proposed by the author.

Others include carbon pricing; energy performance standards for all buildings, appliances and equipment; a greatly expanded Mandatory Renewable Energy Target; R&D funding for promising renewable energy technologies such as solar electricity; and rejecting nuclear power.

While Diesendorf has doubts about Australia's state and federal governments – and other countries – mustering the political will to develop and implement policies based on renewables and energy efficiency measures, he is hopeful that a growing grassroots movement will achieve policy changes through collective action.

Greenhouse Solutions with Sustainable Energy concludes with a detailed list of actions people can take individually and collectively. There are also appendices presenting scientific and mathematical analyses of coal-fired vs renewable power scenarios; the economics of electricity generation; and a comparison of carbon tax vs capped emissions trading.

Diesendorf's book is an important one for a country with the highest greenhouse gas emissions per capita in the world. The arguments and assertions are accompanied by a wealth of technical information and quantitative analyses that some readers may find daunting.

However, the book can be read at a number of levels and for those interested in getting a scientific perspective on the current greenhouse emissions debate, it is an invaluable resource.

Greenhouse Solutions with Sustainable Energy
Mark Diesendorf

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Reuse locally at e-cycled.com

Cameron Andrews, Sandra Wang and Emma Rogers have launched a new 'freecycling' site called e-cycled.com 'to help tackle the problem of household goods becoming waste prematurely.'

'We were mainly concerned about items such as furniture and whitegoods that many people throw out when they still have quite a bit of use left in them,' Wang says.

When moving apartments recently, Andrews found he had a pile of furniture, in good condition but not worth selling, that needed getting rid of quickly. Much of it was not wanted by charity.

'We hope that e-cycled.com will help provide an easy-to-use alternative that will help people see old household items as reusable goods, not landfill waste,' says Andrews.

www.ecycled.com

'To tackle climate change, people need to think more seriously about reuse and recycling, rather than consumption and dumping.'

e-cycled.com follows other sites of the same motivation, such as the already popular freecycle.org.au, established by Recycling Community Australia, which are helping to reduce needless waste to landfill.

People can search or list their goods on e-cycled.com by registering and then creating a listing, with or without photos. Visitors interested in any listed items can use the links to ask questions or arrange for collections.