

chain. reaction

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The National Magazine of Friends of the Earth Australia

www.foe.org.au

fukushima one year on



Can we save the Murray-Darling?

- Occupy Texas
- Fighting Ferguson's nuclear dump
- A smart grid and seven energy sources
- How low can uranium export policy go?



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Chain Reaction website

www.foe.org.au/chain-reaction

Chain Reaction contact details

PO Box 222, Fitzroy, Victoria, 3065.
email: chainreaction@foe.org.au
phone: (03) 9419 8700

Chain Reaction team

Jim Green, Kim Stewart, Georgia Miller, Rebecca Pearse,
Richard Smith, Elena McMaster, Tessa Sellar

Layout & Design

Tessa Sellar

Printing

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Chain Reaction Advisory Board

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Front cover:

Fukushima anniversary commemoration, Melbourne,
11 March 2011. Photo by Tim Wright.

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FoE Australia News

Friends of the Earth (FoE) Australia is a federation of independent local groups.

You can join FoE by contacting your local group – see the inside back cover of Chain Reaction for contact details.

There is a monthly FoE Australia email newsletter – subscribe via the website: www.foe.org.au

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Quit Coal

Campaigners with FoE Melbourne's Quit Coal campaign collective paid a visit to the office of Martin Ferguson, federal minister for coal and uranium, earlier this year. Ferguson supports spying on green groups.

See the article on p.36 of this edition of Chain Reaction.

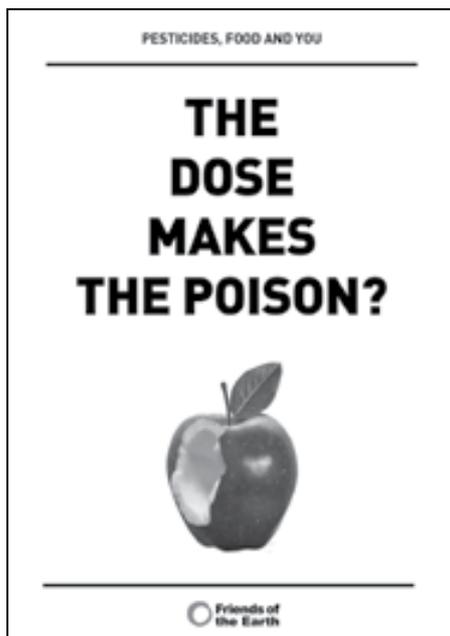
Right – Quit Coal held an action to protest against a proposed brown coal mine in Bacchus Marsh on February 6.

quitcoal.org.au

flickr.com/photos/quitcoal



Pesticides, food and you



In February, FoE published a new report called 'The Dose Makes The Poison?' The report fills in some significant knowledge gaps regarding the consumption of pesticides on food products in Australia.

Whilst compiling the research for this report it was interesting to note that there is no source of information in Australia which clearly states which foods are the most risky to eat in terms of pesticides and which pesticides are commonly ingested by consumers of non-organic food. It was also interesting to note that the only state producing information concerning pesticide residues on food was Victoria.

In terms of published residue results, the following foods have produced the most positive pesticide detections over the past decade: apples (15.2% of all detections), wheat (13.2%), strawberries (10%), pears (9.5%), grapes (6.4%), and lettuces (4.1%).

Detailed research was also carried out by FoE on recently published scientific reports concerning pesticides and health. Pesticides regularly found on Australian produce have been linked to possible problems with human endocrine function, ADHD (Attention Deficit Hyperactivity Disorder), learning and behavioural problems, lower IQ and possible increases in lymphoblastic leukemia in children.

Also of concern is that some pesticides are suspected endocrine disruptors – chemicals that interact and disrupt human and animal hormones which regulate reproduction, metabolism, developmental behaviour, immune function, stress and growth.

The report can be purchased from FoE for \$12 or downloaded for no charge from foe.org.au/pesticides-and-toxic-chemicals

Anthony Amis
anthonyamis@hotmail.com

Walking for a future

In February and March, activist June Norman was joined by a growing number of people during her 29-day walk of almost 500 kms from Kumbarilla to Gladstone in Queensland.

The purpose of the walk was to highlight the impacts of the coal seam gas industry on people, landscapes and climate and followed the route of a proposed gas pipeline to the port town of Gladstone.

Norman said: "I've seen the impacts of the mining industry and I am really concerned, where will my grandchildren source their food and what quality will their water be? This industry needs to be slowed down and managed in a more sustainable manner."

The group of walkers arrived in Gladstone the same day that UNESCO was meeting to assess the impacts that the coal and gas industries are having on the World Heritage Listed Great Barrier Reef and the surrounding Marine Park.



The walk was an initiative of Friends of the Earth and the Lock the Gate Alliance campaign.

Photos and reports:
[facebook.com/groups/walk4afuture](https://www.facebook.com/groups/walk4afuture)
[flickr.com/photos/foeaustralia](https://www.flickr.com/photos/foeaustralia)



Adele, June and Janet – Walking for a future

Anti-wind power front group's junk science

Documents released in January under a Freedom of Information (FOI) request to NSW Health cast doubt on the credentials of anti-wind farm campaigners who have been whipping up fears in communities around the country.

The Waubra Foundation, a front group created by Landscape Guardian activists, and which has become the

main organisation opposing wind energy on health grounds, spent much of 2011 lobbying state health departments around the country.

Via an FOI request, FoE uncovered a critical assessment of the Waubra Foundation's claims made to the NSW public health authority, NSW Health.

Cam Walker, Friends of the Earth campaigns co-ordinator, said:

"The documents from NSW Health cast considerable doubts over the fear-based claims of the Waubra Foundation. The assessment finds the claims of the anti-wind energy group to be of the 'lowest category of scientific evidence', and having major methodological flaws.

"Despite claims that the Foundation maintains complete independence from advocacy groups, it shares a post office box with the Landscape Guardians. The Foundation was set up by a long term anti-wind campaigner with financial interests in oil, gas, uranium and, recently, coal."

A national coalition of health groups, the Climate and Health Alliance, released a Position Statement on wind turbines and human health in January, rejecting claims that wind power poses a threat to health. The statement is posted at: www.caha.org.au/publications

Contact Cam Walker for copies of the documents received under FOI: cam.walker@foe.org.au, ph (03) 9419 8700



Protesters given the green light in Queensland

On January 20 in the Brisbane courts, a magistrate gave the green light to environmental protesters in Queensland to take action to protect the environment from coal and coal seam gas development.

"This is a great day for Queensland, and a great outcome for the environment" said Derec Davies from FoE Brisbane. "Gladstone Harbour is sick, and protest action from the community has been validated today."

On November 9 last year, Davies boarded and temporarily stopped the dredging in Gladstone Harbour, gaining national media attention and connecting dredging impacts to the Great Barrier Reef and the activities of Queensland's coal and coal seam gas industries.

At the January 20 court hearing, there was no fine, no conviction, and Gladstone Port Corporation's \$35,000 damages claim was thrown out.

"The risk to the Great Barrier Reef from 34 new coal mines and four coal seam gas ports is far too high," Davies said.



A protest against dredging in Gladstone Harbour, March 2012.

South Melbourne Commons open



Last December, more than 1000 people came to the opening celebration for FoE Australia's new community sustainability hub in South Melbourne.

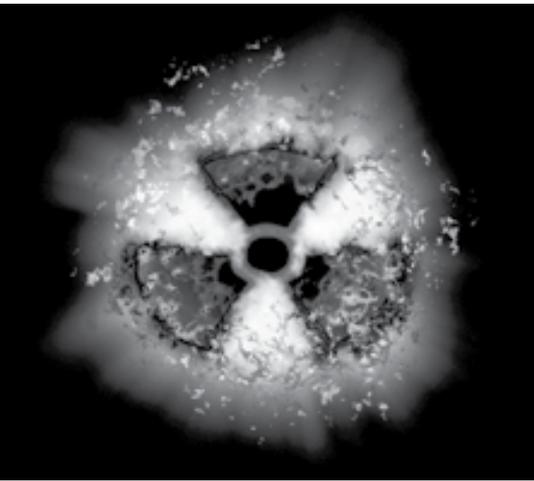
It has taken us more than four years to get the project up and running, but the Commons, a collaboration between FoE Australia and the Father Bob Maguire Foundation, is finally up and running, with an organic cafe, a FoE food co-operative, open access gardens and a beautiful hall. The Pantry at the South Melbourne Commons is a food and grocery cooperative that provides a sustainable alternative to supermarket shopping.

The Commons runs gardening and permaculture courses, sustainable living workshops, and lots of public events. If you're in Melbourne, please drop by for a look around. Check the website for details on how to get there and upcoming events.

Corner of Bank and Montague Sts, South Melbourne

Web: <http://commons.org.au>

Video: <http://vimeo.com/33435397>



Pro-nuclear jiggery-pokery exposed

FoE Australia's Anti-nuclear and Clean Energy (ACE) campaign has written a report exposing the nuclear nonsense of Adelaide University's Prof. Barry Brook, one of Australia's most vocal supporters of nuclear power.

The critique calls Prof. Brook to account for his wildly inaccurate assessment of the Fukushima disaster, and for trivialising the repeatedly-demonstrated connections between nuclear power and nuclear weapons (most recently with North Korea's use of an 'experimental power reactor' to produce plutonium for weapons).

Prof. Brook claims that nuclear waste is a trillion-dollar asset yet it is clearly a multi-billion dollar liability – nuclear power utilities around the world are keen to dump their waste in Australia or anywhere else that will take it.

Responding to Prof. Brook's claim that nuclear power is the safest energy source, Jim Green, FoE's national nuclear campaigner and author of the report, said: "Can anyone imagine Israel destroying wind turbines in Iran or Iraq, or terrorists stealing solar panels, or North Korea building secret solar water heating systems, or Pakistan's A.Q. Khan network stealing and on-selling designs for energy-efficient buildings?"

"Claiming that nuclear power is safe and clean doesn't help solve the energy/climate problem. A better way forward is to roll out renewables and energy efficiency programs and to invest in R&D to expand the capabilities and decrease the cost of renewables," Green said.

The report is posted at: foe.org.au/anti-nuclear/issues/oz

Nuclear racism

For some years FoE has been campaigning to have the Olympic Dam uranium/copper mine subject to the same regulations as apply to other mines in South Australia. Unfortunately that work hit a major hurdle late last year when the SA Labor and Liberal parties passed amendments to the 1982 Roxby Downs Indenture Act – the legislation which sets the legal framework for the operation of the mine.

The amended Act retains most of the indefensible exemptions of the original legislation. For example the mine will still not be subject to the SA Aboriginal Heritage Act. Traditional Owners were not even consulted by the government or BHP Billiton. The SA government's spokesperson in Parliament said: "BHP were satisfied with the current arrangements and insisted on the continuation of these arrangements, and the government did not consult further than that."

The amended Indenture Act also retains exemptions from environmental protection and water resource laws. SA Liberal Party industry spokesperson Martin Hamilton-Smith said "every word of the agreement favours BHP,

not South Australians" – yet the Liberal Party voted in favour of the Labor government's legislation without proposing a single amendment.

Mark Parnell, an SA Greens member of the upper house of the SA parliament, did a fine job holding the major parties to account for the disgraceful Indenture Act – but all of his amendments were rejected.

In the mid-1990s, then Olympic Dam mine owner WMC Resources used divide-and-rule tactics against Traditional Owners leading to one person being accidentally shot dead, extensive violence and several people being imprisoned. Some of the company executives responsible for that atrocity are still involved in the industry.

The Lizard's Revenge Olympic Dam expansion music/art/festival/protest will be held in July. More information is posted on Facebook – search for 'Lizards Revenge'.

More information:

Mark Parnell: <http://markparnell.org.au/campaign.php?campaign=29>

Friends of the Earth: foe.org.au/anti-nuclear/issues/oz/u/roxby



On January 12, 20 Sydney-siders and Friends of the Earth members dressed up as beach safety icon David Hasselhoff to bring their concerns about the safety of nano-sunscreens to the office of the Minister for Health, Tanya Plibersek. The action coincided with Hasselhoff's visit to Sydney to star in *Celebrity Apprentice*. Skin safety experts and community groups have long called for new safety testing and labelling of sunscreens produced using nanotechnology.

Photo by Erland Howden



FoE International News

Friends of the Earth International is a federation of autonomous organisations from all over the world. Our members, in 76 countries, campaign on the most urgent environmental and social issues, while working towards sustainable societies.

Durban climate talks 'smoke and mirrors'

The annual United Nations climate talks were held in Durban, South Africa, in December. Phil Lee from the FoE International Secretariat said:

Developed countries engaged in a smoke and mirrors trick of delivering rhetoric but no action, failed to commit to urgently needed deep emissions cuts, and even backtracked on past commitments to address the climate crisis.

The outcome of the Durban talks, heralded by some as a step forward, in fact amounts to:

No progress on fair and binding action on reducing emissions

No progress on urgently needed climate finance

Increased likelihood of further expansion of false solutions like carbon trading

The further locking in of economies based on polluting fossil fuels

The further unravelling of the legally-binding international framework to deliver climate action on the basis of science and equity.

More information: foei.org/en/what-we-do/climate-and-energy

The disastrous Durban talks inspired FoE groups worldwide to collaborate on a series of exposés of the corporate capture of UN institutions –

read more at foei.org/en/what-we-do/corporate-capture

Friends of the Earth International Online

Web: www.foei.org

Youtube channel: www.youtube.com/user/FriendsoftheEarthInt

Action alerts: www.foei.org/en/get-involved/take-action

Subscribe to 'Voices', the bimonthly email newsletter of FoE International, at: www.foei.org/en/get-involved/voices

FoE's web radio station (in five languages): www.radiomundoreal.fm

FoE International online shop

(calendars, t-shirts, greeting cards, subscriptions to FoE publications, and more): www.foei.org/en/get-involved/shop



Outside the UN climate talks in Durban.

In the REDD:

Australia's push for forest carbon offsets

Australian lobbyists used the Durban climate talks to push for decisions to establish forest carbon offsets for trade in the carbon market. FoE believes that these REDD (Reducing Emissions from Deforestation and Forest Degradation) projects are an ineffective 'solution' to tackling climate change and also take the world further away from stopping deforestation and forest degradation.

A FoE International report released in December is written by Australians Rebecca Pearse and Julia Dehm. They visited Indonesia to examine the Kalimantan Forests and Climate Partnership, the world's first large scale REDD pilot project that was set up between Australia and Indonesia.

The report finds that the REDD project is failing to deliver on promised benefits. It does not guarantee

Indigenous Peoples' rights, it conflicts with the UN Declaration on the Rights of Indigenous Peoples, it has created confusion among local groups, and it faces ongoing local opposition.

Moreover the project is failing to contribute to a reduction in greenhouse gas emissions as palm oil firms involved are illegally clearing land in nearby areas, which are supposed to be under a deforestation moratorium. Yet another problem is that projects such as the Kalimantan Forests and Climate Partnership allow Australian companies to carry on polluting while hiding behind offset credits from the REDD scheme.

The report, 'In the REDD: Australia's carbon offset project in central Kalimantan', is posted at foei.org/en/resources/publications/forests-and-biodiversity

Action alerts

To support these action alerts or find out more, visit foei.org/en/get-involved/take-action

In February, 28 Right Livelihood Award laureates wrote to the Norway Government Pension Fund asking it to **divest all its holdings in Shell** due to the severe environmental harm caused by the company's negligence in the Niger Delta, Nigeria. Please join the laureates in calling for the pension fund to act now.

The German airline Lufthansa has recently been using **biokerosene made from jatropha**, an inedible plant. The airline claims that flying on biokerosene is good for the environment despite numerous studies claiming the opposite. Its production is also damaging the lives of the Indonesian farmers growing the plant.

February 17 was the first anniversary of the **disappearance of 26-year-old Sandra Viviana Cuellar Gallego**, an environmental engineer and activist from Cali, Colombia. Please join FoE Colombia in calling on the Colombian Attorney General to report on the government's efforts to find Sandra.

Large scale **agrofuels plantations** are being promoted as a solution to the climate crisis, yet millions of people are already facing the impacts of land grabs and evictions caused by agrofuels. Tell the Ugandan government to respect the rights of its communities and its forest policy rather than promoting plantations at the expense of people and the environment.

Join FoE International and FoE South Africa in calling on Sasol, one of South Africa's largest polluters, to get out of the climate negotiations and stop promoting **false solutions to the climate crisis**.

The government of Uganda is about to give away the **Mabira forest reserve** to the Sugar Corporation of Uganda. This grant of free land will increase erosion, diminish fresh water supplies and destroy habitats for hundreds of endangered species. Please join FoE Uganda in calling on the government to halt this disastrous plan.



European banks fuelling hunger

European banks, pension funds and insurance companies are increasing global hunger and poverty by speculating on food prices and financing land grabs in poorer countries, according to a report by FoE Europe.

The report analyses the activities of 29 European banks, pension funds and insurance companies, including Deutsche Bank, Barclays, RBS, Allianz, BNP Paribas, AXA, HSBC, Generali, Allianz, Unicredit and Credit Agricole. It reveals the significant involvement of these financial institutions in food speculation, and the direct or indirect financing of land grabbing. Environmental and development organisations are calling for strict regulation to rein in these destructive activities.

The January 2012 report, 'Farming money: how European banks and private finance profit from food speculation and land grabs', is posted at foei.org/en/resources/publications/pdfs/2012/farming-money

Intimidation of FoE Guatemala

FoE International condemns the violent incidents carried out against Friends of the Earth Guatemala (CEIBA) and the National Network in Defence of Food Sovereignty, Guatemala (REDSAG). On February 25, the offices of CEIBA and REDSAG were broken into and all the computers were stolen. Money and valuable objects were not taken from the premises. This has led the organisations to believe that the crimes were politically motivated. CEIBA and REDSAG are widely recognised for their work defending Indigenous Peoples and Guatemalan communities.

Win on GM crops in Europe

Germany-based BASF is halting the development and commercialisation of genetically modified (GM) crops in Europe. "This is another nail in the coffin for genetically modified foods in Europe" said FoE Europe's Adrian Bebb.

FoE International supports Occupy movement

A FoE International statement released in late 2011 states: "We offer our solidarity and our support, and we join this [Occupy] movement wholeheartedly. To save our communities and our environment, we stand united in calling for a profound transformation of the current globalised political economic system."

FoE International chair Nnimmo Bassey said: "We are one with those who raise their voices against corporate greed and who speak out for social equity and real solutions to the crises we face. Economic policies that prioritise profit over life have led us to the brink of catastrophic climate change; continuing with the same approach will only lead to more environmental destruction and inequality. This is system failure - we demand an alternative system with environmental and economic justice at its core."

foei.org/en/what-we-do/economic-justice

Croatia: victory on golf courses

FoE Croatia has been celebrating the abolition of the unconstitutional Golf Course Act which gave a green light to investors in golf courses and discriminated against local residents and landowners.



Can we save the Murray-Darling Basin?

Jonathan La Nauze

As we stare down the twin barrels of global warming and growing global resource demands, sustainability of the Murray-Darling ought to be a national priority. Water extraction already exceeds sustainable levels in all but one of the basin's 23 rivers, and seven of its groundwater systems.

Ninety-five percent of this water is taken for irrigation. And whilst we are experiencing a brief wet period now, the CSIRO predicts run-off in the Basin could decline by up to 37% by 2030 due to climate change. Simultaneously, market analysts predict global demand for Australian agricultural product will steadily increase, whilst another grave new threat to basin water resources muscled its way in – coal seam gas mining.

Reducing use in over-allocated systems whilst preventing overreach in the remainder is an absolute necessity if the basin's rivers, communities and industries are to survive the coming crunch. Yet right now the national water reform process looks like delivering the complete opposite or just disintegrating altogether. Where once there was bipartisan determination to solve the problem, short-term politics now seems to cloud the vision of Labor and the Coalition. In this context the Australian Greens have a crucial role to play.

The following article also appears in the current edition of *Green*, the magazine of the Australian Greens. Where it implores Greens members to take action, we urge the same of Chain Reaction readers. It also makes a particular appeal to Green MPs, to show leadership where it is lacking, and salvage the Murray-Darling Basin Plan within this electoral term. With every day that passes, the next drought edges nearer, as does the longer term drying of the climate. If we go to the next election without this matter resolved, there is a very real risk we will be too late.

The decline of Australia's longest and most heavily utilised river system has been making headlines for decades. So too the succession of politically compromised – and ultimately unsuccessful – attempts to reverse it. Now Australia teeters on the edge of yet another failure with the strife-ridden Murray-Darling Basin Plan. Hope survives yet, and in 2012 the Greens have a key role to play – as both a grassroots movement and a parliamentary party – if the Plan is to set the river on a sustainable course.

Spanning four states, one territory and 14% of the Australia's landmass, the Murray-Darling Basin is as vast as it is complex. At the heart of its plight is a deceptively simple problem: we take too much water from its 23 rivers, leaving aquatic ecosystems barely able to function. Curtailed flooding limits

Floodwaters rejuvenate old growth redgums near Shepparton, Victoria.
Photo by Rahima Hays

the opportunity for fish, waterbirds and other aquatic life to breed. Constricted flows prevent the river flushing salt downstream and out to sea. At its mouth, internationally renowned wetlands have become sterile hypersaline ponds and acidifying time-bombs that threaten the water supply for several million Australians.

Successive river rescue plans have failed to grasp the nettle, due largely to the lobbying power of irrigation's elite corporate farms and the parochialism of state governments in Queensland, New South Wales and Victoria. Despite radical reforms and the expenditure of billions of public dollars, basin rivers remain mere conduits for irrigation flows. Floodplain wetlands and river channels themselves receive the scraps after irrigation entitlements are met. In many places this means years or decades between drinks.

Until now. Finally, at the height of the millennium drought, John Howard and his Water Minister Malcolm Turnbull stared down the irrigation lobby and upstream states to pass the Water Act 2007. It provides for a scientifically-determined Basin Plan that must reduce water extraction to sustainable levels. Nearly \$10 billion is now allocated to put the plan into action and help regional communities adjust. Critically, a third of that is for buying water from farmers, avoiding the need for compulsory reductions.

'The Murray-Darling Basin Authority has produced a draft Plan that manipulates science in an attempt to engineer a pre-determined political outcome.'

– The Wentworth Group of Concerned Scientists, January 2012

Whilst the Plan is taking some time to develop, water buy-backs have already made significant inroads into the reduction it will demand. About 1,000 gigalitres (GL) – a quarter of what independent scientists say is needed – has been recovered since 2009. But then in November last year, Minister Tony Burke caved in to sections of the irrigation lobby and announced a slowdown on buy-backs in the southern rivers where irrigation entitlements are most dangerously oversubscribed.

Many ecosystems will take decades to recover from the stress we put them under during the millennium drought. If the next drought arrives before enough water has been bought back, some will tip over the edge. Delaying buy-backs makes this more likely. It also makes it harder for many family owned farms, indebted due to the high Australian dollar, the supermarket duopoly and ever-sinking commodity prices, to sell their water at a reasonable price and recoup their losses. As a direct result of the Commonwealth stepping out of the water market, entitlements have reached their lowest price in a decade. Good for big agribusiness wanting to buy-up water, not so good for small irrigators wanting to consolidate or retire.

Murray-Darling Basin Plan

The buy-back announcement was followed within days by the release of a draft Basin Plan so hopelessly compromised it has drawn universal condemnation from environment



Activists from Friends of the Earth and the Wilderness Society were thwarted by high winds when we attempted to unfurl a giant 50-metre banner on the Hume Weir in December last year. The banner read 'Basin Plan Fails Rivers'.

Photo by ReRu/Mick Tsikas.

groups and the highly respected Wentworth Group of Concerned Scientists. All scientific studies to date indicate irrigation cuts of at least 4,000 GL are needed, yet the Draft Plan proposes only 2,750 GL. The Murray-Darling Basin Authority (MDBA) acknowledges this will deprive key sites of sufficient water, including internationally recognised wetlands like Chowilla in South Australia and Barmah-Millewa straddling the Victorian-New South Wales border. Salinity levels in the Coorong will still reach lethal levels during drought. Native fish and migratory waterbirds miss key breeding opportunities.

The Draft Plan flies in the face of the MDBA's previously published science that indicated cuts of up 7,600GL were required. Since then, the irrigation lobby has sharpened its knives, New South Wales and Victoria have returned to the warpath, and ex-NSW planning minister Craig Knowles has been installed as the new MDBA Chair.

To justify the about-turn, Knowles claims the earlier work didn't account for how modern "flow constraints" conspire against the delivery of larger flows: environmentally desirable, but simply not possible. This claim is mischievous and misleading. With \$10 billion and seven years before the Plan comes into force we have ample opportunity to overcome most if not all of these constraints.

In some cases the work has already started, such as with the mid-Murrumbidgee wetlands. The Draft Basin Plan deprives them of enough water to maintain wetland vegetation and native fish breeding. The MDBA's excuse is that the Mundarlo bridge near Gundagai would be washed away if the required flows were delivered. Yet the state government has already begun a feasibility study into raising the bridge to allow for bigger environmental flows.

In western New South Wales, the Australian Floodplain Association has begun helping farmers draft legal waivers to give government the confidence that environmental flows across their land won't result in a lawsuit. The risk of such lawsuits is another excuse the MDBA has given for limiting environmental flows. In their first month the Floodplain Association had a million acres of floodplain covered. Far from a 'constraint', graziers are bending over backwards to enable environmental flows because it's good for business – land productivity increases after a good flood.

Climate change and the draft Murray-Darling Basin Plan

Jamie Pittock

The Murray-Darling Basin Authority's (MDBA) draft Basin Plan does not adequately fulfil the obligation under the Water Act 2007 to deal with the risks posed by climate change to the availability of Basin water resources. To rigorously manage the anticipated impacts of climate change on water resources and ecosystems, three approaches are required.

Firstly, reductions in water allocations to account for potential losses due to climate change. CSIRO modelling suggests that between 1990 and 2030 the average surface water availability in the Basin could increase by up to 7% or decrease by as much as 24%. These impacts are magnified down the rivers, and in the worst case scenario, outflows may fall by up to 69%.

The Authority has erred in adopting the CSIRO median scenario of a 12% reduction because this is no more or less likely than other outcomes and because good risk management requires considering how to manage the consequences of less likely by more severe events.

There are three ways in which the draft Basin plan could do this:

- Increase the amount of water allocated to the environment. The MDBA say in the draft Plan that they will manage the risk of climate change by implementing their plan. In the Guide to the Basin Plan in 2010, the Authority proposed to reallocate 3% of diverted water to the environment over a 10-year period for adaptation to climate change compared to a total reallocation of 27-37%. This volume of water is not adequate to ameliorate the impacts of a climatic step change, such as that experienced in south-west WA. However the draft Plan reduced the total reallocation to 2,750 GL/year of water to the environment (25%), suggesting that any climate change consideration has effectively been eliminated.
- Ensure that the environment does not continue to suffer disproportionate cuts in years of reduced water availability. In the Guide the MDBA adopted a policy of 'equitable sharing' of water losses between the environment and consumptive users. While better than the status quo it does not fulfil the Ramsar Convention obligation to give priority to maintaining the ecological character of wetlands. Further, equitable sharing is not guaranteed in the Plan as the details on implementation are left to state government water resources plans due in 2019.
- Review the plan frequently enough to adjust water allocations to climate changes. Reviews of the Plan are proposed for 2015 and in the lead up to a second Plan from 2021 which could fulfil this ideal. However the proposal to begin implementation of the Plan from 2019 militates against timely action.

The second necessary measure to manage the impacts of climate change is the application of adaptation measures. The draft Plan only proposes to use environmental water allocations and measures to sustain wetlands. Environmental flows are an important solution but both of these measures only work with good management that has been lacking from our state governments.

Environmental flows should be complemented by a range of additional interventions that have different risks and together spread risk to reduce the likelihood of unacceptable impacts. These complementary measures include protecting remaining free-flowing rivers, replanting riverside forests, removing redundant dams, and adding fish ladders and cold water pollution control devices to dams. These measures are not considered in the draft Plan.

The third necessary measure to manage the impacts of climate change is to regulate climate change-related inflow interception activities to prevent further loss of water. The total volume of water diverted from the Basin continues to increase as poorly-regulated activities take more water. These include forestry plantations, farm dams and take from overland flows. New climate change-related energy and sequestration activities threaten to exacerbate this trend, including from carbon farming methodologies and gas production.

Under the 2004 National Water Initiative these were supposed to be identified and regulated within the water market where they have a significant impact, but only South Australia has taken action. The draft Plan merely proposes that states are to 'identify' these inflow interception activities by 2017 for incorporation in water resource plans from 2019.

In conclusion, the draft Basin Plan does not propose adequate measures to manage climate change impacts. Three major changes are recommended for the Final Plan: reallocate more water from consumptive uses to the environment; cap water consumption by unregulated users and incorporate them in the Basin's water market; and spread the risk by adopting complementary adaptation measures.

Dr Jamie Pittock works at the Crawford School of Economics and Government, Australian National University.



River Red Gum vegetation survey project

Aaron Eulenstein

Over the long weekend in late January members of the Barmah Millewa Collective of Friends of the Earth camped on Wadi Wadi country in the Nyah Vinifera River Red Gum Park on the banks of the mighty Murray River, just north of Swan Hill. The purpose of the weekend was to work in conjunction with Wadi Wadi Traditional Owners on a culturally directed vegetation survey project.

We were honoured to be hosted by Traditional Owner Cain Chaplin who provided amazing insight into Wadi Wadi culture and connection to this amazing Red Gum Park.

Providing direction on survey methodology and technique was Damien Cook, senior ecologist from Australian Ecosystems. Also participating in the project was Elaine Cook, Tiku Peters, Dave Crawford, Neil Macfarlane, Nilgun Guven, Floyd O'Dwyer, Emel O'Dwyer and Teri Young from Melbourne.

The weekend succeeded in establishing four permanent 10x10m quadrants in areas indicated as being of cultural significance to Wadi Wadi people by Cain and ecological significance by Damien. Flora was recorded from each quadrant to establish baseline data from which future surveys will build. The long-term aim of the survey is to assist Wadi Wadi in their ability to strategically contribute to management strategies concerning the Nyah Vinifera Red Gum Park within their Joint Management agreement, the framework of which is currently being negotiated.

As well as the goal of beginning vegetative records for areas of cultural significance within the park, the project also aimed to create a sense of community engagement within the park and the joint management process. I would particularly like to thank Neil Macfarlane from the Mid Murray Field Naturalists Club for coming along on Sunday to participate in the surveys and for contributing his amazing personal knowledge and experience of local flora and ecology.

The Barmah Millewa Collective actively campaigns for and supports the processes of Joint Management and this project was a clear example of what can be achieved by joint management at a local community level. We would strongly support other activities of this nature and anyone wanting to be involved in learning more about the processes of Joint Management and how to build capacity for joint management should contact the Barmah Millewa Collective at FoE Melbourne's office. We have upcoming events planned for this year including returning to the park to do follow up surveys of the established quadrants and hopefully establishing more survey quadrant points.

There is also a platypus survey project currently being developed that may provide data as to the presence or not of platypus within the park. The platypus is a totem species for the Wadi Wadi and has not been seen within the park for many years. The return of this species to the park would be of strong cultural significance for Wadi Wadi people.

As well as achieving great outcomes for the survey aims the weekend also was great fun with swimming in the Murray, sunset beers and barbeque dinners at the Wadi Wadi homestead Tyntynder.

Contact

Web: melbourne.foe.org.au/?q=bmc/news
Contact: Alyssa Vass,
Barmah Millewa Collective Coordinator,
email alyssa.vass@foe.org.au,
ph (03) 9419 8700

Occupy Texas

Robin Taubenfeld

75205 ... the zip code I grew up in turns out to have the highest percentage of people who donate to the Republican Party of any region in the US. University and Highland Park, white enclaves with their own police force and school district, surrounded on all sides by the rest of the city of Dallas.

I have been visiting Dallas regularly for almost 25 years, and yearly since the birth of my four year old daughter, to allow her to know her American family. We live in Brisbane.

In 2011, thanks to Facebook and a Qantas sale, we managed to be in Dallas for the start of Occupy Dallas. Never in my life as a Texan have felt so positive about Texas! In 2005, when Cindy Sheehan set up camp outside George W. Bush's ranch after her son died in Iraq, I felt hope. When I heard that a Peace House existed in Crawford, Texas, I felt gratitude. When I saw that Dallas was going to join the Occupy movement, I was actually excited to be going to Texas!

Texas – where suburban front yards proudly display “Welcome Home George and Laura” signs, abortion clinics get bombed, gun control is unpopular and peak oil has never even been heard of. Texas – where the creation museum is down the road from the dinosaur tracks ... and the nuclear power reactor. Texas – where the cars are bigger, the star-emblazoned freeways are loopier, the highway police are called Rangers, the border is patrolled by vigilante nationalists. I grew up with the pledge to the flag in the morning and prayers over the loud-speaker before lunch in my public school in Dallas.

So, as you can see, despite most of my family (and my oldest friend) living there and the wonderful big skies, Tex Mex food and great and diverse music, I am a bit down on the place.

Occupy Dallas

As Occupy Wall Street gained momentum, Occupy camps sprouted up all over the world. Brisbane was planning one,

as were Sydney and Melbourne. I contacted organisers in Dallas; I subscribed to the ‘chat room’ and looked for a way I could be involved. I figured that being there with a small child and really wanting to prioritise spending time with our family meant I would probably not camp.

Chat room discussion about whether it is OK to bring children to protests led me to want to focus on fun, family-friendly creative action. Chat room discussion calling Occupy Wall Street's demand for universal health care “problematic” baffled me. Of course, any movement claiming to represent 99% of the population would be full of diversity and contradiction, but at least it was happening.

The American people are doing it tough! Not by the standards of many in the world, to be sure. but by the standards that accompany the values and the system within which they live. The schools are terrible, the public transport is bad, university is out of reach for most people, health care and insurance are so expensive that people just don't have them, jobs are fewer. They may own things like cars and TVs, but the quality of life is poor. They are losing their homes and amassing huge debts, and yet some fat-cats at the top are receiving bail-outs and bonuses.

The “American Dream” is finally being exposed for what it is – an impossibility for most in a system designed to have a few at the top and a whole heap of people at the bottom. I think it is hard for Americans to articulate that capitalism – something they have been told so strongly is necessary for “democracy” – cannot bring about equality.

So a movement built up – not calling for the end of capitalism, but calling for an end to “corporate greed” and corporate involvement in government. It is a message that is much easier to digest than “we need to change the whole system”. And if it is something that resonates with people enough to bring them together, it's a start, I thought.



Occupy Dallas
photo by Robin Taubenfeld.



Robin Taubenfeld (right), Moonbeam (centre) and friend on the march to the Federal Reserve Bank office in Dallas.

The first day

My daughter Moonbeam and I brought several cartons of fruit with us to share with the marchers, a cooler-box on wheels, some trays, utensils, some first-aid kits, gloves, chalk, clown gear, costumes, sunscreen, water, and bubbles – all the things you'd expect us to take to a protest!

I spoke with organisers about cutting up and handing out the fruit we had brought. They were concerned that they had not got a permit for food handling and that this could be a problem. I suggested I could do it at my own risk. They also had no real infrastructure for moving things around, which was problematic for supplying food and drink for a mob.

So, armed with a stroller, a bag of stuff I could carry and a cooler with watermelon and a few things I could manage, we took off on the march.

Shouting 'Whose streets? Our streets', we marched to the Federal Reserve Bank office in Dallas. We walked the whole way there on the sidewalk! I thought to myself: I didn't help organise this so I should participate without too much criticism.

At one intersection where the police had stopped traffic for us, a man in a car was honking his horn while giving us the finger. I stopped and yelled at him and the police – he was disturbing the peace, we had the right to march. Another protester pushed me on from behind! Whose side are you on, buddy, I thought.

A few moments later, though, a group of protesters stopped in front of his car and the noise stopped. The 99% does not have agreed-upon tactics, but we will get there, I thought.

"El pueblo unido jamas sera vencido!" I was very surprised that despite being in Texas, where 50% of the working population in Texas is Hispanic, the march only chanted in English. I tried to lead a few rounds of "the people united will never be defeated" in Spanish, but I think that as an unknown clown, pushing a stroller down the road, I didn't have enough activist cred to get a following. Fair enough, I thought, I am not yet part of the community. I will lead a chant another day.

The rally at the Fed was noisy, colourful and fun. By the time we got there we had found the other kids and parents and had formed a kid block. We spent most of the rest of the day with them. Blowing bubbles, sharing food, drawing on

the sidewalk and dressing up, and giving out watermelon – which didn't last long. They were Hispanic, Black, White, mixed, young, idealistic, smart, caring, aware and interested in changing the world – and they were in Texas!

For me and Moonbeam, the day ended there. The kids were tired and Moonbeam slept. Later that day, a General Assembly was held, the protesters agreed to camp in John F. Kennedy Plaza and the Occupy Dallas protest camp was born. Over the next month, Moonbeam and I spent as much time at Occupy Dallas as we could.

Protest camp

A protest camp – especially a camp that claims to represent the 99% – is a microcosm of our society. Even the utopian ideals held by some could not be expected to negate the violence of the culture within which we live, the experiences of the past we carry with us, our fears and our prejudices.

There were arguments. Should we feed the homeless? Do kids have to wait until the General Assembly meeting is over to have dinner? Should we try to get a permit for the camp? How should we deal with violence and aggression in the camp? Whose way is the right way? Is pacifism co-option? Is damage to property acceptable? Is violence an inappropriate response, and so on.

There were terrible things: there was pushing, yelling, stealing, reports of adults taking advantage of minors, sexism, racism, and more.

But still the fact that people were trying to build a community to change their world was wonderful.

Workshops were held, skills shared, politics discussed, a functioning library set up, a kitchen established. And yet, the rules of engagement were constantly evolving. There were power-plays and intrigue and the camp, meetings and actions were disproportionately male and white. Despite tensions – and serious problems – there was hope and there was love.



Occuplay!

My favourite part of Occupy Dallas was Occuplay! – an initiative set up by parents to facilitate child-minding and child friendly activities. Lovely people donated toys, bubbles, costumes and a tent and a few dedicated adults ensured that things got going.

Passers-by would see the children playing and come by to see what the Occupy camp was all about. It was joyful, friendly and inclusive. On one day a woman's older daughter was sitting in a circle playing the guitar and singing with 10 or so others, while her younger daughter was running around with Moonbeam, climbing on public art and chasing bubbles.

Food and snacks magically appeared by the goodwill of the public – enormous pizzas, gigantic chocolate chip cookies with 'Occupy Dallas' written on them, fruit, water, snacks. Every day at lunch time, Hare Krishnas provided a vegetarian buffet free-for-all. At these moments, I thought "this is how life is meant to be" – caring, sharing, building community based around common dreams, goals, aspirations, creative resistance.

In the land of the free and the home of the brave, Occupy provided a rallying point for the disenfranchised – people who had lost their businesses or homes or both, the chronically homeless, the educated poor, veterans, unionists, greenies, animal libbers, socialists, anarchists and questioning!

Occupy Chase Manhattan

The most exciting day for me was the blockade of a Chase Manhattan bank in downtown Dallas. People were linking arms, chanting, making street rhythms by jumping up and down on the street vents. Briefly the stroller brigade formed part of the blockade as the children drew pictures and blew bubbles. One line of people became three and the chant changed from "Show me what democracy looks like" to "show me what revolution looks like" – and I was so proud to be in Texas!

Many were arrested that day – police officers charged the blockade and then lined Main Street. Protesters' hands and feet were tied with ziplock plastic cuffs and they were carried away – painfully. Moonbeam and I and the other

parents and little children stood across the street near the police van and yelled, chanted, sang. We shouted solidarity messages to the arrestees and derision at the cops. We were angry. It is our job to make noise and question the role of the police as tools of the state. When the police line Main Street and arrest your friends, you have first-hand experience of what "democracy looks like" in the USA.

Americans are famously patriotic. Like Australians, we are taught the history of the "founding fathers" of our nation, with little reference to the existence of the first peoples – or their genocide. In the glorified American narrative, to free our nation from the shackles of Great Britain, brave men refused to pay taxes, dressed up as Indians and threw British tea overboard ships, drafted documents that declared all men equal, and led a revolution against the motherland.

Civil disobedience, destruction of property, proclamation of civil rights and armed insurgence are the backbone of the American freedom story. The civil rights movement was able to play on the notion of Americans being equality-loving people to support its call for civil disobedience. Today, however, civil disobedience is deemed Un-American – or Un-Australian. Demanding civil rights is radical, destruction of property is terrorism and armed insurgence is unthinkable!

In one fell swoop, Americans were attempting to live in communities that reflected the change they wished to see in our society – or part of it – to transform the way we operate. Attempts at democratic and local decision-making and consensus were made – meetings were long and numerous. At the same time, anger and disillusion were driving the "rebel" spirit to take action, to resist dominant society and reclaim our culture.

So Occupy camps and the movement provided the opportunity for both activist training and social experiment. Our activist lore is full of famous words such as "There is no road to peace, peace is the road", "Be the change!" and "By any means necessary!" The struggle lies in finding the balance between gentle action to build community and potentially confronting action to bring about change.

Robin Taubenfeld is a member of Friends of the Earth, Brisbane.

All Occupy Dallas photos by Robin Taubenfeld.



Occupy Mum at Occupy Sydney



Contact

The Occupy Sydney website is
www.occupysydney.org.au

Bern Ellis

My involvement with Occupy Sydney has been one of support. As a single parent with two children and a part-time worker, I always knew my involvement would be limited. Even so, I have been able to attend planning meetings, work-group meetings and general assemblies.

I have facilitated general assemblies and written minutes. I have been a tent monster, learned yoga, practiced meditation, created signs and pamphlets. I use social media and made two Tumblr sites (messagesofsupport.tumblr.com and signsforchange.tumblr.com). I have attended Free School and ran my own meetings and workshops.

Before Occupy I was an isolated single parent and part-time student / worker. I never went out or did anything unless it was for my children. I didn't like the way I was excluded from the decisions that governments made, but I didn't know what I could do about it. I followed Occupy Wall Street online and I learnt in a short amount of time the details of the broken economic, ecological and sociological systems that control us. And when Occupy Wall Street put a global call out for worldwide Occupy movements I knew that this was the action I wanted to be involved in, this was the change I wanted to see in the world.

After Occupy I have learnt so much about myself. I have connected to my self-empowerment and leadership skills. I have talked to and had conversations with more people than at any time in my life before. I have learnt that people all want the same things, and as I learn more about direct democracy and consensus I also learn that we can be inclusive with respect and consideration for each other.

The biggest shock to my system was the fact that our police officers are ordered to harass, bully and intimidate protesters. I didn't want to believe that police officers would abuse their position of authority like that. Maybe it was just isolated incidents that I saw in YouTube video footage. But my involvement with Occupy Sydney has shown me direct and undeniable evidence that police will execute their powers without human rights, or duty of care or even lawful action in mind.

I witnessed this myself when four to six officers watched me (one person) practice meditation for 20 minutes three times a day. Often they would approach me and attempt to interrupt my meditations. This was in November 2011.

What's more worrying is that our councillor's and politicians all stand by and allow this police behaviour to continue. Even now police are constantly raiding the Occupy site, stealing political signs, personal items, cardboard desks and milk crates. The only thing that has been a relief in this onslaught is the support of Magistrates to overturn the political bail conditions on Occupiers. I look forward to more supportive outcomes in our courts.

I want to see Occupy become a community hub in every town and city. I want garden-to-kitchen shared food. I want libraries of books, people, items and skills. I want common areas for free school, working groups and conversations that are inclusive to resolve local human needs.

I want our public governance to be accountable, transparent and sustainable. I want all people to be empowered leaders that are informed and active participants in our communities. I am willing to dedicate myself to the changes that support communities to practice consensus and direct democracy. I am willing to action the change I want to see in this world, are you?



Occupy Brisbane



Occupy Brisbane.

Photo by Robin Taubenfeld.

Kathy Newnam

The Occupy movement has created a new space for empowerment and grassroots participation. In Brisbane, the movement held an occupation for seven weeks in public spaces. The highlight was the 19 days in the city's Post Office Square.

During that time, the occupation created a strong sense of community – establishing the Free University of Occupied Brisbane; Occupylay; the People's Library; a kitchen providing food for the occupation and anyone who dropped in; various arts and cultural events and many new friendships and strong bonds of solidarity.

Most of all, the occupation created a vision and lived experience of a new kind of democracy. The decisions and work of the occupation were made through the General Assemblies which were held every day for seven weeks.

Just as in other cities throughout the world, the authorities in Brisbane made a conscious decision to try to crush the movement. The Brisbane City Council ordered the occupation to be dismantled and have since taken a 'zero tolerance' approach – scouring their books for any by-laws they could use to silence the movement. Since the eviction from Post Office square, the fines received by the movement total \$7200 – for camping, playing instruments and even a \$500 fine for holding an information table.

While the level of repression here pales in comparison to that being experienced in other parts of the world, the reasons are the same. The establishment, the 1% and their puppet governments, fear nothing more than people breaking down the alienation and divisions that keep us separated and fighting one another. They fear nothing more than the oppressed finding their own ways to organise and work together. The participatory democracy that is central to the Occupy movement breaks down the sense of disempowerment that results from the lack of democracy and intense alienation enforced upon us by the current economic system and the culture of individualism and consumerism.

The Occupation in Brisbane, as elsewhere, was not without its problems. There were many issues – challenges to the democratic process, the problems of breaking down the ingrained tendency toward individualism and the many problems posed by the realities of discrimination, oppression and violence that replicated themselves within the movement itself.

Despite this, or perhaps because of it, all who participated in the occupation and the broader movement learnt a great deal through the collective discussions, debates and the experience of trying to create a new way of organising. From those who had not participated in any protest action before to the most seasoned activists, everyone has learnt more about how to work together and solve problems collectively. This is perhaps the most important lesson from the first stage of the Occupy movement – our strength is in our collectivity.

Those who benefit from the way society is currently structured, the 1%, have immense political and economic power. Our collective organisation is our strength, and participatory democracy makes the most of that strength by striving to give equal space to the many different voices and experiences within the movement and by the process of collective self-empowerment.

The collective experience gained through building a movement together is laying the groundwork for the future: the future of this movement and the future of society. It is not easy – but how could we expect it to be any different? There is so much at stake and there is great resistance to the sort of change that this movement is inspiring.

Kathy Newnam is a local grassroots feminist organiser and coordinator of the People's Kitchen at Occupy Brisbane.

Fighting Ferguson's Dump

Natalie Wasley

In February 2010, Resources Minister Martin Ferguson introduced the National Radioactive Waste Management Bill into the House of Representatives, saying it represented "a responsible and long overdue approach for an issue that impacts on all Australian communities".

The legislation names Muckaty, 120 kilometres north of Tennant Creek in the Northern Territory, as the only site to remain under active consideration for a national nuclear waste dump.

The proposal is highly contested by the NT Government and is also being challenged in the Federal Court by Traditional Owners. Despite this, the Bill passed a Senate vote on March 13 with only the Greens and Independent Nick Xenophon opposing it.

Ferguson's legislation repeals three Department of Defence site nominations made by the Howard government – Harts Range, Mt Everard and Fisher's Ridge – but preserves the highly contested Muckaty nomination.

Mitch, a spokesperson for Harts Range and Mt Everard said "It is almost seven years since the NT dump plan was announced. We are happy that Harts Range is now off the list but we support the Muckaty people to say no. This proposal is based on politics not science. This is a very sad day."

Traditional Owners are angry that they continue to be sidelined. Muckaty Traditional Owner Penny Phillips, from the Wirntiku group, "The government should wait for the court case before passing this law. Traditional Owners say no to the waste dump. We have been fighting against this for

years and we will keep fighting. We don't want it in Muckaty or anywhere in the NT."

Greens Senator Scott Ludlam called for the vote on the proposed law to be delayed, saying "It is either a complete waste of the parliament's time to be debating a bill that targets a site which, if the applicants to the Federal Court action are successful, will be taken permanently off the table or it may prejudice or get in the way of that action itself."

Ferguson's law is a crude cut and paste of the Howard government's Commonwealth Radioactive Waste Management Act that it purports to replace. It limits the application of federal environmental protection legislation and it curtails appeal rights. The draft legislation overrides the Aboriginal Heritage Protection Act and it sidesteps the Aboriginal Land Rights Act. It allows for the imposition of a dump on Aboriginal land with no consultation with or consent from Traditional Owners. In fact, the Minister can now override any state or territory law that gets in the way of the dump plan.

Before it won government, Labor promised to address radioactive waste management issues in a manner that would "ensure full community consultation in radioactive waste decision-making processes", and to adopt a "consensual process of site selection". Yet despite many invitations, Martin Ferguson refuses to meet with Traditional Owners opposed the dump.

Traditional Owners have now written to the Governor General asking her to meet with them before considering whether to give Royal Assent to the law.

Martin Ferguson's office in Melbourne.





Muckaty Traditional Owners at a protest in Tennant Creek, April 2010.

Bribery

Nigel Scullion, Country Liberal Senator for the NT, was originally opposed to the dump being foisted on the NT. He has now changed his mind after securing a deal with the Gillard Government for funding for NT medical services.

Scullion's deal would see an initial injection of \$10 million by the Commonwealth — with states and the ACT then paying the NT to store waste produced in their jurisdictions. However, Scullion admits this sweetener was not needed for the Coalition to support Ferguson's Bill, telling ABC News last week "We were supporting this in any event".

Penny Phillips asked in response "Who is Nigel Scullion to sell our land out from under us for \$10 million dollars? He's never even been out to Muckaty to see the land he's trying to sell. That's our land and we say no to the waste dump."

NT Chief Minister Paul Henderson has called the deal "offensive". Gerry McCarthy, member for the Barkly region where Muckaty is located, called it "bribery", adding: "This debate is far too important for a short term fix with a cheap approach to try and pay somebody off to get a storage facility established quickly."

Toxic trade-off

A toxic trade-off of basic services for a nuclear waste dump has been part of this story from the start. The Muckaty nomination was originally made with the promise of \$12 million compensation for a small group identified by the Northern Land Council as the exclusive Traditional Owners. The Traditional Owner who was the main proponent of the dump passed away in late 2011. At a Senate Inquiry she gave the following evidence: "As you have probably heard, the government do not have money for out-stations anymore ... So we made a decision about this waste problem to get money to build up our outstations, to get money to go back to our land and have schooling, have employment, have health out on the land itself."

Both the NT and Commonwealth governments have systematically stripped back resources for small remote Indigenous communities, placing increased pressure on them to accept long-term and high impact projects like the waste dump.

While Ferguson's legislation passed the Senate with government and Coalition support, there is a broad and growing alliance that will challenge the proposal every step of the way.

After a trade union delegation visited Tennant Creek last August, Peter Simpson, from the Electrical Trades Union's Queensland Branch, told the local newspaper the unionists had agreed to do everything they could to stop the nuclear dump from proceeding. A growing number of councils along the transport corridor have also voiced their opposition.

Traditional Owner Pamela Brown from the Milwayi group told New Matilda, "We want the government to come down and see us and we can show them all the sites, we want Martin Ferguson and the others to come out to Muckaty.

We want them to come out and see — people will do ceremony, our way, to prove who really owns Muckaty. That's our way, not whitefella way, if we are talking about land".

Protest actions will continue in Tennant Creek across the Territory and a photo exhibition of the community titled "Manuwangu, Under the Nuclear Cloud" has begun a national tour.

The campaign against the Muckaty dump continues to call for a comprehensive and independent inquiry into the full range of radioactive waste management options in Australia.

In the meantime, there is a simple solution: leave the waste where it is produced at the Lucas Heights nuclear research centre, run by the Australian Nuclear Science and Technology Organisation, which is south of Sydney. That is where the waste is produced, and that is where Australia's nuclear expertise is concentrated.

As Dr Ron Cameron from ANSTO said: "ANSTO is capable of handling and storing wastes for long periods of time. There is no difficulty with that." Similar views have been expressed by the Commonwealth nuclear regulator, ARPANSA, by the Australian Nuclear Association and even by Martin Ferguson's own department.

Natalie Wasley is the coordinator of the Beyond Nuclear Initiative. www.beyondnuclearinitiative.com

Central Land Council reponse to dump law

The Central Land Council (CLC) expressed "profound disappointment" that the Senate passed the National Radioactive Waste Management Bill on March 13, describing the legislation as "fundamentally flawed".

CLC Director David Ross said: "This legislation retains many of the provisions that are in the old Act (Commonwealth Radioactive Waste Management Act 2005). It seeks to find a politically expedient solution, shows contempt for state and Territory laws, and a disregard for decision making processes enshrined in the Land Rights Act.

"This legislation is shameful, it subverts processes under the Land Rights Act and is clearly designed to reach the outcome of a dump being located on Aboriginal land in the Northern Territory, whether that's the best place for it or not.

"The passage of this legislation will further inflame the tensions and divisions amongst families in Tennant Creek, and cause great stress to many people in that region. The Minister should have acknowledged some time ago that the Muckaty nomination is highly contested, and he should have insisted on a thorough and proper consultation process as set out in the Land Rights Act."

Global Conference for a Nuclear Power Free World



Thousands attended an anti-nuclear protest in Yokohama, January 2011.

Cat Beaton and Peter Watts

Peter Watts is an Arabunna man and co-chair of the Australian Nuclear Free Alliance (ANFA). Cat Beaton is Nuclear Free NT campaigner at the Environment Centre of the NT and an ANFA national committee member. In January, they went to Japan to attend the Global Conference for a Nuclear Power Free World. More than 6000 people attended the conference including 100 international participants from over 30 countries.

As Australians visiting Japan in 2012 we were taken to a fork in the road regarding the future of nuclear power. Prior to March 2011, Japan had 54 nuclear reactors. Hardly any are now in operation – most were closed for safety tests after the March 2011 disaster and most are still facing local community campaigns to keep them closed. The lights are still on and millions are questioning whether or not reactors are the future of Japan.

Many people we met in Japan were confused about the long-term impacts from the Fukushima disaster and the risks of exposure to radiation. People were saying there was not enough information from the government. Independent environmental contamination monitors like SAFECAST were swarming with volunteers and requests for Geiger counters. Japan's science ministry admitted that the US military was provided information about radioactive fallout from Fukushima more than a week before the Japanese public was informed. This was the latest in a string of similar revelations.

Australia is also at a fork in the road. We stare down the barrel of an unprecedented expansion of uranium mining. Business giants want to triple uranium exports to countries like Japan. There are plans to expand BHP Billiton's Olympic

Dam copper and uranium mine in South Australia and ERA's Ranger uranium mine in NT. Both mine expansions raise important local issues about the creation and long-term management of mountains of radioactive tailings waste, water use, contamination, risks to workers, and increased transport dangers.

Given the unique and dangerous nature of uranium, the industry will never be easy to manage, it will never be cheap to regulate and development will always be meet opposition. Uranium mining is not just an "emotional" issue; it presents serious risks like no other industry. What we are seeing in Japan today is that the fruits of our exports are rotting. The tsunami that led to the meltdown at the Fukushima Daiichi power plant will be forever etched in the minds of many. It was a moment in time comprehensively covered by just about every TV station and media outlet in the world. And just as well, as this was the way that many in the Fukushima Prefecture found out what was happening.

As the disaster unfolded, a 20 km exclusion zone was established. Over 100,000 people were evacuated from their homes and many are now in temporary accommodation with no plan or direction for the future. Many thousands more live in an area on alert with bags packed and ready to move if the situation at Daiichi worsens.

However, with some radiation readings that are higher outside the exclusion zone and little to no information or direction from the government, the decision to stay or go for those living in the Fukushima prefecture is an agonising one. Along our travels through Japan we met many people who said that they had left the area for fear of radiation. Radiation

levels have been detected in the breast milk of mothers and the urine of children. These facts are alarming, and if we were to experience this in Australia we would be up in arms to eliminate the cause, and ensure it never happened again.

We feel great sorrow that Australian uranium was present in all the stricken reactors at Fukushima. As Australians in Japan, it made us feel ashamed and embarrassed. Why aren't we doing anything to help? And why did it take us seven months to find out that our uranium was in use at Fukushima? The Australian Safeguards and Non-Proliferation Office belatedly acknowledged in October: "We can confirm that Australian obligated nuclear material was at the Fukushima Daiichi site ..." Meeting with people from Fukushima was confronting and humbling. It was very hard to look people straight in the eye and hear personal accounts from those in the Fukushima district and in temporary accommodation.

A farmer in Fukushima had to slaughter his herd of cattle as the level of contamination in milk and meat was simply too high to sell. People are buying food from western Japan to avoid eating contaminated food. Farmers are going broke without government assistance as food from the Fukushima prefecture remains on the shelves in supermarkets in Tokyo and beyond. There is a story of a farmer who committed suicide shortly after the March 11 disaster because he had spent years perfecting the quality of his soil, only to learn that the contamination of his land was too high for him to continue farming.

The organisation of mothers, teachers and everyday people was extraordinary. People who had never had concerns about nuclear power and radiation risks are now meeting for study sessions to educate themselves around the risks and probable outcomes that they can expect. Children from Fukushima are facing discrimination in the communities they have evacuated to, treated as if radiation was contagious.

The power generated from the plants in Fukushima was all for export to the bigger cities, particularly Tokyo. The local people feel they have been abandoned, after serving the nation by hosting the power plants. People are angry, active and want answers. There have been calls for corporations who continue to profit from nuclear power to contribute to the enormous costs faced by communities as they manage decontamination, dislocation and loss of livelihood due to the compounded disasters.

We strongly believe that uranium mining companies should also recognise a responsibility to compensate the people of Fukushima. It is sad that the uranium mining companies operating in Australia have turned a blind eye to alarming revelations of safety breaches and safety data falsification in Japan over the past decade. Seeing the devastation from Fukushima made us think about the best way we could provide aid to a country in need. It would be good for Australia to assist with nuclear expertise, monitoring equipment, offers of accommodation or funding. But the best way we can help the people of Japan is by turning off the tap on our uranium mining industry to ensure that we do not fuel further tragedies.

More Information

More information about the Global Conference for a Nuclear Power Free World is posted at www.npfree.jp/english.html

Interviews from Cat and Peter's trip to Japan, and Peter's address to the conference, are posted on Youtube - search for **darwinlarrakin**

See the Facebook page '**Nuclear Trail - Australia to Japan**': [facebook.com/pages/Nuclear-trail-Australia-to-Japan/358198994197109](https://www.facebook.com/pages/Nuclear-trail-Australia-to-Japan/358198994197109)



Stupid Government,
TEPCO did this.
It made our Japan
a junkyard
for Poisonous wastes

Anti-nuclear protest in Yokohama, January 2011.

Fukushima - one year on



Fukushima anniversary commemoration, Melbourne.
Photo by Tim Wright.



Akiko from Fukushima, Toki (a Hiroshima survivor), and Ako at the Fukushima anniversary commemoration in Perth, March 11.



Fukushima anniversary commemoration, Melbourne.
Photo by Tim Wright.

Below: Too little, too late. International Atomic Energy Agency staff at Fukushima.





Damage from the March 11 tsunami.



A man from Fukushima holds his daughter at a 60,000 strong anti-nuclear protest in Tokyo in late 2011.



In Fukuoka Prefecture, more than 15,000 people took part in a rally in November calling on the government to decommission all nuclear power plants throughout Japan.



Demonstrators march near the headquarters of TEPCO in Tokyo, Aug 2011.

Below: Fukushima anniversary commemoration, Melbourne.
Photo by Nori Koizumi



Australia's role in the Fukushima disaster

Jim Green

Sunday March 11 was the first anniversary of the Tohoku earthquake and tsunami in north-east Japan and the meltdowns, explosions and fires at the Fukushima nuclear plant.

The impacts of the nuclear disaster have been horrendous. Over 100,000 people are still homeless and some will never be able to return. Homeless, jobless, separated from friends and family, the toll on people's health and mental well-being has been significant – one indication being a sharp increase in suicide rates. One farmer's suicide note simply read: "I wish there wasn't a nuclear plant."

Preliminary scientific estimates of the long-term cancer death toll range from some hundreds to "around 1000". The death toll could rise significantly if many people resettle in contaminated areas. Contamination with long-lived radionuclides will persist for many generations – caesium-137 will be a concern for around 300 years.

Direct and indirect economic costs of the disaster will amount to several hundred billions dollars. It will be decades before the ruined reactors are decommissioned. Decades before the legal battles have concluded.

Come in, spinner

The Fukushima anniversary was accompanied by extraordinary spin from the nuclear industry and its supporters. They claim that no-one will die from radiation exposure from the Fukushima disaster. That could only be true if low-level radiation exposure is risk-free – a proposition rejected by expert bodies such as the UN Scientific Committee on the Effects of Atomic Radiation and the US Committee on the Biological Effects of Ionising Radiation.

The nuclear lobby generally accepts that there have been horrendous impacts from the evacuation of over 100,000 people (in addition to the large number of evacuees whose homes were destroyed by the earthquake and tsunami). They spin this issue by saying that evacuees should be allowed to return to their homes.

Sometimes government agencies are blamed for maintaining the 20 km evacuation zone. Sometimes environment groups are blamed – apparently the cruel, exploitative 'radiophobia' of green groups leads to governments setting unnecessarily cautious radiation protection standards. That argument is a stretch at the best of times, and completely ludicrous in Japan where nuclear 'regulation' has been marked by corruption, collusion, conflicts of interest, and complete indifference to the views and concerns of environment groups or the public at large.

If anything the Japanese government has been rather too keen for evacuees to return to their homes. The 'permissible'

radiation dose has been raised from 1 millisievert per year to 20 mSv. To give a sense of the hazard involved, if 50,000 people are exposed to 20 mSv/year for five years, about 250 fatal cancers would result. For any individual receiving that radiation dose over five years, the risk of fatal cancer is about one in 200.

Evacuees

Evacuees want the option of returning to contaminated areas if they so choose or moving elsewhere if they choose. They want financial support to help them through the current period and to resettle in their old homes or to find new ones. They want to see a decent clean-up of contaminated areas to reduce future radiation exposure. And they want those responsible for the disaster to be held to account.

Environment groups and other NGOs have been supporting evacuees in their many battles to achieve the above outcomes. NGOs have been active in the clean-up operations. They have actively fundraised to support disaster relief efforts. NGOs such as the Tokyo-based Citizens Nuclear Information Centre (cnic.jp/english) have played a vital role in providing expert information in circumstances where, for good reasons, no-one trusts the government or Fukushima plant operator TEPCO or the so-called nuclear regulator.

The nuclear lobby is right that many Japanese are suffering from anxiety as a result of the Fukushima disaster. But that's not a result of NGO 'radiophobia' – it is an understandable reaction to the circumstances people face. It's difficult to know whether food or milk is contaminated. The radioactive fallout from the Fukushima disaster has been highly uneven – even within a small area the radiation readings can vary by orders of magnitude. Compensation has been too little, too late. The clean-up has been slow and contentious.

All that human misery as a result of an easily preventable disaster.

Whereas the earthquake and tsunami of March 2011 were natural disasters, Fukushima was a man-made disaster. TEPCO failed to adequately prepare for and protect against earthquakes and tsunamis. The Japanese government's Investigation Committee is blunt about the company's culpability: "The nuclear disaster prevention program had serious shortfalls. It cannot be excused that the nuclear accidents could not be managed because of an extraordinary situation that the tsunamis exceeded the assumption."

TEPCO's greatest failure was that it did not properly protect back-up power generators from flooding. Without back-up generators to maintain reactor cooling, it was only a matter of time before the situation spiralled out of control as it so dramatically did with a succession of meltdowns, fires and explosions in the days after March 11.



Fukushima anniversary commemoration in Melbourne, March 11.

Photo by Tim Wright.

Australia's role

There is no dispute that Australian uranium was used in the Fukushima reactors. The mining companies won't acknowledge that fact – instead they hide behind bogus claims of 'commercial confidentiality' and 'security'. But the truth is out. The Australian Safeguards and Non-Proliferation Office acknowledged in October that: "We can confirm that Australian obligated nuclear material was at the Fukushima Daiichi site and in each of the reactors – maybe five out of six, or it could have been all of them".

It is likely that TEPCO has been supplied with uranium from BHP Billiton's Olympic Dam mine, ERA's Ranger mine, and Heathgate's Beverley mine.

Yuki Tanaka from the Hiroshima Peace Institute noted: "Japan is not the sole nation responsible for the current nuclear disaster. From the manufacture of the reactors by GE to provision of uranium by Canada, Australia and others, many nations are implicated."

Mirarr senior Traditional Owner Yvonne Margarula said she is "deeply saddened" that uranium from the Ranger uranium mine in the Northern Territory has been exported to Japanese nuclear power companies including TEPCO.

No such humility from the uranium companies. They get tetchy at any suggestion of culpability, with the Australian Uranium Association describing it as "opportunism in the midst of human tragedy" and "utter nonsense".

Moreover, the Association said: "The Australian uranium industry has led the global nuclear industry's efforts to create a framework of stewardship for the safe and responsible management of uranium throughout the nuclear fuel cycle."

Led the effort to create a framework of stewardship for meaningless rhetoric, more like it. Here's an example of the sort of gibberish they come up with: "When the principle is actively applied, Stewardship becomes a driver for innovation in the ways we view our businesses and operate them. ... Leading companies will see Stewardship not as a compliance issue but as a means to shape their future operational processes, products, services and relationships."

To translate: uranium 'stewardship' means flogging off uranium, counting the money, flogging off more uranium, counting more money.

Scandals and accidents

Australia's uranium industry did nothing as TEPCO lurched from scandal to scandal and accident to accident over the past decade. It did nothing in 2002 when it was revealed that TEPCO had systematically and routinely falsified safety data and breached safety regulations for 25 years or more. The industry did nothing in 2007 when over 300 incidents

of 'malpractice' at Japan's nuclear plants were revealed (104 of them at nuclear power plants). It did nothing even as the ability of Japan's nuclear plants to withstand earthquakes and tsunamis came under growing criticism from industry insiders and independent experts. It did nothing about the multiple conflicts of interest plaguing the Japanese nuclear 'regulator'.

Australia could have played a role in breaking the vicious cycle of mismanagement in Japan's nuclear industry by making uranium exports conditional on improved management of nuclear plants and tighter regulation. Even a strong public statement of concern would have been heard by the Japanese utilities (unless it was understood to be rhetoric for public consumption) and it would have registered in the Japanese media.

But the uranium industry did nothing. And since the industry is in denial about its role in fuelling the Fukushima disaster, there is no reason to believe that it will behave more responsibly in future.

Successive Australian governments have done nothing about the unacceptable standards in Japan's nuclear industry. And since Prime Minister Gillard said the Fukushima disaster "doesn't have any impact on my thinking about uranium exports", there is no reason to believe that the government will behave more responsibly in future.

The Australian Uranium Association issued a media release on March 8 titled: "Nuclear industry takes Fukushima opportunity to demonstrate transparency and responsibility".

In fact the industry has lacked transparency – refusing even to acknowledge whether it supplied uranium to TEPCO. Nor has the industry been responsible – it has brought shame to all Australians by turning a blind eye to serious problems in customer countries and responding with mock indignation when anyone calls its bluff.

Jim Green is the national nuclear campaigner with Friends of the Earth, Australia and author of a detailed briefing paper on the events leading up to the Fukushima disaster. www.foe.org.au/anti-nuclear

Who - or what - is to blame for the Fukushima nuclear disaster?



Protest in Tokyo.

This is an excerpt from a March 2012 briefing paper by Friends of the Earth, 'Japan's nuclear scandals and the Fukushima disaster', online at foe.org.au/anti-nuclear/issues/nfc/power/japan

Was TEPCO – operator of the Fukushima Dai-ichi nuclear plant in Japan – responsible for the nuclear disaster which began on March 11 last year? Or was the disaster the result of unfortunate but unavoidable natural disasters which could not be anticipated – an 'Act of God'?

Many nuclear advocates want to absolve TEPCO from responsibility for the March 2011. However there is an abundance of evidence that TEPCO did not adequately protect the Fukushima plant against earthquake and tsunami risks. In particular, the failure to adequately protect back-up power generators was a direct cause of the nuclear disaster that began unfolding shortly after the other two disasters on March 11 – the earthquake and the tsunami.

The greatest problem was the location of most of the water-cooled generators in the basement of a poorly-protected turbine building. Fukushima Dai-ichi was equipped with 13 emergency diesel generators, one of which was out of service for maintenance on March 11. TEPCO had three air-cooled backup generators located 10–13 metres above sea level. In addition there were the 10 water-cooled generators.

After the March 11 earthquake and tsunami, only one of the air-cooled generators, which sat 13 metres above sea level, was still functional after the tsunami (it helped protect reactors #5 and #6). The other two air-cooled generators were rendered useless by the tsunami despite being 10 metres above sea level. All 10 of the plant's water-cooled generators were inundated by the tsunami.

Without back-up generators, it was only a matter of time before the situation spiralled out of control as it so dramatically did with a succession of meltdowns, fires and explosions in the days after March 11.

Experts speak with one voice: this was a man-made disaster not an Act of God. The Investigation Committee established by the Japanese government last year said: "TEPCO did not implement measures against tsunami as part of its Accident Management strategy. Its preparedness for such accident as severe damage at the core of reactor as a result of natural disasters was quite insufficient."

A June 2011 report by the International Atomic Energy Agency found that there were "insufficient defense-in-depth provisions" for tsunami hazards at Fukushima and that "severe accident management provisions were not adequate to cope with multiple plant failures."

TEPCO lacked "common sense" and "absolutely should have known better," said Dr Costas Synolakis, a US engineering professor with expertise in tsunami modelling.

Former TEPCO executive Masatoshi Toyota said: "Backup power generators are critical safety equipment, and it should've been a no-brainer to put them inside the reactor buildings. It's a huge disappointment that nobody at TEPCO – including me – was sensitive enough to notice and do something about this discrepancy."

Another former TEPCO executive said: "We took it for granted that the quake-resistant design of our Fukushima and other nuclear plants was fail-safe. But I now doubt how serious we were about preparing for a severe disaster. If only we'd put the backup generators on even higher ground away from the reactors, the Nos. 1 to 4 reactors might not have been damaged."

Former TEPCO engineer Toshio Kimura said: "I asked my boss back in the late '90s what would happen if a tsunami hit the Fukushima reactors. I said surely a meltdown will happen. He said 'Kimura, you are right'. But it was made clear that the issue of a big tsunami was taboo. ... If they'd moved the emergency diesel generators to a position above the expected tsunami level it would have cost the company a lot. So nobody proposed it. ... A few years later I quit the company because of its culture of cover-ups."

Another TEPCO engineer said that when he was preparing for a government inspection in 1987, the inconsistent placement of the generators "stood out like a sore thumb."

For many years, TEPCO either denied the possibility of an earthquake and tsunami of March 11 proportions or argued that such events were so improbable that they could be ignored. In 2001, TEPCO submitted a document on tsunami preparedness to the Nuclear Safety Agency – a one-page document.

Food irradiation push faces court challenge

Robin Taubenfeld

In the 1980s, an international consumer campaign played a vital role in raising awareness about food irradiation. Worldwide, workers, environmentalists and consumers joined together to make wide-scale food irradiation an unpalatable business prospect. The nuclear industry seemed to back off. In Australia, a ten-year moratorium was placed on food irradiation in 1998. Irradiation virtually disappeared from the public eye.

In actual fact, the irradiation industry continued to expand, irradiating non-food products – such as packaging, bee hives, herbs, pharmaceuticals, medical products, pet food, therapeutic goods, wine corks, cosmetics, cereals and grains fed to meat animals. When the moratorium on food irradiation in Australia was lifted, the nuclear irradiation industry was already well entrenched.

Australia now has three nuclear irradiation plants – located on the outskirts of Melbourne, Sydney and Brisbane. Despite ongoing opposition, herbs, spices, herbal infusions and nine tropical fruits – including mangoes, paw paws, lychees and custard apples – have been approved for irradiation.

A further application by the Queensland Government for the irradiation of persimmons is pending the outcome of a federal court challenge. A further 18 approvals for the irradiation of tropical fruits and vegetables are on the cards. Irradiation is also being promoted by Food Standards Australia NZ (FSANZ) as the preferred alternative to the highly toxic pesticides Dimethoate and Fenthion which must soon be phased out as the post-harvest treatment for tropical fruit fly.

Irradiation is the process of exposing food or other products to ionising radiation, generally to extend shelf-life, for bacterial decontamination or for insect control. In Australia, gamma radiation from cobalt-60 produced in Canadian nuclear power reactors is used. Like other faces of the nuclear industry, the irradiation industry and approval process is fraught with scandal, dirty tactics and spin.

In 2008/09, up to 100 Australian cats developed neurological disorders linked to their consumption of irradiated cat food. Irradiated cat food is now banned in Australia. But since then, Australian governments have amended trade rules to support the interstate movement of irradiated foods.

In 2010, the Queensland Department of Primary Industries lodged an application for the irradiation of persimmons, claiming irradiation was the only cost-effective treatment for fruit fly disinfestation to enhance the persimmon export trade. The Department's claims were flawed and FSANZ's processing of the application was also highly irregular.

There are numerous alternatives to irradiation for fruit fly management, including both chemical and non-chemical treatments and, to date, none of Australia's trading partners require persimmons to be irradiated. Furthermore, the consumption of irradiated foods has not been proven safe. There are no long-term scientific studies of the impacts of an irradiated diet on human health. Given the recent Australian experience with cats, the precautionary principle should apply.

Without due notice to the public, as the Food Act requires, FSANZ included a general review and extensive amendment of Food Standard 1.5.3 Irradiation in the Queensland application, especially on the labelling of irradiated food and irradiation record-keeping. The public was neither clearly notified of the additional content, nor was the working title of the application changed to reflect the additions. The proposed changes were not even included in the published Risk Assessment. Despite this lack of transparency, the Food Standards Ministerial Council approved the application.

Concerned about the lack of due process, Gene Ethics and the Australian Safe Food Institute challenged the application in the Federal Court. The matter was heard in November 2011 and the court has yet to hand down its ruling. Meanwhile, there is an injunction on the irradiation of persimmons and the proposed general amendments to the standard.

No matter what the outcome of the court case, persimmons are just the "thin edge of the wedge" of a renewed push to irradiate food in Australia. Food Irradiation Watch is currently re-writing the Irradiation-Free Food Guide and will be coordinating action on labelling and the expected irradiation applications. Join us! Together we can keep irradiated food off our tables.

Robin Taubenfeld is a member of Friends of the Earth, Brisbane.

More information

www.foodirradiationwatch.org



Let the facts speak: an indictment of the nuclear industry

On March 11, the anniversary of the earthquake, tsunami and Fukushima nuclear disaster in Japan, Greens Senator Scott Ludlam released the fourth edition of *Let the Facts Speak: An Indictment of the Industry*.

The publication – online at www.letthefactsspeak.org – includes a 150-page catalogue of nuclear accidents and incidents since the 1940s. It also includes an analysis of nuclear risks covering issues such as reactor ageing, the uncomfortable intersection between economics and nuclear safety, regulation, 'Generation IV' reactors, and the debate over the risks of exposure to low-level ionising radiation.

Let the Facts Speak also includes a 'Dirty Dozen' list of some of the most dangerous and infamous moments in the history of the nuclear industry. It includes some major reactor accidents – Chernobyl, Fukushima, Three Mile Island, and Windscale. Three entries address non-reactor accidents – the Chelyabinsk liquid nuclear waste explosion in the Soviet Union, the theft of a radiotherapy source in Brazil and subsequent fatalities, and the fatal accident at a fuel fabrication plant at Tokaimura, Japan.

One entry concerns the failure to account for 160 kgs of plutonium for a period of at least eight months at the Sellafield plant in the UK. That was just one of many incidents at the same site, including a 1957 reactor fire, a data falsification scandal and a serious sabotage incident in the late 1990s, and international controversy over the routine emissions from nuclear fuel reprocessing operations.

The Superphenix fast breeder reactor in France is included in the Dirty Dozen list as an example of a nuclear 'white elephant' – a plant that failed spectacularly to meet its promised performance levels with billions of dollars wasted in the process (other such examples include reprocessing and fuel fabrication plants at Sellafield). Superphenix also provides a reminder that some of the 'next generation' nuclear power technologies that are now being promoted as 'new' and 'safe' are in fact old and unsafe.

Several entries – including Three Mile Island, Fukushima and Tokaimura – demonstrate the industry's failure to learn from past accidents.

The Dirty Dozen list includes an example of strikes on a nuclear plant directed by a national government (Israel's destruction of the Osiraq research reactor in Iraq) and strikes against a nuclear power plant by a sub-national group (Basque ETA terrorists). Those two entries are included here.

Bombing and destruction of reactor in Iraq

On 7 June 1981, Israeli fighter planes destroyed the French-supplied 'Osiraq' (or 'Osirak' or 'Tammuz 1') 40 MW research reactor located at the Al Tuwaitha Nuclear Centre, 17 kms from Baghdad.

Ten Iraqi soldiers and one French civilian were killed in the attack, and three Israeli army personnel died during training for the mission. Other than those deaths, the attack was of little public health or environmental consequence as the reactor had not begun operating and had not been loaded with nuclear fuel.

The significance of the attack (and surrounding events) was that it so starkly demonstrated the *realpolitik* of nuclear weapons proliferation – Iraq's pursuit of weapons under cover of a 'peaceful' nuclear program and Israel's willingness to respond with a 'pre-emptive' military strike.

The safeguards system of the International Atomic Energy Agency was put to the test and was found wanting. IAEA inspections failed to uncover Iraq's weapons program and other research reactors were later found to have been used in various ways to advance Iraq's weapons program.



Israel clearly had no faith in the IAEA safeguards system as demonstrated by its attack on Osiraq (and more recently with its attack on a suspected reactor site in Syria in 2007).

In April 1979, Israeli agents in France allegedly planted a bomb that damaged the partially-built Osiraq reactor while it was awaiting shipment to Iraq. Israel is also alleged to have murdered a scientist working on Iraq's nuclear program in June 1980 and to have bombed several of the French and Italian companies it suspected of working on the project.

The Iranian military also attacked and damaged the Al Tuwaitha Nuclear Centre with air strikes on September 30, 1980, shortly after the outbreak of the Iran-Iraq War, and both Iran and Iraq attempted military strikes on nuclear plants on other occasions during the 1980-88 war. Al Tuwaitha was bombed during the 1991 Gulf war and yet again during the 2003 Gulf war. More recently, Israel destroyed a suspected reactor site in Syria in 2007.

The above examples have been motivated by attempts to prevent nuclear weapons proliferation. Nuclear plants might also be targeted with the aim of widely dispersing radioactive material or, in the case of power reactors, disrupting electricity supply.

Reprocessing plants and stores for spent nuclear fuel and high-level nuclear waste typically contain enormous quantities of highly radioactive materials in readily dispersible forms, and are more vulnerable to attacks than reactors as they are generally less well protected.



Al Tuwaitha Nuclear Centre, Iraq.



Terrorist attacks on Spanish power reactor

On 18 December 1977, Basque ETA separatists set off bombs damaging the reactor vessel and a steam generator at the Lemoniz nuclear power plant under construction in Spain. Two workers died and one of the terrorists sustained fatal injuries.

On 17 March 1978, ETA planted another bomb in the plant, again causing the death of two workers and inflicting substantial damage to the plant. The explosives were smuggled into the plant by site workers.

On 3 June 1979, an anti-nuclear activist was killed by police during a peaceful protest (the peaceful public movement against Lemoniz attracted as many as 150,000 people to protest rallies).

On 13 June 1979, ETA planted another bomb inside the plant and the explosion caused the death of one worker.

On 11 November 1979, ETA kidnapped guards and exploded bombs at another nuclear plant, causing extensive damage.

On 29 January 1981, ETA kidnapped the chief engineer of the Lemoniz nuclear plant and later killed him.

ETA also destroyed hundreds of electricity pylons connected to the site.

In 1983, the Spanish nuclear power expansion program was cancelled following a change of government and construction of the Lemoniz plant was never completed.

Dozens of incidents of nuclear terrorism have taken place around the world, with a bewildering variety of perpetrators and motives. To date there has not been an incident resulting in mass casualties. However then UN Secretary General Kofi Annan warned in 2005:

"Nuclear terrorism is still often treated as science fiction. I wish it were. But, unfortunately, we live in a world of excess hazardous materials and abundant technological know-how, in which some terrorists clearly state their intention to inflict catastrophic casualties. Were such an attack to occur, it would not only cause widespread death and destruction, but would stagger the world economy and thrust tens of millions of people into dire poverty."

There are frequent reports of inadequate security at nuclear plants. In November 2005, for example, a reporter and photographer were able to park a one-tonne van for more than 30 minutes outside the back gate of the Lucas Heights nuclear site without being challenged. The gate, 800 metres from the research reactor, was protected by a simple padlock. *The Australian* reported: "The back door to one of the nation's prime terrorist targets is protected by a cheap padlock and a stern warning against trespassing or blocking the driveway."



The Lemoniz nuclear power plant in Spain.

How low can Australia's uranium export policy go?

Jim Green

Australia's choice of uranium customer countries has gone from bad to worse with the decision at Labor's national conference in December to ditch its policy of banning uranium sales to India.

We have uranium export agreements with all of the 'declared' nuclear weapons states (the US, UK, China, France, Russia) although none of them are serious about their obligation under the Nuclear Non-Proliferation Treaty (NPT) to pursue disarmament in good faith. That weakness, among others, is now being used to justify disregarding the NPT altogether.

We claim to have championed the adoption of 'Additional Protocols' - agreements which provide the International Atomic Energy Agency (IAEA) with somewhat greater powers to uncover covert weapons programs. But we waited until all of our customer countries had an Additional Protocol in place before making it a condition of uranium sales. That's not using uranium exports to leverage improvements in the safeguards regime - it's low-brow, opportunistic, retrospective PR.

We claim to be working to discourage countries from producing fissile (explosive) material for nuclear bombs,

yet we export uranium to countries blocking progress on the proposed Fissile Material Cut-Off Treaty. And we give Japan open-ended permission to separate and stockpile plutonium although that stockpiling has fanned regional proliferation risks and tensions in North-East Asia for many years.

In theory, Australia has a 'strict' policy of requiring Australian consent to separate and stockpile plutonium produced from Australian uranium; in practice, we have failed when put to the test and permission to separate plutonium has never once been refused.

We sell uranium to countries with a recent history of weapons-related research. In 2004, South Korea disclosed information about a range of weapons-related R&D over the preceding 20 years. Australia has supplied South Korea with uranium since 1986. We don't know whether Australian uranium or its by-products were used in any of the illicit research in South Korea. The Howard government and its

safeguards office showed no interest in finding out the answer to that question.

The 2006 approval to sell uranium to China set another new low: uranium sales to an undemocratic, secretive state with an appalling human rights record (such as jailing nuclear whistleblowers). That precedent was reinforced with the subsequent approval of uranium sales to Russia (another undemocratic nuclear weapons state, though Russia prefers to deal with dissidents by poisoning them with radioactive polonium).

The Russian agreement set some new lows of its own: uranium sales to a country which is very rarely visited by International Atomic Energy Agency (IAEA) safeguards

inspectors - just two inspections over the past decade. Federal parliament's treaties committee recommended against uranium sales to Russia until some sort of safeguards system was put in place, only to have its recommendation ignored by the Rudd government.

Another new low with the Russian agreement: we granted permission for Russia to process Australian uranium at a nuclear plant that is entirely beyond the scope of IAEA inspections -

the IAEA has no authority to inspect the plant even if it had the resources and the inclination to do so.

The decision at Labor's national conference in December to allow uranium sales to India sets a new low - uranium sales to a country which is outside the NPT altogether and is not subject to the requirement of the 'declared' weapons states to pursue nuclear disarmament in good faith.

And another low: India would be the only one of Australia's uranium customers which is definitely continuing to produce fissile material for weapons (China may also be doing so).

We take pride in Australia's 'leadership' role in the development of the Comprehensive Test Ban Treaty (or at least Alexander Downer does). Yet we sell uranium to countries that have signed but not ratified the CTBT (the US and China) and the government now plans to sell uranium to India, which has neither signed nor ratified the CTBT.



Cartoon by Heinrich Hinze. www.scratch.com.au

Another new low. The CTBT remains in limbo because those three countries, and a few others, refuse to sign and ratify it.

And another low: if uranium sales to India proceed, it will be the first time since the Cold War that we have sold uranium to a country which is engaged in a nuclear arms race. India and Pakistan are expanding their nuclear weapons arsenals at an alarming rate; both continue to develop nuclear-capable missiles; both are expanding their capacity to produce fissile material; both refuse to sign or ratify the CTBT.

And the India decision marks a low-point in Australia's international diplomacy. To permit uranium sales with no commitment by India to curb its weapons program, and no commitment to de-escalate the South Asian nuclear arms race, is spineless, irresponsible, dangerous sycophancy.

How low can we go? Plans are in train to sell uranium to the United Arab Emirates, probably followed by other countries in the Middle East. We were planning uranium sales to the Shah of Iran months before his overthrow in 1979. The Middle East has been (and remains) a nuclear hot-spot with numerous covert nuclear weapons programs – successful, aborted, destroyed or ongoing. The Middle East has also seen numerous conventional military strikes and attempted strikes on nuclear plants – in Iraq (several times), Iran, Israel and most recently Syria.

In theory it would be possible to leverage worthwhile non-proliferation and disarmament outcomes through uranium export policy; in practice, and in Australia, it works the other way around.

Short of selling uranium deliberately and specifically for weapons production – as we did after World War II – I don't think it's possible for Australian uranium export policy to sink any lower.

How much longer until the contradictions and the hypocrisy overwhelm the spin? The government got a fright when the treaties committee refused to rubber-stamp the Russia uranium agreement. Perhaps the treaties committee will recommend against uranium sales to India unless accompanied by meaningful commitments from India to curb its weapons program, and meaningful safeguards. Perhaps its recommendations won't be so easily ignored next time. Perhaps.

Jim Green is the national nuclear campaigner with Friends of the Earth and author of a briefing paper on uranium sales to India. www.choosenuclearfree.net/india

Friends of the Earth invites you to join the Active Friends Program

What is the Active Friends Program?

The Active Friends Program is one of the best means to support current and future work of Friends of the Earth. It involves a regular monthly donation of a self-nominated amount.

Where will Active Friends donations go?

Friends of the Earth is renowned for making a little money go a long way. Because our administration costs are always kept to a bare minimum, practically all Active Friends contributions directly support campaign work, publications and community engagement. Active Friends donations support

- a moratorium on coal and coal seam gas mining through our 'Quit Coal' campaign
- renewable energy through our 'yes2renewables' campaign
- our work to safeguard water for the rivers, wetlands and forests of over 14% of Australia's landscapes through the 'ourdarlingmurray.org' campaign
- FoE's Anti Nuclear & Clean Energy (ACE) campaign, which continues to highlight the dangers of nuclear power and uranium mining and to promote safe alternatives.

Why is the Active Friends Program vital to FoE?

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Synthetic biology: playing Lego with life

Gregory Crocetti and Bob Phelps

A coalition of 111 civil society organisations around the world – including Friends of the Earth Australia and Gene Ethics – just released 'The Principles for the Oversight of Synthetic Biology'. Synthetic biology is "extreme genetic engineering" – not only cutting and pasting genes but also writing genetic code to create new genes, genetic traits and new life forms from scratch, in our latest attempt to control Nature.

Until now, genetic manipulation (GM) typically allowed single genes to be cut and pasted into existing organisms. However, synthetic biology claims to take a 'real engineering' approach and use standardised parts to create new forms of life. Scientists, engineers, designers, undergraduates and even school students are encouraged to use these 'plug and play' living systems. They offer the attraction of playing Lego with life.

With the seductive promises of new pharmaceuticals, biofuels, plastics and profits, industry and governments are pouring billions into researching, developing and creating new living things that have never existed before. The science is progressing rapidly and new commercial players want to deliver synbio products to market. As with GM and nanotechnology (the science of the small), the claimed benefits of synthetic biology to society and the environment are used by industry and the government to 'counterbalance and neutralise' concerns of new risks. Synthetic biology is framed as the 'solution' to major crises – the end of oil and phosphates, food shortages and famine, global climate change.

But governments have failed to legislate, assess or eliminate the completely new, unknown and unforeseen risks from synthetic organisms that have never existed till now.

Synthetic biology is also set to deepen social and economic inequalities and injustices. Synthetic organisms designed to make pharmaceuticals, biofuels, plastics and profits all need to be fed. While some may ultimately use sunlight to make their own sugars, current versions of synthetic microorganisms are fed on the biomass that now feeds, clothes and houses people – typically from the global South. Thus, synthetic biology would widen the gap between rich and poor.

If released, synthetic organisms will evolve in response to the laws of nature and exchange their novel genes with other living beings. No-one knows what will result.

Even with stringent safeguards, organisms created using synthetic biology may threaten human health, disrupt ecosystems, and drive further inequality between classes and cultures. So, the effective oversight of synthetic biology is necessary, but is it sufficient? The citizens' principles for synbio oversight propose a moratorium to enable the ground rules to be settled first.

The principles for the oversight of synthetic biology

The following principles are necessary for the effective assessment and oversight of synthetic biology:

- Employ the Precautionary Principle
- Require mandatory synthetic biology-specific regulations
- Protect public health and worker safety
- Protect the environment
- Guarantee the right-to-know and democratic participation
- Require corporate accountability and manufacturer liability
- Protect economic and environmental justice

The full declaration can be accessed from foe.org/principles-for-synthetic-biology. We call on the Australian government to recognise the declaration and to embrace the principles.

The Precautionary Principle

National governments are duty bound to fulfil their commitments as parties to the 1992 Rio Declaration and the Convention on Biological Diversity (CBD) which states: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

The Cartagena Protocol on Biosafety is a treaty made under the Convention on Biological Diversity, a binding commitment by the international community to ensure the safe transfer, handling and use of living modified organisms (bch.cbd.int/protocol). Over 160 nations have so far signed and ratified the protocol but Canada, the USA and Australia still refuse to do so. If the Australian government is serious about responsibly developing a synthetic biology industry then it must fully honour its commitments to the Rio Declaration and the CBD by signing onto the Biosafety Protocol.

Require mandatory synthetic biology-specific regulations

Industry self-regulation is unacceptable for any powerful, new technology and its products. In Australia, the Gene Technology Act 2000 and the Office of Gene Technology Regulator may regulate some aspects of synthetic biology but the present laws would soon be outdated. For instance, our regulators use the weak industry concept of 'substantial equivalence' to compare the safety of GM and ordinary foods and crops in making their assessments. But synthetic organisms have never existed and have no history of safe use so comparisons with natural life forms will offer no assurance of safety.

Protect public health and worker safety

No synbio product should be mass-manufactured or sold until independent and iron-clad environmental health and safety rules are agreed and enforced.

Leading synthetic biologists say their aim is to remove as much complexity as possible from genomes that contain the codes of life as a way to understand and control what remains. However, this fails to acknowledge the

Illustration by Stig from Beehive Design Collective.



unpredictable new traits that will emerge from the process of placing new genetic and metabolic pathways into completely new organisms. They also ignore the role of gene mobility and interactivity within and between genomes.

The lure of Do It Yourself, Lego-style 'plug and play' biology has attracted people all over the world with minimal skills and diverse backgrounds who are already 'playing' with synthetic organisms, though no effective regulatory frameworks or government oversight are in place. The Office of Gene Technology Regulator was alerted to community concerns about DIY biology and reluctantly issued a tepid warning.

Protect the environment

Industry and government already promise that synthetic biofuels will solve emerging energy crises. But do we even need this new technology? And how on earth can synthetic biologists guarantee that new forms of life are safe?

Scientists propose mechanisms to prevent synthetic organisms or genetic constructs from reproducing in the wider world, similar to Monsanto's promised 'terminator technologies'. It was claimed they would guarantee biosafety by preventing the transfer of pollen between plants. But terminator does not exist and is not fail-safe.

Guarantee the right-to-know and democratic participation

The Australian government has started to discuss ethics and public engagement around synthetic biology but effective regulation and enforcement, with real community participation, remains far off. Given the impact that synthetic biology might have on communities, farmers and other workers, the cultural, legal social and economic interests of these groups must be influential in all decision-making processes.

Require corporate accountability and manufacturer liability

Synthetic biology owners must bear the total costs of any negative risks, hazards and impacts of their products, if they are allowed to go ahead at all. Our governments must not allow owners to shed the burden of risk onto the community. If risks are too great for private investors and insurers to cover, then they are surely too great for the public to bear!

Protect economic and environmental justice

Abundance does not guarantee availability. GM promised a food revolution that would feed the world but GM crop plants yield no more than the best conventional varieties. In many places they are also now failing to kill insects and weeds as they were designed to do. A five-year scientific study commissioned by the World Bank and the UN – the International Assessment of Agricultural Knowledge, Science and Technology for Development – concluded that GM and other emerging technologies (such as synthetic biology) are unlikely to answer human food needs of the future.

With synthetic biology, most current interest is on a biomass-based economy, transforming crops like sugar, wheat, maize and soy into pharmaceuticals, fuels, plastics and profits. However, there is simply not enough land and water for all of the proposed demands. With companies like Amyris Biotechnologies already using synthetically engineered yeast to transform Brazilian sugar cane into biofuels, we see a trend to further loss of farmlands, forests and foods for pharmaceuticals, plastics and fuel, to make massive corporate profits.

Dr. Gregory Crocetti is a campaigner with the Nanotechnology Project at Friends of the Earth. Bob Phelps is Director of Gene Ethics.

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It is the coal barons, not activists, who threaten society.

Shaun Murray

Anti-coal activists pose a political threat. That's why we're being spied on.

I'd like to know how the government can justify employing a private company to spy on me. As an anti-coal activist, and member of one of three main community groups in Australia campaigning against the coal industry, I was alarmed by revelations that the Australian Federal Police has singled us out as a potential threat and is employing a private company to spy on us.

As peaceful community activists, we collectively have no history of or motivation to disrupt energy supply. We pose no threat to society – unlike the coal industry, which wields massive political influence and holds the greatest responsibility for the hundreds of thousands of deaths, extinction of species, and billions of dollars of damage annually that climate change is causing.

So on what basis are we deemed a threat to critical infrastructure and energy security? In Victoria, the only thing anti-coal activists have ever done to affect energy supply was a protest in 2009 that for a few hours shut down one of Hazelwood Power Station's eight coal loaders, temporarily removing 0.5 per cent generation capacity from the national grid on a day of relatively low electricity demand.

Even if we were able to seriously disrupt electricity supply on a high-demand day, I fail to see how triggering blackouts could further our cause. As such, we clearly pose no threat to society and do not warrant being spied on, or having special legislation enacted to curtail our advocacy.

Yet a lack of evidence doesn't seem to have stopped the federal Minister for Resources and Energy, Martin Ferguson, from successfully advocating for heavy-handed laws framed in the language of anti-terrorism, but designed to repress political advocacy.

Indeed, the real threat that anti-coal activists pose is a political one – mass protests at Hazelwood Power Station in 2009 and 2010 helped to withdraw the social licence of this dangerous, polluting industry.

This in turn led to the current federal government legislation to buy out and close 2000 megawatts of brown-coal generation, and no doubt caused political fallout for the coal industry and its political allies. It is unsurprising that the coal industry would flex its political muscle in response, demanding tougher laws to deter such effective advocacy.

The real threat to our energy security in recent times has been the massive use of air-conditioners on very hot days, exacerbated by lack of policy to institute more efficient building codes, or to build more solar power to match these demand spikes.

So not only does the coal industry appear to be manipulating our political and legislative processes, it continues to pollute, expand, and cause death and massive damage with impunity. For years, it has successfully curtailed government action to combat climate change.

Now the crisis looms: leading scientific experts tell us that the world is on track for 4 degrees of global warming, potentially by as early as 2060, resulting in mass extinction and a reduction of Earth's carrying capacity to less than one billion people. As burning coal is the single greatest contributor to the climate crisis, it therefore "poses the single greatest threat to civilisation and life on this planet" (in the words of Professor James Hansen, NASA's top climatologist).

So given that air-conditioning poses a greater threat to energy security than anti-coal activists do, and that burning coal poses an existential threat to life on this planet, perhaps public resources could be better spent on something other than interfering with community advocacy aimed at trying to stop the coal industry from destroying the biosphere.

Shaun Murray is the coal spokesperson for Friends of the Earth Australia, and an activist with the Quit Coal campaign.

A bird? A plane? No, it's Shaun Murray protesting Mantle Mining's plan for a brown coal mine at Bacchus Marsh, near Melbourne.

A smart grid and seven energy sources



Giles Parkinson of reneweconomy

The Grattan Institute's study into Australia's energy future - *'No easy choices: Which way to Australia's energy future'* - canvasses seven technologies that could help deliver an 80 per cent reduction in emissions by 2050. They are wind, solar PV, solar thermal, geothermal, CCS, nuclear and bioenergy. And then there is the grid, and it's need to be smart and play fair, and not just favour the incumbent coal and gas plants.

Here is a synopsis.

Wind

Grattan says wind power could provide more than 20 per cent of Australia energy needs (it currently provides just 2 per cent) and is the only low emissions power technology that is ready for rapid scale up in a short period of time, and within the benchmark range of \$100-\$150/MWh. It says wind power costs may continue to fall, but at a lower rate than other technologies. It says in good wind areas in WA, costs are around \$90-\$130/MWh.

Grid access is a major issue for remote resources, and grid capacity is also a factor, causing some less favourable areas to be developed rather than stronger wind areas in South Australia for instance. And it is notes that community concerns have had an impact. The renewable energy target plays a critical role in its deployment. It notes Australia has is capable of substantially expanding the amount of wind power that is fed into its electricity systems - (South Australia has 22 per cent wind, one of the highest in the world) - but ultimately it will meet some sort of constraint without storage capacity. Wind can be relatively easily absorbed up to around 25 per cent of the grid, but beyond 30 per cent is uncertain.

Solar PV

Solar PV is probably the most contentious and least understood technology, simply because its costs are falling at such a phenomenal rate. Grattan says solar PV could comfortably provide for more than Australia energy needs, but in practice is likely to account for around 30 per cent with grid integration management, and significantly more with storage - it contributes just 0.9 per cent of generation now. It notes that costs are around \$220-\$400/MWh, but costs are falling rapidly, and its trajectory will be influenced by the level of deployment support from governments.

On the issue of value, it will be worth more in some contexts than in others, depending on how it affects supply. It notes that PV generation aligns well with commercial sector and industrial peak demand (which is why the solar industry believes this will be the hot spot of development in coming years), but far less so with residential sector demand.

It says installations for industrial and commercial customers will be economic before small-scale residential systems.

It notes that AECOM's analysis of potential large-scale solar precincts in NSW suggested a levelised cost of electricity (LCOE) of between \$230-\$270/MWh, Bloomberg New Energy Finance suggests costs will be around \$US150-\$US230/MWh in 2020, while the US Department of Energy's 'Sun Shot' program is seeking costs of \$US100/MWh. Storage options will include on-site or distributed batteries (such as in electric cars), sodium sulphur cells and compressed air storage, sophisticated storage devices, such as the 10kWh RedFlow units used in Australia's Smart Grid, Smart City program (costly) and simpler invertors.

Solar thermal

In theory, there is ample solar thermal energy to meet Australia's needs - an array of 50 kms by 50 kms should do the trick nicely. However, thermal storage and gas co-generation is needed to overcome intermittency, and its costs are currently not commercial, but with those it could closely match demand, and be more valuable to the market. Costs are likely to be addressed through more deployment (of which there is none in Australia), better engineering and more efficient components and fluids. It suggests solar towers would be likely cheaper in the long run (none even made the Solar Flagships shortlist). And it needs changes to regulatory barriers for transmission networks.

It says estimates of its LCOE in around 2015 are still high, at about \$200-\$250/MWh, though even in the short term the range of estimates is large. "The great advantage of CSP is that its generation aligns with peak demand, and that it is dispatchable with storage. If these features are valued appropriately in electricity prices, or through other policies, the economics of CSP generation become more appealing." And because development would be limited to only a few areas in the world rich with solar resources - such as the Middle East, north Africa, and parts of north America and China, deployment in Australia could have a big effect on global technology costs.

Geothermal

Another resource that could easily account for Australia's energy needs in theory, but delays and problems in early development raised questions about reliability and costs. There had been minimal deployment in Australia, due to funding issues – hot sedimentary aquifers may offer better short term prospects than deeper and more complex hot dry rocks. Because of the uncertainties, the scale and timing of geothermal generation remains uncertain and there are big divergences in projections of Australia's future Australian generation mixes – from 1.5 per cent in 2030 in one case to around one quarter of its energy needs by 2050 in another.

The major problem for geothermal energy is that it is capital intensive, with drilling the greatest component – around 50-80% – of capital costs. In granite, drilling costs \$10 to 15 million for a 5 kilometre deep well – and most of the companies involved in exploration and development are small. Cost estimates range from \$130/MWh to \$220/MWh, and some see geothermal facing similar challenges to those facing the coal seam gas industry 15 years ago. "It took that industry eight to 10 years to develop commercial tools and achieve commercially viable flow rates," it says. The geothermal industry would be very happy if it got to the scale of CSG in Australia in that time frame, possibly without the flack.

Carbon capture and storage

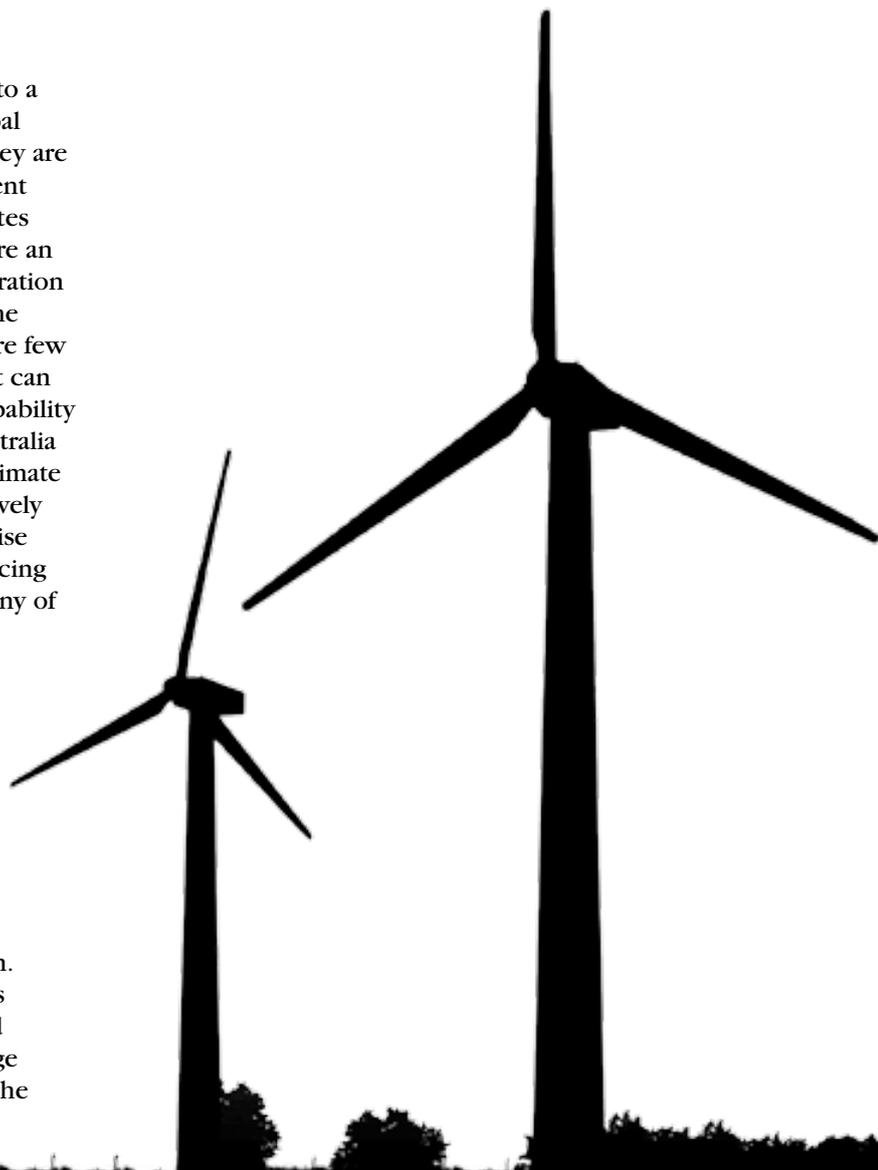
Grattan says CCS could contribute very significantly to a clean energy future and extend the life of existing coal and gas plants. But while costs appear competitive, they are not proved at scale, and the absolute size of investment will be a major barrier for early mover projects. It notes that technologies such as CCS and nuclear will require an investment of \$1 billion or more, even for a demonstration plant, and very few substantial companies will "bet the company" on a project that is also high risk. "There are few energy companies globally, and none in Australia, that can afford to invest this amount without a very high probability of success." There are also very few companies in Australia with the scale required. It noted a report from the Climate Group and Ecofin that estimated that given the relatively high risks of CCS, a company would need an enterprise value of over \$140 billion to take on the risk of financing a 1,000 MW commercial CCS plant. There are not many of those in Australia.

Nuclear

Grattan says nuclear could meet a large proportion of Australia's energy needs, however there is a great question over costs. It says that generation 3 plants are well developed but costs uncertain as there is limited experience in actually deploying them in western nations such as Australia, and there will be increased regulatory requirements. Gen 4 plants may be cheaper and more efficient, but they are unproven. There is also the question of financial risk and who is prepared to shoulder it. Citigroup analysts concluded that development risk of nuclear power were "so large and variable that individually they could bring even the largest utility company to its knees financially".

"Nuclear power could be very cost-competitive with other low-emissions technologies. But the private sector may struggle to finance nuclear power plants without government support," the report notes. "The long-run cost estimates for nuclear power broadly match current estimates for several other low-emissions technologies. However, major credit analysts consider that private companies are, at present, unlikely to accept the full risk of building a new nuclear plant. If they do, finance is likely to be high cost." It says China could be a game-changer on costs.

It says it would take 15-20 years for a nuclear plant to be developed in Australia, but it also questions whether nuclear would be able to play a constructive role in the local grid, noting that it is relatively small, and nuclear is not capable of responding to peak demand. "Given that there is sometimes vigorous competition in electricity generation, and that nuclear power plants need to consistently sell 80% or more of their total generating capacity, it may not be viable to build many plants of this size (1000-1600MW) in Australian electricity markets." It says this constraint could change, if re small modular reactor technology that could create units of less than 300MW, becomes economically viable. And then there is public resistance. And waste disposal.



Bioenergy

Grattan says there is significant bioenergy available in Australia, although unlikely to be more than 20 per cent of demand given the competing needs of food. Indeed, if bioenergy were to supply more than 10 per cent of Australia's energy needs, it would require use of agricultural residues or dedicated bioenergy crops that do not compete with food production. And there is little experience of this in Australia, and this could take more than a decade to acquire.

Bioenergy has advantages in that it could be deployed easily, though, to help meet daily peak demand. Improvements in supply chain needed, and efficiency of scale needed to encourage more plants for 5MW or less. But it notes that current network connection practices and expertise are not conducive to a scenario of connecting a large number of relatively small power stations to the grid in regional areas.

Grids

Whatever the technology cost developments of individual energy sources, the grid will play a decisive role. Grattan says regulatory reform is essential if the grid is to integrate sources such as solar, wind and geothermal, and not merely serve to protect incumbent gas and coal generation. Right now, the grid is designed essentially to connect major coal basins to capital cities. It needs to evolve to include wind and solar and other sources, and it needs to get smarter. It says Australia needs to build skills and knowledge in grid integration through greater research and experimentation.

Grattan says transmission infrastructure does not represent a significant constraint to any of the low carbon technologies within the short term, but for wind, geothermal, large-scale solar and possibly biomass to provide a very large proportion of electricity supply over the longer term would require substantial new transmission capacity, including greater interconnection capacity between state regions to cater for variability in wind and solar.

"While overcoming these transmission constraints is technologically straightforward and the need for major new capacity is not immediate, we can't afford to be complacent," it writes. "The long-life of transmission infrastructure, its high cost, and long lead times involved in developing new transmission corridors, mean that decisions about its layout in the near term have implications for the relative viability of our technology options decades into the future. The current set of regulatory frameworks for how we manage the development of transmission capacity are not well suited to a situation

where there is a wide range of options around generator locations, as is likely if renewable technologies become economically attractive. The characteristics of the current framework could act to frustrate efforts to decarbonise electricity supply in an efficient and timely manner."

*In other words, reform.
And do it now. And do it smart.*

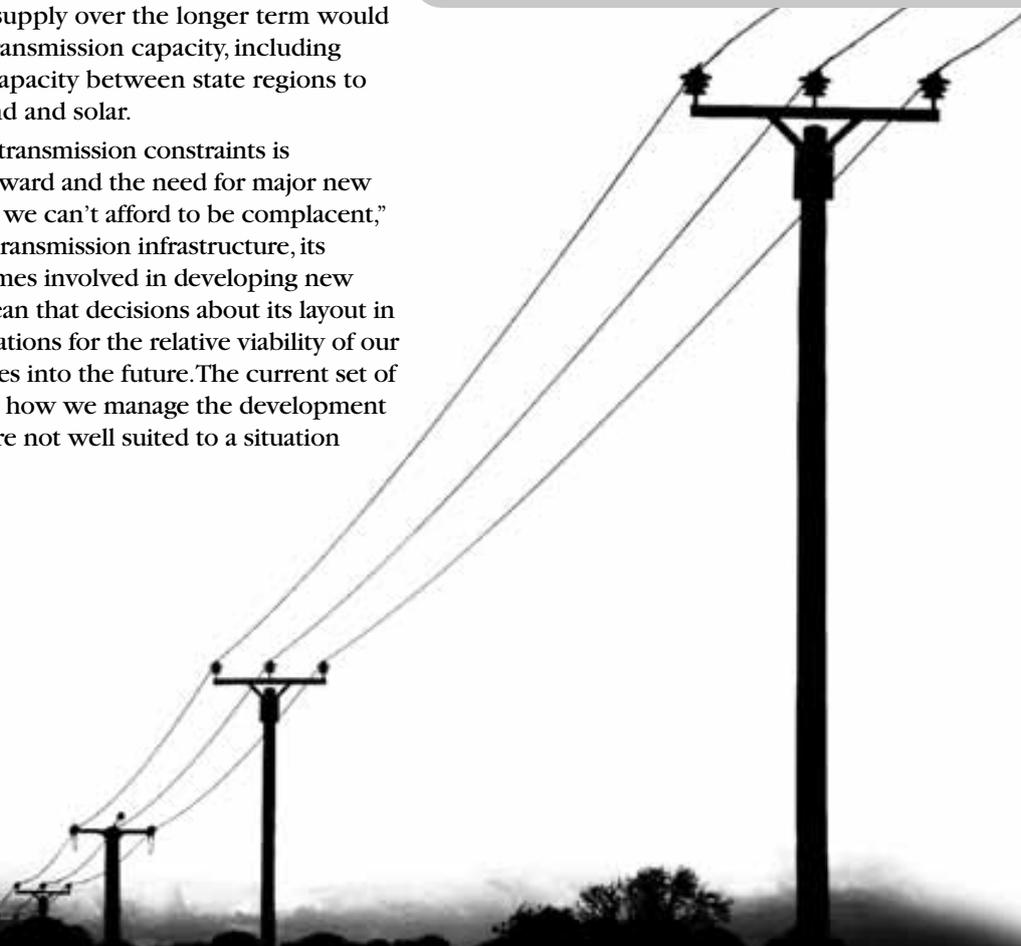
Giles Parkinson is editor of reneweconomy.com.au, where this article was first published (along with a separate analysis of the report by Parkinson).

The Grattan Institute report, 'No easy choices: which way to Australia's energy future?' is posted at www.grattan.edu.au/programs/energy.php

A review of the report, by Dr Ted Trainer from UNSW, is posted at bravenewclimate.com ('The Grattan Report on low-emissions energy technology - some critical comments', 14 February 2012)

climatespectator.com.au has reviews of the Grattan Institute report by Mark Diesendorf ('A peak at Australia's energy potential', 7 March 2012, reprinted in this edition of Chain Reaction) and Matthew Wright ('Blind spots on our solar future', 8 February 2012). Tony Wood, author of the Grattan Institute report, wrote a rejoinder to Wright, posted at: www.grattan.edu.au/programs/energy.php

And for readers who just can't get enough of the energy debates, bravenewclimate.com has a debate between Diesendorf ('100% Renewable Electricity for Australia: Response to Lang', 27 February 2012) and Peter Lang ('100% renewable electricity for Australia - the cost', 9 February 2012). And climatespectator.com.au has a debate between Diesendorf ('A cheaper path to 100% renewables', 21 October 2011) and Wright ('100% renewables, no hot air', 10 November 2011).



A peak at Australia's energy potential

Mark Diesendorf

A recent contribution to the debate over electricity futures for Australia comes from the Grattan Institute report 'No quick fix for Australia's future energy challenge'. Some of the points it makes are important. For instance, Grattan shows that we cannot rely solely on fuel switching to gas-fired electricity to achieve all our emissions reductions. I would restate this as saying that, although there may be a temporary role of gas for fuelling some peak-load power stations during the transition to an ecologically sustainable energy future based on the efficient use of renewable energy, it would be a mistake to convert base-load coal to base-load gas.

Grattan gives a useful table summarising its assessment of the various technology options, although it is hard to know what to make of the entry 'projected costs [of carbon capture and storage (CCS)] competitive'. Projected by whom and competitive with what? And under what level of carbon price?

More serious concerns are triggered by Grattan's assertion, in relation to commercially available low-carbon energy technologies, that 'none currently represents more than 2 per cent of Australia's electricity supply and their future technical and economic potential is shrouded in uncertainty'. While the charge of uncertainty can be readily applied to CCS, nuclear and possibly hot-rock geothermal, it's hard to justify for wind, solar PV, some forms of bioenergy and concentrated solar thermal power (CST) with thermal storage.

The 2 per cent level has little significance in light of the high levels of installed wind power and very high growth rates being achieved by both wind and PV in several countries. With appropriate policies, Australia could have substantial contributions from both wind and PV, and even a few gigawatts of CST, by 2020, while it's unlikely that it could have any contributions from CCS or nuclear by then.

There is sufficient experience with wind, PV, biofuelled gas turbines and CST to make reasonable projections of their future costs under very large-scale mass production. For example, the report by the California Energy Commission on 'Comparative Costs of California Central Station Electricity Generation' projects that nuclear power commissioned in 2018 could be as expensive as large-scale PV (1). Contrary to Grattan, all low-carbon alternatives are not equal in uncertainties about future technical and economic potential.

Grattan makes a case for government intervention in the market, beyond a carbon price, to assist the development, demonstration and early deployment of low emissions technologies. While its case is valid, it could be strengthened by recognising that the transformation of the energy system in the face of climate change means giving temporary support to the roll-out of safe and effective renewable energy technologies that are not necessarily the cheapest at the margin. We should be planning for the whole period 2020-2050, not just 2013.

Grattan is hobbled by its notion that, "it is possible that none of the technologies can produce power at a scale and at costs similar to today's electricity." So what? Grattan overlooks the research (www.externe.info) showing that current prices of fossil fuels are too low because they don't take into account the environmental, health and economic damage produced. Surely the principal justification of a carbon price is to reform the market to internalise the costs of these adverse impacts?

With this perspective, current market prices of energy technologies are less important than future projections, taking into account externalities and relative risks. What would be the costs of insuring a nuclear power station properly against a rare but catastrophic accident such as experienced at Chernobyl or Fukushima? The Japan Center for Economic Research estimates the partial costs of the Fukushima disaster at \$US71-250 billion, yet TEPCO was insured for only \$US1.5 billion (2).

'It's surprising that Grattan omits to discuss the two studies that suggest that 100 per cent renewable electricity may be technologically feasible for Australia.'

It's surprising that, in considering the scale-up of new technologies, Grattan omits to cite, let alone discuss, the two studies that suggest that 100 per cent renewable electricity may be technologically feasible for Australia.

In 2010 the 'Zero Carbon Australia Stationary Energy Plan' found that 100 per cent renewable energy is technically possible for Australia (3). The core of this study is a single hour-by-hour computer simulation of Australian electricity demand in 2008 and 2009. The principal renewable energy sources chosen were CST with thermal storage and wind power. While I take issue with ZCA's claim that the transition could be made in a decade and several other assumptions, this ground-breaking work deserves to be acknowledged.

In early December 2011, UNSW researchers Ben Elliston, Iain MacGill and I published the first of a series of peer-reviewed papers on our independent simulations, which remove most of the assumptions constraining the ZCA study, making it unnecessarily expensive (4). However, we still have some assumptions of our own that will be progressively removed before we perform an economic analysis.

We ran a series of hour-by-hour computer simulations of 2010 electricity demand in the five Australian states and the one territory (ACT) covered by the National Electricity Market. To meet demand we chose a broad renewable energy mix: CST with thermal storage, wind, solar PV, biofuelled gas turbines and existing hydro. All are commercially available technologies.

Gas turbines are highly flexible generating plant ideally suited to supporting fluctuating wind and PV renewable generation. Some are already deployed in Australia as peaking plant fuelled on natural gas. However, they can also burn liquid and gaseous biofuels produced sustainably from the residues of existing crops. Jet aircraft on some overseas commercial flights are already flying with one or more of their engines burning biofuels.

Based on scores of simulations and extensive sensitivity analysis, our research finds that it would have been technically feasible to supply 2010 electricity demand by 100 per cent renewable energy with the same reliability as the existing fossil fuelled system. The key challenge is meeting demand on winter evenings. A large part of this demand is of course residential space heating. At sunset on overcast days, the thermal energy storages are not full and sometimes wind speeds are low as well. Initially we used biofuelled gas turbines to fill the gap. This is likely to be lower cost than ZCA's solution of choosing a vast excess of CST power stations, many of which would not be operated in summer.

Our second peer-reviewed paper (Elliston, Diesendorf & MacGill, Energy Policy, in press) explores an even cheaper solution than lots of gas turbines or excess CST: namely a revitalised residential energy efficiency and smart grid program to reduce peak electricity demand on winter evenings.

Both the ZCA and UNSW simulations refute the notion that renewable energy cannot replace base-load coal-fired power. ZCA interprets its results by saying that CST with thermal storage is base-load. We interpret the simulation results differently, concluding that although CST can perform in a similar manner to base-load in summer, it cannot in winter. That doesn't matter however. In a predominantly renewable energy supply mix, we find that the concept of 'base-load power station' is redundant. The important result is that renewable energy mixes can give the same reliability of the whole generating system in meeting demand as the existing polluting fossil-fuelled system. Similar results for the US were presented at the Solar 2011 conference by David Mills and Weili Cheng.

Mark Diesendorf is Associate Professor and Deputy Director of the Institute of Environmental Studies at UNSW. His latest book is 'Climate Action'.

This article was first published in climatespectator.com.au

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Lynas rare earth project sparks huge campaign in Malaysia

Lee Tan

History was made in Malaysia on Sunday February 26 in the coastal town of Kuantan. About 15,000 people turned up for the country's biggest ever environmental protest action. Protestors shouting "Stop Lynas. Go Back to Australia!" carried placards and banners against the directives of the country's new law to control protests known as the Peaceful Assembly Act.

This is but one of the many monthly public protest actions which have taken place since Malaysians first learnt from a New York Times article that the world's largest rare earth processing plant was under construction in an industrial estate very close to the Kuantan Port, several kilometres from the South China Sea. The plant has been constructed quietly since 2008 with no community consultation.

Entangled in this controversy is Australia's Lynas Corporation. Earlier in February, the Malaysian Government granted a temporary operating licence to Lynas for its Advanced

Materials Plant (LAMP). It is a rare earth refinery, the biggest of its kind outside of China. The plant is several months away from completion. It sits on top of a drained peat mangrove swamp only a few kilometres away from several residential estates. Within a 30 km radius live an estimated 700,000 people, mostly concentrated along the coast.

Lynas aims to ship ore concentrate from its Mt Weld mine near Laverton in Western Australia some 5,500 kms away via Fremantle to the Port of Kuantan to its refinery for the final stage of production.

Hybrid and electric cars, wind turbines, solar panels, low-energy light bulbs, hi-tech digital and electronic equipment, and guided missiles all use rare earths. Ore bodies are often found with radioactive thorium and uranium. The processing of rare earths into oxides is hazardous due to the addition of vast amounts of corrosive concentrated acids at very high temperature. Huge amounts of water and fuel are required,

Protest in Kuantan, February 26, 2012.





in the process discharging a massive amount of toxic waste in all forms – solid, gaseous and liquid – as well as carbon.

China has been supplying about 97 percent of the world's rare earth oxides at low costs. There, poorly managed refineries and their toxic waste have poisoned the surrounding land and waterways, posing serious health hazards and agriculture problems to the local community. Pollution is so serious that the Yellow River 10 kms away was contaminated through its tributaries. Increasing fatal cases of cancer and ruined crops have been reported. In some places, the problem was so bad that the entire village had to be relocated.

In the USA, the Molycorp rare earth plant in California's Mt Pass was shut down in 2000 by the government due to groundwater contamination and pollution problems. Molycorp under its new ownership vowed to pioneer clean rare earth production, spending US\$500 million to clean up the problem and to re-engineer the plant to make it a closed system where all the waste will be managed and contained. Late in 2010, China suddenly reduced the export quota of its rare earth oxides. The reduced supply coupled with an increasing demand from green and hi-tech industries has resulted in a spike of rare earth prices – from as low as US\$10.32 per kg in 2009 to a peak of US\$222.92 last August (based on the Mt Weld average composite prices provided by Lynas Corporation).

Lynas says it will provide the first new source of supply to the world outside China, making Malaysia, if the plant goes ahead, a strategic player in the industry. However, the local community has vowed to do whatever it takes to stop the

project. Their concerns are understandable since the Lynas plant will be leaving behind about half a million tonnes of hazardous solid sludge – enough to fill about 250 Olympic-size swimming pools every year. On top of that, every hour 100,000 cubic metres of waste gas will be discharged into the atmosphere and 500 tonnes of waste water will be discharged into a natural river, which is an important mangrove habitat. This river drains directly into the South China Sea less than four kilometres from the plant.

Malaysia has never had any single project that produces so much waste. The plant's location on a peatland and its close proximity to the sea add to the problems and risks. A disposal facility for the radioactive solid waste has not been established, nor has a site been located for a disposal facility. The presence of radioactive substances, especially long-lived thorium, and the sheer volume of the waste pose a huge challenge for safe and effective management of the waste.

Lynas has proposed to turn its contaminated radioactive waste into commercial gypsum and fertilisers, creating concern that the hazards will be spread far and wide all over the country.

Seafood is a speciality for Kuantan. Many families rely on catches from the sea for their livelihoods. This part of Malaysia is a prime coastal tourism destination with the world class Club Med resort 10 kms away. Tourism and fishing are by far the most important income-generating activities for many coastal communities.

Until recently, when news of the strong local protests reached the international media, Lynas' share values were riding high as investors flocked to put their bet on Lynas.

Construction defects

Lynas is a single-project company with neither mining experience nor rare earth processing expertise. In the absence of any institutional memory, Lynas resorted to hiring contractors which in turn sub-contracted other contractors and suppliers to carry out all of its operations. The haste, the lack of experience and the reliance on contractors have caused massive cost over-runs and construction defects at the plant in Kuantan.

The critical parts of the plant – the concrete tanks in the processing area – are defective due to the omission of the damp proofing membrane at the base of the tank and poor workmanship resulting in serious leakage and cracks. They are expensive and time consuming to fix if at all possible. Yet Lynas continued to promote its early production date.

Lynas has overlooked the strong reaction the project will draw from Malaysians. Malaysia has already had a nasty experience with a rare earth plant. In a neighbouring state, Japan's Mitsubishi Corporation was forced to shut down the Asian Rare Earth plant about 20 years ago following strong public protest and court action. Unusually high numbers of fatal leukaemia cases, birth defects and a range of other ailments were detected in nearby villages. Mitsubishi subsequently paid US\$100 million for the clean-up effort which is still continuing today.

Only a few months ago, news of the permanent storage site leaking for the last 20 years were revealed in a major daily newspaper in Malaysia. The leaking waste storage site is a constant reminder of how the government and a large corporation failed in their duty of care.

The Lynas plant is near completion. The protest movement has the support of Malaysia's key professional bodies such as the Malaysian Medical Association and the Bar Council (Association of Lawyers). Many highly qualified and skilled professionals have come forward to study Lynas' plan and have provided critical reviews to the government and to protesters. They are sceptical that the project is as harmless as Lynas, the government and the International Atomic Energy Agency have claimed.

Following the mass rally in Kuantan and a number of solidarity actions throughout the country including one near the site of Mitsubishi's now-closed rare earth plant, the Malaysian Prime Minister told the media, "We would not give an operating license unless we are satisfied that the local community can accept that this project is safe." Only a few days later, the licence was reportedly handed to Lynas.

Some Malaysian politicians have suggested the waste be sent back to Western Australia, where the mining occurs, an idea WA Minister for Mines and Petroleum Norman Moore has firmly rejected.

What is the responsibility of the WA government and Lynas to manage the radioactive waste derived from Western Australian rare earths? Does WA have a responsibility to take back waste? If WA had to take back the waste, would the state want to mine and export it in the first place? If toxic waste from rare earth ore processing was returned to the country supplying the ore, should that precedent also apply to, for example, uranium exports?

The Malaysian authorities have been so inept and complacent that they have not acknowledged the hazards and risks associated with the rare earth plant. The rapid approval process and the secrecy surrounding the project raise suspicions of dodgy deals waiting to be exposed.

While the community is firmly opposed to the rare earths project, the Malaysian government has granted Lynas a 12-year tax holiday. Lynas would have to pay A\$18 million a year in taxes including a carbon tax in Australia.



Protest in Kuantan, February 26, 2012.

Get involved

Please sign the online petition to stop this unethical project
thepetitionsite.com/1/ban-rare-earth-exports

More information: savemalaysia.org and stoplynas.org

Art to expose Agent Orange disaster

John Percy

Australian and Vietnamese artists are contributing works to an art exhibition to be held in Sydney in August to expose the ongoing horror of the Agent Orange chemical warfare inflicted on the Vietnamese people by the American war in the 1960s and '70s. Agent Orange Justice hopes to take the exhibition to Melbourne and Brisbane also.

Eighty million litres of "herbicide" were sprayed on the forests, fields and people of Vietnam over 10 years, to deny shelter to the Vietnamese freedom fighters, and to deny them food and support from the local community. More than three million people were killed or affected, with terrible birth defects inflicted up to the third and fourth generations. US and Australian service men and women and their children have also been affected.

The exhibition aims to raise consciousness on the Agent Orange issue and to raise funds for Vietnamese victims. NSW state Governor Marie Bashir will open the exhibition and Vietnam's consul general in Sydney, Mai Phuoc Dzung, will speak at the opening.

In addition to original artworks and cartoons, the exhibition includes photographs from Vietnam of the impact and results of Agent Orange spraying, as well as a display of anti-war posters from the campaign against the war in Vietnam. Over the four days of the exhibition there will be seminars and film showings each evening.

Organisers will also launch a petition calling for support of victims, land remediation and recognition of Agent Orange health issues for all veterans, and calling for the governments involved to acknowledge their responsibility.

The exhibition has been initiated by Agent Orange Justice - Australia Vietnam Solidarity Network. AOJ was established in June 2011, with a launch meeting addressed by Mai Phuoc Dzung, Greens Senator Lee Rhiannon, green bans activist Jack Munday and Mike Karadjis from Agent Orange Justice.

Agent Orange Justice is the Australian section of the international campaign to hold the United States government responsible for the disaster it created for millions of Vietnamese people through its 10-year spraying of Agent Orange in Vietnam between 1961 and 1971.



This international campaign is spearheaded by the Vietnam Association of Victims of Agent Orange / Dioxin (VAVA) and aims to pressure the US government and the chemical companies that produced Agent Orange to pay to clean up the toxic mess still contaminating parts of Vietnam's environment and to provide adequate compensation to the Vietnamese who are affected.

The exhibition will be held from August 8-11 at Mori Gallery, 168 Day Street, Sydney. Agent Orange Justice is inviting artists and cartoonists in Australia and Vietnam to contribute artworks to the exhibition, and supporters to volunteer to publicise and help staff the exhibition.

Contact

Contact Agent Orange Justice to help build or contribute to our events, or to join or affiliate:

info@agentorangejustice.org.au

PO Box 290, Enmore NSW 2042.

www.agentorangejustice.org.au



Mining industry: the monsters in our midst

*Dirty Money –
the true cost of Australia's mineral boom*

By Matthew Benns

Random House, 2011

Review by Ben Courtice

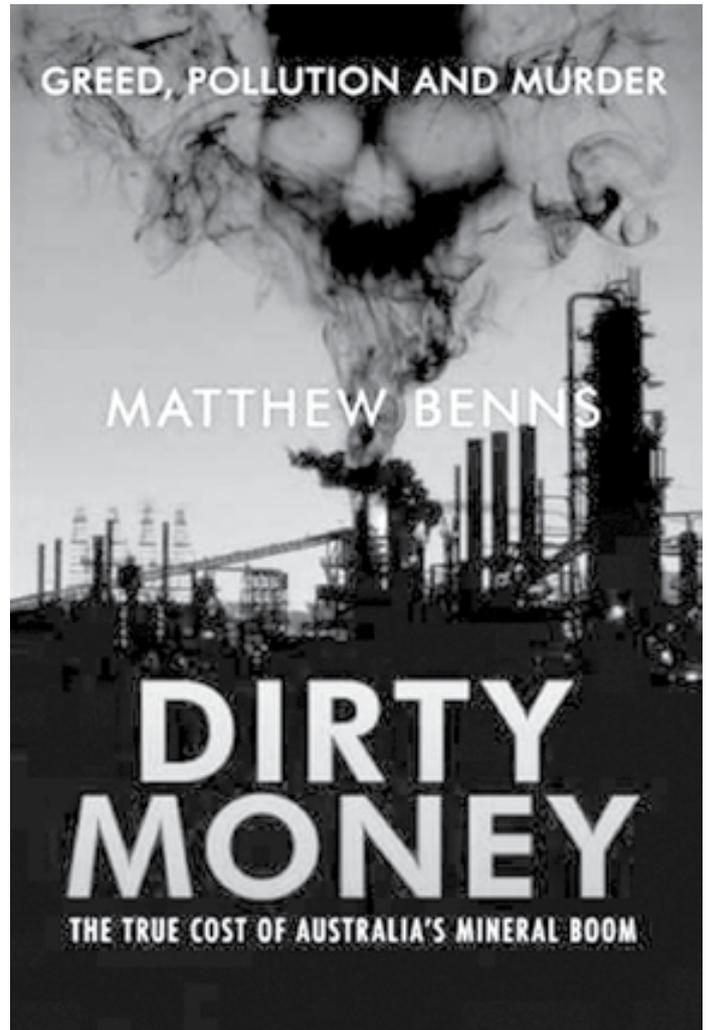
In late 2011, I sat down with a Filipino environmentalist who wanted to tell me a story that sounded all too familiar.

Rodne Galicha is from the southern island of Mindanao. He is part of a group called Alyansa Tigil Mina ("stop mining alliance"), and particularly wanted to talk to me about the Tampakan copper mine proposed by Saggittarius Mines Inc. (SMI). SMI is the Philippine-based subsidiary of Brisbane-based Xstrata Copper, a division of the Swiss multinational mining giant Xstrata.

Indigenous people will lose farms and villages to the giant mine. Local communities have found themselves torn apart by conflict over the project. Ominously, Galicho told me, six opponents of the mine have been assassinated by unknown persons – including Catholic priest Father Pops Tenorio.

The mine plans include a proposal to stack the expected 2.7 billion tonnes of wastes on the mountain above the mine site. In an area near an active volcano, subject to earthquakes, and which saw devastating floods just last year, this crazy scheme saw it labelled "one of the most dangerous mining projects in the world" by one expert.

In January 2012, the Department of Environment and Natural Resources refused SMI an Environmental Clearance



Certificate, so there is a chance that this dangerous project may have been halted. SMI is appealing the decision.

Yet that is just one mine.

You can read of dozens more historic and unfolding mining disasters like that threatened at Tampakan, in Matthew Benns' new book "Dirty Money – the true cost of Australia's mineral boom". Disasters for land, health, indigenous culture. Assassinations of mine opponents, legal and illegal political corruption, and more.

The one thing all his stories have in common, whether they take place in Africa, PNG, Romania, the Philippines – or in Australia – is that they are projects of Australian companies causing ecological and social disaster.

Benns' book opens with the gut-wrenching tale of how the Canadian/Australian company Anvil Mining aided soldiers as they massacred at least 100 local villagers near their Kilwa mine in the Democratic Republic of Congo, in 2004.

He moves on to look at many more sad stories. Widespread PCB carcinogen contamination in the mines around Lithgow, NSW, that some fear is going to contaminate local drinking water. Canadian-based Barrick Gold's Lake Cowal mine is

opposed by the local Wiradjuri people, who see the lake as their spiritual and cultural heritage – but Barrick Gold is only interested in the bottom line.

Australia's former colony, PNG, is a perennial victim of Australian-based mining ventures. BHP Billiton presided over one of the greatest environmental disasters in history at the Ok Tedi mine in PNG.

Even now, more disasters are on their way in PNG. The Ramu Nickel Project – in which Australian company Highland Pacific has a stake – plans to pump five million tonnes of mine waste slurry 150 metres underwater in Basamuk Bay each year for the next 20 years. Benns outlines a mess of threats, buy-offs, violence and disappearances as locals have attempted to resist the proposal.

These horror stories are mostly quite recent. Ramu Nickel is not yet operational: the story is still unfolding as you read this. And companies who are up to their necks worldwide in intimidation, corruption and environmental devastation are happily ensconced in our downtown business districts here in Australia.

The enormous wealth generated by Australia's mining boom is flowing into many areas. A measly \$22 million was all it took big miners like BHP to run the advertising campaign that saw Labor ditch Kevin Rudd as PM. Now we see Gina Rinehart moving into media to get her point across more forcefully.

Shale and Coal-Seam Gas is an almost entirely new industry that has sprung up, with exploration (if not production) in all states now – despite huge and largely unquantified damage to underground water and farmland. As the money generated by mining increases, so does the industry's capacity for new ventures.

Benns' book is valuable for its brutal recounting of the devastation being caused by mining companies and his steadfast exposure of the tycoons who benefit. He points to a couple of elements of a solution to the problem.

One is to set up an effective sovereign wealth fund based on taxes on mining companies, an ongoing asset for Australian governments, that can last when the minerals are all gone.

His recommendations on this are brief, but basically consistent with the suggestions made by Paul Cleary in his book "Too Much Luck – the mining boom and Australia's Future", which was also published last year (a thought-provoking read itself, if somewhat less sensational).

The other potential solution Benns briefly mentions is enforcing transparency in international operations of mining companies, citing the Extractive Industries Transparency Initiative.

Whether these proposals go far enough is something we should question, but the main service the book provides is to sound the alarm on the monsters in our midst. The story told to me by Rodne Galicho sounded all too familiar to an environmental campaigner like me, but it's a blind spot for Australia's media and the general public. For that alone, Benns' book deserves to be read widely.

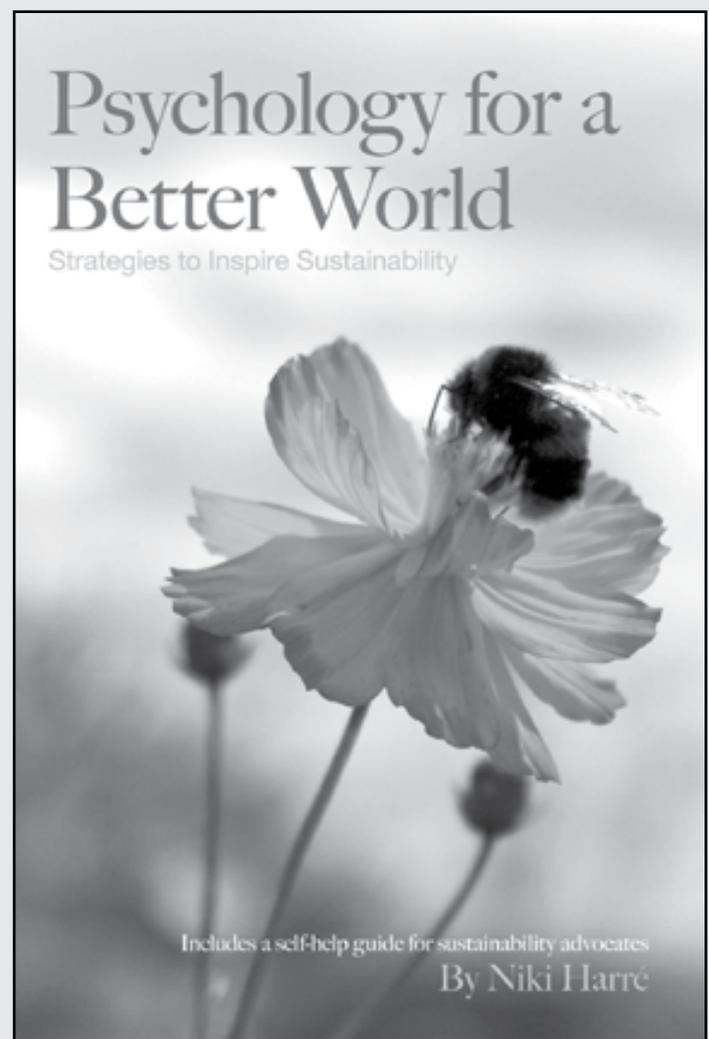
Ben Courtice is a renewable energy campaigner with Friends of the Earth, Melbourne.

Psychology for a Better World

*Psychology for a Better World:
Strategies to Inspire Sustainability*

Niki Harré

2011



Review by Kim Stewart

As a long term environmental and social justice activist, many times have I bemoaned a campaign's seeming inability to inspire people to action. While we all have good personal reasons of our own why we choose to work for environmental justice, it's sometimes hard to convey that to others in a way that makes them want to get involved.

It's too easy for critics to dismiss us as starry-eyed idealists when they can't relate to the masses of facts and doom-

saying we sometimes resort to in an effort to impress others of the urgency of our cause. Where we see hope and human social change, they see entrenched human nature and inevitability that can engender hopelessness. Combine that with the daily struggle that is most people's lives under capitalism and just getting through the day can be hard.

And let's face it, nuclear weapons, global climate change, these are big and complex problems. They won't go away overnight. The military, corporations and the fossil fuel industries are huge, rich and powerful. Are we not mere blades of grass standing up against a juggernaut?

Yet we continue to fight the good fight year after year. We know conquering such a massive social problem will require both an inspirational core of advocates for justice and a critical mass of people wanting change for it to happen. Why on earth do we do it?

This book by Niki Harré – an associate professor at the University of Auckland where she has taught social and community psychology for over a decade – looks at sustainability as a collective social enterprise, and effort to change society, not just solve one or two “problems”. From that angle, social psychology is invaluable. Research has a lot to tell us about how people interact and go beyond actions that are just personal, ineffectual or symbolic.

Religious groups and PR firms are leagues ahead of us in this respect: knowing how people tick and taking advantage of our natural tendencies to want to belong, to be meaningful and to communicate with others to sell a belief system or a product. We, as environmental justice advocates, are not selling people a crock, we are enjoining them to work alongside us to build a better world. It is that focus on alternatives to the way things (don't) work now, that Harré says is the advantage that we have.

Secondly, she focuses on the positive. The half-life of plutonium, for instance, is a scary idea and a negative one that leaves us feeling hopeless. There is a strong stream of hopelessness in the environment movement that shows itself in trends like the end of civilisation movement and the likes of James Lovelock who paints a very grim picture of the future affected by climate change. It should be no surprise, given the obvious fear that Lovelock has for the future, that he would grasp at equally horrific solutions like nuclear power (Monbiot is another case in point). Fear stops people acting sensibly, to blurs the judgement, clouds the ability to reason effectively.

We need to embrace the fun and creativity in our actions, what Emma Goldman asks for in her “dancing” revolution. Research indicates that, “positive emotions make us more creative, better at sifting through complex information, more open to information that is personally threatening but potentially important, and better negotiators”.

While dry reality has its place in submissions and scientific documents, we need to be aware of how all the information we know can affect others emotionally. No-one wants to be immobilised by the terror of the next Fukushima, we need to know these things, but how do we impart that information to new volunteers and advocates?

Harré points to research that indicates that information is but one of the ways that people decide what is a right action, people look at what they have learnt, authority figures in their lives, and other people they respect, as well as the behaviour of their peers and their own sense of self-efficacy. We ourselves, with our heartfelt desire for a better world to live in, can be more persuasive advocates by being emotionally genuine than with facts alone. Empowering people to feel they can act and use their skills in engrossing tasks are better ways of embracing them into our community than expectations of sheer will power and sacrifice.

Thirdly, Harré focuses on what we know about how people change: their beliefs, their attitudes, their behaviour. It's not about tricking people, but learning some skills of persuasion that can help a person who is somewhat rigid in their views be able to safely start to consider alternatives. This involves the psychological principle of “unconditional positive regard”. She tells us to look for out common humanity, “think of ourselves as part of a negotiation with equals”. In this respect she asks us to examine our own motivations for activism:

“[W]e are subject to all the confusion, hesitation and egoism that hold back progress on this issue. I believe that one deeply committed person can make a tremendous difference, but I also know that most of us are not that person – including me. It's a fine balance between letting yourself and others off the hook when the going gets tough, and being unrealistic about what is manageable. I finally came to accept my own and others' limitations as eco-warriors when I discovered fascinating research on how willpower appears to operate like an energy source – each of us only has a limited amount and we can use it up.”

Important words for those of us who have suffered the guilt of burn-out.

Harré offers us some practical suggestions in chapter 2. She reminds us to stop fighting battles we can't win and learn to know when to let go: “A consequence of this approach is letting go of those people who are way out of reach. Some people are, and will remain, resistant to sustainability. Maybe your neighbour really will be the last person in the world to give up driving his V8 to the corner store for a bottle of French mineral water.” We put a lot of energy into trying to persuade these kind of people, they are obvious. Less obvious are those who ‘sit on the fence’.

Harré ends the book with some very practical tasks and worksheets for assessing your own and others capacity at personal, local and community levels.

This book walks the talk on truly wanting to help people use the information learned by psychology to create a better world. Harré has written a book that is freely distributed, well referenced, easily accessible and eminently useful. Take an empowering journey into psychology, read this book!

You can order the book for \$15 – or download it as a free PDF – at psych.auckland.ac.nz/psychologyforabetterworld

Kim Stewart is a member of Friends of the Earth, Brisbane.

Friends of the Earth Australia contacts

National website

www.foe.org.au

National Liaison Officers

National Liaison Office

phone: (03) 9419 8700.

address: PO Box 222, Fitzroy, Vic, 3065.

Cam Walker (Melbourne)

email: cam.walker@foe.org.au

phone: 0419 338047

International Liaison Officers

Derec Davies (Brisbane)

email: derec.davies@foe.org.au

phone: 0421 835587

Tully McIntyre (Melbourne)

email: tully.mcintyre@foe.org.au

phone: 0410 388187

Latin America: Marisol Salinas (Melbourne)

email: marisol.salinas@foe.org.au

phone: 0431 368606

National campaigns, active issues, projects and spokespeople

Murray-Darling Basin

Carmel Flint (NSW)

email: carmelflint@tpg.com.au

Jonathan La Nauze (Melbourne)

email: jonathan.lanauze@foe.org.au

phone: 0402 904251

Anti-Nuclear and Clean Energy

Jim Green (Melbourne)

email: jim.green@foe.org.au

phone: 0417 318368

Coal campaign

Shaun Murray (Melbourne)

email: shaun.murray@foe.org.au

Indigenous Communities in

Latin America Campaign

Marisol Salinas (Melbourne)

email: marisol.salinas@foe.org.au

phone: 0431 368606

Pesticides

Anthony Amis (Melbourne)

email: anthonyamis@hotmail.com

Nanotechnology

Gregory Crocetti

email: gregory.crocetti@foe.org.au

phone: 0403 733628

South Melbourne Commons

(a collaboration between FoEA and the

Father Bob Maguire Foundation).

address: 217-239 Montague St,
South Melbourne (cnr Bank St).

email: ecomarket.melbourne@foe.org.au

or smc.operations@foe.org.au

phone: 03 9682 5282

website: www.commonsof.org.au

Membership issues/ financial contributions

Melissa Slattery

email: melissa.slattery@foe.org.au

phone: Freecall 1300 852 081

(03) 9418 8700 (Tues-Thurs)

LOCAL GROUPS

FoE Adelaide

address: c/- Conservation SA,
Level 1, 157 Franklin Street,
Adelaide, SA 5000

email: adelaide.office@foe.org.au

website: www.adelaide.foe.org.au

Clean Futures Collective

(mining & energy collective)

meets 5.30pm, first and third Wed of the month.

email: shani.burdon@foe.org.au

phone: 0412 844 410

Reclaim the Food Chain

(food and farming collective)

meets 6pm, fourth Thursday of the month.

FoE Brisbane

address: 20 Burke St, Woolloongabba
(above Reverse Garbage).

postal: PO Box 5702,
West End, Qld, 4101

phone: (07) 07 3392 4449

fax: (07) 3846 4791

email: office@brisbane.foe.org.au

website: www.brisbane.foe.org.au

Climate Frontlines

Wendy Flannery

email: wendy.flannery@gmail.com

FoE Melbourne

address: 312 Smith St, Collingwood.

postal: PO Box 222, Fitzroy, 3065.

phone: (03) 9419 8700,

1300 852081

(free call outside Melbourne)

(03) 9416 2081

fax: (03) 9416 2081

email: foe@foe.org.au

website: www.melbourne.foe.org.au

Climate Justice Collective

Brett Hennig

email: brett@thesharehood.org

phone: 0432 918 150

Anti-nuclear & Clean Energy (ACE) Collective

Zin Rain

email: ace@foe.org.au

phone: 0408 165735

Food co-op

phone: (03) 9417 4382

Bookshop

phone: (03) 9417 4564

FoE Kuranda

address: PO Box 795, Kuranda,
Qld, 4881

email: info@foekuranda.org

website: www.foekuranda.org

FoE Sydney

postal: 19 Eve St, Erskineville, NSW, 2043.

email: foesydney@gmail.com

website: www.sydney.foe.org.au

David McGill

phone: 0411 029172

email: mcgill.david.a@gmail.com

FoE Southwest WA

address: PO Box 6177,
South Bunbury, WA, 6230.

phone: Joan Jenkins (08) 9791 6621,
0428 389087.

email: foeswa@gmail.com

Bridgetown Greenbushes Friends of the Forest

address: PO Box 461,
Bridgetown,
WA, 6255.

email: president@bgff.org.au

website: www.bgff.org.au

AFFILIATE MEMBERS

Food Irradiation Watch

postal: PO Box 5829,
West End, Qld, 4101

email: foodirradiationwatch@yahoo.com.au

website: www.foodirradiationinfo.org.

Tulele Peisa (PNG)

'sailing the waves on our own'

website: www.tulelepeisa.org

Katoomba-Leura Climate Action Now

George Winston

email: gwinston@aapt.com.au

Sustainable Energy Now (WA)

address: Perth. PO Box 341,
West Perth WA 6872

phone: Steve Gates 0400 870 887

email: contact@sen.asn.au

website: www.sen.asn.au

Six Degrees Coal and Climate Campaign

A campaign initiative of FoE Brisbane Co-op Ltd.

email: sixdegrees@gmail.com

website: www.sixdegrees.org.au

phone, fax, street and postal addresses shared
with FoE Brisbane (see above).

Six Degrees regional campaign office

phone: (07) 4668 1880, 0427 166166,

address: 23 Thorn Street Warra, Qld, 4411.

Reverse Garbage

address: 20 Burke St, Woolloongabba.

postal: PO Box 5626,
West End, Qld, 4101

phone: (07) 3891 9744

email: info@reversegarbage.com.au

website: www.reversegarbage.com.au

Mukwano Australia

Supporting health care in organic farming
communities in Uganda.

email: Kristen.Lyons@griffith.edu.au or

Samantha.Neal@dse.vic.gov.au

website: www.mukwano-australia.org

In Our Nature

In Our Nature is a not-for-profit organisation
which is working on the Kitobo Colobus Project,
located in southern Kenya.

Julian Brown

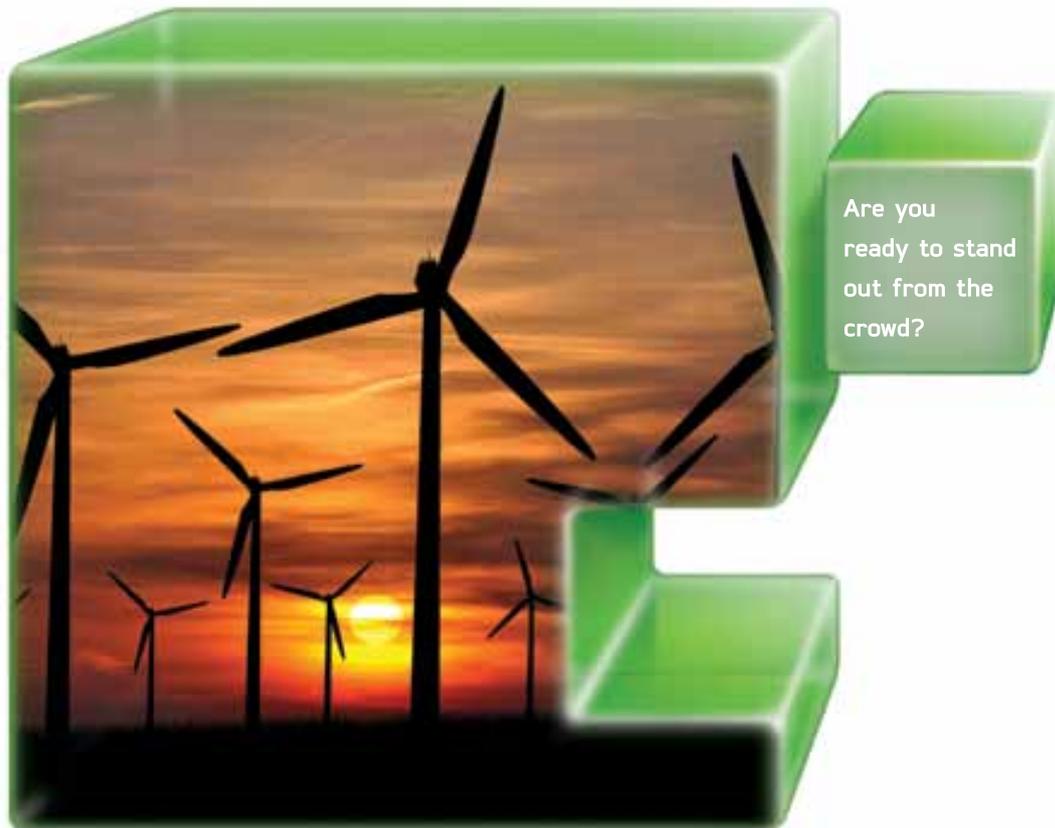
email: julian.brown20@yahoo.com

West Mallee Protection (SA)

Breony Carbines

email: westmallee@gmail.com

phone: 0423 910492



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