

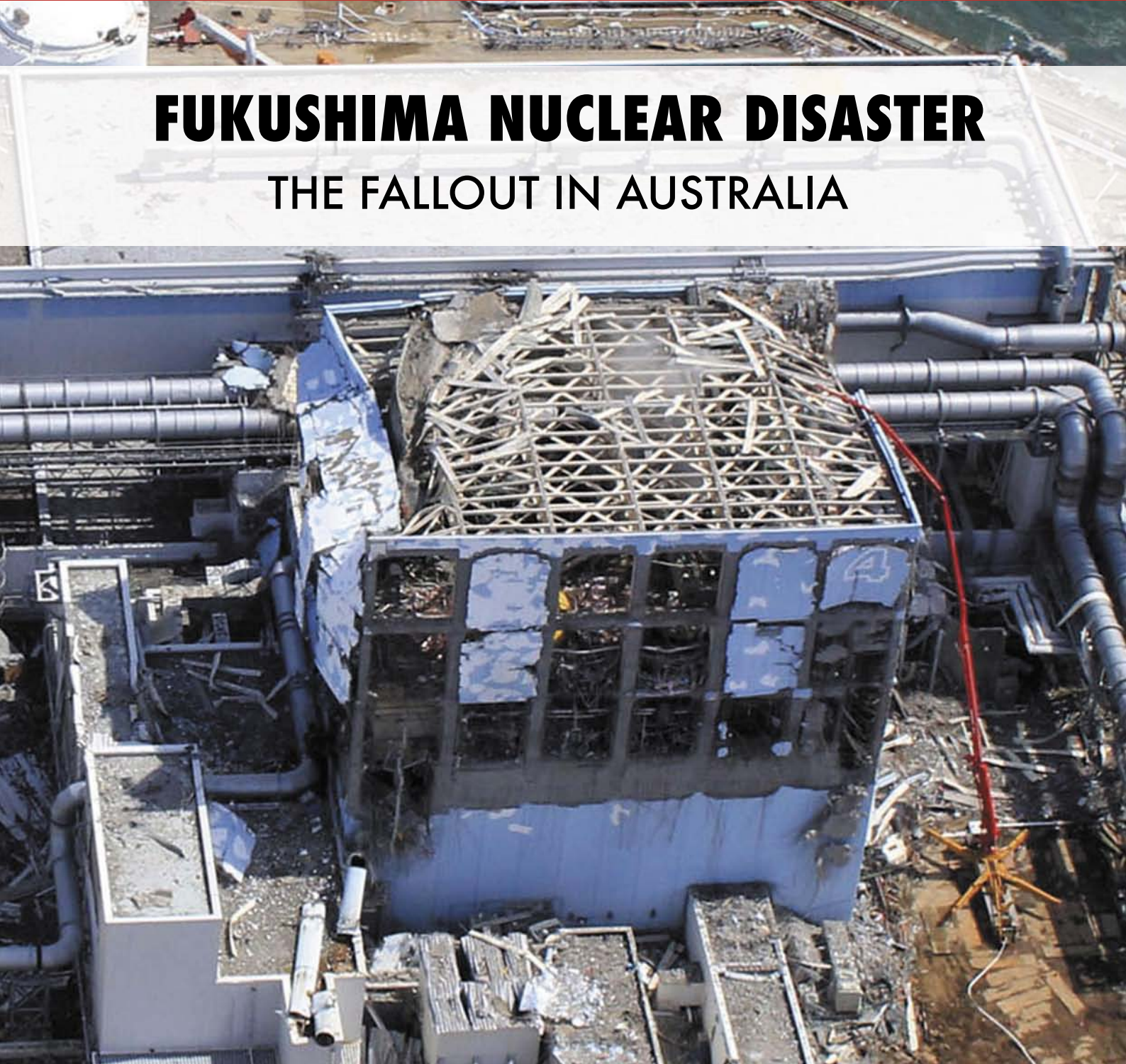
CHAIN REACTION

THE NATIONAL MAGAZINE OF FRIENDS OF THE EARTH AUSTRALIA :: WWW.FOE.ORG.AU

ISSUE # 112 JULY 2011 RRP \$5.50

FUKUSHIMA NUCLEAR DISASTER

THE FALLOUT IN AUSTRALIA



IN THIS ISSUE

- *Australia wimps out on renewables*
- *What's really pushing power prices up?*
- *The baseload electricity myth*
- *Pricing carbon in rural Australia*
- *US war games in Australia*
- *Murray-Darling plan sinks*
- *Gunns teetering in Tassie*
- *Our bloody cattle exports*
- *Australian teachers reject nano-sunscreens*

A photograph of a woman with long dark hair, smiling and looking down at a baby she is holding. The baby is yawning with its mouth wide open. The woman is wearing a black top. The baby is wearing a red long-sleeved shirt and a green vest with a floral pattern. In the background, there is a framed picture of a tree on a wall.

*'I invest
ethically
because I
don't want to
make money
from harming
others.'*

NADINE

Adelaide,
Environmental
Engineer.
New mum.

1800 021 227 • www.australianethical.com.au

Australian Ethical Investment Ltd ('AEI') ABN 47 003 188 930, AFSL 229949. Australian Ethical Superannuation Pty Ltd ABN 43 079 259 733 RSEL L0001441. A PDS is available from our website or by calling us and should be considered before making an investment decision. Australian Ethical® is a registered trademark of AEI.

australianethical 
investment + superannuation

Publisher

Friends of the Earth Australia,
ABN 81600610421

Chain Reaction Team

Jim Green, Cam Walker, Natalie Lowrey,
Holly Creenaune, Lilly Lowrey, Kim Stewart,
Georgia Miller, Rebecca Pearse, Richard Smith,
Elena McMaster

Layout & Design

Lilly Lowrey

Printing

Arena Printing and Publishing, Melbourne.

Subscriptions

Six issues (two years): \$A33

Twelve Issues (four years): \$A60

See subscription ad in this edition of Chain Reaction.

Subscription Enquiries

Chain Reaction, PO Box 222, Fitzroy
Vic, 3065, Australia. Ph (03) 9419 8700,
Fax (03) 9416 2081 Email: <chainreaction@foe.org.au>

ISSN: 0312 - 1372

Copyright

Written material in Chain Reaction is free of copyright
unless otherwise indicated, or where material has been
reprinted from another source. Please acknowledge
Chain Reaction when reprinting. Permission to use
graphic material must be obtained from the artist.

The opinions expressed in Chain Reaction are not
necessarily those of the publishers or any
Friends of the Earth group.

Chain Reaction is indexed in the Alternative Press index.

Chain Reaction is published three times a year.

CHAIN REACTION ADVISORY BOARD

Karen Alexander

Biodiversity campaigner [Vic]

Greg Buckman

Author/Researcher [Canberra]

Damian Grenfell

Globalism Centre RMIT [Melbourne]

Jo Immig

National Toxics Network [Banalow, NSW]

Geoff Evans

Sustainability researcher/campaigner [Newcastle]

Binnie O'Dwyer

FoE representative [Lismore]

James Whelan

Co-director of the Change Agency [Brisbane]

*The board provides big picture thematic and
political advice to the Chain Reaction editors,
advice on themes for future editions, as well
as helping to ensure that a broader range of
sectors/constituencies are represented in the
articles. The Chain Reaction editorial team are
still responsible for content, editing and design
and so any problems, omissions or other failures
are ours!*

PRINTED ON RECYCLED PAPER

CONTENTS:

REGULAR ITEMS

Earth News	2
FoE Australia News	4
FoE International News	6
FoE Australia Contacts	<i>Inside back cover</i>

CLIMATE & ENERGY

Australia wimps out on renewables	10
<i>Molly Wishart</i>	
The Base-Load Myth	12
<i>Mark Diesendorf</i>	
Pricing carbon in rural Australia	20
<i>Rebecca Pearse & James Hitchcock</i>	
What's really pushing up the price of power?	31
<i>Hugh Outhred</i>	
A clean break for Australia's future	32
<i>Fiona Armstrong & Laura Eadie</i>	
Proposed gas refinery on the Kimberley coast	45
<i>Martin Pritchard</i>	

NUCLEAR

Do we know the Chernobyl death toll?	23
<i>Peter Karamoskos & Jim Green</i>	
Radioactive Exposure Tour	24
<i>Madeline Hudson</i>	
WA 'Walk Away from Uranium Mining'	26
<i>Marcus Atkinson</i>	
Fukushima: the political fallout in Australia	27
<i>Jim Green</i>	
The Future Fund's nuclear weapons investments	29
<i>Tim Wright</i>	

NANOTECHNOLOGY

Australian teachers reject nano-sunscreens	16
<i>Elena McMaster</i>	
Nanotechnology campaign update	17
Nanotechnology and the commodification of everything	39
<i>Elena McMaster</i>	

OTHER ARTICLES

Why Gunns is teetering in Tassie	9
<i>John Lawrence</i>	
Ye Cods, the Murray-Darling Basin Plan swirls and ... sinks?	14
<i>Carmel Flint</i>	
Friends of Tulele Peisa	18
<i>Wendy Flannery</i>	
Ten reasons to oppose US war games in Australia	22
<i>Kim Stewart</i>	
Slaughterhouse live: our bloody cattle exports	34
<i>Geoff Russell</i>	
Direct action for social change	36
<i>Kim Stewart</i>	
Pindone rabbit baiting - cruel and careless	42
<i>Sharon Beder and Richard Gosden</i>	

REVIEWS

Radical Homemakers	47
Smart Gardening	
50 Years Photographing Australia	48

EARTH NEWS



Pete Gray

To those that stand up for peace, for biodiversity and the climate, Peter Gray, 30, who died of cancer on April 30 peacefully at home with his loving wife, Naomi, will never be forgotten.

Pete was a member of Rising Tide Newcastle, and an activist and supporter of the North East Forest Alliance and the Newcastle Branch of The Wilderness Society. Those who have been part of the struggle to protect the vanishing old-growth forest and remnant woodlands of eastern Australia will recognise the names of some of the places that Pete cheerfully joined comrades to defend: the Otways, Badja, Stroud Mountain, Copeland Tops, Jiliby, Myall River, Moira and Millewa. Most of these places are now protected from logging. He was an activist that was not content to merely throw himself in front of the bulldozers for a cause, but would always seek to understand the legal, administrative, biological and strategic background of the problems and threats he confronted.

Rising Tide will never be the same without him. Any of you that have been to one of Rising Tide's flotilla blockades of Newcastle harbour will appreciate that it was Pete that first conceived the idea back in 2006. And of course it was him that dreamed up the elaborate pirate vessels made of rafts and barrels, planks and rope, that caused police (and Greenpeace rescue craft) such headaches at those joyful protest actions. Some of my most cherished images of him show him cheerfully being arrested for the climate: smiling next to his mum in the 200 strong crowd blockading parliament, grinning with his hands cuffed behind his

back during the 1000-strong coal-line shut down during Climate Camp in Newcastle in 2008.

In 2006, Pete challenged the NSW's Government's Environmental Assessment for the massive Anvil Hill coal mine (now re-named Mangoola) in the Wybong area of the Upper Hunter in the NSW Land and Environment Court. His victory meant that all Scope 3 greenhouse emissions of coal mines now have to be assessed in NSW. The impact of the case was huge, since the media adored the David and Goliath tale that had such a clear-hearted and ingenious hero at centre stage. He and Naomi are currently applicants in another legal challenge in the Land and Environment Court, trying to force the NSW Government to regulate the greenhouse pollution of the country's single biggest point source of carbon dioxide emissions, Bayswater Power Station, near Muswellbrook.

The rest of the country know him as the shoe-thrower. Last year, when John Howard appeared solo on the ABC TV's Q&A program, Pete was in the audience. He stood up and threw his shoes at Howard in a gesture that mimicked the Iraqi journalist who did the same to George W. Bush. Pete's anguish about the loss of civilian life and shame and anger at Australia's role in that in the current war in Iraq is shared by many, and his gesture of contempt for Howard spoke for them too.

Pete was deeply loved by the activist community in Newcastle and beyond. In all the years that I knew him, I never saw him trespass against another person, or take any action that he knew to be unjust. He was an anti-establishment traditionalist, a shoe-throwing pacifist and an intellectual bon vivant.

– Georgina Woods

Wadi Wadi Traditional Owners celebrate anniversary

Wadi Wadi Traditional Owners celebrated the first anniversary of the proclamation of the Nyah Vinifera Park on July 3. Following the exciting win by Barmah-Millewa Collective (FoE Melbourne) and Wadi Wadi last year, Wadi Wadi are working with Parks Victoria and the Department of Sustainability and Environment to look after the Nyah Vinifera Park under a co-management arrangement. The Park has been flooded for the last 12 months – the first proper flood since 1995. This water has had an amazing effect in bringing the Country back to life.

Legal challenge to HRL coal plant

In June, Environment Victoria and City of Port Phillip-based climate action group LIVE announced a legal challenge to the proposed new HRL coal-fired power station planned for Morwell in Victoria. Lawyers for environment groups have lodged a Victorian Civil and Administrative Tribunal appeal against the EPA's decision to approve the new coal-fired power station. A key concern is that the proposed power station does not meet best practice standards for electricity generation, and that the EPA failed to consider non-coal based technologies in its determination of best practice.

Australia's renewable share declining since 1960

Research released in May by Environment Victoria shows that renewable energy has fallen over the past 50 years as a proportion of Australia's total electricity generation. The report shows that renewable energy (mostly hydro) provided 19% of the nation's electricity in 1960 but this fell to just 7% by 2008. During the same period Australia's overall energy use grew dramatically so that the actual output of coal power increased by 1200% while renewable energy grew by just 450%. The report, 'Australia's Electricity Generation Mix 1960-2009', is posted at www.environmentvictoria.org.au

Electricity price rises

The Climate Institute released research in April detailing how electricity price rises are primarily being driven by the cost of network wires and poles upgrades, and not pollution and clean energy policies. The research also reveals Australia's power sector ranks among the 10 most polluting power sectors on the planet, measured by greenhouse emissions per kilowatt-hour. The report, 'Electricity Prices: The Facts', is posted at www.climateinstitute.org.au

45,000 say 'yes' to climate action

On May 29, almost 45,000 of Australians stood up at rallies across the nation to "Say Yes" to cutting pollution and taking decisive action on climate change. Rallies



Protest outside the Australian consulate in Kuala Lumpur.

took place simultaneously in Sydney, Melbourne, Adelaide, Brisbane, Perth, Hobart and Canberra, in a national day of action organised as part of the 'Say Yes' campaign. www.sayyesaustralia.org.au

Australia spends \$11 billion more on pollution than cleaning it up

Research released by the ACF in March shows the Australian government spends \$11 billion more on subsidies that encourage greenhouse pollution than it does on programs to tackle climate change. The analysis shows funding for programs to address climate change has increased by about \$500 million since 2007-08, but incentives that encourage pollution have ballooned by more than \$1.5 billion. In 2007-08, the government spent \$480 million on programs to tackle climate change but it spent \$10.6 billion on subsidies that promoted fossil fuel use. This financial year the spending on climate programs is up to around \$1 billion, but the fossil fuel subsidies are up too, to a massive \$12 billion, meaning the Australian Government is spending \$11 billion more encouraging pollution than on cleaning it up." More information: www.acfonline.org.au/articles/news.asp?news_id=3308

In May, the Australian Greens released polling results that show overwhelming support for redirecting the government's \$11 billion a year hand-out to fossil fuel companies to renewable energy research and development. The Galaxy poll of 1,036 people showed 84% of Australians would like to see fossil fuel subsidies redirected to renewable energy research

and development. Only 9% believed it appropriate for fossil fuel companies to receive this hand out from the government.

Rare earths controversy in Malaysia

On May 20, over 300 people held a protest outside the Australian consulate in Kuala Lumpur, objecting to plans by Australian company Lynas Corporation to construct an Advanced Material Plant at Kuantan, Pahang. People were concerned that the facility would be processing rare earths oxide which contains radioactive thorium and that the company has no adequate plans to deal with the waste produced by the facility. Pahang residents are concerned that the thorium could lead to similar problems as those experienced 20 years earlier at the Bukit Merah Mitsubishi rare earths facility at Ipoh, Perak, where a number of children were born deformed and community members developed cancers after being exposed to thorium.

The rare earths are to be mined at Lynas' rare earths mine at Mount Weld in Western Australia, processed at Mount Weld and then transported for export from Fremantle. The ore will then be unloaded at Pahang and refined further at the Advanced Material Plant.

Rare earths are essential for the production in magnets used in computers, smart phones, electric cars and wind turbines. Almost the entire world production of rare earths is concentrated in China, however due to severe environmental problems, particularly in

Baotou Inner Mongolia, China decided to cut production of rare earths in 2010, leading to a likely shortage of rare earths. Lynas jumped at the chance of meeting the supply shortfall and fast-tracked its Mt Weld and Malaysian facilities.

Anthony Amis

Developing countries pledge bigger emissions cuts than richest nations

Research commissioned by Oxfam compares four of the most widely respected studies of emissions reductions pledges and finds that developing countries are making more of an effort to cut their greenhouse gas emissions than developed countries. Oxfam estimates that over 60% of emissions cuts by 2020 are likely to be made by developing countries.

Bike Futures 2011

The Bike Futures 2011 conference will be held in Melbourne on October 12-14. Now in its third year, Bike Futures has become the key annual professional development for national and local leaders, planners, designers and builders to use bike transport and recreation to advance their communities. More information: Bicycle Network ph 1800 616 600, <http://bikefutures.conferenceworks.net.au>

FOE AUSTRALIA NEWS

Friends of the Earth Australia is a federation of independent local groups. You can join by contacting your local group - see the inside back cover of Chain Reaction for contact details or visit: www.foe.org.au/groups.

There is a monthly FoE Australia email newsletter which - subscribe via the website www.foe.org.au. To financially support our work, please visit: www.foe.org.au/donate. To find us on social media, visit: www.foe.org.au/news/2010/finding-us-on-social-media



Part of FoE Adelaide's Sustainable Food and Farming Quilt

Food and farming film festival in Adelaide

FoE Adelaide's sustainable food and farming film festival will be screening from July to September. Now in its third year, the Feast of Film is a community-run showcase of thought-provoking and inspiring film from around the world, and this year features documentaries on a spectrum of food issues, from urban agriculture, to permaculture as a tool for the transformation of war-torn societies, emerging radical young farmers' movements, local economies, and more. In response to requests from previous years, the organising collective is working to make the film program available at a reduced cost to communities around Australia. With a number of expressions of interest already received, the Feast of Film looks likely to appear in a rural or urban community near you soon. For more information, visit www.adelaide.foe.org.au, or email joel.catchlove@foe.org.au

In February 2010, FoE Adelaide initiated and coordinated the highly successful community food convergence 'From Plains to Plate: the Future of Food in South Australia'. Plains to Plate has now evolved into a network of community, farming, environmental, health and government organisations, and is currently refining its strategies for ensuring just and sustainable food systems in South Australia. More information on the network, including how your organisation can get involved, can be viewed online at <http://futureoffoodsa.ning.com>

The finishing touches are now being put on FoE Adelaide's Sustainable Food and Farming Quilt. With contributions from all over Australia and the world, the quilt has been assembled into a dazzlingly diverse visual manifesto of a sustainable food system. Once completed and officially launched, it will commence a tour of South Australian community centres and exhibition spaces, as well as being submitted to the Royal Adelaide Show. A companion poster is being produced, complete with images and supporting text for the quilt, for use in classrooms, kitchens, community gardens, offices, shops, grain silos, etc.

FoE Brisbane takes Xstrata to court

In May, FoE Brisbane launched legal action in Queensland's Land Court against global mining giant Xstrata in relation to the greenhouse impacts of its proposed Wandoan mega coal mine. Each year the proposed coal mine, 350 kms north-west of Brisbane, would extract 30 million tonnes of coal and cause 47 million tonnes of carbon dioxide pollution, a sizable 0.15% of annual global emissions. If the mine goes ahead, it will be one of the largest coal mines in the world. The proposed Wandoan mine is the first stage of the gargantuan coal expansion into the Surat Basin coal deposits.

Please support FoE's coal seam gas campaign in Qld

Friends of the Earth has been a leading force in the community opposition to the roll out of coal seam gas in Queensland. There are plans to drill more than 40,000 CSG wells in Queensland alone. FoE is pivotal to the broad based and determined resistance that has been happening in places like Tara on the Darling Downs. We are a key member of the Lock the Gate Alliance, a national grouping of more than 80 organisations. At present we urgently need to raise \$6000 to keep our work going. Please support us if you can. Further information here. www.foe.org.au/climate-justice

Campaigning for wind power in Victoria

2011 marks the tenth anniversary of the Codrington wind farm in Victoria's southwest, the state's first. On May 18, Planning minister Matthew Guy announced approval for the latest, a three-turbine project at Chepstowe, near Ballarat. But this announcement only came after much pressure was put on Guy by renewables supporters including Friends of the Earth.

Victoria's wind industry is threatened with a becalmed future due to the policies of the state's new Liberal government. They came to power with promises

to ensure no-go zones for wind farms in the Macedon ranges, Bellarine and Mornington peninsulas, and the Great Ocean Road area. These are some of the best areas in the state for wind farms. They also promised to give residents within 2 kms of proposed wind farms the right of veto over development.

Comparing the 2 km restriction with the complete lack of restriction on coal mines and gas infrastructure is an important angle in our campaign too. There is a gas power station to be built at Tarrone, near Warrnambool, and local residents petitioned for an exclusion zone around it to no success.

*More information: yes2renewables.org
Ben Courtice, FoE Melbourne renewable energy campaigner, ben.courtice@foe.org.au,
ph 9419 8700 (ext.10), 0413 580 706*

Stop HRL coal plant in Victoria

The campaign to stop HRL's proposed new coal-fired power station from being constructed is now in full swing despite the Victorian Environmental Protection Authority's decision to approve staged construction of the plant. This decision was taken despite a record 4000 objections to HRL's application, and clearly demonstrates the EPA's failure to stop inappropriate projects from proceeding. A 'Snap Rally' was held at Parliament House with over 300 people, supported by the Stop HRL collective, Friends of the Earth, Greenpeace, and Environment Victoria.

An article in The Age revealed that the big four banks have ruled out financing the project. The state and federal governments are promising \$50m and \$100m respectively to prop up HRL with 'low emissions' technology funding.

For more information and to get involved, contact Shaun Murray at FoE Melbourne, shaun.murray@foe.org.au, 0402 337 077, www.stophrl.org (sign on for campaign updates), www.facebook.com/stophrl

Victorian govt abandons Hazelwood negotiations

In May, the Victorian Coalition government announced that it has discontinued discussions over the plan to secure the early closure of two units of the Hazelwood coal-fired power station. FoE Melbourne campaigns co-ordinator Cam Walker said: "The Coalition has now been in government for almost half a year. Yet they have still not released a climate change policy, and the community is now being told that the 20% greenhouse emissions reduction



target that the Coalition voted to support while in Opposition is now 'aspirational'. We have a planning minister who is seemingly willing to kill off any chance for future community owned wind farms in the state through the creation of arbitrary 'no go' zones for wind development. And now we have the government of the day walking away from negotiations over the partial closure of Hazelwood".

Coal mining at Anglesea

Since 1961 Alcoa has been operating a coal mine just inland from Anglesea on Victoria's Surf Coast. The mine and attached power station provides energy for the Point Henry smelter, which produces aluminium for local use and export. Under the original 1961 lease conditions, Alcoa has an automatic option to mine the site for another 50 years, but the company is currently in negotiations with the state government about a substantial expansion of its open cut mine. They are seeking a license to operate for another 50 years. This is at the same time that the government has said it will close off the surrounding area to wind energy developments.

The coal mine negotiations have raised many health and amenity concerns amongst locals. The mine will further destroy the heritage listed heathlands. With the right policy and incentives, the Surf Coast, Bellarine Peninsula and surrounding regions could easily

produce as much energy as the coal mine from renewable and other clean energy sources.

For more information and to support the campaign, visit www.melbourne.foe.org.au/?q=node/900

Declaration for safer Australian pesticide laws

A declaration for safer Australian pesticide laws was launched in June. It is a joint campaign of WWF, National Toxics Network, CHOICE and the Public Health Association of Australia, supported by over 50 prominent Australians and organisations including FoE. In Australia, there's no requirement for the manufacturers of old pesticides to prove they are safe in accordance with current standards. That means the pesticide industry gets the benefit of the doubt, while pesticides not allowed in other countries and suspected of causing cancer and other health problems remain on the Australian market. At least 17 pesticides registered for use in Australian agriculture are suspected carcinogens, and 48 are potential hormone disruptors. Eight chemicals with known safety risks have been under review by our regulator for more than 13 years, some for more than 15 years

Add your name to the list of signatories at www.foe.org.au/pesticides

FOE INTERNATIONAL NEWS

Friends of the Earth International is a federation of autonomous organisations from all over the world. Our members, in over 70 countries, campaign on the most urgent environmental and social issues, while working towards sustainable societies.

Web www.foei.org, Facebook www.facebook.com/foeint. You can sign up for 'Voices', the bimonthly email newsletter of FoE International, at www.foei.org/en/get-involved/voices.

FoE's web radio station broadcasts the voices of the affected people we work with and the campaigners fighting on their behalf. Listen online (in a choice of five languages) at www.radiomundoreal.fm.

Check out the FoE International online shop at www.foei.org/en/get-involved/shop for calendars, t-shirts, greeting cards, subscriptions to FoE publications, and more.

Stop farm land grabbing

Ahead of the G20 Agriculture Ministers meeting in Paris in June, hundreds of civil society groups called on G20 governments to halt all land grabs and return lands to communities. FoE International, along with farmers' movements, women's groups and more than 500 other organisations, outlined the actions necessary to ensure food security and sovereignty, combat rural poverty and protect the global food system from future environmental shocks. FoE International Food Sovereignty program coordinator Kirtana Chandrasekaran said: "The G20 does not represent many countries or communities facing hunger and it has a history of pushing deregulation which has worsened the food crisis. It has no legitimacy to decide on global solutions to the food crisis or price volatility."

More information: 'Dakar Appeal Against Land Grabbing', www.grain.org/m/?id=332
See also www.focusweb.org/content/its-time-outlaw-land-grabbing-not-make-it-responsible



FoE celebrates 40 years of mobilisation, resistance and transformation

This year Friends of the Earth International, the world's largest global grassroots federation of environmental groups, celebrates its 40th anniversary. FoE International was founded in 1971 in Roslagen, Sweden by a group of environmental activists from France, Sweden, the UK and the US. These activists saw a pressing need for an organisation that would facilitate the tackling of cross-boundary environmental issues.

Forty years later, the federation boasts 76 member groups and over two million individual members and supporters around the world. Our positions and campaigns are informed by our work with the grassroots and communities. FoE International is also part of a global environmental and social movement that includes farmers, indigenous peoples, workers, women and young people.

To mark the anniversary, FoE has produced a range of materials – a publication on FoE's history and work over the past 40 years, stories of struggle and success, audio interviews, photos, and an interactive map.

Visit: www.foei.org/en/who-we-are/about/40th-anniversary

Japan earthquake and tsunami appeal

As part of its support for relief work in Japan, FoE International has donated A\$11,000 to Peace Boat for its work in the city of Ishinomaki, Miyagi Prefecture. The donation has been used to support the purchase of mud-cleaning equipment for the volunteer Tsunami Mud & Small Debris Clearance initiative. This project has resulted in the clearance of over 500 homes and other buildings, including schools, retirement homes and shops, and miles of streets and drains.

To donate online: www.foei.org/en/get-involved/take-action/japan-earthquake-and-tsunami-appeal

FoE Asia Pacific nuclear declaration

In June, a FoE Asia Pacific meeting in Seoul held a press conference to declare its commitment to a Nuclear Free Future. It included statements from Japan, Korea, Malaysia, Sri Lanka and Australia as well as the declaration from FoE Asia Pacific.

The declaration notes: "Approximately 70% of uranium used in nuclear reactors are sourced from the homelands of Indigenous minorities worldwide, this is no different in Australia. Aboriginal communities in Australia have publicly announced their sadness at the uranium that has been taken from their lands without their consent and resulted in the nuclear disaster in Japan." FoE Japan has been campaigning with many others to protect children and expectant mothers from high radiation exposure from the stricken Fukushima nuclear plant. They are calling for more extensive evacuation areas, measuring of residents' internal radiation exposure, the dismissal of the Fukushima health advisor, and strict adherence to a one millisievert limit for public radiation exposure. <http://fukushima.greenaction-japan.com>

Protests against Barrick Gold

In April, FoE participated in protests against Barrick Gold at the company's annual general meeting in Toronto. Protesters

supported a loud call from communities around the world for a halt to gold mining and Barrick Gold's destructive practices. Barrick Gold, the largest gold miner in the world, has been the subject of many documented studies of human rights abuses and environmental devastation globally, including in the Philippines, Tanzania and Australia.

FoE called into question the corporation's gold mining operations. With the vast majority of gold used for jewellery, Barrick's gold mines on average use more water than the entire bottle water industry in Canada, and this water is polluted with mining waste products such as cyanide, mercury, arsenic, cadmium, selenium, and sulphides.

Natalie Lowrey from FoE Australia, who was inside Barrick's AGM and joined the rally outside, said: "In Australia, Barrick has desecrated an ecologically and culturally significant site on Wiradjuri lands with an open-pit mine in the bed of Lake Cowal within a flood plain. Wiradjuri Traditional Owners have been fighting Barrick in the courts for 10 years on the desecration of sacred sites at Lake Cowal and on the protection of Wiradjuri Native Title Rights."

More information: <http://protestbarrick.net>, youtube.com/waysofseeing

Brazilian Forest Code

The National Seminar on the Forest Code held in São Paulo on May 7 gathered over 400 participants from 50 organisations,

peoples' movements, members of parliament, scientists, academics and rural and urban social groups. These organisations express their strong rejection of proposed legislative amendments to Brazil's Forest Code. This policy reform, in a mega-biodiverse country which has over 50% of the world's tropical forests, will favour agribusiness transnational corporations and broaden social and environmental injustice brought by carbon markets, land grabbing, contamination and the displacement of peasants, local communities and indigenous peoples.

World Bank fuelling climate chaos

A new report by FoE International, released in June during UN climate talks in Bonn, shows that the World Bank Group has been increasing its investments in fossil fuels and promoting corporate-led false solutions to climate change, including carbon trading, that serve to deepen rather than alleviate the current environmental crisis. The report, 'Catalysing Catastrophic Climate Change', follows widespread concerns voiced by developing countries about the growing role of the World Bank in delivering climate finance. It is posted at www.foei.org

FoE groups in action ...

In March, civil society organisations in Colombia took to the streets of the capital Bogota, to mark the International Day of

Action Against Dams and for the defence of rivers, water and life. They were joined by other like-minded organisations from the continent and beyond. La Troja is a warehouse and distribution centre run by FoE Costa Rica. It has been created to enable small scale producers to store and sell basic grains such as, maize, beans, rice and other non perishable products.

Two companies involved in the building of a mega-dam in Indonesia have been engaged in the displacement of local people through the compulsory purchase of land for less than the price of a bag of rice. The project, known as Poso II, will affect the lives of up to 2000 people. For more information and to support the campaign: www.foei.org/en/get-involved/take-action/halt-the-poso-ii-mega-dam

FoE Norway is celebrating the decision of the Norwegian government, despite massive pressure from the oil industry, to hold off on oil activity in the areas of Lofoten, Vesterålen and Senja in the north of the country.

During the Shell annual general assembly in The Hague on May 17, FoE International presented an 'erratum' to Shell's 2010 annual report. In this spoof erratum, which was distributed among shareholders, Shell 'admits' that it is "causing a lot of unwanted and unnecessary damage" in its global oil-gas- and biofuels operations. The company also states that Shell "has learnt from these mistakes" and pledges to take "full responsibility to prevent and mitigate costs for the environment and people affected by our operations".

Visit: www.foei.org/shell-report.





Support Friends of the Earth

community · ecology · solidarity · justice

We are part of the Australian voice of the largest grassroots environment network in the world, with groups in 77 countries. Whether you decide to get a campaign up & running, volunteer at the fabulous food coop or bookshop, or provide crucial dollars as an Active Friends monthly supporter, it is people like you who keep Friends of the Earth strong. If you are short on time, but big on commitment, take a few minutes to fill in this form.

As a member of Friends of the Earth you are never alone

Help ensure FoE remains a vibrant & independent voice for social and environmental justice. Give your support by:

- ☐ Becoming an **Active Friend** by giving monthly tax-deductible donations
- ☐ Becoming a **New Member** ☐ **Renewing** your membership
- ☐ Giving a one-off **Donation**

Name: _____

Address: _____

State: _____

Postcode: _____

Email: _____

Phone: _____

Mobile: _____

You make the difference · Join Friends of the Earth

active friends

I'd like to make a **monthly donation** of: ☐ \$20 ☐ \$30 ☐ \$50 ☐ other \$ _____ (\$10 min)

The donation will be by (please fillout appropriate card details below):

- ☐ **Direct Debit** from my bank account (the least admin fees!) ☐ **Credit card**

A Service Agreement will be sent to you upon receipt of this form. If you would also like to become a member, tick here: ☐ an additional \$20 per year will go towards membership, this is not tax-deductible.

membership

Become a FoE member with a yearly membership payment:

- ☐ **\$150 Supporting Member** (\$100 tax deductible)
- ☐ **\$90 Organisation** ☐ **\$80 Household** ☐ **One Year**
- ☐ **\$60 Waged Person** ☐ **\$40 Concession** ☐ **Ongoing** (Credit Card or Direct Debit only)

donations

Make a one-off donation (over \$2.00 is tax-deductible): Donation \$ _____ (thank you!)

Direct debit

I/We _____

(Given name)

(Family name)

Request you, until further notice in writing, to debit my/our account described in the schedule below, any amounts which Friends of the Earth Inc may debit or charge me/us through our direct debit system. I/We understand that 1) the bank/financial institution may in its absolute discretion determine the order priority of payment by it of any moneys pursuant to this Request or any other authority or mandate. 2) The bank/financial institution may in its discretion at any time by notice in writing to me/us terminate this Request as to future debits. Bendigo Bank Direct Debit User ID no: 342785

Financial Institution: _____

BSB # _____

Branch address _____

Account # _____

Name on Account _____

Signature _____

Credit Card

☐ Visa ☐ Mastercard ☐ Bankcard Name on card: _____

Card no: ____ / ____ / ____ / ____ Expiry Date: ____ / ____

CCV no: ____ (last 3 digits on back of card) Cardholder's signature: _____

Cheques payable to 'Friends of the Earth'

Please return to Friends of the Earth, PO Box 222 Fitzroy VIC 3065

Ph: 03 9419 8700 Fax: 03 9416 2081

email: membership@foe.org.au website: www.melbourne.foe.org.au ABN: 68 918 945 471

Why Gunns is teetering in Tassie

John Lawrence

What company has received \$500 million in cash from the issue of new shares over the past three years but only has a market value of \$300 million?

Why Gunns, of course.

What company, when faced with the daunting prospect of repaying or renegotiating almost all its borrowings of \$600 million within 12 months, pretends that the announced sale of all assets is to finance a new pulp mill rather than to enable the solvency declaration to be signed?

What company, having announced the sale of all assets, will be forced to publicly reveal in its annual accounts the write down of the values to reflect current market offers rather than pie-in-the sky expectations?

What unprofitable company, whose operations have been sold, about to be sold or closed down, can still claim “underlying profit” of \$40 to \$50 million?

What company, operating in the native forest sector with decrepit assets and diminishing markets, is demanding compensation for a cessation of its loss-making activities?

What company failed to foresee the decline in global demand for native forest woodchips, yet nevertheless books income from plantations not due for six years as current year income?

What company brazenly tells the market that it is confident of gaining finance of \$2.5 billion without a joint venture partner -- but is yet to reveal the new business case despite adverse exchange rate movements, the proposed sale of all forestry assets and the plummeting market assessment of its assets?

What company has not bothered to explain a material matter as to how second and third rotation tree crops needed as feedstock for a pulp mill, will be arranged and financed now that Managed Investment Schemes are defunct and plantation land about to be sold?

That's right, Gunns, in every case.

This company is in its death throes yet continues to delude itself and the market and the Australian public that it has a future. And perhaps it has, if government bails it out. For that is the only way forward for Gunns. Institutions are wary of bold new developments at the best of times, let alone a proposal from a teetering company with no experience in the operations of a high-tech, supposed state-of-the-art pulp mill.

Institutions once provided the stability, the authority, the credibility and most importantly most of the cash that has

allowed Gunns to survive. But Gunns has slipped out of the top 200 on the ASX charts and institutional interest is waning. The current share register now more closely resembles a hotel register of a two-star private hotel. Gone are the long-term boarders. It's the itinerants who only stay a night or two whose names continually appear on the register. Here one day, gone the next. Similar to the politicians who have overseen this farce ... Paul Lennon and David Bartlett.

With change comes hope. When Lara Giddings accepted the poisoned chalice as Premier, hopes were raised that someone would at last recognise that rebuilding a new Tasmanian economy on the foundations of an almost insolvent entity was not necessarily a prudent plan.

Alas, Giddings still sees Gunns' pulp mill as the shining beacon, guiding the state forward. Unfortunately most advice on forestry matters has come from the government-owned Forestry Tasmania, now hopelessly conflicted and closer to insolvency even than Gunns. The advice from that source is unlikely to be impartial. It took the state government forever to realise that it might need to be a little more proactive, so it has recently called tenders to provide advice through a strategic review.

For years Forestry Tasmania, entrusted with the care of the state's native forests, has conspired with Gunns to split the proceeds of woodchipping in proportions that favoured the latter. But now both are facing a bleak insolvent future, and are accusing the other of price undercutting as they play leapfrog in the race to the bottom. Only when that inevitable destination is reached will Tasmania be able to move forward.

John Lawrence works in Tasmania as an accountant in public practice and an observer and researcher on finance and economic matters at the state level. This article first appeared on Tasmanian Times. <http://tasmaniantimes.com>

Australia wimps out on renewables

Molly Wishart

When Australian state electricity authorities built giant 1,000 to 2,000 megawatt (MW) coal-fired power stations – like Liddell, Bayswater, Loy Yang, Tarong and Eraring – in the 1970s and 80s, it seemed like a 'good idea at the time'. The country had a rapidly growing hunger for electricity, and lots of cheap coal, so they appeared to be the perfect fit.

But history has caught up with them – they have become climate change dinosaurs. With black and brown coal used to fire three-quarters of the nation's electricity, they have helped make our country the largest per capita greenhouse gas emitter in the developed world. If Australia is to take climate change action seriously, they have to be given an honourable, and quick, extinction.

Because electricity is the easiest of Australia's greenhouse gas sectors to cut, serious national climate change action will probably necessitate the electricity sector eventually becoming greenhouse gas emissions free, or very close to it. There are only two paths to deliver this: nuclear and renewable energy.

Gas can't, despite what its boosters claim, because it releases two-thirds of the greenhouse gas emissions that black coal does. And carbon-capture-and-storage (CCS) can't, because its unproven (there are no commercial scale plants in the world), it emits about a fifth of the emissions of non-CCS plants, it can have major storage risks, and, in Australia's case, there are few storage sites within 100 kms of power stations.

Nuclear technology is proven, and has zero emissions once built (though there can be significant emissions associated with its construction), but after the recent Fukushima accident in Japan, there are greater doubts than ever about its safety and it remains an expensive technology. It has also never convinced the world it can safely store its waste or that it can break the link between 'peaceful' nuclear technology and the proliferation of Weapons of Mass Destruction. So this leaves renewable energy.

Just as Australia has enormous deposits of coal, gas and uranium, it also has a huge renewable electricity generating potential. Australia gets more sunshine than any other continent on earth, it has one of the world's best geothermal resources, and it also has sizeable wind, biomass and wave resources. Renewable energy is the obvious way to decarbonise Australia's electricity supply. That's why the CSIRO has projected that renewable energy will eventually generate most of the country's electricity in a carbon constrained world.

Renewable energy policy

But instead of embracing renewable energy, Australia is doing its best to run away from it. Australia's main renewable electricity support scheme is its Large and Small Renewable Energy Targets. Since it started as the Mandatory Renewable Energy Target a decade ago, it has suffered from two major problems. The first is that it gives the same subsidy to all large-scale renewable electricity generators, regardless of whether they are generating wind, solar or geothermal etc. That's great for wind – the least expensive non-hydro form of large-scale renewable electricity – but it's a major problem for all the other types that need a bigger subsidy to be competitive. This wouldn't be a problem if it weren't for the fact that solar and geothermal have much larger long-term generating potentials than wind, which could never generate all of our electricity.

The second major problem is that the scheme has been saddled with having to subsidise solar hot water by providing a generous subsidy to small-scale (but not large-scale) solar generation. This has resulted in the scheme's currency – Renewable Energy Certificates (RECs) – generally having a low and erratic value. The scheme's separation into large and small components at the start of this year has so far had limited success in lifting the value of large-scale RECs, and hasn't attempted at all to solve the problem of the scheme's inability to provide a greater subsidy to large-scale solar and geothermal than to wind.

Some relief to the one-sized-subsidy-fits-all problem came in 2009, when the Rudd government allocated \$1.6 billion to the subsidisation of some large new solar generators under a new 'Solar Flagships' scheme, and in 2010, when the Bracks Victorian Labor government pledged to source 5% of the state's electricity from solar by 2020. In 2010, the Stanhope ACT Labor government also undertook to hold auctions for 240 MW of large-scale feed-in tariff renewable subsidies. Of these, only the ACT commitment looks set to survive intact.

The Gillard government began cutting the Solar Flagships scheme during last year's election and continued this year in its Queensland flood package and annual budget. Only about half the scheme's original funding will now be spent over the next four years (though there is a vague promise to spend more later). And after the Victorian Auditor-General criticised the development of its solar target, the Baillieu Liberal government looks set to ditch it. This means, as ever, there is precious little

attempt to subsidise anything but wind in Australia's renewable electricity world.

Carbon pricing, when and if it ever happens, has the potential to eventually become a 'white knight' for large renewables but in May climate change minister, Greg Combet, said its starting price would be 'well South' of \$40 per tonne. If he means about \$20 per tonne, then it won't provide much support for any type of renewable electricity, let alone solar and geothermal (even \$40 per tonne would do little).

None of this means that Australia won't have any large-scale renewable generating capacity by the end of this decade. It will, but it is likely to mainly consist of wind, a bit of biomass (mostly sugar cane waste and landfill), and hydro. Solar and geothermal, despite their towering generating potential, will hardly figure. Australia won't have a particularly diversified renewable electricity base from which it could eventually generate all of its electricity. And its electricity sector will still be dominated by fossil fuels, including rapidly expanding gas.

Small-scale renewables

If the news is fairly bad on the large-scale renewable electricity front, it is only slightly better on the small-scale renewables one. Since 2008, all states and territories have had feed-in tariffs, mainly for small-scale solar panels. There is no doubt they have been successful in significantly lifting the country's solar panel capacity. In 2009, we only had 100 MW of solar panel generating capacity: now we have more than 500 MW (although much less sunny Germany has over 11,000 MW and Spain has over 5,000 MW).

But throughout 2011 there has been a campaign to discredit solar panel subsidies, mainly because many people are being told they are pushing up their power bills. They do put some upward pressure on the bills, but most of the increase over the past three or so years has come from expansion of the electricity distribution and transmission networks. It needs to be remembered, too, that Australia still enjoys some of the cheapest electricity in the developed world.

The negative press has found its target with the Keneally Labor and O'Farrell Liberal governments winding back the New South Wales feed-in tariff and the Rann Labour government in South Australia getting ready to do something similar. On top of this, the Gillard government has recently wound back some

of its solar panel subsidy provided through the Small Renewable Energy Target scheme. Fortunately, the cost of solar panels has fallen over the past two years, so they don't need the level of subsidy they used to, but the recent sudden changes don't bode well for their future.

When the Snowy Mountains and Tasmanian hydro schemes were delivering large new capacity in the 60s and 70s, Australia generated nearly a quarter of its electricity from renewables. Today, we generate less than 10%. The federal and state subsidy schemes that has operated over all, or some, of the past decade have helped stop the slide and have brought some diversity to the country's renewables mix.

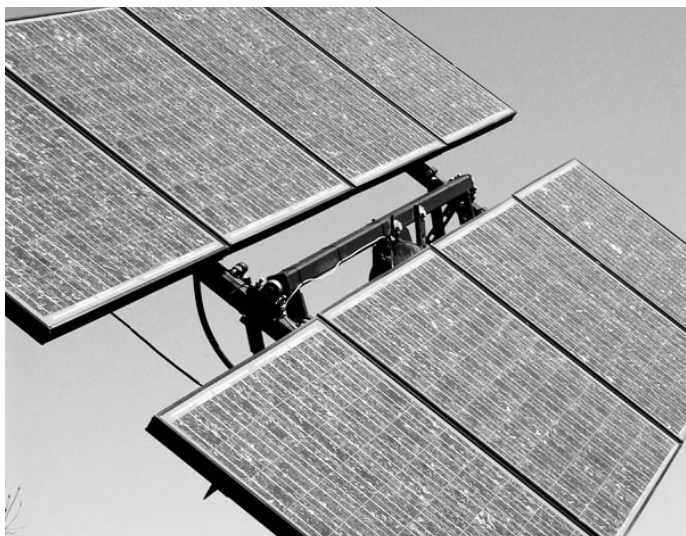
But they have fallen well short of boosting renewable electricity in a major way, let alone enabling it to eventually generate all of the country's electricity. Australia is far too tentative about renewables, particularly compared to many European countries. Even Great Britain, historically considered the 'dirty man of Europe', has embraced renewable energy more enthusiastically than we have. It has a goal of sourcing 30% of its electricity from renewables by 2020 and a support mechanism, much like Australia's, that has a certificate multiplier device built into it that delivers a higher subsidy for more costly renewable types like solar and offshore wind.

Meanwhile Liddell, Bayswater, Loy Yang, Tarong and Eraring coal stations keep belching out greenhouse gases and electricity demand keeps growing at a fast clip in our country. Australia needs to get on board the renewable electricity boat, properly, or we will never seriously get on board the climate change action boat.

“The CSIRO has projected that renewable energy will generate most of the country's electricity in a carbon constrained world.”

The Base-Load Myth

Mark Diesendorf



To every complex problem there is a simplistic response, which is usually wrong. For instance, to the challenge of generating all of Australia's electricity from renewable energy, the deniers repeatedly utter the simplistic myth that renewable energy is intermittent and therefore cannot generate base-load (that is, 24-hour) power.

However, detailed computer simulations, backed up with actual experience with wind power overseas, show that the scoffers are wrong. Several countries, including Australia with its huge renewable energy resources, could make the necessary transition to an electricity generation system comprising 100% renewable energy over a few decades. Case studies include the UK (www.zerocarbonbritain.org), Europe (www.erec.org), Germany, Denmark, northern Europe (International Journal of Energy Research, 32: 471–500), New Zealand (Energy, 34: 524–531), and the whole world (Energy Policy 39:1154–1190; Int. J. of Global Energy Issues, 13, nos 1–3; www.ecofys.com/publications/The-Energy-Report-Ecofys.htm).

Supplying base-load power is not a major obstacle. Firstly, night-time demand is low compared with daytime demand. This base-load demand could be further reduced by improving efficiency of energy use and by the forthcoming phase-out of electric off-peak hot water and its replacement with solar hot water and instantaneous gas. This is the reverse of previous policies, which deliberately encouraged an increase in night-time demand to allow inflexible coal-fired stations to generate 24/7.

Secondly, some renewable energies are just as reliable sources of base-load electricity as coal, while being 50 times less greenhouse polluting. These include bio-electricity generated from burning the residues of crops and plantation forests, concentrated solar thermal power with low-cost thermal storage, and hot-rock geothermal power. Of these, bio-

electricity from residues is ready for rapid growth. It already contributes to both base- and peak-load power in parts of Europe and the USA.

Several different types of concentrated solar thermal power are already in limited mass production in Spain and California. However, we still need several years of experience with different types of collectors, heat-storage and heat-transfer systems before choosing second-generation systems for mass production. Meanwhile Australia should implement a feed-in tariff for large-scale solar, to gain experience, optimise systems and then move into local manufacture of the best designs. Hot-rock geothermal power is being demonstrated on a small-scale in France, Germany the USA and will soon be demonstrated in Australia.

Until solar thermal power with thermal storage is ready to be rolled out rapidly, the cheapest renewable electricity option for replacing several coal-fired power stations is one of the so-called 'intermittent' sources, wind power, a fully commercial technology. Wind supplied the biggest contributions to new generating capacity in Europe in 2008 and 2009. It already provides 24% of Denmark's electricity generation and over 14% of Spain's and Portugal's. It's undergoing enormous growth in China, which doubled its wind generating capacity each year during 2006–2009.

Intermittency

So, what about intermittency? There is no doubt that the output from a single wind farm fluctuates greatly. However, the fluctuations in the total output from a number of wind farms, which are geographically distributed in different wind regimes, are much smaller and partially predictable. Modeling shows that it's relatively inexpensive to lift the reliability of the total wind output to a level equivalent to a coal-fired power station by adding a few low-cost peak-load gas turbines that are operated infrequently.

Even in the absence of renewable energy power stations, electricity supply systems are designed to handle fluctuations in supply and demand. A power station or a transmission line may break down. An advertising break in a popular TV show may result in millions of kettles being switched on. These fluctuations are handled by peak-load plants, such as hydro and gas turbines, that can be switched on and off quickly, and by reserve base-load plants that are kept hot. Up to a point, these existing back-up systems can also handle fluctuations in wind and solar power without storage.

With large amounts of wind and solar photovoltaic capacity in the grid, some additional peak-load plant may be required. Gas turbines (essentially jet engines) are suitable because they

“Some renewable energies are just as reliable sources of base-load electricity as coal, while being 50 times less greenhouse polluting.”

can be turned on and off quickly, have low capital costs and, provided they are not operated a lot, have low fuel costs. They are reliability insurance with a low premium. They can be fuelled by gas or preferably biofuels produced sustainably.

Feasibility has been established by computer simulations of electricity generation systems by several research groups around the world, including my own in CSIRO in 1980s. See ‘The Base-Load Fallacy’ (www.energyscience.org.au/factsheets.html) and the book ‘Renewable Energy and the Grid’ edited by Godfrey Boyle, Earthscan, 2007. Two recent detailed studies, funded by the National Renewable Energy Laboratory in the USA, found that wind power could supply 20-30% of electricity, given improved transmission links and a little low-cost flexible back-up (see www.nrel.gov/wind/systemsintegration/ewits.html and www.nrel.gov/wind/systemsintegration/wwis.html).

So a plausible Australian scenario for the next decade is the phase-out of several coal-fired power stations simultaneously with a rapid growth in efficient energy use, solar hot water, wind power and bio-electricity. These clean technologies would buy us time to commercialise solar thermal and possibly geothermal power and then integrate them on a large scale in the 2020s as the remaining coal stations are shut down. Thus Australia could achieve a sustainable electricity system.

Clearly this solution is more complex and subtle than simplistic statements from renewable energy deniers that “The Sun doesn’t shine at night and the wind doesn’t blow all the time” and false statements that “Renewable energy cannot supply base-load power”. In reality, there several renewable electricity technology options with different statistical properties. There is also the prospect of substantial modifications of demand by means of ‘smart grids’. A mix of sources with appropriate transmission links and ‘smart grids’ could provide a reliable system of 100% renewable electricity. Such a system supersedes the concept of ‘base-load’. The important thing is not the reliability of one type of energy source, such as wind or solar, but the reliability and sustainability of the whole supply-demand system.

Associate Professor Mark Diesendorf is Deputy Director of the Institute of Environmental Studies at UNSW. His latest book is “Climate Action: A campaign manual for greenhouse solutions”.

SUBSCRIBE TO CHAIN REACTION TODAY!

Subscriptions Enquiries:

Chain Reaction
PO Box 222 Fitzroy
Victoria 3065
Australia

Ph: +61 (3) 9419 8700,
Fax: +61 (3) 9416 2081
Email: foe@foe.org.au

Subscribe now to make sure you receive every issue of Chain Reaction.

Four issues: \$A22 (within Australia)
Cheques, etc payable to Chain Reaction

Chain Reaction receives no financial support relying on subscriptions, FoE membership and volunteers for its continued existence. All contributions are greatly appreciated by the Chain Reaction editorial team.



Ye Cods, the Murray-Darling Basin Plan swirls and... sinks?

Carmel Flint

I don't think that I have ever seen a creature as innately mournful as the Murray Cod. It seems to have had its current fate writ large across its face for thousands of years.

One doesn't need to go too far back to trace the tragedy of the Cod. When John Oxley travelled through the Basin in 1817 he recorded one man catching 18 ample Murray Cod in the Lachlan River in less than an hour.

River regulation and over-fishing commenced soon after, and continued without cessation until the population suffered a massive collapse in the 1950s. Over an eight year period from 1956-1964, the commercial catch in NSW declined from a maximum of 140 tonnes to just 20 tonnes, with commensurate declines in South Australia.

Nothing meaningful has been done to arrest that decline, and this summer, after massive blackwater events that led to de-oxygenated water and extensive fish kills, it was reported that Murray Cod numbers had been further decimated. The Moama Fishing Classic caught only two specimens of Murray Cod this year across a three day contest.

In our lifetime, the Cod is becoming a creature of myth and memory. It is our largest freshwater fish, an extraordinary and charismatic figure that can live for a 100 years and weigh more than 100 kgs, but which is now facing the most dire fate imaginable. And we, collectively, seem to have neither the will nor the courage to do anything about it.

The Cod, or what's left of them, must be watching with a terribly chagrined eye the latest appalling developments on the Murray-Darling Basin water reform process. The worst failings of the Australian political system have been on stark display in this process – where the undue influence of a powerful vested interest is allowed to destroy the well-being of the wider community and the environment that it depends upon.

The irrigation sector has had a very clear agenda from the first day that the guide to the Murray-Darling Basin Plan was released, and one by one they have been getting everything that they wanted. Here's a little sample of how they are going so far. The process of actually implementing change has been put back by at least a decade. The state-based water resource plans will not have to be aligned with the Murray-Darling Basin Plan until 2019, and then they have the option of another five years of transitional arrangements stretching to 2024.

The scientific process has been compromised, with the Murray-Darling Basin Authority (MDBA) admitting that they are now considering returning less than 2800 gigalitres (GL) of water to the rivers each year, when the science indicates that



volumes in the order of 7000 GL are required. The modelling by the MDBA shows that returning only 2800 GL will result in:

- no improvement in waterbird numbers which have reduced to 20% of historical levels;
- insufficient water to provide access to wetland and floodplain habitat for native fish, which have experienced a 90% decline in populations;
- the probable death of more than 25% of River Red Gum in 18 hydrological indicator sites including major Ramsar wetlands; and
- the Murray River mouth being closed three times more often than it should be.

The MDBA has refused to appoint an independent scientific reference panel to review their work, and the Wentworth Group of Scientists has walked away from the process because it lacks any scientific credibility. The parochialism that has led, in large part, to the decline of the Murray-Darling river system, is now being touted as the 'solution'. 'Localism' we are told, is the answer. However, localism appears to us to be dangerously synonymous with putting irrigators in charge of making decisions about returning water to the environment. And how does this all stack up economically, one wonders – is this all part of a fair 'balance' between economy and environment. Alas, no.

Irrigated agriculture represents only 6% of the gross regional product of the Murray-Darling Basin. Dryland agriculture is a far more significant industry in terms of economic output, and in terms of putting food on our tables. However, reduced flooding as a result of over-allocation of rivers for irrigation has substantial negative impacts on dryland farmers.



The Australian Floodplain Association tell us that one dryland farmer alone can make an extra \$1.8 million worth of product and produce an additional 200 kgs of food after a flood. A similar story applies in relation to industries such as tourism, apiary and recreational fishing – they all flourish when the rivers run.

Then there are the Traditional Owners, whose cultural economies have been dependent on the river systems of the basin for so many generations that we cannot number them. They are seeking a separate cultural water allocation, that delivers tangible cultural and economic outcomes, and that finally and rightly recognises their sovereignty over the water resources of this country. We are yet to see any hard evidence that the federal government is taking their aspirations seriously.

Make no mistake, the confected divide between ‘jobs’ and the ‘environment’ has never been more fatuous than it is in the Murray-Darling debate. We have watched whole ecosystems move to the brink of collapse, cities like Adelaide facing chronic water shortages, and millions of tonnes of salt that should have flushed out to sea building up in estuaries and on farmlands around the Coorong and Lower Lakes. The cost of ‘business as usual’ is immense and unsupportable through any rational frame of debate.

The economic argument, fairly rendered, is squarely on the side of strong and determined action to return the river to health and thus secure the future of the communities that depend on it. It is the politics where the problems lie – politics which are undoubtedly as murky and confounded as the rivers where the Cod now passes its ever-shortening days.

Not only will the proposal by the MDBA to return less than 2800 GL to the Murray-Darling fail to arrest its decline, but it will waste vast sums of taxpayers money in doing so. The

federal government has committed \$8.9 billion to the reforms regardless of the volume of water that is returned to the environment. Most of the money, some \$5.6 billion, will be spent on so-called ‘water-saving’ infrastructure for irrigators.

The fact is that enough money has been allocated to purchase sufficient water to return the system to health. However, because the government has locked it in to infrastructure savings, instead of being used to buy water it is being used to subsidise the irrigation sector. If the target volume for environmental water is set at only 2800 GL then the overall program will cost taxpayers more than double the price of water on the open market.

That is the worst case scenario which is now unfolding as the most likely outcome of the Basin Plan process – less than half the volume of water that is needed is returned to the environment and our public money is used to entrench the irrigation industry instead of restructuring it.

The draft Basin Plan is expected to be released in July and will then go on public exhibition for 16 weeks. This is the time to have our mightiest river system and its voices heard. Let’s remind environment minister Tony Burke that the eye of the Cod is upon him – he should ponder its haunting visage and act to place the greater good above the dictates of narrow vested interests.

They’re our rivers, our lifeblood.

Carmel Flint works with the Barmah Millewa Collective on the Murray-Darling Basin water campaign. Visit the website of FoE’s Barmah Millewa collective for updates: www.melbourne.foe.org.au/?q=bmcl/news

Australian teachers reject nano-sunscreens

Elena McMaster



Workers are on the front line when it comes to potential health and safety risks from nanomaterials. The Australian Education Union (AEU) is now leading the Australian union movement, acting this year to help prevent unnecessary and potentially harmful exposure to nanomaterials in workplaces. The Victorian branch of the AEU adopted a resolution unanimously in April calling for nano sunscreens to be kept out of schools. That resolution is now federal policy.

The AEU Victoria resolution drew a vociferous reaction from some industry and science bloggers – and a slightly confusing attack on the AEU's decision on the government-funded TechnYou website, supposedly an educational resource on emerging technologies. The reaction from some in the blogosphere – accusing the AEU and Friends of the Earth of endangering children's lives – indicates the extent to which some nano proponents are prepared to bend facts to suit their own techno-optimistic view of nanotechnology while attacking concerned community groups for not being judicious enough in their use of the facts.

Unlike the claims that nano sunscreens are entirely safe and offer better sun protection than conventional sunscreen, the AEU resolution and the Friends of the Earth position is backed up by existing peer-reviewed scientific literature. It has been well established that nanoparticles of zinc oxide and titanium dioxide are significantly more toxic than their bulk counterparts and can kill cells and damage or even break DNA strands. Some early studies have also demonstrated that these nanoparticles may, in fact, be able to penetrate human skin. If they do, this is a potential health risk. Further research is urgently needed to test whether nanoparticles used in sunscreens can get through human skin in real-life conditions (including people with sensitive or broken skin). It is also absolutely essential that we understand whether very young children – who have much thinner skin than adults – are at a higher risk of exposure.

The precautionary approach requires that where there is evidence of the potential for serious harm, but scientific

uncertainty persists, the burden of proof rests on proponents to prove a technology or material safe (rather than critics to prove that it is unsafe). It is an approach promoted by the UK Royal Society to manage the uncertain risks associated with nanotechnology and it is an approach consistent with our government's own stated objectives. It is also consistent with Australia's international obligations as a signatory to the 1992 Rio Declaration on Environment and Development. This is clearly affirmed in the first objective of the National Enabling Technologies Strategy (NETS) office, the public engagement arm of the Department of Innovation and Industry.

Appropriate consideration of risks to human health and safety and the environment is an integral part of the development and application of nanotechnology. This will be achieved by continuing to:

- use an evidence based approach to making decisions about nanotechnology;
- use existing regulatory frameworks to deliver an efficient and effective response to the health, safety, and environmental impacts of nanotechnology;
- ensure that regulatory schemes are reviewed to assess their ongoing ability to deal with the impact of nanotechnology, and regulatory or procedural changes implemented as necessary;
- apply a precautionary approach consistent with Australia's international obligations, including the Rio declaration; and
- ensure information about the health, safety and environmental impacts of nanotechnology is based on scientific evidence.

The NETS office objectives read well, however there is little indication they have been put into practice. Unfortunately the federal government continues to resist community pressure to apply the precautionary approach to the development and commercialisation of nanotechnology. The bureaucratic wheels in Europe may be turning slowly with regulation of nanomaterials in cosmetics due to take effect in 2013. But Australia's regulatory bodies are moving glacially to close truck-sized holes in our regulations. Hundreds of products containing nanomaterials are still being manufactured with no tracking or notification requirements, no safety testing and no labelling. Meanwhile workers and community members are already being exposed to nanomaterials in hundreds of consumer products.

While scientific uncertainty persists and our national health regulator digs its head deeper into the sand, the AEU decision to discourage teachers from using nano sunscreens and to require schools to provide nano free sunscreens is an important and progressive move. With a number of effective non-nano, zinc based SPF 30+ sunscreens widely available it makes no sense for workers and parents to gamble with

their own health and the health of their children.

The AEU resolution recognises that decisions about technological innovation, its commercial use and public safety cannot always be entrusted to government who often see their role as fostering innovation, investment and commercialisation rather than protecting public safety. The AEU resolution also recognises that we cannot always trust regulators to put public safety before corporate agendas.

The response to the AEU resolution from industry and some science bloggers indicates an ideological blindness to evidence-based community concerns about safety. The response from elsewhere – other unions, child care and educational groups and public health organisations – reflects the community desire

for sane and safe technologies that don't carry health and safety risks for workers or publics. The AEU resolution shows that community voices can speak louder than industry propaganda and government spin.

The AEU Victoria resolution is posted at www.aeuvic.asn.au/80284.html

Elena McMaster is a campaigner with Friends of the Earth's Nanotechnology Project. Email elena.mcmaster@foe.org.au, web www.nano.foe.org.au, ph (03) 9419 8700.

Nanotechnology campaign update

Friends of the Earth's Nanotechnology Project has been having a great few months. While the government is still largely failing to act to protect people and the environment, we are working with growing numbers of community groups keen to take things into their own hands.

The recent decision of the Australian Education Union (AEU) to support a nano-free sunscreen policy in all public schools is a victory for precaution and common sense. AEU Victoria unanimously passed a resolution in April urging their members to avoid nano-sunscreens. AEU Victoria also recognised that the development and commercialisation of nanotechnology carries significant safety, environmental and social challenges. The resolution has been adopted by the federal executive, so it now forms federal policy.

The AEU is just the latest civil society group to choose nano-free sunscreens. In recent months, the Victorian volleyball players' association announced a nano-free sunscreen policy. Several of Melbourne's biggest building sites have also brought in a nano-free sunscreen policy in response to demands by construction workers. And following the nation-wide mailout of our Safe Sunscreen Guide to childcare centres last summer, many childcare centres have also begun supplying nano-free sunscreen to the kids in their care. The calls by more and more community groups for a precautionary approach to nanotechnology, and for the right to choose nano-free, are in direct contrast to the federal government's approach so far.

Two years ago, the NSW Parliamentary Inquiry into Nanotechnology recommended that nanoparticles be regulated as new chemicals, which would require their passing new safety assessment before being permitted in products. The Inquiry also recommended that the use of nanoparticles in sunscreens,

cosmetics, foods and workplaces face mandatory labelling.

Yet the federal government continues to reject calls for labelling that would let the public know whether they face exposure in their workplaces or homes. Without mandatory product labelling, many of the companies we work with find it very difficult to get accurate information about the nano-content of products and ingredients that they buy. The failure to give workers information about their occupational exposure to nanoparticles, and to require that companies take action to protect their employees from unsafe exposure, is particularly alarming.

France, Belgium and Denmark have committed to introducing mandatory registers for nanomaterials in commercial use. France is moving closer to establishing not only a mandatory register for nanomaterials used commercially, but also the world's first national epidemiological survey of exposed workers. The French researchers hope that their project will inform research into occupational exposure to nanomaterials, provide a way to detect any longer term health harm, and enable workplace health harm to be tracked back to the place of employment. Organisation for the project is underway and the launch is planned for mid-2012.

Australia should be making every effort to keep pace with international best practice. In the coming months our project will investigate real workplace practice in relation to nanoparticle handling. We hope to build momentum for a mandatory register and precautionary action for workplace safety.

More information: web www.nano.foe.org.au, ph (03) 9419 8700.

Friends of Tulele Peisa

Wendy Flannery

FoE Australia's (FoEA's) commitment to supporting the Carteret (Tulun) Islands people has been a feature of its climate justice campaign since 2006. Located 86 kms north-east of Bougainville, within the national boundary of Papua New Guinea, the Carterets are a scattering of low lying islands in a horseshoe shape stretching roughly 30 kms in a north-south direction, with a total land area of 0.6 square kms, a maximum elevation of 1.5 metres above sea level, and with a population of around 2000.

The people of the Carteret Islands are on the frontlines of catastrophic climate change. They are one of the first entire communities to have to move because of a combination of climate change related factors threatening their livelihoods. They have fought for more than 20 years against the rising ocean, building sea walls and planting mangroves. However, storm surges and high tides continue to wash away homes, destroy vegetable gardens, and contaminate fresh water supplies.

The plight of the islanders was described in graphic detail in the FoEA 2006 publication, 'Climate Justice: A Fair Share of the Atmosphere', drawing heavily on the work of the late Pip Starr, who visited the islands and provided photographic evidence and firsthand accounts of the people's experience. The prediction is that the Carterets will be largely uninhabitable by 2015.

In response to this challenge, the Carteret chiefs decided to set up an organisation to oversee their relocation and resettlement, and engaged Ursula Rakova, a Carterets woman with extensive grassroots development experience, to lead its planning and implementation. Known as Tulele Peisa – "Sailing the Waves on Our Own" – the organisation's vision is to maintain the islanders' cultural identity and live sustainably wherever they are. Its guiding philosophy is to encourage self-sufficiency and independence through all steps of the relocation process. The Catholic Diocese of Bougainville has donated more than 48 hectares of land at Tinputz on mainland Bougainville, and is willing to consider a second land grant once the first group of houses are built and families resettled.

The plan is to relocate 1700 islanders voluntarily, 10 families at a time, to three safe and secure locations on mainland Bougainville over a 10 year period. The work involves planning, training and capacity building of project officers and fundraising, as well as advocacy and lobbying within Bougainville so that the relocation can be developed in a culturally sensitive way. In practice it requires such things as negotiating access to land,

organising the building program, establishing food gardens and a school, helping families to move and resettle, and building good relationships with the existing community in the resettlement location. While the PNG national government has recognised the plight of the islanders and allocated funds towards resettlement, to date Tulele Peisa has not been able to access these funds.

In line with FoEA's practice of providing opportunities for representatives of vulnerable communities to visit Australia, with a view to impacting the Australian public and key policy makers through face-to-face encounters, in late 2007 Ursula Rakova and Bernard Tulun of Tulele Peisa accepted the invitation to do a speaking tour in Melbourne, Canberra, Sydney and Brisbane. Subsequently, members of the Climate Frontlines collective in FoE Brisbane (FoEB), whose focus was support for Pacific Islander communities vulnerable to climate change, kept in contact with Ursula and her work.

When an opportunity arose to promote and facilitate the participation of several Pacific Island representatives in the Australia Pacific Earth Charter festival in September 2010, the Climate Frontlines collective was able to have Ursula Rakova included and featured in several parts of the program. During the main public day of the festival, Ursula stunned many of those present when she talked about people in the Carterets finding sharks and stingrays in their vegetable gardens during the high season of king tides and storm surges.

The collective used the opportunity, in collaboration with Oxfam, for a fund-raising event geared towards financing the construction of the first couple of houses on Bougainville for relocated families. The event was also used to garner the interest of individuals or organisational representatives for an ongoing Brisbane-based support group to be known as Friends of Tulele Peisa.

Friends of Tulele Peisa

The first meeting of the group was held in October, when Ursula was in Brisbane on her way back to PNG after other meetings in southern states, so that she could provide initial direction for the group's activities. The Climate Frontlines collective in FoEB has taken responsibility for convening the group and keeping in regular contact with Ursula. A smaller fundraising event was held in December when Ursula passed through Brisbane on her way back from the UN climate



Ursula (centre) at the Brisbane Friends of Tulele Peisa fundraiser, December 2010, flanked by two Australian supporters of Papua New Guinea origin – Philma Kelegai (originally from Yalibu in the Southern Highlands Province) and Veronica Robbins (originally from Milne Bay Province).

negotiations in Cancun, as well as a speaking engagement at Ballina with interested individuals in northern NSW.

The Friends group currently comprises one or more representatives of five Brisbane-based organisations and several other individuals. In addition to fundraising for such needs as housing construction and a new engine needed for the boat used to ferry people and goods between the Carterets and mainland Bougainville, other support needs which have emerged in consultation with Ursula include:

- preparing information for posting on the Tulele Peisa website (set up by FoEA's Nat Lowrey), specifying protocols for journalists and film makers visiting or conducting interviews about the resettlement project, in order to ensure that intellectual property rights and other appropriate information/remuneration sharing;
- assisting with the production of materials to help Tulele Peisa lobby within PNG for the release of funding allocated for resettlement programs;
- exploring the possibility of direct access to AUSAid and/or climate adaptation funds;
- supporting Ursula's efforts to engage in a comprehensive review process of the whole program;
- maintaining regular contact with Ursula for updates on Tulele Peisa's work, to inform efforts at ongoing information sharing and awareness-raising within Australia;
- developing an online networking facility for Friends of Tulele Peisa, to enable sharing on follow up actions, advertise relevant events, and post news updates from Ursula.

On the first of these points, Ursula noted that since 2005, 24 media crews have come to the island and the people have never seen the results of many of the visits in terms of significant international financial or other support. This has led the Friends group to reflect on what sometimes seems to be a fine line between advocacy and exploitation for personal or organisational ends.

To conclude, it seems appropriate to share a comment Ursula made on her return from the international climate summit in Cancun last December, having had to come to terms with the fact that the intergovernmental negotiations were going nowhere fast: "We need everyone to make a strong stand to demand a deep cut in greenhouse emissions. For you, this cut is a lifestyle choice. For us, it is a matter of life and death – it is about our cultural survival and our survival as a people."

Wendy Flannery is a member of the Climate Frontlines collective at Friends of the Earth, Brisbane.

Pricing carbon in rural Australia

Rebecca Pearse and James Hitchcock

A new piece of emissions trading legislation passed in the lower house of federal parliament on June 16 – the Carbon Farming Initiative (CFI). It looks to be a significant part of the trade in carbon rights from 2015. It is a voluntary terrestrial (land-based) carbon offset scheme, where landowners will be able to generate emissions reduction carbon credits for sale on carbon markets to domestic and international buyers from July this year.

It's time to get our heads around what the CFI means. Emissions trading schemes are ridiculously complicated, making participation in the debate suited to desk-bound policy wonks and few others. Here we offer a brief introduction of the rationale behind emissions trading and carbon offsets, before introducing the shambolic features of Australia's new scheme.

Carbon offsetting is a key feature of all emissions trading schemes, and fundamental to the failure of these schemes. Whilst a country like Australia may legislate a cap on greenhouse gas emissions (e.g. our trifling 5% below 2000 levels by 2020), emissions reduction that occurs outside the national borders and in different industries to those creating emissions here can be counted against these targets. Rather than reduce emissions from say a coal- or gas-fired power station, carbon offsets can be purchased to reduce emissions on paper.

Offset projects are usually created in developing, non-Annex 1 nations under the United Nations' Kyoto Protocol. Projects in the Kyoto Protocol Clean Development Mechanism (CDM) and Joint Implementation are sold in the most part on the European Union Emissions Trading Scheme (ETS). The CDM has been rife with controversy. Around 85% of CDM offsets surrendered under the EU ETS were derived from projects where firms made minor technical adjustments at a few industrial installations to eliminate hydrofluorocarbon refrigerant gases and nitrous oxide (a by-product of nylon production).

Whilst the US and Europe have been able to eliminate the majority of hydrofluorocarbon production via regulation, in Asia the availability of funds via the CDM has led to what the UN CDM Methodology Panel describes as a strong incentive to prolong the operation beyond their normal lifetime and not improve the efficiency of the plants.¹ Offsets encourage companies to increase pollution in order to be paid to reduce.

Australia's Carbon Farming Initiative

The Australian CFI will lead to the creation of an assortment of carbon offsets from land use practices. Activities covered in the CFI scheme will likely include: reforestation; improved

“Offsets generated in the Carbon Farming Initiative look certain to be a loophole for polluting firms keen for a way out of reducing emissions in their operations.”

soil management and fertiliser usage; better rice cultivation practices; reduced methane emissions from livestock; and the application of biochar.

The CFI is not compulsory for farmers to engage in, and for now credits can be sold only in the voluntary carbon market. This is the market where offsets are sold to corporations or consumers wanting to make their activities 'carbon neutral'. The majority of these credits will not be 'Kyoto compliant'. That is, they do not meet the regulatory standards of the UNFCCC, and cannot be used to meet national targets under the Kyoto Protocol. Approximately 25% of net CO₂e emissions in Australia have originated from land ecosystems, primarily from deforestation. So with its focus on the land sector the CFI seems a welcome addition to the climate debate. However, there are fundamental flaws with the scheme.

Exactly how the CFI will relate to the pending emissions trading scheme is currently unclear. The Multi-Party Climate Change Committee is still deliberating on the structure of the future emissions trading scheme and therefore whether CFI carbon credits will be saleable to companies with obligations under the scheme. No firm position on the CFI as an offset mechanism for the future ETS has been announced by any political party. Offsets generated in the CFI look certain to be a loophole for polluting firms keen for a way out of reducing emissions in their operations.

Carbon accounting

Before looking at the detail of the CFI, it's worth pondering the production of carbon offsets as an act of accounting. Pricing carbon begins from the assumption that the true cost of greenhouse gases is not reflected in the price we pay for goods and services sold in the market. These market 'externalities' must be internalised into the cost structure of production. The carbon market reduces a range of situations, or interrelationships between humans and ecological systems, to a single, measurable figure – equivalent tonnes of carbon dioxide (CO₂e).

The result is a crude algebra of inputs and outputs, pluses and minuses, in a simplistic appraisal of ecological processes. Quantities of CO₂e either as an input to the atmosphere or a reduction become definable in a range of locations from emitting greenhouse gases from a coal-fired power station or

steelworks, to acts such as the destruction of hydrofluorocarbon gases or not cutting down a forest (what policy makers crudely define as a carbon 'sink').

But here's the rub. The Earth's ecological systems and complex social relations don't follow this linear logic. First, ecologically speaking not all carbon is the same. Carbon exists not only in space but in time. Carbon that is stored in landscapes is part of what we could call a living carbon cycle where carbon is constantly transferring between inorganic forms (CO₂ in the atmosphere) and organic forms (plants, algae, animals etc.) These processes are dynamic and in constant flux over decades. Fossilised carbon in comparison is produced over thousands of years and effectively stored for thousands of years.

The assumption that carbon stored in land ecosystems via the CFI is equivalent to fossil carbon is scientifically unsound. The Climate Commission in its recent report expressed concerns along these lines and stated that sequestering carbon into land ecosystems does not remove it from the active atmosphere-land-ocean cycle. Further, in this cycle the sequestered carbon "is vulnerable to human land use and management, which can rapidly deplete carbon stocks, and to major changes in environmental conditions, which can change the amount of carbon stored in the long term".²

Secondly, the reduction of this problem to CO₂e excludes a complex array of other social and ecological relations. A tonne of CO₂e from a power station in the Hunter Valley does not represent the health impacts on the community, destruction of Indigenous sacred sites, loss of agricultural land, depletion and pollution of water sources and loss of biodiversity. Whilst a tonne of CO₂e could be offset in principle, these other impacts cannot.

Devil in the detail

Beyond these fundamental flaws, the details of the CFI reveal a politically and ecologically hazardous proposal. The methodologies and governance of offset accreditation proposed in the CFI are striking in their lenience. Offsets are based on the idea of 'additionality' – that an emissions reduction activity would not have occurred without the existence of the incentive to do so from an offset scheme. If it sounds like fortune telling it kind of is. Establishing additionality is essentially telling a hypothetical story about the future. In the CFI the story-telling abilities of project developers are not being tested at all.

Under the CFI, additionality will be established with a positive list of activities deemed additional to business-as-usual. The list includes activities that are not common practice, and not required by state or commonwealth law, and is not counted as an emissions reduction under another program. Current methods under review are the culling of feral camels, capture and combustion of methane from waste and savannah burning. Other questionable abatement activities have also been flagged such as the application of biochar.

This test does nothing to ensure the CFI itself led to these activities. Landowners could be undertaking these activities already. For example, even if landowners have been shooting

camels for years before the CFI is introduced, they can still claim CFI credits under the scheme. This is weak compared to the already problematic UN CDM additionality rules.

Permanence refers to how long a carbon sink or store is maintained. Under the CFI, carbon stores are considered permanent if it is retained for 100 years. The first problem with this is of course that it is fossilised carbon that is being offset. Fossilised carbon may be stored for tens of thousands of years if not literally permanently. Second, if an offset store is destroyed due to a natural disaster, the CFI does not require landowners to relinquish the CFI credits generated from that plantation. Instead a 5% 'risk of reversal buffer' applied to credits generated by each participant is assumed to compensate for this. The calculation of this buffer is not clear, and we suspect arbitrary.

Leakage is when a carbon offset project does not contribute to the reduction of aggregate emissions in the area or sector it is located in but instead the project displaces the emissions elsewhere. So for example, a landowner might reduce cattle numbers to generate CFI offsets. But the landowner nearby increases their cattle at the same time to meet unchanged demand in the beef market. The CFI consultation paper recognised this as a significant problem, but the government has not made an attempt to deal with this. It is impossible to imagine how leakage in carbon offsets might be overcome, particularly in voluntary project-based offsets schemes like the CFI.

CPRS #2

The CFI is the first picture of what the carbon pricing mechanism negotiated in the Multi-Party Climate Change Committee will look like. The installation of a national emissions trading scheme (not a carbon tax) is underway and the outcomes are looking strikingly similar to those of 2009. The near-certain inclusion of CFI offsets into the future ETS will be a repeat of the former Carbon Pollution Reduction Scheme legislation. The CPRS included offsets credits based on methods not recognised under the Kyoto Protocol. Worse, the CPRS made no provision to limit the amount of offsets firms could purchase to guarantee continued pollution.

If you have made it to the end of this article you will have likely realised one thing, carbon offsetting and trading is complicated nonsense, all numbers and business speak, with little regard for the ecological and social realities of climate change. It seems to us that we need to bring climate change politics back to the ground. Say Yes Australia to the end of the fossil fuel and native forestry industries.

References:

1. UN CDM Methodology Panel, 2010, 'Report on HFC projects', Annex 2 Page 3, https://cdm.unfccc.int/Panels/meth/meeting/10/044/mp44_an02.pdf
2. Climate Commission, 2011, 'A Critical Decade: Climate Science, Risks and Responses', Canberra: Climate Commission Secretariat, p.57.

Ten reasons to oppose US war games in Australia

Kim Stewart



Protest at the 2007 Talisman Sabre war games.

In July the Talisman-Sabre 2011 (TS11) US-Australian joint exercises will take place on land in many Australian locations. An estimated 30,000 troops, most of them from the US military, and their tanks, trucks, cars, troop carriers, ships, submarines and other vehicles will descend on Bradshaw and Delamere training areas in the Northern Territory and on Shoalwater Bay Training Area in Queensland, as well as locations in the Coral, Arafura and Timor Seas and ports and airports in Cairns, Townsville, Gladstone and Brisbane. Every time this happens peace and environmental activists from around Australia meet them for the biennial Peace Convergence. Why do we oppose the war games? Here's a short synopsis:

1. TS11 takes place on indigenous lands and sovereignty has never been ceded. The Darambal people of Rockhampton region are unlikely to ever get land rights while the military control their land.
2. TS11 takes place in the Coral Sea and traverses the Great Barrier Reef Marine Park. If ordinary Australians can't fish there, neither should the military be allowed to use sonar (known to effect whales and other sea animals) or leak oil and dispose of their waste there.
3. TS11 take place in Shoalwater Bay, one of only three locations where endangered dugong dwell in Australian waters. Injury from ships or shock from undersea explosions pose a threat to their existence.
4. TS11, like all war games and war itself, is not environmentally benign. Beside material damage to land and flora by tanks and troop movements, all military activities are polluting, including the use of 'green' practice munitions.
5. Live firing occurs in the water catchment for the town of

Yeppoon. Military toxins from munitions have been and continue to be used in this catchment. Given the military's record on sexual assaults recently, they are unlikely to confess to water and land pollution and repeatedly ignore the issue in their documents.

6. TS11 is not required to submit an Environmental Impact Assessment. They do offer a Public Environment Report each two years, but this is no more than a greenwashing exercise that ignores the social justice issues.

7. TS11 brings many troops to the surrounding towns where drunkenness, street crimes, drug use, prostitution and sexual assaults increase. This is a familiar tale wherever US Troops are based.

8. TS11 further ensconces Australia in a US Alliance where pre-emptive and unjust wars are the norm. The Australian Defence Force admits it is about 'interoperability' with the US military.

9. TS11 is vehemently opposed by people living near the Shoalwater Bay Military Training Area who have been ignored, insulted and buzzed by military helicopters and faced with an ongoing barrage of bomb vibrations all year round from the base.

10. TS11 is part of the training for ongoing wars in Iraq and Afghanistan that have already claimed the lives of 27 Australian troops, more than 3000 US troops and hundreds of thousands of civilians, destroying their homes and livelihoods, contaminating their land with depleted uranium and other toxins and driving many of them to seek refugee status in Australia where they are likely to be further abused.

Join the protests: www.peaceconvergence.com
Facebook: Peace Convergence 2011

Do we know the Chernobyl death toll?

Peter Karamoskos and Jim Green

With the 25th anniversary of the Chernobyl tragedy falling on April 26, estimates of the death toll from the disaster were hotly debated.

The debate over Chernobyl turns on the broader debate over the health effects of low-level radiation – and in particular the cancer risk it poses. The weight of scientific opinion holds that there is no threshold below which ionising radiation poses no risk and that the risk is proportional to the dose: the “linear no-threshold” (LNT) model.

Uncertainties will always persist. In circumstances where people are exposed to low-level radiation, studies are unlikely to be able to demonstrate a statistically-significant increase in cancer rates. This is because of the ‘statistical noise’ in the form of widespread cancer incidence from many causes, the long latency period for some cancers, limited data on disease incidence, and various other data gaps and methodological difficulties.

Notwithstanding the difficulties, there is growing scientific confidence in the LNT model. An important study in this regard is the 2006 report of the Committee on the Biological Effects of Ionising Radiation (BEIR) of the US National Academy of Sciences. The BEIR report comprehensively reviewed available data and concluded that: “The balance of evidence from epidemiologic, animal and mechanistic studies tend to favour a simple proportionate relationship at low doses between radiation dose and cancer risk. ... The risk of cancer proceeds in a linear fashion at lower doses without a threshold and ... the smallest dose has the potential to cause a small increase in risk to humans.”

The alternative view, that low-level radiation is harmless, is restricted to a small number of scientists whose voice is greatly amplified by the nuclear industry (in much the same way as corporate greenhouse polluters amplify the voices of climate science sceptics). In Australia, for example, uranium mining and exploration companies such as Toro Energy, Uranium One and Heathgate Resources have sponsored speaking tours by scientists who claim that low level radiation exposure is not only harmless but actually good for you.

There is general agreement that about 50 people died in the immediate aftermath of the Chernobyl accident. Beyond that, studies generally don’t indicate a significant increase in cancer incidence in populations exposed to Chernobyl

fallout. Nor would anyone expect them to because of the data gaps and methodological problems mentioned above, and because the main part of the problem concerns the exposure of millions of people to very low doses of radiation from Chernobyl fallout.

For a few marginal scientists and nuclear industry spruikers, that’s the end of the matter – the statistical evidence is lacking and thus the death toll from Chernobyl was just 50. Full stop. But for those of us who prefer mainstream science, we can still arrive at a scientifically defensible estimate of the Chernobyl death toll by using estimates of the total radiation exposure, and multiplying by a standard risk estimate.

The International Atomic Energy Agency estimates a total collective dose of 600,000 Sieverts over 50 years from Chernobyl fallout. A standard risk estimate from the International Commission on Radiological Protection is 0.05 fatal cancers per Sievert. Multiply those figures and we get an estimated 30,000 fatal cancers.

A number of studies apply that basic method – based on collective radiation doses and risk estimates – and come up with estimates of the death toll varying from 9000 (in the most contaminated parts of the former Soviet Union) to 93,000 deaths (across Europe).

Those are the credible estimates of the likely eventual death toll from Chernobyl. Claims that the death toll was just 50 should be rejected as dishonest spin from the nuclear industry and some of its most strident and scientifically-illiterate supporters.

These debates will be replayed in relation to the Fukushima crisis in Japan. Nuclear industry spruikers will insist that no-one is at risk from low-level radiation exposure from Fukushima. The rest of us will need to wait some months or years before we have a plausible estimate of total human radiation exposure upon which to base an estimate of the death toll.

Peter Karamoskos is a Nuclear Radiologist, a member of the Medical Association for Prevention of War, and public representative on the Radiation Health Committee of the Australian Radiation Protection and Nuclear Safety Agency. Jim Green is the national nuclear campaigner with Friends of the Earth, Australia.

Radioactive Exposure Tour

Text by Madeline Hudson. All photos by Jessie Boylan.



Olympic Dam copper/uranium mine.

Since the 1980s, Friends of the Earth's (FoE) annual Radioactive Exposure Tour has exposed thousands of people first-hand to the realities of 'radioactive racism' and to the environmental impacts of the nuclear industry.

The tour is a 10-day journey into the heart of the breathtaking semi-arid landscapes of South Australia and its atomic history and current uranium mining operations. A new campsite this year was at Point Lowly at the top of the Spencer Gulf, near Port Augusta. BHP Billiton plans to expand the Olympic Dam copper/uranium mine to such a degree that it will require well over 200 million litres of water a day for processing, probably over 250 million litres. Point Lowly is its proposed site for a desalination plant for this purpose. Point Lowly is also the only breeding ground of the Giant Australian cuttlefish. This proposal directly threatens the existence of this charismatic and unique species.

Each year, we visit Roxby Downs Olympic Dam copper/uranium mine on Kokatha country. BHP Billiton plans to expand its operations to become the largest open cut mine in the world. FoE is campaigning against the proposed expansion and to have the South Australian Roxby Downs Indenture Act repealed. This law grants the mine wide-ranging exemptions from the Aboriginal heritage protection, environmental protection, natural resources and freedom of information acts.

This year was a special event as Lake Eyre South was full of water and we experienced the expansive wonder of the inland sea. Arabunna elder Uncle Kevin Buzzacott accompanied us, as always, through out this country. A highlight was our visit to the sacred mound springs. The springs threatened

by BHP's overuse of the Great Artesian Basin water - it uses more than 35 million litres per day.

We visited the in-situ leach uranium mine of Beverley in the Gammon Ranges, which is also set to expand. We met with Adnyamathanha elder Enice Marsh who told us about the affect the mine has had on the country and the divisions created within the Adnyamathanha community. We visited the magnificent Arkaroola Wilderness sanctuary, also threatened by a uranium mine proposal. Travelling and camping with us on the journey was the indefatigable Avon Hudson, anti-nuclear veteran and Maralinga whistleblower. Each year, we hear first-hand accounts of the British nuclear bomb tests at Maralinga and learn about ongoing nuclear proliferation risks arising from the uranium mining and export industry.

In a post-Fukushima world, it is now more important than ever to get active not radioactive.

Madeline Hudson is a member of the Anti-nuclear and Clean Energy (ACE) collective at Friends of the Earth, Melbourne.

For a longer account of the 2011 radtour visit www.foe.org.au/anti-nuclear/issues/oz/radtour/2011



Clockwise from top: 1. Mound Spring, Arabunna land. 2. Kevin Buzzacott. 3. Marlin and Hudso. 4. Steve Holdsworth, Avon Hudson, Jessie Boylan, Jim Green. 5. Mound Spring, Arabunna land.

WA 'Walk Away from Uranium Mining'

Marcus Atkinson

Footprints for Peace, a global grassroots group that organises walks, bike rides and runs around the world, invites people of all ages, background and cultures to come and support Traditional Owners in their opposition to uranium mining by participating in the 'Walk Away from Uranium Mining' from Wiluna to Perth from August 21 to October 28.

Footprints for Peace is working together with the Western Australian Nuclear Free Alliance which is led by Traditional Owners from the Pilbara, the Kimberley, the Goldfields, the Great Victoria Desert, the Central Desert, the Gascoyne, Perth and the South West. Right now in WA, uranium mine proposals include BHP Billiton - Yeelirrie, Mega Uranium - Lake Maitland and Toro Energy- Wiluna Lake Way. Each of these proposed uranium mines is in the Wiluna area where we will begin the walk. For more information: <http://ccwa.org.au/campaigns/nuclear-free-wa>

The walk begins on the 45th anniversary of the Wave Hill Walk-Off in which Vincent Lingiari in 1966 led a walk off on Gurindji Land about wage rights and land rights. We will remember the success and courage of the past and the struggle that continues today regarding fundamental issues about Aboriginal traditional lands.

The walk finishes in Perth on October 28 to coincide with the Commonwealth Heads of Government Meeting being held in Perth, to deliver our message that WA has the choice to walk away from this costly, toxic industry, which produces unsafe energy sources, radioactive waste and weapons usable material in favour for a renewable energy future.

We have participants confirmed from France, Greece and the United States including Native American people who will be coming to join Aboriginal Traditional Owners, and concerned people from all over Australia.

A bus is organised to leave from Perth to Wiluna on August 18, returning August 26 for people to join the beginning of the walk. You will witness, experience and listen to Traditional Owners, visit Wiluna Lake Way and walk on country to the proposed uranium mine site – BHP Billiton Yeelirrie.

A walk is a mobile community involving food, campsites, water, electricity, administration and media. Walkers will cover a distance of 20 -25 kms a day with a rest day each week and will be accompanied by a support vehicle.



1. Footprints for Peace in New York for the Nuclear Non-Proliferation Treaty Review Conference, 2010. 2. Footprints for Peace, Hiroshima, 2004.

Come and be a part of this international event, even if you cannot walk we still require drivers, kitchen crew, media liaison, video and photographers, musicians, artists and general support.

To make a tax deductible donation:

www.everydayhero.com.au/footprints_for_peace

More information: www.nuclearfreefuture.com

Marcus 0400 505 765 - nffc@footprintsforpeace.org

Fukushima: the political fallout in Australia

Jim Green

Several months after the Fukushima nuclear disaster, we're beginning to get a sense of the likely long-term impacts. Radiation has spread across much of the northern hemisphere and parts of the southern hemisphere, including northern Australia. Japan's Nuclear and Industrial Safety Agency estimates the radioactive release at 770,000 terabecquerels in the first week of the crisis. Total radiation releases will probably fall somewhere between 10–40% of those from the 1986 Chernobyl disaster. Radiation releases have not been stopped and will continue for some months.

At the Fukushima Daiichi site, at least four reactors will be permanent write-offs, and the other two are unlikely to be restarted. The long-term cancer death toll will probably be somewhere between several hundred and several thousand. For comparison, a reasonable estimate of the Chernobyl death toll is 30,000.

Allowable radiation dose limits in Japan have been thrown out the window, both for emergency workers and for the general public. Estimates of the economic costs of the disaster range from \$50 billion to \$130 billion – but it wouldn't surprise if the true costs are considerably greater. Between 100,000 and 150,000 people cannot return to their homes because of radioactive contamination. Some may be able to return before the end of this year but permanent relocation is a likely outcome for those who lived in the most contaminated regions. Legal and political battles will take decades to play out.

TEPCO, the company which owned and operated the Fukushima plant, will be bailed out by Japanese tax-payers as per the Golden Rule of capitalism: privatise the profits and socialise the losses. Globally, the nuclear power 'renaissance' has taken a big hit. Germany, Italy and Switzerland have decided to abandon nuclear power in favour of renewable energy sources. Plans to introduce or expand nuclear power in many other countries have taken a big backwards step.

Before Fukushima, a reasonable estimate was an 18–36% global expansion of nuclear power from 2010–2030 (choosenuclearfree.net/renaissance). In the wake of Fukushima, there will be little if any expansion of nuclear power in the next 20 years. In the 2030–2050 window, roughly 300 of the 430 currently-operating reactors will be permanently shut down so the industry will have to build new reactors at a cracking pace just to stand still.

Nuclear power in Australia

TEPCO has for many years put profits ahead of safety and this is the root cause of the nuclear disaster. Common-sense and prudent emergency planning would have protected emergency diesel generators against the March 11 tsunami. Working generators would have prevented the explosions and fires by maintaining reactor cooling.

The problems were not limited to TEPCO – they were (and are) systemic problems arising from the control of Japan's nuclear industry by a clique of corporate executives, supine regulators and captured bureaucracies. Similar problems are evident in Australia. In the past year, three whistleblowers have raised concerns about safety standards at the Lucas Heights nuclear research reactor site operated by the Australian Nuclear Science and Technology Organisation (ANSTO).

All three were suspended. The government's health and safety watchdog Comcare produced a report highly critical of ANSTO's safety record and its treatment of whistleblowers, but instead of acting on the report the federal government called for further reviews. The non-independent regulator, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), has produced two reports into the problems at ANSTO.

The reports contradict each other so now there is a review into ARPANSA. The upshot of all this – lots of reports and reviews, most of them not worth the paper they're written on, and no safety improvements at Lucas Heights.

Thankfully there is no prospect of these clowns operating nuclear power plants in Australia. The Labor Party has reaffirmed its opposition to nuclear power and the Coalition has dropped its tepid support for the introduction of nuclear power.

A poll by Roy Morgan Research several days into the Fukushima crisis found that 61% of Australians oppose the development of nuclear power in Australia, nearly double the 34% level of support. A Lowy Institute poll in June came up with near-identical results. The Morgan poll found that just 12% of Australians would support a nuclear plant being built in their local area, 13% would be anxious but not oppose it, and 73% would oppose it.

Uranium mining

Radioactive by-products of Australian uranium have been spewing into the atmosphere from Fukushima. BHP Billiton and Rio Tinto export uranium from Australia to TEPCO from the Olympic Dam and Ranger mines, respectively. Heathgate Resources, operator of the Beverley uranium mine in SA, has probably also supplied TEPCO.

As a major uranium supplier, Australia could have played a role in breaking the vicious cycle of nuclear safety breaches, data falsification and cover-ups in Japan over the past decade by making uranium exports conditional on improved management of nuclear plants and tighter regulation. But the mining companies and state/territory governments did nothing. And they will continue to do nothing.

A joint statement released by the prime ministers of Japan and Australia on April 24 recognised “the need to enhance their cooperation in the framework of the International Atomic Energy Agency (IAEA) to globally strengthen the safety standards of nuclear power generation.” Japanese Prime Minister Kan expressed his expectation for continued stable supply of energy resources and Prime Minister Gillard assured Kan that Australia would continue stable supply through commercial market mechanisms. To translate that diplomatic jargon: it’s business as usual with no requirements for strengthened safety standards or tighter regulation.

In June, the head of the IAEA opened the Agency’s first major meeting since the Fukushima disaster with the warning that “business as usual” was not an option for the nuclear industry. But the meeting decided that business as usual is indeed an option. A proposal for mandatory random IAEA safety inspections of nuclear plants was rejected. More fundamental reforms, such as separating the IAEA’s promotional and regulatory functions, were not even on the agenda. The Fukushima disaster will not fundamentally change the situation for uranium mining in Australia, but it will have some effect. Public opposition to uranium mining has strengthened. The Morgan poll found 50% opposition to uranium exports compared to 44% support. This heightened opposition has had flow-on effects such as the WA Labor Opposition’s reaffirmation of its no-uranium-mining policy at its state conference in June.

It may also be more difficult politically to open up new markets for Australian uranium; for example it will complicate the current push for Australia to ditch long-standing policy of refusing to allow uranium sales to countries refusing to sign the Nuclear Non-Proliferation Treaty. Another consequence of Fukushima is that demand for uranium will be weaker than it would otherwise have been.

Spin doctors

Pro-nuclear ideologues have been madly spinning the Fukushima disaster. Several days into the crisis, Dr Ziggy Switkowski made the remarkable comment that: “The best

place to be whenever there’s an earthquake is at the perimeter of a nuclear plant because they are designed so well.”

In June, Switkowski claimed that “there have been no casualties from the operations of those nuclear reactors in the path of the tsunami or from subsequent uncontrolled leaks of radiation” and that there is no evidence yet of adverse health effects. He ignores the widespread human exposure to radiation from Fukushima and the likely resulting long-term cancer death toll.

Switkowski has been repeatedly reassuring us that lessons will be learned and improvements will be made in the design of nuclear reactors. However, history clearly shows that nuclear lessons are not properly learned. The OECD’s Nuclear Energy Agency notes that lessons may be learned but too often they are subsequently forgotten. Or they are learned but by the wrong people. Or they are learned but not acted upon. The situation in Japan illustrates the point — it has become increasingly obvious over the past decade that greater protection against seismic risks is necessary, but the nuclear utilities haven’t wanted to spend the money and the Japanese nuclear regulator and the government haven’t forced the utilities to act.

Adelaide University academic Prof. Barry Brook has made even more of a goose of himself than Switkowski. Even as nuclear core meltdown was in full swing, Brook said: “The risk of meltdown is extremely small, and the death toll from any such accident, even if it occurred, will be zero. There will be no breach of containment and no release of radioactivity beyond, at the very most, some venting of mildly radioactive steam to relieve pressure. Those spreading FUD [fear, uncertainty and doubt] at the moment will be the ones left with egg on their faces. I am happy to be quoted forever after on the above if I am wrong ... but I won’t be. The only reactor that has a small probability of being ‘finished’ is unit 1. And I doubt that, but it may be offline for a year or more.”

Every one of Brook’s predictions was wrong. Bad idea to mix a flawed assessment with arrogance and scattergun abuse towards anyone with a different assessment. One contributor to Brook’s ‘Brave New Climate’ blog summed up his problem: “Unfortunately, Prof. Brook has really abdicated a neutral position on this event. His clear support of nuclear power seems to have impacted his critical thinking skills. ... Every time he states something in this crisis is ‘impossible’, it seems to happen the next day.”

More information: www.choosenuclearfree.net/fukushima

Jim Green is the national nuclear campaigner with Friends of the Earth (www.foe.org.au) and coordinator of the Choose Nuclear Free project (www.choosenuclearfree.net).

The Future Fund's nuclear weapons investments

Tim Wright



The A-dome in Hiroshima, partially destroyed by the nuclear bomb in 1945.

Australia's Future Fund recently dropped a raft of cluster bomb and landmine producers from its investment portfolio. But stock listings obtained through freedom of information laws have shown that 15 companies involved in the manufacture of nuclear weapons – devices of far greater destructive potential – are still in the mix. The International Campaign to Abolish Nuclear Weapons has revealed that the Future Fund's investments in nuclear weapons companies up to April 2011 totalled \$135.4 million.

Why the distinction between these inherently inhuman weapons, all of which pose a grave threat to civilians and the environment? Through their ordinary use, nuclear weapons – like cluster munitions and anti-personnel mines – violate fundamental principles of customary international law, as well as treaty law.

If the Future Fund is to comply with its own stated policy not to finance companies involved in activities that are unlawful in Australia, it should exclude nuclear arms makers from its investment universe.

The Future Fund would not be the first sovereign wealth fund to do so. The Norwegian Pension Fund and the New Zealand Superannuation Fund have both deemed it unethical to finance nuclear weapons companies, winding up all investments they once had.

When quizzed in Senate Estimates in May 2011, the Future Fund's investments chief appeared unaware that nuclear weapons are banned under Australian law. A Commonwealth statute implementing our commitments under the South Pacific Nuclear-Free Zone Treaty explicitly prohibits the acquisition, development, manufacture, testing and use of nuclear explosive devices in Australia. It also makes it a crime to facilitate the production of nuclear weapons, whether here or overseas.

In addition, the 1995 Weapons of Mass Destruction (Prevention of Proliferation) Act – which applies to biological and chemical arms as well – makes it an offence for companies or individuals to provide goods and services to anyone producing nuclear weapons.

Financing the nuclear weapons business, either directly or indirectly, hampers disarmament efforts by providing material support for the indefinite retention of these devices by a small number of governments. And it could facilitate the use, one day, of a nuclear weapon by design, miscalculation or accident.

Any such use would have catastrophic humanitarian consequences. Nuclear weapons are unique in their destructive capacity and the human suffering they cause. A single nuclear bomb dropped on a large city could kill millions of people.

No adequate medical response would be possible, and the lingering effects of radiation on human beings would cause death and suffering many years after the initial explosion, with genetic damage passing from generation to generation. Supporting the industry that produces these instruments of terror is grossly unethical.

The fund's biggest holding is in Honeywell International (A\$76.8 million), a company in charge of conducting simulated nuclear tests for the US government and helping to extend the lifecycle of America's Trident II nuclear weapons. Other Future Fund stocks have large stakes in joint ventures to build medium-range nuclear missiles for France and maintain Britain's ageing fleet of Trident submarines. One company, Larsen & Toubro, has a contract to construct nuclear-armed submarines for India, a country outside the nuclear Non-Proliferation Treaty (NPT).

It is no excuse for the Future Fund that these companies are also involved in legitimate enterprises. Certainly the cluster bomb and landmine companies excluded from the Future Fund's portfolio derive some of their profits from other, non-controversial activities.



The Gillard government's National Radioactive Waste Management Bill is expected to be debated in the Senate in July and is likely to be passed with Labor and Coalition support. The draft legislation overrides Commonwealth environmental and Aboriginal heritage laws and it overrides all state/territory laws. The government is pushing ahead with the legislation despite an unresolved Federal Court challenge against the nomination of the Muckaty site in the NT for a national nuclear waste dump. More information: www.beyondnuclearinitiative.com. Photo by Jessie Boylan.

The Future Fund has defended its investments on the basis that “conventions dealing with nuclear weapons are focused on non-proliferation” rather than disarmament, and should therefore be viewed differently from conventions establishing universal prohibitions on particular weapons.

But disarmament is at the heart of the NPT, which – according to its preamble – seeks to “facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery”. This grand bargain, brokered in 1968, requires the five original nuclear weapon states to do away with their nuclear arsenals completely, and in exchange every other state party commits never to acquire them. It is wrong to suggest that the NPT’s disarmament provision, Article VI, is somehow peripheral to the main agreement.

Judging by its public statements, the Future Fund appears poorly informed about Australia’s obligations under international conventions relating to nuclear weapons and the domestic legislation that implements those obligations. It would do well to seek formal legal advice and consult with relevant government departments.

All financial institutions in Australia – banks, super funds and asset managers – have an ethical responsibility to divest from nuclear weapons companies. Doing so will help to stigmatise nuclear weapons and make this industry less viable. It will be a significant and tangible contribution towards nuclear disarmament.

It is both ironic and disturbing that, while Foreign Minister Kevin Rudd travels the world building political support for the complete elimination of nuclear weapons, back home the Future Fund is very much undermining that objective. Its support for the nuclear weapons industry raises an important question for the Australian public: What kind of future is our Future Fund investing in?

Tim Wright is Australian director of the International Campaign to Abolish Nuclear Weapons. More information: www.icanw.org.au/futurefund

What's really pushing up the price of power?

Hugh Outhred

Household electricity bills are rising and about half of a typical bill goes to paying network costs. Are we paying too much for network infrastructure?

Electricity networks are undeniably important. They allow electricity to flow from power stations to electrical equipment in homes, shops, offices and factories. But it may be time to look at their cost. The Final Report of the NSW Electricity Network and Prices Inquiry (December 2010) states that costs associated with building and operating distribution networks presently are responsible for about 40% of the typical NSW residential electricity bill.

Transmission costs are responsible for about 8%. The report also states that the distribution-related bill fraction is expected to rise to 44% by 2012/3. Transforming the Electricity Sector, Garnaut Update Paper 8 states "... weaknesses in the regulatory framework have led to over-investment in networks and unnecessarily high prices for consumers". But is regulation really to blame? Or is it as much about the way we use power? Improving the regulatory framework would help – particularly to remove perverse incentives to overstate costs and appeal the regulator's decision – but other factors are also important.

These include concerns about climate change impacts from the combustion of fossil fuels in power stations and social reliance on electricity to the extent that it is regarded as an "essential service". There are also lifestyle and technology changes that increase electricity use in homes, offices and industry. For example, growing use of air-conditioning in Australian homes drives up summer peak demand, which in turn drives network investment. There may well be room to improve cost-effectiveness in network operation and investment as Garnaut suggests but network cost increases flow predominantly from these trends.

Internationally and in Australia, one response has been to promote the concept of a "smart grid". Smart grids use advanced measurement, communication and control techniques to coordinate operation and investment decisions. Electricity generators, network service providers and electricity consumers work together to improve power delivery. The Smart Grid Australia Consortium reports various initiatives that are underway. These include the federal government's Smart Grid Smart City project.

While the future is uncertain, one clear trend is towards even greater complexity and rapidity of change in an already complex industry. The electricity industry operates by means

of a complex technological system that involves industry participants, regulators, government policy makers and the designers, manufacturers and retailers of electrical equipment and buildings.

Achieving coherent, sound decision-making and successful innovation can be very difficult. One difficulty is that unintended consequences may only emerge after long periods of time. We are still coming to grips with the effect of air conditioning on network costs, the climate change impacts of fossil fuel combustion and current problems with Japan's Fukushima nuclear power station. So how do we reform the system to improve decision making and reduce costs to the consumer? The Australian Energy Market Commission recommends three ways forward:

- investing in generation capacity to secure supply and to meet peak demand
- expanding consumer choices
- funding the network to help minimise the costs of transmission and generation.

These priorities are important but they are not sufficient. There is no specific mention of distribution networks, nor is it clear that these priorities address the complexity of the electricity industry. This complexity constrains options and creates inter-dependencies between them. There are no simple answers – priorities must be set and trade-offs made – but who should do that? The Commission rightly points out that this review has implications for the whole community but it is not clear how it intends to draw the community into this important conversation.

Will the outcomes merely reflect the preferences of influential industry participants? Will the community "take ownership" of the outcomes or will we see never-ending divisive political argument as seems to be the case with climate change policy and also electricity restructuring in New South Wales? If we want cheaper power bills and more sensible investment in future, the community will have to be involved.

Hugh Outhred is a Professorial Visiting Fellow at UNSW and Managing Director of Ipen Pty Ltd, a company that provides advisory and educational services on energy issues. This article is reprinted from The Conversation www.theconversation.edu.au

A clean break for Australia's future

Fiona Armstrong and Laura Eadie

When it comes to innovation policy, the Gillard government relies heavily on hot air to hide its lightweight commitment to Australia's long-term future. Back in February, the Prime Minister painted a vision for "a high tech, high skill, clean energy economy that is self-sustaining beyond our reliance on mineral exports". Yet the 2011-12 federal budget is light on detail about achieving this. Given the rapid pace of clean-technology development in Europe and Asia and the pressure of the high dollar on manufacturers, developing a coherent set of policies to stimulate low emissions technology is an essential risk management tool for any government hoping to last beyond the next election, let alone beyond the current mining boom.

If Wayne Swan was serious about balancing Australia's long-run budget, he would have cut more than \$1 billion from the Fringe Benefits Tax for cars. He would have claimed back the \$2 billion in diesel tax concessions we shell out to mining companies every year and put it to better use funding cleantech innovation. Who could argue with that as a "no-regrets" way to fund the innovation commitment Ross Garnaut says we need to transition to a low-emissions economy?

Stuck in a holding pattern

Instead, Gillard's first budget leaves Australia in the same holding pattern as under Rudd and Howard. While the government pretends a carbon price will be enough to drive investment in renewable energy, crucial innovation policies remain an under-funded jumble of grants and rebates which don't align with each other and often place restrictive criteria on applicants, leading to under spending and under performance.

Neither a carbon price nor our only workable emissions reduction policy – the renewable energy target – will meet our manifestly inadequate 2020 target of a 5 per cent reduction, let alone our 2050 target of a 60 per cent reduction. We urgently need serious policies to scale up alternative base-load renewable energy technologies, such as wave, geothermal and concentrating solar thermal. Yet at a tiny \$108.7 million over 14 years, the commitments in the federal budget for venture

capital for development and commercialisation of renewable technologies are laughably low. There is little thought to what will drive innovation in clean energy beyond the much mauled Solar Flagships program which has had its energy storage options knocked out, its funding cut, then restored, and now deferred for two years.

Reducing our emissions is not just a moral responsibility – Australia faces a significant risk of being left behind in the development of renewable technology globally. Investment in new renewable energy capacity first exceeded fossil fuels in 2008, and maintained this lead in 2009. In 2010, investment in wind, solar, biofuels and other renewable by G-20 countries surged 30 per cent to almost US\$200 billion. Despite current high upfront costs, a 2011 report from the Melbourne Energy Institute demonstrates substantial cost reductions in base-load renewable energy technologies are possible, assuming specific policies are in place to support their roll out. Countries with a head start in these markets are likely to benefit from their rapid growth rates and generation of skilled jobs.

Building on existing comparative advantages, such as our abundant sunshine, is an important way to secure our place in the global green economy. But establishing new industries requires a coherent set of policies for innovation and commercialisation. We need to level the playing field for renewable energy, to commercialise strategically and start to innovate clean, not dirty.

Level the playing field

Australia's current energy policies tilt the playing field in favour of carbon-intensive coal, gas and petroleum fuels. In 2010-11, an estimated \$12 billion per year in subsidies and tax concessions went to these fuels. Levelling the playing field for renewable energy is essential to ensuring low-emissions innovation and commercialisation policies are effective.

For example, the diesel rebate applied under the Fuel Tax Credits program currently provides almost \$2 billion/year to mining companies as credits to subsidise the use of diesel for off grid electricity generation and use in heavy vehicles. So while most of us pay a levy of 38c per litre for diesel, mining companies get this back as tax credits. Cutting this subsidy alone would fund Ross Garnaut's recent call for a doubling of investment in clean-technology innovation and commercialisation. Removal of this impost on taxpayers would also encourage mining companies to shift from this very high emissions and costly alternative to clean renewable energy.

Commercialise strategically

To compete in a globalised market for clean technology, Australia needs to develop unique combinations of skills and industries. This requires a strategic approach to investing in technology commercialisation – one that builds on our

natural comparative advantages without picking winners or losers. Remote power generation for mines and communities not connected to the electricity grid is a potential area for such investment. Around ten per cent of Australia's installed power generation is currently off-grid, and this is set to expand due to the mining boom. The current use of diesel for much off grid power generation in remote Australia is absurdly expensive.

Existing alternative renewable technologies are already cost competitive in the long run, but suffer from high upfront costs. As an example, solar thermal with storage costs an estimated \$270 per MWhr compared to \$350 per MWhr for diesel at some sites. While the applications are not universal, there are substantial opportunities in many remote locations, such as the Midwest minerals province in WA. Policies to achieve this might include grants for site specific feasibility studies and loan guarantees. By providing information and reducing risk, government can help address the difficulty faced in financing projects using new technologies, and increase investor confidence and the willingness of banks to lend.

Innovate clean, not dirty

Building competitive industries also requires investment at the beginning of the innovation chain. There are strong arguments for weighting government expenditure at the early stages of the research and development continuum toward renewable energy technologies, rather than betting on clean coal or carbon capture and storage.

As fuel costs and carbon prices inevitably rise, existing industries will fund innovation in fossil fuels to improve their efficiency, and potentially reduce their carbon emissions. Clearly, there are fewer vested interests willing to significantly invest in new renewable energy technologies. As Garnaut says, public support for research, development and commercialisation of low-emissions technologies is one way of cutting the cost of reducing our emissions. At another level, it is our contribution to a global effort.

In light of the current political instability around our domestic carbon policy, Australia needs a better strategy to adapt to the rapidly changing global economy. We can do this by developing an innovation policy that builds on our comparative advantages, using the wealth generated by our natural resources to build new industries and provide for our own clean energy future. Otherwise Australia risks remaining stuck in a holding pattern – while other countries ride the wave of cleantech investment into the global green economy.

This article was originally published by the Centre for Policy Development. Fiona Armstrong is a Fellow at the CPD. Laura Eadie is the CPD's Sustainable Economy Program Director. www.cpd.org.au

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 the current and future work of Friends of the Earth. It involves a regular monthly donation 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 will help maintain projects such as the Nuclear Freeways Project, protecting Red Gum forests and ensuring climate refugees are recognised and given aid to, to name just a few.

Why is the Active Friends Program vital to FoE?

Friends of the Earth never endorses people, parties or products and does not receive government or corporate sponsorship. To remain a radical and credible voice for social and environmental justice, we need a stable financial base. The Active Friends Program means that Friends of the Earth can engage in long-term campaign planning, and quickly and effectively respond to local issues.

How can you join the Active Friends Program?

To join the Active Friends Program, please fill in the 'Active Friends' section on the reverse side of this page and post to: Friends of the Earth, PO Box 222, Fitzroy, 3065. You can cancel this pledge at any time by contacting the FoE office. All Active Friends donations are fully tax deductible.

www.foe.org.au



**Friends of the Earth
Australia**

Slaughterhouse live: Our bloody cattle exports

Geoff Russell

This story was written before I had seen the Four Corners special 'A bloody business'. I had the intention of opening with a description of some of the footage shown in that program. Footage showing scenes of horrific cruelty in Indonesian slaughter houses. But I can't do that. It was simply too horrible.

All I could think of was my student days studying the history of Germany during the 1930s and the rise of Nazism. The acquiescence that allowed the Holocaust to happen was on display during interviews with Australian cattle producers who were appalled by the slaughter conditions while perfectly happy to bank the money. These human scum, and in particular Meat and Livestock Corporation CEO Cameron Hall, rank among the worst excuses for human beings on the planet.

Rest assured, the remainder of this story will perhaps shock but there will be no graphic descriptions of cruelty.

The live animal export trade has been a major focus of animal welfare and rights groups for decades. Campaigns have usually focused on sheep and the death and suffering during the 2-3 week trip to the Middle East. Typically, annual death tolls are around one per cent. This may not sound high, but it is equivalent to 16 per cent of a farmer's sheep dying in paddocks in the prime of their life in a single year.

Not being a sheep, it is hard to imagine how they feel about being confined on a ship and standing in excrement for three weeks, but many deaths are caused by inanition. Inanition is a tricky technical word meaning they just stop eating and die. It is subtly different from starvation, which would take much longer. No, the shipping conditions rob sheep of the will to live, something that even hunger or mulesing won't do.

In recent years the campaign focus has broadened with Animals Australia investigators putting themselves in harm's way to take footage of horrific slaughter or handling methods in Egypt, Kuwait, Bahrain, Jordan and the United Arab Emirates. Each investigation has been greeted with a mixture of mock and genuine outrage and disgust in Government and industry circles.

The offending segment of the trade has sometimes been suspended for a suitably polite period after which everybody picks up where they left off amid grandiose claims that steps have been taken, training initiated, protocols established, reports written and people admonished.

There follows a period of silence until the next investigation which unfathomably but invariably finds more of the same. The latest cycle of this dark game is underway as a result of Animals Australia footage of cattle handling and slaughter in Indonesia shown last night on Four Corners.

But the implications of the live cattle export to Indonesia are widespread and complex. The savagery spreads out beyond the cattle themselves to forests, orangutans, local cattle, farmers and undernourished children. This industry can't move a sinew without smashing something or somebody. Some background will help understand what is happening.

Food riots in Indonesia and elsewhere in 2008 captured media attention briefly as grain prices peaked and people went hungry. The Indonesian food system has been fragile for decades. In 1995, according to the UN Food and Agriculture Organisation, it produced just 2584 calories per person per day. The latest 2007 data shows a slight reduction as productivity increases fail to cope with 20 per cent more people.

Our food system, for comparison, consistently produces about 3200 calories per person per day. When cyclones send banana prices through the roof, we can easily eat something else. When rice prices go up in Indonesia, people go hungry, seriously hungry. The practical impact of a marginal food supply is that some 30-40 per cent of Indonesian children are stunted. They don't get enough food. Stunting during childhood usually causes a host of other physical and mental problems in later life. Australia's live cattle exports to Indonesia have mushroomed since the mid 1990s and we are now sending half a million cattle to Indonesia annually.

Doesn't that mean more meat for children and less sick kiddies? Only if the batteries in your bullshit detector are flat. What do you think happens? People who are having trouble affording rice just duck down to the supermarket and pick up a steak or a bucket of mince to give little Bambang a growth spurt?

There are 225 million Indonesians who share about half the quantity of beef consumed by Australia's 22 million fatties. But guess what tourists and wealthy Indonesians get to eat in Jakarta restaurants and hotels? What has this large growth in live cattle export done to the Indonesian beef supply? Nothing. Nada. Zip. There has been no increase in the per capita beef supply since 1995. Tick, tick, tick, work it out. Guess what has happened to the indigenous cattle herd? Globalised markets ... survival of the fittest. The local cattle industry has declined by the same amount the import industry has grown.

But wait, there's more. There's not a lot of pasture in Indonesia so almost all the feeder cattle from Australia end up in feedlots for 90 days. And what drives these feedlots? What do the cattle eat? Remember all those TV programs about palm oil? Remember the bull-dozed tropical forests and dead and orphaned orangutans replaced by palm oil plantations? Palm kernel cake is now the main component of cattle rations in feedlots.

Probably in the very feedlots that produce the beef that TV documentary crews eat at their hotels while making stories about the horrors of palm oil. Palm kernel cake is what you get when you crush palm kernels to make palm kernel oil. It's a high protein food similar to the soy bean cake left after the oil is extracted from soy beans.

Warning: satire alert.

So can you see the beauty of the system? We have deforested large areas of Australia to run cattle. To run the northern herd for Indonesia, we burn huge areas of the top end every year in massive conflagrations to prevent reforestation and the drawing down of any of that carbon from our coal burning. Hell - we wouldn't want that. All this destruction allows us to produce cattle at bargain prices just ready for fattening.

Then we sell these cheap feeder cattle to Indonesia and they obliterate their tropical forests and orangutans for the final fattening. Deforest one, get one free. But the bonuses just keep coming. Cheap feeder cattle drive the little producers out of business, this means that instead of small local Bali

cattle eating rice straw and turning it into useful manure locally, the post-harvest rice straw is sent to feedlots which concentrate manure to maximise its potential for damage.

Then most of the beef is eaten by the rich and when the rich get bowel cancer and heart disease they do what the rich everywhere do ... demand first class medical attention. This consumes resources which might otherwise get frittered away providing clean water to some grotty little village in the back of nowhere. Isn't it wonderful what can be achieved with a little cooperation and globalised markets?

End of satire!

Exporting cattle to Indonesia does nothing for the poor of Indonesia. But it makes the destruction of tropical forests and indigenous wildlife like orangutans more profitable.

Geoff Russell is a member of Animal Liberation SA. This article was first published in The Punch.

Mekamui/Bougainville film project

Clive Porabou travelled his native island Mekamui/Bougainville earlier this year while interviewing and filming the people of the land on the reopening of the gold, silver and copper mine Panguna. He found that practically all traditional owners on the land were opposed to the reopening of the mine which destroyed their land and environment and had cost the lives of 20,000 people (a fifth of the population) during the war and the military blockade in the 1990s.

Panguna mine was closed in 1989. Indigenous people forced the closure of the mine that was destroying their land and environment, and kept it closed. With steadily growing pressure from Rio Tinto's subsidy Bougainville Copper Limited (BCL) to reopen Panguna Mine as soon as possible, as well as the ever increasing flow of pro-mining articles in the mainstream media, the Indigenous people of Mekamui/Bougainville are keen to have their voices heard. They warn against repeating the mistakes of the past by a hasty reopening of the mine.

Today there still has not been any compensation paid by BCL to the Bougainvillians, nor has the cleaning up of the mine area and the polluted Jaba River System commenced. Pro-mining voices are saying that Mekamui/Bougainville can only be sustained and rebuilt by the very thing which destroyed it in the first place: Panguna mine.

With large copper and gold deposits remaining Panguna would be potentially still one of the world's largest producers of these metals. BCL is planning to increase the production

levels of 1987 by 30%, which would give the mine a life span of 14 years. If the mine is not expected to last longer than 14 years, how is it going to sustain the development of Bougainville? BCL's shareholders plan to walk away with the majority of the profits, leaving a pittance to the traditional owners of the land, who will be left again with the destruction and pollution.

Mekamui/Bougainville has a long tradition in agriculture and is still the largest producer of cocoa in the Pacific. Agriculture is a sustainable industry: the land can be used again and again and is not left scarred and unfertile forever as it is the case with mining. Clive is giving a voice to the silent majority of Bougainvillians on the current situation in his new documentary: 'Saving our Land', which is a follow up of his film 'Panguna Mine Dilemma'. The 30-minute documentary will be ready for release in July 2011.

For more info visit Clive Porabou's blog <https://mekamui.wordpress.com> To order 'Saving our Land' \$25 (5 for \$100), or 'Panguna Mine Dilemma', 2008, \$15, email BJ at bj@mekamui.org or phone +614 3942 6932.

Direct action for social change

Kim Stewart

In the light of a world in fear of terrorism, authoritarian power structures are increasingly using ‘security’ as a byword for repression. Those of us that work in environmental and social justice arenas are used to media portrayal of protesters in the streets as ‘violent’ and thus illegitimate. However, uprising against tyrants in the Middle East have won popular support. Maybe the time is ripe for a public discussion about how direct action is a necessary tool for social and democratic change.

Author Edward Abbey, who coined the term “monkeywrenching” famously said that “Sentiment without action is the ruin of the soul”. His novels advocated direct action in defence of the Earth to the extent of property damage. However, many social change agents reject property damage, instead seeking to use their own bodies as tools: protesting en masse in the streets, blockading facilities and sometimes locking on to things in an effort to draw attention to injustices. Friends of the Earth has never shied away from such activities and has been both applauded and criticised for it. The popular perception remains that direct actionists are troublemakers, even terrorists, and should not be taken seriously.

Many philosophical and political theorists see direct action as appropriate only as a last resort. John Rawls, political philosopher, recognises its relevance in the maintenance of a democratic society – if one is to be truly free to question the laws of such a society, it must sometimes happen that one needs to step outside the law to show its inadequacy. Such is the nature of civil disobedience. It seeks not to overthrow the system in which it finds fault, but to change some part of it, while respecting it in principle. Perhaps Mohandas Gandhi is the most famous proponent of non-violent resistance in the name of justice.

Christopher Manes is an advocate of peaceful direct action. He sees it as proper recourse in desperation, after all legal avenues have failed: “Demonstrations ‘demonstrate’ to the culprits, and to the world, that when all our letters are ignored, our arguments mitigated, and our legal appeals denied, we still refuse to accept the accelerating destruction. We put our bodies and our time where our mouths are – on the front lines! We demonstrate our fear, hurt, and rage against the despoilers.”[1]

Because people engaging in direct action do not seek to reject all laws, but simply the ones they find unjust, then they should adhere to respect for the rights of others as is appropriate. To this end, Manes talks about a “code” of behaviour that includes “respect toward all beings (and) non-violence”.

However, many people see that the environmental crisis is of such urgency that more direct and effective measures are warranted. ‘Ecotage’, or ‘monkeywrenching’, goes one step further, and a step too far in the eyes of its victims. Ecotage is the wilful destruction of property “to prevent ecological damage” such as disabling bulldozers, digging up roads and spiking trees.[1]

The Earth First! Primer describes it thus: “Monkeywrenching is a step beyond civil disobedience. It is nonviolent, aimed only at inanimate objects, and at the pocketbooks of the industrial despoilers. It is the final step in the defence of the wild, the deliberate action taken by the Earth defender when all other measures have failed, the process whereby the wilderness defender becomes the wilderness acting in self-defence.”[2]

Such actions are not without their risks, and when a mill worker was injured as a result of a spiked tree, critics labelled the action terrorism. However, as advocates point out, “risk to humans hasn’t stopped the timber industry ... [which has] the worst safety record of any enterprise in the United States” [3]. Manes sees the ethical inconsistency, which is implied by the condemnation of ecotage, as more important than the damage done to any bulldozer. When property is given higher legal and moral status than living beings, including the trees and animals that are destroyed in the process of logging, there is something seriously wrong in the society that allows it.

Earth First! states: “Within the Earth First! movement, monkeywrenching is a source of controversy. There are those who say we should renounce all forms of sabotage. Others are against particular tactics, particularly tree spiking, which they say has the potential to injure. Several EF! local groups have renounced tree spiking, others have not. There is no movement consensus at this time, and debate is lively. Ultimately, whether or not to monkeywrench is an individual decision.”



Muckaty Traditional Owners and supporters protesting Martin Ferguson's plans to impose a nuclear waste dump on their land in the NT. June 2011. Photo by Jessie Boylan.

There is no doubt that monkeywrenching has achieved some great successes. In the 1980s an Indian tribe spiked Mare's island in British Columbia over a period of months. They sent a letter to the local saw-mill, accompanied by a box of spikes, claiming to have spiked 400,000 trees. Mare's Island is now an Indian tribal park.

With its combination of theatrics and political comment, Earth First! (like Greenpeace) captures the attention of the media. In 1985 the Oregon Forest Service planned a huge birthday party for Smokey the Bear to educate kids about playing with fire. The fact is, logging companies start most of the fires! Dave Foreman, of Earth First! shows up in a Bear costume and succeeds in co-opting the Forestry services media, while distributing leaflets proclaiming the facts, much to the chagrin of the rangers who didn't want to be seen arresting Smokey the Bear at his own birthday party. Pretty tame, but effective. Earth First do not claim to be actively monkeywrenching, though they provide the information for those who wish to.

The Environmental Rangers are another group, Vietnam vets, who declare their willingness to use weapons, and die if need be, to protect the environment. It is the possibility of violence inherent in a 'no compromise in defence of Mother Earth' stance, that most troubles critics.

Monkeywrenching's corporate victims claim that violence begets more violence. While Manes concedes that this may be true, he makes the counterclaim that the resource-use

industry is rife with lawlessness too. He cites a review by the California Water Resources Control Board that found more than half of 100 timber harvest plans violated forestry rules. A recent Australian example was the Gold Coast City Councils plan to cull 4000 protected sacred ibis without a permit from National Parks and Wildlife. The lawlessness argument, Manes concludes, is an argument for ecotage!

The rule-of-law argument and the ascendancy of property above nature meets a further conflict when one realises that even the "most unregenerate industrialist" could not condone the completely uncontrolled use of private property, for unrestricted pollution would ultimately effect everyone's rights and thus conflict with the core values of the American Constitution: "justice, tranquillity, general welfare and liberty"[1]. Ecotage, Manes says, is not challenging property rights, just asking us what kind of property rights are compatible with justice for all beings.

Yet too often the law protects environmental vandals. When the majority of Australians rejected the Jabiluka Uranium mine, our so-called democratic system let them down. When two million Australians took to the streets against our government's involvement in the Iraq war, we were disappointed. Political expediency is often the defender of social injustice and environmental destruction; morality and justice do not provide economic benefits; and the dollar remains the bottom line.

Its protagonists see direct action it as a moral act. One

of Earth First!'s main advocates and practitioners, Dave Foreman, points out: "it's a means of self-defense". Earth First! subscribe to the Deep Ecology ethic which expands the notion of self to include all of nature, a stance they use to justify property damage and possible injury to humans in the name of "larger self" or the biosphere.

Whether or not one agrees with this world-view, it remains that species are becoming extinct as a result of human action at an unprecedented rate and that climate change will affect all life on earth. Indeed, when the Zimbabwean government enforces the protection of the endangered black rhino from poachers with a shoot to kill policy, it is ecotage made legal. And this is the essence of the direct action moral dilemma: should we let human-centred values allow extinctions to continue or use property damage or violence to prevent it? Is there any other way?

While Earth First! remains a banned organisation in the U.S. (along with terrorist organisations like Al Qaeda) and Foreman's book "Moneywrenching" is banned in Australia, a small group of dedicated activists are still willing to put their freedom on the line for a cause. Anti-coal protesters are entering coal mines and coal-fired power stations around the world in order to shut down the industry. Coal Seam Gas protesters with Friends of the Earth and Six Degrees staged a tree-sit outside Tara in Queensland in May 2011. Police threatened that they could be charged under terrorism laws if they did not desist.

In 2008 Christian peace activists calling themselves the "Citizens Inspection Team" who entered U.S. spy base Pine Gap in 2005 were acquitted after appealing their conviction under the Defence Special Undertakings Act of 1952 that treated their action as terrorism. Donna Mulhern, in her defence said, "Everything I had done before didn't disrupt the war process, but going into Pine Gap did. I was trying to fulfil the promise I had made to the people of Iraq to do something to stop the war." In 2011 one of the Pine Gap 6 told the Department of Defence that he intended to damage military property in protest against the Talisman Sabre joint US-Australian war games. ASIO and the Federal Police immediately started making enquiries, indicating the activist-terrorist connection is still alive and well.

However, things are changing. A 2011 court case in the United Kingdom acquitted twenty climate activists who had been charged with 'conspiracy to commit aggravated trespass' after using the 'necessity defence'. This was the second time this defence had succeeded in the U.K.

Courts since six Greenpeace activists were acquitted of criminal damage after scaling the chimney of Kingsnorth coal-fired power station. Scores of similar stories are emerging from the US and Australia signify a sea change in the weight courts are giving to environmental and social justice protest. Ploughshares peace activists who have admitted to criminal



damage of military vehicles have also been acquitted after using the 'necessity defence' that they were trying to prevent their country from being involved in an unjust war that was resulting in the deaths of hundreds of thousands.

Indeed, in 2011 Bolivia became the first nation in the world to give nature rights under law. Thanks to the Universal Declaration on the Rights of Mother Nature, environmental defenders can appeal to the importance of defending Earth, just as peace activists have long appealed to human rights as a fundamental premise for social justice. In that declaration, the call to "empower human beings and institutions to defend the rights of Mother Earth and of all beings" has finally brought political and philosophical credence to direct action.

References:

1. Christopher Manes, 1990 "Ecotage" in Zimmerman, M (ed) 1999 *Environmental Philosophy: from animal rights to radical ecology*
2. *What Exactly is Earth First!: An Introductory Primer* (visited July 2000) at www.enviroweb.org/left/primer
3. Vale, V, 1987 "Earth First!" interview with Mike Rozelle, co-founder of Earth First! in *RE:Search #11: Pranks! Re/search publications, San Francisco*

Nanotechnology and the commodification of everything

Elena McMaster

High tech innovation is the promise of our post-Utopian age and we are in an age of unprecedented and accelerating technological change. The speed with which technological innovations are being developed and commercialised is occurring inversely to our collective capacity to choose, reject or control various technologies. As the climate crisis worsens we are also increasingly reluctant to criticise the scientific world-view that presents them to us as progress.

But techno-optimism is a cynical place to start when we are trying to imagine and create alternative futures. Techno-optimism assumes that collectively we have given up on the idea that social conditions are malleable and that any alternative exists to industrial capitalism. In the words of activist Pat Mooney, techno-optimism suggests that "... we only need to bankroll the trickle down transfer of technology. The antidote to illness is genomics research; world hunger can be sated with more money for biotech research; the cure for global warming is geoengineering; Synthetic Biology is the answer to Peak Oil; the reply to the democratic deficit is Twitter; and the end of poverty will be brought about through nanotechnology." If it sounds too good to be true, it usually is.

The next Industrial Revolution

Emerging technologies, including nanotechnology, synthetic biology and biotechnology, have been promoted as ushering in the next Industrial Revolution – presaging the transition from an oil-based economy to a 'green' economy, revolutionising manufacturing and information technology, reducing waste and decoupling economic growth from resource constraints.

Proponents and critics of nanotechnology have suggested that it is the vanguard technology for a technological revolution. The promise of the new techno-industrial paradigm is that we will be able to manufacture products and substances from the atom up, doing away with the need to ration finite natural resources and eliminating waste. Proponents say that nanotechnology and emerging technologies have the potential to dramatically transform every industry and radically alter economic systems of supply and demand.

According to the linear model of innovation, technological innovation leads directly to improved social welfare, as higher productivity creates wealth that 'trickles down' to the less privileged

classes. The trickle down theory of economic growth and social welfare is a favourite liberal myth of wealth redistribution that has been used variously to justify dismantling the welfare state, corporate tax breaks and free trade. Now it is being used to justify technological innovation in the absence of any evidence that many of these technologies actually serve any social good or lead directly or indirectly to improved social conditions.

Aside from the usual vagaries of capitalist markets, the intensive globalisation of markets means that wealth redistribution is increasingly skewed by the unequal division of labour, unequal land ownership, monopolies on intellectual property and the constant race to the bottom on labour costs. In this context high tech, proprietary, industrial-scale technologies are far more likely to increase inequality rather than reduce it.

The disruption of traditional manufacturing industries will disproportionately affect Southern workers, while the jobs created will likely be in capital-intensive knowledge industries in the global North. Intellectual property and patenting laws will also ensure that the same multinationals who control carbon-based markets and various industries now – who are also at the forefront of nanotechnology research and development and hold most of the existing patents – will control markets and industries in the new high tech bio-economy too. Knowledge provides the keys to the palace in the next Industrial Revolution and those who have proprietary knowledge can simply shut the doors to any late-comers.

Along with the impacts of technological change and industrialisation it is important to remember what – history shows – drives technological innovation on this scale. Successive technological revolutions have been driven by industrial and military imperatives. The steam engine was developed to mechanise manufacturing and improve transportation so that goods could be transported and traded more efficiently and over larger distances. The railroad effectively facilitated the expansion of industrial capitalism. The development of both the transistor radio and the internet was driven by military needs.

Emerging technologies now are being promoted by the same vested interests. Industry investment in nanotechnology and other emerging technologies spans a huge range of industries including pharmaceuticals, energy, chemicals, software, biotechnology, agriculture, cosmetics/personal care and food. Total industry investment in nanotech was roughly equal to total government investment in 2005 as the focus shifted from research and development to the commercialisation of applications.



Virtually all of the world's largest companies are involved in funding nanotechnology, biotechnology and synthetic biology research and development and driving commercialisation. These include Monsanto, DuPont, L'Oreal, BASF, Microsoft, Proctor & Gamble, Unilever and the major oil companies. In 2010 over one quarter of the funding for nanotechnology research in the U.S. went to the military where they are using nano-applications to make body armour, more explosive explosives and new textiles to protect against chemical and biological warfare.

As in previous technological shifts this one is also being underwritten by vast sums of public money. Governments, particularly, in the U.S., Japan, and Germany, have been investing heavily in nanotechnology in pursuit of a competitive advantage in the new industrial paradigm.

In Dakar earlier this year, Pat Mooney spoke of the massive and unparalleled investment in nanotechnology: "Over the last ten years, industrialised countries have spent \$50 billion in basic research on nanotechnology. That, by the way, is the largest science initiative in the history of the world by far. It's bigger than the Manhattan Project that created nuclear weapons. It's bigger than the Apollo Project that put someone on the moon, by far bigger. A massive investment by government to say, 'we have a new manufacturing paradigm we can use and we want everyone else to buy it.'"

21st century imperialism: the commodification of everything

So, where does techno-optimism lead us? Industry and government have begun answering the looming threats of climate

change and peak oil by turning their attention to living carbon. The living stuff – grass, trees, algae, seaweed, soil, microbes etc. – that constitutes the earth's natural production. The new industrial term for all things living is 'biomass', a term which encompasses all of the planet's natural production. And the industrial capitalists are keen to find new and more extensive ways to use the earth's annual natural bounty to keep the industrial machine oiled and ticking over. Emerging technologies, particularly nanotechnology and synthetic biology, are being developed to transform and 'value-add' biomass so that living materials and living systems can be turned into profitable industrial products and services.

At the moment we use only about a quarter of our existing biomass. Current use reflects both subsistence and industrial production. The 'bioeconomy' is not a new method of economic organisation, nor is it anachronistic. Pre-Industrial Revolution, pre-mechanisation and mass production and the beginning of our reliance on fossil fuels, global economic activity was based exclusively on biomass.

And, as the ETC Group points out, many societies still rely primarily on biomass: "But while the global economy as a whole may have taken a century-long detour from that bio-based economy, billions of people did not. They – that is, peasants, indigenous peoples, pastoralists, fisherfolk, forest dwellers and other traditional communities – remained independent of the hydrocarbon economy ..."

The new proposed bioeconomy is very different from the bio-based economies that did exist and continue to exist for billions of people. It is founded on proprietary industrial-scale technologies rather than local knowledge and community-scale technologies. It is based on an understanding of the earth's natural materials and

organisms as bulk commodities awaiting harvest and exploitation rather than an awareness of the diversity of plant and animal life and their specific properties and uses. It is capital-intensive and relies on monoculture crops and plantations for feedstocks rather than labour-intensive and reliant on diverse and rotational cropping methods. The industrial shift from dead carbon to living carbon is not only environmentally destructive, it will also necessarily displace many people by disrupting traditional land uses and livelihoods.

Synthetic biology and nanotechnology are enabling technologies for the new bioeconomy. They will theoretically allow living carbon to supplement or replace fossilised carbon in electricity generation, in the production of plastics and industrial chemicals, for fertilisers and in any other industrial process or products where carbon is used as a raw material or energy source. Synthetic biology involves the artificial creation of biological organisms, processes and systems and the redesigning of existing biological systems. It is central to the exploitation of biomass because it enables living carbon to be manipulated to produce the kinds of fuels and chemicals currently produced using fossilised carbon.

Effectively, synthetic biology is the construction of living things with computer-synthesised DNA. Nanotechnology is contributing to the exploitation of biomass by providing novel methods for extracting cellulose from plant matter to make biofuels. A nanotechnology application has been developed to make biofuels more efficiently and less expensively from plant matter other than corn and sugar cane (e.g. grass, wood, stalks).

Proponents claim that nanotechnology will help in reducing pressure on traditional feedstocks, such as corn and sugar cane, by making it possible to use a whole range of other feedstocks for biofuel. In this context nanotechnology is an enabling technology providing industry with the opportunity to make so-called 'marginal' grass and bushlands, as well as algae and farm waste, into profitable commodities.

In practice this means that the enclosure of the commons is increasing at an exponential rate. Large tracts of land in biomass-rich areas, such as sub-saharan Africa and Brazil, are being bought up by foreign governments and multinationals to grow feedstocks for biofuels. The new global bio-economy is being founded on a completely new kind of resource heist, a 'land grab' of unprecedented proportions.

A 2010 Friends of the Earth report, 'Africa: up for grabs', on land acquisition in 11 African countries found that five million hectares – equivalent to the land area of Denmark – has already been bought by multinationals to produce biofuels. In resisting the new bioeconomy and the technologies enabling it we are struggling against the commodification of everything, the tyranny of the market over life and the colonisation of the bits and pieces and systems that make up our living ecosystems.

Future dreaming: ideology and utopia

As we face the massive challenges of climate change, loss of biodiversity and unsustainable resource exploitation we need to challenge the role of science and technology in society. Western science is an immensely important and useful knowledge form but it is not valueless, intrinsically neutral or existent outside of

the social conditions and cultural artefacts that shape all other knowledge forms.

As feminist historian Theodore Roszak says, we have been taught to honour the scientific method as "a way of seeing that is wholly unblemished by subjective taint." Science assumes an atomistic world, where we can continually reduce materials, systems and processes down to their smallest parts (and that this is somehow most accurate way to understand the natural world).

It is a reductionist world-view that too often denies the diversity and inter-relatedness of living organisms and living systems. Technological innovation has a profound impact on social and economic organisation and the ways that we see and relate to the world. Technological applications are not neutral artefacts. They are products of social, political and economic conditions. Under capitalism this means that many technological applications are consumer products rather than a type of innovation that fills a real social need and is accessible to all those who actually need it.

The government- and industry-backed 'techno-fixes' offer a compelling vision to a fearful global populace. Author and activist Naomi Klein also attended the World Social Forum in Dakar earlier this year. She suggested that the antidote to this vision involves a re-imagining of the ecological movement, bringing our ecological vision back down to earth from the cosmos.

The instrumental vision of the earth – typified by the view of a fragile blue/green planet floating in space – makes it more difficult to reject large-scale environmentally and socially destructive techno-fixes that promise to allow us to adjust the planetary thermostat and ensure the survival of our species and others. Ideas like 'fertilising' the ocean with iron nanoparticles to encourage phytoplankton growth and blasting sulphates into the air to simulate a volcanic eruption seem logical within this instrumental view.

An alternative vision, the perspective we gain by having our feet planted in the dirt, feeling rain on our skin and hearing the sounds of a forest living, exposes the insanity and destructiveness of this instrumental vision. An understanding of the earth as a complex living system, as a series of intimately-linked relationships, as something connected to us rather than outside of us, is essential to develop a truly sustainable ecological vision.

Elena McMaster is a campaigner with the Nanotechnology Campaign at Friends of the Earth. www.nano.foe.org.au

Canadian-based activist group, the ETC Group works on emerging technologies where they converge, on the atomic scale. Their reports provide an excellent and chilling overview of the world of emerging technologies and equity and environmental dimensions. www.etcgroup.org

Pindone rabbit baiting – cruel and careless

Sharon Beder and Richard Gosden

Many rural Australians have a dread of rabbits. If they see one or two on their property they have visions of hoards of rabbits teeming over the land, eating all available vegetation, undermining trees and bushes, and destroying everything in sight. Indeed rabbits have been a major problem in many agricultural areas in the past and efforts to eradicate them have included the introduction of the viruses Myxomatosis in 1950 and calicivirus since 1995.

Although calicivirus has been successful in significantly reducing rabbit numbers, some survive and landholders are now ever vigilant of rabbits for fear they may again reach plague proportions. Their efforts in this regard are aided in NSW by the Livestock Health and Pest Authorities (LHPA) in areas where it deems rabbits are too numerous. The LHPA uses calicivirus, poisons such as 1080 and pindone, and habitat destruction, in conjunction with councils and landholders.

As a regulatory agency concerned with the health of livestock, the LHPA is “committed to safeguarding agricultural production from the biosecurity risks posed by disease and pests”. However, its domain is not restricted to agricultural areas and it has been active in semi-urban and coastal areas throughout the state. Most recently the LHPA has been active in coastal areas of southern NSW, promoting the use of pindone to kill rabbits and training local landholders to use pindone-baits.

Pindone is not a target-specific poison and has the potential to kill other animals including humans, pets and wildlife. It is used in urban-fringe areas, and places where there are concentrations of small landholders, in preference to the poison 1080 because its slower killing time, and the availability of an antidote, make it less dangerous to use around humans and pets. However these factors will not prevent the poisoning of wildlife and it is for this reason that in some Australian states, including NSW, pindone is not supposed to be used where significant native wildlife populations occur.

The far south coast of NSW is a rural area supporting a variety of agricultural production and many small landholdings with an intimate mixture of open fields, bush blocks, lakes, swampy areas and National Parks. This coastal zone includes a range of fauna habitats and a wide variety of native species co-existing in close proximity. There is a surprising number of threatened species that are either known or predicted to be in the area, including several species of owl (including the Barking Owl), the Spotted-tailed Quoll, the Little Eagle, the Southern Brown Bandicoot, and the Long-nosed Potoroo.



1. Swamp wallaby (with joey in pouch) eating carrot. 2. Possums, which are also at risk.

Last year the Eurobodalla Shire Council in coordination with the LHPA undertook a program of pindone-baiting of rabbits on council land in the area. The Council claims this is in response to complaints by residents about rabbits digging in their gardens and eating their plants. The Council did not undertake any assessment of the risk pindone poses to native wildlife in the area but instead relied on the advice of the LHPA, which in this case recommended the use of pindone and also coordinated landholders in some areas to conduct simultaneous poisoning on their properties.

Every program of pest eradication by poison has to take into account the effect it will have on both target and non-target species. To do this it has to take account of the effects, and the risks, of both primary and secondary poisoning of animals. Primary poisoning occurs when target and non-target animals consume baits; secondary poisoning occurs when predators eat sick animals that have been poisoned or scavengers eat the carcasses of poisoned animals.

A program of feral animal control that is neither cruel nor careless requires that target animals do not have a slow, painful death and that poisoning is confined to target species. The use of pindone baits does not meet either criteria.

Pindone is an anticoagulant that kills by interfering with blood clotting, causing fatal haemorrhages. According to Trudy Sharp and Glen Saunders, scientists from the NSW Department of Primary Industries, who prepared a Model Code of Practice for the humane control of rabbits for the federal government, it takes around 10 to 14 days for rabbits to die following initial ingestion of pindone. During that time the animals bleed from the nose, mouth, eyes and anus, and pain from bleeding in internal organs, muscles and joints lasts for several days before they die. They conclude: "Because anticoagulant poisons take several days to kill, during which time they cause distress, disability and/or pain, they are considered inhumane."

The assessment of what is and what is not a cruel or inhumane way to treat animals is a contentious issue. The institution with the most influence and established moral standing in Australia on matters relating to animal welfare is the RSPCA. On its website the RSPCA has a page titled, "What is the most humane way to control rabbits". Shooting and cage trapping are recommended as the most humane methods of control while 1080 is considered inhumane. In regard to pindone the RSPCA is unequivocal in its criticism and says that it does not consider pindone "an acceptable control method as affected rabbits take several days to die".

Collateral damage

Whereas the question of cruelty is focused largely on rabbits the question of carelessness centres on the risk of collateral damage – the killing of non-target species. Common wildlife at risk of poisoning by pindone in the coastal area of southern NSW includes swamp wallabies, redneck wallabies, kangaroos, possums, antechinus, bandicoots, owls and eagles.

In October the ABC reported that over 400 birds including kelp gulls, giant petrels and black ducks had been killed on Macquarie Island after being exposed to another anticoagulant poison, brodifacoum, used to eradicate rabbits and rodents on the island.

There are few studies of the toxicity of pindone to Australian native fauna. According to a 2002 survey of the literature by the National Registration Authority for Agricultural and Veterinary Chemicals (NRA – now the APVMA) the available information "indicates that a number of native species (macropods [kangaroos and wallabies], bandicoots, dasyurids, raptors and a range of granivorous birds) are likely to share the high sensitivity of rabbits to pindone".

Although the 2002 NRA review found that "pindone poses a manageable risk to non-target species", throughout the report there are constant references to the limited availability of scientific data and, with regard to the persistency of pindone residues, it admitted that its findings were "very tentative". According to the NRA review, laboratory studies have found that owls can be poisoned by eating pindone-contaminated mice carcasses and that "raptors appear to share the high sensitivity [to pindone] of rabbits, based on results for wedge-tailed eagles and brown goshawks".

The LHPA response to the risk of secondary poisoning is an unproven assertion that this risk is very small because the sick rabbits go back to their burrows to die, an assertion that the

LHPA does not seem to believe in since it recommends that the most effective way to poison rabbits is with "a series of smaller doses over a period of 4 to 12 days" rather than one large dose. This means they expect the rabbits to be up and about for up to 12 days after taking the first bait, plenty of time for predators to find them. Pindone was declared ineligible for registration in the US and has never been registered in the UK. However in New Zealand it is registered and widely used for killing rabbits and has even been deliberately used to kill possums and wallabies, which are considered to be pests.

In Australia, the LHPA can actually require landholders to lay pindone baits in order to control rabbits. Before using LHPA supplied baits the landholder must sign a legally-binding indemnity form for every property where they intend to lay the baits. The form states that the landholder indemnifies the LHPA and all its employees against any actions, proceedings, claims, demands, costs and expenses that result from injury to any person, loss of any animal or any other loss.

Pesticide Control (Pindone Products) Order 2010, gazetted in August 2010, enables landholders to use 1080 and pindone after attending a short three-hour course. By the end of October some 200 people had been trained, many of whom own small lifestyle blocks near or including wildlife habitat.

Although it is illegal to use pindone without doing the short course a curious anomaly remains whereby anyone can still purchase ready-mixed pindone baits over the counter of hardware and produce stores without showing credentials. While this anomaly remains pindone can easily and unknowingly be used illegally. A maximum \$60,000 penalty is prescribed for non-compliance with the new regulation.

LHPA authorised control officers are culpable if they knowingly organise or coordinate pindone-baiting campaigns in areas where threatened species are likely to be at risk. An LHPA officer told those attending a short course at Moruya that the risk assessment required by landholders before pindone baits are laid "can be just a good hard think" although in some sensitive areas the LHPA will undertake the risk assessment on behalf of landowners.

According to a policy officer from the NSW Department of Environment, Climate Change and Water, if a landowner assesses the risk to wildlife is low and uses a mesh canopy then they will be able to cite that in their defence but there is no guarantee that if, say kangaroos are killed by pindone-baits the landowner has laid, they won't be prosecuted. When the issue of landholder liability was raised at the Moruya short course, landholders were reassured that the Department is very unlikely to prosecute any landowner in the event of wildlife deaths.

Sharon Beder is a visiting professorial fellow at the University of Wollongong and author of several books including Environmental Principles and Policies (UNSW Press, 2006).

More information and references: www.herinst.org/pindone, email pindone@gmail.com

Letter to the Editor

Dear Editor,

Concerning the article on population policies in the last Chain Reaction, I agree that population control alone will not solve climate change. But it would help if population growth was addressed on a global level together with lowering the carbon footprint of people in carbon intensive countries. We need to take responsibility and acknowledge the right of other species to exist and the survival of our natural environment.

As a woman, having seen a lot of the negative impacts of overpopulation first hand, I have chosen not to have children despite biological instincts and cultural expectations. Before worrying about taking women's reproductive rights away, we should acknowledge that there are many countries and cultures where women cannot choose not to have children.

Starting from having no say about who their partners should be, they are seen as reproductive machines this being their sole value. After delivering so many children with great risks involved in childbirth, I'm sure many women would be grateful if they had the choice of stopping.

Adopting some humility and accepting that we as humans are an environmental disaster, taking measures to tackle global overpopulation seems appropriate. Making birth control available where it isn't, equal rights for men and women and learning to value women beyond their childbearing and rearing capacities, should all help achieve this.

Many years ago I had the privilege of experiencing true sustainable living, spending some time with the nomadic Penan in Borneo. This sustainability only worked because of small family groups, very large territories and their nomadic life style. Though their lifestyle had integrity and was to my mind perfect in all ways, I have to admit that I found living like that extremely hard and I doubt that many people from wealthy, modern societies would be up to it.

So expecting us to cut down on our standard of living enough to reach true sustainability seems unrealistic. Also we have to allow that many people who live in extreme poverty and with very low life expectancies have the right to a better quality and longer life.

Bearing all that in mind and also considering that the bulk of humans are living in impoverished areas, we have to expect a huge increase in carbon emissions when social justice takes place. Which brings us back to the fact that population control has to be part of tackling climate change.

Lastly regarding traditional, or any owners making decisions about their lives, land and waters this is true, as long as we agree that the environment is no one's to destroy, since we have learnt the effects of destruction go beyond property boundaries and are a global issue.

Having said all this, I don't doubt that government's goal of a sustainable population in Australia is largely connected to making sure our comfortable way of life is not threatened, instead of helping the dire situation our world with all its species is in.

*Nadine O'Brien
North Queensland*

Proposed gas refinery on the Kimberley coast

Martin Pritchard

Oil and gas companies Woodside, Shell, BP, BHP and Chevron are proposing to build one of the world's biggest gas refineries to process Browse Basin gas on the Kimberley coast in the far northwest of WA. The WA Government under Premier Colin Barnett is pushing the proposal. Barnett has staked his political future on the project. Federal resources minister Martin Ferguson has gone along with the project as well.

The proposal would change the Kimberley forever – it would lead to the industrialisation of one of the most intact, large natural areas on the planet. The WA Premier has described the Kimberley as “one of the world's last great wilderness areas”. Yet he has also said he wants to industrialise the Kimberley: “Just as the Pilbara was critically important to the development of WA from the '60s, over the next 50 years the Kimberley will play a similar role.”

What the gas refinery would mean:

- It would be Australia's largest, and the world's second largest, LNG producer.
- The gas refinery would cover 25 sq kms of land, equivalent to 1,200 Subiaco ovals.
- The port area would cover 10 sq kms of a Humpback Whale calving area.
- There would be a 50 sq kms 'marine deadzone' offshore from James Price Point because of the blasting and dredging for the port and pipelines.
- 30 billion litres/year of wastewater generated by the refinery and the 6-8000 construction-worker town would be pumped into the pristine waters north of Broome.
- An oil spill from the project area could arrive in Roebuck Bay and Cable Beach in 1-10 days.
- 39 million tonnes/year of greenhouse gas emissions – equivalent to 20% of WA's current emissions from this one project..

Wider industrialisation

A government blueprint for mining in the Kimberley was published in 2005, ‘Developing the West Kimberley's Resources’. It outlines development scenarios that the Premier is likely to take: “It is also envisaged that the LNG plant could service minerals and energy developments throughout the West Kimberley, including an alumina refinery for bauxite from the

Mitchell Plateau in the remote North Kimberley wilderness and a gas-to-liquids processing facility. The medium growth scenario further includes lead and zinc mining at Admiral Bay (200 km south of Broome) with export through the Port of Broome.”

The Premier has told us that he sees no reason why associated developments of the LNG industry such as fertiliser and explosive factories cannot come with a refinery on the Kimberley coast.

Alternative sites for gas refineries

Unfortunately the argument to keep the fossil fuels in the ground has fallen on deaf ears. The government is touting LNG as a ‘clean’ fuel despite the fact that we know otherwise. The fight has turned into one of protecting the Kimberley rather than keeping the gas in the ground.

The federal and state governments signed an agreement in 2008 that included investigating sites outside the Kimberley. So far there have been only preliminary investigations. Documents obtained through FoI show that advice to the federal environment minister from his department acknowledges that investigations carried out so far are inadequate.

Reports by two economic analyst companies, JP Morgan and Citigroup, have shown that alternatives for piping Browse basin gas to already industrialised areas are not only economically viable but are financially advantageous to the Joint Venture partners. The reports outline that the main advantage to development in the Kimberley is a time advantage. This time advantage is now being whittled away by delays in project development which are only likely to be exacerbated by the increased pressure of an overloading in LNG projects around the country and increasing opposition to industrialising the Kimberley.

Opposition to the industrialisation of the Kimberley

The Broome community including business leaders, Traditional Owners and long-term residents have recently realised the full extent of the impacts the current proposal would have economically, socially, culturally and environmentally on the West Kimberley. Fifteen hundred people marched through the streets in opposition to the gas refinery in a town of 15,000.

A recent meeting was held at short notice by ‘Old Broome



1. Indigenous Women of Broome stopping Woodside work. 2. Broome community stand together after stopping the bulldozer from working. 3. After the lock-on.



families'. Five hundred people turned up to express their opposition to the proposal. The numbers are climbing exponentially. The Broome community – both Indigenous and non-Indigenous – has stopped Woodside work for 22 days (as at June 28, 2011) at James Price Point, such is the depth of feeling here. People do not want industrialisation.

National opposition is climbing dramatically. Twelve thousand postcards were recently delivered to the Prime Minister in opposition to the gas refinery proposal and 11,200 submissions were received by the WA EPA on the proposal.

Benefits to local communities

Local communities, Indigenous and non-Indigenous can benefit from the Browse Basin proposal without destroying the current economic base of tourism which depends on the Broome and Kimberley brands.

Services that every Australian takes as a birthright can be provided with the proceeds of LNG production regardless of the location of processing. We are arguing that the Kimberley's economic future should be based on respect and protection of the globally significant environmental and cultural values here. The rest of the planet is being trashed, we have an opportunity here to have a spectacular intact landscape managed by the traditional custodians that would be the envy of the world.

Our conversations with Joint Venture partners show that they are extremely nervous about the refinery proposal and are unconvinced by the consistently upbeat rhetoric of previous Woodside CEO Don Voelte. There are no buyers for the LNG as yet. A final investment decision is a long way off. This project is far from certain.

The Kimberley needs help – now

The next several months are likely to decide the fate of the Kimberley. We are calling on people to help protect this special place by contacting the Joint Venture partners BP, BHP, Shell and Chevron to let them know the depth of feeling and opposition to this proposal. The Broome and Kimberley community are calling for help in the campaign – they are asking for people to come and help in the region.

Martin Pritchard is the Director of Environs Kimberley

More information:

Environs Kimberley: www.environskimberley.org.au

The Wilderness Society: www.wilderness.org.au/kimberley

Australian Conservation Foundation: www.acfonline.org.au/articles/news.asp?news_id=3282

Hands Off Country blog: <http://handsoffcountry.blogspot.com>

Save the Kimberley: www.savethekimberley.com

WWF Australia: <http://wwf.org.au/ourwork/oceans/kimberley/under-threat/LNG-development>

Kimberley Direct Action: <http://kimberleydirectaction.wordpress.com>

Reviews

Radical Homemakers

**Radical Homemakers: changing the world
from your own backyard**

Shannon Hayes
2011
Finch Publishing

Review by Joel Catchlove

Shannon Hayes' *Radical Homemakers* builds on the perspective asserted by Wendell Berry, Sharon Astyk and others highlighting the primacy of home, community and place in resisting and building alternatives to corporate consumer culture in favour of a "life-serving economy". Hayes' book is divided into two parts, the first providing an engaging overview of the symptoms of cultural collapse that 'radical homemakers' seek to sidestep, from the industrial food system, to consumerism, corporate culture and formal education.

Central to the discussion is an exploration of how a return to the home fits within the context of feminism. In particular, Hayes' call for a return to the home appears to run counter to the assertion by Betty Friedan and others that full participation by women in the industrial economy as a requisite for gender equality. However, Hayes articulately describes how the industrial economy itself may be the problem, and that the radical household itself can become a site for renegotiating gender roles as part of a broader contribution to sustainability.

The second part of *Radical Homemakers* documents the activities and philosophies of a number of radical households in the United States. Through interviews and broader research, Hayes details how homemakers are redefining social relationships and reclaiming community self-reliance.

While it necessarily focuses on the household as the centre of social change and ecological action, at times this focus feels too introspective, suggesting a need for further exploration of the links between radical households and broader action for justice and sustainability.

While much in Hayes' book will be familiar to participants in activist and permaculture communities, *Radical Homemakers* is engaging, thoughtful and affirming for all who are seeking practical, personal strategies for existing beyond the corporate economy.

Smart Gardening

Smart Gardening

Marcelle Nankervis
2010
SBN: 9781921497315
A\$ 34.99, 204p

Review by Cecile Storrie

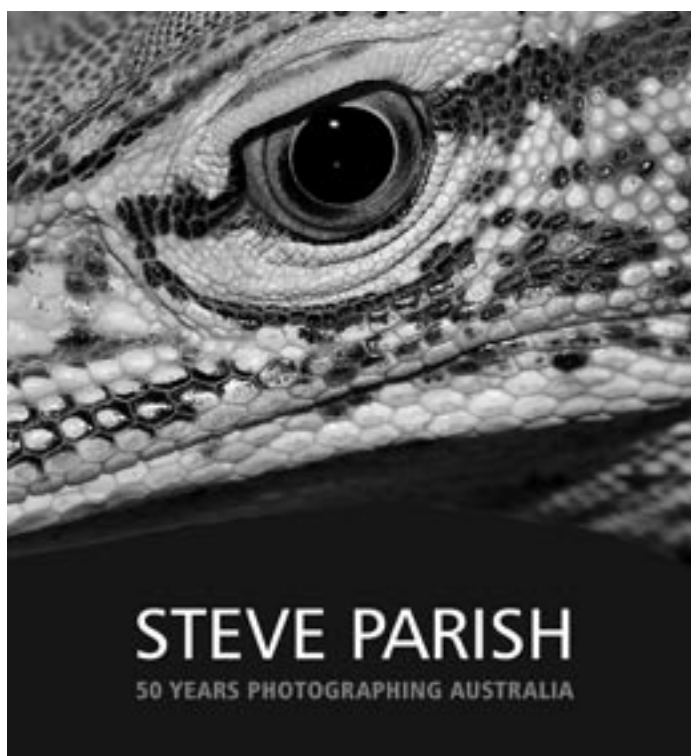
The book has two parts: Part one: What every gardener needs to know and Part two: Annual garden guide. At the end is a vegetable harvest guide and a glossary of pests and diseases.

Part one covers useful topics such as saving energy and keeping cool, saving water which includes tips on the use of grey water and saving the environment. The section on 'Making the most of plant nutrients' is particularly good. The back to basics section is practical with some excellent tables of suitable fruit trees for your climate. The table of vegetables with heirloom names and traits is another good one not usually covered in gardening books.

Part two is comprehensive in covering four main climate zones: tropical, sub-tropical, temperate and cool. However, Adelaide is classified as temperate which leads to such inappropriate advice as to plant avocado, mango and pineapple in March. I thought the book would have been much more useful if the author had recognised Mediterranean as a separate climate zone and organised the 'what to plant when' advice more appropriately. For example I found it inconsistent that one should plant broad beans in May and harvest broad beans in May – harvesting sweet corn in May would also be rather a long shot.

There are many useful tips such as 'How to sharpen a spade' or 'How to make your own seed pots', but these are under particular zones so if you are not consulting the tropical garden section you would miss the ones listed there. Such valuable information could have a section of its own. However, there is much useful advice on garden maintenance, propagation, lawn care and what to do in the vegetable and flower garden as well as the orchard month by month.

*More information: <http://marcellenankervis.blogspot.com>
Smart Gardening can be ordered online at www.myshopping.com.au*



50 Years Photographing Australia

Steve Parish: 50 Years Photographing Australia

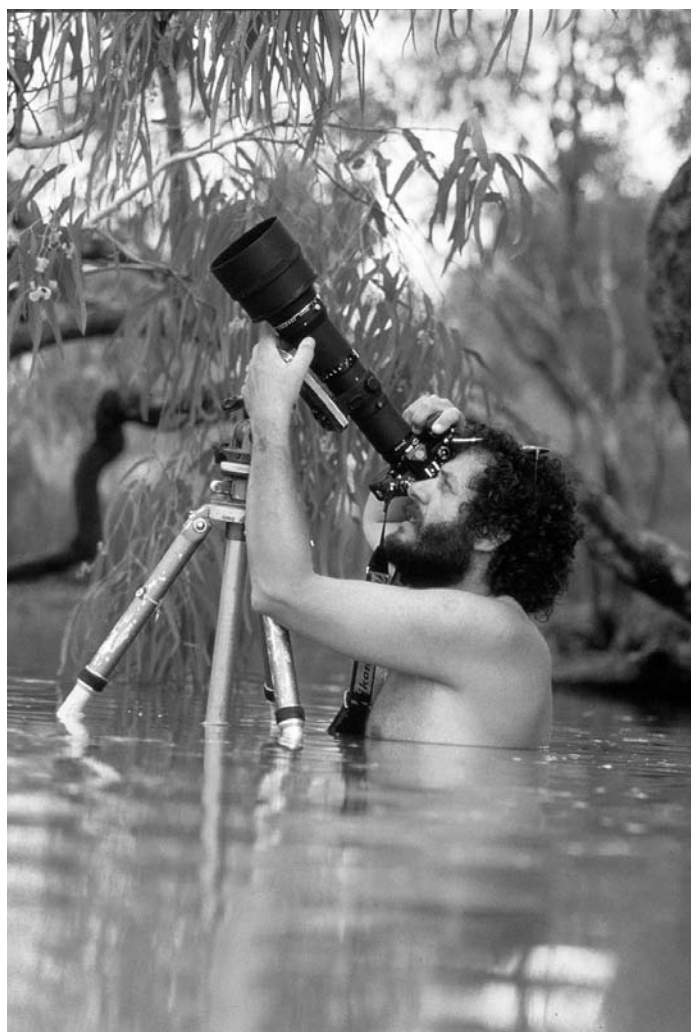
Steve Parish

2010

ISBN: 9781741936247

A\$ 79.95

304p - hardback



Renowned both locally and internationally over the last 50 years for capturing the natural beauty of Australia's environment and the protection of its wildlife, Steve Parish has released his own autobiographical account of his journey to date.

"This book is not only a chance for me to share my most memorable moments photographing Australia so others can see how captivating and important our natural environment is to our nation," Steve said, "but also shows the dramatic changes our environment has experienced over the past five decades."

Readers are treated to the photographer's personal, first-hand accounts of some of the most significant events in Australian environmental history, including what he witnessed during the 1980s Franklin-Gordon Wild Rivers campaign and the more recent protests in Tasmania's Florentine Forests.

"Certainly being so immersed in the natural environment over the last 50 years I have developed a love and appreciation for the world we live in and the need to protect it," Steve said. "It is devastating to see the destruction we have caused to this natural world and the species that are no longer with us as a result of our actions."

More information: www.steveparish.com.au

Friends of the Earth Australia contacts:

National website

www.foe.org.au

National Liaison Officers

National Liaison Office: ph (03) 9419 8700. PO Box 222, Fitzroy, Vic, 3065

Cam Walker (Melbourne) 0419 338047
<cam.walker@foe.org.au>

Kristy Walters (Brisbane) 0423 478 757
<kristy.walters@foe.org.au>

International Liaison Officers

Derec Davies (Brisbane)
<derec.davies@foe.org.au>

Latin America: Marisol Salinas
(Melbourne) <marisol.salinas@foe.org.au>

Membership issues / financial contributions

Mel Slattery <melissa.slattery@foe.org.au>
Freecall 1300 852 081

National campaigns, active issues, projects and spokespeople

Anti-Nuclear and Clean Energy:
Jim Green (Melbourne) ph. 0417 318368
<jim.green@foe.org.au>

Coal Campaign:
Shaun Murray (Melbourne) <shaun.murray@foe.org.au>

Indigenous Communities in Latin America Campaign (mining - forestry – hydroelectric projects):
Marisol Salinas (Melbourne) ph (03) 9419 8700 <marisol.salinas@foe.org.au>

South Melbourne Commons
(a collaboration between FoEA and the Father Bob Maquire Foundation).
<ecomarket.melbourne@foe.org.au>
ph 0403 440 996

Pesticides:
Anthony Amis (Melbourne)
<anthonyamis@hotmail.com>

Nanotechnology:
Georgia Miller (Melbourne) 0437 979402
<georgia.miller@foe.org.au> and
Elena McMaster (Melbourne)
<elena.mcmaster@foe.org.au>

Food and agriculture spokesperson:
Gyorgy Scrinis (Melbourne) <gyorgy.scrinis@foe.org.au>

South Melbourne Commons (a collaboration between FoEA and the Father Bob Maguire Foundation).

<ecomarket.melbourne@foe.org.au>
Website: <http://southmelbourne.vic.au/commons>

Local Groups

FoE ADELAIDE

c/- Conservation Council of SA. Level 1, 157 Franklin Street, Adelaide. Ph (08) 8211 6872, adelaide.office@foe.org.au, www.adelaide.foe.org.au
Clean Futures Collective
Shani Burdon <shani.burdon@foe.org.au> ph 0412 844 410 (meets on the first and third Wed of the month, 5.30pm)
Reclaim the Food Chain (food and farming collective) meets 6pm, fourth Thursday of the month.

Clean Futures Collective

Shani Burdon <shani.burdon@foe.org.au> ph. 0412 844 410 (meets on the first and third Wednesday of the month, 5.30pm)

Food group

Level 1, 157 Franklin Street, Adelaide SA 5000

BRIDGETOWN GREENBUSHES FRIENDS OF THE FOREST

PO Box 461, Bridgetown, WA, 6255. Ph (08) 9761 1176 <bgff@live.com.au>
www.bgff.org.au

FoE BRISBANE

Postal address: PO Box 5702, West End, Qld, 4101. Ph (07) 3846 5793, fax (07) 3846 4791, <office@brisbane.foe.org.au>
www.brisbane.foe.org.au

FoE KURANDA

PO Box 795, Kuranda, Qld, 4881 www.foekuranda.org

FoE MELBOURNE

Postal – PO Box 222, Fitzroy, 3065.
Street address – 312 Smith St, Collingwood. Ph (03) 9419 8700, 1300 852 081 (free call outside Melbourne).
Fax (03) 9416 2081. <foe@melbourne.foe.org.au> www.melbourne.foe.org.au

FoE SOUTHWEST WA

PO Box 6177, South Bunbury, WA, 6230. Ph Joan Jenkins (08) 9791 6621, 0428 389087. <foeswa@foe.org.au>

FoE SYDNEY

Mailing address: 19 Eve St, Erskineville, NSW, 2043. foesydney@gmail.com
www.sydney.foe.org.au

Affiliate members

Food Irradiation Watch

PO Box 5829, West End, Qld, 4101.
<foodirradiationwatch@yahoo.com.au>
foodirradiationinfo.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 <julian.brown20@yahoo.com>

Katoomba-Leura Climate Action Now

George Winston <gwinston@aapt.com.au>

Mukwano Australia

Supporting health care in organic farming communities in Uganda. <Kristen.Lyons@griffith.edu.au> or <Samantha.Neal@dse.vic.gov.au>
www.mukwano-australia.org

Reverse Garbage

PO Box 5626, West End, Qld, 4101. Ph (07) 3844 9744 <info@reversegarbage.com.au> www.reversegarbage.com.au

Sustainable Energy Now (WA)

Perth. PO Box 341, West Perth WA 6872. www.sen.asn.au <contact@sen.asn.au>
ph Steve Gates 0400 870 887

Tulele Peisa (PNG)

'Sailing the waves on our own'.
www.tulelepeisa.org

West Mallee Protection (SA)

Breony Carbins 0423 910492.
Cat Beaton 0434 257359.
<kokathamulacamp@gmail.com>
www.kokathamula.auspics.org

Peace Convergence 2011

End the lies!
End the wars!
End the US Alliance!



Be visible for peace in
a time of permanent war.

Resist the US-Oz War Games at Shoalwater Bay.
Gather in Rockhampton, Yeppoon and Byfield,

15 - 29 July

More: Graeme Dunstan 0407 951 688
FaceBook: "Peace Convergence 2011"
www.peaceconvergence.com