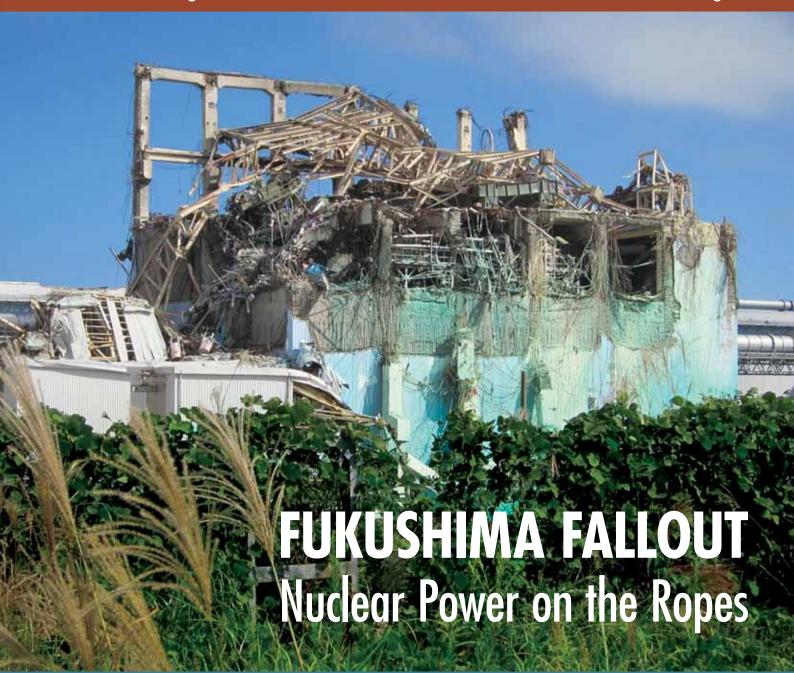
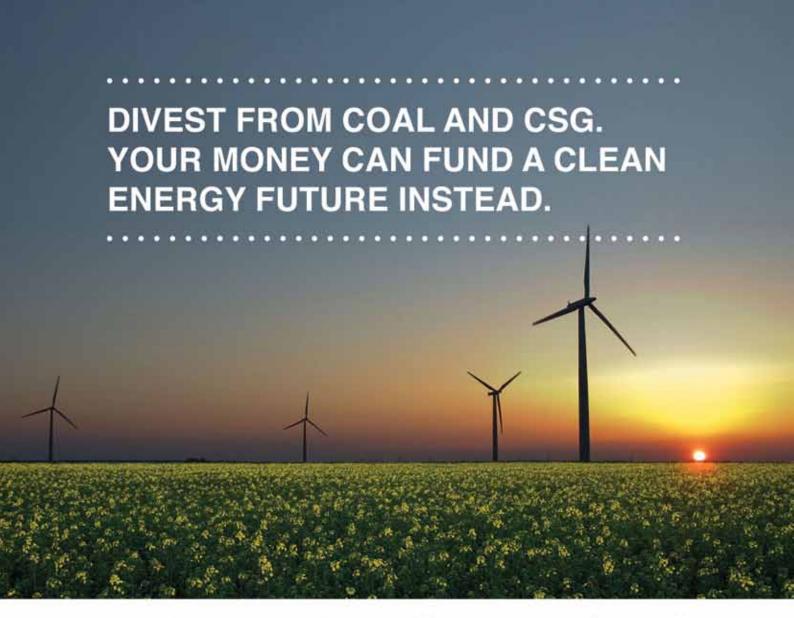
# chain. reaction

The National Magazine of Friends of the Earth Australia

www.foe.org.au



- Election aftermath: Full speed in reverse
- Boycott reforms target environmentalists
- Forest Stewardship Council fails
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### FoE Kuranda working to protect river water supply

Friends of the Earth, Kuranda are concerned that the Kuranda and Mareeba town water supply may not be safe to drink without additional filtering. This is because Kuranda and Mareeba take their water supply direct from the Barron River, which has become seriously polluted. Moreover, the Mayor of Cairns recently said he believed the region's (i.e. Cairns') long-term water supply needs would be met by the Barron River.

In the Barron River catchment there is a massive cocktail of pesticides, fungicides, herbicides and fertilizers being used in intensive agriculture and animal farming. There are also unlined old community dumpsites as well as diesel and petrol pumps. There has also been a history of gold mining along the Cholesy River, which means a high risk of arsenic and mercury contamination. There are numerous sources of treated and untreated sewage.

The Queensland government is now proposing there be a significant increase in agricultural production, logging and development in the Barron River catchment. This is only going to further deteriorate the water quality of the Barron River and the health of the coral reef.

We may all suffer a serious reduction in our own health if we don't stop the continuing decline in the health and quality of this important, iconic World Heritage River. Take action now and help do something to save Cairn's and the Tableland's polluted river and water supply.

Friends of the Earth meets @ 1pm, third Sunday of the month at the Community Hub, or the Central Hall, Original Markets, Kuranda. Everyone welcome.

For more information see www.foekuranda.org, email info@foekuranda.org or phone Jon on 0499207492 or email jbgleu@gmail.com.





### CounterAct – Training for change

CounterAct – a project of Friends of the Earth, Australia – has recently released a report into the training needs of grassroots activists in Australia. Garnering survey responses from over 100 people working for environmental and social justice, plus a range of interviews and attendance at key events over 12 months, gives an interesting insight into the challenges faced by community campaigners.

Extraordinary levels of commitment were shown through huge amounts of volunteer hours and a genuine, widespread interest in working collaboratively with others. There is a large demonstrated need and commitment to support more training across Australia.

The report includes three case studies from the Broome Community No Gas campaign, Occupy Melbourne and the Coal Seam Gas campaign.

Priority training areas include movement building and group skills such as facilitation and volunteer retention; direct action planning and related legal knowledge; and communications -including traditional, social media, storytelling and practical skills around video, graphics and distribution of campaign materials. CounterAct will be shortly launching a crowdfunding campaign, and seeking other resources to develop and deploy trainings in these areas in 2014.

To download the report, check out our latest news, or contact us, visit www.counteract.org.au

### Reverse Garbage Co-op, Brisbane

Reverse Garbage Brisbane is a not-forprofit worker run co-operative that promotes environmental sustainability and resource reuse. The organisation collects high quality industrial discards, diverting them away from landfill and sells them at a low cost to the general public. Education is at the core of the organisation with environment and waste focused art workshops forming a large part of the business. Reverse Garbage also offers a mail order service and hosts retail space, Reverse Emporium.

Also set up to provide meaningful and ecologically sustainable employment, Reverse Garbage strives to be an example of a truly sustainable

enterprise. Social sustainability is practiced through a worker-managed co-operative model that encourages workplace equity. Currently there are twelve workers.

Now in its fourteenth year, Reverse Garbage is housed in the same building as Friends of the Earth, Brisbane.

Location: 20 Burke Street, Woolloongabba Q 4102

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www.facebook.com/reversegarbage

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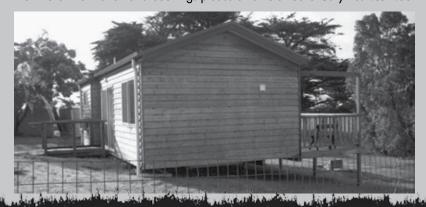
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## Looking for Matakupay – The Platypus Project

Patrick Simmons

FoE Melbourne's Barmah Millewa Collective and members of the Wadi Wadi community have set up a community-based project to research platypus populations in North-West Victoria. Along the stretch of the Murray River near Swan Hill and the Nyah-Vinifera River Red Gum forest, there have been no official sightings of platypus in the past 10 years. For members of the Wadi Wadi community, the elusive platypus, or Matakupay, has a special cultural significance as one of their totem animals. Community member Jacinta Chaplin recalls: "When I was about thirteen, my uncle showed me the platypus, and he said 'This is your totem, you've got to protect it, always make sure it's safe'." The long-term aspirations of this project are to bring Matakupay back to Wadi Wadi country.

We've been working with the Australian Platypus Conservancy's (APC) Geoff Williams to research the feasibility of doing this. Because so little is known about platypus populations around Swan Hill and Nyah, the first step is researching all past sightings in the area to get a good idea of where platypus have been seen, and where they might be seen in the future. This basically involves putting the word out, and speaking to Traditional Owners, farmers, fishermen, kayakers and anyone else who may have seen platypus in the past.

During the recent project launch in Swan Hill, some of the Collective joined Geoff and Wadi Wadi community member Cain Chaplinin visiting 150 students at three schools in the area, to raise awareness about the cultural values of the platypus and how to protect it. Geoff also led a public talk by the Murray River explaining where and how to look for platypus, and how to tell them apart from native water rats. Conversations quickly started about where platypus might be, and what people in the area can do to restore

might be, and what people in the area can do to restore populations in the area. This has developed into a series of volunteer-based group platypus watches along sections of Murray River and its branches to look for platypus and record any sightings. In combination with the historical sightings this will provide some baseline information about platypus populations in the area, which can then be used to plan future stages of the project or to lobby regional water managers about the need for native revegetation and improved environmental flows.

So far we've had some encouraging anecdotal evidence that platypus have been seen in billabongs of the Nyah-Vinifera river red gum forests, and more recently in the



Platypus spotting.

Little Murray River further upstream. Given the long home range of platypus, which can travel up to 7 kms in search of food, it is possible populations have travelled further downstream of the Gunbower Lagoons, the closest stable population of platypus. We know from speaking to members of the Wadi Wadi community that platypus have been seen in Nyah-Vinifera about 10 years ago, and Geoff Williams has indicated this would be a feasible platypus habitat, depending on the seasonal release of environmental flows into the forests.

Studies like these and our previous vegetation surveys in Nyah-Vinifera are small puzzle pieces in building a case for better environmental flows for the river red gum forest, which could act as a potential habitat for platypus migrating downstream from the Gunbower lagoons. Calling attention to iconic species can draw different people together in conservation efforts, and can also be symbolic of the broader need to protect vital ecosystems along the Murray. It is early days, but tying in a local community project to this broader discussion may help in improving environmental flows for Nyah-Vinifera and bring Matakupay back to Wadi Wadi Country.

If you have seen a Platypus in the Swan-Hill region or want to get involved in the project please contact us: patricksimons25@gmail.com

Web: http://matakupay-platypusproject.com/project

## ReefWalk 2013

Hi, my name is June Norman and I have been a volunteer with Friends of the Earth, Brisbane for eight years. I began my involvement with the anti-nuclear campaign, when in 2010 I organised a walk from Brisbane to Canberra – 'Women's International Walk for Peace' – walking for a nuclear-free sustainable future for our grandchildren.

Three years ago I transferred to Six Degrees to focus on coal and coal seam gas. The unprecedented expansion of these industries is a very real threat to our Great Barrier Reef. My concern is echoed by the involvement of the United Nations Educational, Scientific and Cultural Organisation's investigation into development at Gladstone and its impact to the reef.

Last year, I was struggling with how to bring awareness of these concerns to ordinary people, especially those living in small towns and communities. As walking is my passion, I decided to organise a walk from Cairns to Gladstone, 'ReefWalk 2013'. After a Brisbane launch on May 24 at Kangaroo Point, with supporters including Bob Irwin and Larissa Waters, we headed to Cairns to start the epic journey on June 1.

After a wholesome breakfast send off in Cairns with great TV coverage, 14 walkers (including a 13 year boy with his arm in a sling) continued along the Bruce Highway.

Three days later we arrived in Babinda, where we were given a warm welcome. The next morning we were treated to a spectacular send off with the release of over 100 homing pigeons ... 'Pigeons for the Reef'.

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The walk attended Innisfail's celebration of World Environment Day. I was honoured to be invited to plant a tree in town's Rotary Park in partnership with the local indigenous elder, Henry Epong. It was a ancient indigenous food tree (podocarpus).

One of the key things that kept me motivated along the walk was the presence and passion of all the walkers. Rosalie and Nick, local doctors from Alice Springs walked from Ingham to Gladstone; Glenda from Switzerland, who walked from Proserpine to Gladstone to let Australian's know "the Reef belongs to the world and that you are just the custodians"; Anna from Sydney, a legal secretary, walked the first 10 days to Mission Beach alongside her daughter and 13 year old grandson. We say every step counts, one hour, one day, one week or all the way, those who walked a few hours played their part in the journey. In total we had over 300 people participate in ReefWalk 2013. Together, we walked an average of 20 kms a day with a rest day every five or six days. A support vehicle carried our food, water and camping gear.

The walk itself could not have happened without the support of the communities along the way, the special people who found us places to stay: schools, private homes, community halls, camp grounds, caravan parks and showgrounds. They provided wonderful meals, baked dinners, salads, BBQs, lasagnas, home-made cakes and sweets. I don't think anyone lost any weight!

We were welcomed at community gatherings, given the opportunity to show slideshows, documentaries and to listen to the concerns of the local people of their feelings of powerlessness against the government and the mining companies.

I believe the walk was very successful in highlighting the issues threatening our Great Barrier Reef, connecting communities and empowering and supporting people to stand up and speak out.

ReefWalkers joined by residents of Babinda. 'Pigeons for the Reef' were released as they set off.

# Election aftermath: Full speed in reverse

Cam Walker

The following is a brief assessment of possible trajectories in environmental politics under the federal Coalition government, specific areas where the Coalition can be expected to act, and a summary of some of the key players in the new political landscape.

#### The first Tea Party government?

John Howard was never an advocate for climate action. Yet we face something different in Tony Abbott. A lot of water has passed under the bridge of conservative politics since Howard's days. If we want to see what an Abbott government might mean for the environment, we would be well advised to look to the US, where a highly ideological Tea Party movement continues to drive government agendas. Think Sarah Palin, not John Howard.

It seems clear that this government will start to dismantle 40 years of environmental progress and modernisation, as approvals for major projects are passed to the States and Territories. Tony Abbott calls this cutting 'green tape'. In the real world this means more coal mines, more gas rigs, and more port facilities on the Great Barrier Reef.

Mr Abbott has long said that his first actions as PM will include the dismantling of the carbon price. What is surprising is the speed at which he is enacting his agenda. There are a considerable number of senior Coalition MPs with profound dislike of all things green. This may manifest as vindictive actions, like the expected lock out of environmental NGOs from government access.

This Tea Party approach is a strategic error. Playing to the climate sceptics and anti-greens will not win fans amongst soft green Liberal voters. It also runs the risk of alienating sections of the business community. For example, if Mr Abbott shuts down the wind industry, he is depriving farmers of reliable income and removing jobs from regional Australia. In short, if this government goes hard against everything green, it will damage the economy at the same time.

When we look at the Coalition's recent record, we can see they have been forced to keep the facade that they will take action on climate, yet the Direct Action Plan will deliver very little in terms of emissions reduction. It is little more than a slush fund for farmers and the tree plantings by his Green Army will not be a panacea for our rising greenhouse emissions. The anti science agenda suggests that the Coalition is not controlled by economic rationalists

any more, because of the evidence that it is willing to protect fossil fuels and mining at any cost.

#### Winding back wind and other renewables

Ideological opposition to action on climate is likely to trump the opportunities presented by renewables. The depth of hatred expressed towards wind energy by a growing number of Liberals is troubling but also difficult to fathom. Do they hate the wind industry because it proves that the green movement was right all along? Or is it just sloppy and poorly thought out populism?

A raft of anti-wind campaigners within the Coalition have been becoming more vocal over the past year. These include new Liberal MP for the seat of Hume NSW, Angus Taylor, who has emerged as a staunch critic of wind energy and the national Renewable Energy Target; Liberal MP Craig Kelly (Hughes, NSW); and Chris Back, Liberal Senator for Western Australia.

The Coalition has announced it will 'resolve' community concerns over wind farms. It ignores the fact that 19 independent studies has shown there is no link between turbines and ill health.

While there are people in the anti-wind movement who are simply concerned about what they believe are negative impacts of this technology, there is an ideological right wing tendency which tends to dominate, which veers towards anti-green and climate sceptic positions. The anti wind hate site 'Stop These Things' best typifies this approach, describing environmentalists as 'Greentards'. While the anti wind movement demographic tends to primarily cross over with the wise use and 'angry and conservative older white' demographic (eg Family First and DLP), there is a slightly wider constituency which deserves to be engaged.

Polls continue to show that the vast majority of conservative voters support renewables. Even in the US, where powerful religious and conservative forces that are sceptical of climate change dominate, 57% of small businesses believe climate change and extreme weather events are an urgent problem that can disrupt the economy and harm small businesses. And renewables show that a green economy is a better economy; with less pollution, less risk, more jobs and opportunity spread across many regions rather than centralised in a few communities.

#### People to watch

Greg Hunt – The new environment minister certainly understands that climate science is real and humans are the main cause of global warming. But he is already having to implement a deeply anti-environment agenda, including the abolition of the Climate Commission. Mr Hunt has a long term personal interest in the environment and it will be interesting to see how he implements his Parties negative and destructive policy.

Simon Birmingham – The new Parliamentary Secretary to the Environment Minister, with responsibilities for water, has highlighted "the creation of a one-stop-shop for environmental approvals (and) the removal of Labor's carbon tax" as priorities for the government.

Eric Abetz – An elder of the Liberal Party and anti-green senator from Tasmania, Mr Abetz can be expected to continue his campaign against environmental organisations which was interrupted by John Howard losing power. He describes the Greens party as having 'simplistic and extremist policies and double standards' and is no fan of membership-based green organisations.

The IPA – While the right wing Institute for Public Affairs does not actually hold a seat in parliament, it may as well, given its influence on key thinkers in the Liberal Party. As was recently reported in Fairfax media, growing number of corporate sources have said it is hard for multinationals and big companies to continue supporting the institute due to its hardline positions on many issues. One described its position on climate change as 'nuts' and 'lunacy' and embracing 'fringe' elements. This won't stop the Coalition from drawing from the IPA's wishlist of anti-environmental measures. In April, Mr Abbott explicitly endorsed the IPA's '75 Ideas for a Better Australia'.

Nick Xenophon – The independent Senator from SA tends towards popularist politics and has been tending to align himself with the anti-wind movement over the past year. With the Coalition promising to 'resolve' the issue of wind farms and health, and John Madigan, the anti-wind Democratic Labor Party (DLP) Senator from Victoria, there is the real chance of an anti-renewables push when the Coalition starts the review of the Renewable Energy Target (RET) in 2014.

The 'wise use' movement – This loose-knit coalition of far-right groups includes the Shooters and Fishers Party and the Country Alliance. Given that the preferences of these micro parties have had some influence in the Senate outcomes because of preference deals, they will be

expecting some pay-back from some of the right leaning or unaligned senators who were elected. This could include Ricky Muir from Victoria (Motoring Enthusiasts Party) and Family First, who got a Senate seat in SA.

New kids on the block – Clive Palmer's Palmer United Party has arrived on the scene, picking up three Senate seats (one of them subject to a recount) and one lower house seat for Clive himself. It holds a schizophrenic approach to fossil fuels (concerned about the impacts of unconventional gas but pro-coal) and the erratic behaviour of its leader and untested qualities of its parliamentarians mean it will be one to watch. It has already announced it will act as a voting block in the senate with the Motoring Enthusiasts Party.

*Pro climate action ALP MPs* – The Coalition is moving forward with its intention to remove the price on carbon. It is not yet clear how the ALP will vote when the legislation comes up, or more broadly, how much it will push on climate and environment in the next election campaign.

The environment movement – Groups are all looking for ways to influence the new government and are already adopting various strategies, from seeking engagement with the Coalition, to a shift in resources away from the federal political level (e.g. increased shareholder and corporate activism) and enhanced support for local struggles at the state and regional level.

#### Things to look for:

- There is a strong chance that green groups will lose access to government MPs, Ministers and departments;
- There is a strong chance that there will be cuts to the GVESHO program - these are administration grants from the federal government for a large range of groups from across the country, traditionally supported by both main parties;
- 'investigations' into the charitable tax status of green groups (remember the IPA's critiques of green groups that have deductible gift status, which identified this as an obvious way to attack the finances of green groups and hence their ability to wage effective campaigns). Even the risk of loss of tax status will have a chilling effect on many groups;
- The Government has already indicated that it intends to review the legal protections currently offered to environmental groups who engage in secondary boycotts.

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#### What's coming – environment and climate policy

#### Climate change & energy

The Coalition has committed to abolish the carbon price and abolish the Climate Change Authority, the Climate Commission, and the energy security fund. While it has committed to retain the Renewable Energy Target of 20% by 2020 it will review it in 2014, opening the very real possibility that the government will walk away from the target. The Renewable Energy Target is vital for driving investment in renewable energy.

#### Coal & gas

The Coalition refused to support the call for a moratorium on coal seam gas (CSG) projects when it was in opposition. It says that the federal government has only 'limited powers' to regulate. It will stand back and let the States do what they want when it comes to coal and gas approvals. It has even offered \$100 million in incentives to boost mineral and petroleum exploration.

Lock the Gate has become a significant player in the national debate over land use and energy futures. And while the Coalition has been keen to talk down the influence of these issues at the election box, there is no doubt that new fossil fuel projects mean a headache for the Coalition (split as they are between pro drilling Liberals versus Nationals with an ear for constituent concerns) and opportunities for the Greens, ALP and minor parties like the DLP. Key Greens like Jeremy Buckingham (NSW MP) and Larissa Waters (Queensland Senator) continue to play a significant role in the community campaign against new coal and gas, while Greens leader Christine Milne plans to continue her pitch to rural and regional voters.

#### **Environmental powers**

This is one of the greatest short term threats: the Coalition intends to 'streamline assessments and approvals' processes for major projects. It will set up a 'one-stop shop' for environmental approvals processes, covering both Commonwealth and State legislation that will cut 'green tape' (environmental protections). In the real world this will most likely mean more coal mines, more gas rigs, and more port facilities in places like the Great Barrier Reef.

#### **Nuclear power and uranium mining**

Mr Abbott is a fan of nuclear power, saying: "nuclear power is the only proven way of generating the base load power Australia needed without producing carbon pollution". Given how unpopular a domestic nuclear industry would be, he was smart enough not to make it an election issue.

The Coalition's Resources and Energy policy says "the Coalition will formalise the agreement to sell uranium to India". The Coalition also wants to explore the development of an export industry for thorium – although the use of thorium as a nuclear fuel has not progressed beyond the experimental stage.

#### Forests & biodiversity

The Coalition has said it will abolish the Biodiversity Fund. The fund provided significant 'on the ground' support (and meaningful employment opportunities) to many indigenous communities.

The Liberal Party voted to disallow management plans for marine parks. It has publicly committed to reviewing the marine parks network and current management plans, a dangerous and backwards move.

It has already said it would 'consider' any proposal from the Victorian government to reintroduce cattle grazing into the alpine national park.

It is not yet clear if the government will seek to have the Tasmanian World Heritage Area de-listed.

#### Don't forget the neighbours

The Coalition has said it will redirect more than \$4 billion from the foreign aid budget towards infrastructure in Australia like roads. Check the Australian Council for International Development for details about the impacts of this announcement: http://acfid.asn.au

Cam Walker is a national liaison officer with Friends of the Earth.

#### Resources

Friends of the Earth is maintaining a watching brief on the implementation of the Abbott government's environment and climate agenda via a project called 'environment watch', which is updated regularly and available on our website: www.foe.org.au

Also check our 'nature not negotiable' campaign. www.foe.org.au/nature-not-negotiable

# Boycott reforms target environmentalists

Julian Brezniak and Lewis d'Avigdor

The Government is intending to review the legal protections currently offered to environmental groups who engage in secondary boycotts. The parliamentary secretary for agriculture Senator Richard Colbeck told The Australian that "one of the things I'd be looking at would be to bring a level playing field back so that environment groups are required to comply with the same requirements as business and industry." I

This policy has been in the pipeline for some time, since at least March 2013, as part of the Coalition's intended "root and branch" review of competition law in Australia, including the Competition and Consumer Act.<sup>2</sup>

This review has far reaching implications for both environmental activism and the functioning of political debate in Australia. The proposals are particularly important to Tasmania's forestry industry, which has been the subject of some significant secondary boycotts.

Usually a commercial boycott includes some sort of agreement to abstain from dealings with a business to achieve some end. There have been many famous boycotts<sup>3</sup>, not least the 1987 and 1991 Rugby World Cup boycotts that blocked the Springboks from competition.

As it stands, the Competition and Consumer Act <sup>4</sup> does not prohibit these "primary boycotts" in most circumstances. Individuals are usually free to agree to not acquire products from companies that, for example, source products from environmentally harmful or morally dubious sources.

Only primary boycotts relating to a business that is engaging in international trade are banned – it is currently prohibited for individuals to collectively engage in boycotts that are aimed at disrupting Australian trade.<sup>5</sup>

However, the Competition and Consumer Act does prohibit "secondary boycotts". A secondary boycott occurs when two or more people act together to hinder or prevent a business from acquiring products from or selling products to another business. Secondary boycotts of this nature are not illegal if the ACCC gives an authorisation to conduct one.

Secondary boycotts (and primary boycotts affecting international trade) are lawful when the "dominant purpose" of the boycott is for environmental protection or for consumer protection. And it is this exception to the prohibition on secondary boycotts that is at the centre of the public debate about the coalition's "root and branch" review of Australia's competition laws.

These environmental and consumer protections were included in the Competition and Consumer Act in 1996 as a compromise for support for Howard's 1996 workplace legislation by Cheryl Kernot and the Democrats in the Senate. It is not clear whether the Coalition will seek to remove only the protection for environmental and consumer

activists conducting secondary boycotts. It is possible that the Coalition would also seek to prohibit primary boycotts - an unprecedented restriction.

The particularly concerning aspect of the Coalition's proposal is the chilling effect it may have on public debate. The Competition and Consumer Act extends liability for secondary boycotts to people who attempt, or attempt to induce others to engage in a secondary boycott, or for being indirectly "knowingly concerned" in a secondary boycott.

If the Coalition removes the protection for environmental or consumer activists, then it may be that even a tweet from an environmental activist, calling on others to not buy a company's finished products because they contain inputs sourced from (to use one example) Gunns, would be vulnerable.

This prohibition is made broader still because the tweet in question need not actually have a adverse economic impact on the business targeted by the boycott – it need only have the "purpose" of causing "substantial loss or damage" to the target of the boycott.

Yet what about factual representations? The proposed changes have the potential to go beyond targeting misrepresentations. Even truthful statements made by activists that have the purpose of inducing others to change their purchasing habits may be vulnerable if the Coalition's proposals are advanced.

Eric Hutchinson, incoming Liberal Member for the Tasmanian seat of Lyons said recently on ABC's Tasmanian Statewide Morning with Leon Compton that, "It's not about a reduction in free speech, it's about being accountable for the consequences for making misrepresentations."

When questioned about the alleged misrepresentations made by activist groups about the environment, Hutchinson pointed to the change in terminology used in relation to Tasmania's protected forests: from "old growth" to "native forest" and then to "high conservation value forest". It is not clear whether GetUp! or the other environmental activist groups are responsible for these changes in terminology, much less whether such terms could be considered as false representations.

The Coalition's proposed changes to the Competition and Consumer Act threaten to foreclose public discussion about the effects of business on the environment – and they come just as the closure of a major source of environmental information – the Climate Commission – has been announced.

Yet the political impetus which has framed these policy murmurings can be found in Tasmania. The past actions of secondary boycotts relating to Gunns and Ta Ann combined with the swing against Labor in Tasmania may have emboldened the Coalition to attack environmental groups. If they are successful in pursuing this policy under the banner of competition policy reform, it will have the effect of silencing debate and prohibiting coordinated actions.

It is odd for a party that champions free markets to turn to regulation to preserve vested interests, when consumers have failed to back those interests. One certainly hopes that the Institute for Public Affairs will continue to campaign against this policy, as Chris Berg did on September 24.7

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## Energy freedom on or off the grid?

Ben Courtice

It's long been a favoured wish of many environmentalists to go off the grid, to be self-sufficient in energy and other services, and avoid the corporate utilities and their coalpowered electricity. The ambition for freedom from energy bills and fossil-fuel electricity is understandable.

I was born and lived until the age of eight in an off-grid Queenslander farmhouse. We didn't even have a telephone. The most energy intensive technology we had was a kerosene-powered refrigerator which we ran some of the time. Of course, living far from the city, we were able to use wood for heating and cooking. Living off-grid was easy enough if you didn't mind the low-tech lifestyle.

And now in the age of relatively cheap solar panels (which weren't around in the 1970s), you can live off the grid and use a huge battery attached to a large array of solar PV (photovoltaic) panels, to maintain a hi-tech lifestyle on clean solar energy.

But for many, the large batteries needed are still too expensive, so the idea of going off-grid still rests on heavy use of firewood or even bottled fossil gas for the most energy intensive household services: space heating, water heating and cooking. Having lots of people transfer from using fossil-powered electricity to bottled fossil gas and/ or firewood is just exchanging one set of environmental problems for another.

The Zero Carbon Australia Buildings Plan, published in July by think-tank Beyond Zero Emissions and the Melbourne Energy Institute, has outlined why energy efficiency is still such an important step for homes (and all buildings).

The efficiency measures are a combination of old-style, low-tech common-sense (draught sealing, insulation, double glazing) and more modern technological innovation: for example, it will be news to some that heat pumps, i.e. reverse-cycle airconditioners, are far more energy-efficient heaters than a fossil-gas burning wall furnace or ducted heater (and are a favoured option for hot water heating, as well).

Some common house types, such as a brick-veneer concrete slab home in Melbourne, could typically reduce energy use by 70% if they adopted the suite of measures suggested by the Buildings Plan.

That kind of efficiency certainly makes it much easier to run a home off solar. The Buildings Plan found that homes

across Australia could generate, on a net annual basis, more energy than they would use – just from PV installed on the available roof space.

If your home is remote, far from the electricity transmission lines, it could already make good financial sense to set up a large solar PV array connected to a large battery. It could in fact be cheaper and more efficient and perhaps even have a smaller ecological footprint than trying to lay many kilometers of cable for grid connection.

Batteries are expected to get much cheaper in the next few years. Will this make the off-grid, self-sufficient model accessible to the population at large, in the cities too? Will we all be living the dream?

The great problem with going off-grid as a solution for everyone is that as an individualistic response, it favours not just the better-off, but also those with better rooftop solar access. What do ground-floor apartment residents do? What do people with largely shaded properties do? What can renters do if the landlord won't cooperate to install solar?

If increasing numbers of consumers abandon the grid altogether, the costs of maintaining the grid infrastructure to remaining properties will be shared between a shrinking number of households, each paying a rising fixed cost to remain connected.

Electricity market analysts have forecast a version of this that they call the "solar death-spiral". It's a dystopian vision of what rising power costs and falling battery and PV costs could bring about. Like the growth in private healthcare and the attendant atrophying of the public health system, it's a fairly plausible outcome of a market system that aspires to user-pays principles. "Living the dream" for some (personal energy freedom, off-grid) might create a nightmare for others.

A further, ecological problem arises from the nature of the off-grid setups that are likely to be installed. Homes will need a greater number of PV panels, and a large capacity battery, to bank enough energy for several cloudy days in a row. This would mean more materials and labour needed for all those batteries and solar panels. That comes at an environmental cost, as with all extractive industries: where

are we going to get that much lithium for batteries? How sustainable will the lithium mines be? And so on.

Another question is, could energy storage be achieved with a lower resource demand and environmental impact at larger scale? The ZCA Buildings Plan recommends battery banks – but at substations, not individual houses, to store and share solar output from a whole area.

In short, there is no guarantee that creating off-grid homes en masse will be a more efficient, less polluting or socially just option than maintaining grid connection to most homes. As Beyond Zero Emissions demonstrated with the 2010 Stationary Energy Plan, large-scale renewable generators (solar-thermal and wind) distributed across a wide geographical area can efficiently iron out a lot of the unevenness in production from localised solar and wind power (cloudy days and so on). Recent studies from UNSW and the Australian Energy Market Operator have confirmed and added to BZE's original insights.

Long-held dreams of going off-grid will probably remain appealing as long as the large energy utilities are run to maximise profit for their private owners, and as long as they source their electricity from dirty old coal and gas. But the appeal of a simple solution, going off-grid, has hidden complications.

But BZE's research has shown that common-sense energy efficiency combined with rooftop solar power can turn our homes into net renewable energy generators, and remove most of our bills (including all of the gas bill, when we go gas-free).

The drop in electricity demand caused by energy efficiency and rooftop PV uptake is already causing consternation among energy utilities. Even without the "solar death-spiral", their business models are not built to cope with these new forces. So while it may not solve the whole climate or sustainability crisis, what people are able to do at home – including to achieve (relative) energy freedom – is an important part of the solution, and it's important we get it right together.

Ben Courtice works for Beyond Zero Emissions as media co-ordinator, and is a member of Friends of the Earth Melbourne. This article was written in a personal capacity.

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# ACCC fails to tackle misleading conduct in sunscreen industry

Louise Sales

Over a year after Friends of the Earth Australia submitted complaints to the Australian Competition and Consumer Commission (ACCC) accusing the sunscreen ingredient manufacturers Antaria and Ross Cosmetics of misleading conduct, the Commission has confirmed that it intends to take no action. This is despite clear evidence that the companies misled both major sunscreen brands and consumers. Both companies had data that confirmed their products were nanomaterials, yet they claimed they were 'non-nano' or 'nanoparticle-free' in marketing materials and in statements to sunscreen brands and the public.

In a letter to Friends of the Earth, the ACCC attempted to justify its failure to take action by claiming "there is no credible evidence that sunscreens containing nanoparticles pose a health risk". However the European Commission's Scientific Committee on Consumer Safety (SCCS) recently recommended that certain nano titanium dioxide ingredients not be used in sunscreen because they strongly react with sunlight to produce free radicals. The head of CSIRO's Nanosafety division has warned that in a worst-case scenario, nano-ingredients in sunscreens could increase the risk of skin cancer (tinyurl.com/nano-abc). The SCCS also recommends that nano titanium dioxide and nano zinc oxide not be used in powder or sprayable products because of the toxicity risk associated with inhalation.

Some of Australia's biggest sunscreen brands were affected by Antaria and Ross's misleading claims, including products such as Cancer Council Classic, Invisible Zinc Junior and Body sunscreens, Coles Sports and Woolworths Clear Zinc. The complaint against Antaria was supported by range of groups including the Public Health Association, the Australian Education Union and the Australian Council of Trade Unions.

More worryingly, it appears that Antaria and Ross Cosmetics' misleading claims were just the tip of the iceberg. Testing by the Government's National Measurement Institute commissioned by Friends of the Earth last year has revealed that a number of other sunscreen brands that claim to be non-nano actually contain nanomaterials. These include Banana Boat Mineral Protect, Cancer Council Kids, Key Sun White Zinke, Coco Island White Zinc Cream, MiEssence Reflect Outdoor Balm and Soleo Organics. That's not to say that we think all of these brands have been deliberately misleading consumers - it appears that a number of them have been misled by ingredient manufacturers.

It would seem that sunscreen ingredients manufacturers can't be trusted to provide meaningful information about the ingredients they are selling. This clearly demonstrates the need for the regulation of nano-ingredients in sunscreen. This scandal would never have happened if Australia regulated the use of nano-ingredients in sunscreens and ensured accurate labelling.

European regulation requiring the safety testing and labelling of nano-ingredients in sunscreens came into force in July 2013 and New Zealand will require labelling from 2015. While the European scheme is not perfect, at least regulators there are attempting to assess the risks posed by nanomaterials and to protect consumer choice. In Australia the use of nano-ingredients in sunscreen and cosmetics remains unregulated.

The Australian Therapeutic Goods Administration which regulates sunscreen products has so far rejected calls from the Cancer Council, the peak cosmetics industry body ACCORD, the peak consumers group Choice, health experts, unions, and community organisations for the mandatory labelling of nano-ingredients in sunscreens.

Dermatologists and skin experts warn that people potentially most at risk from the use of nano-ingredients in sunscreen are those with thin or damaged skin, or people who wear sunscreen regularly. Labelling is needed to ensure that these people can avoid nano-ingredients in sunscreen if they want to.

It's a sad indictment of our regulators that Europe is leading the way when it comes to regulating nano-ingredients in sunscreen, when Australia is the place where sun is such a fierce presence in everyone's life. Australians should have the same right to know what is in the products they buy as Europeans.

#### Take Action:

Contact the Minister for Health and demand the labelling and safety testing of nano-ingredients in sunscreen:

Hon Peter Dutton MP PO Box 6022 House of Representatives Parliament House, Canberra ACT 2600

Ph: (02) 6277 7220

Email: Peter.Dutton.MP@aph.gov.au



www.foe.org.au

## Wandoan coal project scrapped

John Hepburn

In September, Australian media outlets declared that Glencore/Xstrata had shelved the massive Wandoan thermal coal project in the Surat Basin in Queensland. This means that not only will the 40 million tonnes of thermal coal that they planned to mine from Wandoan each year stay in the ground, but it also means that the Southern Missing Link rail line almost certainly won't get build because Xstrata's Wandoan mine was the cornerstone project. This means that roughly 70 million tonnes p.a. worth of other smaller proposed coal mines in the region are in serious trouble.

For communities concerned about climate change and the negative environmental impacts of large-scale coal mining, this is a win. We had heard rumours from internal company sources that XStrata had made this decision but it is great news to have it confirmed publicly.

I remember going into the Brisbane Land and Environment Court for a day of hearings in 2011 when Friends of the Earth (FoE) and a group of local landowners were taking Xstrata to court to challenge the approval of the Wandoan mine. The Xstrata barristers were unbelievably confident. The landowners were stoic, but worried. Friends of the Earth were strident. I had a conversation with one of Xstrata's barristers in the lift. I told him that I hoped they would lose.

The landowners were objecting to the mine on the grounds of water impacts, impact on farmland, and impacts on their lives and businesses. FoE objected on the grounds of the global climate change impacts of burning 40 million tonnes of coal each year for 35 years. The full documentation for the project and the court case can be found on Chris McGrath's excellent website (www.envlaw.com.au/ wandoan.html). FoE had brilliant testimony by their expert witness Malte Meinshausen who explained the climate change and ocean acidification impacts of the mine.<sup>2</sup>

After several months of deliberations, the court rejected the climate change arguments. The landowners had a mixed outcome. The Erbacher family and a couple of other local landowners have continued with their legal fight up until this day. Earlier this year they won a landmark compensation claim against Xstrata – which the company is now appealing. The Erbachers have also filed a judicial review case in the Supreme Court which has not yet been allocated a hearing date.

It has been an incredibly long and expensive process of seeking justice through the courts for the Erbachers and the other landowners. And despite the announcement to investors that they will be shelving the project, Glencore/Xstrata have not withdrawn it from the planning system and, as far as we know, are still seeking to have the mine approved by the State Government.

The tenacity of the landowners has been an inspiration but it has taken a very heavy toll on them. And in some ways the nightmare continues. The mine is "on hold". It isn't cancelled. If and when coal markets become more favourable, there is nothing to stop GlencoreXstrata from re-commencing the project, or from selling it to another company as an approved mine. For landowners, it makes it difficult for life to ever get back to normal.

This highlights one of the fundamental difficulties in campaigning to stop a coal mine, compared to stopping a coal plant or a port. The coal resources under the ground have a theoretical value on a company's balance sheet that an unbuilt coal plant or port does not. It means that while coal plants and ports get scrapped, mines just get put "on hold".

The Wandoan project gives a particularly clear example of this. When the the Glencore/Xstrata merger was confirmed earlier this year, it became pretty clear that the Wandoan project would be in doubt because Ivan Glasenberg (Glencore CEO) had been clear about not supporting greenfield projects. In April, we heard rumours from senior sources within Xstrata that they had decided not to go ahead with either the Wandoan mine or the proposed coal terminal at Balaclava Island in the Fitzroy Delta.

A group of us wracked our brains to try to figure out how to flush out the Balaclava Island decision ahead of the World Heritage Committee meeting in June so that it might open the political space for the Federal Environment Minister to formally rule out new coal ports in the Fitzroy Delta (which is part of the Great Barrier Reef World Heritage Area) – a decision which would also knock out the proposed Fitzroy Terminal project proposed by the Mitchell Group (which is far less politically influential than Xstrata).

#### Glencore/Xstrata AGM

The Glencore/Xstrata AGM was coming up in Switzerland in May of this year and Getup, FoE, WWF, Australian Marine Conservation Society and The Sunrise Project worked together to support Ginny Gerlach from the Keppel and Fitzroy Delta Alliance (KAFDA) to fly to Switzerland for the meeting. KAFDA wrote to Xstrata and purchased shares so that Ginny could speak from the floor of the AGM. She respectfully let them know she was coming and did media interviews before her departure.<sup>3</sup> Getup! prepared to run full page ads to run in the European financial press, targetting Glencore/Xstrata over the destruction of the Great Barrier Reef.

Ginny got to Switzerland and prepared herself for the meeting only to find that Xstrata announced the day before the meeting that they would be scrapping the proposed Balaclava Island coal terminal. After such an incredible

grassroots community campaign it was an incredible result. But in typically resolute fashion Ginny proceeded with her presentation to the AGM anyhow. She got great feedback from shareholders at the meeting who had no idea their company was proposing to build a new coal port in the Great Barrier Reef World Heritage Area.

The Glencore/Xstrata announcement over the scrapping of Balaclava Island was made on the May 13. Three days later, unbeknownst to any of us, then Federal Environment Minister Tony Burke wrote a strongly worded letter to the Mitchell Group stating: "While not prejudicing my position in relation to the assessment, I believe it is only fair to advise you that if the following information, which is now publicly available, had been contained in the referral documentation, it is likely that I would have made the decision that your proposal was clearly unacceptable. ... I am writing this letter in good faith, given that you may be spending considerable amounts of money on a project which has an exceptionally complex approval pathway."

This letter was released recently after an FOI request by Graham Lloyd at The Australian.

As we anticipated, now that the big fish was out of the way (Xstrata), it paved the way for the government to effectively stand up to the small fry (Mitchell Group) and push for the kind of sensible environmental decision that it should have made in the first place. The Mitchell Group proposal is still on the table but it looks like it has lost political support from both the Coalition and ALP (and it never had any form of public support).

Balaclava Island was not "put on hold" or "delayed" but scrapped. A few weeks after the AGM it was formally withdrawn from the planning system. At the time, Glencore/Xstrata insisted that the Wandoan mine was still on the table. Now it is officially "on hold", which is as good as we are going to get.

It is likely that the delays to the Wandoan project by the concerns of local landowners fighting for their legal rights pushed the final investment decision back by several years – enough to shift it out of the peak of the coal boom and into the current trough.

Things could have been very different.

My thoughts are with the Erbacher family and all of the other landowners and rural communities around Australia who inadvertently find themselves in a fight with some of the biggest companies on earth. Their tenacity and courage to stand up for their rights is an inspiration.

At some point in this fight, we need to get to the point where the government simply rules out coal mines on our best farmland, in water catchments and on top of rural communities. And then at some point we'll need to get to the stage where it is illegal to dig up and burn fossil fuels because of greenhouse pollution.

Like all large social transformations it will take time. In the meantime, communities have little choice but to keep fighting to protect the places they love.

John Hepburn is Executive Director of The Sunrise Project. Web: www.sunriseproject.org.au

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# Dim future for coal, report finds

A new report by UNSW academics Ben Elliston, Iain MacGill and Mark Diesendorf compares the likely costs of pursuing 100% renewable energy against fossil fuel options and finds that a shift to commercially available clean energy would be cost-effective and relatively low-risk.

The research assumes a price on carbon emissions of at least A\$56 per tonne by 2030, as modelled by the Australian Treasury, and estimates a range of costs for capturing and storing emissions from coal- or gas-fired power plants underground.

"There's a very low probability that coal has a future in power stations for generating electricity because even if carbon capture and storage becomes available, the way things are going, renewables will be cheaper," said Mark Diesendorf, an associate professor at UNSW's Institute of Environmental Studies.

The renewable energy scenario envisaged in the paper relies on wind power for 46.4% of electricity generation, concentrated solar thermal 21.5%, solar photovoltaics 20.1%, biofuels 6.2%, conventional hydro 5.6% and pumped hydro 0.2%.

The paper, 'Comparing least cost scenarios for 100% renewable electricity with low emission fossil fuel scenarios in the Australian National Electricity Market', is posted at http://tinyurl.com/unsw-2013

# Forest Stewardship Council fails rainforest protection in Victoria

Anthony Amis

In September, Friends of the Earth Australia (FoE) produced a case study on the complications associated with Forest Stewardship Council (FSC) certification of rainforest communities in Victoria's Strzelecki Ranges. With FSC now making headway across Australia, with a range of forest agencies and companies alike showing increased interest in the scheme – the recently signed Tasmanian Forest Agreement for example is relying on FSC certification – it is worth investigating what impacts FSC has had on ecosystems that have been certified.

The Hancock Victorian Plantations certification of 2004 was the first time FSC had certified a forestry operation in Australia. Since that time (and for several years before), FoE and local group Friends of Gippsland Bush have been documenting the entire process. It is worth noting that Hancock is also certified under the rival Australian Forestry Standard, a standard which is fully endorsed by industry but not environmental groups. Both FSC and the Australian Forestry Standard have retained the Hancock certificates despite a litany of problems which both systems have not been able to resolve. One the major issues has been that of rainforest management and definition.

FSC is proud to trumpet that it operates under 'Principles and Criteria' which ensure that forests are managed in a environmentally responsible manner. However, in the Australian scenario, FSC is operating under "weaker" interim standards which are set by the certifying companies. Stronger national standards are enacted when stakeholders agree on what those standards should be and then work toward their implementation. The Australian national standards have stalled since 2002, when environmental organisations failed to agree on certification of native forest logging. Since that time, numerous FSC certificates have been granted to mostly plantation companies under interim standards. In 2002 FoE was arguing for stronger national standards, but those arguments were quashed by weight of numbers led by the Wilderness Society and the Tasmanian Greens. A full decade has now been lost.

NGOs are now working again on delivering national standards, which are expected to come to fruition by late 2015 – or perhaps even later. Once the national standards are set, all interim standards will then also come under the national standards. It also means that if the Tasmanian Forestry Agreement is enacated, which it must by October 2014, then that agreement will be assessed under the weaker interim standards.

#### Strzeleckis

The FSC process that has unfolded in the Strzeleckis should be seen as a failure of process regarding FSC interim standards. In 2000, FoE and Friends of Gippsland Bush agreed on allowing FSC to certify Hancock's operations, largely because it was perceived that FSC would mean that there would ultimately be some sort of improvement in forest management. It was also agreed at that time that it would be beneficial in bringing in an outside influence, because the Strzelecki Ranges were about to be woodchipped into oblivion and any options of clawing back forests from the woodchippers was better than nothing. FSC at that time also had a much better reputation than what it has now and it was perceived that perhaps FSC certification could slow down or stop the imminent destruction.

After a range of issues were discussed and supposedly implemented, Hancock gained FSC certification in February 2004, with Smartwood (a subsidiary of New York's Rainforest Alliance) being the certifier. The major issues of concern were/are: management of high conservation valued forests, koalas and pesticide application.

Before the 2004 certification, Friends of Gippsland Bush, industry and local Gippsland Councils were already involved in a process which nominated key areas to be protected in the bioregion. A major study of the region was conducted by Biosis Research which recommended a 8,500 hectare reserve which would link up all the existing reserves in the Strzeleckis and protection of key rainforest catchments. The Reserve known as the Cores and Links Reserve recommend large rainforest buffers up to 250 metres on prime stands of rainforest and smaller buffers on the rest. Large buffers are required as a means of safeguarding rainforest from the impacts of fire and disease. Under the Victorian Code of Forest Practices, the legal document governing forest management in Victoria, it stated simply that rainforest on private land (which is how the Hancock forests had been redefined in 1993) should be protected without stipulating a mandatory rainforest buffer on private land rainforest.

Initial FSC auditors supported the arguments for larger rainforest buffers, however as these auditors were replaced, more industry sympathetic auditors took their place and gradually the implementation process undertaken in the FSC process via a system which involves the issuing of a number of Corrective Action Requests (CARs) was started with each years audit failing to come to grips with the audits that had occurred previously. As a result, more CAR's were issued which again diluted the issue without properly solving the problem. It also meant that instead of Hancock losing their FSC certificate by breaching CARs, they would be "rewarded" by retaining their certificate. What sort of message does this send out to companies doing the wrong thing?

The FSC process also forced Hancock to produce a Rainforest Best Management Plan, which was peer reviewed by scientific experts. Once the review was completed, both scientists agreed that Hancock's management plans were inadequate. Yet since that review Hancock has not rectified its plan to implement the recommendations made by the experts, essentially meaning that the current rainforest management implemented by the company and supported by FSC in annual audits has no scientific merit. This situation has remained since 2006.

In 2006 the Cores and Links Reserve was announced by the Victorian State Government. Whilst not fully implenting all of the Biosis study, the announcement did ensure large buffers on a number of key rainforest catchments including the nationally significant College Creek. As such the agreement was supported by all involved. However this agreement was overturned in 2008 and a new agreement signed between the State Government and Hancock, without the support of other groups. This agreement allowed for clearfelling in areas set aside in the 2006 agreement. College Creek, for example, exempted from logging in 2006, now would see approximately 40% of its catchment clearfelled. Smartwood essentially said nothing about the new agreement despite it being concocted by industry and government against the wishes of the local community. So much for FSC's social license!

Smartwood and FSC remained almost mute about issues surrounding the Cores and Links, claiming that the Cores and Links agreement went beyond Smartwood issues listed in the interim standard. If an issue is not included in the standard, then auditors cannot measure against those issues for compliance. Other issues that auditors cannot measure against include sustainability issues and contractual arrangements which are the reason why the forests are falling in the first place. If logging contracts are set too high and the company has to log at increased levels to meet contractual obligations, then this is not included under FSC standards. The other key weakeness of the entire system is that the auditors are paid for by the company that is undertaking the logging. What auditing company would pull a certificate if it means loss of business for them?

The case study - 'Forest Stewardship Council, Hancock Victorian Plantations and Rainforest Management under Smartwood Interim Standards' - is posted at tinyurl.com/fsc-cr

Anthony Amis is a member of Friends of the Earth, Melbourne.



#### What is the Active Friends Program?

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

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# Carbon markets and the failed promise of new green gold: plantation forestry in Uganda



Kristen Lyons and Peter Westoby School of Social Science, Queensland University

Private sector investment is now central to international development. But there are profound social and environmental costs associated with privatising development. Such costs demonstrate the limits of market-based private led development interventions.

In this article we draw from a year's research in Uganda, where private sector led plantation forestry and carbon trading initiatives are delivering 'development' but at the cost of significant local livelihoods. Our research indicates that the enclosure of land to establish forestry plantations is constraining local people's access and user rights to landscapes they have historically relied for food, expressions of culture, the collection of firewood, local medicines and much more. Yet carbon accounting, and the reductive logic on which carbon markets rely, fails to adequately consider the rights and interests of these marginalised communities, many who have long-term connections to land.

Contemporary neo-liberal (and market-based) approaches to development are enabling the largely unregulated 'investment' by finance capital, including from the private sector and philanthro-capitalists (such as the Bill and Melinda Gates Foundation) in the global south. Such trends coincide with the decline in foreign aid spending in some countries, including Australia. This so-called privatisation of development is clear on the African continent, where the

food, agriculture, timber, biofuels, oil and mining sectors have become significant targets for foreign investors.

Much private investment is now directed towards market-based responses to climate change. Many of these, including the carbon offset project that we examine here, rely upon mitigation strategies in the global south to offset industrial and polluting activities in the global north. There are loud calls of support for these market-based approaches, including by the Durban United Nations Framework Convention of Climate Change Conference.

#### Green Resources and Green Gold

To increase understandings of the impacts of private-led green development interventions, we have focused on the activities of Green Resources, a private Norwegian company engaged in forestry plantations, carbon offset, forest products and renewable energy in Mozambique, Tanzania, Uganda and South Sudan. Green Resources is now estimated to be the largest plantation forestry operation on the African continent. In Uganda, Green Resources has obtained licenses to establish forestry plantations in two degraded Central Forest Reserves; the Bukaleba Forest Reserve (4500 ha) in Muyuge District on the shores of Lake Victoria in eastern Uganda, and the Kachung Forest Reserve (2221 ha) in Dokolo District, northern Uganda.

In order to participate in international carbon markets, Green Resources complies with a number of international regulatory mechanisms (including the Forest Stewardship Council, the Climate Community and Biodiversity Standard and the Clean Development Mechanism). Amongst other things, these regulations enable the reduction of plantations into measurable carbon; through calculations related to the area under plantation forestry, the diameter and height of individual trees, alongside other metrics.

Despite the benefits associated with Green Resources' activities in Uganda – including some employment opportunities, provision of some important health services and infrastructure – benefits on which the company makes claims to corporate social responsibility, there is another story. Our fieldwork – including interviews and focus group discussions with around 150 women and men living in villages both within and directly adjacent to the forestry plantations – points to the social, ecological and political challenges associated with the arrival of this company in Uganda. We highlight just some of these issues here, before turning to consider what this means for the future of carbon trading initiatives for development in Uganda, and more broadly.

#### The human costs

From the beginning, Green Resources' activities have had profound impacts for local people. Establishing Green Resources' plantations, for example, required the re-location of many people. No compensation has been paid to those affected. Some village members describe being 'chased away' by the company, sometimes violently, and in the process losing crops and household items vital to their livelihoods. As a result of forced resettlement, many people describe now being distanced from important cultural sites – including a sacred Walumbe tree in Bukaleba Central Forest Reserve, as well as family burial grounds. Many people spoke of the desecration of sacred sites, including the plantation being located directly on top of burial grounds.

Food insecurity has also been intensified for many community members. The Central Forest Reserves (location of the plantations) have historically been important areas for crop cultivation and animal grazing (although there is contestation about whether this is a legal activity). Yet these are the very lands which communities have lost access to as an outcome of the license arrangement between the company and the Central Government. Some villagers also described the company encroaching onto designated community land, further reducing land availability and intensifying vulnerability to food shortages. In short, many people are describing a landscape that is literally being over-taken by trees, leaving little space to carve out viable livelihoods at the local level. Many described taking employment with the company as a strategy to generate an income, thereby creating the means to purchase food (and other vital needs) for their household. Yet amongst those employed by the company (in the nursery and in the plantations), there are also concerns about workers' conditions and rates of pay. For example, some people reported being required to buy their own safety equipment and tools, while others spoke of low rates of pay and delays in payment, with little recourse to the company. Limited employment opportunities also create divisions amongst community members; between those benefitting

from the company, and those who do not (including older members of the community who are unfit for the physical work required). This division is intensified when local people are employed in the role of plantation security officers – and are therefore responsible for ensuring fellow community members do not 'trespass', and enforcing fines and/or jail sentences in cases where this occurs.

On the one hand, we heard stories from people who explained they were no longer able to enter the licensed plantation area to grow crops or collect firewood, and cases of trespass that were met with large fines and sometimes jail sentences. Yet we also heard stories from people who were employed to weed food gardens that were being cultivated within the license area. In these cases, it appears certain individuals – with special privileges, or those willing/able to pay the company – were able to rent this land directly (and informally) from the company.

Such scenarios only further fuel the confusion many community members have about access and user rights in the plantations. This relates not only to rights related to growing food within the plantation license area, but also rights related to grazing animals, the collection of firewood and medicinal crops. This confusion is fuelling anxiety and community mistrust of both the company and local leaders, and many people are worried about their long-term future, including their ability to access food growing land.

#### Fools Gold

Overall, it appears the privatised carbon market model of development is doing more to entrench the commercial interests of first world financial interests than altering structural dynamics in ways that might enable local people in Uganda to benefit from this development intervention. Instead of winning, as the company would like us to believe, the communities with whom we spoke who live in and adjacent to Green Resources' plantations are struggling to come to grips with the new modes of resource access and use that are a direct outcome of the enclosure of forest reserves into plantation forestry, and their subsequent reduction into carbon.

While Green Resources (and other companies like it) are set to profit from the climate crisis, development initiatives such as the one we have considered here arguably do little to address the fundamental challenges we face. And while Uganda is one of a number of countries that has historically made only minor contributions to global greenhouse gas emissions, the stories here – including violent evictions, increased food insecurity and disconnection from sites of cultural significance – demonstrate the burden local people are now being expected to carry in a climate change world. Given such blatant inequity – and despite the hype from its champions – north/south carbon markets are revealing themselves as fools gold, rather than a much hyped green gold.

Meanwhile, Uganda's mostly subsistence farming communities continue to adapt and transition to life in a climate change world. Surely international development – including investment from both national governments and the private sector – might achieve more positive outcomes, or at least do less harm, by focusing on investment that supports such local community initiatives?



Beth Schultz - WA Forest Alliance

Western Australia's Environment Minister, Albert Jacob, is about to sign off on a 10-year management plan for WA's south-west native forests.

For management, read "logging and burning". WA's current forest managers cannot conceive of any forest management that does not involve chopping down trees and burning forests at unnatural frequencies over unnaturally large areas. Minister Jacob has been in the job for only seven months and he wasn't even born when the fight to save WA's forests began, in 1975. Of course the decision will not be his alone. It will be the decision of the Barnett Government, which is determined that native forest logging will continue for at least another 10 years despite the cost to taxpayers and the environmental damage it will do – facts available to any independent investigator interested in the truth.

With or without government direction, WA's government agencies – the Conservation Commission, the Department of Parks and Wildlife, the Environmental Protection Authority - have obligingly provided the smokescreen of misinformation, wilful blindness and falsehoods behind which the myth of sustainable logging has been perpetuated and spread.

Hidden in the hundreds of pages withheld from the public until the last minute or extracted only via questions in parliament, there are some gems.

For example, we now know there are 10,033 hectares of mature karri forest available for logging. Under the plan recommended for approval by WA's Environmental Protection Authority, 500 ha will be clear-felled every year. That means all mature karri forest available for logging will be gone in about 20 years.

The karri sawlog industry will then collapse because the plan to get sawlogs from karri regrowth has been, like most forestry projections, an abject failure. Firstly, karri regrowth is not growing as fast as anticipated. 'First thinning', supposed to happen at age 20, is not happening till age 30. Secondly, karri regrowth is not providing good quality sawlogs. Instead of increasingly large volumes, in 2011-2012 less that one per cent of karri regrowth logs were good quality sawlogs.

The karri sawlog industry has logged itself out of existence. Yet the Forest Management Plan 2014-2023 will set an allowable cut of karri sawlogs that as usual we are assured is sustainable.

In a report to the WA Government, the Auditor General said that the forest managers overestimated the amount of logs they could sell by 19 per cent and that environmental protection measures were routinely ignored.

The expert panel that examined how sustained yield was calculated for the next Forest Management Plan found that the software used to model this fundamental figure cannot take fire or drought into account

To make allowance for these episodic events, without explanation, as some sort of safety margin, the forest managers reduced the allowable cut of jarrah sawlogs by 10 per cent and the allowable cut of karri sawlogs by 15 per cent.

In past years the forest managers said they could project the sustained yield of jarrah and karri sawlogs for 250 years. For the next Forest Management Plan they have reduced this ludicrous time frame to 10 years.

However, the expert panel on sustained yield said that because of shocks like major fires, cyclones, and pest and disease outbreaks, the next Forest Management Plan should be reviewed after five years. No mention of climate change here, yet all these shocks are exacerbated by climate change.

To add insult to injury, native forest logging is costing WA taxpayers millions of dollars a year. Using various subterfuges the WA Government gives the Forest Products Commission huge subsidies while the Commission uses creative accounting to conceal its losses.

Native forest logging in Western Australia is an environmental and economic disaster. The only explanation for its continuation by government is ideology, but ideology is not changed by facts and rational debate.

As with the 10-year campaign that succeeded in getting much of WA's old growth forest protected, only massive public pressure will persuade the current crop of wilfully blind politicians running Western Australia to change their minds. Either that or we'll have to get rid of them.

www.waforestalliance.org

## Knit Your Revolt

"Knit Your Revolt – A network of rad crafters sticking their needles to misogynistic knit-wits and extreme conservatism."

Knit Your Revolt came about as a result of the collective rage amongst a large group of crafters about the impending election of our now Prime Minister Tony Abbot – a well know misogynist among Australian politicians. Inspired especially by the image of the freshly ousted then-Prime Minister Julia Gillard knitting, and the associated sexist outrage, the seeds of the "Knit Your Revolt" campaign were sown. The growing trend towards right-wing politics as well as the number of outrageously sexist and misogynistic comments by politicians, media commentators and other public figures added further fuel to the rage. How could people be ready to vote in a man who had continually made outrageously sexist comments about women, including many aimed at our then female Prime Minister? The rage had to be channeled into action.

Casey Jenkins, a well known and highly respected craftivist and founder of the Melbourne-based craftivist group Craft Cartel put the idea for a knitting-led protest tour to the members of the Craft Cartel and Knit Your Revolt was born. Very quickly, we had 18 craft groups on board and over 100 individual crafters on board and ready for some

knitted anti-Abbott action. Aimed specifically at Tony Abbott, a design for a giant knitted banner was created as the offers of help flowed in. With so many crafters wanting to contribute a second banner was designed – this one was a giant red pair of budgie smugglers.

Both banners were created by dozens of crafters who knitted and crocheted small sections of the banner as well as letters of the slogans: 'Misogynist Knit-Wit – Not PM Material' and 'Budgie Smugglers – more threat to Australia than People Smugglers'.

Post election, Tony Abbott, our new Prime Minister has just won another Ernie Award for being a repeat offender with his continuing sexist comments, and the Knit Your Revolt crafters continue to plot and plan new projects for the next three years (at least.)

Crafters are welcome to join us - you can find more details at: knityourrevolt.com, facebook.com/knityourrevolt.

A longer version of this article is posted at www.foe.org.au/chain-reaction/editions/119



# International Women's Earth and Climate Initiative Summit

Claire van Herpen

"Women of the World Call for Urgent Action on Climate Change & Sustainability Solutions"

Policymakers, scientists, businesswomen, Indigenous Leaders and environmental activists from across the globe gathered in New York on September 23rd for the International Women's Earth and Climate Initiative (IWECI) Summit.

The three-day summit took place on the eve of Climate Week and the United Nations General Assembly session, and as the Intergovernmental Panel on Climate Change (IPCC) prepared to release its much anticipated Fifth Assessment Report. The summit brought together a diverse mix of women from all over the world – 50 from the global south and 50 from the global north - to engage in an important dialogue centred on building momentum, increasing funding and bringing about policy changes necessary for substantive action on climate change and sustainability solutions.

Unified by the 'Declaration Statement for Urgent Action on Climate Change and Sustainability Solutions,' the goal of the summit was to collectively form the Women's Climate Action Agenda, a framework for implementing solutions while focusing on the Rights of Women, as well as the Rights of Nature, Indigenous Peoples and Future Generations. Carbon pricing, fossil fuel divestment, protection of our oceans. women's empowerment, energy access, climate justice, food sovereignty, water security, rights of nature and system change were amongst the key issues discussed.

Keynote speakers included Jane Goodall - founder of the Jane Goodall Institute and U.N. Ambassador of Peace, Jody William - Nobel Prize laureate, women's rights and anti-landmine activist, and Christiana Figueres - Executive Secretary to the United Nations Framework Convention on Climate Change (UNFCC).

The Summit brought together community leaders from across the globe and provided them with a platform to discuss their on the ground experiences and solutions. Osprey Orielle Lake, the founder and co-director of the IWECI and head of the Women's Earth and Climate Caucus (iwecc.org), noted that the Summit delegates are accomplished leaders in their fields, yet are rarely given the opportunity to converse together at this level. "The result is an unprecedented collaboration, representing 33 million women and men around the world who are fiercely dedicated to a just transition to a clean energy future and to transforming how we are living with the earth and each other."

Research shows that women are the most negatively impacted by climate change and environmental degradation, but they can also provide the key to finding meaningful solutions. Lake noted "it's important to understand that women are central stakeholders- as an example, between sixty and eighty per cent of household food production in developing countries is done by women".

Sally A. Ranney, Co-Founder of the IWECI acknowledged the huge potential for people-led movements which engage women worldwide to unite and take action as powerful stakeholders in climate change and sustainability solutions. "We represent a constituency of 33 million women and men, already mobilized and ready to take action. We vote, we march, we petition, we have purchasing power. We will be heard and we will make change, so that future generations can have a liveable planet,"

Summit delegates will finalise the Women's Climate Action Agenda over the coming weeks and plan for collective actions in 2014.

Claire van Herpen is a Melbourne-based member of FoE's Climate Frontlines Campaign.

#### More Information

Keep up-to-date with IWECIS updates at www.iweci.org, Twitter @IWECI Sign up for email updates at www.iweci.org/newsletter signup



On Future Fund chair David Gonski's 60th birthday, Melbournians protested the Australian government fund's investments of \$227m in nuclear weapons companies. A new report into the global financing of nuclear weapons, 'Don't Bank on the Bomb', identifies 298 financial institutions in 30 countries that invest heavily in companies involved in nuclear weapons programs. The report is posted at www.dontbankonthebomb.com

## Farewell speech by Ursula Rakova from Tulele Peisa

This inspiring speech was delivered by Ursula Rakova, Executive Director of FoE Australia affiliate Tulele Peisa. On behalf of the community of Woroav village, site of the first relocation of Carteret Islands families, Ursula was farewelling and thanking visitors from Newtok, Alaska, and the Ahus and Western islands of Manus Province in PNG. It illustrates a new momentum in the struggle for climate justice being generated by face-to-face contacts among representatives of communities already facing hazardous circumstances threatening their well-being and cultural integrity. The full speech will be uploaded to www.tulele-peisa.org.

- Wendy Flannery, Climate Frontlines, FoE Brisbane.

We welcomed you a few days ago and now we bid you farewell not only as friends but as part of a much larger network of communities facing the same fate of climate change and its impacts; you have all become part of our little community here in Woroav. Speaking for the community of 70 plus people in Woroav village, it is an honour and privilege to say thank you and to bid farewell to you all:

- Stanley, George, Robin from Alaska and Allyson for coming all the way from the States to visit us in Woroav, Tinputz, Papua New Guinea;
- Dr. Gabriel, Michael and Isaiah from Manus Province;
- •Sally of The National newspaper of PNG in accompanying the visitors to Buka, Woroav and the Carterets – your contribution to The National provides further advocacy on our issue.

Global warming which causes climate change and rising sea levels has no barriers and boundaries. You have

witnessed in the Carterets the efforts of my people to try to contain the impacts to levels which could permit them to continue live on the islands by erecting sea walls and planting of mangroves. This does not deter the sea from eating the shorelines.

We value and trust the learnings and shared experiences gained from the challenge which has brought us together as communities, from Alaska, from Ahus and the Western Islands in Manus, and the Carterets. We will not let climate change impacts take away and control our lives as we are determined to be a voice for our people and our communities. We must take the learnings from each other forward and incorporate them into our programs wherever they could fit best.

What we have learnt most from our brothers in Alaska is the Training Fund program, where Stanley has built the capacity of the young people in Newtok to train in various fields and trades to be further employed into the community ... To our brothers from Manus: your visit means that we as Papua New Guineans need to stand together as a voice and get our leaders to stop talking politics and get back to the basics, the basic fundamentals of human rights and the rights of communities displaced because of climate change. We may all have a right to move to where we want; but where will we move to? This is a question that often goes unanswered. To the American friends, Robin and Alysson: as attorneys we hope and pray you will break some new ground in climate change litigation to support us, the most vulnerable communities ...

We have built a strong network of people who are not sitting around and waiting for help to come by. Let's continue to keep ourselves informed as together, as a voice and a force, we continue to forge ahead to build safe and peaceful communities for our people.



# Fukushima and nuclear conspiracy theories

Jim Green

Conspiracy theories conjured up by nuclear advocates are mostly harmless fun. But not when they involve trivialising the suffering of victims of the Fukushima nuclear disaster.

Political demagogue Lyndon LaRouche is the most colourful of the conspiracy theorists. Here's his take on the antinuclear movement: "This utterly depraved, dionysian cult-formation found its echoed, more violent expression in late 1980s Germany, where the anti-nuclear, fascist rioting reached near to the level of outright civil war ..."

Australia's Leslie Kemeny (think Lord Monckton) agrees: "Radical green activism and global terrorism can form dangerous, even deadly, alliances. The 'coercive utopianism' of radical greens, their avid desire for media publicity and their hidden socio-political agendas can produce societal outcomes that are sometimes violent and ugly."

Kemeny believes the anti-nuclear movement is "supported by immense funds from affluent right-wing interests" and is also tied to the "political left". Go figure. With such a grabbag of extreme – and extremely contradictory – views, Kemeny might be considered a good candidate for Bob Katter's political party, or Clive Palmer's ... but he's already joined Fred Nile's.

A recent convert to nuclear conspiracy theories is Adelaidebased nuclear advocate Geoff Russell. Russell has no time for the euphemisms of 'dionysian cult-formation' or 'coercive utopianism'. He gets straight to the point: nuclear critics are responsible for all of the death and suffering resulting from the Fukushima nuclear disaster and much else besides. Ouch.

How does he arrive at those conclusions? One part of the intellectual contortion concerns the role of environmental groups such as Friends of the Earth. To the limited extent that environment groups influence energy policy around the world, the result is a greater role for renewables, less nuclear power and less fossil fuel usage. But for Russell, being anti-nuclear means an implicit endorsement and acceptance of fossil fuels and responsibility for everything wrong with fossil fuel burning.

That contorted logic will come as a surprise to Friends of the Earth campaigners risking life, limb and heavy penalties in their efforts to shut down coal mines and ports; and to everyone else engaged in the fossil fuel and climate problems in many different ways.

A second intellectual contortion concerns the cancer risks associated with radiation exposure. Russell's view is that long-term exposure to low levels of radiation "does sweet fa". In a submission to a South Australian Parliamentary Committee, he writes: "Let's suppose that if 1000 people drink a glass of wine a day then eventually 10 will get cancer due to that wine. I just made those numbers up, they are to illustrate the method ... So how many people will get cancer if a million people drink 1/1000 of a glass per day? The antinuclear logic ... estimates 10,000 cancers. The population is consuming 1000 times the alcohol that produced 10 cancers, therefore there will be 10,000 cancers."

Russell gets his simple calculations wrong by three orders of magnitude – three more than you'd expect from a self-described mathematician. In any case the link between wine and cancer tells us precisely nothing about radiation.

Russell and science are at odds on the question of the cancer risks associated with low-level radiation exposure. The 2006 report of the Committee on the Biological Effects of Ionising Radiation (BEIR) of the US National Academy of Sciences states that "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."

Likewise, a 2010 report by the United Nations Scientific Committee on the Effects of Atomic Radiation states that "the current balance of available evidence tends to favour a non-threshold response for the mutational component of radiation-associated cancer induction at low doses and low dose rates."<sup>2</sup>

It's a big step, but once you've convinced yourself that radiation is harmless, a world of possibilities present themselves. Scientific estimates of the Chernobyl death toll range from 9,000 to 93,000 <sup>3</sup>, but Russell claims the Chernobyl death toll was "three tenths of a half of a sixth of bugger all" or "a few dozen deaths". Another step gets you to this: "It is far worse than flippant to risk the destabilisation of the unusually benign climate of the past 10,000 years because of a few dozen deaths. That's nutter stuff."



Likewise, early estimates of the long-term Fukushima cancer death toll range from 130 to 3,000  $^4$ , but if radiation is harmless the radiation-related death toll will be zero. Or as Russell bluntly puts it, Fukushima was "deathless".

Russell claims the performance of the Fukushima nuclear power plants in the face of the 3/11 earthquake and tsunami was "a spectacular success and one of the biggest unreported good news stories of the decade." And it was indeed a spectacular success except for the explosions, meltdowns and fires.

Russell wants us to contrast the Fukushima nuclear accident with "actual suffering" from the 3/11 earthquake and tsunami. Tell that to the family and friends of the Fukushima farmer whose suicide note read: "I wish there wasn't a nuclear plant."

The Fukushima disaster has caused an immense amount of suffering, particularly for the 160,000 evacuees who remain homeless two years after the disaster. The Nuclear Accident Independent Investigation Commission (NAIIC) – established by an Act of Parliament – notes that evacuees "continue to face grave concerns, including the health effects of radiation exposure, displacement, the dissolution of families, disruption of their lives and lifestyles and the contamination of vast areas of the environment." The nuclear disaster is also responsible for nearly half <sup>6</sup> of the estimated 1,632 indirect deaths associated with the evacuation from the 3/11 triple-disaster.

Importantly, the NAIIC report – along with every other report into the Fukushima disaster – is clear that whereas the 3/11 earthquake and tsunami were Acts of God, Fukushima was an Act of TEPCO. Russell and likeminded apologists fudge or ignore the distinction. The NAIIC report states that the Fukushima disaster was "a profoundly man-made disaster that could and should have been foreseen and prevented" if not for "a multitude of errors and wilful negligence that left the Fukushima plant unprepared for the events of March 11."

That wilful negligence is responsible for all the suffering and deaths associated with the evacuation and ongoing dislocation; radiation exposure likely to lead to a cancer death toll ranging from 130 to 3,000; and economic costs that will total several hundred billion dollars.

Russell has another intellectual contortion to perform. If radiation is harmless, there is no need for an exclusion zone to be maintained around Fukushima. Sometimes he goes so far as to say the initial evacuation was "unnecessary" – though of course he never said any such thing in the immediate aftermath of the nuclear disaster.

So why is the evacuation zone still in place two years after the nuclear accidents? Russell argues: "The panic whipped up by the anti-nuclear movement completed the devastation began by the tsunami and prompted an unnecessary evacuation that killed people." And still more bizarrely, "the people who are still living in temporary housing in Japan should be running a class action against the anti-nuclear movement for its role in the wasting of so much money when there are serious needs to be met."

Russell never explains how NGO views (which he misrepresents) translate into government policy. As best as one can work it out, environment groups pump "radiophobia" into the ether and governments (and radiation scientists) absorb it by osmosis – hence the "unnecessary" Fukushima exclusion zone. Either that or shamanic transmutation.

Russell's attacks on environmentalists place him alongside LaRouche, Kemeny and other comedians, demagogues and conspiracy theorists. But there's nothing funny about his distinction between the easily-preventable Fukushima nuclear disaster and "real problems", or his distinction between the suffering of Fukushima evacuees and "actual suffering", or his description of the Fukushima disaster as "benign". Those statements are disgusting and disgraceful. *Jim Green is the national nuclear campaigner with Friends of the Earth, Australia.* 

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# Is Fukushima the new normal for nuclear reactors?

Benjamin Sovacool

The new crisis at the Fukushima nuclear power plant in Japan saw radioactive water leak again from the crippled facility, raising fears that groundwater flowing into the Pacific Ocean could be contaminated. The Japanese government also raised the international incident level – the scale used to assess nuclear accidents – from one to three out of seven. The original nuclear meltdown following the 2011 Japanese earthquake was scaled seven. Even if Fukushima was ultimately caused by the 2011 earthquake and ensuing tsunami, accidents such as this beg the question: can nuclear energy ever be truly safe? There are three reasons to think that nuclear accidents are common, and could increase – and it's not because of the

#### Lessons from history

In the early 1980s, Yale sociologist Charles Perrow argued that the partial meltdown of a nuclear reactor at Three Mile Island was a "normal accident". The crux of his argument was that complicated technological systems have unavoidable problems that can't be designed around.

technology. Let's have a look at the evidence.

Perrow's argument – still relevant today – rested on three pillars. First, people are fallible, even at nuclear reactors. Operator error is still a very common factor in incidents and accidents.

Second, big accidents almost always have very small beginnings. Nuclear power plants are so complex that relatively simple things — shirt tails, fuses, light bulbs, mice, cats, and candles — can disrupt the entire system.

And finally, many failures are those of organisations more than technology. Given the right event, all these factors can lead to system-wide failure. Perrow concludes that such high-tech, dangerous systems are hopeless and should be abandoned, as the inevitable risks of failure outweigh any conceivable benefits.

Nuclear reactors do have inherent advantages over fossil fuels, but Perrow's argument raises serious questions about nuclear safety.

#### Never-ending accidents

Even so, Perrow was writing in the 1980s. Surely things have improved since then? Well, perhaps not.

If you consider the full range of incidents and accidents reported on the International Nuclear Event Scale <sup>3</sup>, there have been hundreds of events over the past few decades. One peer-reviewed study identified 105 nuclear accidents totalling U\$176.9 billion in damages and 4,231 fatalities worldwide from 1952 to 2011.<sup>4</sup> The International Atomic Energy Agency also reports no less than 2,400 separate incidents since the organisation began collecting data in the 1950s.

Most of these incidents involved no major releases of radiation or fatalities. But three emerging trends still cause reason for grave concern.

First, major modern nuclear power accidents are no longer one-off events. Instead, they can span years or even decades, creating a sort of "continuous accident".

The infamous Chernobyl nuclear power accident may have started on April 25 1986, but it continued into the early 1990s. Secrecy, further accidents, and wildfires in the exclusion zone meant that exposure to dangerous levels of radiation weren't controlled immediately.

We can see this same "continuous" trend with the accident at Fukushima. The triple meltdown itself at Fukushima in March 2011 was just the beginning.

In March 2013 a power outage left four underground spent fuel pools without fresh cooling water for several hours. The same month, it surfaced that a TEPCO crew laying down rat-proof netting caused another outage. In April 2013 regulators discovered that thousands of gallons of radioactive water had seeped into the ground from a leaking system of plastic sheeting.

In May, a fire broke out near Fukushima Unit 3 — ostensibly caused by cardboard boxes catching flame. And most recently in August 2013, regulators announced that 300 tons of radioactive water was found leaking from storage tanks.

#### New designs, new problems

There is some evidence that newer reactor designs and systems are more prone to accidents. Dennis Berry, Director Emeritus of Sandia National Laboratories, explains that the problem with new reactors and accidents is twofold: scenarios arise that are impossible to plan for in simulations, and people make mistakes.<sup>5</sup> As he put it: "Fabrication, construction, operation, and maintenance of new reactors will face a steep learning curve: advanced technologies will have a heightened risk of accidents and mistakes. The technology may be proven, but people are not."

Former nuclear engineer David Lochbaum has noted that almost all serious nuclear accidents have occurred when operators have little experience with a plant.<sup>6</sup> This makes new systems incredibly risky.

Lochbaum cites numerous historical examples of nuclear reactor accidents, including Three Mile Island and Chernobyl, which suffered accidents immediately or soon after opening. Only Fukushima seems to have defied the trend; it was opened in 1971 and continued operating until the 2011 earthquake.

#### Electric pressure

The third problem is electric market restructuring. This puts more pressure on nuclear operators to keep costs low, potentially compromising safety.

The problem is, as former Nuclear Regulatory Commission chair Peter Bradford states, "nuclear energy can be cheap, or it can be safe. But it can't be both." And even then, "there's always the possibility somebody will cut a corner".8

For example, the pressure to build new generators on existing sites to avoid finding new locations can increase the risk of catastrophe, since there is a greater chance that one accident can affect multiple reactors.

Nuclear waste storage is also becoming more dangerous, with many spent fuel pools packed with more fuel rods to keep costs low, making them hotter and denser. Operators have to add boron to water pool to absorb neutrons, increasing the risk of chain reaction, or criticality, accidents.

The industry has also been trying to tinker with reactor sizes and promote designs that operators have little experience with, making operator training a factor. Some of these new reactor designs use more fuel and create more heat, meaning they have bigger cores containing larger quantities of dangerous fissionable materials, increasing the magnitude of any accident that could occur.

These factors are worrying (to say the least) given the severity of what a single, serious accident can do. Too bad it seems a matter of when, not if, we will see more of them in the future.

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# Harassment of anti-nuclear citizens in Japan

Anti-nuclear activists held an exhibition in Tokyo on August 10–11 to highlight the harassment and threats they faced during a period long before the Fukushima nuclear disaster.

Letters and postcards sent to the activists in the 1990s and early 2000s were displayed. One postcard simply says, "You are a tick." Some envelopes contained hair, cigarette butts and dead cockroaches. Other letters were filled with obscenities.

Yuki Adachi, a 61-year-old resident in Tokyo, said she was repeatedly harassed after she joined the antinuclear movement in light of the 1986 Chernobyl nuclear disaster. She organised a citizens group, invited mothers like her to study meetings, and sometimes joined opposition demonstrations held at candidate sites for nuclear power plants in Japan.

Adachi then began to receive strange mail and "silent" phone calls at midnight. A credit card company sent her a bill for 3 million yen (about US\$31,000) for a tractor that she had supposedly ordered from an agricultural machinery store in Hiroshima Prefecture. Someone had stolen her credit card number. Without my knowledge, I was suddenly forced into debt. I felt spine-chilling horror," Adachi said.

Baku Nishio, 66, co-leader of the Citizens' Nuclear Information Center (CNIC), a nonprofit organisation, said he received letters and postcards with nonsensical sentences. But in others, the messages and intentions were clear. One year, Nishio learned that his acquaintances had received New Year's greeting cards that falsely used his name as the sender. The messages on the cards were intended to make him appear like a member of a radical group. "I think that the person who sent those New Year's greeting cards wanted to split the participants and members of our activities," Nishio said.

For two to three years, Masako Sawai, 60, a CNIC staff member, often received large bundles of several dozen letters. In one case, an envelope arrived at Sawai's home that contained a copy of a photo of her walking with her child. "I think that a big organisation with a lot of money and manpower was behind (the harassment)," Sawai said.

In 1995, five organisations and 66 individuals asked the Human Rights Protection Committee of the Japan Federation of Bar Associations to take measures against the harassment. By that time, 4,000 of the letters and postcards had been confirmed around the country.

Lawyer Yuichi Kaido, one of the organisers of the exhibition, said: "The battle between those supporting the restart of idled nuclear reactors and those against it will be heating up from now on. The obstruction tactics against the anti-nuclear movement that were seen in the past could occur again."

'Tokyo exhibition to show harassment against antinuclear movement', Asahi Shimbun, 10 August 2013.

## Fukushima "under control"?

Jim Green

Japan's Prime Minister Shinzo Abe assured the International Olympic Committee (IOC) on September 7 that the Fukushima situation – in particular the leakage of contaminated water from holding tanks and the constant flow of contaminated groundwater – was "under control".

However, Kazuhiko Yamashita, a senior official with Fukushima plant operator TEPCO, said the water leaks were not under control. "We regard the current situation as not being under control," he said. "Predictable risks are under control, but what cannot be predicted is happening." 1,2 Shunichi Tanaka, chair of Japan's Nuclear Regulation Authority (NRA), said on September 6 that TEPCO "has not been properly disclosing the situation about the contamination and the levels of contamination." He added: "This has caused confusion domestically and internationally. Because of that, the Japanese government has a sense of crisis and I, personally, feel a little angry about it." 3

Hiroaki Koide, an associate professor at Kyoto University Research Reactor Institute, said: "I was flabbergasted by Abe's speech. The problem of contaminated water is far from being solved. This problem has been going on all the time since the reactors were destroyed. Contaminated water has been leaking into the ocean ever since."<sup>4</sup>

The situation in Fukushima "has never done or will do any damage to Tokyo," the Prime Minister said. But radioactive fallout and contaminated food and water are problems that have been felt in Tokyo and beyond. The Mayor of Tokyo, Naoki Inose, publicly denounced the Prime Minister by saying that the problem of contaminated water leaks was "not necessarily under control" and that: "The government must acknowledge this as a national problem so that we can head toward a real solution."<sup>5</sup>

"The contaminated water has been contained in an area of the harbour only 0.3 square kilometres big," Prime Minister Abe said. No it hasn't. There is routine release of contaminated water, in part because the barrier between the 'contained' area and the ocean has openings so it can withstand waves and tidal movements.<sup>6</sup>

On July 10, the NRA said it "highly suspected" that the Fukushima plant was leaking contaminated water into the ocean. TEPCO acknowledged that fact on July 22.<sup>7,8</sup>

US experts urged Japanese authorities to take immediate steps to prevent groundwater contamination two years ago, but their advice was ignored. TEPCO reportedly lobbied against the proposed construction of a barrier – a measure that will now be taken with government funding – because of the high cost. <sup>10</sup>

Princess Takamado – daughter-in-law of the Japanese Emperor – told the IOC: "The Olympic bid has given the young people in the area affected something to dream for, the motivation to move forward with courage ... I know one of the IOC's most important aspects is the legacy a Games leaves. The IOC will certainly remain in the heart of these young people."9

Princess Takamado did not explain how newly-built sports stadiums in Tokyo would improve the lives of young people in Fukushima Prefecture, or the lives of the 160,000 evacuees from the nuclear disaster who remain dislocated.

#### Namie Resolution

The town assembly of nuclear disaster-hit Namie, Fukushima Prefecture, passed a resolution against Prime Minister Shinzo Abe on September 20 for declaring the situation "under control." The Namie Town Assembly unanimously passed the resolution stating that there is a "serious problem" with Abe's remarks as they "contradict reality." The resolution states: "The situation has never been 'under control,' nor is the contaminated water 'completely blocked."9,11

Regarding Abe's claim that "there are no health-related problems until now, nor will there be in the future," the Namie resolution pointed out that there had been 1,459 deaths related to the triple disasters in Fukushima Prefecture thus far. "We can't help but feel resentment against the government and plant operator Tokyo Electric Power Co., both of which are disregarding Fukushima Prefecture," the resolution states.

#### Contaminated fish

Prime Minister Abe's comments to the IOC are contradicted by contaminated fish. Radioactivity levels have been dropping but contaminated fish exceeding safety limits are still being detected.<sup>12</sup>

Toshimitsu Konno, a fisherman in Soma, Fukushima Prefecture, responded to the Prime Minister's comments to the IOC meeting: "He must be kidding. We have been tormented by radioactive water precisely because the nuclear plant has not been brought under control." 13

As the string of scandals surrounding contaminated water unfolded, South Korea greatly expanded bans on fish imports on September 6. A ban on fish imports from Fukushima Prefecture was extended to a further seven prefectures. <sup>14</sup>

Fisheries vice-minister Son Jae-hak said that Japanese authorities had failed to provide timely and detailed information about the water leaks and that the ban would stay in place indefinitely. The fisheries ministry said the ban was necessary "as the government concluded that it is unclear how the incident in Japan will progress in the future and that the information the Japanese government has provided so far is not enough to predict future developments". <sup>15</sup> Among other countries, the US, China, Taiwan and Russia also have fish import bans in place. <sup>16,17</sup>

Jim Green is the national nuclear campaigner with Friends of the Earth, Australia.

# Fukushima and the death of science journalism in Australia

Noel Wauchope

Investigative journalists would do well to investigate what is happening to science news writing in Australia. Australian media has never been an enthusiastic employer of scientifically informed journalists. They've been few and far between in the Australian press. Perhaps because their area of interest is not considered "sexy"?

Within the last few months, there's been an exodus of journalists from the Australian media. Amongst the departures – science journalists. There is a resource, for

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journalists in general, called the Australian Science Media Centre (AuSMC). Sounds really good, doesn't it? But more about that later.

Where does this leave science writing? I knew that quality science journalism in Australia was dwindling. It took the most recent pro-nuclear advertorial in the Fairfax media to really wake me up to this. John Watson, 'Senior writer' at Fairfax Media, wrote an article entitled, 'Want to kill fewer people? Go nuclear' (posted at tinyurl. com/watson-junk-science).

To be fair to John Watson, his article is easily interpreted by the average reader. Readable, not believable. He starts off – rather unwisely – with the time honoured denigration of those who prefer anti-nuclear opinions: "... a pitchfork-waving mob who demand we have nothing to do with nuclear power, while relying on other energy sources that all kill more people."

The article is full of bald and incorrect generalisations: "Nuclear power is the safest source of energy by a long way. Solar power causes five to 10 times as many deaths."

Watson misrepresents statements from the United Nations Scientific Committee on the Effects of Atomic Radiation Panel (UNSCEAR), and the World Health Organisation (WHO), regarding Fukushima. UNSCEAR's brief unofficial preliminary report has now been taken down from their website. Both these recent reports stated that there should be an expected rise in cancer amongst women who were exposed to Fukushima radiation as children.

He minimises the problem of storing nuclear waste and sidesteps the core question of the economics of the nuclear fuel cycle. He implies that nuclear power is cheap, without exactly saying so. Why have The Age, Sydney Morning Herald and others sunk to this level of sloppy journalism?

Apart from the obvious fact they don't want to offend their corporate backers, this kind of writing is symptomatic of what happens when you get rid of your qualified dedicated science journalists. Amongst the plethora of Fairfax journalists encouraged to depart their jobs were science editor Deborah Smith, health editor Julie Robotham, health correspondent Mark Metherell and environment reporter Rossyln Beeby.

#### Murdoch media

That's Fairfax. But what about the Murdoch media? The Murdoch media never had much of a problem in its coverage of science. The Australian blithely publishes science articles written by journalists who are clearly far from expert in the field of science. This has been documented by Tim Lambert with his article, 'The Australian's War on Science' (tinyurl.com/lambert-war). In it he goes about scrutinising, in depth, writers such as Maurice Newman and Graham Lloyd. The Australian did have one qualified science writer, Leigh Dayton. No more.



This brings me back to the Australian Science Media Centre. It seems like a good idea and it's a not-for-profit project. It does raise the question: is it wise to get rid of real science journalists and depend on a centralised body which may well undermine science journalism?

A large empirical study was undertaken recently by Andy Williams of Cardiff University in the UK. It confirmed that science PR is increasing while independent science journalism is decreasing. The development of science media centres (SMCs) has been problematic as far as coverage of the Fukushima nuclear disaster. The use of SMCs around the world has assisted the nuclear industry. It has seemingly got TEPCO and others out of paying huge compensation to those impacted by the disaster.

The independent scientist was squeezed out of the media long ago. These days, you are more likely to read work by pro-industry journalists that don't have a grip on the full impact of nuclear disasters.

An article at nuclear-news.net provides a number of references revealing how experts from SMCs have downplayed the seriousness of the Fukushima nuclear disaster (tinyurl.com/fuku-smc). I note that the "experts" writing about ionising radiation and health were nuclear engineers – not radiation biologists.

The article states: "I just wanted to introduce you to this side of the science "debate" and how the science is corrupted and biased without independent scientists to keep a check and balance. I was surprised to see the Australian SMC coming out in strength to ignore the plight of the children of Fukushima and save the nuclear industry from a well deserved collapse."

I'm not alone when it comes to lamenting the reduction of science journalists in the Australian media. The subject's discussed eloquently by Melissa Sweet and Leigh Dayton at a Crikey in a piece called: 'From the perfect job to an endangered species: the demise of science journalism and why it matters' (tinyurl.com/sweet-dayton).

Australia's Science Media Centre says it is dedicated to: "helping scientists work effectively with the news media". Yes, it's a not-for-profit funded by various reputable organisations. They include the CSIRO, the South Australian, New South Wales, and Victoria Governments, Australia Pacific LNG, News Limited, BHP Billiton and a number of universities. I repeat, it does sound good.

Yet how do general journalists scrutinise and distinguish between what is an independent science story and what is a pro-business story? How easy might it be for general journalists to be discouraged from covering certain topics?

In Australia, many industries already release media statements that are easily included in an article by a general journalist. If the subject is complex – e.g. the health effects of Fukushima radiation – it is all too easy to go to the science media centre and get a comforting article from a nuclear engineer. Just as has happened in Japan and the UK.

This article is reprinted from Independent Australia, www.independentaustralia.net

### Radioactive Exposure Tour 2014

The Radioactive Exposure Tour 2014 will travel from Melbourne to the heart of the nuclear industry in South Australia and onwards to the frontline of radioactive racism at Muckaty, NT. Organised by Friends of the Earth, the RadTour will explore the history of anti-nuclear movements in Australia and the impact the industry has had on the people and the environment. We'll travel the distance to support the community at Muckaty opposing the Federal Government's plans to dump radioactive waste on their country. For more information or to be involved, email: radexposuretour@gmail.com, web: acecollective.org/radioactivetour



# Uranium mining and export not a piece of yellowcake

Dave Sweeney

Recently the Australian Uranium Association and other nuclear industry hopefuls headed to western Queensland for the Mining the Isa conference. Mt Isa is no stranger to mining but the region – and Queensland – would be well advised to treat the claims of the uranium sector with caution.

Globally the nuclear industry is under intense political, regulatory and community pressure since the Fukushima meltdown, a continuing nuclear crisis directly linked to Australia's contested and contaminating uranium industry.

Recently the Newman Government released an "action plan" that seeks to open the door to uranium mining in Queensland but the LNP's uranium road map is deeply flawed and in conflict with federal policy, global markets and community expectations. A key plank of the LNP's plan is to have "all uranium mining proposals in Queensland assessed and approved by the state government". Currently uranium mining and wider nuclear issues remain the clear responsibility of the federal government and this is as it should be.

Uranium mining is an issue of national interest and importance with extensive risks and long term impacts and is rightly a matter for the active consideration of the national government.

State governments, mining companies and the Australian Uranium Association, have long dreamt of the power to tick off on a new uranium mine being transferred to state governments in the hope that this would removing key checks and balances and speed up approvals.

Currently the LNP's hopes about this facet of the plan appear misplaced, with the Coalition Government assuring the Australian Conservation Foundation that under the "proposed streamlining of approval processes under the EPBC, our intention is for uranium mining to be one area where the Federal Government would retain control and would not implement a bilateral approval process".

Uranium mining remains a high risk-low return game. Since the Fukushima accident began in March 2011 there have been repeated calls from a range of non-government and community-based organisations for an independent review of the costs and consequences of the Australian uranium sector – here and abroad.

The uranium sector and successive Australian governments have ignored these calls – and a similar one from the UN Secretary General for a review of the human and environmental impacts of uranium mining – preferring to base their planning on tired assurances rather than robust analysis.

This trend of industry appeasement rather than assessment, applies not only to the nuclear safety rules and culture but also to the sector's economic performance. A market analysis by economic forecaster Morgan Stanley, ironically released on the same day as the LNP's plan, shows the price of uranium has slumped by nearly 50% since the Fukushima nuclear crisis, where Australian uranium became and remains global radioactive fallout.

Earlier this year an ACF report, 'Yellowcake Fever: Exposing The Uranium Industry's Economic Myths', used official industry data to show the uranium sector is a minor contributor to employment and the economy. Our research shows in the 10 years to 2011, uranium accounted for only 0.29% of Australian export revenue and less than 0.015 per cent of national jobs.

So while the sector's risks are significant its economic contribution is not: in total it provides only around 650 jobs and seven hundred million dollars \$700 million in earnings – nationwide.

Yet Premier Campbell Newman did nothing to challenge long-standing gulf between the promise and the performance of Australia's uranium sector when he did his policy U-turn last October. As he broke earlier commitments not to develop the uranium sector in Queensland, Newman spoke of the "billions" of dollars and "thousands" of jobs that would follow.

Such claims are fanciful and – as Newman later admitted – were made without any independent economic analysis or evidence. But on the principle of never let the reality impede the rhetoric the LNP continues to promote the economic and employment contribution of this sector far beyond the bounds of credibility.

The small economic gain from uranium can mean big pain and there is a compelling case that Australia's uranium trade is a major source of domestic and international risks and is overdue for an independent inquiry into its effects on the environment, health, safety and security.

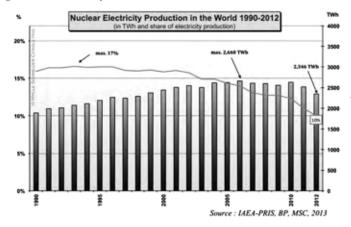
It is time to increase, not reduce, the scrutiny given to uranium mining.

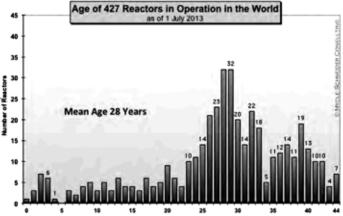
Radioactive waste, legacy mine sites and nuclear risks last far longer than the shelf-life of any politician.

Dave Sweeney is a nuclear free campaigner with the Australian Conservation Foundation. The ACF report, Yellowcake Fever: Exposing The Uranium Industry's Economic Myths, is posted at tinyurl.com/acf-uranium

# World Nuclear Industry Status Report 2013

Figure 1: Nuclear Electricity Generation in the World





The World Nuclear Industry Status Report 2013 (WNISR) was released on July 11. The report looks at nuclear reactor units in operation and under construction, with global statistics and detailed country-by-country information. The report also contains useful material on topics such as potential newcomer countries, the credit-rating performance of some of the major nuclear utilities, the aftermath of the Fukushima disaster, and development patterns of renewable energies compared to nuclear power. Some key facts from the report are listed here.

The number of operating reactors has fallen from the 2002 peak of 444 to the current 427 reactors.

Installed nuclear capacity peaked in 2010 at 375 gigawatts (GWe) before declining to the current level of 364 GWe.

Annual nuclear electricity generation peaked in 2006 at 2,660 terrawatt-hours (TWh), falling to 2,346 TWh in 2012 (down 7% compared to 2011, down 12% from 2006). About three-quarters of this decline is due to the situation in Japan, but 16 other countries, including the top five nuclear generators, also decreased their nuclear generation.

The nuclear share of the world's power generation declined steadily from a historic peak of 17% in 1993 to about 10 percent in 2012. Nuclear power's share of global commercial primary energy production fell to 4.5% in 2012, a level last seen in 1984.

The average age of the world's nuclear fleet continues to increase and in mid-2013 stands at 28 years. Over 190 reactors (45% of the total) have operated for 30 years, of which 44 have run for 40 years or more.

Fourteen countries currently are currently building nuclear power plants, one more than a year ago as the United Arab Emirates (UAE) started construction at Barrakah. The UAE is the first new country in 27 years to have started building a commercial nuclear power plant.

As of July 2013, 66 reactors are under construction (seven more than in July 2012) with a total capacity of 63 GW. However:

- Nine reactors have been listed as "under construction" for more than 20 years and four additional reactors have been listed for 10 years or more.
- Forty-five projects do not have an official planned start-up date on the IAEA's database.
- At least 23 have encountered construction delays, most
  of them multi-year. For the remaining 43 reactor units,
  either construction began within the past five years
  or they have not yet reached projected start-up dates,
  making it difficult or impossible to assess whether they
  are on schedule or not.
- Two-thirds (44) of the units under construction are located in three countries: China, India and Russia.
- The average construction time of the 34 units that started up in the world between 2003 and July 2013 was 9.4 years.

Only three reactors started up in 2012, while six were shut down. In 2013, up to 1 July, only one reactor started up, while four shutdown decisions – all in the U.S. – were taken. Three of those four units faced costly repairs, but one (Kewaunee, Wisconsin) was running well and had received a license renewal just two years ago to operate up to a total of 60 years; it simply became uneconomic to run. Engagement in nuclear programs has been delayed by most

Engagement in nuclear programs has been delayed by most of the potential newcomer countries, including Bangladesh, Belarus, Jordan, Lithuania, Poland, Saudi Arabia and Vietnam.

In 2012, construction began on six reactors and on three so far in 2013, including on two units in the US. Those two units have been offered over US\$8 billion in federal loan guarantees and other subsidies whose total rivals their construction costs, and special laws have transferred financial risks to the taxpayers and customers.

Additional costs arising from upgrading and backfitting measures following the lessons of the Fukushima crisis are only beginning to surface. They are likely to have substantial impact on investment as well as operational costs.

Nine out of 14 major utilities assessed in the WNSIR saw their earnings decline over the past five years while 13 constantly increased their debt level.

Over the past five years, 10 out of 15 assessed nuclear utilities were downgraded by credit rating agency Standard and Poor's, four remained stable, while only one was upgraded.

#### Renewable energy

In spite of a slight decrease in global investment in 2012, partly reflecting rapidly falling equipment prices, renewable energy development continues its rapid expansion in both, capacity and generation. China, Germany and Japan, three of the world's four largest economies, as well as India, now generate more power from renewables than from nuclear power.

Global investment in renewable energy totalled US\$268 billion in 2012, down from US\$300 billion the previous year but still five times the 2004 amount.

Globally, since 2000, the annual growth rates for onshore wind power have averaged 27% and for solar photovoltaics 42%. This has resulted in 2012 in 45 GW of wind and 32 GW of solar being installed, compared to a net addition of 1.2 GW of nuclear. China has a total of 75 GW of operating wind power capacity, roughly doubled in each of the past five years.

For the first time, China and India generated more power from wind than from nuclear plants in 2012, while in China solar electricity generation grew four-fold in one year.

The World Nuclear Industry Status Report is posted at www.worldnuclearreport.org

## World Nuclear Association and IAEA scale back projections

A new World Nuclear Association (WNA) report, 'The Global Nuclear Fuel Market: Supply and Demand 2013-2030', revises and reduces the Association's pre-Fukushima projections of nuclear power growth. Compared to current installed capacity of 334 GWe, the WNA projections range from a lower scenario of no net growth, a reference scenario of 72% growth (574 GWe by 2030; 3.0% annual growth) and an upper scenario of two-fold growth (700 GWe in 2030; 4.2% annual growth).

Both the upper scenario and the reference scenario are "significantly lower" than the projections in the WNA's 2011 report. World Nuclear News reports: "The lower projected rate of growth of the nuclear sector in the latest edition of the WNA market report (compared with the 2011 edition) reflects the current and expected increased level of challenges facing utilities aiming to commission new nuclear power plants. These challenges are not only a result of the post-Fukushima calls for the industry to demonstrate higher levels of safety, but also the need to cope with stronger competition from alternative generating technologies at a time of more modest power demand growth expectations."1

In the reference scenario, uranium demand would reach 97,000 tonnes by 2030, from today's level of 62,000

tonnes. Provided that all uranium mines currently under development enter service as planned, the report finds that the uranium market should be adequately supplied to 2025; beyond this time new mines need to be operating.<sup>2</sup>

The IAEA has recently released its Annual Report for 2012, projecting nuclear power growth of 23% to 100% percent by 2030.<sup>3</sup> As with the WNA, the IAEA has scaled back its nuclear growth projections. The report notes that last year the UAE became the first country in 27 years to break ground on its first nuclear power plant. On the disposal of spent nuclear fuel, the IAEA report notes that most of its 158 member states have delayed the construction of repositories. Historically, upper scenarios from the WNA and IAEA have always been fanciful, whereas lower scenarios are usually much closer to the mark.

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# Uranium price slumps, Paladin Energy in trouble

The spot uranium price fell to US\$34.50 / lb U3O8 in late July, a price not seen since December 2005 during the upswing of a spectacular price bubble which peaked in June 2007 at US\$138 / lb. The 12% price slump in July was the biggest monthly loss since March 2011. Since September 2, the spot price has been still lower, at US\$34.00. Those prices are just over half the spot price of US\$66.50 / lb on 11 March 2011, the first day of the triple-disaster in northeast Japan.

The long-term contract price has been reasonably stable in recent months at US\$57 / lb. At that price, the value of annual global uranium requirements for power reactors is around US\$10 billion.

FNArena wrote on September 17: "The issue of low uranium prices discouraging new supply is not just one of the spot price itself but one of the marginal cost of new supply. Producers suggested to Ux that the average marginal cost of production of operating mines is around where the spot price is now, but the marginal cost of developing a new mine is more like US\$65-70/lb. From the nuclear energy prospective, respondents rated the most significant demand-side influences as, in descending order of influence, Japanese reactor restarts, Chinese reactor build, the premature shutdown of older US reactors and the emergence of newcomer countries to nuclear energy (about equal), and the upcoming French nuclear licence renewals."

Raymond James analyst David Sadowski expects an average spot price of \$40 per pound this year, \$52 in 2014, and \$70 in both 2015 and 2016. Michael Angwin from the Australian Uranium Association expects low prices until about 2017/18, and a nasdaq.com article states that "the road to recovery for this battered commodity will be a long haul". Rob Atkinson, outgoing CEO of Energy Resources of Australia, says the uranium spot price is woeful, making it extremely difficult to make the case for developing a new mine, and the market will remain difficult for at least another two years.

The industry hopes that reactor restarts in Japan will improve the situation – but restarts will be slow and in many cases strongly contested. The industry hopes that new build in China will improve the situation – but pre-Fukushima nuclear growth projections have been sharply reduced and China now plans to approve a "small number" of new reactors projects each year.

The industry hopes that the end of the US-Russian 'Megatons to Megawatts' program – downblending highly enriched uranium from weapons programs for use in power reactors – will improve the situation. But mine

production has met an increasing proportion of demand in recent years - 78% in 2009 and 2010, 85% in 2011 and 86% in 2012 (the shortfall was around 10,000 tonnes of uranium in 2011 and 2012). This suggests that the end of the Megatons to Megawatts program will have a moderate impact. There is scope for weapons material to continue to supply the civil market regardless of future bilateral US-Russian agreements. Ux Consulting noted last year that reduction in demand stemming from the Fukushima accident "essentially negates much of the reduction in supply resulting from the end of the US-Russia HEU deal". Utilities have built up uranium stockpiles in recent years as a result of low uranium prices (the World Nuclear Association estimated commercial inventories totalling 145,000 tonnes of uranium in 2010 – enough to supply global demand for two years).

Jeb Handwerger, described by Uranium Investing News as a "uranium bull and stock guru", says that "Smart money recognizes the bottom." But smart money is heading for the door. At the Paydirt Uranium Conference in February 2012 in Australia, it was clear many companies were looking elsewhere, prompting an industry veteran to quip that copper and gold had never before enjoyed so much airtime at a uranium conference. A year later, attendance was so poor that the conference was reduced from two days to one day and shifted from the Hilton Hotel to a less opulent venue.

Uranium gloom and doom is also being felt in the enrichment sector. Urenco posted a 45% drop in revenue for the first half of 2013 and a 31% fall in earnings (compared to the first half of 2012). Revenue fell to 384 million euros and earnings dropped to 319 million euros. Urenco said it expects a "substantial rebalance" during the second half of the year due to continued capacity expansion in its US facility and the construction of a new unit in the UK. The UK government owns one third of Urenco, as does the Dutch government, with the final third held by German utilities E.On and RWE. All the owners have been looking to sell their stakes but have so far failed to secure a deal.

#### Paladin Energy

Australian-based Paladin Energy operates two uranium mines in Africa – Langer Heinrich in Namibia and Kayelekera in Malawi. CEO John Borshoff told a mining conference in Western Australia in July that the uranium industry faces a number of "major problems" such as the lack of greenfields development, dwindling investment capital and the sickly uranium price.

Borshoff said: "[T]he uranium industry is definitely in crisis, I believe, and is showing all the symptoms of a mid-term paralysis if this situation does not demonstrably change. How can there not be a problem when you have an effective moratorium with nearly all major companies making no commitment to greenfields development until the price gets about US\$70 and it is believed it can stay above that level. And how can there not be a problem when you have a strong chance that some of the more expensive, smaller operations will be mothballed – putting more pressure on current production. ... Only at this price level [US\$70/lb] – and above – can sufficient capital for new products be raised and returns on investment be justified to finally give some risk reward to the shareholder. And this appears to be a long way away."

Borshoff said much of the blame lies with the uranium industry's customers, who he said had focused on the expediency of current cheap prices rather than the supplydemand gap forecast to open in coming years.

Shares in Paladin plummeted on August 5 after the company announced a heavily discounted A\$88 million raising through the issuing of 125.6 million shares. The company's cash position dropped to A\$78.1 million at June 30, down from A\$112.9 million at the end of the previous quarter.

The news followed a decision by the company to scrap negotiations for the sale of its interest in Langer Heinrich. Langer Heinrich produced 5.3 million pounds out of the company's total output of 8.26 million pounds of U3O8 in the year to June 30. Borshoff said: "The current depressed uranium price has meant that it is unlikely that a price that appropriately reflects the strategic value of the asset will be achieved and accordingly proceeding at this time would be detrimental to long-term shareholder value."

Andrew Shearer, an analyst at PhillipCapital Ltd., said: "The decision to terminate the asset sale is contrary to the company's guidance that the process was continuing well and heading toward a conclusion."

Stockbroker RFC Ambrian said: "From a technical perspective, Paladin can be satisfied that it has achieved record sales but the fact remains that it has not had a profitable annual result since commencing operations. Our modelling forecasts continued negative cash flow and the company running out of cash in early 2014 and consequently [being] unable to service its substantial debt position. This was expected to be covered through the strategic sale of a minority interest in Langer Heinrich for cash."

The share offering bought the company some breathing space if nothing else. Paladin had about US\$670 million of debt at the end of March 2013 according to data compiled by Bloomberg.

On August 30, Paladin Energy had more bad news, reporting a net loss of US\$420.9 million for the 2013 financial year, more than double the previous year's loss of US\$172.8 million and not far short of the company's record net loss of US\$480.2 million in financial year 2009. Borshoff launched into another spray about the low uranium price, labelling it "diabolical", "extremely depressed" and "of great concern".

Borshoff would not rule out closing one of Paladin's two mines (most likely the Kayelekera mine in Malawi) as part of the company's efforts to cut costs. Analyst Andrew Shearer said the Kayelekera mine was unlikely to be profitable at present prices, but the decision was complex: "They would have to weigh up the cost associated with putting it on care and maintenance and whether they have any contractual agreements in terms of uranium sales."

As Paladin does not make enough profit at current uranium prices to meet its debt repayments, the company will once again try to sell down its stake in its Namibian mine. Extra funding is needed to repay US\$300 million in convertible notes that mature in 2015.

As of late August, Paladin's share price was A\$0.56, barely one-tenth the figure of A\$5 the day before the Fukushima disaster.

According to Fairfax journalist Peter Ker, Paladin's "parlous state has some whispering about executive renewal."

Paladin said on October 2 that it would cut more jobs and further reduce spending. Executive pay was reduced in 2012/13, with Borshoff's remuneration slashed to A\$2.5 million p.a. – less than half the amount he received in the previous year. Costs at the Kayelekera mine will be cut by 22% over the next two financial years and costs at Langer Heinrich will be reduced by 15%.

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## South Korea: Nuclear scandal widens

A scandal in South Korea concerning the use of counterfeit parts in nuclear plants, and faked quality assurance certificates, has widened.

In May 2012, five engineers were charged with covering up a potentially dangerous power failure at the Kori-I reactor which led to a rapid rise in the reactor core temperature. The accident occurred because of a failure to follow safety procedures. A manager decided to conceal the incident and to delete records, despite a legal obligation to notify the Nuclear Safety and Security Commission. In October 2012, authorities temporarily shut down two reactors at separate plants after system malfunctions.

Then in November 2012, the scandal involving counterfeit parts and faked certificates erupted. The reactor parts included fuses, switches, heat sensors, and cooling fans. The scandal kept escalating and by the end of November it involved at least 8,601 reactor parts, 10 firms and six reactors and it was revealed the problems had been ongoing for at least 10 years. Plant owner Korea Hydro and Nuclear Power (KHNP) acknowledged possible bribery and collusion by its own staff members as well as corruption by firms supplying reactor parts. Two reactors were taken offline to replace thousands of parts, while replacement parts were fitted to other reactors without taking them offline.

In recent months the scandal has continued to expand.

**Late May 2013:** Two more reactors were shutdown and the scheduled start of two others was delayed because an anonymous whistleblower revealed that "control cables had been supplied to [the] four reactors with faked certificates even though the part had failed to pass a safety test."

**June 20:** Widespread police raids. Prosecutors reveal that the number of plants suspected to have non-compliant parts (or at least paperwork) has widened to include 11 of South Korea's 23 reactor reactors.

**July 8:** The former president of KHNP was arrested as part of the ongoing investigation into nuclear industry corruption.

**July 10:** Search and seizure occurred at Hyundai Heavy Industries after the Busan Prosecutor's office obtained warrants relating to the nuclear parts scandal.

**July 11:** Details emerged on the involved parties in the Hyundai headquarters raid, including persons and exchanged funds. Contract bribery is included in the charges.

**October:** Seoul has selected global ship classifier Lloyd's Register to review the safety certificates of the country's nuclear reactors in the wake of a scandal over forged documents, the energy ministry said.

Even before the scandals of the past two years, a 2011 IPSOS survey found 68% opposition to new reactors in South Korea. The proportion of South Koreans who consider nuclear power safe fell from 71% in 2010 to 35% in 2012.

# China cancels nuclear fuel centre following protests

The Chinese government has abandoned plans for a huge nuclear fuel centre in Guangdong province. At a projected cost of US\$7.32 billion, the Heshan Nuclear Power Industry Park was to be equipped with facilities for uranium conversion and enrichment as well as manufacturing of fuel pellets, rods and finished assemblies.

Public concern began to grow when villagers were surprised that the "industrial park" they had been told about was going to process radioactive fuel. On July 12, more than 1,000 protesters descended on the offices of the Heshan city government to oppose the project. Heshan and Jiangmen officials hastily called a press conference and promised to run more TV programs to educate the public. On July 13, a notice that the project had been cancelled

On July 13, a notice that the project had been cancelled was posted on the Jiangmen government's website. On July 14, residents gathered again outside Jiangmen's government headquarters, worried that the project had merely been postponed, but the city's Communist Party chief emerged to reassure them that it had indeed been scrapped for good.

Reflecting on the failed project, some government officials blamed old bureaucratic habits for alienating the public. One official said: "The more we explained, the more people believed we were deceiving them." For example, a Q&A on the local government's website responded to a question about risks in the event that the plant was bombed during warfare by stating: "Given that it is a civilian nuclear facility, the plant is protected by international law and could not be attacked during wartime."

The Economist reflected on the events: "As well as complicating China's nuclear plans, such protests would raise fears in Beijing of something more worrying: an antinuclear movement becoming a cover for anti-government activity. Taiwan offers a precedent. In the 1980s opponents of the island's authoritarian government rallied public support for their cause by tapping into public concerns about nuclear power. The Communist Party does not want to run that kind of risk."

## Taiwanese nuclear politics heats up

A parliamentary vote on whether to hold a referendum on the completion of the Lungmen nuclear power plant in Taiwan descended into a brawl between opposing parties on August 2. The vote, proposed by the ruling Chinese Nationalist Party (Kuomintang – KMT), had been scheduled to decide whether construction of Taiwan's fourth nuclear power plant, which is nearing completion, should continue.

Fourty politicians from the opposition Democratic Progressive Party (DPP) barricaded themselves inside the legislative chamber on August 1, remaining there overnight in an attempt to stop the August 2 vote taking place.

The brawl broke out as KMT politicians tried to take possession of the podium to allow the vote to proceed. Television footage showed politicians pushing and shoving, two male politicians wrestling on the floor, and bottles and cups of water being thrown at each other. The scuffle led to the session being suspended, without a vote on the referendum taking place.

The DPP is calling for the Lungmen plant to be scrapped without holding a referendum. At least 50% of eligible voters would have to participate in a referendum for it to be binding. Taiwan has never passed a referendum. The 50% participation threshold has not been reached in any of the six referenda held since the Referendum Act came into effect in January 2004, despite those referenda being held in conjunction with national elections in 2004 and 2008. The Taiwan Anti-Nuclear Action League is calling for the Referendum Act to be made less restrictive.

The KMT said it would arrange six shifts, each comprising 15-20 people, to break through the DPP's grip on the podium, but the ruling party later said it would put on hold a motion to allow for a referendum on the nuclear plant. Greenpeace Taiwan warns that in the event of a nuclear accident, none of the subcontractors working on the Lungmen power plant would shoulder any responsibility. At an August 2 press conference co-hosted by the Green Citizen's Action Alliance, Greenpeace said that General Electrics and Mitsubishi are indemnified against all responsibility. Senior Greenpeace member Ku Wei-mu said the contractors had no right to ask Taiwanese to trust the safety of nuclear reactors if they themselves were not prepared to accept liability.

On July 31, Lin Tsung-yao, a consultant on the Lungmen plant's safety monitoring committee, posted a report detailing a number of construction problems on the project. Lin questioned the quality of GE's structural designs, and said that the project is hampered by the dearth of professionals at the Ministry of Economic Affairs and the Atomic Energy Council who understand the issues and can adequately oversee the project.

The DPP is calling for a phase-out of nuclear power, and even the KMT has pledged to make Taiwan nuclear-free by the middle of this century. Six reactors at three plants currently provide about 18% of the country's electricity. On March 9, anti-nuclear rallies swept across Taiwan ahead of the second anniversary of the Fukushima disaster. According to rally organisers around 200,000 people attended protests nationwide, with 120,000 taking to the streets in Taipei. An opinion poll conducted by the Taipei City Government in March showed that 66% of residents in the capital wanted the Lungmen plant to be scrapped, with just 18% supporting its continuation.

The Fukushima disaster resonated strongly owing to similarities and links between the two countries. Taiwan and Japan both suffer from seismic activity (a 1999 earthquake in Taiwan killed around 2,400 people). Both countries are hit by typhoons – in mid July, a typhoon left Taipower's Chinshan 2 reactor offline and in need of repair.

Taiwan's Shihmen nuclear power plant may have been leaking small amounts of radioactive water for more than three years according to a report published in August by the Control Yuan, a government regulator. A Taipower official said the water did not come from the storage pools, but may have come from condensation or water used for cleaning up the floor. The Control Yuan did not accept the explanation and asked Taipower to look into other possible sources of the leak such as spent fuel storage pools. The contaminated water has been collected in a reservoir next to the storage pools.

The Control Yuan said there had been a catalogue of errors, including a lack of a proper plan for how to handle spent nuclear materials and inadequate supervision by the Ministry of Economic Affairs. "The company has yet to clearly establish the reason for the water leak," it said.

## Uranium Mining in Niger

In the latest unrest at Niger's uranium mines, one person was killed and 14 wounded in a car bomb attack at Areva's uranium mine at Arlit, northern Niger, on May 23. Two suicide bombers were also killed. On the same day, military barracks in the northern town of Agadez were attacked, resulting in the deaths of 18 soldiers and one civilian. The Arlit attack caused sufficient damage to force a halt to mining operations, which were partially restarted on June 18. The Movement for Oneness and Jihad in West Africa (MUJAO) claimed responsibility for the attacks, in retaliation for military involvement in neighbouring Mali. MUJAO was one of three Islamist groups that seized control of northern Mali last year before French-led troops drove them out. Moktar Belmoktar, whose brigade calls itself 'Those Who Sign In Blood', also claimed responsibility for the Arlit attack and is believed to be responsible for an attack on a gas plant in Algeria in January which resulted in 80 deaths

#### Areva and uranium mining in Niger

including 37 foreign hostages.

Areva has been mining uranium in Niger for more than 40 years and operates two mines in the north of the country through affiliated companies Somair (Arlit mine) and Cominak (the nearby Akokan mine). Areva is also working to start up a third uranium mine in Niger, at Imouraren.

In July 2007, rebels attacked the compound of an electricity company that powers the area's towns and the Arlit and Akokan uranium mines, but government troops fought them off. Around the same time, rebels made a series of attacks on government and mining interests, killing 15 government soldiers and abducting over 70 more.

Four French workers were kidnapped in 2008 by Tuareg-led rebels and released several days later. The rebel Niger Justice Movement (MNJ) said the French were seized to demonstrate to foreign mining companies that the Niger government could not guarantee the security of their operations.

In August 2008, gunmen killed one civilian and wounded another in an attack on a lorry used for transporting uranium from north Niger to a port in Benin.

In 2010 in Arlit, seven employees of Areva and one of its contractors were kidnapped. Four of them, all French nationals, are still being held. The group has repeatedly threatened to execute them in retaliation for the French-led intervention in Mali.

After the 2010 kidnapping, the French government sent special military forces to protect Areva's uranium mines in Niger, supplementing private security companies which mostly employ former military personnel. The use of French military forces to protect commercial interests led to renewed criticisms of French colonialism in Africa.

(France ruled Nigeria as a colony for 60 years, ending in 1960.) In any case, French military forces and Nigerien counter-terrorism units failed to prevent the May 23 attack.

An Areva employee said questions were still being asked as to how the May 23 attack could have happened considering "the impressive military and security apparatus" that was in place. Agoumou Idi, a worker at the mine site, said: "We saw a car enter the factory and immediately it exploded. The terrorists, probably from MUJAO, took advantage of the fact that the entrance gate was open in order to let in a truck carrying the next shift of workers. They used that opening to enter the heart of our factory and explode their vehicle." In addition to attacks and kidnappings, the Arlit mine has been subject to worker disputes. Workers began an openended strike on August 20, 2012 over labour conditions, but the strike ended the following day as negotiations resumed with management over conditions at the mine.

There have also been strikes at the nearby Akokan uranium mine. About 1,200 workers began a 72-hour strike on July 9, 2012 to demand higher wages. A 48-hour strike began on April 18, 2013 to demand the payment of a bonus on the mine's 2012 financial results. In May 2012, the social security tribunal of Melun (France) condemned Areva for the lung cancer death of a former employee of the Akokan mine. The court ordered Areva to pay 200,000 Euros plus interest in damages, and to double the widow's pension. Serge Venel died of lung cancer in July 2009 at the age of 59, after working at the Akokan mine from 1978 to 1985.

#### Ethnic and regional tensions

Areva's operations have exacerbated ethnic and regional tensions within Niger. Uranium production is concentrated in the northern homeland of the nomadic Tuareg minority, who have repeatedly risen in revolt, charging that whatever resources do accrue from the mining operations go primarily to the southern capital of Niamey.

According to the UN human development index, Niger is the third poorest country on the planet, with 70% of the population continuing to live on less than US\$1 a day and life expectancy reaching only 45.

Khadija Sharife wrote in a 2010 *Pambazuka* article: "French interests on the continent were realised through France's postcolonial Africa policy, known as Françafrique, extending to the diplomatic and political echelons of the Elysée from the days of de Gaulle. The policy comprised corporate and intelligence lobbies, multinationals intimately connected to the State such as Elf and Areva, French-backed dictators, and shadow networks named in honour of its masterminds such as Jacques Foccart, de Gaulle's chief Africa advisor who was called out of retirement at age 81 by French President Jacques Chirac to resume activities. Chirac himself would

declare in the early 1990s that the continent 'was not yet ready for democracy.' ... Currently, the Niger's 12,000 armed forces are guided by 15 French military advisors, with Nigerien personnel largely trained, armed and financed by France, protecting five critical defence zones – namely geostrategic routes and mines."

In 2008, international transparency campaigners meeting under the umbrella of the Extractive Industries Transparency Initiative condemned the opaqueness surrounding Nigerien mining contracts and demanded their "full publication in the official gazette and the elimination of confidentiality clauses." Nigerien environmental and civil society groups have also denounced the 'vagueness' of local authorities over numerous uranium and oil prospecting licences granted to foreign firms, including Areva. In May 2008 the Nigerien parliament rejected the creation of a commission of inquiry into mining contracts.

#### Environmental and health impacts

Areva was one of three companies receiving the Prix Pinocchio awards in 2012, in the category "Dirty Hands, Pockets Full" (prix-pinocchio.org). Friends of the Earth France said Areva "refuses to recognise its responsibility for the deterioration of the living conditions of people living near its uranium mines in Africa", a charge that was denied by Areva.

In 2008, Areva received a Public Eye Award as one of "the world's most irresponsible companies" for its uranium mining operations in Niger (publiceye.ch). NGOs the Berne Declaration and Pro Natura alleged: "Uranium mining in Niger: mine workers are not sufficiently informed about health risks, open-air storage of radioactive materials. Workers with cancer are deliberately given a false diagnosis at the company hospital."

Niger's uranium mines have been the subject of many environmental and health controversies including leaks; contamination of water, air and soil; the sale of radioactive scrap metal; the use of radioactive ore to build roads; and poorly managed radioactive tailings dumps.

In November 2009, Greenpeace – in collaboration with the French independent laboratory CRIIRAD (Commission for Independent Research and Information about Radioactivity – criirad.org) and the Nigerien NGO network ROTAB (Network of Organizations for Transparency and Budget Analysis – rotabniger.org) – carried out a scientific study of the areas around the Areva mining towns Arlit and Akokan. The groups found:

• In four of the five water samples that Greenpeace collected in the Arlit region, the uranium concentration was above the WHO recommended limit for drinking water.

- A measurement performed at the police station in Akokan showed a radon concentration in the air three to seven times higher than normal levels in the area.
- The concentration of uranium and other radioactive materials in a soil sample collected near the underground mine was found to be about 100 times higher than normal levels in the region, and higher than the international exemption limits.
- On the streets of Akokan, radiation dose rate levels were found to be up to almost 500 times higher than normal background levels. A person spending less than one hour a day at that location would be exposed to more than the maximum allowable annual dose.
- Although Areva claims no contaminated material gets out
  of the mines anymore, Greenpeace found several pieces
  of radioactive scrap metal on the local market in Arlit,
  with radiation dose rates reaching up to 50 times more
  than the normal background levels. Locals use these
  materials to build their homes.

The pattern seems to be weak environmental and public health standards which are only addressed – partially – when local or international NGO scrutiny embarrasses Areva, or in response to local worker and citizen protests such as the 5,000-strong demonstration in May 2006. Some 2,000 students held a protest in Niger's capital Niamey on April 5, 2013 against Areva to demand their country get a bigger slice of its uranium mining revenues. Marchers held placards saying "No to exploitation and neocolonialism" and "No to Areva". Mahamadou Djibo Samaila, secretary general of the Union of Niamey University Students, said: "The partnership in the mining of uranium is very unbalanced to the detriment of our country."

The Niger Movement for Justice, a largely Tuareg-armed militia active since 2007, has demanded a more equitable distribution of uranium revenue, protection from ecological degradation and access to constitutional rights such as water and waste sanitation, education and electricity.

The government has dismissed the armed civil society movement as anti-democratic 'drug smugglers'. Yet the government has also complained about Areva's behaviour. In 2007, the government expelled Dominique Pin, head of Areva Niger, from the country. In February 2013, President Mahamadou Issoufou said the government intends to renegotiate its partnership with Areva for the exploitation of uranium resources.

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## Dig for secrets: the lesson of Maralinga's Vixen B



Liz Tynan

Occasionally I give guest lectures to undergraduates about Maralinga. In the vast majority of cases, the students have never heard of the place. A small number may have heard the word, but don't know what it means. Most have never heard it at all.

This lack of knowledge about the British nuclear tests in Australia is not surprising. The tests were not part of the national conversation for many years. Although older people remember something about the test series, no-one knows the story of the most secret tests of all, the ones that left the most contamination: Vixen B.

Maralinga is a particularly striking example of what can happen when media are unable to report government activities comprehensively. The media have a responsibility to deal with complex scientific and technological issues that governments may be trying to hide. While Maralinga was an example of extreme secrecy, the same kind of secrecy could at any time be enacted again. The Edward Snowden case has shown what can happen when journalists become complicit in government secrecy, and we have learned the press must be more rigorous in challenging cover-ups. That did not happen during the Maralinga era.

The British nuclear test program was spread over 11 years, from 1952 to 1963, and took place at three locations: the Monte Bello Islands off the coast of Western Australia, and Emu Field and Maralinga in the South Australian desert. A total of 12 "mushroom cloud" bombs were exploded: three at Monte Bello, two at Emu Field and seven at Maralinga.

#### Vixen B

The tests that had more far reaching significance than the 12 major trials, however, were the 12 radiological experiments known as Vixen B that were only held at Maralinga. These experiments used TNT to blow up simulated nuclear warheads containing a long-lasting form of plutonium.

In total, Vixen B scattered 22.2 kg of plutonium-239 around the Maralinga test site known as Taranaki, with some 20kg initially thought to be in the adjacent burial pits and over 2kg dispersed across the test range. Later it was found that rather than the 20kg sitting safely in the 21 Taranaki burial pits that were bulldozed at the time to hold waste material, it was actually spread around the site in particles of widely divergent size.

This form of plutonium has a half-life of over 24,000 years. The extreme persistence of radiation and the threat of cancer posed by inhaling small particles in dust at the site make this substance especially dangerous.

The toxic legacy of Maralinga can almost entirely be summed up in one word: plutonium. When the Maralinga Rehabilitation Technical Advisory Committee (MARTAC) reported in 2002 on the outcome of the operation to remove contamination from the area, co-funded by the British government, it said "Plutonium ... was almost entirely the contaminant that determined the scope of the [Maralinga rehabilitation] program." The site was rehabilitated in the mid to late 1990s, with some UK government funding, although controversies continue about the effectiveness of that remediation.

While the major trials sent clouds of minute particles of debris into the stratosphere (more than 10km above the ground) and spread fallout over most of the continent, the impact of the minor trials was more concentrated, more geographically contained and longer-lasting.

Plutonium oxide from Vixen B shot up between 800 and 1,000 metres into the air, where it was picked up by the wind and carried in plumes that spread northwards from the firing pads in a pattern about 150 kilometres long and many metres wide.

The 1968 Pearce report, prepared by the British physicist Noah Pearce, claimed that the 1967 clean-up operation had placed about 20kg of the 22kg of plutonium into 21 shallow pits adjacent to the Taranaki firing range. In fact, most of the plutonium was later found to be scattered around the site.

MARTAC confirmed that the plutonium contamination at Taranaki, as described by the Pearce report, was wrong by a factor of 10: "A comparison between the levels reported by the UK at the time (Pearce 1968) and the field results reported by the Australian Radiation Laboratory ... (Lokan 1985) demonstrates an underestimate of the plutonium contamination by about an order of magnitude."

The errors perpetuated by the Pearce report resulted in considerable confusion and misinformation about plutonium contamination at Maralinga for many years.

#### Royal Commission

Most people who know anything at all about the British tests usually know that Robert Menzies did not consult Cabinet when he agreed to the first British test, at Monte Bello in 1952. Later, the Australian judge and former federal Labor politician who was to lead the 1984-1985 Royal Commission into the British nuclear tests, Jim McClelland, described Menzies' actions as both "grovelling" and "insouciant". The McClelland Royal Commission came to be described as a spectacle of national revenge.

The output of the contemporary media shows a notably limited understanding of the scientific and technological aspects of the bomb tests, and their political ramifications. This era is an example of exceptionally successful media management, in which the official line presented by the test authorities and both the UK and Australian governments dominated. The 1950s media found themselves incapable of overcoming the high official stone wall.

By the late 1970s a marked change in how the Australian media covered the British nuclear tests was apparent. The Australian media had dropped its Menzies era compliance and was nurturing some resourceful investigative journalists who would not follow the official line.

Political scrutiny also stepped up. Momentum began to build around the time that the left-wing ALP politician and then deputy leader of the opposition Tom Uren asked a question of the Minister for Defence, Jim Killen, in Parliament in December 1976. This question challenged the ongoing Maralinga secrecy, particularly surrounding Vixen B.

Killen was under growing pressure to look more closely at the issue. One of the most significant outcomes was a secret Cabinet submission tabled on 11 September 1978, titled "Plutonium Buried Near Maralinga Airfield". This was not actually plutonium from the Vixen B experiments, but

a significant amount of the substance in barrels of salt from an earlier experiment.

The submission raised a potential security problem: "It would not appear difficult for a small party of determined men who had received information to recover the substance in a single quick operation if they were willing to take large risks to themselves. They could then threaten, say, to exploit the extremely toxic properties of plutonium against the population of a major city."

This secret submission was to become central to the journalistic uncovering of Maralinga that set in motion years of media scrutiny of the legacy of Maralinga. The investigative journalist Brian Toohey ran a series of stories in the *Australian Financial Review* in October 1978, based in part on the leaked Cabinet submission.

Toohey's stories brought the wrath of Defence Minister Killen down on his head. Killen denounced Toohey in Parliament, accusing him and the *Australian Financial Review* of issuing an invitation to terrorists to help themselves to the dangerous material at Maralinga.

Several months before the McClelland Royal Commission began in 1984, Toohey wrote a *National Times* feature that provided a detailed examination of Vixen B, containing information that had, until then, not appeared publicly. Toohey wrote: "It would seem that what the British and Australian authorities described as minor experiments in fact involved the cavalier dispersal of plutonium and have created a far greater health hazard at Maralinga than the full-scale atomic tests."

The landmark *New Scientist* story by Ian Anderson in 1993 was the most significant later era piece of investigative science journalism on Maralinga. The story titled "Britain's dirty deeds at Maralinga" went further than ever before in uncovering the truth of Vixen B. Anderson was the first to show publicly how much plutonium contamination remained at the site and that the true level of contamination had been known by the British authorities but covered up.

What are we to make of the events at Maralinga in the 1950s and 1960s, and particularly the Vixen B tests? Australia was not a nuclear power. It was in a highly ambiguous position – it was the staging ground for nuclear weapons testing but the tests themselves were run with great secrecy and control by another nation, the "mother country" herself. This made Australia, at least initially, curiously powerless and inept in dealing with the tests.

The biggest failure of all was to completely overlook by far the most dangerous tests held at Maralinga, Vixen B. The total secrecy surrounding Vixen B was more for political rather than military or national security reasons, and the British acknowledged later that there was no reason other than political for them not to be held on UK territory. The absence of media coverage and public debate created a gap in most people's understanding of Maralinga, making it in many ways a uniquely tangled national issue, still mysterious and perplexing.

Dr Liz Tynan is a Senior Lecturer in the Graduate Research School at James Cook University, Townsville. This is a longer version of an article published in The Conversation on 26 July 2013.

# Abbott's Indigenous Council: Undermining Aboriginal interests



Kado Muir, Mitch, and Peter Watts.

As the dust starts to settle and Australia reflects on the outcomes of the recent federal election many Aboriginal people have growing concerns over Tony Abbott's new Indigenous Advisory Council and the agenda behind its plans for 'real action for Indigenous Australians'.

The Council appears to be on the road from idea to institution, with scant consultation or consent from Aboriginal and Islander people. In the style that has marked so much of successive governments approaches to our issues the proposed Council is top down and unrepresentative with Tony Abbott and Nigel Scullion being joined at the table by Warren Mundine, Noel Pearson and Marcia Langton.

There may be more Aboriginal 'leaders' involved, but who knows – and that is the whole point. Unlike ATSIC or the newly re-elected National Congress – with all their limitations and flaws – the Indigenous Advisory Council is hand-picked by the politicians, not promoted by our people.

This is not to say that these three individuals do not have things to offer and positive contributions to make. But they do not have a mandate to represent all our views and they hold views about Aboriginal 'development' that are far removed from the lived experience and deeply held aspirations of many Aboriginal people. Particularly in

relation to the role of the State and of the resource sector in the Coalitions new 'open for business' Australia.

In 2012 Marcia Langton outlined her views through the Boyer lecture series titled 'The Quiet Revolution: Indigenous People and the Resources Boom'. Her view that mining is helping to pull Aboriginal people out of poverty was widely promoted through the ABC and Fairfax media. What was less advanced was her connection to the resource sector through the Rio Tinto group and her involvement with the Australian Uranium Association's 'Indigenous Dialogue Group'.

Warren Mundine is not only the co-convenor of the Uranium Association's Indigenous Dialogue Group but is also a Director of the Australian Uranium Association. His views on the nuclear industry are in conflict with those of many in Aboriginal Australia living with the legacy of nuclear testing or actively resisting uranium mining and radioactive waste dumping on their country.

We all want to make things better for our people but there is a real danger in talking about the interests of mining and the need for change in Aboriginal Australia as though they are the same thing. They are not. It doesn't have to be one or the other. We three and many people – do not believe that mining is in the best interest for our families, the long

term health of our country or will stop the suicides, alcohol abuse, violence, or raise the level of education and access to health services.

If mining meant these things then the Aboriginal communities of the Pilbara would have a very different set of social indicators than the current ones.

Mining is not a panacea for addressing the social, cultural and economic disadvantage of Aboriginal people. The resource sector does have a role and a responsibility to address issues and improve outcomes in areas where it operates but governments must be held to account to meet their responsibility to provide the roads, schools, housing, health services and other infrastructure that people in cities and towns take for granted.

Basic citizenship entitlements - hard won by our predecessors following the historic 1967 referendum - should never be tied to or traded around proximity and access to a mineral deposit.

Mining is neither a new development nor a new answer to old problems. Mining has been around for hundreds of years. Look at Aboriginal life in Australia's mining regions around Roeborne, Port Hedland and Port Augusta. Spend a couple of days out at Laverton, go talk to the folks at the missions in Kalgoorlie and tell us mining is pulling Aboriginal people out of poverty or reducing the rates of kidney disease and cancers. Look at the youth suicide rates, our people's lack of representation in Parliaments and over representation in prisons. It's not as simple as saying mining will pull us out of poverty, stop the welfare dependence and 'save us'. It hasn't done it in the last 200 years of occupation and excavation.

Even in 2013 community development is at the front end of mining, particularly during approvals and heritage clearance. But as soon as the commodity price drops or costs increase it is the community development budget that is cut. After the first round of flash cars and payments once the digging begins life too often becomes reduced to footy carnivals, training programs, a couple of cleaning jobs – and high profile pictures in the company's annual report.

The establishment of the Indigenous Advisory Council, two thirds of who are directly aligned with the controversial uranium industry does not bode well for advancing a mature conversation around and action on the problems of Aboriginal inequality and disadvantage. At the very least there should be a diversity of communities with a diversity of views represented.

You can't have your yellowcake and eat it too: the members of the Indigenous Advisory Council should declare their interests and stand down from their involvement with either the Council or the Australian Uranium Association.

Kado Muir, Mitch and Peter Watts are 2012–13 co-chairs of the Australia Nuclear Free Alliance (anfa.org.au). An edited version of this article was published in the Koori Mail, 30 September 2013.



### Date set for court case over Muckaty nuclear waste dump

A date has been set in the Federal Court case of Aboriginal traditional owners fighting plans to use their land as a nuclear waste dump. The site on Muckaty Station near Tennant Creek in the NT is the federal government's preferred site for Australia's first radioactive waste facility.

Beyond Nuclear Initiative spokeswoman Natalie Wasley says the month-long trial has been listed for June 2014. "After eight years that's a big relief for traditional owners and the community who have had this nuclear cloud hanging over their heads," she said.

Australia's peak trade union body the ACTU has joined Muckaty Traditional Owners, Unions NT, Public Health Association of Australia, Medical Association for the Prevention of War and national and NT environmental organisations in the call to dump the dump.

ACTU President Ged Kearney said unions had adopted a policy at last year's ACTU Congress to oppose a nuclear waste dump in the Northern Territory. "We stand in solidarity with the traditional owners and communities and with environmental groups resisting federal government plans for a radioactive waste dump," Kearney said. "We reject any legislation which would continue to target a site on the Muckaty Land Trust or any other site in Australia, for a nuclear waste dump that is not based on recognised science and international best practices."

### Australia's Nuclear Shame, Part I:

# Undermining the South Pacific Nuclear Weapons Free Zone

Declassified documents from the National Archives of Australia, and US diplomatic cables published by WikiLeaks, highlight longstanding opposition in Canberra and Washington to a comprehensive nuclear-free zone that might constrain US nuclear deployments in the Pacific.

This saga is detailed in a recent article by Nic Maclellan, who works as a journalist with Islands Business magazine (Fiji) and other Pacific media, and is co-author of three books on nuclear testing in the South Pacific.

The South Pacific Nuclear Free Zone (SPNFZ) Treaty was finally negotiated in the 1980s after decades of campaigning by unions, Pacific churches and the Nuclear Free and Independent Pacific movement.

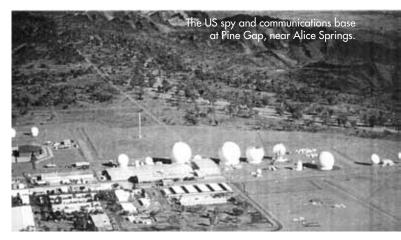
Under the Treaty, member countries in the zone commit never to develop nuclear weapons. Under three protocols, nuclear weapons states with territories in the zone (France, Britain and the US) agree to apply the treaty to their territories. In accepting the protocols, all nuclear weapons powers also undertake not to use or threaten to use any nuclear device against countries in the zone, and not to test nuclear bombs in the zone.

Russia and China signed the protocols in 1986 and 1987 respectively, pledging not to store or test nuclear weapons in the region or use them against Australia, New Zealand or island nations. France, Britain and the US refused to sign the treaty protocols until March 1996 (after a series of French nuclear bomb tests in the Pacific), and even now the US refuses to ratify its signature by passing legislation through the US Senate.

The delay reflects longstanding US opposition to limits on its nuclear deployments in the region. US diplomatic cables published by WikiLeaks show Washington's opposition to the SPNFZ dating back to the 1970s.

US cables from September 1975 show that Gough Whitlam supported the proposal in public but privately told the US Embassy that he only did so because he "feels obliged to give token support" to a "beleaguered" NZ government. The Fraser government did nothing to progress Treaty negotiations from 1975–83.

The Hawke Labor government revived the concept of a nuclear free zone at the 1983 South Pacific Forum leaders meeting in Canberra. However the Hawke government was duplicitous as Nic Maclellan writes: "[D]eclassified documents from the National Archives of Australia, including the 1985 Cabinet minute about the SPNFZ Treaty, show clearly that Australia designed the treaty to protect US interests in the Pacific, including the deployment of nuclear-armed warships and the testing of nuclear missiles. ... At the time, the Hawke government was embroiled in debate over



a US proposal to test-fire two MX inter-continental ballistic missiles into Pacific waters east of Tasmania."

Australia fought to retain the option to provide assistance in the manufacture or acquisition of nuclear weapons – and fought against draft Treaty text which would complicate or preclude that option. Canberra wasn't prepared to stop the export of uranium from Australia to nuclear weapons states.

Maclellan notes that those decisions during the 1980s have important implications today, at a time when Australia is proposing to sell uranium to India, a country that has refused to sign the Nuclear Non-Proliferation Treaty. He writes:

"International legal experts, including Don Rothwell, professor of international law at the Australian National University, have raised concerns that uranium sales to India would breach Australia's obligations under the treaty. Rothwell has prepared a legal opinion stating that the SPNFZ Treaty prohibits members from selling uranium to countries that do not accept full-scope nuclear safeguards under the Nuclear Non-Proliferation Treaty.

"This is consistent with past Australian government policy. In 1996, Australian foreign minister Alexander Downer observed that 'Article 4(a) of the SPNFZ Treaty imposes a legal obligation not to provide nuclear material unless subject to the safeguards required by Article III.1 of the NPT; that is full scope safeguards.'

"In spite of this, the Gillard government commenced discussions on uranium sales to India in 2012, even though Delhi still refuses to open its nuclear facilities - civilian as well as military - to international inspectors, as required by the Nuclear Non-Proliferation Treaty."

Nic Maclellan, 27 August 2013, 'Delaying the nuclear-free zone in the Pacific',

http://inside.org.au/delaying-the-nuclear-free-zone-in-the-pacific or tinyurl.com/nic-macl

### Australia's Nuclear Shame, Part II:

# Undermining the Nuclear Non-Proliferation Treaty

Dave Sweeney

August 2013 – Sixty-eight years ago this week our world changed forever – and tens of thousands of lives instantly ended – when the atomic bomb was unveiled. The destruction of the Japanese cities of Hiroshima (6 August) and Nagasaki (9 August) in 1945 heralded the end of the Second World War and the beginning of the nuclear age.

It is a long way from Hiroshima in 1945 to election mode Canberra in 2013, but lessons learned and actions taken to stop the chance of further nuclear threats are being forgotten in the rush to advance risky Australian uranium sales.

In December 2011, the Labor Party narrowly voted to overturn a long standing ban on the sale of uranium to countries that had not signed the Nuclear Non-Proliferation Treaty (NPT) — the world's main check and balance on the spread of the world's worst weapons.

Labor's backflip was designed to allow uranium sales to India, a nuclear weapon state that has consistently refused to sign the NPT. The move was condemned by the Australian Greens but enthusiastically welcomed by the Coalition, which paved the way with its August 2007 decision to support uranium sales to India and is an active supporter of an expanded uranium sector.

But the controversial sales plan is in clear conflict with Australia's obligations under the South Pacific Nuclear Weapons Free Zone Treaty – also known as the Treaty of Rarotonga – and is putting Australia on a collision course with our Pacific neighbours.

Professor of International Law at ANU, Professor Donald Rothwell, has examined the treaty and the planned sale deal and concluded 'Australia is obligated under the Treaty of Rarotonga to not provide India with nuclear materials until such time as India has concluded a full-scope safeguards agreement.'

The Treaty, signed 28 eight years ago this week in the Cook Islands, bans the use, testing and possession of nuclear weapons within the South Pacific region and places constraints on non-military nuclear activities, including the export of uranium. The Treaty sent a clear and important message to those nuclear weapons states that saw the Pacific as an easy testing ground. It remains relevant and important today, but is now under direct threat from the atomic ambitions of Australian politicians and miners.

The Treaty of Rarotonga clearly makes any uranium sales conditional on the receiver nation agreeing to comprehensive or 'full-scope' nuclear safeguards — that is, the nation receiving the uranium must open up all of its nuclear facilities to inspections by the International Atomic Energy Agency (IAEA).

India has declared some of its nuclear facilities to be 'civilian' and others 'military', with a number of its civilian facilities now open to the IAEA. But India retains extensive restrictions on international and independent access to its nuclear facilities and its approach in no way meets the requirements of comprehensive safeguards, posing a radioactive risk for the planet and a legal and policy headache for Australian uranium producers and promoters.

The Department of Foreign Affairs and Trade officials currently developing a nuclear cooperation and sales treaty with their Indian counterparts are tight-lipped about the yawning gap between Australia's uranium ambitions and nuclear obligations. For its part, India has made it clear that while it will continue developing and deploying nuclear weapons it will not accept full-scope safeguards on its nuclear facilities.

Proponents of the sales deal claim that earlier Indian recognition in a nuclear deal brokered with the United States mean changed circumstances and new rules, but the US-India deal has seen India accept only limited IAEA safeguards and in no way reduces Australia's obligations under the Treaty of Rarotonga.

As home to around 35 per cent of the world's uranium, the decisions Australia makes and the positions Australia takes matter. Uranium is a dual use fuel – it can be used to power reactors or weapons – and the distinction between the civil and military nuclear sectors is often more psychological and semantic than real.

In the week that sees the anniversary of the both the bombings of Hiroshima and Nagasaki and the signing of the Treaty of Rarotonga and in the shadow of Fukushima – a continuing nuclear crisis directly fuelled by Australian uranium – it is time for Australia – and Australian politicians – to choose. Do we advance the self-interest of the high risk, low return uranium mining sector or are we a nation with the capacity to reflect on the past, respect the future and honour our international commitments?

Dave Sweeney is nuclear free campaigner at the Australian Conservation Foundation.

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# Undermining nuclear disarmament diplomacy

Documents obtained by the International Campaign to Abolish Nuclear Weapons (ICAN) in August through freedom of information reveal that the Gillard government refused to endorse an 80-nation statement delivered at this year's Non-Proliferation Treaty meeting in Geneva because it referred to a Red Cross resolution with which Australia fundamentally disagrees, and because it had concerns that the statement was designed to build support for a ban on nuclear weapons.

The declassified diplomatic cables, ministerial briefings and foreign ministry emails show that Australia's opposition to the landmark Red Cross resolution – adopted by the international movement in November 2011 – prompted Australian Red Cross chief executive officer Robert Tickner to seek an explanation from then foreign minister Bob Carr, who responded to his letter but deliberately withheld information about Australia's true position. Foreign ministry official Caroline Millar was fearful that to do so would "add oxygen" to the issue.

Former prime minister Malcolm Fraser and former foreign minister Gareth Evans were critical of Australia's decision not to endorse the humanitarian statement. Responding to a letter from Mr Fraser, then prime minister Julia Gillard explained that Australia did not support it because "a push for a nearterm ban on nuclear weapons formed part of the context of the statement's intention". Canberra is opposed to any moves to delegitimise the use or possession of nuclear weapons.

Canberra considers a ban on nuclear weapons to be incompatible with its continued reliance on US "extended nuclear deterrence", which it claims "has provided security and stability in our region for more than 60 years and [has] underpinned regional prosperity". Australia now hopes to steer other nations away from pursuing a ban on nuclear weapons, the documents reveal.

Tim Wright, Australian director of ICAN, said: "We were disappointed to learn that Australia plans to undermine the work of progressive nations and non-government organisations to advance a global ban on nuclear weapons. It should instead be driving international efforts for such a treaty. Despite their enormous destructive potential, nuclear weapons are the only weapons of mass destruction not yet subject to a total ban.

"Australia cannot credibly advocate nuclear disarmament while claiming that US nuclear weapons guarantee our security and prosperity. Not only is this a ludicrous notion; it is also a dangerous one because it signals to other nations that nuclear weapons are useful and necessary," Wright added. "It is now clear that the Rudd and Gillard governments were interested only in maintaining the status quo of disarmament inaction. The Abbott government



should join the vast majority of nations, and the Red Cross, in rejecting nuclear weapons for all."

In February 2014 the Mexican government will host a major conference on the humanitarian impact of nuclear weapons, which is likely to be the first major test of the new Australian government's commitment to nuclear disarmament. ICAN is encouraging the foreign ministry to report on the human toll of British nuclear testing in South Australia and Western Australia in the 1950s and 1960s, and to commission research on the effects of a regional nuclear war in Asia Pacific on the global climate and agricultural production.

"This would contribute to the evidence base key to informing policy choices about nuclear weapons and their elimination," said Dr Bill Williams, who chairs ICAN in Australia. "The most startling new scientific evidence in relation to the effects of nuclear weapons is the severe, prolonged and global cooling, drying and darkening that would be caused by the millions of tons of soot and smoke injected into the upper atmosphere following the use of even a tiny fraction of the world's nuclear weapons."

Gem Romuld, ICAN outreach coordinator in Australia, is encouraging more humanitarian and environmental organisations in Australia to adopt nuclear disarmament as part of their work, in the same way that Australian Red Cross has done. "Banning nuclear weapons is everyone's responsibility," she said. "The general public need to take nuclear weapons personally and insist that the Australian government take stock and get real on abolishing these weapons of mass destruction."

#### Sources:

International Campaign to Abolish Nuclear Weapons, media release.

Philip Dorling, 2 October 2013, 'ALP nuclear backflip linked to US defence', Sydney Morning Herald, tinyurl.com/dorling-smb



# Understanding the Science of Climate Change

A Short Introduction to Climate Change Tony Eggleton 2013, 248pp, paperback Cambridge University Press, Melbourne \$39.95

ISBN: 9781107618763 Also available as an eBook

Review by David Teather

Type "climate change" into your search engine. Pandora's box opens. Who or what to believe? But the climate is an observable phenomenon. It's been the subject of sustained scientific enquiry for decades. What have scientists really learned about the earth's climate?

After a working life as a geology academic specialising in the weathering of rocks, Emeritus Professor Tony Eggleton, of the Australian National University, approached climate change with an open mind. He wrote this book as a retirement project, and organised his enquiry around key questions: What can change the climate? How has the climate changed in the past? Is the climate changing now? And, if the climate is changing now, is the rate of change normal? What's causing this change? What can be done about it?

Searching for answers, Eggleton takes us on a guided tour through many topics: seasonal changes in animals and plants; temperature records and their accuracy; records of rainfall, storms, droughts and floods; behaviour of mountain glaciers, arctic permafrost, polar sea-ice and icecaps; storage of heat in the oceans; sea level; ocean acidity; geological evidence of temperatures and chemical composition of the atmosphere over millions of years; chemical and physical properties of greenhouse gasses; solar radiation, sunspots and much more. Along the way we get fascinating insights into how scientists work, and why they have confidence in what they know.

As the book develops, the author summarises the "work in progress" that we accept as scientific knowledge. The evidence is inescapable. Not only is the earth's climate getting hotter, but the distribution of rainfall is changing, polar ice is melting, sea level is rising and the oceans are becoming more acidic.

Eggleton found that many factors can initiate and contribute to climate change, and have in past ages done

so. But the climate is now changing much faster than at any time during the last two million years (when *Homo sapiens* first appeared). This exceptionally rapid change is due to a single cause: the emission of greenhouse gasses (primarily carbon dioxide, but also methane) resulting from human activity (primarily burning fossil fuels, but also clearing forests and manufacturing concrete!)

Eggleton searched diligently for scientific evidence and theory that might support contrary views. As a distinguished scientist, he knows what to look for and where to look. He was shocked to find nothing of substance, and demonstrates that the case espoused by those who deny climate change is flimsy indeed. It's puffed up by mass media that thrive by reporting conflict, and supported by those with vested interest in maintaining the status quo.

Returning to the science, Eggleton concludes that global warming risks triggering changes likely to exacerbate the problem to catastrophic proportions: for example, by releasing very large quantities of greenhouse gasses trapped in undersea sediments; and also by melting sea-ice and polar icecaps thereby lowering the reflectivity of the earth's surface which then absorbs more of the sun's heat (rather than reflecting it back into space).

What's to be done? The task is to reduce the concentration of greenhouse gasses in the earth's atmosphere. This means reducing emissions, quickly and safely, taking into account both the risks of climate change and risks inherent in further human intervention in natural systems. The author mentions alternative energy, carbon sequestration and geo-engineering, but reminds us that economics and public policy are outside the scope of his book. For insights on climate change from these perspectives, see "A Blueprint for a Safer Planet" by Nicholas Stern (published in 2009 by The Bodley Head), and Robert Manne's recent article in The Guardian (tinyurl.com/manne-guardian).

Tony Eggleton provides an engaging and expertly informed account of the science of climate change. He gives much-needed coherence to this important and multi-faceted subject. His book deserves a place in every public library, and in libraries of secondary schools, technical institutes, polytechnics and universities. It sits neatly between short summaries, such as "The Science of Climate Change: Questions and Answers" (published in 2010 by the Australian Academy of Science and available at www. science.org.au), and longer works like John Houghton's "Global Warming: The Complete Briefing" (4th edition, 2009, Cambridge University Press).

## Global Warming, Militarism and Nonviolence

Global Warming, Militarism and Nonviolence: The Art of Active Resistance

Marty Branagan

Palgrave Macmillan

June 2013

Hardback

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272 pages

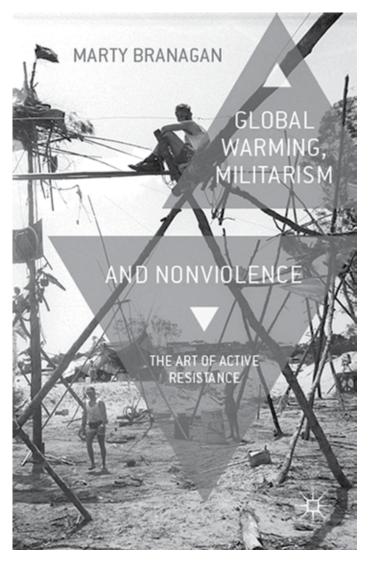
Available from Amazon (tinyurl.com/marty-bran)

Militarism is the elephant in the room of global warming. Of all government sectors, 'Defence' has the highest carbon footprint and expenditure, yet has largely been exempt from international scrutiny and regulation. Marty Branagan uses Australian and international case studies to show that nonviolence is a viable alternative to militarism for national defence and regime change.

'Active resistance', initiated in Australian environmental blockades and now adopted globally, makes the song 'We Shall Not Be Moved' much more realistic, as activists erect tripod villages, bury, chain and cement themselves into the ground, and 'lock-on' to machinery and gates. Active resistance, 'artistic activism', and use of new information and communication technologies in movements such as the Arab Spring and 'Occupy' demonstrate that nonviolence is an effective, evolving praxis.

Michael Allen Fox, Queen's University, Canada, writes: "Marty Branagan's book is the first in the field of peace studies that links anthropogenic climate change with the staggering worldwide costs of war-preparedness. His spirited defence of nonviolence as an alternative to militarism is not only well-supported by historical and contemporary examples, but also features original perspectives on creative forms of activism and on contributions to the repertoire of peaceful methods for social and political change that have been contributed by campaigns in Australia and elsewhere. This is a very worthwhile addition to the literature on nonviolence by an author who is both a scholar and an activist drawing on personal experience."

Ariel Salleh, scholar and activist, editor of Eco-Sufficiency and Global Justice, writes: "This is the most accessible and lively introduction to contemporary politics I've read. It's also a 'how to' book about making social change. Global Warming, Militarism and Nonviolence will leave you with a natural high. At once



visionary, empowering, and practical, we need to get a copy into the hands of every student, activist, and politician, without delay."

Frank Hutchinson, Tamkang University, Tapei, writes: "A particular feature of the work is that it challenges both fatalism and conventional ideas about power. Valuable local and international case studies are offered of the art of active nonviolent resistance to feared environmental futures. This work is strongly recommended for both its theoretical and practical insights."

Ralph Summy, Sydney University, writes: "This book is more than an important study of nonviolence; it is a call to action against militarism. There are many reasons why a democracy would want to curb the influence of its military. Marty Branagan highlights one of the most important – the fact that the military-industrial complex is the primary polluter of our planet. His object is not only to identify the problem of militarism and its effect on climate change, but to replace it with the realistic alternative of three major types of nonviolent action. Labeled 'active resistance', 'conflict resolution', and 'artistic activism', their theoretical viability is cogently argued and their strengths and weaknesses are demonstrated from past cases. Violence turns out to be a choice, not a fate."

Marty Branagan is Lecturer in Peace Studies at the University of New England. He coordinates the Master of Environmental Advocacy degree and annual Nonviolence Film Festival at the university.

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