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Monitored this issue:

Radioactive racism and Australia's 'ecomodernists'

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The plan to turn South Australia (SA) into the world's nuclear waste dump has lost momentum since 2016 though it continues to be promoted by some politicians, the Business SA lobby group, and an assortment of individuals and lobbyists including self-styled pro-nuclear environmentalists or 'ecomodernists'.

In its 2016 report, the SA Nuclear Fuel Cycle Royal Commission established by the state government strongly promoted a plan to import 138,000 tonnes of high-level nuclear waste (about one-third of the world's total) and 390,000 cubic metres of intermediate-level waste.[1] The state Labor government then spent millions on a state-wide promotional campaign under the guide of consultation. The government also initiated a Citizens' Jury process. However two-thirds of the 350-member Citizens' Jury rejected the waste import proposal "under any circumstances" in their November 2016 report.[2]

The Jury's verdict was non-binding but it took the wind out of the dumpsters' sails. Shortly after the Jury reported, the SA Liberal Party – then in opposition and now in government – announced that it would campaign against the waste import plan. Despite the relentless, dishonest promotion of the plan by the state government and the Murdoch press, public opinion in SA was clearly against it.[3]

A key factor in the Jury's rejection of the waste import plan was that Aboriginal people had spoken clearly in opposition.[4] The Jury's report said: "There is a lack of aboriginal consent. We believe that the government should accept that the Elders have said NO and stop ignoring their opinions. The aboriginal people of South Australia (and Australia) continue to be neglected and ignored by all levels of government instead of respected and treated as equals."[2]

The respect shown by the Citizens' Jury to Aboriginal Traditional Owners had been conspicuously in the debate until then. SA Premier Jay Weatherill (ousted in the March 2018 state election) said in 2015: "We have a specific mandate to consult with Aboriginal communities and there are great sensitivities here. I mean we've had the use and abuse of the lands of the Maralinga Tjarutja people by the British when they tested their atomic weapons."[5]

However, the SA government's handling of the Royal Commission process systematically disenfranchised Aboriginal people from the start. The truncated timeline for providing feedback on draft Terms of Reference disadvantaged people in remote regions, people with little or no access to email and the internet, and people for whom English is a second language. There was no translation of the draft Terms of Reference, and a regional communications and engagement strategy was not developed or implemented by the SA government.

The Royal Commission

Royal Commissioner Kevin Scarce – a retired Navy officer – didn't appoint a single Aboriginal person to the staff of the Royal Commission or to the Expert Advisory Committee.

Aboriginal people repeatedly expressed frustration with the Royal Commission process. One example was the submission of the Anggumathanha Camp Law Mob (Adnyamathanha Traditional Owners):[6]

"Why we are not satisfied with the way this Royal Commission has been conducted:

Yaiinidlha Udnyu ngawarla wanggaanggu, wanhanga Yura Ngawarla wanggaanggu? – always in English, where's the Yura Ngawarla (our first language)?

"The issues of engagement are many. To date we have found the process of engagement used by the Royal Commission to be very off putting as it's been run in a real Udnyu (whitefella) way. Timelines are short, information is hard to access, there is no interpreter service available, and the meetings have been very poorly advertised. ... A closed and secretive approach makes engagement difficult for the average person on the street, and near impossible for Aboriginal people to participate."

In mid-2016 Tauto Sansbury, Chairperson of the SA Aboriginal Congress, said: "In our second meeting with Commissioner Scarce we had 27 Native Title groups from all around South Australia. We had a vote on it. And it was unanimous that the vote said 'no we don't want it'. It was absolutely unanimous. Commissioner Scarce said 'well maybe I'm talking to the wrong people' and we said 'well what other people are you going to talk to? We're Native Title claimants, we're Native Title Traditional Owners from all over this country ... so who else are you going to pluck out of the air to talk to ... we've stuck to our guns and we still totally oppose it. That's every Native Title group in South Australia'."[7]

The Royal Commission acknowledged Aboriginal opposition to its nuclear waste import plan – but it treated that opposition not as a red light but as an obstacle to be circumvented. The Commission opted out of the debate regarding land rights and heritage protections for Aboriginal people, stating in its report: "Although a systematic analysis was beyond the scope of the Commission, it has heard criticisms of the heritage protection framework, particularly the consultative provisions." [1]

Such an analysis wasn't "beyond the scope of the Commission" – it ought to have been core business. The terms of reference specifically directed the Commission to consider potential impacts on "regional, remote and Aboriginal communities" and to consider "lessons learned from past … practices".

Adnyamathanha Traditional Owner Regina McKenzie (centre) with friends.

Despite its acknowledgement that it had not systematically analysed the matter, the Royal Commission nevertheless arrived at unequivocal, favourable conclusions, asserting that there "are frameworks for securing long-term agreements with rights holders in South Australia, including Aboriginal communities" and these "provide a sophisticated foundation for securing agreements with rights holders and host communities regarding the siting and establishment of facilities for the management of used fuel."[1]

Such statements were conspicuously absent in submissions from Aboriginal people and organisations. There is in fact an abundance of evidence that land rights and heritage protection frameworks are anything but "sophisticated."[8] For example, the SA Aboriginal Heritage Act 1988 provides feeble rights and protections at the best of times, but it does not apply to the Olympic Dam copper/uranium mine.[8] The mine must partially comply with an old (1979) version of the Act. Or at least, the mine *might* have to comply with the 1979 version of the Act but that it is doubt since the 1979 Act was never proclaimed and has dubious legal standing. The legislation governing the Olympic Dam mine – the Roxby Downs Indenture Act – was amended in 2011. A perfect opportunity to do away with the mine's exemptions from the Aboriginal Heritage Act. But the state Labor government failed to consult Traditional Owners and enshrined the exemptions in the amended legislation. Asked to justify that decision, a government MP said in state Parliament: "BHP were satisfied with the current arrangements and insisted on the continuation of these arrangements, and the Government did not consult further than that."[9]

Enter the ecomodernists

No-one was surprised by the racism of the Royal Commission, given its origins and constitution. Australians are not surprised by the racism of the major political parties – the Australian Labor Party and the Liberal/National Coalition.[8]

And perhaps we shouldn't be surprised by the behaviour and attitudes of Australia's self-styled pro-nuclear 'ecomodernists'.

Ben Heard – whose so-called environment group 'Bright New World' accepts secret corporate donations – said the Royal Commission's findings were "robust".[10] Seriously? Failing to conduct a systematic analysis, or any analysis whatsoever, but nevertheless concluding that a "sophisticated foundation" exists for securing agreements with Aboriginal rights-holders ... that's robust? Likewise, academic Barry Brook – best-known for promoting a bogus Outstanding Scientist award and insisting that there was no credible risk of a serious accident at Fukushima even as nuclear meltdowns were in full swing[11] – said he was "impressed with the systematic and ruthlessly evidence-based approach the [Royal Commission] team took to evaluating all issues."[12]

In a November 2016 article about the nuclear waste import plan, Ben Heard and Oscar Archer wrote: "We also note and respect the clear message from nearly all traditional owner groups in South Australia that there is no consent to proceed on their lands. We have been active from the beginning to shine a light on pathways that make no such imposition on remote lands."[13]

In Heard's imagination, the imported spent nuclear fuel (calling it waste is an "appalling misnomer"[14]) would not be dumped on the land of unwilling Aboriginal communities, it would be processed for use as fuel in non-existent Generation IV 'integral fast reactors'.

Heard claims his imaginary Generation IV reactor scenario "circumvents the substantial challenge of social consent for deep geological repositories, facilities that are likely to be best located, on a technical basis, on lands of importance to Aboriginal Australians".[14]

But even in Heard's scenario, only a tiny fraction of the imported spent fuel would be converted to fuel for imaginary reactors (in one of his configurations, 60,000 tonnes would be imported but only 4,000 tonnes converted to fuel). Most of it would be stored indefinitely, or dumped on the land of unwilling Aboriginal communities. Some might be converted to fuel for export to countries that, like Australia, don't have any of these imaginary 'integral fast reactors'!

Heard acknowledges that even with his imaginary reactors, "some form of disposal is necessary" for relatively short-lived radionuclides.[10] He fails to note that his proposal would also generate long-lived intermediate-level waste destined for deep underground disposal. UC Berkeley nuclear engineer Prof. Per Peterson notes: "Even integral fast reactors (IFRs), which recycle most of their waste, leave behind materials that have been contaminated by transuranic elements and so cannot avoid the need to develop deep geologic disposal."[15]

Heard says he "respects" the opposition of Traditional Owners to the waste import plan, but that respect appears to be superficial at best. Indeed one of his responses to the overwhelming opposition of Traditional Owners was to organise an 'open letter' promoting the waste import plan which was endorsed by 'prominent' South Australians, i.e. rich, non-Aboriginal people.[16]

One of the reasons to pursue the waste import plan cited in Heard's open letter is that it would provide an "opportunity to engage meaningfully and partner with Aboriginal communities in project planning and delivery". Evidently Heard believes that Aboriginal

people's opposition to the waste import plan ought to be overridden but they might be given a say in project planning and delivery.

A second version of the open letter cited the "successful community consultation program" with Aboriginal communities.[17] But the report arising from the SA government's community consultation program (successful or otherwise) stated: "Many [Aboriginal] participants expressed concern about the potential negative impacts on their culture and the long-term, generational consequences of increasing the state's participation in the nuclear fuel cycle. There was a significant lack of support for the government to continue pursuing any form of nuclear storage and disposal facilities. Some Aboriginal people indicated that they are interested in learning more and continuing the conversation, but these were few in number."[3]

Geoff Russell[18], another self-styled pro-nuclear environmentalist, wrote in a November 2016 article:[19]

"Have Aboriginals given any reasons for opposing a waste repository that are other than religious? If so, then they belong with other objections. If not, then they deserve the same treatment as any other religious objections. Listen politely and move on.

"Calling them spiritual rather than religious makes no difference. To give such objections standing in the debate over a repository is a fundamental violation of the separation of church and state, or as I prefer to put it, the separation of mumbo-jumbo and evidence based reasoning.

"Aboriginals have native title over various parts of Australia and their right to determine what happens on that land is and should be quite different from rights with regard to other land. This isn't about their rights on that land.

"Suppose somebody wants to build a large intensive piggery. Should we consult Aboriginals in some other part of the country? Should those in the Kimberley perhaps be consulted? No.

"They may object to it in the same way I would, but they have no special rights in the matter. They have no right to spiritual veto."

Where to begin? Why should Russell's beliefs be privileged over the beliefs of Aboriginal people? His description of Aboriginal spiritual beliefs as "mumbo-jumbo" is beyond offensive. Federal native title legislation provides limited rights and protections for some Traditional Owners – and no rights and protections for many others (when the federal Coalition government was trying to impose a national nuclear waste dump on Aboriginal land in SA in 2003, it abolished all native title rights and interests over the site). Russell's claim that Traditional Owners are speaking for other people's country is a fabrication.

National nuclear waste dump

The attitudes of the ecomodernists also extend to the debate over the siting of a proposed national nuclear waste dump. Silence from the ecomodernists when the federal government was passing laws allowing the imposition of a national nuclear waste dump in the Northern Territory without consent from Traditional Owners. Worse still, echoing comments from the right-wing Liberal Party[20], Brook and Heard said the site in the Northern Territory was in the "middle of nowhere".[21] From their perspective, perhaps, but for Traditional Owners the site is in the middle of their homelands.

Heard claims that one of the current proposed dump sites, in SA's Flinders Ranges, is "excellent" in many respects and it "was volunteered by the landowner".[22] In fact, it was volunteered by absentee landlord and former Liberal Party politician Grant Chapman, who didn't bother to consult Adnyamathanha Traditional Owners living on the neighbouring Indigenous Protected Area.[23] The site is opposed by most Adnyamathanha Traditional Owners and by their representative body, the Adnyamathanha Traditional Lands Association (ATLA). The April 2018 ATLA Annual General Meeting passed this resolution: "The Adnyamathanha Traditional Lands Association remains totally opposed to the nuclear waste dump at Wallerberdina. This is our land, our culture and we must have veto over this toxic waste being dumped in our country. *Udnyus* come and go but we will be here forever. We say NO to the waste dump, for our grandchildren and their grandchildren and many generations to come."[24]

Heard claims there are "no known cultural heritage issues" affecting the Flinders Ranges site.[22] Try telling that to the Adnyamathanha Traditional Owners who live on Yappala Station, in the Indigenous Protected Area[25] adjacent to the proposed dump site. The area has many archaeological and culturally-significant sites that Traditional Owners have registered with the SA government over the past decade.[26] Two Adnyamathanha associations – Viliwarinha Aboriginal Corporation and the Anggumathanha Camp Law Mob – wrote in a November 2015 statement: "The whole area is Adnyamathanha land. It is *Arngurla Yarta* (spiritual land). The proposed dump site has springs. It also has ancient mound springs. It has countless thousands of Aboriginal artefects. Our ancestors are buried there. Hookina Creek that runs along the nominated site is a significant women's site. It is a registered heritage site and must be preserved and protected."[27]

So where did Heard get this idea that there are "no known cultural heritage issues on the site"? Not from visiting the site, or speaking to Traditional Owners. He's just parroting the federal government's racist lies.

Silence from the ecomodernists about the crudely racist National Radioactive Waste Management Act (NRWMA) which dispossesses and disempowers Traditional Owners in every way imaginable.[28] The nomination of a site for a radioactive waste dump is valid even if Aboriginal owners were not consulted and did not give consent. The NRWMA has sections which nullify State or Territory laws that protect archaeological or heritage values, including those which relate to Indigenous traditions. The NRWMA curtails the application of Commonwealth laws including the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 and the Native Title Act 1993 in the important site-selection stage. The Native Title Act 1993 is expressly overridden in relation to land acquisition for a radioactive waste dump.

Uranium mining

Silence from the ecomodernists about the Olympic Dam mine's exemptions from provisions of the SA Aboriginal Heritage Act.[8]

Silence from the ecomodernists about sub-section 40(6) of the Commonwealth's Aboriginal Land Rights Act, which exempts the Ranger uranium mine in the Northern Territory from the Act and thus removed the right of veto that Mirarr Traditional Owners would otherwise have enjoyed.[29]

Silence from the ecomodernists about the divide-and-rule tactics used by General Atomics' subsidiary Heathgate Resources against Adnyamathanha Traditional Owners in relation to the Beverley and Four Mile uranium mines in SA.[8,30]

Adnyamathanha Traditional Owner Dr Jillian Marsh, who in 2010 completed a PhD thesis[30] on the strongly contested approval of the Beverley mine, puts the nuclear debates in a broader context: "The First Nations people of Australia have been bullied and pushed around, forcibly removed from their families and their country, denied access and the right to care for their own land for over 200 years. Our health and wellbeing compares with third world countries, our people crowd the jails. Nobody wants toxic waste in their back yard, this is true the world over. We stand in solidarity with people across this country and across the globe who want sustainable futures for communities, we will not be moved."[31]

Now, Traditional Owners have to fight industry, government, and the ecomodernists as well.

References:

1. Nuclear Fuel Cycle Royal Commission Report, May 2016, http://yoursay.sa.gov.au/system/NFCRC_Final_Report_Web.pdf
2. South Australia's Citizens' Jury on Nuclear Waste Final Report, Nov 2016, http://assets.yoursay.sa.gov.au/production/2016/11/06/07/20/56/26b5d85c-5e33-48a9-8eea-4c860386024f/final%20jury%20report.pdf
3. Nuclear Fuel Cycle Royal Commission Consultation and Response Agency, Nov 2016, 'Community Views Report', p.9, http://assets.yoursay.sa.gov.au/production/2016/11/11/09/37/34/0c1d5954-9f04-4e50-9d95-ca3bfb7d1227/NFCRC%20CARA%20Community%20Views%20Report.pdf
4. See the many statements of opposition posted at www.anfa.org.au/traditional-owners-statements
5. ABC, "Australia Must Have a Rational Discussion about Nuclear Industry, Says SA Premier Jay Weatherill," The World Today 19 Mar. 2015, www.abc.net.au/worldtoday/content/2015/s4200643.htm
6. Anggumathanha Camp Law Mob, "Submission to the Nuclear Fuel Cycle Royal Commission," 4 Sept. 2015, http://nuclearrc.sa.gov.au/app/uploads/2016/03/Anggumathanha-02-09-2015.pdf
7. Adelaide Congress Ministry, 18 Aug 2016, www.facebook.com/adelaide.congress/posts/604440683059431
8. Jim Green, Sept 2017, 'Radioactive Waste and Australia's Aboriginal People', Angelaki: Journal of the Theoretical Humanities, Volume 22, Issue 3, pp.33-50, https://nuclear.foe.org.au/radioactive-waste-and-australias-aboriginal-people/
9. Parliament of South Australia, 24 Nov 2011, Hansard: "Roxby Downs (Indenture Ratification) (Amendment of Indenture) Amendment Bill, https://hansardpublic.parliament.sa.gov.au/Pages/HansardResult.aspx#/docid/HANSARD-10-8440
10. Ben Heard, 2 Nov 2016, "We must be a full-service provider to the nuclear back-end", https://decarbonisesa.com/2016/11/02/we-must-be-a-full-service-provider-to-the-nuclear-back-end/
11. https://nuclear.foe.org.au/barry-brook-brave-new-climate/
12. Barry Brook, 7 June 2016, 'On the Nuclear Fuel Cycle Royal Commission', https://bravenewclimate.com/2016/06/07/on-the-nuclear-fuel-cycle-royal-commission/
13. Ben Heard and Oscar Archer, 4 Nov 2016, 'False revelations, manufactured outrage: the timing tells the story', https://decarbonisesa.com/2016/11/04/false-revelations-manufactured-outrage-the-timing-tells-the-story/
14. Ben Heard, 1 Feb 2017, 'Close the cycle: an alternative approach for used nuclear fuel', www.onlineopinion.com.au/view.asp?article=18822&page=0
15. Breakthrough Institute, 5 May 2014, 'Cheap Nuclear', http://theenergycollective.com/breakthroughinstitut/376966/cheap-nuclear
16. Paul Starick, 13 Dec 2016, 'Prominent South Australians demand that the state push ahead with study on nuclear waste repository', www.news.com.au/national/south-australia/prominent-south-australians-demand-that-the-state-push-ahead-with-study-on-nuclear-waste-repository/news-story/f784dcc1328f7edca73744480c50c6a1
17. Ben Heard, 2 March 2017, 'An open letter to South Australia's elected members and political parties 2 March 2017: Opportunity for Government to transform the State', www.brightnewworld.org/media/2017/3/3/an-open-letter-to-south-australias-elected-members-and-political-parties-2-march-2017
18. https://nuclear.foe.org.au/geoff-russell/
19. Geoff Russell, 10 Nov 2016, 'The Nuclear Waste Dump: South Australia Does A Brexit', https://newmatilda.com/2016/11/10/the-nuclear-waste-dump-south-australia-does-a-brexit/
20. Erin Stewart, 31 May 2012, 'A community maintains its spirit in confronting ignorance', www.theage.com.au/opinion/politics/a-community-maintains-its-spirit-in-confronting-ignorance-20120530-1zjbj.html
21. Ben Heard and Barry Brook, 25 June 2014, 'Nuclear waste is safe to store in our suburbs, not just the bush ', https://theconversation.com/nuclear-waste-is-safe-to-store-in-our-suburbs-not-just-the-bush-28206
22. Ben Heard, 12 May 2016, 'Location, location, location: why South Australia could take the world's nuclear waste', https://theconversation.com/location-location-location-why-south-australia-could-take-the-worlds-nuclear-waste-59242
23. https://nuclear.foe.org.au/waste/#flinders
24. www.facebook.com/permalink.php?story_fbid=169465413771115&id=150362412348082
25. Australian Government, 22 Jan 2014, 'New Indigenous Protected Area Creates Opportunities for Yappala Community', www.indigenous.gov.au/new-indigenous-protected-area-creates-opportunities-for-yappala-community
26. Scribe Archeology, Aug 2015, 'VYAC Yura Malka. Cultural Landscape Mapping of the VYAC Yappala Group of Properties, Draft Report', www.archive.foe.org.au/sites/default/files/VYAC%20Yura%20Malka_V0b.pdf
27. Viliwarinha Aboriginal Corporation and the Anggumathanha Camp Law Mob, 27 Nov 2015, 'Help us stop the nuclear waste dump in the Flinders Ranges!', https://nuclear.foe.org.au/2015-statement-from-adnyamathanha-traditional-owners/
28. Amanda Ngo, 2017, 'National Radioactive Waste Management Act 2012', https://nuclear.foe.org.au/nrwma/
29. Gundjeihmi Aboriginal Corporation, 'A History of Duress – A GAC Research Project', http://web.archive.org/web/20130425181741/http://mirarr.net/duress1.htm
30. Jillian K. Marsh, 2010, 'A Critical Analysis of the Decision-Making Protocols used in Approving a Commercial Mining License for Beverley Uranium Mine in Adnyamathanha Country: Toward Effective Indigenous Participation in Caring for Cultural Resources', Ph.D. thesis, Department of Geographical and Environmental Studies, University of Adelaide, https://digital.library.adelaide.edu.au/dspace/bitstream/2440/67247/8/02whole.pdf
31. Media Release, 29 April 2016, 'Adnyamathanha Traditional Owners will fight nuclear waste dump plan', https://nuclear.foe.org.au/no-nuclear-dump-in-the-flinders-ranges/

The problems with Japan's plutonium: What are they and how do we deal with them?

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The Citizens' Nuclear Information Center (CNIC) recently organized a seminar with guest speaker Prof. Frank von Hippel, a nuclear physicist from Princeton University's Program on Science and Global Security, presenting alternative ways to dispose of spent fuel instead of reprocessing, as well as options for disposal of separated plutonium. After this presentation of technical solutions, a panel discussion took place. Prof. Eiji Oguma, a historical sociologist from Keio University's Faculty of Policy Management and a well-known commentator on the post-Fukushima anti-nuclear movement in Japan, pointed out the political barriers that must be overcome if any of these technical solutions were to be actually implemented, no matter how much more reasonable they may seem from economic and safety perspectives. CNIC's General Secretary, Hajime Matsukubo was also on the panel and brought into the discussion the international implications of Japan's plutonium policy including the US-Japan Nuclear Agreement.

Prof. von Hippel explained that plutonium disposal is a global problem, with more than half of the existent separated plutonium being produced as a result of civilian reprocessing, the rest produced for military purposes. Disposing of the plutonium that had been produced for weapons during the cold war has been a huge headache for the United States with planned disposal by burning it as MOX fuel in commercial reactors proving hugely expensive.

America has all but abandoned its half-built MOX plant and is now looking towards the 'dilute and dispose' option. This process would use glove boxes to mix 300 grams of plutonium oxide into a can of 'star dust' (a secret ingredient from which plutonium would be difficult to separate again). This can would then be placed in a plastic bag and another 'outer blend can.'

Another way of immobilizing plutonium is the Hot Isostatic Pressing method, which is being developed in the UK and utilizes radiation-resistant, low-solubility ceramic. After plutonium has been immobilized, it is safer to bury it underground than keep it on the surface and Prof. von Hippel mentioned the deep borehole disposal method which uses techniques developed for drilling oil and geothermal wells that can bore five kilometers into the earth. In the US, however, plans for a demonstration project of this method of radioactive waste disposal were rejected by local governments.

Prof. von Hippel stressed that the main lesson for Japan is that separated plutonium is extremely difficult to dispose of and that it is definitely better not to separate any more than is already stockpiled. Instead of sending spent fuel from the nation's nuclear power plants to Rokkasho for reprocessing, it would be safer and much cheaper and more efficient to set up dry cask storage for the spent fuel onsite at the plant. Prof. von Hippel showed us successful examples of this method in the US and suggested that there were moves in this direction in Japan as well.

Prof. von Hippel's detailed technical solutions were very convincing. Yet despite the dangers of holding such a large plutonium stockpile (47 metric tons, enough for approximately 6,000 nuclear weapons), despite the massive costs involved and despite having no concrete viable plans as to how to actually use the separated plutonium, official Japanese government policy is to continue to separate even more plutonium at the Rokkasho Reprocessing Plant, which is currently due to commence operations in 2021.

In the panel discussion which followed Prof. von Hippel's presentation, Prof. Oguma agreed that reprocessing was most certainly problematic, but, he pointed out, it will be extremely difficult to just put up onsite storage of spent fuel, no matter how reasonable a technical solution it is. Political consent must be gained from the people in communities, which will not just be hosting the nuclear power plant, but will be asked to store its radioactive waste as well. As Prof. Oguma pointed out, especially post-Fukushima Daiichi, no one trusts the Japanese Government's nuclear policy and the likelihood that they will agree to yet another imposition that can be perceived to be long-term and dangerous, is very low.

Much of the Japanese public also believes that onsite storage is merely an excuse for the nuclear industry to keep afloat. If spent fuel pools fill up, utilities will not be able to operate their plants. For many activists this is one way of closing them down, which is their main aim. Prof. Oguma argued that a minimum requirement for any form of political consent to onsite storage would be a clear commitment by the government to phase out all nuclear power by a fixed date, so that the final amount of waste can be determined and will not just keep growing, along with the burden on local people.

This is a significant difference in perspective. Prof. von Hippel's main aim is to stop reprocessing and reduce stocks of separated plutonium, even if nuclear power generation continues, but Prof. Oguma claims that without an overall reassessment of the entire nuclear power policy it will be impossible to gain political consent for Prof. von Hippel's proposed onsite storage.

The Monju fast breeder reactor.

The economics is not as straightforward as it sounds either. While it is undoubtedly cheaper, in a purely mathematical sense, to simply dispose of spent fuel as waste, instead of reprocessing it and fabricating MOX fuel, the accounting systems of utilities make the more efficient alternative of direct disposal very difficult. At the moment, spent fuel is counted as an asset on utility balance sheets under the premise that it will become MOX fuel. If reprocessing is officially abandoned, all of the spent fuel 'assets' will become 'liabilities' and many utilities will be facing possible bankruptcy.

Prof. Oguma suggested that the only way to overcome all these political and economic barriers is for the government to disclose all information on nuclear power and reprocessing and to conduct an open public debate on how to proceed. If a public consensus is reached, based on all the scientific, technical and economic data available, then reprocessing should be stopped.

CNIC's Hajime Matsukubo pointed out that the Japanese government's accountability crisis was not just domestic, but international. Building up such large stocks of plutonium at huge cost and with no credible purpose inevitably makes neighboring countries suspect Japan's intentions. Indeed documents recently revealed show that the present Vice Minister of the Ministry of Foreign Affairs has long been an advocate of Japan becoming a nuclear weapons state. Japan's opposition to President Obama's proposal that the US adopt a no first-use of nuclear weapons policy, was reported in the Japanese media. Thus Japan's credibility as a strong advocator of non-proliferation is already failing and the plan to separate even more plutonium at Rokkasho could easily provoke a regional nuclear arms race, destabilizing the region, just as hopes rise that the situation in North Korea may improve.

Mr. Matsukubo also pointed out that Japan is the only non-nuclear weapons state that is permitted to separate plutonium under the US-Japan Nuclear Cooperation (123) Agreement. This creates double standards which weaken the entire global non-proliferation regime. For example, Saudi Arabia is negotiating a 123 Agreement with the US and demands that it also be allowed to reprocess spent fuel 'like Japan.'

For all of the above safety, economic and non-proliferation reasons, it would seem that there is plenty of ammunition for the movement against reprocessing. Indeed, Mr. Matsukubo said that in many ways it should be easier to stop reprocessing than stop nuclear power generation. Why hasn't this happened? As well as the difficulties mentioned by Prof. Oguma, there is also the factor that the movement against reprocessing in Japan has not been as strong as the movement against nuclear power. Reprocessing seems like a more convoluted, more removed issue, perhaps difficult for people to grasp and focus on.

All speakers agreed that the movement against reprocessing must be strengthened. The first thing that must be done to achieve this is to raise awareness and understanding regarding this issue within the broader anti-nuclear movement (both power generation and weapons) and the general public. Providing accurate information on the nuclear fuel cycle in a format that people can understand is the vital first step. As many people as possible must be informed about the costs, the dangers and the alternatives. The movement must be strong enough to demand that governments and utilities disclose all data, engage in an open debate and commit to implementing the consensus which emerges.

Prof. Oguma said that he and many other activists in Japan were committed to conveying the messages of Fukushima to the larger world, and to contributing to international solidarity on ending nuclear power. This also includes understanding how other countries see Japan. The plutonium issue is one that has particularly strong international impacts and implications and by pursuing this present policy the Japanese government is only damaging Japan's international credibility, especially regarding non-proliferation.

The seminar concluded that, whether on an international level or a domestic one, the Japanese government must restore accountability and democracy, it must formulate a responsible nuclear policy that is demonstrably safe, economic and realistic and which has the consent of the people. Viable technical alternatives to reprocessing spent fuel are available but can only be implemented through raising awareness and a change in political will, which as a movement, we must focus on with added strength.

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US government calls on Japan to reduce plutonium stockpiles

The US government has called on Japan to reduce its stockpiles of separated plutonium. The request was made by the US Department of State and National Security Council ahead of next month's extension of a bilateral nuclear cooperation agreement, *Nikkei Asian Review* reported.[1]

Japan can reprocess spent nuclear fuel under the Japan-U.S. Nuclear Cooperation Agreement, which is expected to be automatically extended beyond its expiration on July 16. If the two countries come to any agreement about Japan's plutonium stockpiling, it is unlikely to be included in the treaty-level Nuclear Cooperation Agreement.

Nikkei Asian Review reported that Japan's nuclear regulator is expected to adopt a policy of capping the plutonium stockpile and delaying the start-up of the Rokkasho reprocessing plant. However the start-up of Rokkasho has been delayed over 20 times and it is unclear whether serious consideration is being given to a further delay to deal with the problem of growing plutonium stockpiles.

Tokyo "will respond in good faith to the [US] request, but this will also require efforts by power companies," said a Japanese government source. "This isn't something that is going to happen overnight."[1]

The *Asahi Shimbun* newspaper reported that the Cabinet Office's Japan Atomic Energy Commission will incorporate measures to curb plutonium stockpiling in its five-point basic nuclear policy expected at the end of June; and that a reduction in plutonium stockpiles held by Japan will also be specified in the government's basic energy plan, which will be revised next month.[2] The government's draft policy allows for separation of plutonium from spent fuel based on the projected amount to be used in reactors as mixed plutonium-uranium oxide fuel (MOX), *Asahi Shimbun* reported.

It seems that the government will pressure utilities to operate more reactors using MOX rather than conventional uranium fuel. The Federation of Electric Power Companies of Japan estimates that MOX fuel should be used at 16–18 reactors to keep Japan's plutonium stockpile from rising.[2] Of the nine reactors that have restarted in the past few years, four can use MOX fuel.[2]

The prospects for plutonium-fueled fast reactors could hardly be bleaker. Japan has permanently shut down the Monju fast reactor, and Japan's involvement in the planned ASTRID demonstration fast reactor in France is in doubt.[3,4]

Ending the reprocessing of Japan's spent fuel (currently in Europe, later at Rokkasho) would signal serious intent to address the problems associated with plutonium stockpiling (including the regional tensions and proliferations risks arising from Japan's plutonium program). But the Japanese government seems determined to go ahead with Rokkasho despite the endless delays and the mind-boggling increases in the cost estimates – the latest estimate is ¥2.9 trillion (US$26.4 billion; €22.9 billion).[2] Japan's Atomic Energy Commission estimated in 2011 that building Rokkasho and operating it for 40 years will cost ¥11.68 trillion (US$106 billion; €92 billion).[5]

Costs associated with reprocessing Japan's spent fuel in Europe are also mind-boggling. The Citizens' Nuclear Information Center reported in August 2017 that the cost of reprocessing and transporting back to Japan and managing the high level radioactive waste, which is at present overseas, is estimated at ¥13.9 trillion (US$127 billion; €110 billion) and fabrication of MOX fuel at ¥2.3 trillion (US$20.9 billion; €18.1 billion).[6]

(Written by Nuclear Monitor editor Jim Green.)

1. Nikkei Asian Review, 10 June 2018, 'US demands Japan reduce its plutonium stockpiles', https://asia.nikkei.com/Politics/International-Relations/US-demands-Japan-reduce-its-plutonium-stockpiles
2. Yusuke Ogawa, Rintaro Sakurai and Shinichi Sekine / Asahi Shimbun, 17 June 2018, 'Japan to cap plutonium stockpile to allay U.S. concerns', www.asahi.com/ajw/articles/AJ201806170027.html
3. Asahi Shimbun, 31 May 2018, 'Scaling back of French reactor a blow for nuke fuel reprocessing', www.asahi.com/ajw/articles/AJ201805310040.html
4. Asahi Shimbun, 18 June 2018, 'EDITORIAL: Japan should disconnect from fast-breeder reactor project', www.asahi.com/ajw/articles/AJ201806180025.html
5. Atomic Energy Commission Bureau, 10 Nov 2011, 'Estimation of Nuclear Fuel Cycle Cost', www.aec.go.jp/jicst/NC/about/kettei/seimei/111110_1_e.pdf
6. Citizens' Nuclear Information Center, July/August 2017, 'Project Cost Estimate for the Rokkasho Reprocessing Plant', Nuke Info Tokyo No. 179, www.cnic.jp/english/?p=3903

National Geographic joins nuclear propagandists

Author: Noel Wauchope – Australian anti-nuclear campaigner

NM863.4735

In September 2018, National Geographic will launch the documentary series, Wild Edens.[1] It's all about wilderness areas and is also a soft sell for the nuclear industry. And there's an Australian connection, with the Global Ecology Lab of Flinders University, South Australia. Their energy researcher, Ben Heard[2], was master of ceremonies at the premiere in Spain in April.

Gone are the days of "nuclear power too cheap to meter" and "Atoms for Peace". These were the 20th Century catch calls to promote the nuclear industry to business and to the public. Even late in the 20th Century, when things had come a bit unstuck with Windscale, Three Mile Island and Chernobyl accidents, the propaganda was still straightforward and often simplistic.

By 2018, things have changed. The argument that nuclear power is cheap has fallen apart. As for the "peaceful atom" and "no connection with nuclear weapons", that one has fallen through, too. Recent research in UK[3] and the USA[4] make it clear that nuclear energy and developing new reactors are necessary for the continued development of nuclear weapons. Hans-Josef Fell, president of the global Energy Watch Group, states in the brief titled 'The disaster of the European nuclear industry': "The driving force behind the UK government's affinity to nuclear technology is the cross-subsidization of the military nuclear program."[5]

In the 20th Century, the industry was slow to come up with the new selling arguments – the need for boundless energy, nuclear being "clean", combating climate change, the need for nuclear for space travel. Another factor was the type of nuclear reactor being developed. By the turn of the century, the "conventional" large nuclear reactors were looking expensive to build, fraught with safety problems (and hence, strict regulations) and lumbered with issues of radioactive waste disposal.

In the 21st Century came changes in technology and in the content of propaganda. Enter the "new nukes" – modern designs, especially small modular nuclear reactors (SMRs – they leave out that unpopular word "nuclear"). After much soul-searching – or, rather, much complex research on public opinion – the proponents of new nukes have now finally settled on environment, climate change and also a nod to space travel as the reasons why the world must embrace SMRs.

But it's not only the content of their propaganda which has changed. It's the style. It's the copious wrapping around this 21st Century nuclear birthday present.

And here's where National Geographic comes in – their new documentary series Wild Edens will be gorgeous: 'filmed in the world's most stunning untouched places and their inhabitants – wildlife and fauna alike, endangered by the effects of climate change.'[6]

The PR for nuclear power will be introduced so slightly and subtly you'd hardly notice. This is the strategy of the SMR propagandists. They also do lobby business and government with sophisticated technical arguments. But for the public – us, the great unwashed and especially the young – it is all beautiful touchy-feely stuff. A good example is "ecomodernism".[7] The Ecomodernist Manifesto goes for 32 pages, glorifying nature and our duty to protect it.[8] It's not until page 23 that there is one (approving) paragraph about nuclear power, and nuclear barely gets a mention in the rest of the document. However there is a fair bit of criticism of renewable energy scattered throughout the text.

Similarly, glossy documentaries like Pandora's Promise[9,10], Twisting the Dragon's Tail[11] and science and space travel episodes by pro-nuclear TV rock-star Brian Cox take a very pro-environment and positive theme, with a definite, but lightly stated, push for new nuclear power. The most recent glossy nuclear advertisement documentary is *The New Fire: Could the Next Climate Heroes be Nuclear Engineers?*[12]

Ben Heard's speech, on opening the premiere of Wild Edens, talked about climate change but then moved on to a longer tribute to nuclear power:[13]

... this beautiful and important film from National Geographic, brought to us with the help of Rosatom, represents ... recognition that nuclear technologies are crucial to the protection, restoration and expansion of our natural world.

... it is particularly nuclear technologies that will help us find energy at a global scale, without super-charging the climate change of tomorrow.

… And one of the greatest, most hopeful signs I have seen that this can happen, is to see a major corporation like Rosatom step boldly forward in this way and claim this issue on behalf of nuclear technologies.

Wild Edens will surely be beautiful, informative about wild places and worth watching. Just be aware of the underlying propaganda about nuclear power being the essential cure for climate change; nuclear power being clean and green; and the nuclear waste problem being solved.

References:

1. http://wild-edens.com/
2. www.nuclear.foe.org.au/ben-heard-secret-corporate-donations/
3. www.sussex.ac.uk/webteam/gateway/file.php?name=2016-16-swps-cox-et-al.pdf&site=25
4. www.insidesources.com/nuclear-energy-should-be-a-us-national-security-concern/
5. http://energywatchgroup.org/wp-content/uploads/2018/03/Nuclear-disaster_EPR_EN.pdf
6. www.prnewswire.com/news-releases/rosatom-and-national-geographic-bring-the-audience-a-new-documentary-series-project-wild-edens-dedicated-to-the-fight-against-global-warming-680152683.html
7. https://en.wikipedia.org/wiki/Ecomodernism 8. www.ecomodernism.org/manifesto-english/
9. Nuclear Monitor #764, 'Pandora's Promise' Propaganda, 28 June 2013, www.wiseinternational.org/nuclear-monitor/764/pandoras-promise-propaganda
10. Nuclear Monitor #773, 'Pandora's Propaganda', 21 Nov 2013, www.wiseinternational.org/nuclear-monitor/773/pandoras-propaganda
11. https://en.wikipedia.org/wiki/Uranium_%E2%80%93_Twisting_the_Dragon%27s_Tail 12. http://newfiremovie.com/
13. www.brightnewworld.org/media/2018/5/17/wild-edens-russia-opening-remarks-at-the-global-premier

U.S. nuclear bailout could cost $8–17 billion a year

NM863.4736

The controversial Trump Administration plan to nationalize the nuclear energy marketplace could cost U.S. consumers US$8–17 billion a year in artificially high electricity bills, with the prospect of extensive coal-fired power plant subsidies potentially doubling that figure. Further, the bailouts of nuclear and coal could trip up America's renewables industry, leaving the U.S. even further behind in the global race for clean energy technology development and deployment.

On June 6, the Nuclear Information & Resource Service (NIRS) released updated and expanded figures on the nuclear bailout costs estimated in its November 2016 report that concluded that federal handouts for nuclear alone could add up to US$280 billion to electricity bills by 2030. A bailout of coal-fired power plants would leave ratepayers and taxpayers holding the bag for even more. NIRS estimates that the current Trump bailout scheme could costs consumers US$8–17 billion for just the nuclear element and as much again for coal subsidies.

Tim Judson, executive director, Nuclear Information & Resource Service (NIRS), said: "By pushing for a nationwide bailout for nuclear power and coal, the Trump administration is rushing headlong into an energy buzz saw, and they don't even seem to know it. Subsidizing the nuclear industry alone is likely to cost American consumers US$8 billion to US$17 billion per year, and subsidies for coal could cost just as much. Betting on old, increasingly uneconomical nuclear and coal power plants as a national security strategy is like gold-plating a Studebaker and calling it a tank. And it could destroy the booming renewable energy industry, which is already employing more Americans than coal and nuclear combined."

Peter A. Bradford is a former member of the U.S. Nuclear Regulatory Commission (NRC) and former chair of the Maine and New York utility commissions. Bradford also taught energy policy and law at the Vermont Law School. Commenting on the bailout scheme, Bradford said: "The Trump Administration's desire to tax American consumers to support failing power plants is energy policy-making gone haywire. As was said in the run-up to the 2003 invasion of Iraq, the facts are being fixed around the desired end result. We have no military crisis and no threats of our system reliability or resilience that require this drastic and expensive governmental intervention. Claims of such problems are fairy tales, straight out of Mother Goose."

Bradford continued: "The Administration's warnings of dire effects from power shortages caused by shortages of reliable and resilient generation are contradicted by all of the bodies with actual responsibility for assuring adequate supplies. There are no state or federal energy regulators petitioning DOE for these measures. Indeed, those who have spoken clearly have said that such steps are unnecessary. By overpaying hundreds of dollars per family per year for electricity that can be obtained far less expensively from other sources, the administration is impoverishing customers, cutting off construction and industrial jobs and suppressing energy innovation, in which the U.S. has been competing for global leadership."

Tyson Slocum, director, Energy Program, Public Citizen, said: "President Trump's asinine nuclear and coal bailout will cost households billions of dollars, but will bolster the profits of a handful of Trump's top campaign and financial supporters. Trump is charging consumers billions to fill the swamp with undeserving special interests."

Slocum said that any effort to force consumers and/or taxpayers to bailout the owners of nuclear and coal power plants under the guise of resilience, fuel security or national security is absurd and will be subject to vigorous legislative, regulatory and legal challenges.

As such, it is likely that the Administration is still months away from an actionable plan using any of the three statutes it has identified. Action under 202(c) of the Federal Power Act would involve a subsidy structured through electric rates, subject to review and approval by the Federal Energy Regulatory Commission. Action under the 1950 Defense Production Act would require Congressional appropriations, and therefore a taxpayer-based subsidy, as would action under the Fixing America's Surface Transportation Act. Further, the formal National Security Council review process to develop a national security threat assessment intervention plan is at least months away.

Background

The theories advanced by the Trump Administration for the nuclear and coal bailouts are radical, unprecedented, and unsupported by any factual or empirical analysis. Nuclear and coal power plants expected to retire because of their uneconomic performance pose zero reliability or national security concerns.

Nonetheless, an internal National Security Council policy memo leaked on June 1 outlined potential actions by the US Department of Energy (DOE) to provide billions of dollars in financial assistance over two years to uneconomic nuclear and coal power plants using: Section 202(c) of the Federal Power Act; the 1950 Defense Production Act; and the Fixing America's Surface Transportation Act. While the Trump Administration has been trying to push for such bailouts in a variety of ways over the past year, the involvement of the NSC introduces a new twist in these efforts by trying to make fuel security a new national security priority that requires aggressive federal intervention into domestic energy markets.

The National Security Council memo focuses on supposed threats to natural gas pipelines and infrastructure from natural disasters and malicious attacks, but it does not consider the essential vulnerability of a national electricity grid based on central station power plants, of which coal and nuclear power plants are the most typical. They require high-voltage transmission lines to deliver electricity from coal and nuclear plants, hundreds of miles in many cases. In addition, the memo neither considers the vulnerability of power plants themselves, nor does it discuss the attractiveness of nuclear power plants in particular as targets for malicious acts.

In an odd twist, the memo cites provisions of the Defense Production Act to justify federal intervention into industry during times of war that make a stronger case for reliance on entirely different technologies than central station coal and nuclear power plants: Defense Production Act authorities should be used "to reduce the vulnerability of the United States to terrorist attacks" and to "encourage the geographic dispersal of industrial facilities in the United States to discourage the concentration of such productive facilities within limited geographic areas that are vulnerable to attack by an enemy of the United States." These provisions of the Defense Production Act, taken to their natural conclusion, should encourage the expansion of distributed and on-site power sources and modern infrastructure designs, like "islandable" microgrids, rather than trying to retain a grid design based on large, vulnerable central station power plants.

Audio from a June 6 media teleconference hosted by NIRS is posted at www.tinyurl.com/bailout-audio

The November 2016 NIRS report, 'Too Big to Bail Out: The Economic Costs of a National Nuclear Power Subsidy', is posted at www.bit.ly/too-big-to-bail-out-nuclear

Energy Charter Treaty pitting parliament against nuclear profits – Vattenfall vs. Germany

NM863.4737

A new report from the Corporate Europe Observatory and the Transnational Institute exposes how the little-known Energy Charter Treaty gives corporations the power to obstruct the transition towards renewable energy and how it is being expanded, threatening to bind yet more countries to corporate-friendly energy policies. Brief excerpts reproduced below outline the problems and one of the case studies presented in the report: Vattenfall's claim against the German government resulting from the 2011 nuclear phase-out decision.

Two decades ago, an obscure international agreement entered into force, the Energy Charter Treaty. It grants corporations enormous powers over energy systems including the ability to sue governments, which could obstruct the transition towards renewable energy. And the Treaty is in the process of expansion, threatening to bind yet more countries to corporate-friendly energy policies. Today the ECT applies to nearly 50 countries stretching from Western Europe through Central Asia to Japan.

Among its many provisions, those regarding foreign investments in the energy sector – also known under the infamous acronym ISDS or investor-state dispute settlement – are the Treaty' cornerstone. The ISDS provisions give foreign investors in the energy sector sweeping rights to directly sue states in international tribunals of three private lawyers, the arbitrators. Companies can be awarded dizzying sums in compensation for government actions that have allegedly damaged their investments, either directly through 'expropriation' or indirectly through regulations of virtually any kind.

Energy giant Vattenfall, for example, has sued Germany over environmental restrictions on a coal-fired power plant and for phasing out nuclear power. Oil and gas company Rockhopper is suing Italy over a ban on offshore oil drilling. Several utility companies are pursuing the EU's poorest member state, Bulgaria, after the government reduced soaring electricity costs for consumers.

Shut-down Brunsbüttel nuclear plant as seen from the Elbe River.

Vattenfall sued Germany in 2012, seeking €4.3 billion plus interest for lost profits related to two of its nuclear power plants. The legal action came after the German Parliament decided to speed up the phase-out of nuclear energy following the Fukushima disaster in 2011 and countrywide anti-nuclear protests. Amongst other things parliamentarians ordered the immediate and permanent shutdown of Germany's oldest reactors, including Vattenfall's Krümmel and Brunsbüttel plants. Due to several breakdowns, both had already been out of service for several years. The case is ongoing at the time of writing (June 2018).

The case is interesting because it shows how the Energy Charter Treaty:

1. Puts a lot of taxpayers' money at stake: Vattenfall's €4.3 billion claim – the equivalent of one quarter of Germany's entire 2017 health budget – is one of the largest in the history of investor-state arbitration. By April 2018 the German Government had spent more than €15 million in legal and administrative costs to defend the case. Furthermore, Vattenfall has spent €26 million on its lawyers which it also claims from Germany.
2. Leaves citizens in the dark: Experts have slammed the German Government for "intentionally leaving the German public out in dark" about the details of Vattenfall's claim. Despite billions in taxpayers' money at stake, not a single case document has been publicly released. A small group of elected parliamentarians have access to Germany's arguments in the proceedings, but only in a high-security building and they are not allowed to reveal anything they see to anyone. While the Government did agree to livestream a 10-day hearing in October 2016, experts questioned the usefulness of that exercise: permanent recordings were only made available for two days while notes were not prepared at all (so people had to watch 8 hours per day for 10 successive days) and viewers had to follow the complex oral arguments without any of the written materials.
3. Creates VIP rights for foreign investors: Together with German energy giants E.ON and RWE, Vattenfall also sued Germany in its constitutional court. In 2016 the latter upheld the nuclear exit, but condemned the fact that its acceleration did not allow the companies to use formerly allocated electricity output allowances, ordering Germany to find a solution for this problem. Even though Vattenfall obtained justice in German courts, it still continues its parallel Energy Charter Treaty claim – possibly counting on a much larger amount of taxpayer money in compensation than would ever be available under German law. Germany's largest association of judges and public prosecutors has criticised parallel justice systems such as those found in the Energy Charter Treaty, which are exclusively available to foreign investors, stating that "the creation of special courts for certain groups of litigants is the wrong way forward".

The English-language report is online, as are summaries in French, German, Spanish, and Italian.

Corporate Europe Observatory and the Transnational Institute, June 2018, 'One Treaty to rule them all: The ever-expanding Energy Charter Treaty and the power it gives corporations to halt the energy transition', https://corporateeurope.org/international-trade/2018/06/one-treaty-rule-them-all

Nuclear power falls below 10%, overtaken by non-hydro renewables

NM863.4738

Nuclear power accounted for 9.8% of global electricity generation in 2017 (2,503[1] / 25,570[2] terawatt-hours). That's a big drop from nuclear's historic peak of 17.6% in 1996.[3]

Renewables accounted for 26.5% of global electricity generation in 2017.[4] Thus renewables generated 2.7 times more electricity than nuclear power. Non-hydro renewables (10.1%) generated more electricity than nuclear (9.8%) for the first time in decades.

Global nuclear power capacity increased by 5.4% from Dec. 2007 to Dec. 2017 (from 372 GW to 392 GW) if including idled reactors (mostly in Japan).[5] However, including those reactors in the count of 'operable' or 'operational' reactors is, as former World Nuclear Association executive Steve Kidd states, "misleading" and "clearly ridiculous".[6] If idled reactors are excluded, nuclear capacity as of Dec. 2017 was 353 GW[7] and fell by 5.1% from 2007 to 2017.

Whether or not idled reactors are included in the count, nuclear capacity changed little from 2007 to 2017 (up or down by about 5%). Compare that to renewables: global renewable power capacity more than doubled in the decade 2007-2017, and the capacity of non-hydro renewables increased more than six-fold.[4]

Bloomberg NEF New Energy Outlook 2018

Bloomberg NEF has published the 2018 edition of its annual New Energy Outlook.[8] The report focuses on electricity generation worldwide. Its long-term projections assume that existing energy policy settings around the world remain in place until their scheduled expiry, and that there are no additional government measures. The 150-page report draws on detailed research by a team of more than 65 analysts around the world, including modeling of power systems country-by-country, and of the evolving cost dynamics of different technologies.

Wind and solar are set to expand to almost 50% of worldwide electricity generation by 2050 on the back of cost reductions and the advent of cheaper batteries that will enable electricity to be stored and discharged to meet shifts in demand and supply. The report predicts a 17-fold increase in solar PV capacity worldwide, and a six-fold increase in wind power capacity, by 2050.

The levelized cost of electricity (LCOE) from new solar PV plants is forecast to fall a further 71% by 2050, while that for onshore wind drops by a further 58%. These two technologies have already seen LCOE reductions of 77% and 41% respectively between 2009 and 2018. Solar PV and wind are already cheaper than building new large-scale coal and gas plants.

Batteries are also dropping dramatically in cost. Bloomberg NEF predicts that lithium-ion battery prices, already down by nearly 80% per megawatt-hour since 2010, will continue to tumble as electric vehicle manufacturing builds up through the 2020s.

Seb Henbest, lead author of the New Energy Outlook report, said: "The arrival of cheap battery storage will mean that it becomes increasingly possible to finesse the delivery of electricity from wind and solar, so that these technologies can help meet demand even when the wind isn't blowing and the sun isn't shining. The result will be renewables eating up more and more of the existing market for coal, gas and nuclear."

Coal shrinks to just 11% of global electricity generation by 2050, from 38% currently. Elena Giannakopoulou, head of energy economics at Bloomberg NEF, said: "Coal emerges as the biggest loser in the long run. Beaten on cost by wind and PV for bulk electricity generation, and batteries and gas for flexibility, the future electricity system will reorganize around cheap renewables – coal gets squeezed out."

Gas consumption for power generation increases modestly out to 2050 despite growing capacity, as more and more gas-fired facilities are either dedicated peakers or run at lower capacity factors helping to balance variable renewables, rather than run flat-out around-the-clock. Gas-fired generation is seen rising 15% between 2017 and 2050, although its share of global electricity declines from 21% to 15%.

Electric vehicles add around 3,461 TWh of new electricity demand globally by 2050, equal to 9% of total demand. Time-of-use tariffs and dynamic charging further support renewables integration: they allow vehicle owners to choose to charge during high-supply, low-cost periods, and so help to shift demand to periods when cheap renewables are running.

The New Energy Outlook report predicts US$11.5 trillion being invested globally in new power generation capacity between 2018 and 2050, with US$8.4 trillion (73%) of that going to wind and solar and a further US$1.5 trillion (13%) to other low-carbon technologies such as hydro and nuclear, with gas investments at US$1.3 trillion (11.3%) accounting for most of the remainder.

References:

1. IAEA, 2018, 'Nuclear Power Reactors in the World', www-pub.iaea.org/books/IAEABooks/13379/Nuclear-Power-Reactors-in-the-World
2. IEA, March 2018, 'Global Energy & CO2 Status Report 2017', www.iea.org/publications/freepublications/publication/GECO2017.pdf
3. Mycle Schneider, Antony Froggatt et al., 12 Sept 2017, World Nuclear Industry Status Report 2017, www.worldnuclearreport.org/-2017-.html
4. REN21, June 2018, 'Renewables 2018 Global Status Report', p.40-41, www.ren21.net/wp-content/uploads/2018/06/17-8652_GSR2018_FullReport_web_-1.pdf
5. www.iaea.org/PRIS/WorldStatistics/WorldTrendNuclearPowerCapacity.aspx
6. Steve Kidd, 13 Oct 2016, 'Nuclear power in the world – pessimism or optimism?', www.neimagazine.com/opinion/opinionnuclear-power-in-the-world-pessimism-or-optimism-5031270/
7. Mycle Schneider / World Nuclear Industry Status Report, 9 Jan 2018, 'World Nuclear Industry Status as of 1 January 2018', www.worldnuclearreport.org/World-Nuclear-Industry-Status-as-of-1-January-2018.html
8. Bloomberg NEF, June 2018, 'New Energy Outlook 2018', https://about.bnef.com/new-energy-outlook/