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In the election on Greenland on April 6, the left-wing Inuit Ataqatigiit became the largest party and will lead negotiations to form a coalition government. Hopefully this will result in a stop for the Kvanefjeld mining project.

**NIRS**  
Nuclear Information and Resource Service

**wise**  
World Information Service on Energy  
founded in 1978

# Uranium and Rare Earth Elements in Greenland – Past and Present

by *Palle Bendsen, NOAH Friends of the Earth Denmark's Uranium Group*<sup>1</sup>

## Greenland's position in relation to Norway, Denmark and the United States

Despite its geographical position close to the North American continent, Greenland has been connected to Europe, especially Denmark-Norway, for centuries. After the Treaty of Kiel in 1814, at the end of the Napoleonic wars, Norway declared its independence from Denmark, but Greenland stayed as a Danish possession. In 1931 Norway contested that Denmark had sovereignty over Eastern Greenland. In 1933 the International Court of justice in The Hague ruled that Denmark was the sovereign over Greenland in its entirety.

During most of the second world war Greenland was de facto controlled by the United States after the Danish ambassador - acting on his own due to the German occupation of Denmark - in 1941 signed a defence treaty<sup>2</sup> with the US Government. The treaty on one hand reiterated that Denmark had sovereignty over Greenland - despite the circumstances - and on the other hand laid out that Greenland was within the Western Hemisphere, claimed by the Monroe Doctrine<sup>3</sup>. Subsequently the US Air Force established meteorological stations and air bases in Greenland, strategically important in the war. The cryolite mine in Ivittuut/Ivigut was of crucial importance for the American aluminium industry and airplane manufacturers – and of course for the US Air Force. It also of course provided Greenland with a much-needed income. The separation from Denmark prompted at the same time a change in outlook for a group of Greenlanders, that initiated a readiness for change and probably the process towards more independence.

The scientific geological study of Kuannersuit (and the larger Ilímaussaq complex that it is a part of) dates back over 200 years<sup>4</sup>, so it was no white spot in 1944, when a secret US expedition came to Greenland as a part of a global effort to find uranium deposits for the Manhattan project without any success as far as our sources reveal. But other minerals of interest for the wartime industry were searched for as well.

After Hiroshima and Nagasaki it was obvious what uranium was capable of, and in the aftermath of the war, geologists and officials in Denmark tried to speed up their own explorations along the coast of Greenland. It should serve a dual purpose of re-asserting Danish sovereignty over Greenland - and prepare for a possible future of nuclear energy that was already being discussed publicly in August 1945<sup>5</sup>. But the main interest in uranium was connected to its military use until around 1953.



Dumping ground, photo Finn Larsen

Notwithstanding their anti-colonial stance at the time, the United States put forward a proposal in 1946 to buy Greenland<sup>6</sup> from Denmark just as they had bought the Virgin Islands from Denmark in 1917 – a purchase that was even “conditional on U.S. recognition of Danish sovereignty over the whole of Greenland”<sup>7</sup>. The proposal was rejected and the United States again recognized Denmark's sovereignty over the large island. In reality the United States continued to wield its power over Greenland - without mentioning the Monroe doctrine much but in reality, the mind-set of this doctrine has been obvious since 1941, the latest attempt in 2019 to purchase Greenland was testament to that.

Denmark with Greenland and the Faroe Islands joined NATO in 1949, relinquishing its policy of neutrality. And following a Defence Agreement<sup>8</sup> with the United States in 1951, basically a new version of the 1941-agreement, the US Army began constructing its northernmost air base in Thule, completed in 1953. The Danish government paved the way for the base by forcibly re-locating the population of the village Pittufik 130 km to Qaanaaq where a new town was built.

## Camp Century, Project Iceworm and the B-52 bomber crash – “neither confirm nor deny”

In 1959, the U.S. Army Corps of Engineers built a large military camp, Camp Century<sup>9</sup>, into the Greenlandic Ice Sheet under the guise of it being a scientific research base. For the first time deep ice core samples were actually drilled, which allowed the study of climate change over long time spans. But the corps also explored the feasibility of the so-called Project Iceworm, which was a top-secret plan to store 600 ballistic missiles below the surface of the ice cap - and if necessary, launch them.



Dumping asbestos waste, photo Finn Larsen

While Thule Air Base already had a favourable forward geographical position from where B-52 bombers could operate with much shorter distance to dedicated targets in the USSR, the Iceworm infrastructure would allow for a similar forward position for ICBMs that would be rotated in the enormous infrastructure below the ice – covering an area three times larger than Denmark.

Camp Century was initiated and completed without asking the Danish Government - not to speak of any Greenlandic body. It was abandoned in 1967 as it became obvious that the Ice Sheet moved so fast that the constructions would deteriorate very soon. A nuclear power station was removed leaving behind a radiological legacy that eventually will surface together with an array of other pollutants maybe one hundred years from now when the ice has melted and moved enough.

In 1968 a B-52 bomber carrying four thermonuclear bombs crashed<sup>10</sup> near the base and contaminated a large area with radioactive plutonium. Following this crash Pentagon ordered the praxis of nuclear-armed airborne bombers 24/7 to be discontinued. When this was made public in 1995, it was met with disbelief in the populations of Greenland and Denmark, just as was the case when it was discovered that the Danish Prime Minister H.C. Hansen in 1957 tacitly had accepted that US bombers overflying Greenland regularly carried nuclear bombs. This was contrary to the official agreement between the two countries and contrary to Denmark's official ban on nuclear weapons.<sup>11</sup>

### To have a colony or not

With the formation of The United Nations in 1945 the question of colonialism was actualized. The UN Treaty committed its member states to improve the condition for the peoples in their colonies. Denmark had until then not officially named Greenland a colony, but pressed by the UN, it had to recognize that Greenland in fact was - a colony. A commission was formed to develop plans for the improvement of the conditions of the Greenlandic population. In the renewed Danish constitution of 1953, Greenland was made an "equal" part of the Danish Kingdom as a county. This meant largely a stronger cultural assimilation of the Greenlandic population - now Danish citizens - and a thorough modernization especially from 1960 onwards.

In the 1970's Greenland got a new generation of self-conscious politicians and managed to obtain a limited Home rule by 1979, and in 2009 a wider Self-government with responsibility for the legal system, law enforcement, and - natural resources. Also, Greenlanders were recognized as a people under international law.

### Denmark, Greenland and the nuclear age

After 1945, the world-renowned Danish physicist Niels Bohr whose research had been instrumental in advancing the understanding of nuclear physics was seen as an ace in the eyes of the scientific community and the administration in Copenhagen. But due to his involvement in the Manhattan project combined with his ideas of sharing his knowledge also with the Russians he was viewed with suspicion by the top brass in the US Army, who demanded a code of silence in nuclear matters from all involved in the Manhattan project.

Bohr was well aware of that and was therefore reluctant to participate in any nuclear energy endeavour until President Eisenhower launched the Atoms for Peace<sup>12</sup> program with a speech to the UN General Assembly in 1953.

Things sped up, and Bohr became involved. An Atomic Energy Commission was formed with Bohr as President and a nuclear research facility, Risoe, was founded. Renewed geological scouting took place in Southern Greenland. Bohr even visited Kuannersuit that became the hot spot, tunnels were drilled 12 km into the mountain and about 5,000 tons of ore was transported to Risoe in order to develop methods to separate the fairly low-grade uranium from the mix of minerals in the ore, including the rare earth metals. Also, early feasibility assessments were carried out that covered mining, processing, infrastructure, energy supply and environmental management.

It was in the days when the global nuclear energy community dreamt of power 'too cheap to meter' and they were confident that the future belonged to them. The number of nuclear power plants skyrocketed globally for a while; the only worry seemed to be the supply of uranium.

In Denmark the players were quite few, and they had been in infighting, some of a strategic nature, some personal. And the heaviest players had not shown their cards yet: the energy sector. But in 1972 this sector formed a 'nuclear group' of engineers, a serious step towards future nuclear power plants. In January 1974 a bill was tabled in the Danish Parliament that would allow for NPPs in Denmark by way of an administrative decision by the Minister of Education (the nuclear research centre Risoe was within the responsibility of that ministry). Two weeks later the Danish anti-nuclear movement OOA<sup>13</sup> was formed.

And the winds changed so much that within 11 years a majority in the Danish Parliament decided to take nuclear power off the table as an option for the energy supply. This meant that the interest in mining uranium at Kuannersuit vanished and in the years to come it became commonly understood that there was a ban on uranium mining in Greenland, a so-called zero-tolerance policy.<sup>14</sup>



Anti-nuclear protest, photo Inga Gisladdottir

## GME/GML

In 2007, an Australian owned company stepped in: Greenland Minerals and Energy (today: Greenland Minerals Limited, GML) obtained an exploration license at Kuannersuit. GME had many favourable conditions from the outset including the results of the previous decades' geological, metallurgical and other state sponsored research and development, but they had one major obstacle in the (perceived) zero-tolerance towards uranium.<sup>15</sup> That obstacle was removed with a narrow vote (15 to 14) in Greenland's 31 seat Parliament, Inatsisartut, in 2013.

Since then, the company has drafted five extensive Environmental Impact Assessment Reports with the assistance of Danish and international experts and consultants. These EIAs have been constantly criticized by independent experts as well as environmental NGOs like Avataq and Urani? Naamik! in Greenland and NOAH Friends of the Earth Denmark and SustainableEnergy in Denmark for a number of reasons, most of which were mentioned in the first international appeal to the Greenlandic and Danish governments in April 2013, that mustered support from 48 NGOs from all over the world.<sup>16</sup>

The appeal voiced concerns about mining uranium in the first place, with the radioactive and toxic legacy well known to the readers of Nuclear Monitor from what would become the second largest uranium mine in the world<sup>17</sup>. It would pose a threat to existing trades like agriculture, fishing, hunting and animal husbandry. Later more items were added to the list of negative impacts or deficiencies in the company's reports, notably the question about the Tailings Storage Facility, which today is - a lake. Lake Taseq is chosen as the recipient of 110 million tonnes of tailings over the estimated 37 years of operation. This will include all of the thorium, half of the uranium, and a high concentration of fluoride. Embankments will gradually be built up to a final height of 46 m above ground level.

This wet disposal scheme and the construction of the embankments has faced criticism from international experts. And recently the risk of fluoride pollution has drawn concern. The rock (villiaumite) contains high levels of fluoride which will be released in large quantities in the open pit and in all stages of the processing of the minerals. The concern is that despite the company's intention to withhold and actually sell the fluoride as fluorspar widespread pollution of fluoride will occur both airborne (dust) and in the waterways threatening fish and sheep as well as the inhabitants in Narsaq and the surrounding area. Also the fact that the mine is situated close to the UNESCO World Heritage Site at Kujaata meets criticism<sup>18</sup>.

## Approval – then election

Eventually, the fifth version of the report was approved by the authorities<sup>19</sup> in 2020. The social impact assessment of the mining project was also approved. Thus, public hearings meetings started in January 2021, but was halted again, due to harsh weather – and then the Parliament, Inatsisartut, on 17 February called an early election on 6 April.<sup>20</sup> The public hearings will run until 1 June 2021, prolonged due to COVID-19.

As many times before, the Kuannersuit project is one of the contentious issues in an election, and even within Siumut, that has held the position of Prime Minister since 1979 with the exception of four years from 2009 to 2013 when IA (Inuit Ataqatigiit) led a coalition with Demokraterne. The election was called only one week after 141 NGOs from around the world called for a moratorium on large-scale mining and oil and gas extraction in Greenland.<sup>21, 22</sup>



Storage radioactive materials, photo Finn Larsen

### The scale and the power - a personal note

One thing which has not attracted so much attention yet is the question of scale. The mining project at Kuannersuit is huge. Recently, the neighbouring rare earth elements mining project at Killavaat Alannguat (Kringlerne) has been approved, which is described by its owner as the probably largest deposit in the world. And in a few months, the owners of the more controversial rare earth elements and uranium project at Kuannersuit, GML, expects to get an exploitation license. In addition to containing the second biggest uranium and by far the largest thorium deposits, the Ilimaussaq-complex, of which Kuannersuit is a part, has the second largest deposits of rare earth elements in the world. It would leave Greenland with the largest amount of radioactive waste in one place. The operation will only become a reality if the junior exploration company GML succeeds in finding the necessary capital, which is about half of Greenland's GDP. It goes without saying that the existence of a single company of this magnitude in a country will wield enormous power over the country, its Parliament, Government and administration, its politicians and officials, its public service etc. etc.

Only 12 countries are larger in area than Greenland, but measured by population Greenland is small. Still, countries with much larger populations than Greenland's 56,000 have difficulties in resisting the back-door influence from large corporations. Take, say, the nuclear weapons industry lobby, the fossil fuel lobby, the car industry lobby - they and others of the same kind have tremendous power even in places like Brussels and Washington. See Box 3 below for a taste of this with the traffic of politicians and top-officials in Nuuk joining "the Company" – and in one instance returning to public office.

Nuuk, a capital with just over 18,000 inhabitants, is home to a very small administration that has to handle the extremely complex issues of currently 90 large-scale mining projects, and cope with the muscle and cunning of the consultants and lawyers of these projects. GML's EIA is altogether 9,000 pages. It has been back and forth now five times in three languages, English, Danish and Greenlandic, and consumed an unknown amount of manpower over the years.

Greenland's cities and towns are notorious for their inability to handle ordinary waste from households, fishing industries etc. How would they be able to secure the handling of the exorbitant amounts of highly radioactive and poisonous waste that will be the main product from the Kuannersuit mine?

In Denmark, a dozen of large industrial pollutions continues to cause problems decades after they occurred, and local, regional and national administrations have been kicking the can down the road for as long. Take the agrochemical Cheminova company: from 1943 till 2014 it was owned by Aarhus University. It is still today a disaster on the west coast of Jutland. The University never owned up to its responsibility, the same university that delivers expert opinion on the Kuannersuit project. No connection of course, only the irony of history.

The precarious position between Denmark and the US still exists, but a more complex geopolitical pressure on Greenland and the broader Arctic region has grown over the last few years, with Chinese investments, American and Russian military confrontational behaviour; add to this the growing demand for REEs for the 'green transition', high tech weapons that drives the Kuannersuit project today.

All-in-all: Greenland faces large, difficult decisions in the years to come, full of dilemmas, pressures, horse-trading and worse. The fate of the Kuannersuit project is the first and largest test as to where Greenland wants to go. It was heralded as the key to economic independence from Denmark by the Siumut Government led by Aleqa Hammond 2013-2014, but it could very well be the ticket to a new colonial-type dependence of a foreign company head-quartered far away in Australia and after that, an ages-long dependence as custodians over an immense body of radioactive and toxic waste.

## Literature:

A main source for this article is in Danish:

Henrik Knudsen & Henry Nielsen: *Uranbjerget. Om forsøgene på at finde og udnytte Grønlands uran fra 1944 til i dag*. Vandkunsten, Copenhagen, 2016. 272 pages.

## Positions of the political parties prior to the election 6 April 2021

The **Siumut** party has not been as outspoken in its support for the project as it usually is. For some days they would not announce a final position 'till after the election' but provoked by IA the new chair stated that Siumut still wants the project to go forward.

**Inuit Ataqatigiit** or IA has announced that they will halt the project if they can muster a majority. They are gaining ground in the polls so far. (2 March)

**Atassut** have announced they want a referendum.

**Demokraterne** have announced that if scientific investigation shows that mining will be harmful to the environment and people, they will oppose it. The chair of Demokraterne was Minister for Minerals and he initiated the hearings in December 2020.

**Nunatta Qitornai** have not announced their present position, but as their MP is the former Prime Minister Aleqa Hammond (then Siumut) they will definitely be in favour.

**Partii Naleraq** have announced they oppose the project.

**Samarbejdspartiet** have not announced their opinion yet.

## GML and the Revolving Door between Public Office and Private Company Management, - the most auspicious cases

**Lars-Emil Johansen**, Prime Minister of Greenland (1991-1997) was **chairman of the board of GML** 2009-2011 He served as Speaker of Greenland's Parliament, Inatsisartut from 2013 to 2018

**Hans Kristian Schønwardt**, was state geologist in Denmark 1984-1997; has worked on the geology of Greenland since 1963; has consulted for various mining companies, including Tanbreez Mining Greenland A/S; Schønwardt was **chairman of the board in GML**, a position he left in 2010 with accusations from him that the company was hiding information about the mining potential of Kuannersuit.

He was DIRECTOR IN Westrip Holdings Limited, 11 May 2006-22 March 2013 (*Westrip owned 39% of the shares in GML in 2010*)

As Deputy Minister for Mines in Greenland H.K. Schønwardt was responsible for establishing the Bureau of Minerals and Petroleum (BMP) and was the Director for The Bureau 1998-2005. He also co-authored Greenland's Resource Act.

In this capacity Schønwardt:

- was an ex officio member of the Board of Directors in the state-owned Nunaoil A/S
- was responsible for the exploration license given to GML

Director in London Mining PLC; 4 January 2006 - 23 March 2012

Director in Nordic Mining Limited; 1 September 2006 - 14 February 2010

### Jørn Skov Nielsen

Director for the Bureau of Minerals and Petroleum 2006-2012

Deputy Minister of Industry and Mineral Resources 2012-2020

**Executive General Manager in GML 2020-**

## Articles in Nuclear Monitor about Kvanefjeldet/Kuannersuit and uranium mining

[\\*NM #761 Apr. 2013](#)

Ban on uranium mining in Greenland could be lifted.

[NM #771 Nov. 2013](#)

Greenland drops uranium mining ban

[\\*NM #792 Oct. 2014](#)

The prospect of uranium mining in Greenland might be over.

[\\*\\*NM #829 Aug. 2016](#)

An open-pit uranium mine on an Arctic mountain-top

[\\*NM #861 May 2018](#)

Pro-uranium government in power in Greenland.

[\\*NM #879 Nov. 2019](#)

New setback for the Kvanefjeld mining project in Greenland.

[\\*NM #887 Jun. 2020](#)

Kujataa threatened by mining projects and uranium mining.

\* By Niels Henrik Hooge - NOAH Friends of the Earth Denmark's Uranium Group

\*\* By Bill Williams – Medical Association for Prevention of War; International Campaign to Abolish Nuclear Weapons.

[WISE Uranium project](#) has an excellent page about Kuannersuit/Kvanefjeld covering the history since 2009 with many of the issues that pertains to this disputed mining project

<https://www.wise-uranium.org/upgl.html#KVANEFJELD>

## GML – Greenland Minerals Limited, <https://ggg.gl/>

“The largest shareholder (10.5%) is Shenghe Resources Holding Co Ltd (Shenghe), a leading international rare earth company that supplies 2 end-user industries globally with high purity rare earth metals and oxides”  
<https://wcsecure.weblink.com.au/pdf/GGG/02299504.pdf>

“To date, over a billion tonnes of mineral resources have been established. The resource contains one of the largest inventories of rare earth elements and uranium globally (11.1 million tonnes of rare earth oxide, 593 million pounds U3O8)”  
<https://ggg.gl/project/geology-and-resource/>

### Footnotes

- <https://noah.dk/uranium>
- <https://www.loc.gov/law/help/us-treaties/bevans/b-dk-ust000007-0107.pdf>
- [https://en.wikipedia.org/wiki/Monroe\\_Doctrine](https://en.wikipedia.org/wiki/Monroe_Doctrine)
- <https://geusbulletin.org/index.php/ggub/article/download/6369/12201>
- [https://en.wikipedia.org/wiki/Atomic\\_Age](https://en.wikipedia.org/wiki/Atomic_Age)
- [https://en.wikipedia.org/wiki/Proposals\\_for\\_the\\_United\\_States\\_to\\_purchase\\_Greenland](https://en.wikipedia.org/wiki/Proposals_for_the_United_States_to_purchase_Greenland)
- [https://www.mitpressjournals.org/doi/pdf/10.1162/JCWS\\_a\\_00108](https://www.mitpressjournals.org/doi/pdf/10.1162/JCWS_a_00108)
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- <https://www.atomicheritage.org/history/camp-century>
- [https://military.wikia.org/wiki/1968\\_Thule\\_Air\\_Base\\_B-52\\_crash](https://military.wikia.org/wiki/1968_Thule_Air_Base_B-52_crash)
- <https://www.nukestrat.com/dk/gr.htm>
- [https://en.wikipedia.org/wiki/Atoms\\_for\\_Peace](https://en.wikipedia.org/wiki/Atoms_for_Peace)
- Organisationen til Oplysning om Atomkraft / Organisation for Information on Nuclear Power <https://www.atomkraftnejtak.dk/>
- According to Knudsen & Nielsen, 2016 there is no hard evidence of a law banning the mining of uranium, hence the description of a *perceived* but nonetheless *de facto* zero-tolerance, cf. [https://pure.diis.dk/ws/files/388826/DIIS\\_RP\\_2015\\_17\\_2.pdf](https://pure.diis.dk/ws/files/388826/DIIS_RP_2015_17_2.pdf)
- The situation in 2013 about the lifting of the zero-tolerance is described in NM#761, NM#771
- <http://kortlink.dk/noah/2axa5> and <http://kortlink.dk/noah/twef>
- <https://www.world-nuclear.org/information-library/nuclear-fuel-cycle/mining-of-uranium/world-uranium-mining-production.aspx>
- <https://noah.dk/node/1109> and NM#887 Jun. 2020
- The Environmental Agency for the Mineral Resources Area (EAMRA)
- <https://www.arctictoday.com/greenland-will-hold-an-early-election/>
- 141 NGOs call for a moratorium on large-scale mining and oil and gas extraction in Greenland  
[https://noah.dk/sites/default/files/inline-files/Declaration\\_on\\_large-scale\\_mining\\_and\\_oil\\_and\\_gas\\_extraction\\_in\\_Greenland.pdf](https://noah.dk/sites/default/files/inline-files/Declaration_on_large-scale_mining_and_oil_and_gas_extraction_in_Greenland.pdf)
- GML has responded strongly in a Newsletter under the heading “The NGOs’ neocolonial dreams” <https://ggg.gl/assets/GL-DK/Newsletter-3-EN.pdf>

# How the Czech government is speeding up work on state aid to a new nuclear unit

Jiří Jeřábek, energy campaigner at Greenpeace Czech Republic

It has already been a year since Czechia embarked on a more concrete path to a new nuclear unit. In March 2020 the majority state owned energy utility ČEZ applied for a “permit for the siting of a nuclear installation” at the site of the existing nuclear power plant Dukovany. It was followed by several steps of the Czech government aiming at securing state support for the project. Firstly, the state proposed and later approved two contracts with ČEZ, which are setting a cooperation frame between the state and ČEZ as well as conditions under which the state would buy-off from the company the entire project. Later on in May, the Czech media reported that the government has also approved [another document](#), classified as “secret”, setting specific rules for a nuclear tender, to minimize state security risks connected with foreign investors, especially from Russia and China. These contracts were followed by a governmental draft law, drawing the frame for state aid. The law is currently (March 2021) still stuck in the Parliament, where the opposition has several times managed to block its approval.

## State support for the Dukovany project

The state and ČEZ were already for many years keen to build a new nuclear unit. In 2019, ČEZ got a positive decision on the Environmental Impact Assessment for two new 1200 MW units at the existing nuclear power plant Dukovany. The current plan is to build only one 1200 MW unit, to start the construction in 2029 and have the plant operating from 2037. The biggest obstacle so far have been the costs and lack of clarity of how the state would financially support such a huge investment and this should now be overcome by a massive state aid.

In a nutshell, the Minister of Trade and Industry, Mr. Havlíček and the Prime Minister, Mr. Babiš, introduced two concrete forms of state support which complement each other: firstly, the state will be purchasing electricity from the new unit for 30 years or more for a guaranteed price. Secondly, the state would [grant a loan](#) for ČEZ for the construction, to ensure a much lower interest rate than a commercial loan. However, no quantification of the burden for the state budget and the consumers was published for either of the two support schemes.

## State aid legislation

The draft law, introduced in May 2020, sets a scheme of financial support to nuclear power. It is called “The law on measures for the Czech Republic’s transition to low-carbon energy”, but it only deals with nuclear power, which in a NewSpeak twist is defined to equal low-carbon energy. The draft law basically establishes a scheme, where the state is purchasing electricity from new nuclear sources for a guaranteed price negotiated with the state. The agreed price should cover all the costs and insure an adequate profit to the investor. However the price is

not set in law, it will be negotiated in due time with the Ministry of Industry and approved by the government. Also, the law suggests that the finances needed to pay for the extra guaranteed price will come partly from surcharges on distribution and transmission fees, paid for by energy consumers.

The original plan presented by the Ministry was that the law would be passed by the Parliament in a so-called “accelerated proceeding” in first reading without any possibilities of amendments. However, after severe criticism, the law went to the regular process including parliamentary committees and three readings. The impact assessment does not contain any detailed economic analyses suggesting how much the guaranteed price would be, although some figures were mentioned in public interviews. The investment is believed to be 160 billions of Czech Crowns (6 bln EUR) and including a state loan for the project, the electricity from the new reactor would cost only [50-60 euro/MWh](#). Therefore the guaranteed price that would cover the difference to the future power market price is supposed to be negligible. However, this is extremely optimistic as all other nuclear projects in Europe have shown much higher costs. An economic analysis commissioned by NGO Calla suggests a price of new Dukovany unit between 78-138 euro/MWh, depending on the extent of the state support. (the analysis available in English: [Review of new Czech NPP project Economics of Dukovany](#)). The adoption of the law had been already for several times postponed due to the obstructions by the opposition. The opposition parties are primarily concerned about security risks connected to possible Russian or Chinese builders and are suggesting to exclude these from the upcoming tender.

As for the second form of state support, the state loan, there were no more details available and it is not clear where the state money for the loan would come from. There are only statements of politicians saying that the state can cover from 70% to 100% of the investment with a very low interest rate.

While ČEZ got recently approved the above mentioned permit for the siting of a nuclear installation, the other essential steps are not progressing at all and the whole plan is gaining further delays. The law is stuck in the Parliament and it is not sure if it would be approved until the new parliamentary elections in October 2021. Furthermore it is not clear when ČEZ would publish a tender for the builder. The latest [news](#) suggests it might also be only after the elections. Originally, it was planned to be out before the end of 2020. One of the open issues the government has not decided about is whether the tender would be open for Russian and Chinese companies and under what conditions.



# Australian uranium fuelled Fukushima and now fuels global insecurity

By Jim Green and David Noonan

Fukushima was an avoidable disaster, fuelled by Australian uranium and the hubris and profiteering of Japan's nuclear industry in collusion with compromised regulators and captured bureaucracies.

The Nuclear Accident Independent Investigation Commission – established by the Japanese Parliament – concluded in its 2012 report that the accident 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”.<sup>1</sup> The accident was the result of “collusion between the government, the regulators and TEPCO”, the Commission found.

## Overseas suppliers

But overseas suppliers who turned a blind eye to unacceptable nuclear risks in Japan have largely escaped scrutiny or blame. Australia's uranium industry is a case in point. Yuki Tanaka from the Hiroshima Peace Institute noted: “Japan is not the sole nation responsible for the current nuclear disaster. From the manufacture of the reactors by GE to provision of uranium by Canada, Australia and others, many nations are implicated.”<sup>2</sup>

There is no dispute that Australian uranium was used in the Fukushima reactors. The mining companies won't acknowledge that fact — instead they hide behind claims of “commercial confidentiality” and “security”. But the Australian Safeguards and Non-Proliferation Office acknowledged in October 2011 that: “We can confirm that Australian obligated nuclear material was at the Fukushima Daiichi site and in each of the reactors — maybe five out of six, or it could have been all of them”.

BHP and Rio Tinto, two of the world's largest mining companies, supplied Australian uranium to TEPCO and that uranium was used to fuel Fukushima. The mining companies have failed to take any responsibility for the catastrophic impacts on Japanese society that resulted from the use of their uranium in a poorly managed, poorly regulated industry.

## They can't claim ignorance

Moreover, the mining companies can't claim ignorance. The warning signs were clear. Australia's uranium industry did nothing as TEPCO and other Japanese nuclear companies lurched from scandal to scandal and accident to accident.

The uranium industry did nothing in 2002 when it was revealed that TEPCO had systematically and routinely falsified safety data and breached safety regulations for

25 years or more. The uranium industry did nothing in 2007 when over 300 incidents of ‘malpractice’ at Japan's nuclear plants were revealed (104 of them at nuclear power plants).

It did nothing even as the ability of Japan's nuclear plants to withstand earthquakes and tsunamis came under growing criticism from industry insiders and independent experts. And the uranium industry did nothing about the multiple conflicts of interest plaguing Japanese nuclear regulators.

## “Deeply saddened”

Mirarr senior Traditional Owner Yvonne Margarula – on whose land in the Northern Territory Rio Tinto's Ranger uranium mine operated – said she was “deeply saddened” that uranium from Ranger was exported to Japanese nuclear power companies including TEPCO.<sup>3</sup>

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

Yet, Australia could have played a role in breaking the vicious cycle of mismanagement in Japan's nuclear industry by making uranium exports conditional on improved management of nuclear plants and tighter regulation.

Even a strong public statement of concern would have been heard by the Japanese utilities (unless it was understood to be rhetoric for public consumption) and it would have registered in the Japanese media.

But the uranium industry denied culpability and instead stuck its head in the sand. Since the industry is in denial about its role in fuelling the Fukushima disaster, there is no reason to believe that it will behave more responsibly in future.

Successive Australian governments did nothing about the unacceptable standards in Japan's nuclear industry. Julia Gillard – Australia's Prime Minister at the time of the Fukushima disaster – said the disaster “doesn't have any impact on my thinking about uranium exports”.<sup>4</sup>

## ‘Nuclear village’

Signification elements of Japan's corrupt ‘nuclear village’ – comprising industry, regulators, politicians and government agencies – were back in control just a few years after the Fukushima disaster.<sup>5</sup> Regulation remains problematic.<sup>6</sup>

Add to that ageing reactors, and companies facing serious economic stress and intense competition, and there's every reason for ongoing concern about nuclear safety in Japan.

Professor Yoshioka Hitoshi, a Kyushu University academic who served on the government's 2011-12 Investigation Committee on the Accident at the Fukushima Nuclear Power Stations, said in October 2015:<sup>7</sup>

*“Unfortunately, the new regulatory regime is ... inadequate to ensure the safety of Japan’s nuclear power facilities. The first problem is that the new safety standards on which the screening and inspection of facilities are to be based are simply too lax.*

*“While it is true that the new rules are based on international standards, the international standards themselves are predicated on the status quo.*

*“They have been set so as to be attainable by most of the reactors already in operation. In essence, the NRA made sure that all Japan’s existing reactors would be able to meet the new standards with the help of affordable piecemeal modifications – back-fitting, in other words.”*

### **Fuelling global insecurity**

In the aftermath of the Fukushima disaster, UN secretary general Ban Ki Moon called for an independent cost-benefit inquiry into uranium trade.<sup>8</sup> The Australian government failed to act.

Inadequate regulation was a root cause of the Fukushima disaster yet Australia has uranium supply agreements with numerous countries with demonstrably inadequate nuclear regulation, including China<sup>9</sup>, India<sup>10</sup>, Russia<sup>11</sup>, the United States<sup>12</sup>, Japan<sup>13</sup>, South Korea<sup>14</sup>, and Ukraine<sup>15</sup>.

Likewise, Australian uranium companies and the government turn a blind eye to nuclear corruption scandals in countries with uranium supply agreements: South Korea, India, Russia and Ukraine among others.<sup>16</sup> Indeed, Australia has signed up to expand its uranium trade to sell into insecure regions.<sup>17</sup>

In 2011 – the same year as the Fukushima disaster – the Australian government agreed to allow uranium exports to India. This despite inadequate nuclear regulation in India<sup>18</sup>, and despite India’s ongoing expansion of its nuclear weaponry and delivery capabilities.

A uranium supply agreement with the United Arab Emirates was concluded in 2013.<sup>19</sup> This despite the obvious risks of selling uranium into a politically and militarily volatile region where nuclear facilities have repeatedly been targeted by adversaries intent on stopping covert nuclear weapons programs.<sup>20</sup> Australia was planning uranium sales to the Shah of Iran months before his overthrow in 1979.

A uranium supply agreement with Ukraine was concluded in 2016 despite a host of safety and security concerns, and the inability of the International Atomic Energy Agency to carry out safeguards inspections in regions annexed by Russia.<sup>21</sup>

### **China**

In 2014, Australia banned uranium sales to Russia, with then Prime Minister Tony Abbott stating: “Australia has no intention of selling uranium to a country which is so obviously in breach of international law as Russia currently is.”<sup>22</sup>

So why are uranium sales still permitted to China given its breaches of international law?

Australia’s uranium supply agreement with China, concluded in 2006, has not been reviewed despite abundant evidence of inadequate nuclear safety standards, inadequate regulation, lack of transparency, repression of whistleblowers, world’s worst insurance and liability arrangements, security risks, and widespread corruption.<sup>23</sup>

Civil society and NGO’s are campaigning to wind back Australia’s atomic exposures in the uranium trade with emphasis on uranium sales to China.

China’s human rights abuses and a range of strategic insecurity issues warrant a cessation of uranium sales. China’s ongoing human rights abuses in Tibet and mass detention and forced labour against Uyghurs in Xinjiang are severe breaches of international humanitarian law and UN Treaties.

China proliferated nuclear weapons know-how to Pakistan, targets Australia in cyber-attacks, and is causing regional insecurity on the India border, in Hong Kong and Taiwan, and in the Pacific.

BHP’s Olympic Dam is the only company still selling Australian uranium into China. There is a case for the ‘Big Australian’ to forego uranium sales overall and an onus to end sales to China.

A federal Parliamentary Inquiry in Australia is investigating forced labour in China and the options for Australia to respond. A case is before this Inquiry to disqualify China from supply of Australian uranium sales (see submission 02 on human rights abuses and submission 02.1 on security risks<sup>24</sup>).

### **Weapons proliferation risks**

Australia supplies uranium with scant regard for nuclear safety risks. Likewise, proliferation risks are given short shrift.

Australia has uranium export agreements with all of the ‘declared’ nuclear weapons states – the U.S., U.K., China, France, Russia – although not one of them takes seriously its obligation under the Non-Proliferation Treaty to pursue disarmament in good faith.

Australia claims to be working to discourage countries from producing fissile (explosive) material for nuclear bombs, but nonetheless exports uranium to countries

blocking progress on the proposed Fissile Material Cut-Off Treaty and to countries that refuse to sign or ratify the Comprehensive Test Ban Treaty.

And Australia gives Japan open-ended permission to separate and stockpile plutonium although that stockpiling fans regional proliferation risks and tensions in North-East Asia.

### An industry in decline

Despite liberal export policies, Australian uranium sales are in long-term decline and now represent only 8.9 percent of world uranium usage.<sup>25</sup>

With the Ranger mine shut down and no longer processing ore for uranium exports, there are only two operating uranium mines in Australia: BHP's Olympic Dam copper-uranium mine<sup>26</sup> and the smaller General Atomics' Beverley Four Mile operation – both in South Australia.

Uranium accounts for less than 0.3 percent of Australia's export revenue and less than 0.1 percent of all jobs in Australia.

One wonders why an industry that delivers so little is given *carte blanche* by the government to fuel nuclear safety and proliferation risks and global insecurity.

*Dr Jim Green is the national nuclear campaigner with Friends of the Earth Australia. David Noonan is an independent environment campaigner.*

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# NUCLEAR NEWS



**Pakistan:** The 1100-MW Karachi-2 reactor, also called KANUPP-2, was connected to the grid on 18 March 2021. The reactor is a Hualong One or ACP-1000, supplied by the China National Nuclear Corporation (CNNC). It will be operated by the Pakistan Atomic Energy Corporation, PAEC.

Construction of Karachi-2 [began](#) on 26 November 2013. (source WNN weekly)