

The True Cost of the Atomic Myth: "Uranium Dollars" and the Economics of Nuclear Power

By Andrew McKillop

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Since its introduction in the 1950's, the <u>myths</u> surrounding nuclear power have been worked up into a complex web as massive and multiple as the debts and deficits assailing government leaderships and central bankers in most OECD countries, but like these mythbased no alternatives, the nuclear myths are easy to cut back to basics.

We can start with the Mother Myth of nuclear power. This is as beguilingly simple as the sequence leading to yet another debt and deficit bailout, with printed money in Europe, the USA or Japan. We are confronted by all-powerful debts in today's world, and by all-powerful forces in the atom. By intelligently exploiting it we will have ultimate power...

In fact arguments about 'how to use it' and 'should we use it' started even before the world's first atom bomb was exploded in 1945. How could we use this total power and unlimited energy? Would it be for good or evil? How much would it all cost?

COSTS NEVER MATTERED

The atom scientists of the 1930s- names we still know today, like Fermi and Einstein, argued about those subjects too. But being scientists, they were not especially concerned by what it would all cost. Only later, with the founding of the UN's Atomic Energy Agency in 1956 – which is essentially a promotional agency for nuclear power – were the key subjects of entrepreneurial effort and the obligatorily linked need for government subsidies brought into the fray. This was sold as creating a future world where atomic arms will be changed to power plant ploughshares. While atomic weapons were expensive, the ploughshares would be cheap if we spent enough investing in them (so they said).



THE LOVEABLE ATOM: Don't be fooled by the smiley face, it's more likely a wolf in sheep's clothing.

Another handicap for the 1930's atom scientists that make it hard for them to get an idea how much nuclear power would cost, and which cost several of them their very own lives from cancer death, was that 75 years ago they knew little and therefore cared little about radiation and what it did to living things. The myth of radiation being very 'interesting' but not dangerous, was however firmly debunked by the Hiroshima and Nagasaki bombings, but not without a last ditch attempt by the occupying Allied Powers to protect it – by arresting and deporting any journalist who talked about *radiation deaths*. Estimates of radiation deaths from these two bombs vary widely, depending on the cut-off time interval for making an estimate and also hindered by the Allied Powers blackout on radiation deaths, but in total these were likely well in excess of 100,000.

Today with the Fukushima disaster making it suddenly OK to openly doubt that nuclear power is *clean, safe and cheap,* it is easy to find the *radiological equivalent* of these 6 industry standard <u>BWR power plants</u> and their fuel ponds. Anywhere up to 15 000 times the combined release of radiation from the Hiroshima and Nagasaki bombs.

RISKS DON'T MATTER

Under a tight shield of commercial and national security, technological complexity and simple disinterest in *almost unlimited* health and environment security risks the nuclear industry worldwide... has created hundreds of *Doomsday Machines*. They must never, ever suffer total meltdown, or damage so serious their radiological inventory can escape. If – or rather when – that happens the consequences can only and will only be dire. This central fact has been deliberately and consistently hidden from the general public since the so-called *Atomic Age* began.

This so-called Faustian bargain or Devil's bet dwarfs even the incredible costs of what is a *totally uneconomic* source of electricity, but the financial risks of nuclear power are themselves massive – in fact open-ended like the health and environment risks.

A PRICE TO PAY: Fukushima's Faustian drama unfolds.

We could or might find excuses for the sequence of events and overlays of hasty and uninformed, irresponsible or technologically arrogant decisions leading to hundreds of Doomsday Machines being stationed around the planet – each one a gigantic dirty bomb. For many, still even today, atomic energy looks like *something for nothing*, and this alone has attracted generations of charlatans to work the talk circuits in favour of nuclear power.

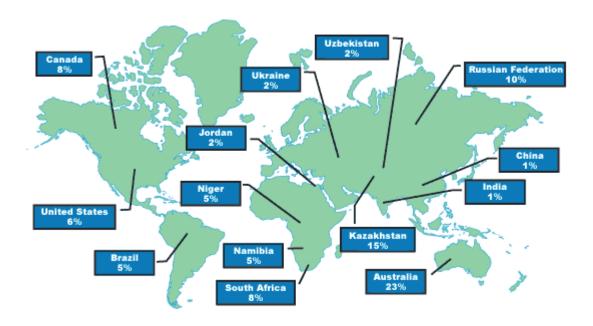
As we know today, the *old nuclear nations* which first developed atomic energy from the 1950s and 1960s have rapidly ageing and unsure reactor fleets. By the 2020-2030 period dozens of these reactors will have to be taken out of service. And then what ? Industry terminology for this includes the keywords Safestore, dismantling, entombment and sarcophagus – all of which translate to extreme high costs both in the short-term and on a recurring basis. This also assumes there will be linked and secure long-term high level radioactive waste *ultimate repositories*, such as the constantly abandoned US Yucca Mountain project, abandoned mainly because of its extreme high cost.

Trying desperately to keep itself alive at whatever cost and whatever risk to present and future human and other life on the planet, the nuclear industry has retreated into its *laager mentality* with technology gimmicks ranging from thorium and other non-uranium fuelled reactors, fusion reactors, and fast breeder reactors. Although no commercial – that is non subsidized and large scale – versions of these *quick fixes* exist, the high-tech sheen on these claimed alternatives is enough to beguile some weak minded, uninformed and gullible persons. Nuclear power should be given another try, they say!

NUCLEAR MERCANTILISM

The key sales pitch for nuclear power- that its costs can be recouped rather quickly from the almost free energy and power it supposedly delivers has been shamelessly used to vend these **Doomsday Machines**, particularly in the emerging and developing countries, from Sudan to Bangladesh, and Ghana to Mongolia. Exactly how to get this energy that will be too cheap to meter remains a shady piece of logic: massive and complex long-term financing vehicles and packages will be needed. While details are shrouded in more than only commercial and financial secrecy – nuclear power's national security handle is heavily employed to blackout information – this, of course, is the basic strategy is **mercantilist**.

The 46-nation <u>Nuclear Suppliers Group(NSG)</u> comprises of mainly OECD membership, but also includes countries like Argentina, Brazil, China, Kazakhstan, South Africa, Turkey and Ukraine, as well as some other small non-OECD countries but specifically does not include India. This traces to the 1975 founding of the NSG, in the wake of India's 1974 test explosion of an atom bomb, and the alarmed but confused attempt by leaderships of the old nuclear nations to lock down nuclear technology but *also* promote nuclear power. The permanent and basic linkage between nuclear weapons, and nuclear power had been made clear for all to see by the Indian test, but business had to go on as usual.



By some strange schizophrenia, the same alarmed political leaderships in the old nuclear nations chose to ignore (or simply *not know*) that with each large-sized civil power reactor they promote, their suppliers contract to house several thousands times more radiation products than those released by the Hiroshima bomb.

Setting aside this sheer madness, for the last 10 years and especially since 2005, *nuclear mercantilism* has rapidly grown as the effective and real mover. This extends far beyond simple market and sales maximising strategy, and the strategy is likely coordinated at high level among the key members of the NSG, who number less than 15 OECD countries.

FROM PETRODOLLARS TO URANIUM DOLLARS

The sales pitch for nuclear power is that we have to massively invest and spend if we want this unlimited energy. Only then will we touch down in Atomic Nirvana and we will finally have been promised since the 1950's- energy that is *too cheap to meter*.

Our fuel is uranium and this fuel is very far from rivalling world oil or other hydrocarbons for global turnover, with an approximate value around 13 billion USD in 2010, but as the nuclear industry likes to crow, uranium fuel costs are only around *five percent* of total operating costs. Uranium supplies are short, and import dependence for most major consumer countries is high. As a result, uranium fuel costs could likely grow, simply due to the permanent supply shortfall of this fuel for reactors and the heavy import dependence of nearly all major users in Europe, Japan and South Korea – incidentally making a mockery of the *energy security* claim used to sell nuclear energy.

Accessing uranium supplies, mainly in Africa and Central Asia is already a *bargaining chip* for nuclear financial packaging and uranium supply features among the underlying movers in Chinese rivalry with OECD country interests in Africa, and Russian versus Western rivalry in Muslim Central Asia. Creating the debt-and-dependency hook, and recycling uranium dollars is therefore part and parcel of the nuclear sales drive in starkly unprepared low income countries – <u>in the case of Sudan</u> (Darfur is home to one of the three largest deposits of high-purity uranium in the world), a long-term civil war and in many others exposed to serious civil strife.

FINANCIAL SHOCKER

Until the Fukushima disaster threw a cloud over the so-called *Nuclear Renaissance* announced by the nuclear industry, this prefigured as many as 100 - 125 reactor sales in emerging and developing countries *outside* China and India in the 2010-2020 period. Excluding uranium supplies, fuel services (waste and reprocessing), electric power infrastructures and other parts of the *nuclear value chain* this **pre-Fukushima** sales target implied a global 10-year turnover value of at least 700 billion USD.

With leverage and financial packaging through national debt and currency exchange rate linked paper, this could generate far above 100 trillion dollars in tradable value, and above all potentially re-create the long 1985-2000 period of Third World debt-driven dependence on OECD nation financial institutions and private banks.

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McKillop

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