

The action to source a GDF site in the manner proposed is bombastic and insulting after the previous consultation was rejected by Cumbria County Council, a body that would appear not to be on your list of negotiation partners. This is a mockery of democracy and can only be equated with EU reaction to any rejection where it keeps asking the same question until it receives a response which is acceptable to the EUrocracy.

That aside, the debate should not be about GDF location but more about how to use the nuclear waste as available resource.

I find it difficult to understand the logic of the Department for Energy, which purports to have environmental concerns at its heart (if that is what the Green Agenda really infers) does not take on board developments in nuclear technology which would utilise high level nuclear waste as a feedstock for new generation reactors based on Thorium. Such reactors would not only reduce the nuclear waste stocks but also produce residues which have much shorter half-lives than the actinide wastes from the Uranium cycle.

A graphic example is shown in the following figure taken from: *Liquid Fluoride Thorium Reactors*, Robert Hargraves and Ralph Moir, *American Scientist*, Volume 98, 2010.

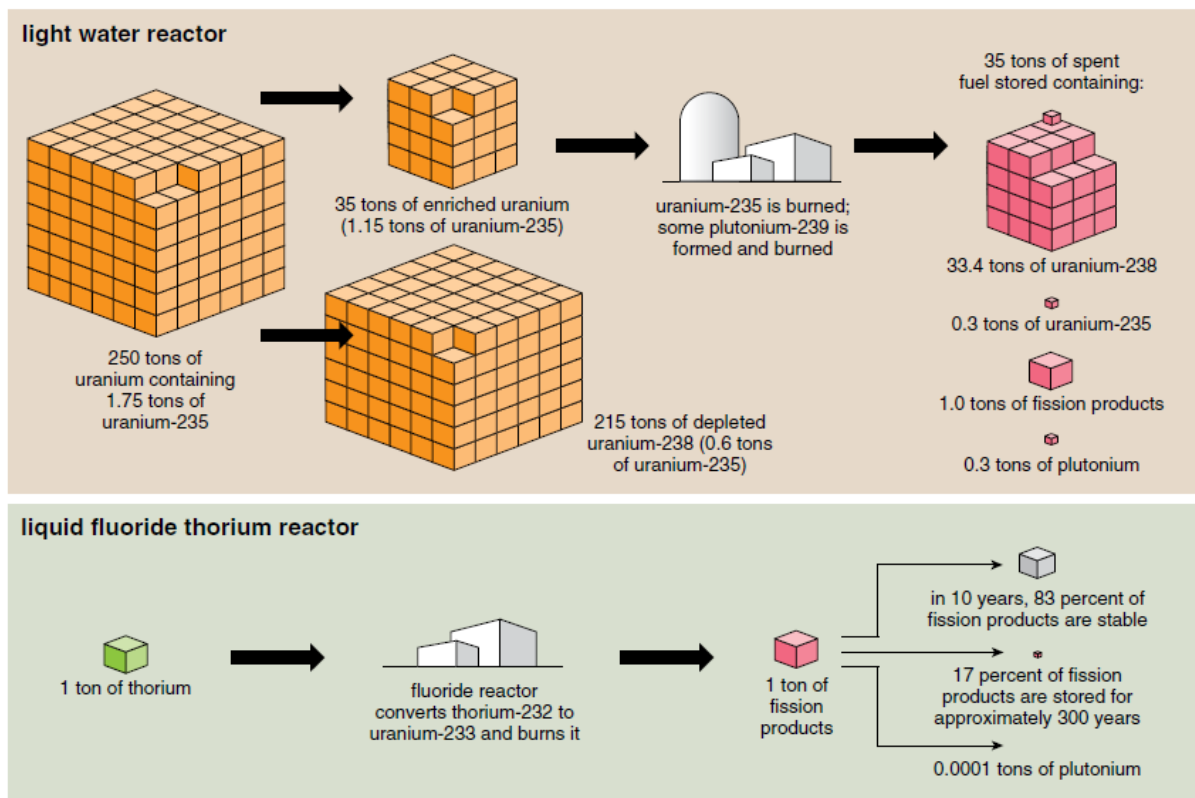


Figure 5. Among the many differences between the thorium/uranium fuel cycle and the enriched uranium/plutonium cycle is the volume of material handled from beginning to end to generate comparable amounts of electric power. Thorium is extracted in the same mines as rare earths, from which it is easily separated. In contrast, vast amounts of uranium ore must be laboriously and expensively processed to get usable amounts of uranium enriched in the fissile isotope uranium-235. On the other end of the fuel cycle, the uranium fuel cycle generates many times the amount of waste by mass, which must be stored in geological isolation for hundreds of centuries. The thorium fuel cycle generates much less waste, of far less long-term toxicity, which has to be stored for just three centuries or so.

Such possibilities show the potential for Thorium based technology and pose the question about your department still looking at Uranium based reactors for the new build which, in turn, will add even more to the high level waste problem.

Hopefully, during his visit to China, the PM will have met with SINAP which is actively developing LFTR for its own Nuclear programme and offers the potential to power China for at least 20k years. Maybe such an exposure will provide sufficient insight to drag UK energy policy into the 21st century.

See Thorium Energy Conference 2013 papers at <http://thoriumforum.com/node?page=5>

Such a solution would be commercially available long before any GDF facility could be completed. Surely there is a clear need for some joined up thinking!

Sincerely,

E J Morley

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