MONEY DICTATES NUCLEAR WASTE POLICY IN THE NETHERLANDS

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Er is in Nederland te weinig radioactief afval (dus in feite te weinig kernenergie) om een ondergrondse berging van radioactief afval economisch aantrekkelijk te maken. Maar volgens de regering is er een uitweg. Over honderd jaar is er meer kernafval. Bovendien zal volgens de regering het geld dat nu opzij is gelegd de komende honderd jaar groeien. Dat stelde de PvdA-VVD- regering op 12 juli 2013[2]. Geld dicteert dus het kernafvalbeleid.
Op 13 augustus 2013 voegde de regering daar nog het idee van internationale opslag aan toe. "Eindberging is voor een land met een klein kernenergieprogramma de duurste stap in het beheer van radioactief afval. Het realiseren van een eindberging met andere landen kan aantrekkelijk zijn vanwege ondermeer schaalvoordelen"[3]. Dat betekent dat we er rekening mee moeten houden dat het kernafval van andere landen in de Noord-Nederlandse zoutkoepels opgeslagen moet worden. Tot zover het PvdA-VVD-beleid.

Summary
Plans for the final disposal of nuclear waste in salt domes in the Netherlands are already 37 years old.
In June 1976 the minister of Economic Affairs made public that five salt domes had been selected for test drilling. Final disposal would start around the year 2000. Immediately protest groups against the plans were created . Test drillings were rejected and the OPLA (OPLAnd, On Land, 1984 -1993) and CORA (Commissie Opberging Radioactief Afval, Committee on Storage of Nucleair Waste 1996 - 2001) started new research programs. In 2011 a new Research Program for Final Disposal of Radioactive Waste (in Dutch OPERA; 2011 – 2015) was started to research of disposal in salt or Boom clay. Spent fuel would be reprocessed and temporary stored in a bunker at the COVRA-facility in Vlissingen for more then 100 years. Final disposal is now foreseen around 2130, depending on the amount of money there will be at that time

Ocean dumping

The Netherlands has been dumping low and intermediate level waste in the sea from 1967 to 1982.[4] Since then all Dutch LLW and ILW was stored first at Petten and since 1992 at the COVRA, near Vlissingen.[5]
Initially radioactive waste was not seen as a problem in Dutch society. In the beginning of the sixties the electricity utility companies decided to build the nuclear power plant at Dodewaard. The government had approved this. At the time neither utilities nor government had questioned whether that waste could be stored safely. Storage was not seen as a necessity then, since the nuclear waste left after reprocessing spent fuel elements from power plants was taken care of abroad. The Netherlands would only have to care for the removal of industrial waste of the nuclear power plants. [6] Indeed, this was dumped into the ocean.

Five salt domes

In the beginning of the Seventies the UK and France showed they were no longer willing to take care of Dutch nuclear waste. The National Geological Agency (RGD) and the Reactor

Centre Netherlands (RCN) then set eyes on the salt domes. The government then created the Interdepartmental Commission on Nuclear Energy (ICK) with its subcommision Radioactive Substances (RAS). The first press publication on this did not disturb anyone. The article in the daily 'Nieuwsblad van het Noorden' of 4. October 1972 heading "Proposal by Reactor Centre Netherlands: store radioactive waste in deep salt layers" did not raise any political reaction, although sites such as Schoonlo were mentioned in the article.
On 18 June 1976 the government wrote a letter to the Executive Board of the provinces of Groningen and Drenthe. The letter stated that five salt domes would be suitable for test drilling: Gasselte, Schoonlo, Pieterburen, Onstwedde and Anloo.[7] The government thought actual storage could begin around the year 2000. [8] According to J. Hamstra, then the main government adviser on nuclear waste, the storage of nuclear waste in the German Asse salt dome was an important argument to investigate salt domes in the Netherlands. [9] Now, after 37 years we know that Asse was a bad example,because all of the 125.000 barrels from this salt dome need to be dug up again[10] .

In 1976 the ICK-subcommission RAS installed in a number of working groups responsible for research, test drillings included. These groups were composed of civil servants of the ministries of Economic Affairs (EZ) and of Environment (VROM). They were assisted by experts provided by RCN, now known as NRG, the National Geological Agency (RGD) and also ,among others, the Polytechnic of Delft.[11]
A RGD report of December 1976 states their goal as: "Feasibility study and general hazard analysis with the aim to obtain public and governmental acceptance".[12] So the conclusion was that the planned research was not about collecting objective data, but to saddle the regional population and administration with radioactive waste. From then on a growing segment of the population in Groningen and Drenthe did no longer believe any official statement. A great number of data against storing in salt confirm this point of view[13] [14]

One of the highlights in the resistance was the demonstration in Gasselte of June 2, 1979 with 25,000 people participating.[15] The government countered this demonstration on June 16 1979 by presenting a plan to accelerate the operation of test drilling. This was done in the framework of the so-called Public Discussion on Nuclear Energy. However, in March 1980 the Dutch parliament rejected test drillings and decided to hold a Social Debate on Energy (MDE) It was called “the Broad Social Discussion (BMD in Dutch). It was decided to delay exploratory drilling until after the BMD.[16]
In 1984, shortly after the BMD, plans for test drilling reappeared again with the Commission Storage at Land (OPLA),[17] although no specific proposals were mentioned. But in an 1987 interim report, OPLA listed 34 salt domes and salt layers in five northern provinces. [18] Again, this list led to many protests.

In 1987 a new attempt to discuss the problem of nuclear waste, started when Environment minister Nijpels (VVD, Liberals), started a consultation process about criteria the storage must meet.[19] But Nijpels made a false start publishing an almost unreadable paper for the participation process, leading to discussions and protests even at government level. [20]

Interim storage as “solution”
As the final disposal in salt was not realised because of the lack of public acceptance, the further development of nuclear power in the Netherlands became questionable. As a “solution” the Dutch government in 1984 changed its policy for radioactive waste (the

Report on Nuclear Waste, nota Radioactief Afval). This report established the choice of geologically disposal and proposed an interim storage of perhaps 100 years.
A Central Organisation for Radioactive Waste (COVRA) was founded for the management of all Dutch radioactive waste. After a lot of discussions and protests a location was found for the company activities close to the Borssele nuclear power plant in Vlissingen-Oost. The storage started in 1992 for LLW and ILW and in 2003 for HLW. The COVRA now is a 100% state-owned company. [21] [22] [23]

Permanent retrievability
On May 14, 1993 the then Environment Minister Alders (PvdA, Social Democrats) wrote that underground storage is allowed, if 'permanent retrievability' is assured. One should always be able to get to the nuclear waste, but salt domes are slowly silting up. Alders therefore called storage in salt "not very realistic", but wanted "further inquiry" into storage in salt and - a new possibility - in clay.[24]
Nuclear waste remains hazardous for a million years. Permanent retrievability requires permanent access to the waste, knowing where the waste is and what the characteristics of the waste are. Thereforen, detailed knowledge of the waste has to be available forever. But is this possible? How has this to be organized? How to be financed? The government is not addressing this.

To study permanent retrievability, the Ministry of Economic Affairs inaugurated in the1995 the Commission Radioactive Waste Disposal (CORA), which published its report 'Retrievable storage, an accessible path? ' in February 2001[25]. Exploratory drilling and further studies in salt domes or clay layers are to be postponed, but not canceled definitely. The nuclear waste remains above ground…. for the moment.
Seven northern salt domes now appear to be most suitable for the construction of repository of nuclear waste. It concerns Ternaard in Friesland; Zuidwending, Pieterburen, Onstwedde and Winschoten in the province of Groningen; and Schoonlo and Gasselte-Drouwen in Drenthe.

In the years that followed, different governments voiced the same opinion. For example, on June 30th 2009 former Environment Minister Cramer wrote to parliament: "In the current state of science and technology only geological (deep underground) disposal of highly radioactive waste is a solution. This will ensure the waste will, even after millions of years, remain outside the living space (biosphere) of humans."[26] According to the minister future policy will be "directed at retrievable final disposal of radioactive waste in deep underground." She also stated that the report about the preconditions for the construction of new nuclear power plants, which will be published in the spring of 2010, will discuss "possible future policy on radioactive waste." The government wants a discussion about nuclear power with "experts and stakeholders." [27]
However, so far this has not been done.

2130
In July 2011 a new research project started: Research Program Final Disposal Radioactive Waste (in Dutch OPERA).[28] Three quotes: "In the current state of science and technology only geological disposal of highly radioactive waste is a solution, which ensures the waste will, for the long term, remains outside the living space (biosphere) of humans." And: "The decision about a disposal facility for Dutch radioactive waste is a process with a very long time horizon (according to the current policy at least 100 years) that will be implemented gradually." … "International experience show this is at least a 20-25 year long process. The ultimate construction of the facility is expected to

take another 5-10 years. This means final disposal in the Netherlands will not be in operation before 2130".[29]

Central organisation COVRA

In 2012 the government wrote that the Netherlands has a relatively small nuclear program. As a consequence "both the total quantities of spent fuel and radioactive waste, which have to be managed, as well as the proportion of high-level and long-lived waste are modest." [30]
Most of the radioactive waste management activities are centralized in one waste management organisation; the facilities of the Central Organisation for Radioactive Waste (COVRA), These are located at one site in the South-Western part of the Netherlands. The COVRA is a 100% state-owned organisation responsible for storing all radioactive waste.
In this way "as much benefit as possible is taken from the economy of scale", says the government: "COVRA has facilities for the interim storage of conditioned low-, intermediate- and high-level waste. The latter category includes spent fuel of research reactors, waste from molybdenum production and waste from reprocessing of spent fuel of NPPs. COVRA also manages radioactive waste from nonnuclear origin. The COVRA buildings have been designed in such a way that, if necessary, the interim storage period may last for at least 100 years." [31]
Upon transfer to COVRA, it takes over all liabilities, including the responsibility for final disposal. According to the generally applied 'polluter pays' principle, the generator of the waste is charged for all costs related to the management of radioactive waste and spent fuel, including the envisaged costs for final disposal. Once the transfer of the waste has been accomplished, the customer is exempted from further responsibility for the waste. No surcharges can be made to make up for exploitation losses by COVRA and no waste can be returned to the customers. [32]

Money dictates 100 years

The cumulative waste volume that is actually in storage right now, is about twenty thousand m^3. The government in July 2013: "For such a small volume it is not economically feasible to construct a deep geologic disposal facility at this moment. The waste volume collected in a period of 100 years was judged as large enough to make a disposal facility in the future viable. There is a period of 100 years available to allow the money in the capital growth fund to grow to the desired level. This brings the financial burden for today's waste, that the generator (producer, h.d.) has to pay, to an acceptable level. This disposal facility is intended to dispose of all types of radioactive waste, ranging from LILW to heat-generating high-level waste (HLW) since this is the only way to make a deep underground disposal facility economically feasible. For the interim period considered, storage in buildings will be required." [33]
After the interim storage period of 100 years, geological disposal is foreseen. Given the long period, investigation efforts are currently focused on the technical feasibility of a disposal facility on our territory. With regard to the schedule for geological disposal it was noticed by the government that no specific further milestones were indicated.[34]
In the view of the government "There is no immediate urgency to select a specific disposal site. However, further research is required to resolve outstanding issues, to preserve the expertise and knowledge, and to be prepared for site selection in case of any change to the current timetable, arising by way of future European directives, for example." [35]
The government continues: "Transparency of nuclear activities and communication to the public are the cornerstones of such a process: to build confidence in the regulator and in the safety of radioactive waste management, to enable a dialogue among stakeholders and/or public debate on the final disposal. The challenge for the Netherlands is the long timetable

involved: to build and maintain public trust in the waste management solution for a hundred years, but at the same time to be prepared for implementation in case of any change to the current timetable, arising by way of future European directives, for example.[36]

No dialogue

So far, these beautiful words of the government have not been followed up with deeds.
The government did however renew the permit for the nuclear reactorBorssele with 20 more years.[37] [38] [39]. Acording to us, this implies that it would be acceptable to produce more nuclear waste without there beiing a solution for the final disposal of it. The government refuses to discuss this explicitly, as well as the question whether there will be safe permanent storage in a hundred years. The government takes for a fact and without discussion that there will be be enough money for final storage in a hundred years time.
We on the other hand have repeatedly suggested a dialogue about nuclear waste.
In the year 2000, we extracted a number of general conditions for a discussions from literature on risk-management and procedures of storage of nuclear waste in The Netherlands , Great Britain, Canada, Sweden, Switzerland, France, United States, Belgium and Germany[40]:
- In the starting phase of a discussion, participating parties should make clear their values, ethical principles and criteria for the judgment on nuclear waste storage.
- From the beginning it should be clear that ethical and societal factors play an important role in the discussion. All groups that have an interest in the issue should have the possibility to join the discussion.
- When the discussion starts, conclusions should be open. A discussion to legitimize decisions already taken has little value.
- Since it has taken a clear position, government is not the most appropriate authority to organise the discussion.
- Those who are critical of storage should be given funds to develop their arguments. Among the different parties, there should be no financial inequality.
- Good information and communication is important. It is important to give clarity about where the parties agree or disagree. More study is often needed, followed by a confrontation of different arguments.[41]

We brought forward these conditions, but until now the Dutch government didn't even listen to these conditions, with the consequence that there was no participation, no dialogue, no real public debate and that no lessons were learnt by the government.

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[2] http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2013/07/12/convention-on-nuclear-safety-cns.html?ns_campaign=documenten-en-publicaties-over-het-onderwerp-kernenergie&ns_channel=att, 12 juli 2013, p 17.

[3] http://www.rijksoverheid.nl/ministeries/ez/documenten-en-publicaties/kamerstukken/2013/08/13/kamerbrief-over-nationaal-programma-radioactief-afval.html, 13 augustus 2013.

[4] IAEA: Inventory of radioactive waste disposals at sea, IAEA-Tecdoc-1105, August 1999.

[5] http://www.covra.nl/over-covra/beleid.

[6] That was stated by former director of the Dodewaard plant, Mr. van Erpen Rooyaards, before NCRV radio on 19 November 1981.
[7] Letter Minister Economic Affairs Lubbers and Minister of Public Health and Enviroment Vorrink to Gedeputeerde Staten (Executive Board) of Groningen and Drenthe, 18 June 1976. Reference 376/II/1055/EEK.
[8] ICK-commissie; *Subcommissie Radioactieve Afvalstoffen (RAS), Eerste interimrapport betreffende de mogelijkheden van opslag van radioactieve afvalstoffen in zoutvoorkomens in Nederland,* (1977).(ICK-Commission Subcommission Radioactive Waste (RAS). First interimreport about possibilities for the disposal of radioactive waste substances in salt formations in the Netherlands.) .
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[14] http://www.co2ntramine.nl/berging-radioactief-afval-in-de-ondergrond/, January 2013.
[15] An anthology of press publications and comments on the disposal proposals can be found in: Meent van der Suis, *Energie en milieu in de Nederlandse krant 1968-1993,* (1993). (Energy and environment in the Dutch newspapers 1968-1993).
[16] Tweede Kamer, session 1979-1980, 15802, nrs. 11-12, p.160.
[17] Tweede Kamer, session 1984-1985, 18343, 6.
[18] Commissie Opberging te Land (OPLA): *Onderzoek inzake geologische opberging van radioactief afval in Nederland, Tweede Tussenrapport over Fase 1* (January 1986-January 1987), 1987. (Commission Storage on Land. Research for geological disposal of radioactive waste in the Netherlands. Second Interim report on Phase 1).
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[21] http://www.covra.nl/disposal/opera-disposal.
[22] http://www.covra.nl/about-covra/organisation.
[23] Herman Damveld et al, "Kernafval in zee of zout? Nee fout"!", uitgave Greenpeace Nederland, 1994, hoofdstuk 7.
[24] Tweede Kamer, session 1992-1993, 23163, nr 1.
[25] http://www.covra.nl/infocentrum/opera.
[26] Ministry of VROM, Reference RB/2009040895, 30 June 2009.
[27] Ministry of VROM, Reference RB/2009040895, 30 June 2009.
[28] COVRA press release: Start OPERA program, 5 July 2011.
[29] OPERA: Mutiannual program OPERA, 5 July 2011.
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[33] http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2013/07/12/convention-on-nuclear-safety-cns.html?ns_campaign=documenten-en-publicaties-over-het-onderwerp-kernenergie&ns_channel=att, 12 juli 2013, p 17.
[34] http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2013/07/12/convention-on-nuclear-safety-cns.html?ns_campaign=documenten-en-publicaties-over-het-onderwerp-kernenergie&ns_channel=att, 12 juli 2013, p 14.

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[39] https://zoek.officielebekendmakingen.nl/stcrt-2013-7403.pdf, 18 maart 2013.
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