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NUCLEAR BELGIUM, PRESENT AND FUTURE

At the end of the 1960s, Belgium decided to start producing a large share of its electricity with nuclear. Between 1975 and 1985 a total of 7 reactors were put online. Today nuclear is responsible for 55,6% of total power production, making Belgium the fourth most nuclear country worldwide, after France, Lithuania and Slovakia. With the Green party in government, in 2003 a phase-out law was passed, deciding to stop the nuclear reactors after a 40 years lifetime. Today the nuclear phase-out law is under heavy attack, and the elections of May or June 2007 will be decisive on the future of nuclear energy in Belgium.

(651.5777) BBL - The decision to order nuclear reactors was taken without any form of public debate in 1968. The first three commercial nuclear reactors were then put online in 1975: two in Doel, close to Antwerp, and one in Tihange, close to Liège. The oil crisis of the seventies was an extra push for taking nuclear energy further. As a consequence between 1982 and 1985 there were another two reactors added to both Doel and Tihange. Making the total of seven in Belgium. All are Pressurised Water Reactors. There were very concrete plans for a fifth reactor in Doel. These plans were met with a lot of protest in the early eighties, and after the Chernobyl disaster in 1986 the Belgian government put a moratorium on new nuclear reactors. The existing reactors were and are being upgraded however, still increasing the nuclear capacity in Belgium.

The nuclear reactors are owned and operated by Electrabel, the Belgian historical monopolist producer (90% of production). The second Belgian producer SPE (8% of production), has a small share of 4% in the reactors Doel 3 and 4 and Tihange 2 and 3. To complete the picture: Electrabel has a share of 650 MW, and SPE a share of 100 MW in the French nuclear reactor Chooz B, just across the Belgian border. In return EDF has a share of 500 MW of Tihange 1.

The original idea was to give the nuclear reactors a lifetime of 30 years. They had to be paid off in 20 years - leading to some of the highest electricity tariffs in Europe - and after 30 years enough provisions had to be accumulated to be able to dismantle the reactors. The operational permits however are not limited to a given date, but are re-evaluated every 10 years. Since Electrabel argued that there was no actual maximum lifetime of a nuclear power plant, the 30 years period got under pressure. After a very heated and lengthy parliamentary discussion - the end report of the parliamentary commission is 229 pages - the previous government then decided to limit the lifetime of the reactors to 40 years. This means that the first three reactors are to be closed in 2015, the last four should close between 2022 and 2025.
The nuclear phase-out was put down in a law, that was finally approved in 2003. It stipulates the dates for the closure of each reactor. And it states that only in

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case of unforeseen external events, such as international crises, and in case of severe energy security problems, the phase-out can be turned back. Not surprisingly, it is this point that the supporters of nuclear energy are now using to re-open the debate about the phase-out.

Table 1. Belgian nuclear reactors, and their foreseen closure.

		Capacity (MWe)		Date
Name	Type	Net	Gross	Foreseen closure
BR-3	PWR	11	12	closed
DOEL-1	PWR	392	412	15 February 2015
TIHANGE-1	PWR	962	1009	1 October 2015
DOEL-2	PWR	433	454	1 December 2015
DOEL-3	PWR	1006	1056	1 October 2022
TIHANGE-2	PWR	1008	1055	1 February 2023
DOEL-4	PWR	985	1041	1 July 2025
TIHANGE-3	PWR	1015	1065	1 September 2025

Table 2. Belgian power production

Annual Electrical Power Production for 2005	
Total Power Production (including nuclear)	Nuclear Power Production
81500 GWh(e)	45335.443 GWh(e)

The energy savings potential, the potential for large- and small scale combined heat and power, the potential for renewable energy in Belgium is more than big enough to cover the nuclear phase-out. Emissions of CO_2 can still be substantially reduced and our dependence of natural gas do not have to increase significantly. Provided that the political conditions are set right. At the moment this is not sufficiently the case. Especially the energy reduction potential in the buildings and in transport is almost left alone.

The question if the nuclear phase-out will actually take place as foreseen in the law, therefore depends on three uncertainties. The first uncertainty is technical. Nothing guarantees that all the reactors will be able to function for 40 years. Or rather, that it will stay profitable enough for Electrabel to keep investing in the reactors, to keep them running. The second uncertainty is political. No political decision - not even a law - is irreversible. Between the date of the decision and the first shutdown lies 12 years, until the last it's 22 years. And a lot depends on the energy policies the coming years. And the third uncertainty is economical. There will have to be enough investments in replacement or import capacity to guarantee the power supply. Which of course depends on the political affirmation of the nuclear phase-out law, combined with the international market situation: price and availability of fossil and renewable energy, price of CO_2...

The arguments

Late spring or early summer of this year there will be federal elections in Belgium. The exact date will be decided end of January. These elections, and the government negotiations that will follow, are crucial for the first phase of the nuclear phase-out. If the phase-out law is not abandoned in the government declaration of this summer, that means that the law will almost certainly stand until the next elections, in 2011. Now, that would be too late to revise the closure date for the first reactors that are to be closed in 2015. Because in order to be able to keep them open - and for example order fuel - the decision to keep them open has to be taken 7 years in advance.

This is probably the main reason why over the last year the pressure of the pro-nuclear lobby has been intensifying dramatically in Belgium. It is of course surfing on the general revival of pro-nuclear spin on the European and international scene, that uses the drive for climate policies and energy security measures as a way to put nuclear at the forefront again. But the Belgian campaign is clearly building up to the elections.

After the decision of the phase-out law in 2003, the debate on nuclear energy was silent for a while. But at the time of the decision it was clear that not all government parties were equally enthusiastic about it. In short, it was the green parties, and to a somewhat lesser extent the socialist parties that were in favour of the phase-out. The liberal party, leading the government, was much less convinced, but gave in to the arguments of its coalition partners. Although, it must be said that leading liberal politicians took clear anti-nuclear positions at the time.

The opposition, Christian-democrats and the extreme right Vlaams Blok, were fiercely against the phase-out.

Three years later the positions haven't changed fundamentally, but they are getting sharper. The communication of the pro-nuclear is on how difficult it will be to achieve drastic CO_2 emission cuts without nuclear, on how much electricity prices will increase without nuclear, and on the insecurity of the supply of fossil fuels. The quarrels between Russia and its neighbours do of course help in this last argument.

At the start of the discussion the focus was on lifetime extension. Those in favour of nuclear were professing to extend the lifetime of the reactors to 60 years. In order to have more time to develop the better alternative of renewable energy. A very attractive bonus of this scenario would be that in the meantime the nuclear reactors could generate cheap electricity - even combined with a potential income for the government from an extra tax on the nuclear electricity. This tax revenue can then partly be used for funding of renewables and efficiency. This is often referred to as the "Borssele scenario", because of the similar approach the Dutch government took in extending the lifetime of the Borssele reactor. (See: In Briefs, ***Nuclear Monitor*** 634, 16 September 2005)

The experience in Finland with the EPR, shows however that one should be very weary about promises to simultaneously support nuclear and renewables. It just doesn't happen. And more importantly, it slams the door shut to really create a competitive renewables sector. As long as nuclear continues to dominate the production market, it will be very difficult for any newcomer, and renewables especially, to get a significant market share. Finally, the increasing risks of accidents associated with lifetime extension make such a choice unacceptable.

Now also new nuclear is coming on the table. Some are defending that Belgium should build a EPR before 2030. Others are claiming that we should invest in a fourth generation reactor, and that the existing plants should therefore get a lifetime extension. Since the fourth generation is only expected in 2040 at the earliest, we would need to bridge that gap.

The risks associated with a new nuclear plant, the plutonium linked with the fourth generation, let alone the siting problem (where are we going to put a new reactor in one of the most densely populated countries in the world?), are carefully avoided.

The political picture
In the run-up to the elections, the political parties are forming their positions. One can distinguish three groups. The first is the group of the supporters of nuclear. This is predominantly the Christian-democrats and the Vlaams Belang (previously Vlaams Blok). The official position of the Christian-democrats is that the phase-out should be undone, and that the fourth generation reactors are interesting.

The second group is the hesitating group. They are saying that we should have a discussion about the phase-out law, without taking a position. The liberals and French-speaking socialists are in this group. The liberals send out mixed signals. Prime minister Verhofstadt for example claimed upon leaving the cinema where he watched Al Gore's **"*An inconvenient truth*"**, that nuclear was no solution for climate change. But a month later he claimed that perhaps the fourth generation reactors might have significant advantages, and that we should carefully investigate this option.

The third group are the opponents to nuclear. They do not want the phase-out law touched. The green parties and the Flemish socialists are in this group. Both have been very outspoken in their rejection of nuclear. And in their critique of the Commission Energy 2030.

The Commission Energy 2030
In December 2005 the (liberal) Energy minister Marc Verwilghen, installed a commission to advise the government on the Belgian energy policy until 2030. The commission is often called the Commission D'haeseleer, for its president is William D'haeseleer, professor at the Catholic University of Leuven. The commission has to investigate possible energy scenarios, and assess them for their compatibility with sustainable development. The result should be an advice for the government on what energy policies to put in place to secure Belgium's energy future, and meet ambitious climate targets. And of course on the nuclear phase-out.

The commission's president and vice-president, along with most of the permanent members, have clear links with the nuclear industry. In November 2006 the commission released its draft report and recommendations. These are now in public consultation. Not surprisingly the recommendations of the commission are pro-nuclear: the phase-out law should be abandoned, a life-time extension until 60 years should be granted, and a new 1700 MW EPR should be built at the site of the Doel nuclear power plant (near Antwerp). In contrast to the belief in nuclear, stands the barely founded scepticism towards offshore wind, energy savings in households and the CO_2-reduction potential in transport.

Seven expert panels now have to form an opinion on the draft report of the commission, and put this in an advise. The panels are supposed to represent all societal groups. Based on the different advises, the commission will then finalise its report and recommendations. They have to be handed over to the minister at the latest on June 17, conveniently about the time when the elections will be.

The report will have to be rewritten drastically in order to be of any use to an objective debate. Notwithstanding it was supposed to assess all aspects of sustainable development, it nearly only assesses the economic (price) aspects of the energy scenarios, and the CO_2-impact. It has 4 scenarios that play around nuclear and carbon capture and storage, but it does not have 1 scenario that puts in place an ambitious renewables and efficiency policy.

At the same time, the Environment minister ordered a report to examine climate scenarios for the period after 2012. The time horizons for this report were 2020 and 2050. Interestingly enough, the report concludes that it is possible to achieve ambitious CO_2-reduction goals, at a negligible cost to the economy, without nuclear, on the condition that an ecological tax reform is put in place. Taxes on labour should be shifted to energy. An option that is not considered by the Commission D'haeseleer.

Conclusion
Nuclear will play an important role in the electoral debates in Belgium in the first half of 2007. It is clear that the pro-nuclear message is getting more attention now than a year ago. What the result will be, remains to be seen. What we do know now is that there is more than enough interest to invest in renewable and gas-fired power production in Belgium. When we list all the projects that are announced, new-built or in the pipeline, this is enough for the first 3 reactors in 2015 to be replaced. It is up to the politicians to make those projects happen.

Sources: Commission D'haeseleer, CE 2030-report: http://www.ce2030.be (with full reports in English) / The Post-2012 report: http://www.climatechange.be/climat_klimaat/pdfs/EN-Post2012_Horiz20-50.pdf (in English, summary also available)

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Apologies

In Nuclear Monitor issue #650, December 15, 2006, the article “Did Israel use experimental bombs with (enriched) uranium in Lebanon?” slipped through our editing process with some personal characterizations about Dr. Chris Busby and Dai Williams that were inappropriate. We apologize for those. The opinions expressed in the article are those of the author. We regret that the article was published without our usual editorial diligence and we have taken steps to ensure that won’t happen again. Dr. Busby has written a response to the article which can be read at www.llrc.org. For additional information on this issue, see two articles in the Independent: http://news.independent.co.uk/world/middle_east/article1935931.ece and http://news.independent.co.uk/world/fisk/article1935945.ece"

AUSTRALIA'S RE-OPENED NUCLEAR DEBATE

Australians have endured a deluge of pro-nuclear propaganda from the federal government, industry, and sections of the media for the past two years. Prime Minister Howard of the ruling conservative government said nuclear energy would help in bringing down the price of cutting down greenhouse emissions. According to the Labor party 'nuclear power will do nothing to protect the Australian economy and environment from climate change'.

(651.5778) Foe Australia - It began with enthusiastic responses to the rising price for uranium and the potential for Australia to become the world's largest supplier. In addition to the uranium mines operating at Roxby Downs (Olympic Dam) and Beverley in South Australia, and Ranger in the Northern Territory, a wave of uranium exploration is underway. Plans are underway to turn the massive Roxby Downs deposit into the biggest uranium mine in the world. (see also Nuclear Monitor 650.5771 "Uranium mining issues review 2006")

Three reports (1) released in late 2006 advocated an expansion of Australia's uranium industry:
A government-appointed panel (named after its chair 'Switkowski') advocated an expansion of uranium mining and the introduction of nuclear power. The EnergyScience Coalition was formed to counter the Switkowski panel. It published it own findings on the web (2)
The Uranium Industry Framework is a federal government-established body comprising representatives of industry, federal and state governments, and the Northern Land Council.
A federal House of Representatives committee released its report, 'Australia's uranium: Greenhouse friendly fuel for an energy hungry world', in December.

Those reports trivialise or ignore the potential for Australian uranium to contribute to weapons proliferation. However, the proliferation risks have received considerable public attention, especially in relation to the Australian government's approval of uranium exports to China. The conservative federal government of Prime Minister John Howard also supports the US-India nuclear cooperation agreement so there may be a further debate in Australia over uranium exports to India.

International Atomic Energy Agency Director-General Dr. Mohamed El Baradei has also made it somewhat easier to draw attention to the flawed nuclear safeguards system with his blunt acknowledgements of its limitations. El Baradei has stated that the IAEA's basic inspection rights are "fairly limited", that the safeguards system suffers from "vulnerabilities", that efforts to improve the system have been "half-hearted" and that the IAEA runs its safeguards program on a "shoestring budget" comparable to that of a "local police department". (3)

The uranium industry, and government bodies such as the so-called Australian Safeguards and Non-proliferation Office, persist with the fiction that there is no risk of diversion of Australian uranium, but it is a lie which is wearing thin. Even the general public believes its very hard to prove that Australian uranium is not becoming part of the military nuclear cycles in different countries. A survey carried out in 2005 by the IAEA found that 56% of Australians consider the Agency's safeguards inspection system to be ineffective. (4)

The Australian Labor Party's (ALP) opposition to the development of any more uranium mines is under serious challenge from the party and may be reversed at the party's April 2007 national conference. However, the ALP has opposed expansion into any other aspect of the nuclear fuel cycle. According to an ALP spokesperson the Switkowski report confirms that 25 nuclear power stations would only be feasible in Australia with massive government subsidies and would be at least 50 per cent more expensive than existing alternatives. "It is not a solution, it's the creation of a further problem." (5)
Strong language which makes it a bit disappointing that the ALP does accept increase in uranium production to provide the rest of the world with fuel for their reactors.

Uranium enrichment and nuclear power
It is widely believed that if Australia's involvement in the nuclear fuel cycle is expanded at all, it will be with the development of an enrichment industry. The Howard government has been promoting uranium enrichment and has acknowledged that its interest has been heightened by the United States-led Global Nuclear Energy Partnership as well as other international initiatives which might close off future options to develop enrichment or reprocessing technology because of their connection to weapons proliferation.

However, the Switkowski report poured cold water on the government's enthusiasm for enrichment, stating that: "The enrichment market is very concentrated, structured around a small number of suppliers in the United States, Europe and Russia. It is characterised by high barriers to entry, including limited and costly access to technology, trade restrictions, uncertainty around the future of secondary supply and proliferation concerns." The Switkowski report concluded that "there may be little real opportunity for Australian companies to extend profitably" into enrichment and that "given the new investment and expansion plans under way around the world, the market looks to be reasonably well balanced in the medium term."

Australian opposition to uranium enrichment programs in Iran and North Korea would be undermined. Likewise, Australia could not credibly oppose other countries in South-East Asia wanting to develop the capacity to

produce fissile material under the guise of a peaceful program.

The government certainly has no short-term interest in developing a nuclear weapons program, but it may be interested in lowering the barriers and the lead-time to weapons by expanding Australia's involvement in the nuclear fuel cycle. Speculation of this nature is unavoidable since the stated reasons for the government's promotion of nuclear power lack plausibility. The government promotes nuclear power as a climate change abatement strategy, but this is unconvincing given that the government has shown little interest in other climate change abatement measures. Similarly, claims that nuclear power would provide energy security lack credibility given that Australia is arguably blessed with a wider range of energy choices than any other nation.

There are no nuclear power reactors in Australia and there has been little interest in nuclear power for over three decades. But interest in nuclear power has been revived. The Switkowski report was upbeat about nuclear power and proposed building 25 power reactors in Australia by 2050. Nuclear power would be about twice as expensive as power from coal-fired plants, however, and could not even begin to compete economically in the absence of a large carbon tax.

The government is treading carefully in its advocacy of nuclear power, aware that it is an expensive energy option and conscious of the potential political fallout of promoting nuclear power. The government has been determined to avoid any discussion of potential locations for nuclear power reactors or for the disposal of the waste they would produce. The political advantage of promoting nuclear power is that it distracts attention from the government's disgraceful record in relation to renewable energy and climate change policy more generally.

Nuclear waste dump

In the 1990s, Pangea Resources targeted Australia for an international nuclear waste repository. That attracted considerable public and political opposition and Pangea closed its Australian office in 2002. Pangea's successor, the Association for Regional and International Underground Storage (ARIUS), is still promoting the idea of dumping nuclear waste in Australia (6) and the push is also renewed by a private consortium called the Nuclear Fuel Leasing Group. Little is known about the group although its head, Dr. John White, has been promoting its vision of establishing in South Australia a uranium enrichment plant, a fuel fabrication plant, and an international nuclear waste repository. The Adelaide-Darwin rail line is already used to transport yellowcake and could also be used to transport nuclear waste. Meanwhile, the federal government is pushing ahead with its plan to impose a national nuclear dump in the Northern Territory despite fierce opposition from the NT government and from Indigenous communities being targeted. The government has forced draconian legislation through the federal parliament to by-pass normal decision-making processes in relation to the proposed dump. This legislation undermines environmental, public safety and Aboriginal heritage protections. (7)

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HAPPY START OF THE NEW YEAR !!
SEVEN REACTORS CLOSED IN DECEMBER 2006

In the last month of last year 7 reactors were shutdown permanently: Jose Cabrera 1 (Zorita) in Spain, Bohunice 1 (Slovakia), Kozloduy 3 & 4 (Bulgaria) and 4 stations in England: Dungeness A 1 & 2 and Sizewell A 1 & 2.

Congratulations to all of us and especially to those who have been fighting these reactors specifically!

According to the IAEA PRIS database, on January 1, there were:

* 435 nuclear power reactors in operation with a total net installed capacity of 367.793 GW(e);
* 6 nuclear power plants in long term shutdown;
* 29 nuclear power plants under construction.

In 2006:

* 3 reactors started operation: in India Tarapur 3, Tianwan 1 in China and Shika 2 in Japan.
* * The total installed capacity grew not only because the capacity of the 3 reactors connected to the grid was larger then that of the 7 reactors closed (by 500 MWe), by also due to upgrading of existing reactors.
* in 12 countries 29 reactors are under construction. However, 14 of them are located in Russia, Ukraine and India; three countries which have enormous difficulties funding their nuclear programme.
* most of the 435 reactors in operation are between 20-30 years old. Only 35 reactors went into operation in the last 10 years and 100 nuclear reactors are over 30 years in operation

Source: IAEA PRIS database, www.laka.org
Contact: Laka at info@laka.org

U.S. COMMERCIAL NUCLEAR POWER'S "GOLDEN ANNIVERSARY": FIFTY YEARS OF FALSE CONFIDENCE AND MASSIVE GIVEAWAYS

2007 marks the 50th anniversary of two essential commitments made by the U.S. federal government that were essential to the establishment of the nascent commercial nuclear power industry: the 1957 National Academy of Sciences (NAS) report on how to dispose of high-level radioactive wastes (HLRWs), and the 1957 passage of the Price-Anderson Nuclear Industries Indemnity Act.

(651.5779) NIRS - The government was urging private enterprises to build and operate reactors under the provisions of the 1954 Atomic Energy Act Amendments, which ended the federal monopoly and secrecy surrounding certain aspects of nuclear energy. The Act was in response to President Eisenhower's infamous 1953 "Atoms for Peace" speech at the United Nations. This initiative was actually more of a cover for drastically expanding the uranium infrastructure in the U.S., largely in order to fuel the arms race. It also marked an effort by the U.S. to beat the Soviets to the punch, another Cold War ideological competition for the technological prestige and glory of deploying electricity reactors first. Offering "Atoms for Peace" research and development assistance to foreign governments was also an effort to win allies against Soviet influence, especially in light of the U.S. having been the first to develop and actually use horrific atomic weapons.

Utility companies, as well as would-be reactor designers and equipment suppliers such as General Electric and Westinghouse, made it clear that they were not interested in bearing responsibility for the unimaginably long-lasting radioactive wastes that would be generated by this potential new source of electric power. In order to calm industry fears about the unprecedented unending hazard associated with high-level waste, the government offered to assume the long-term responsibility and cost. The U.S. Atomic Energy Commission (AEC) looked to an NAS panel comprised of nuclear weapons complex scientists, academics, and industry officials to conduct the first major study on the waste disposal dilemma.

Likewise, the fledgling nuclear industry, as well as the insurance industry, made it clear that they were unwilling to bear the liability - already recognized as potentially catastrophic - for a large-scale radiation release from a reactor. Congress Charles Melvin Price, Democrat from Illinois (future home to more reactors than any other state), and Senator Clinton Anderson, Democrat from New Mexico (already home to the birthplace of the Bomb, Los Alamos National Lab) - members of the powerful Joint Committee on Atomic Energy booster club - obliged with a piece of legislation severely limiting nuclear industry liability for major disasters, and looking to U.S. taxpayers to pay the rest of the compensation for damages. Even atomic cheerleader in chief Vice President Cheney has admitted that without Price-Anderson, "Nobody's going to invest in nuclear power." (1)

With the waste and liability "problems" thus "solved," this government and industry atomic collaboration culminated in late 1957 with the opening and full-scale operation of the 68 megawatt Shippingport Atomic Power Station in Pennsylvania, the first commercial reactor in the U.S.

Ironically, the NAS "Report on Disposal of Radioactive Waste on Land" depended largely on the more than a decade of experiences with waste disposal at Hanford Nuclear Reservation in Washington and Oak Ridge National Lab in Tennessee. Thus, seeking models to follow, the NAS panel looked to practices such as dumping large quantities of liquid radioactive wastes from reprocessing at Hanford directly into unlined pits, a practice that has resulted in still-unfinished clean ups with price tags topping tens to hundreds of billions of dollars, with the fate of major rivers (such as the Columbia) and aquifers (such as the Snake in Idaho) at risk.

The study assumed that commercial irradiated fuel would be reprocessed, and that high-level wastes would be in liquid form, an incorrect assumption. Much of the study focused on different ways of directly injecting liquid HLRWs into different geological media. The most promising medium identified was salt formations. The study cited such locations as Lyons, Kansas and Carlsbad, New Mexico.

Just over a decade later, the AEC would target Lyons as the first permanent national dumpsite for HLRW. It even held a high-profile national press conference announcing the suitability of the site. But the Kansas Geological Survey revealed that many hundreds of exploratory boreholes and other mine drilling crisscrossed the vicinity of the proposed nuke dump, risking fast flow pathways for water that could percolate down, dissolve the salt formation, and form a corrosive brine that could release radioactive poisons back into the biosphere. The AEC beat a hasty retreat.

But in the aftermath of the Lyons debacle, atomic entrepreneurs in Carlsbad offered their community as a nuclear sacrifice area. It took from the early 1970s till 1999 before the first shipment of plutonium wastes reached the Waste Isolation Pilot Plant, but it marked a culmination of sorts - 42 years later - for the 1957 NAS study that prioritized the idea of atomic waste burial in salt. But WIPP takes only transuranics from the nuclear weapons

complex, not commercial irradiated fuel. Fifty years after the NAS study, with the Yucca Mountain Project in disarray, the government's promise to nuclear utilities to "take out the garbage" goes unfulfilled.

Interestingly, the NAS, even 50 years ago, recognized the high costs and risks of transporting HLRWs long distances. Thus it emphasized the importance of a waste disposal plan before reactors were cited. It stated "We have on several occasions been asked such questions as 'Where can waste be disposed of within 25 miles of Tarrytown, New York?' The answer almost certainly is that waste cannot be disposed of safely anywhere near this site. We stress that the necessary geologic investigation of any proposed site must be completed and the decision as to a safe disposal means established before authorization for construction is given. Unfortunately such an investigation might take several years and cause embarrassing delays in the issuing of permits for construction." But such caution was thrown to the wind, as the Indian Point nuclear power plant was built very near Tarrytown, despite no waste disposal plan, and as dozens of reactors were eventually built on the Atlantic Seaboard, even though the NAS reported that waste disposal options were slim there (although Dr. Arjun Makhijani of the Institute for Energy and Enviromental Research has pointed out that some of the most promising sites for geologic disposal in the continental U.S. are just 50 miles west of Washington, D.C.).

And the embarrassing delays continue today, with the U.S. Dept. of Energy's Yucca Mountain Project director recently admitting that DOE's 2017 opening date (already two decades behind schedule) for Yucca is overly optimistic, and 2020 or 2021 might better account for inevitable lawsuits opposing the dump. Even more recently, the trade press reported that the number two official at DOE told a nuclear industry conference that Yucca's opening could be decades away.

Very interestingly, the NAS already recognized that "Anything on the surface is going to make an attractive military target." Fifty years later, and well over five years after 9/11, wastes are still vulnerable to attack, despite repeated calls by a large number of concerned citizens groups to fortify their storage (2), media exposés on the U.S. Nuclear Regulatory Commission's inaction, and court orders that the insecurity be addressed.

NAS also recognized that "Death Valley is an active seismic area. There has been a movement of about 350 feet in front of the Funeral Range in the last thousand years." The Funeral Range is visible from the top of Yucca Mountain, but 50 years later, the U.S. Department of Energy has continually downplayed the risks of the incessant earthquakes at the proposed dumpsite.

There is irony aplenty in the Price-Anderson Act as well. Despite the original legislative language declaring that the liability coverage would be temporary, for just the first decade to get the fledgling industry onto its own two feet, the Act has been extended six times now, most recently as part of the Energy Policy Act of 2005. Price-Anderson now covers any reactor built by 2025. This "temporary" subsidy, worth hundreds of millions to billions of dollars each and every year in the form of insurance premiums nuclear companies do not have to pay, will have facilitated an un-insurable, catastrophically risky industry for 69 years by that point.

2025 is also the year that NRC's Orwellian "Nuclear Waste Confidence Decision" (appropriately first published in 1984) maintains "at least one" HLRW repository will be open somewhere in the U.S. NRC brandishes its "Confidence Decision" to dismiss any waste-related intervention against old reactor license extensions or new reactor licenses based on the fact that, 50 years after NAS's study, no safe and secure long-term waste management system exists in the U.S. It's important to note that the federal government's promise to "take out the garbage" represents yet another massive, unique subsidy to the nuclear power industry. Even if Yucca opens someday, the atomic ratepayer "Nuclear Waste Fund" will fall far short of the dump's projected $58 to over $100 billion price tag. U.S. taxpayers will be expected, yet again, to pick up the rest of the tab.

After 50 years of false assurances, commercial nuclear power's illusions of confidence are wearing quite thin.

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REVIVAL OF ANTI NUCLEAR POWER MOVEMENT IN LATIN AMERICA

(651.5780) WISE Argentina - In late December 2006, Taller Ecologista (WISE/NIRS Argentina) organized a meeting in Buenos Aires, Argentina, with representatives and anti-nuclear activists of groups in Argentina and Canada, United States, Mexico, Venezuela, Brazil and Chile, mainly from the Federation of Green Parties in the America's. The goal of the meeting was to asses the different nuclear plans in all these countries and to send out a warning message regarding the danger implied with such plans.

Claiming that the power crisis can be solved by producing and using nuclear energy without contributing to climate change, more and more Latin American governments are either promoting the start of a nuclear power program or re-

assuring their commitment to get stations finally started (Argentina and Brazil). This is causing huge concern within civil society organizations.

In Chile, the private sector has asked president Michele Bachelet to do a feasibility study on nuclear energy development in the country. Luckily enough the president seems committed to avoid a nuclear energy program to be developed during her mandate. She has expressed this to several environmental organizations.

Venezuela, Brazil and Argentina have agreed to cooperate in nuclear plans and Uruguay has showed some interest in nuclear energy too.

Some analysts say all these plans are also part of the newly revived political will to stand up against United States hegemony by using the fear that civil nuclear programs wil also contribute to military ambitions for nuclear weapons capability.

The organizations at the meeting agreed that there is an urgent need to have a public debate on these issues. The Green parties and civil society organizations present at the meeting ratified their rejection to nuclear power stating it increases political tensions between states in the region, it threatens democracy (as a nuclear power program is almost always developed under secret and misty processes) and the population has no access to information and because we can not compromise the future of this planet and the generations that will survive us and will have to live with the nuclear waste generated in our days.

More information: www.nonuclear.org.ar

Re-launch of the Argentinean Nuclear Plan

The Argentinian Minister of Federal Spatial planning, and Public Investment and Services, Julio Miguel De Vido, announced in August 2006 that the government was willing to invest 3.5 billion US dollars in the nuclear sector. Of this sum, 600 million are to be used to get the Atucha 2 nuclear power station finally up and running. With the decision the government tries to launch an ambitious nuclear program aiming for a national complete nuclear fuel cycle. Officially this is not only meant for massive generation of nuclear power but "nuclear technology will also be applied on the health and industry sector".

Construction work at the Atucha 2 power station, (745 MW) has restarted and is said to be ready by 2010.

The Argentinian goverment also signed an agreement with NASA (Nucleoeléctrica Argentina S.A.), CNEA (Comisión Nacional de Energía Atómica) and AECL (Atomic Energy of Canada Limited), about cooperation to make lifetime extension of the Embalse nuclear power station possible and to undertake feasibility studies for a fourth nuclear power station.

Source and contact: WISE Argentina

GERMAN DEBATE ON NUCLEAR HEATS UP

Just three days after she ruled out reopening the country's decision to phase out nuclear energy during the current parliamentary year, German chancellor Angela Merkel herself reopened the debate after Russia decided to cut off oil deliveries via Belarus to Germany. On January 4, 2007 she said that "since the SPD (the Social Democratic Party) remains firm on the phase-out, there is no use in talking about it every morning". Five days later however Merkel reopened the debate herself in an interview with German television channel ARD when she answered a question on the Russian/German oil dispute by stating that "one should ask oneself what will be the consequence of closing the nuclear power plants".

The first statement of the chancellor was a reaction on Germany's nuclear industry's repeated attempts to find loopholes in the phase-out law. In december 2006 the EnBW energy company asked the Ministry of Environment permission for lifetime extension of the Neckarwestheim I nuclear power plant that, under the current agreement, should be taken from the net in 2008. EnBW proposed to keep the plant open for 8 more years and in return close Neckarwestheim II not in 2021 but at the same time as Neckarwestheim I. The (SPD) Minister of Environment however stated that under the phase-out law it might be possible to transfer lifetime from an older to a newer plant but certainly not the other way around. A few months earlier the CEO of the RWE energy company (Roels) had proposed to extend the lifetime of Biblis A, Germany's oldest nuclear plant. Given the very lousy history of this particular plant (737 official accidents over the last 30 years) this was received as a provocation in itself, only meant to force a new debate.

Chancellor Merkel, not only heading a two-parties government coalition with quite different positions on the nuclear phase-out but also chair of the coming G8-meeting and, for 6 months, chair of the European Union, will be witnessed taking all kinds of different positions in the coming months. She has to please both her friends and her foe's. In the meantime, the German NGO community is getting their act together for the coming 6 months; the G8 and the EU should take firm steps to combate climate change without accepting nuclear as part of the solution.

Sources: ENDS Europe Daily 2233, 04/01/07, www.nabu.de, www.heute.de

More information and contact: NABU www.nabu.de and the German coalition keeping pressure on the phase-out agreement at http://www.atomausstieg-selber-machen.de/

EUROPEAN COMMISSION LAYS OUT GOOD INTENTIONS BUT POOR PLANS. NUCLEAR LANGUAGE REMAINS FLUFFY

(651.5781) WISE - The European Commission's 'energy package', adopted and released on January 10, 2007, contains a number of elements, from a roadmap on renewable energy to an assessment of the status of nuclear power in the EU, from measures to strengthen the internal energy market to climate policy. The package's central document, 'An energy policy for Europe', attempts to bring together all the elements and to present a vision for the future of energy in Europe.

In this document, the Commission sets out the objectives of this process, which began officially last year: to increase sustainability, slash Europe's dependence on imported fuels and enhance competitiveness. And although the objectives are ambitious, most environmental organizations all over Europe criticized the Commission for not adopting the measures necessary to achieve them. As Greenpeace said in a press release; it will largely maintain the status quo.

The rhetorics were good though; 'a new post-industrial revolution is needed to get Europe into an era beyond the fossil-fired economy'. It does call for the rest of the 'developed world' to reduce emissions by 30% by 2020, consistent with the 2-degree objective. If the EU is serious about making sure that the 2-degree threshold is not crossed, it should also commit to reducing its domestic greenhouse gas emissions by 30% by 2020, compared to 1990 levels. This target has already been endorsed by a number of member states (Germany, UK, France, Italy and Sweden). But what goal did the EU set for itself? In the final package the Commission sets a target of 20% reduction by 2020 for the EU member states, in spite of overwhelming scientific evidence suggesting much greater global reductions are necessary.

Renewable Energy
The Commission claims that the energy package will boost investment in renewable energy.
Indeed, a substantial increase in renewable energy technologies would match perfectly the objectives of sustainability, security of supply and competitiveness, as set out in the package.
The technologies work locally, have almost no impact on the climate system and promote technological development and high-quality jobs in the EU.

EU policy on renewable energy to date
The EU so far had a target for 12% of total energy use to come from renewables by 2010.
Two directives are in place, breaking down this target for the two sectors of electricity and transport: Since 2001, the directive for the promotion of electricity from renewable sources of energy sets an EU target of 21% for 2010, broken down into national targets. According to the directive, member states have to implement support policies for renewable electricity.
The 2003 biofuels directive for the transport sector sets a target of 5.75% for the share of biofuels in the EU by 2010.

And now…
On renewable energy, the European Commission now has set only an overall target of meeting 20 percent of Europe's primary energy needs from renewable sources by 2020. The target is, although maybe not yet wat is needed, not the problem. In the package the Commission undermines the very system that would help realise the new objectives which is currently functioning successfully: sector-specific support for renewable energy.

Nuclear
Earlier reports that the Commission would articulate new support for nuclear power are not justified by the documents contained in the energy package.
In the overview document, An Energy Policy for Europe, the Commission states that it plans to set up a "High Level Group on Nuclear Safety and Security" to "eventually" develop additional EU rules on these topics. This move appears to be a smokescreen for doing nothing. It also reflects valid doubts held by the Commission about nuclear power - regarding its true costs, waste management, weapons proliferation and adverse public and political opinion.

In additional discussion papers the nuclear situation in Europe wil be examined but, as there are too many different positions on nuclear no-one expects real new initiatives on the short term. In European media the fluffy language about nuclear was widely taken as a clear support for a increased role of nuclear in combating climate change.

Now its up to the member states to debate the package in the lead up to the spring European Council, which will adopt a prioritised energy action plan for the next three years.

Sources: Press releases of the Greens/EFA in the European Parliament, Greenpeace International, FOE Europe, all January 10, 2007,

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NUCLEAR LOBBY FAILED IN SWINGING EP VOTE TO PRO-NUCLEAR

On December 14, 2006 the European Parliament voted on the "Morgan Report" (the EP's response to the EC's Green Paper on Energy Supply - see NM 650.5772, p.11). The final resolution now adopted calls for *binding and sectoral* targets for renewable energies in the long-term, as in the original proposed draft resolution.
The Amendment 9 that called for a target of 60% electricity from "low carbon" sources (= including nuclear energy) for the EU was rejected, despite the nuclear lobby. The Amendment 4 that stated that nuclear power was reliably safe (!) was rejected as well.

IN BRIEF

E.ON fights British Nuclear Group over THORP costs
German power company E.ON Kernkraft and two related companies have launched a High Court case to prevent British Nuclear Group (BNG) from claiming back the cost of the April 2005 radioactive leak at the Sellafield-based THORP (Thermal Oxide Reprocessing Plant) from them.

BNG was fined £500,000 (US$970,000 or EUR.750.000) last year after admitting a radioactive leak, the size of a lorryload of thallium, and 160 kg of plutonium. BNG plans to charge E.ON for the cost of repair work as a result of the leak, as well as the costs of keeping THORP in its current non-functioning, and the costs of the effects of the delay, including inflation.

E.ON says it should not pay for the costs of the leak because it was caused by BNG's negligence, and breach of contract and statutory duty. But BNG has already billed E.ON for some of the costs, and now E.ON is seeking a declaration that these costs are not payable by it.

A 42-page writ by E.ON shows a culture of complacency among staff who believed that there could be no leak in the new plant. It also says the management of THORP has showed a lack of monitoring information, lack of supervision at all levels, a culture of tolerating alarms, and a lack of auditing and independent assessment.

It goes on to claim that the leak was caused by BNG's negligent design, construction, maintenance and operation of THORP, and the consequences were made more severe and prolonged by the company's inaction.
The Nuclear Decommissioning Authority, which owns the Sellafield complex, is also trying to recover the estimated £40 million (US$77.5 million or EUR. 60 million) cost
of the THORP closure from its insurers.

British Nuclear Group has denied reports that THORP might remain closed until the summer. The company says April is still its target for re-opening the plant.

Sources: Whitehaven News, 04/01/2007, News and Star 02/01/07 and Independent 31/12/06

In our previous THORP article (NM 650.5775, p.14), it was wrongly stated that £500.000 equals EUR. 575.000.

Ford was also against reproccessing
Former U.S. President Gerald Ford died on Dec. 26. Not noted in the many eulogies and high-profile national ceremonies marking his death is the fact that Ford turned the U.S. away from the civilian use of plutonium.
Just one week before his presidential election loss to Jimmy Carter in 1976, Ford declared that the U.S. would no longer view reprocessing as an essential part of the nuclear fuel chain. Ford's action came in the aftermath of India's detonation of a nuclear explosive in 1974. To build its bomb, India had utilized a reactor provided by Canada, its own uranium supply, and Reprocessing know-how acquired from the U.S. Atomic Energy Commission's "Atoms for Peace" initiative.

Carter went further, banning all commercial reprocessing in the U.S. in 1977. Although President Reagan later overturned the ban, the high cost has prevented a relapse into reprocessing. George W. Bush's Global Nuclear Energy Partnership seeks to revive reprocessing of commercial nuclear waste with an infusion of hundreds of millions to billions of U.S. taxpayer dollars in the next decade alone.

To date, the only commercial reprocessing ever done in the U.S. took place at West Valley, New York between 1966 and 1972. Despite the small amount of reprocessing at West Valley, severe contamination remains to be cleaned up; in 1996, the Dept. of Energy put the cost estimate for clean up at $5 billion.

Contact: Kevin Kamps at NIRS

Sources: Brice Smith, "Insurmountable Risks: The Dangers of Using Nuclear Power to Combat Global Climate Change," IEER Press, Takoma Park, Maryland, 2006 / U.S. Department of Energy and New York State Energy Research and Development Authority, Draft Environmental Impact Statement for Completion of the West Valley Demonstration Project and Closure or Long-Term Management of Facilities at the Western New York Nuclear Service Center, January 1996.

With a little help of their friends…
The Japanese government has decided to help the nuclear industry a bit by subsidizing half the cost of uranium exploration to support private companies Searching for the mineral.

"We want to secure concessions in large uranium deposits to improve the level of self-reliance in the nuclear fuel cycle," said the agency. In 2007 in total 1 billion yen (8 million US dollar) will be give to companies involved searching for uranium.

They will increase their activities in countries such as Australia, Canada and Kazakhstan.

"Uranium exploration projects need a certain level of government support as large deposits are rarely found. In addition, even if they were, it sometimes takes 10 or more years to start production" said the government. And support is also needed because Operations will also be heavily affected by the host-nation political situation, the Natural Resources and Energy Agency, a government body, noted.

Source: The Japan Times, January 6, 2007

50 YEARS OF EURATOM - enough is enough
Conference by the Greens/EFA in the European Parliament
7 - 8 March 2007 in Brussels
In the forefront of the 50th anniversary of the Euratom Treaty on 25 March 2007, and just prior to the European Spring Summit on 8 and 9 March 2007, the Greens-EFA in the European Parliament will hold a conference on 7 and 8 March 2007 to discuss nuclear issues. Nuclear safety, nuclear proliferation, the future of the Euratom Treaty and green alternatives will be the main focus.

A quite interesting line-up of speakers (science, politics, ngo's) will give introductions on several aspects of the Treaty. Debate will be encouraged, especially on strategies towards ending the (bad bits and pieces of the) Treaty.

More information and registration:
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The NUCLEAR MONITOR

The Nuclear Information & Resource Service was founded in 1978 and is based in Washington, DC. The World Information Service on Energy was set up the same year and is housed in Amsterdam, Netherlands. NIRS and WISE Amsterdam joined forces in 2000, creating a worldwide network of information and resource centers for citizens and environmental organizations concerned about nuclear power, radioactive waste, radiation, and sustainable energy.

The Nuclear Monitor publishes international information in English 20 times a year. A Spanish translation of this newsletter is available on the WISE Amsterdam website (www.antenna.nl/wise/esp). A Russian version is published by WISE Russia, a Ukrainian version is published by WISE Ukraine and a Japanese edition is published by WISE Japan (latter two available at www.nirs.org). Back issues are available through the WISE Amsterdam homepage: www.antenna.nl/wise and at www.nirs.org.

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