

# Key issues discussed at the Joint Project Workshop in Budapest on December 15 2017

Patricia Lorenz introduced the nuclear waste directive 70/2011/Euratom on behalf of the Joint Project and welcomed the fact that the directive was introduced to make EU member states try and find a solution to the unsolved radioactive waste situation.

In the first presentation Gabriele Mraz/Austrian Institute of Ecology, Vienna pointed out that the Radioactive Waste and Spent Fuel Directive asks the EU member states to set up national programmes with milestones and timeframes (see presentation) and several concrete issues. National programmes were notified to the EU Commission, however, several **infringement procedures** were started; in Jan. 2017 six are ongoing for not notifying the national programmes properly. The NGO Nuclear Transparency Watch (NTW) however managed to obtain those programmes from the EU Commission and to publish those on its websites in July 2016 – only now also the public gained access.

**It is a positive feature of this directive that not only transparency but also participation** has to be included in each national programme. However, some countries' programmes envisage participation only on regional level. This is insufficient and a transboundary SEA (Strategic Environmental Impact Assessment) is needed, because this is the only currently existing comprehensive participation procedure including the assessment of the possible alternatives. Conducting an Environmental Impact Assessment (EIA) for single projects under the programme cannot replace the SEA. Main alternative options for waste management are direct disposal (national or multinational), reprocessing, long-term interim storage, "Wait and See", and export. To conduct an **SEA for the national programme is considered binding** by NGOs, international experts, DG Environment, but there are other opinions on this issue. Another open issue is what happens if a member state undertakes **significant changes** to its programme later, whether notification and SEA need to be repeated. Also of high importance are the indicators needed to monitor the progress in implementing the programmes.

**Export of nuclear spent fuel** is still possible under the new directive. The open issue here is how to prove corresponding standards of waste management exist in the receiving country.

**Massimo Garribba/DG Energy** referred to the coherent legal framework of three directives in the area of safety, waste and emergency. Fully in force is the nuclear waste directive. The question of implementation is currently a topic. Some infringement procedures were opened. What is often mixed up are national programmes and national reports. The national reports concern the practical preparation needed to fulfill the objective of the directive: no burden on future generations from current use of nuclear power and therefore the obligation to take care of the nuclear waste. The **relation to the SEA directive** is not 100% clear; the opinion of Mr. Kremlis of DG Environment is not the final one, as he is not the legal service of the Commission. Some countries did and some did not carry out a SEA. There is a difference between national policy, which all countries already have and the national programme, which is a very concrete tool. The EU Commission received 22 national programmes, only from Latvia not, others as drafts, which does not count. Peer reviews will be conducted; there is an ongoing cooperation with the IAEA on how to conduct those. In February 2017 a Commission report will be published on the status of the implementation of the directive.

However, e. g. **long time frames** are an issue, because they contradict the objective of not putting burdens on future generation; there will be the first legal interpretation. Shared solutions make a lot of economic sense, thinking of Cyprus e.g. or Austria with one research reactor, not each country has to have a repository, but some problems are hard to solve, like the open questions concerning the situation in 1000 years, because borders might change.

On **cost assessments** the EU Commission included a section on financing of the back end of fuel cycle in the Nuclear Illustrative Program (PINIC) of April 4 2016: more info from member states is needed. A member states group on decommissioning exists since 2006. In June 2017 there will be a public event to discuss the situation after the report and the issue of waste will also be on the agenda in Prague May 2017 at the European Nuclear Energy Forum (ENEF).

On the issue of changes to the programmes the directive is clear on this: it has to be re-submitted. However, an agreement needs to be achieved on **what is substantial change**.

Also important is the issue of possible **intra-community transfers**, which do not count as exports, while at the same time there are nuclear waste import bans in place e.g. in France and Finland.

During the discussion the question on **whether the EU member states (MS) are on the right track** was answered by Gabriele Mraz by saying that the MS are trying to find loopholes in the directive, that the programmes are not always convincing and furthermore timeframes are needed for when decision are taken, 2030 is too late, the problems not being new. M. Garribba pointed out that he cannot go into detail about facts in the report, but he believes that progress has been made in the past years, licenses were granted, repositories are operating, some are planned, while high level waste is still unclear. To decide on sites in 1 or 2 years is not realistic, still more time is needed to implement the solutions, NGOs can be helpful to lead an open discussion about the sites. In those countries where an open discussion was possible, like e.g. in Sweden, there is progress, openness is key to finding a solution.

#### **Member states have to include plans for public participation - are they sufficient?**

Conducting a **SEA is always an obligation for plans and programmes**, how come this is not clear in this case and how can we solve this open legal issue? Mr. Garribba answered by explaining that the EURATOM Treaty is a *lex specialis* and applies for nuclear energy. On the issue of how much the EIA directive can be applied here the EU does not have an answer as today, EU court could give this answer. Ms. Mraz pointed out that participation is more than that and public should be able to take part in decision-taking, but this is lacking in most or all programmes.

Several participants in the audience pointed out that the **shut-down of NPPs** is a political pre-condition for finding a final repository and makes it technically more feasible because there is less waste and the amount is known. Another important topic are possible alternatives to geological disposal.

Mr. Garribba clearly spoke out against Wait and See and that a certain balance needs to be reached on this. Public participation is necessary, only discussion can make a solution possible.

**The EC Report on the implementation of the nuclear waste directive will be published in February 2017.** Olga Kališová/Calla raised her voice against the EC notion to call nuclear unavoidable if coal is

to be phased out. Moreover she continued by pointing out that the EIA is key but not always fulfilled properly e.g. during the EIA for Paks in Hungary in 2016.

## HUNGARY

Zsuzsanna Koritár's presentation was delivered by her colleague Márton Fabók and focused on two topics, nuclear waste and the NPP Paks-2.

The status of radioactive waste and spent fuel management in Hungary has not changed or improved recently, and Hungary is not closer to finding a solution than a couple of years ago.

The other issue is Paks-2. The **EIA procedure of the new blocks** has recently been closed, the environmental license was issued in October 2016. Energiaklub, together with Greenpeace, appealed to the Environmental Protection Chief Inspectorate; one of the main arguments was the unresolved question of spent fuel management. This appeal is still under scrutiny by the authority.

At the existing Paks NPP site Hungary intends to build two 1200 MW nuclear units, however, there is no concept or plan for handling the spent fuel, and what is even more serious: the environmental authority doesn't require having one as a precondition for issuing of the environmental license. So the investment can be carried out, in spite of the fact that a final storage might not be possible in Hungary.

But not only final disposal is the problem. A question that needs to be answered much sooner is the **interim storage of spent fuel**. The existing Interim Spent Fuel Storage Facility, where the spent fuel of Paks-1 is currently being stored, is technically not suitable for the new type of fuel which would be used in Paks-2. According to the original EIA documents the interim storage facility should have been built in the narrow space between one of the existing and one of the new reactor units. This plan, however, poses a lot of safety and thus environmental questions, which have not been investigated by the EIA.

This summer an amendment was submitted by Paks-2 to the environmental authority, in which the location of the new blocks were shifted a bit to the north, thus the interim storage and the reactors are not so closely packed. However, this plan is still not reassuring, and its environmental impacts are still not investigated at all.

The other issue is the Hungarian National Programme for radioactive waste and spent fuel management. According to the nuclear waste directive the national programme has to contain concepts, plans and technical solutions for radioactive waste and spent fuel management. The need for preparing it did not stem from the planned construction of Paks-2 but the introduction of the relevant EU directive. The reference scenario is domestic deep geological disposal, however, the national programme does not prove any technical details about it. The national programme also mentions the interim storage of Paks-2 spent fuel:

„It is important that the environmental impact study assesses the site's environmental impacts in combination with the interim storage.” Energiaklub's opinion does not stand alone, but gets confirmation by the national programme. However, this assessment has never been conducted. For

obvious reasons it is very important to have a solution ready before the new NPP starts producing spent fuel and there will be no plan how to manage this fuel.

According to the Hungarian-Russian framework contract of Paks-2, there is a theoretical possibility to take the spent fuel to Russia for technological storage. However, there are serious doubts that this is realistic and reliable option at all.

Article 10 of the nuclear waste directive is about transparency and public participation in decision making. Unfortunately, the Hungarian national programme chose a very narrow interpretation of this article by engaging only municipal associations in the surrounding of radioactive waste facilities. These associations receive financial support from the Central Nuclear Financial Fund. The national programme does not address any other municipality, organization or the wider public, when it talks about transparency or public participation.

The directive also contains provisions on the cost assessment and management of radioactive waste and spent fuel. This is unfortunately highly neglected in the Hungarian National Programme. It doesn't contain calculations, no assessment for the timing of the costs and the risks associated with the management of the Fund. One of the major risks, also pointed out by the State Auditory Office, is that the money on the account of the Central Nuclear Financial Fund actually does not exist physically. It exists only on paper, but there are no actual savings. This will put a huge burden on future generations, when the majority of the costs arise with the final disposal of spent fuel and decommissioning.

The last but not least important question is the **export of spent fuel to Russia**. Based on a 2004 agreement, Paks can transport spent fuel to Mayak for reprocessing. On paper this is also applicable for Paks-2; but not in reality, because there is no reprocessing facility in Russia which would be able to reprocess the new type of fuel of Paks-2 now or in the near future.

**Vladimir Slivyak** from the NGO Ecodefense in Russia, **talked about Rosatom**, a 100% state owned company. However, the government can sell its shares anytime. Rosatom consists of around 400 companies. Rosatom talks about its portfolio worth 100 billion USD of new NPP implying there are many contracts for new NPP, however, that is not the case. Those offers usually include the offer to take back nuclear waste however there is ban on waste import. But this does not include spent fuel if it is for reprocessing. This means that the remaining waste will be sent back and not be taken in for final disposal. One ton results in reprocessing 100 tons of different radioactive waste – takes up much more volume of space.

No inventory of radioactive waste exists in Russia and it is unclear at which site there is how much. It would take decades to take care of it in Russia itself. Almost 23 000 t of spent fuel, most of it will never be reprocessed for technical reasons, because there is only one facility – Mayak. 20 000 m<sup>2</sup> were contaminated, since 1957 until today it has still not been recultivated, only a national park was created and the area is still highly contaminated. People are not allowed there. Since 1959 reprocessing is taking place there - 100 t yearly, very little. In Russia, a final repository is planned, but very unclear and far away.

**There exists no facility for reprocessing from VVER 1200 reactors (like Paks-2)**. So the promise of taking back fuel is currently not real, because spent fuel cannot be taken back but for reprocessing. Radioactive waste from Mayak is still being dumped to the Techa River, in 2005 the director of

Mayak was convicted for this. Mayak continued claiming that they are not dumping radioactive waste. In Germany there was protest against transporting radioactive waste to Russia in 2010 and spent fuel stayed in Germany. Lower safety conditions in Russia were the official reason for this decision by Merkel's government. Ukraine stopped this year the transport of spent fuel to Russia. But main reason is most likely not political (conflict lasts already two years) but the high costs for this Russia is demanding. Vladimir finished his presentation showing pictures about the situation in the surroundings of Mayak. Obviously people are still making use of the territory for agriculture. Many are sick, with or without official medical confirmation of this being radiation induced.

The discussion with András Perger/Greenpeace Hungary and Vladimir Slivyak focused on trying to find out what the Russian/Hungarian deal really included. Paks-2 should start operating in 2026, spent fuel will be produced, stored next to reactor for five years, how will the fuel be transported to Russia if there is still no reprocessing option? The nuclear waste directive would not prohibit reprocessing under conditions now in Mayak, because **the directive does not cover reprocessing**. Vladimir thinks that at this point in time, Mayak will already be closed down and currently there are no plans to build new reprocessing plants in Russia. However, there is no rule on how long the imported spent fuel can be stored, so this is very hard to tell what will be there in 20 years in Russia. Mayak does not make economic sense and unless there will be a modernization or a new one, the existing one is already very old and will be definitely shut-down in 20 years.

This means that for Paks-2 no solution for the spent fuel is foreseen, not even on paper, because no interim storage is planned at the NPP site and Russia has no reprocessing facility and not way to legally import spent fuel from Paks II.

Vladimir also pointed out to insecurities involving the fact that Rosatom is a share company and the government could sell it off as it has happened already with Rosneft. He also continued pointing out that many of the plans officially announced by Rosatom, also concerning the Fast Breeder programme, are never implemented. Government funding for Rosatom is continuously going down. Delays on basically all new projects had been announced. Currently Rosatom is not able to build more than one reactor per year. However, Putin can certainly find money to build Paks-2 if this is seen as a priority. This can be seen also once construction has started, if it starts.

Nuclear Risk & Public Control – The Joint Project: <http://www.joint-project.org/>



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