



# **Environmental Impact Assessment on Lifetime Extensions of Nuclear Power Plants after ECJ Judgement C-411/17**

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## EXECUTIVE SUMMARY

Considerations concerning Planned Lifetime Extension (PLEX) or Long-Term Operation (LTO) of nuclear power plants under the Espoo Convention raise several questions: Firstly, the Convention only applies if they fall under the definition of a proposed activity, which includes major changes to activities. Secondly, they must be subject to a decision of a competent authority. Thirdly, they must be subject to an environmental impact assessment (EIA), if they are likely to cause significant transboundary impact. On top, further general arguments also might be a reason for an EIA to be carried out.

Considering recent case-law on the matter, especially the judgment by the European Court of Justice (ECJ) in Case 411/17 as well as practical and technical aspects of PLEX, the following findings can be established:

1. "Major change" under the Convention is to be applied widely and includes lifetime extensions of nuclear power plants (NPP) for more than a minimal period of time:
  - Examples show that NPP usually undergo major changes such as safety upgrade programmes, power uprates to increase the plant's output and the recently conducted EU stress tests, before their operating time is extended.
  - Multiple changes which are carried out to prepare an NPP for LTO long time ahead of the extension itself also result in major change.
2. Different national systems cannot lead to the effect that only those states providing for a separate permitting or licensing procedure for LTO are required to conduct a transboundary EIA.
3. NPP are listed in Annex I of the Convention and by nature bear the potential to cause significant transboundary impact. Regarding the impact likely to be caused by PLEX, there is no technical or legal reason to distinguish between PLEX and the original commissioning of an NPP.
4. Other arguments, such as the additional amounts of nuclear waste and changed legislative circumstances also lead to the necessity to conduct a transboundary EIA including public participation.

In favour of a consistent legal framework for Parties to the Espoo and Aarhus Conventions as well as EU member states it is necessary that the requirement to conduct a transboundary EIA with public participation according to the Espoo Convention is tied to similar conditions as according to the EIA Directive of the European Union and the Aarhus Convention.

## CONTENT

1	Introduction .....	4
2	Definition of activity and major change.....	5
2.1	Legal aspects.....	5
2.2	Different types of major changes .....	7
2.3	Multiple changes as preparation of PLEX .....	9
3	What defines a decision?.....	11
3.1	Legislative consent.....	11
3.2	Safety Review.....	11
3.3	Multi-tier decision-making.....	12
4	Likelihood to cause significant transboundary impact .....	13
5	Other reasons to conduct an EIA .....	14
6	Conclusions .....	15
	Annex 1 .....	16

## 1 INTRODUCTION

Planned Lifetime Extension (PLEX) or Long-Term Operation (LTO) of nuclear power plants (NPP) is a sensitive issue within the European energy sector. This is due to the age of the operating reactors in conjunction with the near impossibility to construct and/or finance new reactors. Therefore, it often seems easiest to continue the operation of old reactors as an existing electricity source which is also low in CO<sup>2</sup> emissions.

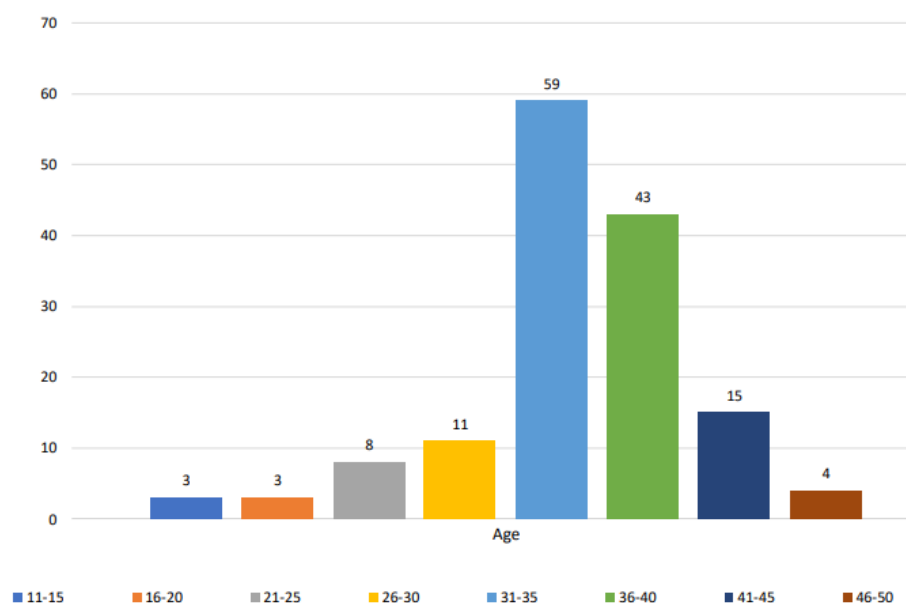
This paper was prepared as a targeted input to the ongoing ad hoc group's work on the issue of NPP lifetime extension under the Espoo Convention in the light of recent case-law, especially ECJ case C-411/17. It aims at gaining better insight in the issue of carrying out obligatory environmental impact assessments (EIA) for operating nuclear reactors once they reached their design lifetime – a procedure industry and states with nuclear power plants try to avoid.

Additionally, at the outset, the core objective of the convention is highlighted, which must necessarily inform any purposive interpretation of the obligations. Ultimately, the convention intends to provide for environmental protection and consultation in the context of activities with likely significant adverse transboundary impacts, and this is set out in the recitals and in the General Provisions of Article 2.

To be treated within the scope of the Espoo Convention, lifetime extensions fall within the definition of a “proposed activity” which the Convention defines as “any activity or any major change to an activity subject to a decision of a competent authority in accordance with an applicable national procedure”. According to the Espoo Convention, an EIA must be conducted if a proposed activity listed in Appendix I – which includes nuclear reactors – is likely to cause a significant adverse transboundary impact.

This paper will focus on the question what is to be considered a “major change” according to the Espoo Convention. Many examples will show that all nuclear power plants which had been operating for 30, 40 or more years have undergone major changes. We will address possible definitions of the term “decision of a competent national authority”. Further consideration is also given to the extent to which lifetime extensions trigger the key test of the Espoo Convention „likely to cause a significant adverse transboundary impact“.

### Age of reactors in Europe



Source: Presentation by Oda Becker at Conference “Climate Crisis” 2019<sup>1</sup>

<sup>1</sup> Available at [https://www.global2000.at/sites/global/files/OldNuclearPlants\\_DNTC\\_Conference.pdf](https://www.global2000.at/sites/global/files/OldNuclearPlants_DNTC_Conference.pdf) (23 November 2019).

## 2 DEFINITION OF ACTIVITY AND MAJOR CHANGE

As the applicability of the Espoo Convention depends on the question whether PLEX falls under the definition of an “activity”, this chapter focuses on the actions usually tied to lifetime extension of NPPs. As this paper will show, firstly, plants undergo changes continuously for a variety of reasons and, secondly, operators intending to life-extend their NPP start preparations by conducting major changes years or rather decades ahead, which can be demonstrated by several examples. These examples also demonstrate the fact that it is difficult to distinguish between, on the one hand, changes designed towards safety improvement or power uprate only and, on the other hand, life-time extension.

According to some considerations, it would be sufficient to conduct a (transboundary) EIA only under the condition that the nuclear regulator grants a permit for a certain period of time with “major changes” being implemented at the plant as a condition at the same time. Two questions arise:

1. What constitutes a “major change”? and
2. Are there any NPP at all, which are granted operational permit beyond the original lifetime of 30 or 40 years without having undergone or undergoing major changes?

After outlining the legal aspects of what can be considered a “major change”, we will provide practical examples to clarify which changes are usually tied to LTO.

### 2.1 LEGAL ASPECTS

Whereas the most common form of LTO involves the continued operation of an existing activity, a reactor newly put into operation after a license has already expired should be treated as a new activity. As however, the definition of “proposed activity” in Article 1 (5) includes new activities as well as “any major change to an activity subject to a decision of a competent authority”, the provisions of the Espoo Convention are to be applied to both cases equally.<sup>2</sup>

Within a preliminary ruling regarding the lifetime extension of NPP Doel, the European Court of Justice (ECJ) for the first time had to deal with the question of the requirement to conduct an EIA for PLEX. According to the ECJ, the wording of Annex I (24) of the EIA Directive – which indicates that a change to or extension of projects subject to this annex requires an EIA (where such a change or extension in itself meets the thresholds, if any, set out in Annex I) – it applies to **any change or extension**, “which by virtue of, inter alia, its nature or scale, presents risks that are **similar, in terms of their effects on the environment, to those posed by the project itself**”.<sup>3</sup> An interpretation of the Espoo Convention – which includes major changes even in the legal definition of a “proposed activity” – should come to the same conclusion.

Regarding the extent of the change to the activity of electricity production, the Court noted:

*“The measures at issue in the main proceedings, which have the effect of **extending, by a significant period of 10 years, the duration of consents to produce electricity for industrial purposes with respect to both power stations in question, which had up until then been limited to 40 years by the Law of 31 January 2003, combined with major renovation works necessary due to the ageing of those power stations and the obligation to bring them into line with safety standards, must be found to be of a scale that is comparable, in terms of the risk of environmental effects, to that when those power stations were first put into service.**”<sup>4</sup>*

The renovation works addressed by the Court which were of needed in order to extend the operational life of both power stations included replacement of facilities due to ageing and the upgrading of other facilities, along

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<sup>2</sup> In this regard see also Findings and recommendations further to a Committee initiative concerning Ukraine, (EIA/IC/CI/4), ECE/MP.EIA/IC/2014/2, Annex, para 45.

<sup>3</sup> ECJ C-411/17, *Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen*, ECLI:EU:C:2019:622, para 78.

<sup>4</sup> ECJ C-411/17, para 79.

with changes to be introduced under the Fourth Periodical Safety Review and stress tests.<sup>5</sup> The relevant actions were described in the “rejuvenation” investment plan earmarking a EUR 700 million investment budget for the necessary works.<sup>6</sup>

The Court thus refers to the **extension of the operating period in conjunction with renovation works**, which might at first glance seem like a unique case. The practical examples in Chapter 2.2 show, however, that major renovation works are by far not atypical in case of PLEX. Although they might be taken step by step and not necessarily as a major upgrade package before the final permit or decision to extend the lifetime is issued, works such as the renewal of the spent fuel pools, building a new pumping station and adaptation of the base to offer better protection to the power stations against flooding, as in the Doel case<sup>7</sup> are not at all exceptional.

In this regard, it should also be considered irrelevant whether changes occurred all at once within one permit or decision or step by step as multiple minor or major changes. Especially regarding renovation or upgrading works in conjunction with a lifetime extension, operators are likely to **conduct various changes at different points in time**. What is relevant in the sense of the Espoo Convention is the likeliness to cause significant environmental impact, which does not necessarily depend on the difference between a major change or multiple minor changes which might amount the same impact. A work-around approach by “salami-slicing” one decision into multiple minor ones each referring to minor changes only, is unacceptable and should be prevented by a clear statement of the Espoo Community.<sup>8</sup>

According to the ECJ, the term “project”, especially in the context of the first indent of Article 1 (2)(a) of the EIA Directive<sup>9</sup> “refers to work or interventions involving alterations to the physical aspect of the site”.<sup>10</sup> According to the ECJ, the **measures and the upgrading work inextricably linked to the lifetime extension together constitute a single project**.<sup>11</sup> Although the question of major change within the scope of the Espoo Convention does not include the term “project” in its wording, Article 2 (7) of the Convention lays down that an EIA “shall, as a minimum requirement, be undertaken at the project level of the proposed activity”. Hence, deriving from the ECJ judicature, an EIA is even more required if an activity falls under the definition of a project.

The Court in the Doel case further noted that **extending the operation of an NPP** “by a significant period of 10 years” is, combined with the necessary upgrading works is **comparable to the original commissioning of a nuclear reactor**.<sup>12</sup> This comparison again clearly shows that the change of an activity must be considered as “major” – as according to the Espoo Convention.

But even apart from the question of major renovation works, it is indicated that the extension of the operating time by itself amounts to a major change to an activity, i.e. if the lifetime is not only extended for a minimal period. In a case regarding the extended duration of a quarry in Ireland, the Aarhus Convention Compliance Committee (ACCC) has also found that the **extension of the operating time by five years is by no means minimal**.<sup>13</sup> The ACCC findings serve to highlight the importance of consultation even where only the operation of the project was extended, and even if there are no physical changes. The ACCC even referred to the aforementioned Rivne case<sup>14</sup> before the Implementation Committee under the Espoo Convention (EIC) in its findings and recommendations further to a Committee initiative concerning Ukraine.<sup>15</sup> In favour of a consistent and contiguous international legal framework and to avoid an incompatibility with the obligations arising under the Aarhus Convention, the Espoo community should obviously sustain this approach.

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<sup>5</sup> ECJ C-411/17, para 65.

<sup>6</sup> ECJ C-411/17, para 64.

<sup>7</sup> See ECJ C-411/17, para 66.

<sup>8</sup> See also similar reasoning of the Aarhus Convention Compliance Committee, e.g. in ACCC/C/2006/17 (*European Community*); ECE/MP.PP/2008/5/Add.10, 2 May 2008, paras 41 et seqq.

<sup>9</sup> Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment, OJ 2012 L 26, 1.

<sup>10</sup> ECJ C-411/17, para 62 with further citations.

<sup>11</sup> ECJ C-411/17, paras 63, 71, 90.

<sup>12</sup> ECJ C-411/17, para 79.

<sup>13</sup> ACCC/C/2013/107 (*Ireland*), ECE/MP.PP/C.1/2019/9, 26 August 2019, para 84.

<sup>14</sup> Further details below, Chapter 2.3.

<sup>15</sup> EIA/IC/CI/4, ECE/MP.EIA/IC/2014/2, annex, paras 42, 44, 45.

Regarding the lifetime extension of the Dutch NPP Borssele, the ACCC found that “the **permitted duration of an activity is clearly an operating condition for that activity**, and an important one at that.”<sup>16</sup> It follows that any change to the permitted duration of an activity constitutes a reconsideration or update of that activity’s operating conditions.<sup>17</sup> Although the wording of the Espoo Convention unlike the Aarhus Convention, does not directly include the term “operating conditions”, a change of operating conditions is closely linked to the activity itself and thus likely to amount to a change of an activity according to the Espoo Convention, given that the activity as such would simply end without the decision on a lifetime extension.

This also applies to cases without a reference to the lifetime of the plant in the license which will be described in Chapter 2.3. Following the approach of the ACCC, a decision to extend the operational period for a longer timeframe than originally planned amounts to the necessity to conduct a procedure with public participation.<sup>18</sup>

For the sake of completeness, it should be noted that the additional amount of radioactive waste due to PLEX, which the ECJ also took into consideration,<sup>19</sup> may as well constitute a “major change”. Such significant additional amounts of waste – in the case of the NPP Doel up to 350 cubic metres for a period of ten years – are inevitably linked to the lifetime extension of nuclear power plants.

To sum up, whether the lifetime extensions falls within the definition of a “project” according to the EIA Directive, a proposed activity or reconsideration or update of operating conditions according to the Aarhus Convention or a proposed activity according to the Espoo Convention, the extension of lifetime for more than a minimal period of time should trigger the obligations to notify and conduct EIA accordingly in line with Articles 2 and 3 of the Espoo Convention.

## 2.2 DIFFERENT TYPES OF MAJOR CHANGES

It should be clear that for nuclear power plants, physical works are not the decisive issue when it comes to defining the “major” change of an activity. Contrary to other large buildings, not only a new wall or additional cooling towers must be regarded as change. In nuclear technology many other changes might be a major change in effect, due to the complexity of NPP systems. In the past decades there was not a single NPP which did not undergo major changes, usually called safety upgrade programmes during operation and/or a multitude of continuous smaller changes, which result in power plants very different to the ones licensed 30 or 40 years ago. One reason is that changes and modifications undertaken do not only address the physical aging of components, but also technological and conceptual aging of the designs.

One highly important major change all nuclear power plants in the EU underwent recently or should undergo in the very next future is the **implementation of stress test results**. In response to the massive nuclear disaster at the NPP Fukushima Daiichi site in Japan on 11 March 2011, a fundamentally renewed discussion on nuclear safety started in the EU and some neighbouring third countries. Those improvements within the stress tests included the establishment of alternative and fully independent back-up heat sinks, an additional layer of safety systems independent of normal safety systems, measures and equipment to protect the plants against several additional types of external events. This led to the deployment of independent station blackout diesel generators, mobile equipment such as pumps and generators for severe accidents, etc.

In France, the stress tests carried out in 2011 resulted in the decision to improve French NPP’s safety by introducing the so-called “hardened core”. However, not a single NPP was yet upgraded with this measure. Currently the operator EDF (Électricité de France SA) is trying to decide which NPP to keep on the grid beyond 40 years of operation, as upgrades will be undertaken only at those plants.

Another change in the operation of NPPs are **power uprates**. Power uprates of up to 7 percent of initial design power can be achieved by adjusting the operational parameters (e.g. temperature or pressure) and control devices. Power uprates of more than 20 percent can be achieved by replacement of steam generators, high- and low-pressure turbines, condensate pumps and motors, or electrical transformers. Examples for power

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<sup>16</sup> ACCC/C/2014/104 (Netherlands), ECE/MP.PP/C.1/2019/3, 21 January 2019, para 65.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> See ECJ C-411/17, para 89.

uprates are Forsmark 3 (+20 percent)<sup>20</sup> in Sweden, Olkiluoto 1 and 2 (33.3 percent each)<sup>21</sup> in Finland and Dukovany 1-4 (11.5-12 percent each) in Czechia. The major change in these cases is constituted not only by the change as such, but also its consequences. These include a reduction of safety margins, the increased ageing of components and faster accident sequences, sometimes also the fuel campaigns and types of fuel are changed; in total this can mean a serious reduction of safety.

Also, many **NPP safety upgrade programmes** have been carried out in the past years. With the following examples we would like to highlight the fact that NPP are never operated in their original version for decades:

One example is the widely deployed **Soviet reactor type VVER 440/213**, e.g. used for **Dukovany** units 1-4 in the Czech Republic.<sup>22</sup> The start of commercial operation of the Dukovany NPP was dated 1986. According to the national CNS reports, two major upgrade programmes were conducted: The initial design of the “Back-fitting” was completed in 1990; its implementation started in 1991 and was completed in 1996. The second programme, MORAVA, most importantly included the exchange of the I&C (Instrumentation and Control system, the “central nervous system”) stemming from the seventies with a digital control system. It was carried out from 2004 to 2007 for unit 1, from 2005 to 2008 for unit 2 and from 2006 to 2009 for unit 4. Annex 1 listed a total of 11 measures for the program “Back-fitting” and 37 for the MORAVA programme.<sup>23</sup> In 2010, the energy output was increased from 440 to 510 MW at all units. After the Fukushima accident, further changes had to be conducted at Dukovany. The most visible and physical change is the construction of additional cooling towers, because the existing ones were identified as not safe enough (“crumbling”) under extreme weather conditions. For units 3 and 4 the implementation of additional cooling towers as ultimate heat sinks is currently in its final stages.

The scope of activities and upgrading programmes necessary to extend the operational period of an NPP can also be demonstrated by **Kozloduj**. The draft Bulgarian National Energy and Climate Plan (NECP) summarizes the measures undertaken in preparation of life-time extension of Kozloduj units 5 and 6:

*“Kozloduy Nuclear Power Plant, being a baseload plant, plays a prominent role in maintaining the sustainability of reserves in the electricity system. It ensures about 33 % of the electricity generation in the country and guarantees Bulgaria’s energy security. The Energy Strategy of the Republic of Bulgaria until 2020, adopted by the National Assembly on 1.06.2011, provides for extending the lifetime of units 5 and 6 of Kozloduy Nuclear Power Plant. **The following actions were undertaken** in this respect:*

- 1. The project for extension of the lifetime of unit 5 was implemented in two stages between 2015 and 2016. As soon as the **full scope of activities for the extension of the lifetime** of the reactor was completed and performance audits were conducted, it was found that no restrictions existed for the safe operation of unit 5 in the period of long-term operation until 2047 (30 years). In compliance with the requirements of Articles 8 and 3 of the Regulation on the procedure for issuing licences and permits for safe use of nuclear energy, on 6.11.2017 the Nuclear Regulation Agency (NRA) issued a licence for the extension of the lifetime of unit 5 of Kozloduy Nuclear Power Plant for a period of 10 years (the maximum operational life according to the Bulgarian legislation).*
- 2. To extend the lifetime of unit 6, **208 activities and measures under the programme for extension of the reactor’s lifetime for a long-term 30-year operation were implemented** by the end of 2018. In accordance with the requirements laid down in the Regulation on the procedure for issuing licences and permits for safe use of nuclear energy, on 8.09.2018 Kozloduy Nuclear Power Plant*

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<sup>20</sup> IAEA country profile Sweden; <https://cnpp.iaea.org/countryprofiles/Sweden/Sweden.htm> (25 November 2019).

<sup>21</sup> <https://www.world-nuclear.org/information-library/country-profiles/countries-a-f/finland.aspx> (25 November 2019).

<sup>22</sup> This reactor model is also in operation in

- Slovakia: Bohunice units 3&4, Mochovce units 1&2 and Mochovce 3&4 (under construction)
- Hungary: Paks units 1-4
- Finland: Loviisa units 1&2
- Ukraine: Rovno units 1&2

<sup>23</sup> CNS Report 2001, Annex 1, 1.3; [https://www.sujb.cz/fileadmin/sujb/docs/zpravy/mezinarorni\\_zpravy/Anex1.pdf](https://www.sujb.cz/fileadmin/sujb/docs/zpravy/mezinarorni_zpravy/Anex1.pdf) (accessed 23 November 2019).



*submitted to the NRA an application for the operation of unit 6 for a period of 10 years (the maximum legally prescribed period)."*<sup>24</sup>

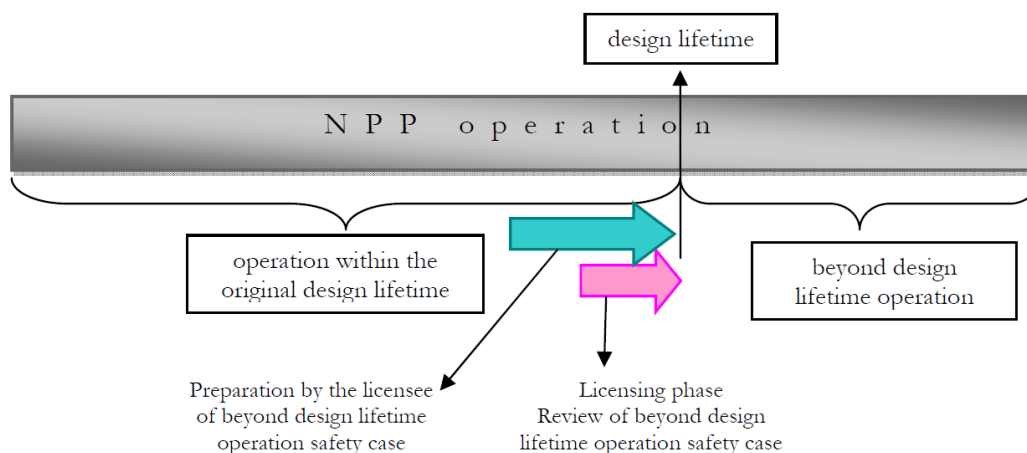
The lifetime extension of the Slovenian NPP **Krško** also requires major upgrade works, such as the alternative design of spent fuel pool cooling, a reconstruction of the operation support centre, the installation of the ventilation and habitability system of the new emergency control room and technical support centre and the installation of an additional heat removal pump.<sup>25</sup>

The above are an indication only of some of the types of changes, and others may include changes to the manner in which the plant is operated.

Clearly regardless of the changes to the physical infrastructure or changes in the approach to the operation of the plant, the **surrounding environment** in which the plant operates has changed since the original project was permitted. Its operation beyond any originally assessed window, therefore necessarily constitutes a major change, a consideration which is best understood in light of the Aarhus Convention.

### 2.3 MULTIPLE CHANGES AS PREPARATION OF PLEX

Lifetime extension and preparation start long before the originally designed lifetime is reached. This is also recommended by the Western European Nuclear Regulator's Association (WENRA), as this picture shows. The view that NPP are designed for 30 or 40 years<sup>26</sup> and need major changes to be operated for a longer time period is shared by WENRA. WENRA believe that LTO is to be prepared before a plant's lifetime is actually fully reached, hence the operator needs to prepare documents and safety upgrades a long time before.<sup>27</sup> The WENRA 2011 report on LTO contains the following graphic explanation:



Source: WENRA 2011, *Pilot study on Long term operation (LTO) of nuclear power plants*<sup>28</sup>

In the case regarding Ukraine, the EIC and the Meeting of the Parties came to the conclusion that the extension of the lifetime of the NPP Rivne, after its initial licence had expired, must be considered as a "proposed activity" and is therefore subject to the provisions of the Convention.<sup>29</sup>

In most WENRA member countries, however, there is no reference to the lifetime of the plant in the license itself. However, in the safety analysis report, there are generally some design assumptions related to the

<sup>24</sup> Draft integrated Energy and Climate Plan of the Republic of Bulgaria, pp 14 et seq; [https://ec.europa.eu/energy/sites/ener/files/documents/ec\\_courtesy\\_translation\\_bg\\_necp.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/ec_courtesy_translation_bg_necp.pdf) (23 November 2019).

<sup>25</sup> See Slovenian Nuclear Safety Administration, News from Nuclear Slovenia, April 2019, p 1; [https://www.gov.si/assets/organi-v-sestavi/URSJV/Dokumenti/Jedrske-novice-za-tujino/News\\_from\\_Nuclear\\_Slovenia\\_April\\_2019.pdf](https://www.gov.si/assets/organi-v-sestavi/URSJV/Dokumenti/Jedrske-novice-za-tujino/News_from_Nuclear_Slovenia_April_2019.pdf) (23 November 2019).

<sup>26</sup> Generation II reactors for 30 years only.

<sup>27</sup> Western European Nuclear Regulator's Association (WENRA), Pilot study on Long term operation (LTO) of nuclear power plants, March 2011 [http://www.wenra.org/media/filer\\_public/2012/11/05/lttofnpps\\_1.pdf](http://www.wenra.org/media/filer_public/2012/11/05/lttofnpps_1.pdf) (23 November 2019).

<sup>28</sup> [http://www.wenra.org/media/filer\\_public/2012/11/05/lttofnpps\\_1.pdf](http://www.wenra.org/media/filer_public/2012/11/05/lttofnpps_1.pdf) (23 November 2019).

<sup>29</sup> ECE/MP.EIA/20/Add.1-ECE/MP.EIA/SEA/4/Add.1, decision VI/2, para 68.

lifetime of some key components, of which the reactor pressure vessel is the most important one. When such values are mentioned, they are generally between 30 and 40 years. When a lifetime is specified in the license, the licensee has in general the possibility to ask for an extension, which needs to be supported by appropriate ageing management programmes and other relevant justifications.

For these reasons, although in the case regarding the Rivne units 1 and 2 formally a new license had to be issued, the outcome should also apply in other LTO cases. The examples presented above show that all other VVER 440 reactors were licensed to 30 years operation time as well. To avoid EIA, Atomic Laws were changed both in Slovakia and Czech Republic and reference to those limited 30 years is now being avoided<sup>30</sup>. Earlier, the situation was perceived differently:

In 2011, the operator started the EIA procedure for the “Long-term operation of NPP V2” (operation of units 3 and 4 Bohunice). As of November 2019 only a very short note can be found<sup>31</sup>. Until October 2019, information was accessible on the Slovak Ministry of the Environment web portal<sup>32</sup>, which defined LTO as a change of activity according to the Slovak EIA Law No. 24/2006 Coll. “This EIA procedure was not completed by issuing the Final Statement, because the project applicant retracted the plan (intent) in 2015 without presenting an Environmental Report.”<sup>33</sup> However, even the short entry still on the website clarifies: “*Change of proposed activity Long-term operation NPP V2, meaning 30 additional years after the design life time. The design life time is 30 years, unit 3 will reach it in 2014, unit 4 in 2015.*”<sup>34</sup>

This also applies for Dukovany – four reactors of the same type operating in the Czech Republic. There the originally intended 30 years were reached and the regulator SUJB issued conditions for the extension<sup>35</sup>, after the operator CEZ had filed an application for an extension of operation beyond the period 30 years; without this permit, operation would not have been possible; o EIA was carried out; to avoid this situation in future, a new Atomic Law which entered into force on 1 January 2017<sup>36</sup> was passed, introducing unlimited licenses.

The presented examples show that the extension of an NPP operational period alone already constitutes major changes. Some might have been already implemented, some still need to be carried out – but in any case, these changes never underwent an EIA. The fact that the upgrade programmes are being implemented now shows that they are a preparation for PLEX. The example of France where the operator is waiting for a decision which plants’ lifetime will be extended before making this large investment is another indication for the extent of necessary changes. The operators who already analysed and implemented the updated safety levels certainly did so with the intention of extending the lifetime of their reactors.

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<sup>30</sup> <https://www.sujb.cz/jaderna-bezpecnost/jaderna-zarizeni/jaderna-elektrarna-dukovany/dulezita-rozhodnuti-k-provozu-edu/> (26 November 2019).

<sup>31</sup> See screenshot in Annex 1; online available at: <https://www.enviroportal.sk/skSK/eia/detail/dlhodoba-prevadzka-je-v2?> (26 November 2019).

<sup>32</sup> At <https://enviroportal.sk/sk.SK/eia/detail/dlhodoba-prevadzka-je-v2> 26 November 2019).

<sup>33</sup> Analýza niektorých otázok týkajúcich sa možnosti vykonania procesu EIA na jadrové zariadenia Mochovce a Jaslovské Bohunice; translation from Slovak to English by Patricia Lorenz.

<sup>34</sup> Ibid, p 2.

<sup>35</sup> <https://www.sujb.cz/jaderna-bezpecnost/jaderna-zarizeni/jaderna-elektrarna-dukovany/dulezita-rozhodnuti-k-provozu-edu/> (26 November 2019).

<sup>36</sup> <https://www.sujb.cz/en/legal-framework/new-nuclear-law/> (26 November 2019).

### 3 WHAT DEFINES A DECISION?

Activities or major changes only fall within the definition of “proposed activities” according to the Espoo Convention if they are subject to a decision of a competent authority in accordance with an applicable national procedure. Therefore, the question arises which national acts can be classified as decisions according to the Convention.

#### 3.1 LEGISLATIVE CONSENT

What has been subject of different cases on international and EU level is the question of **legislative acts leading to the permits of a certain activity**. In this regard, the ECJ as well as the ACCC have dealt with situations where large-scale projects of significant national and also transboundary impact have been subject to a parliamentary or legislative act.<sup>37</sup> What can be concluded from these cases is that if a legislative body in some way acts as an authority by authorising or deciding on the future of a specific activity, the requirements for public participation or EIA fully apply.<sup>38</sup>

According to the ECJ, it is also irrelevant if the project implementation requires an additional consent by an administrative authority, as long as the measures adopted by the legislator define “essential characteristics of the project and, a priori should no longer be a matter for debate or reconsideration”.<sup>39</sup>

Provided that a legislative act provides for a concrete extension of the operational period of a nuclear power plant, and this extension can no longer be reconsidered or adapted at a later stage, it is accordingly clear that the requirement to conduct an EIA equally applies to such a legislative act.<sup>40</sup>

#### 3.2 SAFETY REVIEW

Regarding the question of access to justice, the ACCC found that when determining how to categorize a decision, an act or an omission under the Convention, its **label in the domestic law of a Party is not decisive**.<sup>41</sup> Interpretation of other Conventions or EU legislation should not be in contradiction to this approach. After all, the applicability of the Convention must not depend on the wording of an act (e.g. “license”), but on its function. Hence, the obligation to carry out a transboundary EIA cannot be dependent on whether an active “decision” is required by national law or what level of discretion an authority has when issuing a license or permit. After all, the interpretation of the term “decision” should include any kind of approval by authorities.

In some cases, national law lays down **safety evaluations to be conducted in order to continue operations of a nuclear power plant**. Even in cases where the national authority has no option but to issue a permit given that all relevant safety requirements are fulfilled, this national act must be considered a decision. It is also possible that findings and recommendations of a periodic safety review (PSR) may trigger a “decision” if they are followed by a subsequent authorization under the condition that the respective findings and recommendations are implemented. Otherwise, in such cases, national law would entirely prevent authorities to carry out environmental impact assessments, which cannot be acceptable and, in case of activities listed in Appendix I, contravene Article 2 (2) of the Espoo Convention.

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<sup>37</sup> See e.g. ECJ C-182/10, *Solvay and Others*; ECJ C-411/17, *Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen*; ACCC/C/2011 (*United Kingdom*).

<sup>38</sup> ACCC/C/2011/61 (*United Kingdom*), ECE/MP.PP/C.1/2013/13, 23 October 2013, paras 54, 56.

<sup>39</sup> ECJ C-411/17, para 88.

<sup>40</sup> See C-411/17, paras 87 et seq.

<sup>41</sup> See ACCC/C/2005/11 (*Belgium*), ECE/MP.PP/C.1/2006/4/Add.2, 28 July 2006, para 29; ACCC/C/2008/32 (*European Union*); ECE/MP.PP/C.1/2011/4/Add.1, 14 April 2011, para 71.

### 3.3 MULTI-TIER DECISION-MAKING

A similar issue concerns multi-tier decision-making procedures. The ACCC found that, “where significant environmental aspects are dispersed between different permitting decisions, it would clearly not be sufficient to provide for full-fledged public participation only in one of those decisions”.<sup>42</sup> Respective decisions should be subject to the Aarhus Convention – and consistently subject to the Espoo Convention – if they „**embrace all the basic parameters and main environmental implications** of the proposed activity in question”.<sup>43</sup> Only this way can be guaranteed that all environmental decisions addressing environmental aspects meet the requirements of the Convention(s). This is in line with the requirement that public participation takes place “early, when all options are open” (Article 6 (4) Aarhus Convention).

Regarding the timing of the EIA, it would be recommendable – again for the sake of consistency also with EU law – to apply the following statement as well within the Espoo Convention of the ECJ:

*“Where one of those stages is a principal decision and another an implementing decision which cannot extend beyond the parameters set by the principal decision, the effects which the project may have on the environment must be identified and assessed at the time of the procedure relating to the principal decision.”<sup>44</sup>*

As the Espoo Convention stresses in its preamble the „need to give **explicit consideration to environmental factors at an early stage in the decision-making process** by applying environmental impact assessment“, there is generally a clear requirement to conduct EIA early within a multi-tier decision-making process.

It follows that the **definition of the term “decision”** is to be **interpreted widely**, including legislative acts giving consent to specific proposed activities as well as safety reviews with findings and recommendations to be implemented. Finally it must be considered that the requirements of a transboundary EIA might also apply to more than one decision within a multi-tier decision-making process and are in any case to be carried out at an early stage. In any case, the configuration (or absence) of a permitting procedure can under no circumstances lead to the exemption of an activity listed in Appendix I from the Convention’s scope.

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<sup>42</sup> ACCC/C/2006/17 (European Community); ECE/MP.PP/2008/5/Add.10, 2 May 2008, para 42.

<sup>43</sup> Ibid, para 43.

<sup>44</sup> ECJ C-411/17, para 86, referring to ECJ C-201/02, *Wells*, EU:C:2004:12, para 52, and ECJ C-2/07, *Abraham and Others*, EU:C:2008:133, para 26.

## 4 LIKELIHOOD TO CAUSE SIGNIFICANT TRANSBOUNDARY IMPACT

Generally applicable rules to define which proposed activities or projects are likely to cause significant adverse impact are rare to find, as this question is mostly answered on a case-by-case basis. Clearly, **the precautionary principle** applies, which includes considering the risk of major accidents and/or disasters.

Regarding the EIA Directive, the ECJ ruled, that **projects covered by Annex I**, which includes nuclear power plants, generally “present an **inherent risk of significant effects on the environment** and therefore an environmental impact assessment is indispensable in those cases”.<sup>45</sup> The Court argued that extending an NPP’s lifetime of originally 40 years by a significant period of ten years, combined with major renovation works due to physical ageing and ageing of the plant’s design the power stations and the obligation to bring them into line with safety standards “must be found to be of a scale that is comparable, in terms of the risk of environmental effects, to that when those power stations were first put into service.”<sup>46</sup>

Annex I (24) of the EIA-Directive determines that “any change to or extension of projects listed in this annex where such a change or extension in itself meets the thresholds, if any, set out in this Annex” requires an EIA. This is to be interpreted to the effect that “it **applies to any change or extension** to a project, which by virtue of, inter alia, its nature or scale, **presents risks that are similar, in terms of their effects on the environment, to those posed by the project itself.**”<sup>47</sup>

Applying this approach to the Espoo Convention it must be agreed that a change or extension presents a similar risk in terms of the effects on the environment to those posed by the original activity itself and must in any case be subsumed under the definition of a “major change”.

The ACCC has found that even without additional renovation works it is “**inconceivable that the operation of a nuclear power plant could be extended** from 40 years to 60 years **without the potential for significant environmental effects.**”<sup>48</sup> There is no clear reason why the Espoo community should chose a different approach.

This likelihood to cause effects accordingly applies in a transboundary context, considering that the transboundary effects of new activities in this field are evident. The ECJ’s judgement showed a similar reasoning, stating that the **likelihood of significant transboundary effects is indisputable** and an EIA thus necessary.<sup>49</sup>

Unless they are granted for a minimal time period, lifetime extensions are likely to cause significant adverse environmental impact in general. Given the nature of nuclear power plants these impacts will also be of a transboundary nature.

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<sup>45</sup> ECJ C-411/17, para 75, 80, referring to ECJ C-404/09, *Commission v Spain*, EU:C:2011:768, para 74, and ECJ C-531/13, 11, *Marktgemeinde Straßwalchen and Others*, EU:C:2015:79, para 20.

<sup>46</sup> ECJ C-411/17, para 79.

<sup>47</sup> ECJ C-411/17, para 78.

<sup>48</sup> ACCC/C/2014/104 (*Netherlands*), ECE/MP.PP/C.1/2019/3, 21 January 2019, para 71.

<sup>49</sup> ECJ C-411/17, paras 81, 93.

## 5 OTHER REASONS TO CONDUCT AN EIA

When discussing the need public participation and knowing that an EIA procedure would be the only option, it must be noted that according to the **EU Nuclear Safety Directive**<sup>44</sup>, which is based on WENRA recommendations, NPP are not upgraded to fulfil the current safety level, but only as much as is “reasonably practicable”. Therefore, the **need for risk assessment and understanding of the future safety level** is key, as the public has the right to know which safety deficits exist and are not remedied because it is considered technically or economically impossible.

In the recent past also changes occurred in **radiation protection legislation**. To make sure that the reactors operate according to requirements applied in other potentially affected countries, notification and EIA are the only efficient tool. An example for new legislation in this field is the Austrian Emergency Measures (Interventions) Catalogue introduced in 2014 and similar to the one in Germany. So far, no operating NPP had to test whether it fulfils this regulation. E.g. through the now planned new NPP Dukovany, regions up to 100 kilometres away from the Czech-Austrian border could be contaminated with Iodine 131 to such an extent, that the harvest would have to be destroyed. In order to ensure compliance with these legislative requirements, inter alia set by radiation protection acts, authorities must be able gain insight in the assessment of cross-border impact through transboundary EIA.

But besides the question of necessary upgrade works, another argument is clearly in favour of an obligatory EIA in case of NPP lifetime extensions: Not only the intervention in the environment may change due to a lifetime extension, but the **NPP’s surrounding environment as such might have changed** as well, e.g. due to climate change. The use of the same amount of natural resources may thus lead to different environmental effects, if these resources are no longer available to the same extent. This leads to a necessity to (re-)assess environmental impacts according to the current state at the time of extension.

What also needs to be considered is that most NPP currently in operation **have not undergone a complete EIA when they were originally permitted**. A transboundary EIA regarding their extended operational period thus gives members of the public and affected states the option to participate which they should have had in the first place, for this concerns an era before the relevant UNECE Conventions.

## 6 CONCLUSIONS

Clearly no nuclear power plant undergoes life-time extension (PLEX) without major changes at some point in time. Only once the operator clearly decided to embark on PLEX, major measures are taken, reaching from replacing large components to different technological updates, introducing new fuel types or new I&C systems (Instrumentation and Control). This leads to the easiest – as well most logical and practical – recommendation that lifetime extensions beyond 30 years are accompanied by an obligatory transboundary EIA with a catalogue of issues including

Overall, lifetime extensions of nuclear power plants, considering their possible impact as well as the amount of the changes they imply, can be compared to completely new projects or activities. In any case they cannot be considered a minimal change of activity. The likelihood to cause transboundary impact is given, not only caused by supplementary renovation works, but for the fact that a power plant which otherwise would have ceased operations is kept in service or re-commissioned for a certain period of time.

Existing cases prove that a transboundary EIA is necessary to extend the lifetime of an NPP. The examples of Rivne and Doel are not exceptional as most NPP undergo similar technical measures. From a legal point of view, the question whether a new permit or license must be issued, or the operating period is extended by a legislative act cannot be decisive.

The necessity to conduct an impact assessment with public participation for PLEX can be demonstrated by practical and technical arguments and has been confirmed by the European Court of Justice as well as within the legal basis established by the Convention of Aarhus and Espoo. In favor of a consistent and contiguous international legal framework, we thus call upon the ad hoc working group of Parties to the Espoo Convention to consider these arguments in their draft guidance on the applicability of the Convention to the extension of the lifetime of nuclear power plants.

# ANNEX 1

enviroportal.sk/skSK/eia/detail/dlhodobá-prevádzka-je-v2? | O Enviroportáli | Tlačové správy | RSS feed | Mapa stránky | Kontakt | Hľadaj na Enviroportáli...

enviroportál  
Informačný portál rezortu MŽP SR

Environmentálne témy | Zelené hospodárstvo | Agendy | Informačné systémy | Dokumenty | Videotéka | Pýtate sa

Env. problémy | Rizikové faktory | Príčiny a dôsledky stavu ŽP | Zložky ŽP | Starostlivosť o ŽP | Medzinárodná spolupráca | Terminológia v ŽP

### Posudzovanie vplyvov na ŽP (EIA/SEA)

- Právne predpisy EIA/SEA
- Proces EIA/SEA
- Kroky EIA
- Kroky SEA
- Medzištátne posudzovanie
- Dokumentačné centrum
- Zoznam spôsobilých osôb
- Informačné zdroje
- Projekty EIA
- Informačný systém EIA/SEA
- On-line vstup pre kontaktné osoby
- Pýtate sa
- Kontakt
- Anglická verzia

### Integrovaná prevencia a kontrola znečisťovania (IPKZ)

Prevencia závažných priemyselných havárií (PZPH)

Environmentálna výchova

## Dlhodobá prevádzka JE V2

Print

- **result.act:** 24/2006 novela 408/2011 Z.z. časť EIA
- **Činnosť:** 2.4 Jadrové elektrárne a iné zariadenia s jadrovými reaktormi (s výnimkou výskumných zariadení na výrobu a konverziu štepnych a obohatených materiálov, ktorých maximálny tepelný výkon nepresahuje 1 kW stáleho tepelného výkonu) vrátane

### Základné informácie

**Účel akcie:** Zmena navrhovanej činnosti Dlhodobá prevádzka JE V2 znamená prevádzku JE V2 ďalších 30 rokov po projektovanej životnosti. Projektovaná životnosť je 30 rokov a bude dosiahnutá v roku 2014 pre 3. blok a v roku 2015 pre 4. blok.

**Dotknutá obec:** Veľké Kostoľany, Pečeňady (okres: Piešťany)

**Príslušný orgán:** Ministerstvo životného prostredia SR  
Námestie Ľ. Štúra 1, 81235 Bratislava

**Navrhovateľ:** Slovenské elektrárne, a. s., Mlynské nivy 47, 821 09 Bratislava

**IČO Navrhovateľa:** 35829052

**Povoľujúci orgán:** ÚJD SR

### Dokumenty

Po ukončení procesu posudzovania vplyvov na životné prostredie je dokumentácia uchovaná v evidencii príslušného orgánu.