

## ANNEX

# CLARIFICATIONS AND INFORMATION REGARDING THE PLANNED EXTENSION OF THE DESIGN LIFETIME OF THE BORSSELE NUCLEAR POWER PLANT

### Introduction

1. On 7 May 2014, the Implementation Committee (Committee) under the Convention on Environmental Impact Assessment in a Transboundary Context (Convention) received information from Greenpeace Netherlands regarding the planned extension of the design lifetime of the Borssele nuclear power plant (Borssele NPP).
2. By letter of 19 September 2014, the Committee requested the Government of the Netherlands (Government) to provide the following clarifications and information:
  - (a) *Please provide information about the planned activity (extension of the design lifetime of the Borssele nuclear power plant), the location, the characteristics and the current status;*
  - (b) *Please provide information about the environmental impact assessment (EIA) process for the planned activity, especially with regard to the transboundary aspects; have the potentially affected countries been notified in accordance with article 3 of the Convention?*
  - (c) *Has the Government of the Netherlands taken the necessary legal, administrative and other measures to implement the provisions of the Convention with respect to the activity?*

### (a) Information about the planned activity

3. The Borssele NPP is operated by *N.V. Elektriciteits-Produktie­maatschappij Zuid-Nederland* (EPZ). It is a two-loop Siemens/KWU pressurized water reactor (PWR) that has been in commercial operation since 1973. The Borssele NPP has a thermal power of 1365 MWth, a gross capacity of 512 MWe and a net electrical output of about 485 MWe. It generates some 4% of the Netherlands' electricity demand and is at the moment the only nuclear power plant in operation in the Netherlands.
4. The location of the Borssele NPP is indicated in Figure 1. The plant is located in the Province of *Zeeland* in the southwest part of the Netherlands, at approximately 25 km from the border with Belgium. The distance to the nearest point in Germany is approximately 210 km.

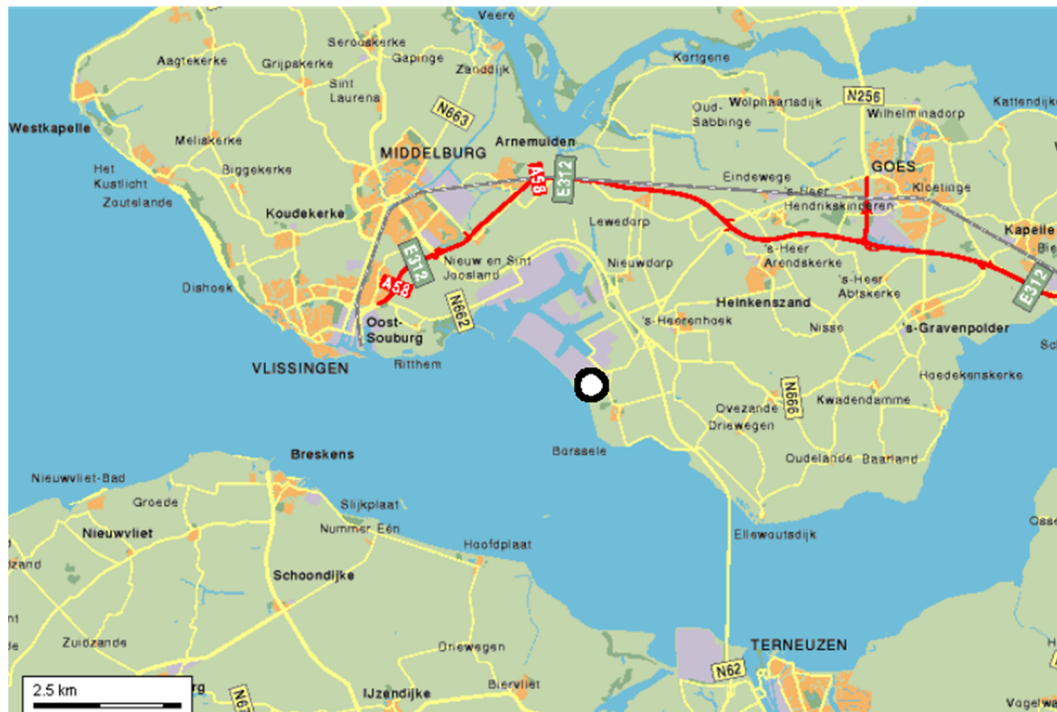


Figure 1: Location Borssele NPP (in circle).

5. The license for construction and operation of the Borssele NPP was issued in 1973 for an *indefinite* period under the Netherlands' Nuclear Energy Act. A Safety Report is part of the license. When the relevant design safety analyses were carried out, the Safety Report was based on a design lifetime of 40 years.
  
6. The ultimate date to shut down the Borssele NPP is 31 December 2033. This shut down date has been incorporated in Section 15a of the Netherlands' Nuclear Energy Act since the first of July 2010. The Dutch text of the Act is available on the internet (<http://wetten.overheid.nl/BWBR0002402>). Compared to the license under the Netherlands' Nuclear Energy Act, which was issued for an indefinite period, this constitutes a restriction of the plant's operating time. Until the ultimate shut down date, the license holder EPZ is required to operate the Borssele NPP safely.
  
7. Since 1973, the operating license of the Borssele NPP has been amended several times. Most recently, the license holder EPZ applied for an adaptation of the Safety Report to extend the original design lifetime from 40 years to 60 years. For this purpose, EPZ was required to demonstrate the safety of the plant for a design lifetime of 60 years. EPZ did not apply for a modification of the duration of the operating license, because the operating license for the Borssele NPP is not limited in time.

8. In the past, the design of nuclear power plants was generally based on a design lifetime of 30 or 40 years. The design lifetime is used particularly in the design of a number of components which are not easily replaceable, such as the reactor vessel and the reactor building. These components were designed so as to be certain to last for the design lifetime foreseen based on a particular load during operation. Given overdesign and conservative analyses, it is likely that large, less easily replaceable components will substantially outlast those 30 or 40 years, but this does need to be demonstrated. Operators of nuclear power plants have, what is referred to as, an 'ageing management program' to monitor and deal with physical ageing phenomena in materials of items that are important to safety. This program thus ensures that components that are important to safety are in adequate condition at all times.
9. A change in the operation of the Borssele NPP in 1994 in connection with the implementation of a number of safety-enhancement measures resulting from a 10-yearly safety review prompted the Netherlands' competent authority to require EPZ to apply for a revision of the license. In the Netherlands, a revision license is considered a comprehensive license that does not only cover the proposed modification of an installation, but the operation of the installation as a whole. The revision licensing procedure for the Borssele NPP was carried out in 1994. All previous licensing decisions issued under the Netherlands' Nuclear Energy Act to operate the Borssele NPP, including all conditions attached to these licensing decisions, were consolidated in a single license. The revision license was issued by decision of 2 August 1994 and was re-issued by decision of 26 May 1999. As part of the procedure for the revision of the license, EPZ has submitted a revised Safety Report as well as a comprehensive environmental impact assessment (EIA) report.
10. In addition to the EIA report from 1994, EPZ has submitted in 1996, 2004 and 2011 EIA reports on the Borssele NPP in connection with license applications for, successively, the increase of the nuclear fuel enrichment grade to 4%, the increase of the nuclear fuel enrichment grade to 4.4%, and the fuel diversification for, among other things, the use of mixed oxide fuel (MOX).
11. In the view of the Netherlands' competent authority, the proposed modifications of the Borssele NPP for which an EIA was conducted by EPZ in the past, had only possible significant adverse transboundary environmental impact in the neighbouring country Belgium. That is also the reason why in all these procedures the Netherlands' competent authority has actively involved Belgian authorities and administrative bodies.
12. With respect to all EIAs in connection with a license application for the Borssele NPP, the Netherlands' competent authority, in accordance with the Convention, has notified the

Belgian authorities of the proposed activities by providing all information throughout the EIA procedures, as well as during licensing procedures, on possible significant adverse transboundary impacts in Belgium. Also, with respect to the EIA and licensing procedures for the fuel diversification at the Borssele NPP, the public in Belgium was provided information on possible adverse environmental impacts of the proposed activity at the same time and in the same way as the public in the Netherlands. Therefore, the public in Belgium had the opportunity to directly participate in the EIA procedure, as well as in the licensing procedure, on the same footing as the public in the Netherlands. The public notifications on the opportunity to participate in the EIA procedure, as well as in the licensing procedure, were published in Belgium and the public in Belgium was therefore in a position to express its views.

13. As for Germany, bilateral consultations are held on an annual basis with the authorities of Niedersachsen and Nordrhein-Westfalen as well as with the *Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit*. These consultations are known as the '*Niederländisch-Deutsche Kommission für grenznahe kerntechnische Einrichtungen*' (NDKK). In the NDKK, the competent German authorities are informed about all developments in the Netherlands in the field of nuclear energy, including anticipated and pending licensing procedures, including those with regard to the Borssele NPP. The relevant agreements in the context of the NDKK have been complied with.
14. In addition, at the request of the German authorities, the Netherlands' competent authority has sent all relevant information in relation to the licensing procedure for fuel diversification of the Borssele NPP, including the draft decision and the notification.
15. The table below shows schematically in what way the Belgian and German governments as well as the public were notified of the different licensing procedures for the Borssele NPP. MOD 1994 stands for 'MODification Project' (the 1<sup>st</sup> large modification project); POS 1996 for '*Project Optimalisatie Splijtstof*' (the use of 4.0% enriched fuel); POS2 2004 for '*Project Optimalisatie Splijtstof 2*' (the use of 4.4% enriched fuel); MOX 2013 for 'Mixed OXide fuel' (fuel diversification, including the use of MOX); LTO 2013 for 'Long Term Operation' (extension of the design lifetime of the Borssele NPP). In addition, the annexed overview shows how and when the Belgian and German governments and public were involved in the different licensing procedures.<sup>1</sup>

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<sup>1</sup> Appendix 1: Overview of involvement of Belgium and Germany with respect to licensing procedures for the Borssele nuclear power plant.

Licenses NPP Borssele	Belgium		Germany		
	Notified (art. 3 Espoo)	Public involved	Notified (art. 3 Espoo)		Public involved
				Via NDKK	
<b>Borssele MOD 1994</b>	x			x	
<b>Borssele POS 1996</b>	x			x	
<b>Borssele POS2 2004</b>	x			x	
<b>Borssele MOX 2011</b>	x	x	x	x	By German authorities
<b>Borssele LTO 2013</b>	x			x	

16. In addition to the submission of four EIAs, EPZ has conducted safety evaluations of the Borssele NPP in 1993, 2003 and 2013. These 10-yearly safety reviews are intended to assess the actual physical condition of the installation, and to review the design and operation of the installation in the light of state-of-the-art science and technology with respect to nuclear safety and radiation protection. Following each periodic safety review, safety-enhancement measures were identified and, following the issuance of the required license, implemented.

**(b) Information about the environmental impact assessment process for the planned activity**

17. The Government recognizes that no EIA has been carried out for the extension of the design lifetime of the Borssele NPP until the end of 2033. Since four comprehensive EIAs were carried out with respect to the Borssele NPP, most recently in 2011, a new EIA would not have had any added value, due to the fact that there are no physical modifications to the installation in relation to the extension of the design lifetime of the Borssele NPP.

18. In the Netherlands, EIAs for nuclear installations, including the Borssele NPP, are regularly required. As indicated above with respect to the Borssele NPP, four EIAs have been carried out since 1994. For other nuclear installations in the Netherlands, EIAs have also been carried out. Examples include the *Centrale Organisatie Voor Radioactief Afval* (COVRA) in Borssele, an organisation for the management of radioactive waste, for which EIAs were carried out in 1989, 1996 and 2014; the transition from highly-enriched uranium (HEU) to lowly-enriched uranium (LEU) by the *Reactor Instituut Delft* (RID), for which an EIA was carried out in 1996; the extension of the uranium enrichment capacity of *Urenco Nederland* in Almelo, for which EIAs were carried out in 2005, 2007 and 2011; the construction of a radioactive waste processing installation at the research site of Petten, for which an EIA was carried out in 2008; and the decommissioning of the low flux reactor at the research site of Petten, for which an EIA was carried out in 2014.

19. Referring to the examples mentioned earlier, in particular those related to the Borssele NPP and *Urenco Nederland*, Belgium and German authorities were notified of the intended activities. In this way, the authorities of both countries were in a position to participate in these procedures for the EIAs and could give their inhabitants the opportunity to express their views. With respect to *Urenco Nederland* the German public has been actively involved in every licensing procedure with an EIA.
20. With respect to the initiatives for two new nuclear power plants in Borssele in 2009, Belgian and German authorities were notified of the proposed activities. Moreover, in Belgium the public was actively involved and was in the position to participate in the EIA procedure. On top of this, all focal points under the Convention were informed and had the opportunity to express their views on the preliminary note for the EIA.

### **(c) Implementation of the provisions of the Convention with respect to the activity**

#### **Implementation of the provisions of the Convention with respect to nuclear reactors by the Netherlands in general**

21. Pursuant to Article 2, second paragraph, of the Convention, the Netherlands is obliged, with respect to proposed activities listed in Appendix I to the Convention that are likely to cause significant adverse transboundary impact, to establish an EIA procedure that permits public participation and preparation of the EIA documentation described in Appendix II to the Convention. On the basis of Appendix I, paragraph 2, such activities include nuclear power stations and other nuclear reactors (except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load).
22. A proposed activity under Article 2, second paragraph, of the Convention, is defined by Article 1, paragraph (v), 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. Pursuant to Declaration A on the application of the Convention and the Protocol to nuclear energy issues adopted at the sixth session of the Meeting of the Parties to the Convention<sup>2</sup>, a major change to an activity means that the activity needs upgrade works during its life cycle that might have significant adverse environmental impacts (point A6 of the Declaration). Thus, even though the sixth Meeting of the Parties to the Convention<sup>3</sup> endorsed the findings of the Committee that the extension of lifetime, after the initial

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<sup>2</sup> Excerpt from UN Doc. ECE/MP.EIA/20/Add.3 - ECE/MP.EIA/SEA/4/Add.3.

<sup>3</sup> Excerpt from UN Doc. ECE/MP.EIA/20/Add.1 - ECE/MP.EIA/SEA/4/Add.1.

license had expired, of a nuclear power plant could be considered as a proposed activity under Article 1, paragraph (v), of the Convention, it must have considered that such extension does not constitute a major change to an activity if it does not need upgrade works during its life cycle.

23. The provisions of the Convention with respect to the extension of the design lifetime of nuclear installations, including the Borssele NPP, are implemented in Chapter 7 on environmental impact assessment of the Netherlands' Environmental Management Act and the Netherlands' Decree on Environmental Impact Assessment. These regulations also serve to implement EU Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC<sup>4</sup> of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (OJEC 1997, L 73) (European EIA Directive). This Directive, in particular Article 7, serves to implement, amongst others, the Convention in the legal system of the European Union.
24. The European EIA Directive – in line with the Convention – makes an EIA and a license mandatory for certain projects, including nuclear power stations and other nuclear reactors (except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load).
25. To fall within the scope of the Directive, there should be a project. Since the Court of Justice of the European Union (Court) has given the term 'project' more or less the same meaning as the term 'activity', the case law of the Court should be taken into account to define the term 'activity' as used in the Convention. According to the Court, the term 'project' refers to works or physical interventions (Court of Justice, 28 February 2008, C-2/07, point 23 (Abraham)). The Court considers that the renewal of an existing permit to operate an airport cannot, in the absence of any works or interventions involving alterations to the physical aspect of the site, be classified as a 'project' (Court of Justice, 17 March 2011, C-275/09, point 24 (*Brussels Hoofdstedelijk Gewest et al.*)). Also, the mere renewal of an existing permit to operate a landfill site cannot, in the absence of any works or interventions involving alterations to the physical aspect of the site, be classified as a 'project' (Court of Justice, 19 April 2012, C-121/11, point 32 (Pro-Braine et al.)).
26. In the Netherlands' Environmental Management Act, the relevant provisions are Articles 7.17, fourth paragraph, sub b; 7.19, fourth paragraph, sub b; 7.23, second paragraph; 7.27, sixth paragraph; 7.29, second paragraph; 7.30, second paragraph; 7.37, second paragraph, sub b; 7.38a; 7.38d; 7.38e; and 7.38g. The requirement to carry out an EIA for a new nuclear power installation can be found in Annex C 22.2 of the Netherlands'

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<sup>4</sup> This Directive has been replaced by Directive 2011/92/EU. The relevant text of this Directive is similar to the text of Directive 85/337/EEC.

Decree on Environmental Impact Assessment; such a requirement for the modification or expansion of an existing nuclear power installation can be found in Annex D 22.3 of this Decree. The Dutch texts of the Environmental Management Act and the Decree on Environmental Impact Assessment are available on the internet (<http://wetten.overheid.nl/BWBR0003245> and <http://wetten.overheid.nl/BWBR0006788>).

27. In addition to the regulations referred to above, the Netherlands has made additional arrangements with Flanders in Belgium and Germany, on the basis of the principle of good neighbourliness, through bilateral arrangements on the practical implementation of transboundary EIAs. These bilateral arrangements serve as a tool for national authorities that are responsible for conducting transboundary EIAs in the border regions of Belgium and the Netherlands, and Germany and the Netherlands. The arrangements have been incorporated in the "*Gezamenlijke verklaring inzake de samenwerking bij de uitvoering van grensoverschrijdende milieueffectrapportage voor zowel projecten als plannen en programma's in het Nederlands-Duitse grensgebied tussen het Ministerie van Infrastructuur en Milieu van Nederland en het Bondsministerie van Milieu, Natuurbescherming en Nucleaire Veiligheid van de Bondsrepubliek Duitsland*" (2005 and 2013), and the "*Stappenschema Grensoverschrijdende Milieu-effectrapportage Vlaanderen – Zuid-Nederland*" (1994). Both documents have been made available to the public on the website of *Infomil*, the Dutch knowledge center in matters of environmental legislation and policy in the Netherlands. *Infomil* also has a helpdesk for licensing officers of the licensing authorities (national, provincial and local). For information in Dutch, see <http://www.infomil.nl/onderwerpen/ruimte/mer/procedurehandleiding/procedurele/grensoverschrijdend/>; for general information in English, see <http://rwsenvironment.eu>.

### **Implementation of the provisions of the Convention with respect to the planned activity**

28. According to the Meeting of the Parties to the Convention, a major change to a nuclear energy-related activity means that the activity needs upgrade works during its life cycle that might have significant adverse environmental impacts (see paragraph 22 above). However, in the case of the extension of the design lifetime of the Borssele NPP, the Netherlands' competent authority issued a license for an adaptation of the Safety Report. This adaptation does not entail a physical modification of the Borssele NPP and therefore does not involve any upgrade works during its life cycle.



29. The present case differs from the case of the Rivne nuclear power plant in Ukraine,<sup>5</sup> because the operating license of the Borssele NPP, issued in 1973, has not expired. Moreover, it may be noted that in the present case EIA documentation and conclusions of EIA procedures are available (see paragraph 10 above).
30. The European case law cited above (see paragraph 25 above) also indicates that a license for the adaptation of the Safety Report of the Borssele NPP, in the absence of any works or physical interventions, does not constitute an activity within the meaning of the Convention for which an EIA should be carried out. The Netherlands' Council of State reviewed the license for the adaptation of the Safety Report accordingly. On 19 February 2014, the Council of State rejected the assertion that the decision not to conduct an EIA constituted a violation of the Convention. See the annexed decision, in particular points 9 and 10, for the reasoning of the Council of State.<sup>6</sup>
31. On the basis of the considerations above, the Government concludes that the extension of the design lifetime of the Borssele NPP does not constitute an activity within the meaning of the Convention and is consequently not subject to the provisions of the Convention.

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<sup>5</sup> Findings and recommendations further to a Committee initiative concerning Ukraine (EIA/IC/CI/4), UN Doc. ECE/MP.EIA/IC/2014/2, Annex.

<sup>6</sup> Appendix 2A: Judgment of the Council of State of 19 February 2014. Appendix 2B: English translation of grounds 9 and 10 of the judgment.