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The precautionary principle and the burden and standard of proof in European and Dutch environmental law

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Abstract

This article offers an analysis of the application of the precautionary principle by European courts and the highest Dutch administrative courts in environmental cases. The precautionary principle is one of the leading principles in EU environmental law, but it has no unequivocal meaning. This makes the principle difficult to apply and the allocation of the burden of proof and the level of standard of proof complex matters. In the context of the allocation of the burden of proof, it is essential to make the distinction between the precautionary principle invoked as an obligation or a justification for protective measures. A realistic level of standard of proof is also essential. Without a fair allocation of the burden of proof and a realistic level of standard of proof, either the authorities or the appellants may be exposed to unequal procedural positions and unsolvable evidentiary problems. Analysis of the case law leads to the conclusion that the principle sometimes is misapplied by the Dutch administrative courts.

1. Introduction

This article offers an analysis of the application of the precautionary principle by the Court of Justice of the European Union (CJEU), the General Court (EGC), The European Court of Human Rights (ECtHR) and the highest Dutch administrative courts in environmental cases, the Administrative Jurisdiction Division of the Council of State (in Dutch: *Afdeling Bestuursrechtspraak van de Raad van State*, ABRvS) and the Trade and Industry Appeals Tribunal (in Dutch: *College van Beroep voor het bedrijfsleven*, CBb). In this article, the term 'environmental' in relation to environmental law will be used in the broadest sense of the word, and it will also include cases concerning public health protection. Although there are significant differences between the various fields of environmental law – such as nature conservation, public health and food safety – and the precautionary principle can have different functions in its specific context, this does not mean that no parallels in the application of

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the precautionary principle can be found.[1] Because of the various legal bases, objectives, and the fact that the precautionary principle is a *principle* of law, it does not have an unequivocal meaning. This makes the precautionary principle, the allocation of the burden of proof, and the level of the standard of proof, complex matters in environmental cases and difficult to apply for authorities and judges. This complexity has resulted in divergent case law and can lead to unequal procedural positions in environmental cases. This raises the question of whether these differences in the allocation of the burden of proof and in the level of standard of proof can be justified.

This article intends to outline the differences between the precautionary principle based on Articles 2 and 8 of the European Convention on Human Rights (ECHR) and the precautionary principle based on EU law in environmental cases, paying particular attention to the allocation of the burden of proof and the level of standard of proof. First, I will describe the precautionary principle, the allocation of the burden of proof and the level of standard of proof (section 2). Subsequently, I will analyse recent case law of the ECtHR (section 3) and of the CJEU and EGC (section 4) on the precautionary principle in environmental cases. In section 5, recent Dutch case law on the precautionary principle in environmental cases will be analysed. In section 6, conclusions will be drawn.

2. The precautionary principle and proof

The precautionary principle is considered one of the leading principles in international and EU environmental law.[2] In EU law, the precautionary principle is sometimes even described as a general principle of law;[3] however, as it is a principle and not a rule, there is no uniform definition of the precautionary principle.[4] Tridimas clarifies that principles must be implemented by legislative or executive action and become material only for the purpose of

1 N de Sadeleer, 'The Precautionary Principle in EC Health and Environmental Law' (2006) vol 12 European Law Journal, 139.

2 In EU law, the precautionary principle is more established and specified than in international environmental law. See S Kingston, V Heyvaert and A Cavoski, *European Environmental Law* (Cambridge University Press 2017) 94. See also O McIntyre and T Mosedale, 'The precautionary principle a norm of customary international law' (1997) 9(2) Journal of Environmental Law, 221.

3 Joined cases T-429/13 and T-451/13 *Bayer and Syngenta v European Commission* [2018] EU:T:2018:280, para 109.

4 Ph Sands and others, *Principles of International Environmental Law* (Cambridge University Press 2018) 234.

the interpretation or judicial review of such actions.[5] The precautionary principle is intended as a method to cope with scientific uncertainty on the effects of decisions on the environment, and aims to regulate potential environmental risks.[6] Therefore, the precautionary principle is a risk management tool for decision-making in complex environmental situations with scientific uncertainty. Risk management relates to the (political) decision how much risk is acceptable, and this decision may need a prior risk assessment to determine the risks.[7] De Sadeleer calls this a two-step process of risk analysis which aims to provide a scientific base for decisions,[8] where the first step consists of a scientific risk assessment and the second step is the decision on the acceptability of the risks by the competent authority. This latter step refers to risk management, and implies an evaluation of relevant interests.

Of course, not every decision has to be preceded by a risk assessment: such an assessment is required only if it is plausible that there is a potential and serious threat to the environment. In this context, Foster points out that there must be some minimum threshold in order for the precautionary principle to be applied.[9] De Sadeleer distinguishes residual risks, certain risks and uncertain risks.[10] Residual risks are small or very hypothetical risks and do not require a prior risk assessment. Certain risks do not require a risk assessment, since these risks are already known – such risks are covered by the preventive principle. Only uncertain risks with some significance should fall under the scope of the precautionary principle. Or, as Sunstein puts it:

'No sensible person believes that an activity should be banned merely because it presents "some" risk or harm. Some threshold degree of evidence should be required for costly measures of risk avoidance, in the form of scientifically supported suspicion or suggestive evidence of significant risk.'[11]

If this threshold of uncertain risk with some significance is exceeded, the authority that wants to allow – or the initiator that wants to undertake – the

5 T Tridimas, 'The general principles of law, who needs them?' (Conclusion) (2016) 1 Cahiers de Droit Européen, 19.
6 F M Fleurke, 'De lange mars van het voorzorgsbeginsel: de redding van de bij?´(2018) 7/8 NtEr, 248 .
7 A Randall, *Risk and Precaution* (Cambridge University Press 2011) 43-55.
8 N de Sadeleer, 'Precautionary principle in EU Law' (2010) AV&S, 24.
9 CE Foster, *Science and the Precautionary Principle in International Courts and Tribunals: Expert Evidence, Burden of Proof and Finality* (Cambridge University Press 2011) 257.
10 N de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (Oxford University Press 2002) 156-157.
11 CR Sunstein, *Laws of Fear: Beyond the Precautionary Principle* (Cambridge University Press 2005)120.

potentially harmful activity or activities bears the burden of proof. Instead of allowing these activities because their potentially harmful effects are not known and the possible damage has not (yet) occurred, the authority or party must submit scientific proof on the potential magnitude of the effects of these activities before they are allowed and can be undertaken. The application of the precautionary principle should therefore start with a scientific evaluation, as complete as possible, and, where possible, identifying the degree of scientific uncertainty.[12] Scientific uncertainty comes in multiple forms. Aven distinguishes uncertainty between the activity and its possible effects on the environment (cause-effect relationship), uncertainty about the probability of the risk, and uncertainty about the accuracy of the prediction model.[13] A proper risk assessment distinguishes between these forms of uncertainty and enables the authority to make an informed decision on the acceptability of the risks. Scientific uncertainty must be distinguished from plain ignorance.[14] In contrast to scientific uncertainty, ignorance implies unawareness of the existing body of knowledge, while scientific uncertainty refers to the many things we do not (yet) know. Environmental scientific uncertainty is often due to the complexity and variability of ecosystems, which makes long-term predictions, based on models, intrinsically difficult. However, this does not release authorities from their duty to examine the existing body of scientific data and is no licence for ignorance. As a result, the precautionary principle is inextricably linked to the burden of proof to substantiate the potential risks, as well as the probability and the magnitude of those risks. The principle requires the best available scientific data to manage the acceptable risks and a cautious worst-case scenario approach to avoid underestimating potential environmental risks. This also means that the known gaps in the available scientific body of knowledge must be recognized and addressed.

On the one hand, the precautionary principle allows the authorities to take protective measures without having to wait until the reality and seriousness of those environmental risks become fully apparent.[15] On the other hand, the precautionary principle may result in the refusal or even the revoking of permits of initiators – if those permits allow potential harmful activities for the environment. In the context of the allocation of the burden of proof, Ambrus makes the distinction between the precautionary principle invoked as an obligation or

12 Commission, 'Communication from the Commission on the precautionary principle' (Communication) COM(2000) 1 final, 3 and 16.

13 T Aven, 'On Different Types of Uncertainties in the Context of the Precautionary Principle' (2011) 31(10) Risk Analysis, 1515.

14 A Trouwborst, *Precautionary Rights and Duties of States* (Koninklijke Brill N.V. 2006) 71-99.

15 Case T-31/07 *Du Pont de Nemours v Commission* [2013] EU:T:2013:167.

a justification.[16] In dispute settlement, appellants may argue that, by approving certain potentially harmful activities, the authorities have breached the obligation to respect the precautionary principle. Then again, the precautionary principle can also be used as a justification by the competent authorities to take protective measures, like a ban, to protect the environment. In both situations, a fair allocation of the burden of proof and a realistic level of standard of proof is essential. Without a fair allocation of the burden of proof and a realistic level of standard of proof, either the competent authority or the appellants may be exposed to unequal procedural positions and unsolvable evidentiary problems. If the competent authority wants to take protective measures on the basis of the precautionary principle, it needs to prove that the threshold of uncertain risk with some significance for the environment will be exceeded in the case of inactivity. If the authority wants to allow a potentially harmful activity, it (or the initiator) needs to prove that the environmental risks of that activity, given the available scientific data, are acceptable. This assessment should take into account both the probability and the magnitude of the risks.[17] The allowed acceptability of this risk must be laid down in legislation in the form of an authorization criterion. Hence, not only the allocation of the burden of proof is relevant, but also the legal level of the standard of proof.[18] Both situations require a prior scientific assessment on the environmental risks, but do not require absolute certainty on the absence of all harmful effects, which has rightly been described as a utopian concept by Trouwborst.[19] He claims that the precautionary principle has lowered the standard of proof for taking protective measures, but has not shifted the burden of proof.[20] In the case of protective measures, it depends on the abovementioned threshold what the level of the standard of proof is for the authority. In the case of allowing potentially harmful activities, the level of the standard of proof on the competent authority (or the initiator) tends to be much higher, because the question is no longer whether the threshold has been crossed. At this stage, the question becomes whether the assessment of the risks involved with those activities provides a level of scientific certainty that justifies a positive decision, because the adverse effects of that decision on the environment are considered acceptable. This evidential framework based on

16 M Ambrus, 'The Precautionary Principle and a Fair Allocation of the Burden of Proof in International Environmental Law' (2012) 21(3) Review of European, Comparative and International Environmental Law, 259.

17 CR Sunstein, *Laws of Fear: Beyond the Precautionary Principle* (Cambridge University Press 2005) 117.

18 D Hamer, 'Presumptions, standards and burdens: managing the cost of error' (2014) 13 Law, Probability and Risk, 221.

19 A Trouwborst, 'The Precautionary Principle in General International Law: Combating the Babylonian Confusion' (2007) 16(2) Review of European, Comparative and International Environmental Law, 185.

20 ibid.

the precautionary principle means that environmental law is marked by heavy reliance on science.[21] However, it also recognizes that absolute scientific certainty does not exist: a proper application of the precautionary principle should therefore not lead to a level of standard of proof that entails proving the absence of all risks, since nobody should be bound to the impossible. In this context, Sunstein distinguishes between a weak and a strong version of the precautionary principle.[22] The strong version of the precautionary principle means that when there is a risk of significant health or environmental damage, and when there is scientific uncertainty as to the nature of that damage or the likelihood of the risk, decisions should be made as to prevent such activities from being conducted unless and until scientific evidence shows that the damage will not occur. The words 'will not occur' seem to require proponents of an activity to demonstrate that there is no risk at all – often an impossible burden to meet.

3. The precautionary principle applied by the ECtHR

The ECtHR has applied the precautionary principle – or at least elements of it – within the scope of Articles 2 and 8 of the ECHR in several environmental cases.[23]

In *Hatton a.o. v UK*[24], the ECtHR does not explicitly mention the precautionary principle. It does, however, note that a governmental decision-making process concerning complex issues of environmental and economic policy, such as in the present case, must necessarily involve appropriate investigations and studies in order to allow a fair balance to be struck between the various conflicting interests at stake[25]. This does not mean that decisions can only be taken if comprehensive and measurable data is available in relation to each and every aspect of the matter to be decided.[26] In this case, the appellants lived in London, near Heathrow airport, and claimed that their rights under Article 8 ECHR had been violated due to increased noise pollution from aircrafts as a result of a new scheme for night flights. The ECtHR determined that a series of investigations had been carried out over a long period of time, that the appellants had

21 N de Sadeleer, 'The Precautionary Principle as a Device for Greater Environmental Protection: Lessons from EC Courts' (2009) 18(1) Review of European, Comparative and International Environmental Law (2009), 3.

22 CR Sunstein, *Laws of Fear: Beyond the Precautionary Principle* (Cambridge University Press 2005) 18-19.

23 DGJ Sanderink, *Het EVRM en het materiële omgevingsrecht* (Dissertation Radboud University Nijmegen, Wolters Kluwer 2015) 119-121.

24 *Hatton v UK* App no 36022/97 (ECtHR, 8 July 2003).

25 ibid.

26 ibid.

been involved in the procedure, and that the State has a wide margin of appreciation to strike a fair balance between the conflicting interests. Under these circumstances, the authorities did not overstep their margin of appreciation.

In *Taşkin a.o. v Turkey*[27], the ECtHR considered, in the context of Article 8 ECHR, that where a State must determine complex issues of environmental and economic policy, the decision-making process must firstly involve appropriate investigations and studies. This will allow them to predict and evaluate in advance the effects of those activities which might damage the environment and infringe individuals' rights, as well as enabling them to strike a fair balance between the various conflicting interests at stake. The importance of public access to the conclusions of such studies and to information which would enable members of the public to assess the danger to which they are exposed is beyond question; the ECtHR further added that the individuals concerned must also be able to appeal to the courts against any decision, act or omission where they consider that their interests or their comments have not been given sufficient weight in the decision-making process.[28]

In *Budayeva a.o. v Russia*[29], Budayeva and others claimed that the Russian authorities had failed to heed warnings about the likelihood of large-scale mudslides, and had failed to implement protective measures against these yearly mudslides in the mountainous area adjacent to Mount Elbrus.[30] The ECtHR considered that Article 2 ECHR entails the obligation to put in place a legislative and administrative framework that is designed to provide effective deterrence against threats to the right of life, and added that the positive obligations under Article 2 largely overlap with those under Article 8. Consequently, the principles developed in the Court's case law relating to planning and environmental matters affecting private life and the home may also be relied on for the protection of the right to life. As to the choice of measures, in principle this is a matter that falls within the State's margin of appreciation, however the ECtHR continued by saying that no impossible or disproportionate burden must be imposed on the authorities, given the choices they must make in terms of priorities and resources.[31]

In *Tătar v Romania*[32], the ECtHR ruled that Article 8 ECHR lays down a positive obligation for Member States to inform the public about potential en-

27 *Taşkin a.o. v Turkey* App no 46117/99 (ECtHR, 10 November 2004).
28 ibid.
29 *Budayeva a.o. v Russia* App no 15339/02 (ECtHR, 20 March 2008).
30 ibid.
31 See also *Kolyadenko a.o. v Russia* App no 17423/05 (ECtHR, 28 February 2012).
32 *Tătar v Romania* App no 67021/10 (ECtHR, 27 January 2009).

vironmental risks and, on the basis of a prior risk assessment, to take those measures that are reasonably necessary to prevent serious damage to the environment and the private and family life of citizens.[33] Although a preliminary impact assessment had already highlighted the serious risks of operating a gold mine, the Romanian authorities had granted a permit and even allowed the mining company to continue its activities after causing serious environmental contamination. The impact assessment was not made public. In this context, the ECtHR concluded that the Romanian authorities had failed to take appropriate measures to protect the right to enjoy a healthy and protected environment, and ruled that the precautionary principle had not been complied with. In this case, the ECtHR explicitly derived for the first time the precautionary principle from Article 8 ECHR, with reference to the precautionary principle based on international environmental law and EU law.[34] The ECtHR explicitly rules that the precautionary principle demands that States do not wait with taking effective and proportional measures to prevent serious and irreversible damage to the environment because of the absence of scientific certainty, and stresses the importance of this principle as a method to protect the environment.

Noteworthy is that, to my knowledge, in more recent cases the ECtHR does not mention the precautionary principle explicitly anymore. Pedersen points out that even a slight retreat in the progressive jurisprudence of the ECtHR on the protection of the environment could be detected.[35] He refers to *Hardy and Maile v The United Kingdom*[36], in which the ECtHR applicants argued that Article 8 of the ECHR had to be applied in a precautionary way.[37] Although the ECtHR refers to *Tătar v Romania* in the case, it limits its judgement to a more procedural approach, stressing that an extensive legislative and regulatory framework was in place to assess and manage the potential environmental risks posed by the LNG terminal, and that applicants had, at the time, the possibility to seek judicial review of the grants and of planning permissions. This more procedural approach can also be found in the even more recent case *Cordella v Italy*[38]. Here, the ECtHR places particular importance on the gross negligence of the Italian authorities in providing any information and effective legal remedy for the applicants to appeal against the lack of protective measures against the environ-

33 ibid.

34 T Barkhuysen and F Onrust, 'De betekenis van het voorzorgsbeginsel voor de Nederlandse (milieu)rechtspraktijk' in A W Heringa and others, *Bestuursrecht beschermd* (SDU 2006) 62.

35 O W Pedersen, 'The European Court of Human Rights and International Environmental Law' in JH Knox and R Pejan, *The Human Right to a Healthy Environment* (Cambridge University Press 2018).

36 *Hardy and Maile v The United Kingdom* App no 31965/07 (ECtHR, 14 February 2012).

37 ibid.

38 *Cordella v Italy* App no 54414/13 and 54264/15 (ECtHR, 24 January 2019).

mental risks posed by the steel factory, while the substantial risks were assessed and not contested. Though the precautionary principle has not been mentioned anymore in recent case law and the ECtHR seems to follow a more restrictive procedural approach, in my view this does not mean that the ECtHR does not recognise the precautionary principle anymore. However, recently the ECtHR seems to choose a more restrictive interpretation of this principle.

In short, in the case law of the ECtHR, the precautionary principle applies in the context of the positive obligations of the State under Articles 2 and 8 ECHR to provide suitable measures, necessary to prevent serious damage to the environment *and* to the private and family life of citizens. Regardless, due to the objectives of Article 2 and 8 ECHR, the environment as such is not protected. When the State grants permission for potentially harmful activities, the decision-making process must involve a prior risk assessment in order to predict and evaluate in advance the effects of those activities, and this assessment must be made public. The individuals concerned must also be able to appeal to the courts against the decision based on the assessment; the authorities bear the burden of proof to substantiate that they have done the appropriate investigations on the potential environmental hazards. If the investigations indicate that there are real and immediate environmental risks to private and family life, the authorities must take timely and suitable measures to minimize the risks to a reasonable minimum. In this context, immediate does not mean that only short-term environmental risks should lead to measures: long-term environmental risks also fall within the scope of the precautionary principle.[39] Furthermore, the ECtHR places much emphasis on the wide margin of appreciation of the Member State to strike a fair balance between the often conflicting interests, and stresses that no impossible or disproportionate burden must be imposed on the authorities. The standard of proof consists of proving that the required due diligence has been met. This means that the State has to prove that, on the basis of a prior scientific assessment, timely and effective measures have been taken to minimize a real environmental risk to an acceptable level. The available means and the policy priorities can also play a role in the decision as to which measures could be taken. The counterevidence for the appealing party boils down to making it plausible that the State has not adequately complied with its due diligence.

39 Conclusion of the Attorney General of the Supreme Court in The Urgenda Case, 13 September 2019, ECLI:NL:PHR:2019:887.

4. The precautionary principle applied by the CJEU and EGC

In EU law, the legal basis for the precautionary principle is Article 191 of the Treaty on the Functioning of the European Union[40] (TFEU). Article 191(1) TFEU states that union policy on the environment is aimed *inter alia* at preserving, protecting and improving the environment and protecting human health. In Article 191(2) TFEU, a high level of protection of the environment is the objective of this union policy. The same objective is also mentioned in Article 37 of the Charter of Fundamental Rights of the European Union [41](the Charter), which has the same legal value as the Treaties as mentioned in Article 6(1) of the Treaty on European Union[42]. The Article reiterates the programmatic statement embodied in the TFEU and does not lay down a right in the sense of an individual entitlement.[43] As the Charter draws a clear distinction between rights and principles, and Article 37 is positioned as a principle, it serves mainly as an interpretative tool in reviewing acts.[44] Article 52 defines only the legal status of rights in the Charter, and Article 51 limits the scope of the Charter to Member States implementing Union law. This requires a certain degree of connection between the national legislation and a provision of EU law.[45] In the case law of the CJEU and the EGC, the precautionary principle and the aimed high level of protection of the environment is therefore derived from Article 191 TFEU and from specific Directives and Regulations concerning public health or the protection of the environment. As a result of this framework, the precautionary principle is applied based on secondary EU law in several different environmental disciplines, such as food and safety law and nature conservation law.

In *Du Pont de Nemours*[46], the EGC ruled that the adoption of a preventive measure or, conversely, its withdrawal or relaxation on the basis of the precautionary principle, cannot be made subject to proving the lack of any risk, in so far as such proof is generally impossible to give in scientific terms since zero

40 Consolidated Version of the Treaty on the Functioning of the European Union [2016] OJ C202/49.
41 Charter of Fundamental Rights of the European Union [2016] OJ C202/389.
42 Consolidated version of the Treaty on the European Union [2016] OJ C202/15.
43 N de Sadeleer, 'Enforcing EUCHR Principles and Fundamental Rights in Environmental Cases' (2012) 81 Nordic Journal of International Law, 39.
44 S Bogojević, 'EU human rights law and environmental protection: the beginning of a beautiful friendship?' in S Douglas-Scott (ed), *Research Handbook on EU law and Human Rights* (Edward Elgar Publishing 2016) 466-467.
45 Case C-206/13 *C. Siragusa v Regione Sicilia* [2014] EU:C:2014:126.
46 Case T-31/07 *Du Pont de Nemours a.o. v European Commission* [2013] EU:T:2013:167.

risk does not exist in practice.[47] In *Pillbox 38*[48], the CJEU considered that, where there is uncertainty as to the existence or extent of risks to human health, protective measures may be taken without having to wait until the reality and seriousness of those risks become fully apparent.[49] Where it proves to be impossible to determine with certainty the existence or the extent of the alleged risk because of the insufficiency, inconclusiveness or imprecision of the results of studies conducted – but the likelihood of real harm to public health persists should the risk materialize – the precautionary principle justifies the adoption of restrictive measures. In *Fipronil*[50], the EGC provides a detailed explanation of the precautionary principle and distinguishes three successive stages:[51] first, the identification of the potentially adverse effects arising from a phenomenon; second, the assessment of the risks to public health, safety and the environment; and third – when the potential risks identified exceed the threshold of what is acceptable for society – risk management by the adoption of appropriate protective measures. The EGC noted that the second stage requires a scientific assessment to identify and characterize a certain risk. When the available data is inadequate or inconclusive, a prudent and cautious approach to environmental protection, health, or safety could be to opt for the worst-case hypothesis. When such hypotheses are accumulated, this will probably lead to an exaggeration of the real risk, but it also gives some assurance that the risk will not be underestimated. The scientific risk assessment, were that risk to become a reality, is not required to provide conclusive evidence of the reality of the risk and the seriousness of the potential adverse effects. Moreover, a situation in which the precautionary principle is applied by definition coincides with a situation in which there is scientific uncertainty. With reference to the *Du Pont de Nemours* case, in *Fipronil* the EGC further noted that a preventive measure may be taken only if the risk – even though the reality and extent of the risk have not been fully demonstrated by conclusive scientific evidence – appears to be adequately backed up by the scientific data available at the time when the measure was taken. The EGC then considered that the responsibility for determining the level of risk which is deemed unacceptable for society lies with the institutions responsible for the political choice of determining an appropriate level of protection for society, yet the EGC also added that these institutions are bound by their obligation to ensure a high level of protection of public health, safety, and the environment.

47 ibid.
48 Case C-471/14 *Pillbox 38 (UK) Ltd v The Secretary of State for Health* [2016] EU:C:2016:324.
49 ibid.
50 Case T-584/13 *BASF Agro B.V. v European Commission* [2018] EU:T:2018:279.
51 ibid.

In the case law concerning the Habitats Directive, the precautionary principle also plays a major role. In the *Waddenzee*[52] case, the CJEU ruled that the authorization criterion laid down in Article 6(3) of the Habitats Directive integrates the precautionary principle, and makes it possible to effectively prevent adverse effects on the integrity of protected sites as the result of the plan or projects considered.[53] In the *Briels* and *Grüne Liga* cases[54], the CJEU noted that the assessment carried out under the first sentence of Article 6(3) of the Habitats Directive cannot have lacunae, and must contain complete, precise, and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned.[55] In the *Orléans* case[56], the CJEU stressed that the precautionary principle requires the competent national authority to assess the implications of the project for the site concerned – in view of the site's conservation objectives and taking into account the protective measures forming part of that project aimed at avoiding or reducing any direct adverse effects on the site – in order to ensure that it does not adversely affect the integrity of the site.[57] Lees points out that the CJEU will allow decision makers to take very little account of any development, whatever its intended purpose or likely outcome, where there is no absolute certainty as to these expected outcomes; she further notes that this strict treatment of the precautionary principle places a lot of weight on irrefutable scientific evidence.[58] With reference to the precautionary principle, the CJEU recalls in the *PAS* case[59] that the assessment carried out under the first sentence of Article 6(3) of the Habitats Directive cannot have lacunae, and must contain complete, precise, and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the plans or the projects, and concludes that the appropriate assessment for the PAS as a whole must also meet these requirements.[60] This means that a so-called programmatic approach with a wide range of projects and a long time span has to meet the same requirements as the appropriate assessment for an individual project. In the *PAS* case, the CJEU adds that the national court must ascertain that there is no reasonable

52 Case C-127/02 *Landelijke Vereniging tot Behoud van de Waddenzee a.o. v Staatssecretaris van Landbouw, Natuurbeheer en Visserij* [2004] EU:C:2004:482.
53 ibid.
54 Case C-521/12 *Briels a.o. v Minister van Infrastructuur en Milieu* [2014] EU:C:2014:330 and Case C-399/14 *Grüne Liga Sachsen a.o. v Freistaat Sachsen* [2016] EU:C:2016:10.
55 ibid.
56 Joined Cases C-387/15 and C-388/15 *Orléans a.o. v Vlaams Gewest* [2016] EU:C:2016:583.
57 ibid.
58 E Lees, 'Concretising the precautionary principle in habitats protection – Grüne Liga Sachsen v Freistaat and Orleans v Vlaams Gewest' (2017) 19(2) Environmental Law Review, 126.
59 Joined Cases C-293/17 and C-294/17 *Coöperatie Mobilisation for the Environment UA a.o. v College van gedeputeerde staten van Noord-Brabant* [2018] EU:C:2018:882.
60 ibid.

scientific doubt as to the absence of adverse effects of each plan or project on the sites, and that the national court has to carry out a thorough and in-depth examination of the scientific soundness of the appropriate assessment.

In short, the precautionary principle in EU law means that the authority or the initiator bears the burden of proof if the threshold of uncertain and significant environmental risks has been exceeded. The standard of proof varies depending on the situation. If protective measures are taken based on the precautionary principle, there must be a sufficient evidentiary basis for the conclusion that real harm to the environment is likely, but scientific certainty is not required. If, on the other hand, the authority wants to allow an activity with potential environmental risks, the standard of proof becomes more substantial. In particular, the Habitats Directive and the case law require a prior risk assessment without lacunae which must contain complete, precise, and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of those activities. There is very little room for scientific uncertainty: appealing parties must make it plausible that the risk assessment is incomplete or inconclusive with the consequence that the level of scientific uncertainty becomes too high to base a positive decision on that assessment.

5. The precautionary principle applied by Dutch administrative courts

In Dutch administrative law, the precautionary principle has no direct national legal basis and is not recognized as a general national principle of law.[61] If appellants invoke this principle, the court has to put these grounds of appeal into the right context. If the grounds of appeal refer to the implementation of environmental EU law, like the Habitats Directive, the precautionary principle must be applied according to the case law of the CJEU and ECG. If there is no reference to EU secondary law, the precautionary principle is usually applied according to the case law of the ECtHR. In the recent case *Windpark Greenport Venlo*[62], however, the ABRvS seemed to recognise a broader application of the precautionary principle extending beyond the boundaries of the case law of the CJEU, ECG and the ECtHR.[63] This distinction is of importance, because it can lead to different procedural positions and outcomes.

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61 MGWM Peeters, 'Het voorzorgsbeginsel en de rechtsvormende taak voor de (Nederlandse) bestuursrechter' in AW Heringa and others, *Het bestuursrecht beschermd* (Sdu Uitgevers 2006) 189.

62 ABRvS 18 December 2019, ECLI:NL:RVS:2019:4210.

63 ibid.

In the case *Windpark Drentse Monden and Oostermoer*[64], the appellants referred to the precautionary principle as mentioned in Article 191 TFEU.[65] They argued that the lack of scientific evidence on the possible health risk of low frequency noise of wind turbines must lead to the application of the precautionary principle and the subsequent annulment of the decision. Within the context of the environmental impact assessment that had already been carried out, the ABRvS pointed out that the precautionary principle does not imply that the competent authorities had to refuse their authorization because some scientific reports referred to a possible link between wind turbines and health risks. The ABRvS thereafter puts the burden of proof on the appellants, given the fact that the competent authorities had already provided elaborate research on the effects of the wind park. Thus, if the appellants refer to the precautionary principle based on EU law, the competent authorities first bear the burden of proof. However, if the required prior risk assessment has been made by the authorities, the appellants will bear the burden of proof to disprove the soundness of this assessment. Under those circumstances, they will have to make it plausible that this risk assessment is flawed to the extent that the assessment cannot form the basis for the decision. It is insufficient to merely point out that scientific counterevidence exists. Only if this counterevidence leads to the conclusion that the potential risks have been underestimated in the risk assessment, and the decision on the acceptability of the adverse effects could be unreasonable, does the court have to annul the positive decision made on the basis of this assessment.

In the context of the Habitats Directive, the level of standard of proof on the appellants is lower because of the fact that the national court has to carry out a thorough and in-depth examination of the scientific soundness of the appropriate assessment made by the authorities or the initiator of the project. This appropriate assessment must contain complete, precise, and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the plan or project proposed on the protected site concerned. A plan or project may only be authorized if it will not adversely affect the integrity of the protected site concerned. This leaves very little room for scientific uncertainty, and the margin of appreciation on the acceptability of the effects is non-existent in the context of Article 6(3) of the Habitats Directive. Given the complexity and vulnerability of ecosystems and the rapid decline of biodiversity in Europe, this strict application of the precautionary principle is understandable. However, it also imposes a serious obligation on the competent authorities and on the initiator, as their burden and level of standard of proof prior to deciding on the

64 ABRvS 21 February 2018, ECLI:NL:RVS:2018:616.
65 ibid.

plan or project is rather high. If appellants cast some relevant doubt as to the scientific soundness of the appropriate assessment and the potential risks involved, this will be sufficient to fulfil their burden and standard of proof.[66]

In the *Chickfriend* case[67], the authorities referred to the precautionary principle as a basis for the decision to ban the export of contaminated poultry and eggs.[68] The CBb noted that this protective measure, based on the precautionary principle as mentioned in Article 7 of the Food Safety Regulation[69] and resulting from the suspicion of exposure to the harmful substance fipronil, is inextricably linked with scientific uncertainty in the scientific assessment of the risk for public health. Due to this scientific uncertainty, the authorities have discretion in the application of the precautionary principle as well as the chosen measures, according to the CBb. This means the authorities do not have to wait until the risk becomes real, and even if the scientific uncertainty were to be eliminated at a later moment, this does not mean that the protective measure – given the available scientific data at that stage in the procedure – was disproportionate.

If, on the other hand, appellants refer to the precautionary principle based on Articles 2 and 8 ECHR, their burden and standard of proof is much higher. In the *UMTS-mast* case[70], the ABRvS concluded, on the basis of a report of the Health Council, that there are no indications that electromagnetic fields in the vicinity of telecommunication masts cause unacceptable health issues. However, the ABRvS added that later research has shown that some scientific uncertainty still remains on the possible health effects of electromagnetic fields due to the increasing use of mobile phones. This modified exposure pattern might lead to serious health risks, and this uncertainty therefore leads to a requirement of further research for the authorities. However, given the available reports in this case, the precautionary principle did not mean that the permit for the telecommunication mast had to be annulled.[71] In this case, the level of standard of proof for the appellants is excessive and requires more than the plausibility that the prior risk assessment does not justify a positive decision because of too much scientific uncertainty.

66 ABRvS 29 May 2019, ECLI:NL:RVS:2019:1603.
67 CBb 15 October 2019, ECLI:NL:CBB:2019:494.
68 ibid.
69 Regulation (EC) No 178/2002 of The European Union and of The Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety [2002] OJ L31/1.
70 ABRvS 5 December 2018, ECLI:NL:RVS:2018:3979.
71 ibid.

In two cases concerning permits for the expansion of existing livestock farms, the appellants referred to the precautionary principle and argued that the local authorities had to refuse the permits.[72] According to them, there was sufficient scientific evidence demonstrating that intensive livestock farms may cause serious health problems, like Q fever, for local residents. The ABRvS concluded that there is no binding legal assessment framework on this topic, so the local authorities have some discretion on how to deal with these environmental risks. In these two cases, the authorities had chosen to use the recommended non-binding standard for endotoxin of the Health Council to assess the applications. The ABRvS judged, in the context of the precautionary principle based on Articles 2 and 8 ECHR, that it is up to the appellants to substantiate their argument that the local authorities can no longer rely on the available scientific research because of new and accepted scientific research on this topic. Even though the ABRvS stressed that there were still numerous questions on the health risks requiring further scientific research, the local authorities could rely on the limited available scientific research. The level of standard of proof for most appellants will be excessive, because they have to substantiate their grounds of appeal with extensive and generally accepted scientific data on a complex environmental topic. The lack of a legal framework on the subject of Q fever becomes an evidentiary disadvantage for the appellants, because it results in a margin of appreciation for the authority, according to the ABRvS. This translates into a strong evidentiary disadvantage for the appellants, because the ABRvS fails to assess whether, with the limited available scientific evidence, the State has met its due diligence requirement. It simply raises the level of standard of proof, while at the same time concluding that there still is substantial scientific uncertainty on serious health risks. This application of the precautionary principle leads to the authorization of a potential harmful activity on the basis of substantial scientific uncertainty only because appellants cannot meet the excessive level of standard of proof. The ABRvS takes insufficient consideration of the fact the precautionary principle in these cases is not used as justification of a protective measure, but as an obligation that has to be met before authorizing potentially harmful activities. This leads to an unrealistic level of standard of proof for the appellants which goes beyond making plausible that the degree of scientific uncertainty is too high and entails substantial scientific counterevidence. This application of the precautionary principle ignores the positive obligation of the State to provide effective deterrence against threats to private and family life within a sufficient legislative framework designed to do so.

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[72] ABRvS 25 July 2018, ECLI:NL:RVS:2018:2395 and ABRvS 27 February 2019, ECLI:NL:RVS:2019:644, Milieu & Recht 2019/76, with comment BAH Bleumink en KJ de Graaf and Tijdschrift voor Agrarisch recht, volume 4, April 2019, nr. 5980, with comment PPA Bodden.

In the abovementioned case *Windpark Greenport Venlo*, the ABRvS notes that Article 191(2) TFEU relates to union policy on the environment, and that this Article may not be invoked by individuals.[73] As the relevant topic of health risks related to low frequency noise is not regulated by secondary EU law, this means the application of the precautionary principle on the basis of Article 191(2) is not applicable. In *Windpark Greenport Venlo*, Articles 2 and 8 of the EHRM were not invoked. Nevertheless, the ABRvS judged that the precautionary principle applied as part of the balance of spatial interests, required by the Dutch Spatial Planning Act. For the application of the precautionary principle merely based on the Dutch Spatial Planning Act, the ABRvS refers to the Communication from the Commission on the precautionary principle from 2000. This is a landmark judgment because it means that the precautionary principle based on Article 191(2) TFEU now applies in all spatial planning cases based on the Dutch Spatial Planning Act – even those cases without any connection to EU secondary law. However, it remains to be seen whether this will become fixed case law of the ABRvS.

6. Conclusions

The application of the precautionary principle and the distribution of the burden and standard of proof in environmental cases is not univocal. The precautionary principle as applied by the CJEU and the EGC has different objectives than the precautionary principle as applied by the ECtHR, which is limited to the human rights of Articles 2 and 8 ECHR; this means that its scope is different. Only if real and immediate environmental risks can be linked to the right to respect for private life and family life will the ECtHR apply the precautionary principle. Furthermore, the positive obligation to adopt appropriate protective measures in the context of these human rights comes with a wide margin of appreciation for the authorities. The standard of proof consists of proving that the required due diligence has been met. This means that the State has to prove that, on the basis of a prior scientific assessment, timely and effective measures have been taken to minimize a real environmental risk to an acceptable level. The available means and the policy priorities can also play a role in the decision on which measures could be taken, because the precautionary principle cannot lead to an impossible or disproportionate burden for the State.

73 ABRvS 18 December 2019, ECLI:NL:RVS:2019:4210, para 29 – 29.3.

The precautionary principle applied by the CJEU and EGC has a much broader scope, because it aims to protect the environment as well as public health. Although the CJEU and the EGC also recognize some discretion for the competent authorities at the stage of determining the acceptable risks and by choosing the suitable measures, the case law is much more detailed and stricter. This margin of discretion is reduced by the pursued high level of protection of the environment and public health and by the specific requirements of EU secondary law. The standard of proof varies depending on the situation: if protective measures are taken based on the precautionary principle, there must be a sufficient evidentiary basis for the conclusion that real harm to the environment is likely, but absolute scientific certainty is not required. If, on the other hand, the authority or the initiator wants to allow an activity that has potential environmental risks, then the standard of proof becomes more substantial; a risk assessment is required, based on the best available scientific data, with the conclusion that the risks are acceptable in the context of a high level of protection of the environment.

When Dutch administrative courts apply the precautionary principle, it is important to define the legal basis of the precautionary principle. Unfortunately, the courts sometimes fail to do so, and even when they do define the legal basis, this sometimes leads to divergent applications of the principle. What stand out is that the precautionary principle based on EU law seems to be applied rather consequently and correctly, because the case law on the precautionary principle of the CJEU and the EGC is more advanced and detailed. In this context, it is also worth noting that the ABRvS has recently ruled that the precautionary principle based on Article 191(2) TFEU also applies in spatial planning cases without any link to EU secondary law – which means that the scope of the EU precautionary principle has been significantly widened in the Netherlands. The burden of proof and the standard of proof do not usually lead to unacceptably unequal procedural positions, both in cases concerning protective measures as well as cases concerning the authorization of potential harmful activities. In the latter category, it will be sufficient if appellants cast some relevant doubt as to the scientific soundness of the appropriate assessment and the potential risks involved, to fulfil their burden and standard of proof. The precautionary principle based on the case law of the ECtHR, on the other hand, seems to cause more problems for Dutch administrative courts. The wide margin of appreciation, in combination with a too limited judicial review of the due diligence requirement, means that appellants can face unsolvable evidentiary problems, as illustrated by the UMTS and Q fever cases. As a result of this national application of the precautionary principle, the appellants were placed in unequal procedural positions, which was unacceptable given the fact that substantial scientific uncertainty was determined by the Court and that serious risks to the environment as a result of the positive decision on the activities could not be ruled out. The appellants were faced with an unrealistic level of standard of proof which went

far beyond making plausible that the degree of scientific uncertainty was too high for a positive decision and entailed complex substantial scientific counterevidence.

In short, when applying the precautionary principle, the national courts have to determine what is the legal basis of the principle, because there are substantial differences between the precautionary principle based on EU law and based on the ECHR. Furthermore, it is important to distinguish between taking protective measures justified by the precautionary principle, or allowing potential harmful activities in compliance with this principle, with it functioning as an obligation for the authority. This distinction should be decisive for the level of standard of proof for appellants. If they appeal against a positive decision concerning a potential harmful activity, the level of standard of proof should not exceed casting some relevant doubts as to the scientific soundness of the prior risk assessment executed by the authority or the initiator. If they make plausible that the risk assessment exceeds the level of scientific uncertainty to make a reasonable decision on the acceptability to environmental risks, their standard of proof should be fulfilled. A higher level of standard of proof leads to unacceptably unequal procedural positions for appellants in complex environmental cases.