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**Aims and Scope**

European Energy and Environmental Law Review is a bimonthly journal which presents comprehensive coverage of the latest developments in energy and environmental law throughout Europe. In addition to this, European Energy and Environmental Law Review contains concise, accessible articles which explore and analyse significant issues and developments in energy and environmental law and practice throughout Europe.

European Energy and Environmental Law Review enables the reader to keep abreast of significant and topical aspects of energy and environmental law, including the legal issues relating to renewables, energy security, energy efficiency, energy competition law, energy liberalisation process, electricity and gas markets, climate change; sustainable energy; land, air, fresh water, oceans, noise, waste management, dangerous substances, and nature conservation. Its succinct, practical style makes it ideal for the busy professional, while the authority, scope, and topicality of its coverage make it an invaluable research tool.
Protection of Health under the Euratom Treaty

Protection of the Health of Workers and the General Public under the Euratom Treaty and the EU Environmental Policy – the Ratio between Human Health Protection and Environmental Protection

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The correlation between the concepts of radiation protection and environmental protection in the context of the application of the Euratom Treaty is a subject poorly covered in academic literature, but, nevertheless one of a perennial value and importance for the “nuclear” Europe. The aim of the text is to verify the extent to which the concept of radiation protection extends along the purview of the (much broader) concept of environmental protection. Thus, an attempt is made to demonstrate whether the health and safety provisions of the Euratom Treaty and the relevant implementing legislation are solely aimed at protecting the health of humans and for that matter are only concerned with the effects of radiation only as far as they relate to the human factor, or indeed, additionally extend to the other elements comprising the environment.

I. The Intrinsic Link between Environmental and Nuclear Law

The link between nuclear and environmental law and policy, regardless of whether these are devised on a global or regional level, is an imminent one. Environmental considerations are intrinsic to the existence of the law and policy on nuclear energy. From a nuclear law standpoint, the objective ancillary to the primary objective of nuclear law which is to regulate the development and management of nuclear energy production, is, certainly, the protection of the environment and the health of the population that are (directly or indirectly) exposed to radiation. In this sense, in spite of the fact that the global nuclear and environmental legal systems possess their own unique characteristics and are underpinned by different ideologies and reasons of being, it remains undisputed that the ultimate goal shared by both is safeguarding the health of the population and the environment.¹

The article looks at the correlation between the concepts of radiation protection and environmental protection in the context of the application of the Euratom Treaty. In this sense, the aim is to verify the extent to which the concept of radiation protection extends along the purview of the (much broader) concept of environmental protection. The article starts out with a brief overview of the more relevant international legal instruments in the environmental and nuclear domain and their mutual interaction, as well as the interchange between the legal framework established under the Euratom Treaty health and safety provisions, on the one hand, and the one developed under auspices of the Union environmental policy, on the other. The ensuing parts examine the extent to which the Euratom health and safety provisions relate to the notion of “environment protection” (as narrowly construed to comprise “air, water, soil, flora and fauna” as environmental assets), inquiring into the existence of a common practice (if not, a duty) on the part of the EU institutions to subscribe to an environmental approach to radiation protection. An environmental approach to radiation protection is one which does not exclusively link radiation protection to human health protection, but additionally encompasses the wider eco-system i.e. the “air, water, soil, fauna and flora” elements. Thus, the article attempts to demonstrate whether the health and safety provisions of the Euratom Treaty and the relevant implementing legislation are solely aimed at protecting the health of humans and for that matter are only concerned with the effects of radiation only as far as they relate to the human factor, or indeed, additionally extend to the other elements comprising the environment.

In examining the complex nature of the correlation between the nuclear and the environmental legal frameworks, a number of authors have subscribed to a narrow definition for “environmental law” as the law that protects the ecosystem i.e. soil, water, air and biodiversity (flora and fauna).² Effectively, such a narrow definition fails to incude the concept of human health protection. It would seem that the choice between a broad as opposed to a narrow circumscription of the scope of environmental law determines the modalities of interplay between the two different legal systems. Namely, once a restrictive view on the notion of “environment protection” is opted for, the link

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between nuclear energy and the environment becomes more remote, especially since nuclear law is chiefly concerned with the protection of human health and only has a negligible bearing on environmental protection (as narrowly construed under the former definition).\textsuperscript{3}

II. The Interface between International and Regional Environmental and Nuclear Instruments

The intensive interaction occurring between the nuclear and environmental legal systems is reflected in the practice of so-called “borrowing” of legal instruments. Namely, this occurs when a legal rule originally adopted within the environmental framework touches upon or, sometimes, directly regulates an issue belonging to the nuclear domain, and vice versa. Pursuant to the devastating effects of the Chernobyl accident, there has been a noticeable increase in the body of international nuclear law documents dealing with environment and health protection since this nuclear predicament served as a turning point for raising awareness of the potentially catastrophic and far-reaching ecological and health effects of nuclear radiation.\textsuperscript{4}

The list of international environmental law instruments whose provisions directly or indirectly concern the activities in the nuclear field is a non-exhaustive one, for which reason presently a reference shall be made to the more prominent of them. A same approach will be followed with relation to international nuclear law instruments applicable to the field of environmental protection. The oldest convention in the field of nuclear law that deals more substantially with environment protection is the Convention on Physical Protection of Nuclear Material (1979),\textsuperscript{5} which, apart from briefly referring to the “protection of public health, safety, the environment and national and international security”,\textsuperscript{6} also criminalizes the intentional commission of certain types of acts that cause or are likely to cause “death or serious injury to any person or substantial damage to property or to the environment”.\textsuperscript{7}

Another international nuclear law instrument that fosters the protection of life, property and the environment from the effects of radioactive releases as one of its objectives is the Convention on Assistance in Nuclear Accident and Radiological Emergency (1986).\textsuperscript{8} The Convention on Nuclear Safety (1994)\textsuperscript{9} and Convention on Spent Fuel and Radioactive Waste Management (1997)\textsuperscript{10} have both identified among their objectives the protection of “individuals, society and the environment from harmful effects of ionizing radiation”.\textsuperscript{11} Furthermore, the “Liability Conventions” (The 1997 Protocol\textsuperscript{12} to Amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage,\textsuperscript{13} the Convention on Supplementary Compensation for Nuclear Damage (1997)\textsuperscript{14} and the 2004 Protocol\textsuperscript{15} to Amend the Paris Convention on Nuclear Third Party Liability\textsuperscript{16}) have been additionally modified to accommodate certain upgraded liability requirements related to the environment. This provides that nuclear operators can be held liable for nuclear damage by incurring the cost of measures for reinstating a significantly impaired environment or for economic loss deriving from an economic interest in the use or enjoyment of the environment that has been significantly impaired due to a nuclear incident.\textsuperscript{17}

\textsuperscript{3} For further reading, see also Emmerechts supra n. 2, at p. 91.


\textsuperscript{6} Preamble to the Convention.

\textsuperscript{7} Art. 7 of the Convention on Physical Protection of Nuclear Material criminalizes the intentional commission of:

\textsuperscript{8} “… (a) an act without lawful authority which constitutes the receipt, possession, use, transfer, alteration, disposal or dispersal of nuclear material and which causes or is likely to cause death or serious injury to any person or substantial damage to property or to the environment; (…) (e) an act directed against a nuclear facility, or an act interfering with the operation of a nuclear facility, where the offender intentionally causes, or where he knows that the act is likely to cause, death or serious injury to any person or substantial damage to property or to the environment by exposure to radiation or release of radioactive substances, unless the act is undertaken in conformity with the national law of the State Party in the territory of which he nuclear facility is situated; (…) (g) a threat: (i) to use nuclear material to cause death or serious injury to any person or substantial damage to property or to the environment or to commit the offence described in subparagraph (e), (…)”;


\textsuperscript{11} IAEA, INFCIRC/546, at http://iaea.org/Publications/Documents/Conventions/jointconv.html.

\textsuperscript{12} See Art. 1 of both conventions.


\textsuperscript{17} http://www.oecd-nea.org/law/nlparis_conv.html.

\textsuperscript{18} See also on this, Emmerechts supra n. 2, at p. 93. For more on this concept of environmental damage, see also Emmerechts supra n. 2, p. 99 et seq.
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Conversely, there have been a number of international environmental law instruments that pertain to the nuclear domain. These are the London Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter (1972)\(^\text{18}\) covering the prevention of pollution to the marine environment caused by introduction of, *inter alia*, high-level radioactive wastes in the sea; followed by the Convention on Environmental Impact Assessment in a Trans-boundary Context (“Espoo Convention”) (1991)\(^\text{19}\) which requires states to conduct environmental impact assessment for nuclear energy activities liable to cause a significantly adverse transboundary impact.\(^\text{20}\) The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention, 1992)\(^\text{21}\) and the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (1998)\(^\text{22}\) are two highly comprehensive environmental legal instruments that just as importantly influence the nuclear field. The OSPAR Convention targets the prevention and elimination of pollution to the marine environment from land-based sources, offshore sources as well as pollution from dumping or incineration of wastes and other matter as well as from radioactive substances (including waste).\(^\text{23}\) The Aarhus Convention on the other hand, deals with the procedural aspects of environment protection introducing a sort of an *ex ante* control over measures liable to have a damaging effect on the environment, as well as laying down an obligation for the public authorities to provide access for the public to environmental information related to the nuclear field as well as setting out rules for public participation in the decision-making for certain nuclear activities.\(^\text{24}\)

The two-way “exchange” of provisions between the legal domains of the nuclear and the environment can also be discerned on the EU level. There are a number of Union measures adopted under the Union environmental policy that contain provisions which, either comprehensively or marginally, cover a particular nuclear energy aspect (be it radioactive waste or other radioactive matter-related nuisances, nuclear power plant construction planning, or other). This mainly concerns the issues that have not been adequately regulated under the provisions of the Euratom treaty (either because there is no express competence in the Euratom Treaty for regulation to occur, or, the Euratom has not made use of the existing competence so that the Union is implicitly called for to step in and regulate.

*Directive 85/337/EEC on assessment of the effects of certain public and private projects on the environment*\(^\text{25}\) lays down an obligation for assessment of the environmental effects of public and private projects likely to have significant effects on the environment and among them, includes projects relating to nuclear power stations and other nuclear reactors and installations designed for permanent storage or final disposal of radioactive waste. Although primarily targeting environmental protection, the Directive was adopted under Arts. 114 and 352 TFEU (then, Arts. 100 and 235 EC; i.e. the “open-ended” competence and the legal approximation provisions) since at the time of its adoption a separate Community environmental policy had still not been foreseen as such under the Treaties. The Directive was later on amended by Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment\(^\text{26}\) which was based on ex-Art. 175(1)EC (now, Art. 18 http://www.imo.org/OurWork/Environment/SpecialProgrammesAndInitiatives/Pages/London-Convention-and-Protocol.aspx.


20 Art. 2 of the Convention.

21 http://www.ospar.org/content/content.asp?menu=00340108070000_000000_000000.


23 Arts. 3, 4 and 5 of the Convention. For the types of radioactive substances covered by the OSPAR Convention see Annexes I, II and III of the Convention.

24 Art. 6 and related Annex I of the Aarhus Convention read as follows:

“(…) Article 6

PUBLIC PARTICIPATION IN DECISIONS ON SPECIFIC ACTIVITIES

1. Each Party:

(a) Shall apply the provisions of this article with respect to decisions on whether to permit proposed activities listed in annex I,…

(…) Annex I

LIST OF ACTIVITIES REFERRED TO IN ARTICLE 6, PARAGRAPH 1 (a)

1. Energy sector:

- Mineral oil and gas refineries;
- Installations for gasification and liquefaction;
- Thermal power stations and other combustion installations with a heat input of 50 megawatts (MW) or more;
- Coke ovens;
- Nuclear power stations and other nuclear reactors including the dismantling or decommissioning of such power stations or reactors 1/ (except research installations for the production and conversion of fissionable and fertile materials whose maximum power does not exceed 1 kW continuous thermal load);
- Installations for the reprocessing of irradiated nuclear fuel;
- Installations designed:
  - For the production or enrichment of nuclear fuel;
  - For the processing of irradiated nuclear fuel or high-level radioactive waste;
  - For the final disposal of irradiated nuclear fuel;
  - Solely for the final disposal of radioactive waste;
  - Solely for the storage (planned for more than 10 years) of irradiated nuclear fuels or radioactive waste; (…)”;\(^\text{27}\)


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192(1) TFEU) on the Union environment policy, thus complementing and reinforcing the Union’s existing environmental impact assessment regime.

Directive 2003/4/EC of the European Parliament and of the Council on public access to environmental information and repealing Council Directive 90/313/EEC27 (based on ex-Art. 175(1)EC (Art. 192(1) TFEU) guarantees the right of access to environmental information held by or for public authorities, whereby the term “environmental information” is taken to cover any information in written, visual, aural, electronic or any other material form on factors, such as, among other, radiation and waste, including radioactive waste, emissions, discharges and other releases into the environment affecting or likely to affect the elements of the environment.28 These elements of the environment are presumed to comprise: air and atmosphere, water, soil, land, landscape and natural sites including wetlands, coastal and marine areas, as well as biological diversity and its components, including genetically modified organisms.29

The much debated Directive 2008/99/EC on the protection of the environment through criminal law30 had a curious life cycle as it was originally adopted under the EU Treaty provisions in the form of Council Framework Decision 2003/80/JHA on the protection of the environment through criminal law.31 Subsequently, the Commission challenged the choice of legal basis for the said Framework Decision in Commission v Council32 where the EU Court of Justice gave the green light for the use of an EU (then, EC), first pillar instrument for harmonizing environmental offences throughout the Community that entails the imposition of penalties on the part of the Member States which are effective, proportionate and dissuasive.33 The Court had considered that this type of measure could only appropriately be based on Art. 192 TFEU (ex-Art. 175 EC) as its main purpose was undisputedly, the protection of the environment.34,35

At the opposite end of the spectrum, there have been a few Euratom measures with their fair share of “greenness”. In keeping with the tenor of international nuclear law instruments, the Euratom acts rarely fail to mention the observance of “environmental considerations” applicable to the nuclear field since a vital corollary objective of the Euratom health and safety provisions is that of prevention/protection from risks liable to adversely affect the environment. In this vein, the Preamble36 of Council Directive 2009/71/Euratom establishing a Community framework for nuclear safety37 invokes the general aim of the Euratom Health and Safety provisions to protect “the population and the environment against risks of nuclear contamination” albeit the Treaty text itself does not contain a reference to the notion of “environment protection” per se. Similarly, the Council Directive 2006/17/Euratom on the supervision and control of shipments of radioactive waste and spent fuel38 couples together the notions of human health protection and environment protection,39 as is the case with Council Directive 2003/122/Euratom on the control of high-activity sealed radioactive sources and orphan sources40 where a reference is made to the potential risks for human health and the environment brought on by high-activity sources.41 What the former three directives have in common is that their texts merely make a passing mention of the importance of the objective of environment protection in the nuclear sphere as their provisions seem to be of a more declaratory than a regulatory nature.

In contrast to this, Directive 96/29/EURATOM of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation42 (not to be mislead by its title which may suggest that the Directive’s provisions would be confined to the field of human health protection) contains operative provisions that have a direct, regulatory effect on the environment.43 The Directive is significant, among other, as it clarifies the overall approach of the Euratom towards the breadth of the notion of radiation protection and its bearing on environment protection. This point will be further developed in the following sections.

27 OJ L 041, p. 0026-0032.
28 Art. 2 of Directive.
29 See Art. 2 Definitions.
30 OJ L 328, p. 0028-0037.
31 OJ L 029, p. 0055-0058.
32 C-176/03 [2005] ECR 1-7879.
33 Emphasis added. See para.46 et seq. of judgment.
34 Para.51 of judgment.
35 Pursuant to Art. 3 of the Directive on the protection of the environment through criminal law, the Member States are to ensure that the following conduct constitutes a criminal offence, when unlawful and committed intentionally or with at least serious negligence (only those passages with direct relevance to Euratom activities are cited herein):

“(a) the discharge, emission or introduction of a quantity of materials or ionising radiation into air, soil or water, which causes or is likely to cause death or serious injury to any person or substantial damage to the quality of air, the quality of soil or the quality of water, or to animals or plants; [Emphasis added] (…)”
(e) the production, processing, handling, use, holding, storage, transport, import, export or disposal of nuclear materials or other hazardous radioactive substances which causes or is likely to cause death or serious injury to any person or substantial damage to the quality of air, the quality of soil or the quality of water, or to animals or plants; [Emphasis added] (…)”;
36 Recital 5 of Preamble.
39 Recital 11 of Preamble.
41 Recital 8 of the Preamble.
42 See Arts. 19, 22, 44, 45 and 47 of the Directive.
III. The Euratom Treaty Health and Safety Provisions in the Wider Context of Environmental Protection

There is both a natural and logical link between the scope of the Euratom treaty (more precisely, the health and safety provisions of Chapter III; Art. 30 et seq. Euratom) and that of the Union environmental policy (Art. 192 et seq. TFEU). The breadth of the area of overlap is significant given that the health and safety provisions of the Euratom Treaty take up a substantial part of the subject matter covered by this Treaty. In retrospect, the prominence of the “Health and Safety” chapter of the Treaty proves all the greater given that its provisions were originally considered as the closest reference to “environmental protection” included in the founding treaties.44 The environmental protection provisions and the Union (then, Community) environmental policy, for that matter, were only introduced into the Treaties as late as in 1987 with the adoption of the Single European Act.45 Furthermore, the Euratom Treaty can be said to provide the most significant environmentally relevant legal bases outside the TFEU (EC).46 This points to an intrinsic link between the health and safety provisions of the Euratom treaty and the TFEU environmental policy provisions. The nature of the former argument may seem slightly one-sided since there is doubt as to whether the Euratom provisions are effectively directed at environment protection in its entirety or, indeed, only partially cover this field i.e. to the extent that environment protection pertains to the protection of human health.47

In order to determine the extent of the said overlap of policies, one needs to inquire more closely into the aim and objective of the Euratom health and safety provisions and place the former into the wider context of environment protection. The Euratom Treaty Chapter on “Health and Safety” sets out the basic standards within the Community for the protection of the health of workers and the general public against the dangers arising from ionizing radiation.48 Art. 30 Euratom concisely and narrowly delimits the scope of application of the health and safety provisions while Art. 35 Euratom introduces an obligation for Member States to establish the facilities necessary to carry out continuous monitoring of the level of radioactivity in the air, water and soil (whereby the Commission has the right of access to such facilities to verify their operation and efficiency). The appropriate national authorities periodically communicate information on the checks referred to in Art. 35 to the Commission keeping it informed of the level of radioactivity to which the public is exposed.49 Although these tasks are expressly written into the Treaty, it is quite a different issue whether and to what extent the Commission makes use of these prerogatives.

Further to this, under Art. 37 on the disposal of radioactive waste, Member States are obligated to communicate to the Commission the general data relating to any plan for the disposal of radioactive waste in whatever form which will enable the former to determine whether “the implementation of such plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State”. Furthermore, pursuant to Art. 38, in the execution of its tasks, the Commission is to make recommendations to the Member States regarding the levels of radioactivity in the air, water and soil.

The reference to “air, water and soil” in the foregoing passages only partly relates to the narrowly defined concept of “environment protection” (which is one excluding “human health” from its remit),50 given that the reference to “fauna and flora” (animal and plant life) is missing from the Treaty text. In the absence of such a reference, the concept of “environment protection” defined as comprising the protection of water, air, soil, and fauna and flora, as environmental assets, is to be regarded as incomplete. Thus, it follows that Arts. 37 and 38, unlike Art. 30 Euratom,

47 See Kramer, L., EC Environmental Law (4th ed.), Sweet & Maxwell, 2000, p. 269. Kramer argues that energy measures based on the Euratom Treaty do not discuss the impact of nuclear energy on the environment in any significant way since they mainly consider the effects of nuclear energy on human health, but not on fauna and flora or other environmental assets.
48 Art. 30 Euratom; According to this article, the expression “basic standards” is understood as:
(a) maximum permissible doses compatible with adequate safety;
(b) maximum permissible levels of exposure and contamination;
(c) the fundamental principles governing the health surveillance of workers.
49 Art. 36 Euratom.
50 Academic literature is not very clear as to giving a precise definition for the evasive term “environment” as authors disagree as to whether the definition should be restricted to the notion of natural environment or include also other elements such as human health (See Fitzmaurice, M.A., International Protection of the Environment (Collected Courses of the Hague Academy of International Law), Martinus Nijhoff Publishers, 2001, p. 24). In certain relevant international environmental law instruments, an erratic pattern in approaches is found regarding the definition for “environment”. For a discussion on this, see Fitzmaurice, M.A., International Protection of the Environment (Collected Courses of the Hague Academy of International Law), Martinus Nijhoff Publishers, 2001, pp. 22-28.
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cannot be seen as potential legal bases for the adoption of legislative measures as they can only be relied on as grounds for the conducting of data collection and the adoption of recommendations.\textsuperscript{51}

Clearly, the emphasis in the Euratom Treaty provisions is primarily put on the protection of the health of humans (the workers and the general public) in the sense that protection of human health has been singled out and, thus, prioritized over the overall environment protection objective. Nonetheless, this and the foregoing considerations are not sufficient to claim that the Euratom Treaty completely excludes environmental protection from its scope and therefore does not endorse an environmental approach to radiation protection.

In conclusion, even if one decides to follow the narrowly defined concept of “environment protection”, one could not artificially extract the “human health protection” component from the “protection of air, water, soil, fauna and flora” as this would, effectively, amount to depriving the Union environmental provisions from attaining their full effect. This flows from the fact that protection of human health figures among the objectives of the Union environmental policy (Art. 192 (1) TFEU). Hence, in examining the relationship between the Euratom and the EU environmental policy, it would seem more instructive to adhere to the broader definition of environment i.e. the one that includes the concept of “human health protection”. This reasoning is further substantiated by the nature of the protection of “air, water, soil, fauna and flora” as one inextricably linked to the notion of human health given that the quality of health of humans is attributable to the quality of their living environment i.e. the surrounding “air, water and soil” space.

In this respect, yet another problem of interpretation arises regarding the existence of a separate title on public health policy in the TFEU which was introduced in the Maastricht Treaty as separate from the one on environmental policy. The dividing line between the two policies has been significantly blurred both in the practice of EU institutions and the case law of the EU Court of Justice. In this respect, the difference between the term “human health” as understood under the text of Art. 192 TFEU (the Union environmental policy) as opposed to “human health” and “public health” (both within the context of Art. 168 TFEU (the Union public health policy) still remains unclear.\textsuperscript{52}

Namely, in the Chernobyl F\textsuperscript{3} case which concerned the choice of a correct legal basis for Regulation No. 3955/87 fixing maximum permitted levels of radioactive contamination in response to a concern to protect public health, the Court stated that, “the protection of public health is also one of the objectives of Community action in environmental matters (…)” (para 18). Contra to the Court’s reasoning, Advocate General Darmon was reluctant to accept that protection of public health falls entirely within the concept of environment since contributing to the protection of human health as one of the objectives of Union’s (Community) action relating to the environment does not entail that all “(…) preoccupations of that kind are exclusively reserved to the sphere of environmental matters” (para. 33).\textsuperscript{54} The reason for the Court’s “inclusive” approach may have been the fact that a separate treaty title on public health did not exist at the material time of the case, so that there was not a treaty legal basis that would have been more immediate to human health protection than the one on environment protection.

Nevertheless, similar dilemmas persist to arise today, after the establishment of a separate policy on public health, in view of the significant bearing human health protection has on the environment resulting in a frequent intertwining of the subject matter of both policies. It is also the approach that has been followed by the Union legislators in their choice between the public health and the environmental protection treaty provisions as appropriate legal basis.\textsuperscript{55}


\textsuperscript{52} See, Kramer supra n. 47, at p. 12 (in footnote n. 49). Kramer gives the example of Case C-293/97 Standley [1999] ECR I-2603 where the Court considered Directive 91/676 on the protection of water from nitrates pollution to be a directive which protects public health (although the legal basis for the Directive was then Art. 130 EC on the Community environmental policy).


\textsuperscript{54} Opinion of Advocate General Darmon delivered on 14 February 1990: “(…) It should also be observed that it is not certain that the protection of public health falls entirely within the concept – not defined by the Treaty – of environment. The fact that Article 130r(1) provides that “action by the Community relating to the environment shall have the following objectives:… to contribute towards protecting human health” does not mean in any way that preoccupations of that kind are exclusively reserved to the sphere of environmental matters. Moreover, the precautions concerning importation into the Community of products to be used for human foodstuffs reflect the concern to protect public health much more than to prevent any damage to the environment. It will be remembered that public health is among the exceptions provided for by Article 36 of the Treaty in relation to the free movement of goods” (para. 33).

IV. The “Environmental Approach” to Radiation Protection and Nuclear Safety

A delimitation of Union’s public health policy from the Union’s environmental policy objectives was attempted in the discussion supra. In reality, discerning the former from the latter proves to be a very delicate task due to the polyvalent character of the notion of public health. The public health policy/environment policy dichotomy is mirrored in the definition given to the term “radiation protection”, as a term most commonly referred to when discussing the health and safety implications of nuclear energy. Alike the evasive definition of “environment”; a broad and a narrow approach to radiation protection has also been developed, determined by whether a broad or a narrow approach is applied to examining the relation between EU’s human health protection and environmental protection tenets.

A clarification needs to be made from the start regarding the terms “radiation protection” and “nuclear safety”. The former implies setting out the limits for radiation doses and radioactivity levels originating from various sources of radiation, whereas the latter relates to the safety of the design and operation of nuclear power plants and other nuclear facilities as sources of radiation. Clearly, the two concepts complement each other, and this is reflected in the definition for radiation protection and nuclear safety espoused by the IAEA. According to the 2007 IAEA Safety Glossary, radiation protection denotes the protection of people and the environment against radiation risks, while nuclear safety represents the safety of facilities and activities giving rise to radiation risks. The EU Court of Justice also decided to follow these definitions in the Nuclear Safety Convention Case, where, in order to define the Union (Community) competence in the field of nuclear safety, it refused to draw an artificial distinction between the protection of the health of the general public and the safety of sources of ionising radiation, thus aligning with Advocate General Jacobs” appraisal of the evolution of the disciplines of “nuclear safety” and “radiation protection”. The two concepts were originally treated as separate and not impinging upon each other; with nuclear safety being focused on the technological safety of nuclear installations and radiation protection being concerned with the maximum exposure levels and dose limits for workers and the population. The rapidly changing conditions in the global nuclear sector inevitably lead to the two formerly separate and autonomous domains partially coinciding: nuclear safety gradually developed a radiation protection aspect to it (in addition to the purely technological one) while radiation protection grew increasingly concerned with limiting radiation exposures through strengthening of the control over radiation sources (including nuclear installations).

The dynamic concept of radiation protection and the different approaches adopted with regard to it will now be further elaborated on. In this sense, once again, a broad view and a narrow view on radiation protection need to be distinguished, where the broad view is one which couples the human health protection requirements together with those related to the protection of “air, water, soil, flora and fauna” (that is, the narrowly construed notion of “environment”). Thus, adopting a broad approach to radiation protection presupposes an “environmental protection” approach to radiation protection as opposed to the narrow one which implies a restrictive view which singularly encompasses “human health protection”.

In order to arrive at the “correct” approach to be followed, it is important that an insight is provided into the approaches offered in the texts of various international and regional instruments, followed by a comparative overview of individual EU institutions’ standpoints on the matter (the Parliament, the Council, the Commission and the EU Court of Justice).

4.1. The international and regional instruments

Global views on radiation protection have ranged from very extensive to completely exclusionary in terms of fitting in the “environment protection” parameter. Exempli gratia, the International Commission on Radiological Protection (ICRP) had been preoccupied with the issue of radiation protection only to the extent that the latter relates to the concept of human environment i.e. to the extent that the
radiological protection of man is directly affected. According to the definition of radiological protection given by the ICRP, the environment is to be considered as sufficiently protected as long as human beings are sufficiently protected.

Since the 1990s, spurred by the rise in prominence of environmental protection and the increased proliferation of international and regional environmental law instruments, there has been a modification of this restrictive view. In fact, a 2008 ICRP document exhibits a shift in views as the ICRP is now no longer predicated “environment protection” on “human health protection”, but rather offers a unique and independent outlook on the former concept. Therefore, it introduces a more extensive approach on the relationship between radiation protection and the environment, aiming to prevent and/or reduce “(...) radiation effects in the environment to a level where they would have a negligible impact on the maintenance of biological diversity, the conservation of species, or the health and status of natural habitats, communities, and ecosystems”.

The former is evidence to an extension in the scope of the ICRP definition of radiation protection as one which does not merely cover the human environment, but also the broader eco-system (the natural environment).

Further on, the closest reference to environment protection in the Statute of the International Atomic Energy Agency (IAEA) is to be found in Art. III health and safety provisions. Namely, according to Art. III(6), the Agency is authorized “(...) [t]o establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property (including such standards for labour conditions (...))”. It has been speculated that the absence of a specific reference is due to the fact that at the time the IAEA Statute was drafted, the potential risks from the peaceful uses of nuclear energy were not as evident as those resulting from military uses. This is further supported by the terminology used in the text of the 1996 IAEA Basic Safety Standards which is predominantly focused on the protection of people against exposure to ionizing radiation and the safety of radiation sources.

However, a significant shift in IAEA’s view can be observed in the 2007 edition of IAEA’s Safety Glossary – Terminology Used in Nuclear Safety and Radiation Protection where a repetitive use of the term “safety standards for protecting people and the environment from harmful effects of ionizing radiation” prevails. In addition to this, it has been indicated that in the framework of IAEA’s regulations and activities, the term radiation protection denotes “protection of people and the environment against radiation risks”. In addition to this, an environmental approach to radiation protection has also been endorsed in Principle 8 of the IAEA fundamental principles which reads as follows: “Whereas the effects of radiation exposure on human health are relatively well understood, albeit with uncertainties, the effects of radiation on the environment have been less thoroughly investigated. The present system of radiation protection generally provides appropriate protection of ecosystems in the human environment against harmful effects of radiation exposure. The general intent of the measures taken for the purposes of environmental protection has been to protect ecosystems against radiation exposure that would have negative consequences.”

Molodstova, supra n. 56, at p. 192.

Idem.


Idem, Abstract.: “(...) the Commission considered it necessary and appropriate to broaden its scope in order to address, directly, the subject of protection of the environment, although it acknowledged that there is no simple or single universal definition of ‘environmental protection’, and that the concept differs between countries and from one circumstance to another. (...) Nevertheless, the Commission did consider it appropriate to set out some high-level ambitions with regard to environmental protection and the specific issue of potential radiation effects, and thus included within its general aims those of wishing to prevent or reduce the frequency of deleterious radiation effects in the environment to a level where they would have a negligible impact on the maintenance of biological diversity, the conservation of species, or the health and status of natural habitats, communities, and ecosystems.

The Commission also stated, however, that it believed that its approach to environmental protection should be commensurate with the overall level of risk (and thus optimised), and that it should be compatible with other approaches being made to protect the environment.” [Emphasis added].

http://www.iaea.org/About/statute_text.html.

Molodstova, supra n. 56, at p. 201.


“(...) Purpose 1.2. “These Standards specify the basic requirements for protection of people against exposure to ionizing radiation and for the safety of radiation sources, hereinafter termed protection and safety.”

Idem.


In addition to this, for a list of the recently published IAEA standards see at http://www-ns.iaea.org/standards/documents/recent-pubs.asp?%5=11&l = 84; The letterhead of the former documents reads “Safety Standards for protecting people and the environment”.

Idem, p. 2.
Protection of Health under the Euratom Treaty

adverse consequences for populations of a species (as distinct from individual organisms).73

On the EU level, following up on the discussion supra regarding the relevance the Euratom health and safety rules have for “environment protection” per se, it is safe to say that the Euratom Treaty text has only to a certain point deferred to an “environmental protection” approach to radiation protection. The “air, water and soil” reference in the Treaty which neglects to include “fauna and flora” as a crucial component of the environment prevents Euratom’s approach from being qualified as fully “environmental”. However, the Euratom’s overall approach to radiation protection has later on been somewhat clarified and complemented by the Basic Safety Standards Directive 96/29/Euratom.74 As it can be inferred from its title, the Directive has a prevalent human health protection objective whereas its text has provided for an “environmental” definition for radioactive contamination as one which represents “the contamination of any material, surface or environment or of an individual by radioactive substances”.75

4.2 The EU institutions
The EU institutions on their own part have not neglected to express their stance on the limits of the scope of radiation protection, which can be characterized as more environmental than anything else, but, nonetheless, short of consistent. Among the majority of institutions, there is a noticeable tendency not to prioritize or in any way favor the health protection over the environmental protection objective.

In the period preceding the adoption of the Directive establishing a Community framework for the nuclear safety of nuclear installations,76 the European Parliament was involved in a back-and-forth with the Commission regarding the initial proposal for the Directive. The Parliament’s Legal Affairs Committee examined the possibility of basing the Directive on the environmental policy provisions of the EC Treaty thus enabling for both the technological aspects of nuclear safety and the environmental aspects to be covered.77 In addition to this, the Legal Affairs Committee remarked on the insistence on the part of the Parliament’s Industry Committee that environmental protection considerations be incorporated into the scope of the Directive through the insertion of a provision referring to the IAEA fundamental principles in order to reflect the environmental protection concerns.78 The former Committee took special note of the proposed text of Art. 2 of the draft Directive which defined “nuclear safety” as “the achievement of proper operating conditions through measures taken with a view to the prevention of accidents or mitigation of accident consequences, resulting in protection of workers, general public and the air, water and soil from undue radiation hazards arising from nuclear installations”.79

It appeared that the centre of gravity of the proposed directive was nuclear safety, the main objective being to supplement the basic standards laid down in the Basic Safety Standards Directive 96/29/Euratom in order to ensure that a high level of safety of nuclear installations is attained and constantly improved.80 The explicit reference to environment in Art. 2 had indicated that, for the purposes of the Directive, the notion of nuclear safety must have been construed also in terms of environment protection, in addition to protection of the health of workers and the general public.81 However, the main thrust of the instrument was considered to be enhancing the existing system of radiation standards previously established by the Basic Safety Standards Directive, while none of the provisions set out in the proposed Directive were specifically aimed at protection against threats to the environment.82 Finally, the Parliamentary Committee concluded that in spite of the “inclusive” definition for nuclear safety in Art. 2, the protection of the environment was not covered by Art. 31 Euratom (the provisions on the basic health and safety standards). Furthermore, the Committee regarded the “air, water and soil” reference of Art. 37 and Art. 38 Euratom as lacking the potential to provide a legal basis for the adoption of legislative measures and therefore upheld Art. 31 and Art. 32 Euratom as the Directive’s appropriate “center of gravity”.83

The Commission took an important cue from the Parliamentary Committee’s appraisal so that the Art. 2 reference to “air, water and soil” was deleted from the definition of nuclear safety in the final text of the Directive adopted on 25 June 2009. In the present text “nuclear safety” is defined as the achievement of proper operating conditions, prevention of accidents and mitigation of accident consequences, resulting in protection of workers and the general public from dangers arising from ionizing radiations from nuclear

73 IAEA Safety Standards Series No. SF-1 (2006); Emphasis added.
74 Supra, n. 42.
75 Title I Definitions. See also, Molodstova, supra n. 56, at p. 229. Molodstova elaborates on the predecessor of the Basic Safety Standards Directive – Directive 80/836/Euratom, where the identical approach to radiation protection had been upheld.
76 Supra, n. 37.
78 Idem, Höckmark Report, p. 46.
79 Idem, p. 45. Emphasis added.
80 Idem, p. 46.
81 Idem, p. 46.
82 Idem, p. 47.
83 Idem, p. 48.
installation. Nevertheless, the lawmakers did not go completely oblivious to the “environment protection” requirement, the former having found its place in the preamble to the Nuclear Safety Directive: “(…) the provisions of Chapter 3 of the [Euratom] Treaty, related to health and safety, form a coherent whole conferring upon the Commission powers of some considerable scope in order to protect the population and the environment against risks of nuclear contamination.”.

In the context of nuclear safety, the Council of the EU as one of the Union’s legislators, has also expressed its openness towards tying the concept of protection of the health of the population and workers together with the concept of protection of the environment from dangers resulting from ionizing radiation, recognizing the progress the Union has achieved in providing a satisfactory threshold of protection thereto.

Unlike the European Parliament, the Commission has not been so keen on the prospect of stretch out the scope of the Euratom health and safety provisions in order to include “environmental protection”. This is to be expected, bearing in mind the role accorded to the Commission in the legislative process as the institution holding the monopoly over legislation proposal in the Union. In this sense, the Commission could not risk drafting a legislative act that would depart from the prescribed scope of application of the Euratom Treaty provisions. By exception, the former would only be possible if there were progressive case law of the EU courts allowing for such an extension. There have, however, been a myriad of Commission policy documents pertaining to radiation protection where the Commission has acknowledged the importance of environmental protection, viewing it as an objective which is distinct and subsidiary to the health protection objective written into the Euratom Treaty.

The EU Court of Justice did not fail to express itself on the issue as well. Back in the late 1980s, in its Cattenom judgment concerning the disposal of radioactive waste from a French nuclear power plant in Cattenom, the Court noted that the health and safety provisions of the Euratom Treaty form conferred upon the Commission powers of considerable scope in order to protect the population and the environment against the risks of nuclear contamination. This statement conveys a fully-embraced environmental approach on the part of the Court which stems from its general tendency to interpret the Euratom health and safety provisions extensively so as to include environment protection into their scope. Further on, in Chernobyl I, confronted with the issue of maximum permitted levels of radioactive contamination being fixed in response to a concern to protect public health, the Court viewed the protection of public health as one of the objectives of Community action in environmental matters, opposite from Advocate General Darmon, who was not convinced that the protection of public health fell entirely and

Art. 2 of the Directive.

Recital 5 of the Preamble; For this, see also European Parliament, Report on Assessing Euratom – 50 Years of European nuclear energy policy, FINAL A6-0129/2007. At point 26 of the Report, the Parliament considered that those provisions of the Euratom Treaty that have helped prevent the proliferation of nuclear materials together with those which address health, safety and the prevention of radiological contamination, should be carefully co-ordinated with the health and safety provisions of the EC Treaty.

See Preamble of Council Resolution of 18 June 1992 on the technological problems of nuclear safety (OJ L 172 p. 2-3): “(…) Whereas the issue of nuclear safety is an important one, particularly with regard to the protection of the health of the population and of workers as well as the protection of the environment from the dangers resulting from ionizing radiation, particularly in the view of the developments which have taken place throughout Europe (…). RECOGNIZES the progress towards an equivalent and satisfactory degree of protection of the population and of the environment in the Community at the highest practical safety levels, as called for in the 1975 resolution, and in contributing to the international acceptance of similar high safety levels (…)” [Emphasis added].

For example, point 4 of the Preamble to the Nuclear Safety Directive makes a direct reference to the case law of the EU Court of Justice.


Opposite to this, in the oral proceedings of the C-29/99 Nuclear Safety Convention case, where the Euratom competence in the field of nuclear safety was examined, the Commission expressed the view that Arts.30 et seq. of the Euratom Treaty and the relevant articles of the Nuclear Safety Convention pursued the same core objective, which is the protection of people and the environment against ionizing radiation (see para. 117 AG Jacobs Opinion in same case).


Para. 11 of judgment.

The Opinion of A G Slyn in the Cattenom case follows the same approach.

Supra, n. 53.

Para. 18 of judgment.
exclusively within the concept of environment.\textsuperscript{94} According to AG Darmon, the fact that protection of human health falls under one of the objectives of Community environmental action does not presuppose that issues of that kind are exclusively reserved to the sphere of environmental matters.\textsuperscript{95} Although at the time of the deliberation of these cases the public health policy had not yet been introduced as such, this, nonetheless, was not determinative for the Court’s willingness to merge together the public health and the environmental protection objectives for the purpose of countering the dangers related to the use of nuclear energy. In fact, later on, both in cases C-61/03 Commission v UK\textsuperscript{96} and subsequently, C-65/04 Commission v UK,\textsuperscript{97} it referred to the “(...) [T]he vital importance of the objective of protecting the health of the public and the environment against the dangers related to the use of nuclear energy (...)”.

Finally, in a recent case\textsuperscript{98} where the Court discussed the potentially nugatory effects of the operation of a Czech nuclear power plant on part of the Austrian population living at the border with the Czech Republic, it acknowledged that it was “(...) common ground that [the Euratom] treaty contains a set of rules relating precisely to the protection of population and the environment against ionising radiations”\textsuperscript{99} and reiterated its Cattenom pronouncement that the provisions of Chapter III of the Euratom Treaty formed a coherent whole conferring upon the Commission powers of considerable scope in order to protect the population and the environment against the risks of nuclear contamination.\textsuperscript{100}

Thus, the EU Court of Justice has unequivocally endorsed an environmental approach to radiation protection by giving a carte blanche for the practice of extrapolation of the Euratom health and safety provisions to the field of environmental protection. This is something the Court sees as “impliedly” written into the Euratom Treaty, since it rarely feels compelled to give additional argumentation justifying the occurrence of such an extrapolation of legal rules.

In conclusion, what can be clearly stated is that the Euratom Community and, on a more general note, the Union itself, have indeed subscribed to an environmental approach to radiation protection which, although not expressly written into the text of the Euratom Treaty, can, as a common approach, be observed in the practice of the EU institutions regarding the issues that involve radiation protection. In this sense, the notion of “protection of the health of workers and the general public” as prescribed under the Euratom Treaty has been broadened so as to incorporate the requirements of environment protection. Nevertheless, this is an estimate based on policy-related pronouncements. What would seem to be a challenge in the future is whether, if a case would arise where the EU Court of Justice would have to adjudicate on the matter, the Court would be prepared to uphold its “extensive” approach on radiation protection and thus consider the potential/actual dangers to the totality of environmental assets and not confine itself solely to examining the effects radiation bears on human health.\textsuperscript{101}

The situation is not made any simpler having in mind that the drafters of the Charter of fundamental rights of the European Union have shied away from prescribing a substantive right to a clean environment, and instead have incorporated a duty to integrate a high level of environmental protection and improvement of the quality of the environment into the policies of the Union.\textsuperscript{102} If a substantive right to a clean environment were to exist in the Charter, it would seem as much more straightforward task to combine the right to a clean environment together with the health and safety provisions of the Euratom Treaty in countering the dangerous effects of radiation, rather than the current approach of reconciling the Euratom provisions with the requirements of the Union policy on environment. Here, what seems to be problematic from a strictly legal viewpoint is that there do not exist any horizontal provisions in EU’s primary law which would enable the application of the provisions of the Charter to the ambit of

\textsuperscript{94} Para. 33 of A G Darmon’s Opinion.

\textsuperscript{95} Idem.

\textsuperscript{96} C-61/03 [2005] ECR I-2477, para. 44 of judgment. Note a similar favorable stance on extension in A G Geelhoed’s Opinion in the case “(...) the objectives underpinning Chapter 3 of the EAEC Treaty – public health and safety and environmental protection – have, since the entry into force of the Treaty, consistently been viewed as being of the utmost importance.” (para. 77).

\textsuperscript{97} C-65/04, ECR 2006 p. I-2239, para. 28 of judgment.

\textsuperscript{98} Case CÈZ. C-115/08 [2009] ECR I-10265.

\textsuperscript{99} Para. 83 of judgment.

\textsuperscript{100} Para. 118 of judgment.

\textsuperscript{101} The Council of Europe Committee on the Environment has in this sense embraced an anthropo-centric approach (rather than an eco-centric one) in examining the scope of the right to a clean environment (For this, see Schall, C., “Public Interest Litigation Concerning Environmental Matters before Human Rights Courts: A Promising Future Concept?”, Journal of Environmental Law Vol. 20:3 (2008), at p. 448). This is an approach to a large extent followed by the European Court of Human Rights (see Kyrtatos v Greece (2005) 40 EHRR 16) in deciding to regard certain parts of the environment as more significant to the individual than others and thus making an artificial division between environmental degradation that affects humans as opposed to one that does not (For this, see Schall, C., “Public Interest Litigation Concerning Environmental Matters before Human Rights Courts: A Promising Future Concept?”, Journal of Environmental Law Vol. 20:3 (2008), at p. 448).

\textsuperscript{102} Art 37 of the Chapter of fundamental rights of the European Union (2010) C 83/02.)
application of the Euratom Treaty\textsuperscript{103} and for this reason, the Euratom domain has escaped being subjected to any sort of human rights-related review from the Union courts.

\textsuperscript{103} See Art. 106a of the Euratom Treaty; Furthermore, by virtue of Art 51(1) of the Chapter of fundamental rights of the EU, it follows that the provisions of the Chapter are addressed to the institutions, bodies, offices and agencies of the Union whose duty is to “(...) respect the rights, observe the principles and promote the application thereof in accordance with their respective powers and respecting the limits of the powers of the Union as conferred on it in the Treaties.”. Art. 18 of the Chapter clarifies that the reference to “the Treaties” in the text only relates to the Treaty on the Functioning of the European Union and the Treaty on the European Union. Hence, the scope of the Euratom treaty has been excluded from the field of application of the Chapter. This issue concerns a different discussion and shall be elaborated in a subsequent paper.