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Kelsen in the reactor hall? The complex interrelationship of national law, European Union law and international law in the regulation of nuclear safety

Introduction

We are in the middle of a series of crises, which also challenge the nuclear safety regulatory framework. The Russian war of aggression against Ukraine is putting nuclear safety at serious risk, as we have seen in the case of Zaporizhzhia nuclear power plant.¹ At the same time, we are witnessing an unprecedented climate crisis and global energy crisis with ever rising prices. According to the International Energy Agency (IEA), nuclear power capacity will almost double by 2050 in the net zero emission scenario and, consequently, annual investments in nuclear power will treble by 2030 in the net zero emission scenario.² Together with the IAEA, Member States' growing interest in nuclear energy and the foreseen breakthrough of small modular reactors (SMRs) will also have an impact on the legislative framework on nuclear safety and security.

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¹ IAEA Board of Governors Resolutions GOV2022/17 (adopted on 3 III 2022), GOV/2022/58 (adopted on 15 IX 2022) and GOV/2022/71 (adopted on 17 XI 2022) on the Safety Security and Safeguards Implications on the Situation in Ukraine.

² International Energy Agency, *Nuclear Power and Secure Energy Transition. From Today's Challenges to Tomorrow's clean Energy Systems*, Vienna 2022, pp. 35–36 and 49.

Nuclear energy production is a sector of the economy deemed so significant for society as a whole that it is subject to a license, or rather a set of licenses. This is the case not least because of the nuclear safety considerations that the use of nuclear energy entails in all countries. Nuclear safety is the undivided responsibility of the license holder of the nuclear installation.³ The regulation of such a nuclear installation functions within the jurisdiction of a State and it is national law that stipulates the requirements for the use of nuclear energy. In addition to the extremely powerful role that national law plays in regulating nuclear safety, nuclear energy has always been a highly international area of energy generation in terms of the regulatory aspects. The international co-operation in the nuclear energy sector has been very active since the International Atomic Energy Agency (IAEA) was set up in 1957. Different aspects of nuclear safety have been increasingly regulated at the international level by international conventions since the Chernobyl accident.⁴ For an EU Member State, there is yet another layer of regulation, namely European Union law,⁵ which in the field of nuclear mainly derives from the Treaty establishing the European Atomic Energy Community (Euratom Treaty).⁶ European Union law always takes precedence over national law.⁷

³ Convention on Nuclear Safety INFCIRC/449. Pursuant to Article 9 “[e]ach Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant license and shall take the appropriate steps to ensure that each such license holder meets its responsibility”.

⁴ Burns succinctly summarizes the impact of nuclear accidents on the international legal framework for nuclear power: “Three Mile Island was a wake-up call. Chernobyl was the spur to action. Fukushima Daiichi was a cause for reflection. Each of these accidents has influenced the development of nuclear law, though the regime within which the international community operates today is largely the product of the instruments developed after the Chernobyl accident”. S. Burns, *The Impact of the Major Nuclear Power Plant Accidents on the International Legal Framework for Nuclear Power*, “Nuclear Law Bulletin” 2018, no. 101(2), p. 30.

⁵ I will be using the concepts EU law and Euratom law throughout this paper. With EU law, I refer in particular to primary EU law as a whole, whereas when utilizing Euratom law, I refer more particularly to primary EU law stemming from Euratom Treaty, which has the similar primary EU law status as the Treaty on European Union and the Treaty on the functioning of the European Union.

⁶ For a comprehensive and most up to date presentation of the Euratom Treaty, see A. Södersten, *Euratom at the Crossroads*, Cheltenham – Northampton, MA 2014. For recent research, see also R. Engstedt, *Euratom – the Treaty and the Competences of the Community*, University of Eastern Finland 2020.

⁷ C-6/64 *Flaminio Costa v. E.N.E.L.* (1964), ECLI:EU:C:1964:66.

The three above-mentioned legal systems are interdependent and in constant interaction. I will therefore attempt to answer the following question in this paper: Which one of the three legal systems (national law, European Union law, international law) is the primary one, if any, for an EU Member State in the area of nuclear safety and what are the interrelations between these main elements?

I will approach the research question by providing a systematization angle to the interaction between these elements in this field. The classical theory of legal systems set out by H. Kelsen⁸ will form the theoretical foundation of this presentation and analysis. I will address the particular topic of nuclear safety and the three levels of regulation from a Kelsenian angle because:

1) Nuclear safety regulation at all levels has evolved remarkably at all levels over the last few decades.

2) The first generations of nuclear reactors have mainly been regulated at the level of national law and this level continues to be extremely important for the practical regulation of nuclear safety.

3) Extensive internationalization of nuclear safety law has gathered momentum ever since the 1980s.

4) For an EU Member State, the EU/Euratom nuclear safety legislative framework has emerged as a level of nuclear safety regulation.

5) A Kelsenian approach can function as a theoretical tool to understand the interrelationship between the three legal systems, which are all important for regulating the safety of nuclear installations. Kelsen's theory can function as an instrument to understand the change that has happened when it comes to the primacy⁹ of these three levels in this field of law.

Therefore, the paper operates at the level of different legal systems and strives to illustrate their interrelationships in the particular legal instruments pertaining to nuclear safety.¹⁰ I will use the case of nuclear safety to demonstrate why European Union law is the primary one for

⁸ Hans Kelsen (1881–1973) was an Austrian academic and legal philosopher. He held academic positions in Vienna, Cologne, Prague, Geneva and later at the University of California, Berkeley. Kelsen can be considered the founding father of the Austrian Constitution of 1920 and he hence also had a very practical impact on legislation.

⁹ With the notions of primary and primacy, I refer to the primacy of one legal system over another. This issue boils down to the division of competence, especially in the area of substantive EU law.

¹⁰ Having limited the focus of this paper to nuclear safety, it follows that for instance nuclear security and nuclear non-proliferation fall outside the scope of this presentation.

an EU Member State. In the forthcoming analysis, most attention will be paid to the EU dimension. In this context, EU law can be considered to have two major angles to the topic of the paper; Firstly, there is the perspective of European constitutional law stemming from the legal basis of EU nuclear law, most notably the Euratom Treaty but also the Treaty on European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU). Secondly, the substantive law angle is visible in the presentation. This has to do with the substantive and nuclear law-specific provisions of the above-mentioned treaties and the secondary legislation emanating from them. The paper has an analytical-descriptive research focus, which serves the methodological objective of systematization describing the interactions of the three legal systems in the field of nuclear law.

The objective of this paper is to contribute to the discussion on legal pluralism and shed light on the interrelationships and the order of primacy of the three legal systems in this area. My central claim will be that in the field of nuclear safety, EU law is the primary one and the Kelsenian basic norm for an EU Member State can be found there.¹¹

With this article, my aim is to fill the gaps in the systematization of ever-changing nuclear law stemming from the three levels of regulation. This change suggests that the basic norm in the sense of Kelsen has shifted for an EU Member State. In light of existing competence, we have a reason to state that the basic norm for nuclear safety regulation has moved towards EU/Euratom legislation. This opportunity to legislate in this field to an extensive extent has not yet been utilized, but it is most likely the case that Euratom's legal basis will be used more often to create a more detailed legislative framework for nuclear safety in the future. Furthermore, enforcement of these EU rules is likely to take a stricter direction. Essentially, the EU policy object of Energy Union will also lead to convergence in this area of energy policy.

This paper is structured as follows: I will first briefly introduce the nuclear law and then move on to describe the three levels of regulation, namely national law, international law and EU law. I will attach to these

The notion of nuclear safety in the context of this paper encompasses safety of nuclear installations but also the safe management of spent nuclear fuel and radioactive waste.

¹¹ It should be noted that the basic norm in the sense of Kelsen's *Reine Rechtslehre* cannot be seen as a silver bullet in deciding the norm which is applied in the case of a conflict of laws. The basic norm rather refers to an abstract legal-theoretical concept without substantive content.

sections substantive content in relation to nuclear safety law. After this discussion, I will turn to the theoretical tool – Kelsen’s theory – and address the interrelationship of these three levels of regulation. The article ends with conclusions.

1. Nuclear law

According to International Atomic Energy Agency (IAEA) Handbook on Nuclear Law, legal norms on nuclear energy are part of State’s general legal system and it takes its place within the normal legal hierarchy applicable in most States.¹² Nuclear law can be defined as “[t]he body of special legal norms created to regulate the conduct of legal or natural persons engaged in the activities related to fissionable materials, ionizing radiation and exposure to natural sources of radiation.”¹³ Generally, nuclear law has its objectives and principles, and it can be regarded as falling somewhere between public and private law with a major degree of interaction between national and international levels. Taking nuclear law into the context of the EU renders the borders even more obscure and, in particular, makes it more challenging to approach this domain of law through the lenses of a purely Kelsenian hierarchy of lower norms deriving validity from the higher norms. Furthermore, the notion of the distinctiveness of nuclear law from other sectors of law has been increasingly abandoned. This applies, for example, to the field of competition law, which to a growing extent can be considered to apply to nuclear sector.¹⁴

It is worth acknowledging the interaction at different levels of nuclear law-making, which happens at international, EU and national levels. An important feature of this interaction in the legislative phases of nuclear rule-making is that the national level – in this case, the national level of an EU Member State – is involved in all three layers. This means that the national level, i.e. the government and parliament also has the possibility of having an impact in all three law-making processes.

¹² C. Stoiber, A. Baer, N. Pelzer, W. Tonhauser, *Handbook on Nuclear Law*, International Atomic Energy Agency, Vienna 2003.

¹³ *Ibidem*, p. 4.

¹⁴ See M. Sousa Ferro, *Competition Law and the Nuclear Sector. An EU Outlook*, “Nuclear Law” 2010, no. 86(2), pp. 35–49. For discussion on the special features of nuclear law as a discipline, see also J. Handrlica, *Nuclear Law revisited as an academic Discipline*, “The Journal of World Energy Law & Business” 2019, no. 12(1).

Nuclear law has usually been considered an extremely practical and utilitarian branch of law, with the focus on the practical application of legal instruments. Systematization and a legal-theoretical approach to nuclear law encompassing different overlapping legal systems has not been commonplace. In this sense, this is a journey into the somewhat uncharted territory of legal discipline.¹⁵

2. National law

Since the introduction of nuclear reactors, nuclear safety has been within the competence of nation states. This leading role of national law is quite natural due to the fact that national law sets the legislative framework for the functioning of nuclear power plants within the jurisdiction of a given nation state. Furthermore, national law sets out the rights and obligations of license holders, who bear the responsibility for nuclear safety.

In addition to statutory law, national law – depending on the constitutional structure of the state – may include lower-level norms such as decrees and government decisions. Moreover, an important element of the regulation of nuclear safety is the regulatory framework provided by the decisions and guides of national nuclear regulatory authorities.

It should be noted that the role of national courts varies from one IAEA Member State to another. One common feature is that the national nuclear and radiation safety regulatory authorities have very strong roles and powers in the interpretation and application of nuclear safety related legislation and lower-level safety guidance documents. The same applies to enforcement: regulatory authorities may stop the operation of a nuclear power plant, for example.

The difference between binding and non-binding is usually made by dividing them into ‘soft’ law and ‘hard’ law. The international nuclear community has developed binding treaties and conventions as well as non-binding guidance and other instruments.¹⁶

¹⁵ It should be noted that the status of Euratom Law as a part of the regulatory complex of national, international and EU law, in particular, has not been a major topic in legal research.

¹⁶ S. Burns, *Milestones in Nuclear Law...*, p. 57. Burns elaborates on an example of ‘hard’ international nuclear law the CPPNM and its 2005 amendment. An example of a non-binding instrument is the 2004 Code of Conduct on the safety and the security of radioactive sources.

The sphere of national law remains the fundamental layer of nuclear safety regulation. For the practical operation of nuclear power plants, it is still the most important regulatory level, but the importance of international level and EU level has grown significantly during recent decades. Nuclear energy and nuclear safety, in particular, have always been of a highly international nature, setting international co-operation at the apex. However, the vast array of international conventions under the auspices of the IAEA have contributed significantly to the substance of national nuclear safety regulation. The same goes for its impact on Euratom legislation.

The key concepts and actors operate at the level of national law. The key concepts, such as the responsibility of the license holder and the independence of a nuclear regulatory authority, find their legally binding legal effect in national law. The sphere of national law creates the legal framework for the practical operation of nuclear utilities, suppliers, sub-contractors, regulatory authorities and the ministries, among other things. In spite of this, it should be borne in mind that the above-mentioned responsibilities and definitions can also be found in the key international nuclear conventions and Euratom legislation. When discussing national institutions, the role of the courts should not be omitted, as they function as umpires with regard to the interpretation of legal provisions in concrete court cases.¹⁷ Similarly, it is important to note that parliaments, governments and other state organs mold the national framework in different ways. National specificities are present in the legislative, application and review phases of the legislative cycle from cradle to grave, but common features do occur.

For an EU Member State, the point of departure is national law. In the field of nuclear safety, legal provisions pertaining to nuclear safety often derive from international conventions and EU law. EU Member States have signed up to international conventions and *pacta sunt servanda* is applicable. As Member States of the EU, they are obliged to implement the provisions of EU Directives and to apply the provisions of EU Regulations directly. EU Member States operate within the realm of national law, but this includes, at least indirectly, elements from the other two legal systems. Hierarchically, for an EU Member State, EU law – and in this case, mainly Euratom law – is the superior form.

¹⁷ There are major differences as to how different Member States consider the role of courts and case law. One general dividing line can be seen between common law countries and countries emphasizing black-letter law.

3. International law

Nuclear energy is characterized by a strong international dimension of regulation.¹⁸ In particular, the Chernobyl nuclear accident led to the adoption of international conventions, most notably the Convention on the Early Notification of a Nuclear Accident¹⁹ and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.²⁰ These were followed by the Convention on Nuclear Safety (CNS) and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (JC). These conventions are legally binding, and the Contracting Parties implement them according to their constitutional provisions. Nevertheless, peer reviews are predominantly incentive convention-based instruments at the disposal of national organs for continuous improvement with a view to obtaining an outside view on the national system and adopting good practices.²¹

It is worth noting that the CNS and the JC are primarily incentive conventions. In this sense, rather soft international regulation turns into hard regulation when it is implemented and applied at the national level. In this process, the implemented national norms take into account the constitutional framework of the State concerned.

Various national laws and international instruments have underscored safety being the primary prerequisite for the use of nuclear energy. One cannot emphasize too greatly the safety principle, which can be characterized as a fundamental principle of nuclear law.²² At the international level, the strongest expression of the safety principle can be found in the CNS negotiated under the auspices of the IAEA.

¹⁸ In the following, the focus will be set on the instruments of international law of the IAEA, despite the fact that under the aegis of OECD/NEA very important instruments in the field of nuclear liability have been concluded. This choice has been made because the IAEA framework is more essential in terms of nuclear safety. For an excellent overview of the different legal instruments of nuclear law stemming from the IAEA, OECD/NEA and the EU, see F. Nocera, *The legal regime of nuclear Energy. A comprehensive guide to international and European Union Law*, Antwerpen – Oxford 2005.

¹⁹ INFCIRC/335 Convention on Early Notification of a Nuclear Accident.

²⁰ INFCIRC/336 Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency.

²¹ INFCIRC/449 Convention on Nuclear Safety. Article 20 of the CNS sets out the principles and modalities of review meetings.

²² C. Stoiber, A. Baer, N. Pelzer, W. Tonhauser, op. cit., p. 5.

The CNS is a tremendous instrument of international law in an extremely complex policy field with inherent sensitivities. According to Nocera, nuclear safety has been traditionally regarded by individual states as falling within their exclusive competence and responsibility.²³ Of course, before the CNS was adopted there were other international agreements in place with links to nuclear safety, such as the IAEA emergency conventions and the Convention on the Physical Protection of Nuclear Material (CPPNM) and later the amendment thereto (A/CPPNM).²⁴ With the genesis of the CNS, the global nuclear safety legal framework received a significant boost and therefore the CNS had a great impact on the design of the Euratom nuclear safety, regime together with Member States' national legislation.

When discussing the role of the legally binding instruments in the field of international nuclear law one should note that for some time they have not been perceived as the best possible option in nuclear regulation. Instead of this, states have in an increasing manner resorted to non-legally binding but politically binding normative instruments.²⁵ As for compliance, it is interesting that legally binding commitments may not always be complied with, whereas non-binding commitments are.²⁶

4. European Union law

The EU legal system is indeed the only one of its kind with such fundamental doctrines as the direct effect and supremacy/primacy of EU law.²⁷ EU law takes precedence over national law even if the conflicting norms deal with a norm of the EU law and a constitutional provision of an EU Member State.²⁸ The EU legal system carries an effective judicial

²³ F. Nocera, *op. cit.*, p. 3.

²⁴ See INFCIRC/274/Rev 1. The Convention on the Physical Protection of Nuclear Material and INFCIRC/274/Rev 1./Mod 1. Amendment to the Convention on the Physical Protection of Nuclear Material. These conventions are the most important international instruments in the field of nuclear security.

²⁵ An example of these instruments is Codes of Conduct. A. Wetherall, *Normative Rule Making at the IAEA: Codes of Conduct*, "Nuclear Law Bulletin" 2005, no. 1, p. 73.

²⁶ *Ibidem*, p. 93.

²⁷ C-26/62 *Van Gend en Loos v. Administratie der Belastingen* (1963), ECLI:EU:C:1963:1 and C-6/64 *Flaminio Costa v. E.N.E.L.* (1964), ECLI:EU:C:1964:66.

²⁸ See C-35/76 *Amministrazione delle Finanze dello Stato v. Simmenthal SpA* (1978), ECLI:EU:C:1978:49.

control mechanism because the CJEU manages this task and sanctions have been put in place for not complying with EU law. Liability is the *ultima ratio* in securing compliance.²⁹

European Union law prevails over national law and the CJEU is the ultimate interpreter of EU law.³⁰ The Euratom Treaty is part of EU primary law and it governs the use of nuclear energy in the EU. A nuclear energy-related specificity in EU law is that the primary law legal basis can be found in the Euratom Treaty. Therefore, the Treaty is the main foundation for secondary EU legislation in the field of nuclear energy. However, this does not exclude the use of 'general' EU Treaties for the regulation of nuclear, although the Euratom Treaty is the key primary law basis for the secondary nuclear energy law.

Put simply, the nuclear safety legislation adopted during the last decade has entailed a codification exercise of IAEA conventions into the Euratom legislative framework, meaning that incentive conventions have become legally enforceable in the CJEU.³¹ Soft law, which is made hard law when applied in the national legal framework, becomes hard law at an intermediary level, Euratom. The soft international regulation becomes hard law already at the EU level before it cascades down to the national level, where EU directives have to be transposed into national law. At the same time, the application at the national level of the IAEA conventions within the national legal framework, including national constitutional provisions, became subject to the national implementation and application of the provisions of nuclear safety directives. Introducing Euratom nuclear safety legislation not only brought the CJEU to the helm as an ultimate interpreter but also a vast array of constitutional provisions and case law derived from 'general EU law'.

²⁹ See C-6/90 *Andrea Francovich and Danila Bonifaci and others v. Italian Republic* (1991), ECLI:EU:C:1991:428 and C-46/93 *Brasserie du Pêcheur SA v. Bundesrepublik Deutschland* (1996), ECLI:EU:C:1996:79.

³⁰ Probably the best-known example of a challenge on the issue of who has the final say in EU law being interpreted by EU Member States' constitutional courts is the so-called Solange cases of the German Constitutional Court. For the position of the constitutional courts of EU Member States, see J. Komárek, *The Place of Constitutional Courts in the EU*, "European Constitutional Law Review" 2013, no. 9(3).

³¹ Until now, probably the most interesting case in the docket of the CJEU has been the case Temelín, C-115/08 *Land Oberösterreich v. CEZ as* (2009), ECLI:EU:C:2009:660. For example, Wolf has argued that this ruling has strengthened Euratom and the Commission, in particular, at least on paper, despite certain disadvantages from the point of view of input and output legitimacy. S. Wolf, *Euratom, the European Court of Justice, and the Limits of Nuclear Integration in Europe*, "German Law Journal" 2011, no. 12(8), p. 1648.

It is essential to understand that the Euratom Community has possessed strong competences in the field of radiation protection for a long time. The change in the paradigm came towards the 2000s, when the CJEU found *grosso modo* in case C-29/99 that radiation safety cannot be discerned from nuclear safety.³² The Commission started to utilize these competences asserted by the CJEU by proposing nuclear safety directives. After a long saga of legislative processes, the directives were adopted.

The TEU and TFEU were negotiated in the aftermath of the wreck of the Constitutional Treaty for the European Union and they entered into force on 1 December 2009. The most remarkable novelty in the TFEU in terms of energy regulation is the single legal basis provided for energy issues. We now have in place Article 194 of TFEU, which is the energy provision used for the legislative process on most of energy issues.³³ There is one exception to the rule, which is the Euratom Treaty. As one may recall, the Euratom Treaty is one of the original Treaties of Rome and it is the primary EU law whence secondary EU legislation on nuclear energy derives.³⁴ The legal basis for nuclear energy issues can thus be found in the Euratom Treaty. The primary law legislative framework for nuclear energy is fundamentally different from the framework that regulates the use of other energy sources.

This being the case, in the field of nuclear energy EU legal instruments such as Directives and Regulations are based on Euratom Treaty.³⁵

³² C-29/99 *Commission v. Council* (2002), ECLI:EU:C:2002:734.

³³ Article 194 of the TFEU sets out the need to establish a common energy market and to preserve and improve the environment, and with a view to these aims, to ensure the functioning of the energy market, ensure security of supply in the Union, promote energy efficiency and renewables, and promote the interconnection of energy networks. In the pre-Lisbon era, the legal basis commonly used for energy issues was Article 175 of the EC Treaty (environmental protection). Similarly, it was commonplace to utilize Article 95 (single market) of the EC Treaty as the legal basis. It should be noted that already before the most recent Treaty amendment, the European Parliament was the co-legislator – on an equal legislative footing with the Council in the legislative process. Furthermore, it is important to note that a fundamental principle according to which Member States decide on their respective energy mix is stipulated in primary EU law.

³⁴ See T.F. Cusack, *A Tale of the Two Treaties: An Assessment of the Euratom Treaty in relation to the EC Treaty*, "Common Market Law Review" 2003, no. 40(1).

³⁵ The emission trading scheme, legislation on renewable energy and other pieces of energy legislation also have an impact on nuclear, and similarly on the practical room for maneuver Member States have in deciding their energy mix.

Probably the most important difference between a legal instrument under Euratom Treaty and a legal instrument under the TFEU is the legislative process. Pursuant to the provisions of the Euratom Treaty, the European Parliament (EP) only has a consultative role in the law-making process regarding nuclear energy.³⁶ Over the years, this has given rise to concerns expressed on potential democracy deficit.³⁷ In most of the legislative files under the Euratom Treaty, the EP submits a report on the legislative dossier concerned but it is up to the Council of the European Union (Council) and the Commission to decide how to deal with the proposed EP amendments to the text.³⁸

In EU law, the Member States are the *'Herren der Verträge'*. Treaties can therefore be amended but it takes an intergovernmental conference and unanimity among the Member States to decide on that matter.³⁹ From time to time, there has been discussion on amending the Euratom Treaty but in practice this would be very hard, if not impossible, as it

³⁶ In the context of Lisbon Treaty, the EP competence was extended, for example, into such sensitive policy areas as agricultural policy and, above all, the area of freedom, security and justice.

³⁷ The goal of this paper is not to discuss Euratom legislation from the angle of democracy or democratic representation. For further discussion, see I. Cenevska, *The European Parliament and the European Atomic Energy Community. A Legitimacy Crisis?*, "European Law Review" 2010, no. 35(3), pp. 415–424.

³⁸ In practical terms, the Council Presidency seldom risks political consensus reached within the Council Working Group by pushing forward with amendments presented by the EP. Therefore, the impact of the EP positions on legal dossiers under the Euratom Treaty is rather weak. The key working group of the Council involved in the law-making under the Euratom Treaty is the Council Working Party on Atomic Questions (AQG), which deals with nuclear safety legislation, *inter alia*. The AQG is for historical reasons under Coreper II and the (ministerial) Council configuration it belongs to is the General Affairs Council (GAC). The AQG also has a more technical sub-group – the Working Party on Nuclear Safety (WPNS), which carried out an analysis of nuclear power plants in EU candidate countries before the enlargement of 2004 and was revived to function as a preparatory body for way forward in the aftermath of the failure of the nuclear package. The Council Working Party on Energy (ENER) is the most important Council working group in the preparation of energy legislation but it seldom takes a stand on nuclear energy particularly. In the EP, the committee responsible for nuclear energy is the Committee on Industry, Research and Energy (ITRE). The Economic and Social Committee is consulted in the legislative procedures under Euratom Treaty.

³⁹ The procedure for amending the Treaties has been set out in Article 48 of TEU. It should be recalled that pursuant to Article 48(7) the consent of the EP is also required in order to amend the Treaties.

requires unanimity.⁴⁰ Therefore, even one Member State can block the decision-making on a Treaty amendment.⁴¹

The key provision of the Euratom Treaty, which defines the interrelationship between Euratom Treaty and the TEU, and TFEU, is Article 106a of TFEU. This article sets out the normative framework for the application of a particular provision of the TEU and TFEU in the context of the Euratom Treaty. It is stipulated in the provision that certain institutional provisions also apply to the Euratom Treaty. Even today, it is debated whether the EU and Euratom form a single legal regime or are they rather separate ones?⁴² As for the interrelationships between the 'general Treaty framework' and 'Euratom Treaty framework', one can see more convergence than divergence. This is especially true in the field of research. For the exercise of competence, there is rather a tendency to diverge.⁴³ It is obvious that there is no clear demarcation line between the two Treaty frameworks.

Competence is a key factor in addressing any research question in the field of law. In EU law, competence is based on conferral as set out in Article 5(1) of TEU.⁴⁴ The CJEU has taken a stand on certain limits of competence, but it has often been the case that the extent of competence

⁴⁰ At the time of the last amendment of the Treaties Germany, Ireland, Hungary, Austria and Sweden agreed on Declaration 54, which stated that these Member States "[n]ote that the core provisions of the Treaty establishing the European Atomic Energy Community have not been substantially amended since its entry into force and need to be brought up to date. They therefore support the idea of a Conference of the Representatives of the Member States, which should be convened as soon as possible".

⁴¹ W.-G. Schärf concludes that despite the Euratom Treaty not having been greatly much in the context of the Lisbon Treaty, the individual rights to appeal and defend their interests are now better protected. The industry, NGOs and Member States, as well as citizens may arbitrate both at the national and European level to defend their interests. W.-G. Schärf, *The Temelín-Judgement of the European Court of Justice*, "Nuclear Law Bulletin" 2010, no. 85(1), p. 91.

⁴² A. Södersten, *op. cit.*, pp. 33–34.

⁴³ *Ibidem*, pp. 414–415.

⁴⁴ Pursuant to Article 5(1) of TEU, "[t]he limits of Union competences are governed by the principle of conferral. The use of Union competences is governed by the principles of subsidiarity and proportionality". EU competence can be exclusive competence but also, more often, this is competence shared with the Member States. The Union exclusive competences are defined in Article 3 and shared competence with Member States in Article 4 of TFEU. There is also a third but minor category of competence, namely supporting competence, which is set out in Article 6 of the TFEU. The extent and limits of EU competence is always governed by the Treaty and, consequently, it is the CJEU that is the ultimate interpreter of the limits of EU competence on a case-by-case basis in light of the Treaty.

has not been determined. Another important issue is the division of competence between Member States and the Union (or in this case Euratom Community) and the limits of this competence.⁴⁵ This may give rise to further testing of these limits, as at the turn of the millennium in the case of the EU nuclear package. Although during the last years Euratom secondary legislation has not been subject to further turbulence, this may change should political priorities among the legislators shift.

Today, we are witnessing more and more EU legislation stemming from the 'general treaties' that has a major impact on nuclear energy and the entire operating environment of this sector of industry. This development gathered momentum especially during the negotiations on climate and energy package in 2007–2008, which led to the adoption of a myriad of hard law provisions affecting the energy sector, including nuclear energy, with ambitious targets to be achieved.⁴⁶

It is important to note that the EU lacks a centralized European nuclear regulatory authority and hence the control is more of a legalistic nature, focusing on the role of the Commission as the guardian of the Treaties and, naturally, the role of the CJEU as the ultimate interpreter of EU legislation. This is the case, despite the strengthened position of European Nuclear Regulators' Group (ENSREG).⁴⁷

⁴⁵ This matter was dealt with in the classic ruling 1/78 of the CJEU, which concerned the Draft Convention of the International Atomic Energy Agency on the Physical Protection of Nuclear Materials, Facilities and Transports. In Paragraph 35 of the ruling, the Court found that "[...] it is not necessary to set out and determine, as regards other Parties to the Convention, the division of powers in this respect between the Community and the Member States, particularly as it may change in the course of time".

⁴⁶ The core of the climate and energy package included Directive 2009/29/EC of the European Parliament and of the Council of 23 IV 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community OJ L 140/63, 5 VI 2009, Decision No 406/2009/EC of the European Parliament and of the Council of 23 IV 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 OJ L 140/63, 5 VI 2009 and the Directive 2009/28/EC of the European Parliament and of the Council of 23 IV 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC OJ L 140/63, 5 VI 2009. In order to achieve all the EU 20/20/20 targets for the year 2020 Directive 2012/27/EU of the European Parliament and of the Council of 25 X 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, OJ L 315/1, 14 XI 2012 was adopted. These pieces of legislation were amended after this and they are subject to further amendments with a view to accomplishing the objectives of the EU Green Deal.

⁴⁷ ENSREG is composed of the top national regulators of EU Member States.

One can say that the EU has had a firm and steady legal framework in radiation safety ever since the early years of the Euratom Treaty. However, nuclear safety, for its part, was considered to fall within the realm of national sovereignty, although nuclear energy has always had a strong dimension of international co-operation. This traditional notion of nuclear safety as being strongly within national competence and resting with Member States was challenged by the CJEU in its landmark ruling C-29/99 in 2000.⁴⁸ This verdict can be considered a classical expression of the teleological interpretation of the Court. This change in the Court paradigm can even be considered to be a construction of the EU nuclear safety doctrine.

The Commission took the initiative and started preparing legislative proposals on nuclear safety and radioactive waste management.⁴⁹ In its Communication Nuclear Safety in the European Union, released in autumn 2002, the Commission issued a message that it is preparing the nuclear package setting out the legal framework for nuclear safety in the EU.⁵⁰ This preparatory work was crystallized in the proposal for a NSD and a proposal for a RWMD.⁵¹

The Commission made a proposal for a new nuclear safety directive in November 2008.⁵² This directive was adopted in 2009. This norm-making activity in the field of nuclear safety has hence proved the Euratom Community is a flexible one.⁵³ This time, the content of this piece of legislation was very different. It mainly codified the CNS in the Euratom legislative framework and thus there were no such major

⁴⁸ C-29/99 *Commission v. Council* (2002), ECLI:EU:C:2002:734.

⁴⁹ In the EU legal system, the Commission has the monopoly of legislative proposals, with the exception of certain legislative initiatives under the Area of Freedom, Security and Justice, where a group of Member States are entitled to make legislative proposals. Despite the on-going discussion on the eventuality of EP right of initiative, it remains extremely limited, consisting of very few exceptions.

⁵⁰ COM(2002) 605 final.

⁵¹ COM(2003) 32 final.

⁵² Commission's Proposal of 26 XI 2008 for a Council Directive (Euratom) setting up a Community framework for nuclear safety. COM(2008) 790 final.

⁵³ J. Handrlica, *The splendid durability of the provisional: A Tribute to Euratom*, "Croatian Yearbook of European Law and Policy" 2018, no. 14(1), p. 164. According to Handrlica, "[t]he Euratom Community has been gradually transformed into a Community establishing binding standards of nuclear safety in order to protect citizens and the environment. Consequently, from this point of view, it can be regarded as a 'flexible' Community".

problems in the negotiation as with the previous attempt. Nearly all the Member States were already Contracting Parties to the CNS.⁵⁴

In the field of radioactive waste management, the Commission proceeded in the same manner as with the NSD.⁵⁵ The RWMD was more or less a codification of the key provisions of the Joint Convention into the EU legal framework. The Commission made the right choice when it proposed an article to be included in the text about the Member States having to take care of their own radioactive waste.⁵⁶ This is in line with the provisions regarding the trans-boundary movements in the JC.⁵⁷ Putting this principle in the Directive was obviously an important element in finding a political compromise.

During the last two decades, Euratom has increasingly become a Contracting Party to the IAEA Conventions and this has led to significant convergence of the EU and international nuclear regimes.⁵⁸ Euratom Community now is a Contracting Party to CNS, the JC, the CPPNM and the IAEA Early Notification and Assistance Conventions.

The legal basis for the EU NSD can be found in Articles 31 and 32 of the Euratom Treaty. These provisions of EU primary law deal with setting

⁵⁴ For detailed discussion on the Nuclear Safety Directive, see M. Garribba, A. Chirtes, M. Nauduzaite, *The Directive establishing a Community Framework for the nuclear safety of nuclear installations. The EU approach to nuclear safety*, "Nuclear Law Bulletin" 2010, no. 2009(2). See also Y. Pouleur, P. Krs, *The Momentum of the European Directive on Nuclear safety – from the complexity of nuclear safety to key messages addressed to European citizens*, "Nuclear Law Bulletin" 2010, no. 2010.

⁵⁵ For an insight into the Nuclear Waste Directive see U. Blohm-Hieber, *The Radioactive Waste Directive: a necessary step in the management of spent fuel and radioactive waste in the European Union*, "Nuclear Law Bulletin" 2012, no. 2011(2).

⁵⁶ Pursuant to Article 4(4) of the Directive "[r]adioactive waste shall be disposed of in the Member State in which it was generated, unless at the time of shipment an agreement, taking into account the criteria established by the Commission in accordance with Article 16(2) of Directive 2006/117/Euratom, has entered into force between the Member State concerned and another Member State or a third country to use a disposal facility in one of them". In the field of conventional (non-nuclear) waste, there is a lot of interpretation practice of the CJEU stating that waste is a commodity and should no barriers or obstacles are allowed in this field that could hinder the functioning of the internal market.

⁵⁷ Moreover, it is stated in the Preamble *considerant* xii. that "[r]ecognizing that any State has the right to ban import into its territory of foreign spent fuel and radioactive waste".

⁵⁸ Legal instruments in this effect are Commission Decisions, which have to be adopted by qualified majority in the Council. Always the most important thing about these decisions are the included annexes where Articles of the respective competence where Euratom has competence are expressly stated.

up basic safety standards and set out the procedure for the law-making process, which is based on qualified majority in the Council.

In the aftermath of the Fukushima nuclear accident in 2011, the Commission launched nuclear safety stress tests, which were executed by the national regulatory authorities. Following these, in June 2013 the Commission issued a proposal for amending the NSD with a view to strengthening the nuclear safety regulatory framework, and the Directive 2014/87/Euratom replaced the existing NSD dating back to 2009, which mainly codified the CNS into the Euratom legal framework.

It is possible to claim that one of the key elements in the CNS is the review mechanism.⁵⁹ As has been pointed out before, the CNS and the JC are incentive conventions. They are all about engaging in a transparent manner in peer reviews with the aim of continuous improvement. The underlying philosophy in this is to be exposed to criticism and strive to do better, and not just to clear hurdles. This is the true benefit of the convention systems.

We are now witnessing more interaction between the 'general EU Treaties' and the nuclear sector. This development is clearly visible, for example, in the recent taxonomy legislation on sustainable financing.⁶⁰ It will be intriguing to see how the way the Euratom Treaty is used as a legal basis may change in the medium and long term. Will the recent crises set into motion new interpretations deriving from Article 1 of the Euratom Treaty?⁶¹ It is interesting that some early comments on Euratom considered its tasks to be more 'promotional' than 'regulatory'.⁶² As Handrlica has noted, the Euratom Treaty contains many powers that have not been utilized so far.⁶³ After many years, the current crisis situation in Europe has now put the security in the supply of nuclear

⁵⁹ For an all-encompassing overview of review mechanisms under the international nuclear conventions, see C. Stoiber, *The Review Conference Mechanism in nuclear law: issues and opportunities*, "Nuclear Law Bulletin" 2009, no. 2009(1).

⁶⁰ Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 VI 2020 on the Establishment of a Framework to facilitate sustainable investment and amend Regulation (EU) 2019/2088. See also complementary climate delegated act, which qualifies nuclear energy as sustainable.

⁶¹ Pursuant to Article 1 of Euratom Treaty, "[i]t shall be the aim of the Community to contribute to the raising of the standard of living in Member States and to the development of commercial exchanges with other countries by the creation of conditions necessary for the speedy establishment and growth of nuclear industries".

⁶² P. Mathijssen, *Some Legal Aspects of Euratom*, "Common Market Law Review" 1966, no. 3(3), p. 330.

⁶³ J. Handrlica, *The splendid durability...*, p. 164.

fuels back on the agenda and it will be interesting to see whether the Supply Chapter of the Euratom Treaty will be looked at in a new light.⁶⁴ Whether this happens or not remains to be seen.

It may be impossible to define a clear hierarchical order of different legal systems in the field of nuclear safety, but certain key developments can be identified. For an EU Member State, the national framework remains a priority. Of course, the international framework is very important in providing inputs into both the national sphere and the EU sphere. The EU pole has been able to gain more weight at the expense of others. However, the practical impact has not been particularly significant. This may change because the necessary competence exists. It may bring changes and even tension to the relations between different legal systems.

5. Kelsen and the three legal systems in nuclear safety

The point of departure for H. Kelsen's classic theory of legal systems is based on the hierarchy of norms (*Stufenbau*). Kelsen considers the validity of a legal norm to always be derived from a higher-level norm – the highest norm in this architecture is the basic norm (*Grundnorm*).⁶⁵ Kelsen also discussed the relationship between national law and international law within this framework. When one adds another layer, namely EU law, the picture becomes even more complex. It should be noted at the outset that there is no clear-cut solution to the question of the hierarchy of these legal systems and many scholars have long emphasized the need for constitutional pluralism.⁶⁶ The same applies to nuclear law and, more specifically, to the regulation of nuclear safety. One might argue that there is no return to the old, rather closed, norm-centric legal system that can be characterized as Kelsenian in the traditional sense. At the apex of the Kelsenian system is the architecture of the hierarchy of norms, which is the main systematic feature of this model.⁶⁷

⁶⁴ For an analysis of the supply aspects of Euratom Treaty, see D. Allen, *The Euratom Treaty, Chapter VI: New Hope or False Dawn?*, "Common Market Law Review" 1983, no. 20(3).

⁶⁵ H. Kelsen, *Reine Rechtslehre*, Tübingen 2008, p. 73.

⁶⁶ For the notion of constitutional tolerance, see J.H.H. Weiler, *In Defence of the Status Quo: Europe's constitutional Sonderweg*, in: *European Constitutionalism beyond the State*, J.H.H. Weiler, M. Wind (eds.), Cambridge 2003, pp. 18–22. For the role of constitutionalism in dividing authority, see M.P. Maduro, *Europe and the Constitution: What if this is as good as it gets*, in: *European Constitutionalism beyond...*, p. 101.

⁶⁷ H. Kelsen, *Reine...*, pp. 73–74.

Another factor that needs to be taken into account, in particular, when discussing nuclear law is the dichotomy between legally binding and legally non-binding nuclear instruments and provisions.⁶⁸ Furthermore, there is clearly a norm hierarchy within the national legal systems in the field of nuclear law, ranging from constitutions to parliamentary acts and government decrees, all the way through to the requirements of the national nuclear safety regulatory authorities.

For Kelsen, international law represents, at least theoretically, a higher layer of law with a coordinating function of the borders of the validity of national law.⁶⁹ International law can be regarded as consisting of norms originating from the acts of the States. In this system, Kelsen underscored the importance of *pacta sunt servanda*.⁷⁰ Nevertheless, Kelsen found that at the time his pure theory of law was developed international law was still 'a primitive legal order' at the early stages of its development.⁷¹ We should therefore not omit the developments of international law and, in the similar vein, EU law after the release of the pure theory of law.⁷²

In many respects, Kelsen observed the evolving international law from the perspective of centralization. In light of the developments in the substantive area of international nuclear safety law, we can easily argue that that it has long ceased to be a primitive legal order. The international legal order of nuclear safety contains a wide variety of legally binding and non-binding instruments with a multitude of contracting parties. The international nuclear safety law has contributed positively to increasing the level of nuclear safety across the world. Despite this extremely positive impact, centralization has not developed very far and the lack of sanctions for non-compliance of legal obligations – at least in the traditional legal sense – is apparent. Indeed, it can be stated that

⁶⁸ For example, S. Burns notes that a number of conventions reflect or have been shaped by non-binding guidance and standards. This is the case, for example, for CPPNM. S. Burns, *Milestones in Nuclear Law: A Journey in Nuclear Regulation*, in: International Atomic Energy Agency, *Nuclear Law. The Global Debate*, Vienna 2022, p. 58.

⁶⁹ H. Kelsen, *Reine...*, pp. 94–95.

⁷⁰ *Ibidem*, p. 138.

⁷¹ *Ibidem*, p. 140.

⁷² For Kelsen's argumentation on the relationship and interplay between international law and national law, see H. Kelsen, *Zur Lehre vom Primat des Völkerrechts*, "Internationale Zeitschrift für Theorie des Rechts" 1938, no. 12, pp. 211–216 and H. Kelsen, *Die Einheit von Völkerrecht und staatlichem Recht*, "Festgabe für Alexander N. Makarov. Abhandlungen zum Völkerrecht. Zeitschrift für ausländisches öffentliches Recht" 1958, no. 19(1–3), pp. 234–248.

the real power of international nuclear safety law can be found exactly in this kind of softer *modus operandi*, with the strong role of participating Member States and the peer reviews.

The interrelationship between national law, international law and EU law is often complicated and obscure at the practical level. All the three legal systems are involved in a constant trilateral and interdependent relation, in which rules ordained within one system may become legal sources of other systems. From these complex relations, it is easy to conclude that interrelationships between the three systems will be determined by the special features of a given case, which means that a case-by-case approach is needed.⁷³ However, the added value of Kelsen can be found in the current constitutional debate on interaction between legal systems in providing different options in clarifying validity and authority of EU law.⁷⁴

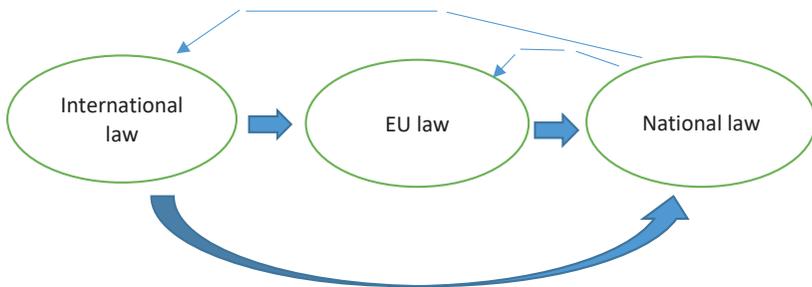


Figure 1. Nuclear law and the current interaction of legal systems

Source: own research.

From the figure above we can note that international law, taking conventions as an example, forms the basis for the interaction between different legal systems. In the field of safety, the nuclear-specific regulation mainly stemmed from the national legal sphere before the advent of the international conventions. National law therefore contributed

⁷³ D. Bethlehem, *International Law, European Community Law, National Law: Three systems in Search of a Framework. Systemic Relativity in the Interaction of Law in the European Union*, in: *International Law Aspects of the European Union*, M. Koskenniemi (ed.), Hague – London – Boston 1998, pp. 194–195.

⁷⁴ For further discussion, see C. Richmond, *Preserving the identity Crisis: Autonomy, System and Sovereignty in European Law*, in: *Constructing Legal Systems. European Union in Legal Theory*, N. MacCormick (ed.), Dordrecht 1997.

to the emergence of international nuclear conventions, as states were represented in the preparation of these instruments of international law. States inevitably brought the practices of formulating nuclear law from the national setting into the international sphere of nuclear law. Then, however, the tide changed, and international conventions started to be the benchmark with which national nuclear law provisions had to be in accordance. The international conventions also had an impact on Euratom secondary legislation. This was the case for the EU Nuclear Safety Directive (NSD) and EU's Radioactive Waste and Spent Fuel Management Directive of spent nuclear Fuel and (RWMD).⁷⁵

EU Member States get input from both international law and EU law. Both legal inputs are binding, and Member States have to implement the legal provisions from both these layers of international (or in the case of EU, supranational) regulation.⁷⁶ In the domain of EU law, the Court of Justice of the European Union (CJEU)⁷⁷ is the ultimate enforcer of EU law. EU Member States have the possibility to influence the emerging international law nuclear safety instruments and EU regulation.

Why have I placed EU law in the position of the basic norm? The main reason is that the perspective of this paper is that of an EU Member State, which sets EU law in a superior position from the point of view of an EU Member State. To find out another reason, we must dig deeper into the differences between hard law and soft law and their very practical implications. For example, there is no doubt about the CNS being a legally binding instrument of international law. It is hard law, period. Nevertheless, if we look at the main features of its substantive Articles, such as peer reviews, we detect one major difference: the CNS and the JC are incentive conventions.⁷⁸ They aim at exposing oneself openly to

⁷⁵ The NSD is largely based on the Convention on Nuclear Safety and the RWMD on the Joint Convention on the safe management of spent nuclear fuel and radioactive waste. In addition to the EU Member States, the Euratom Community also is a Contracting Party to both Conventions. In this case, it is important to identify the division of competence between EU Member States and the Euratom Community vis-à-vis the Articles of the Conventions.

⁷⁶ This of course depends on the legal instrument in question.

⁷⁷ I will use the abbreviation CJEU for the time before the Court of Justice of the European Union was still European Court of Justice (ECJ). The name of the Court was changed when the Lisbon Treaty entered into force.

⁷⁸ Initially, after the conclusion of the Convention, some disappointed views were expressed. For instance, Kamminga found that "[b]ecause the obligations contained in the Convention are so imprecise, the impact of the Convention depends almost entirely on the effectiveness of its review system. Unfortunately, this system is of the most

outside criticism. They strive to do better and not merely clear the hurdle. This is not to say that peer reviews under the Euratom legal framework would do the opposite; quite the contrary. Nonetheless, the difference is that in the Euratom legal framework the CJEU may end up as the ultimate interpreter of the level of nuclear safety of an EU Member State against the backdrop of nuclear safety legislation. This is an important point, although the CJEU has not so far been very active in this sense.

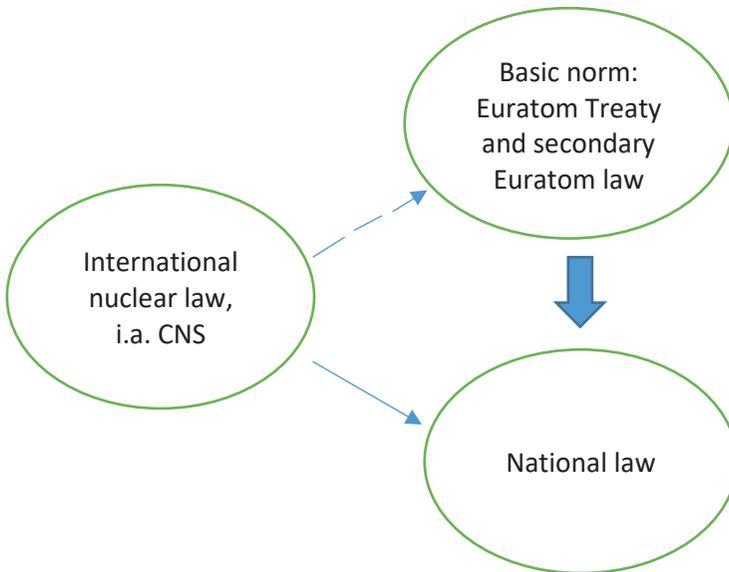


Figure 2. Norm-hierarchy of legal systems from an EU Member State point of view

Source: own research.

Let us now discuss the norm hierarchy from the perspective of an EU Member State, which is described in Figure 2. In this case, I have placed the Kelsenian basic norm on the Euratom law, given the fact that it is primary to the national law. The national nuclear safety legislation thus derives its validity for its substantive contents from Euratom legislation. One could ask why international law is not the basic norm? After all, international nuclear safety conventions existed before the directives.

rudimentary type and does not provide for independent verification of compliance". M.T. Kamminga, *The IAEA Convention on Nuclear Safety*, "International & Comparative Law Quarterly" 1995, no. 44(4), p. 877.

This is not the fundamental point for an EU Member State. In Euratom legislation, the basic norm does not necessarily function theoretically, because the international legal community does not have to comply with EU law. Nonetheless, the situation is somewhat different for an EU Member State. It should be noted that EU Member States have to comply with the international conventions to which they are Contracting Parties. The CJEU has also adjudicated on the issue of supremacy of international law, in this case, the United Nations Security Council Resolutions vis-à-vis EU law, and decided, emphasizing the autonomy of the EU legal order, that no such supremacy of international law exists.⁷⁹

Some commentators who have studied global legal pluralism have drawn attention to the possibility application of laws derived from all the three legal orders, which has been defined as material complementarity.⁸⁰ In fact, nuclear safety legislation has been quite flexible in the application of rules from all the three layers.

It is important the extent to which the Euratom Community is ready to utilize its competences. It seems that after the nuclear safety directives – the NSD and the RWMD – were been adopted, the European Commission (the Commission) did not push forward with further secondary legislation.

In brief, the most important operational legal framework for a state, which is a Member State of the EU, is national law. However, national law does not exist in a vacuum but is subject to constant interaction with the legal spheres of international law and EU law. The layer of national law is responsible for the obligations of international and EU law, but there is also a strand, albeit weaker, of interaction moving from national law to international law and EU law. The point of departure for Kelsen's approach is the validity of law. We can identify that at the national level the validity of a legal norm can be traced all the way back to national constitutions, which very often contain provisions for protecting individuals' health and, for example, environmental protection,

⁷⁹ See C-402/05 P and C-415/05 P *Yassin Abdullah Kadi and Al Barakaat International Foundation v. Council and Commission* (2008), ECLI:EU:C:2008:461. For a discussion on the interrelationship between international and EU law in the nuclear non-proliferation sector, see G. Mallard, *Crafting the Nuclear Regime Complex (1950–1975): Dynamics of Harmonization of opaque Treaty Rules*, "European Journal of International Law" 2014, no. 25(2), pp. 445–472.

⁸⁰ In this respect, S. Bergé mentions the C-301/08 *Irène Bogiatzi v. Deutscher Luftpool and Others* (2009), ECLI:EU:C:2009:649. J.-S. Bergé, *Legal Application, Global Legal Pluralism and Hierarchies of Norms*, "European Journal of Legal Studies" 2011, no. 4(2), pp. 241–263.

which without the existence of nuclear safety legislation at least would set positive obligations to enact nuclear safety legislation. However, in the theoretical absence of national nuclear safety legislation, a stronger argument would be the normative framework to be found in a legally binding form within the remits of international and EU law.

We can conclude that the picture of international nuclear law is diverse with two elements, legally binding and non-binding, even more visible than in other fields of international law.⁸¹ This makes approaching the issue from a Kelsenian perspective all the more challenging due to the focus of Kelsen on the validity of mostly legally binding norms.

From a national perspective, one can approach international law through the classical dichotomy of monism and dualism. This is also highly relevant from the point of view of nuclear law. With these concepts, I am referring to the national systems of incorporating the instruments or provisions of international law into the national legal orders, be that through incorporating national acts or merely application of international legal agreements as such without national acts. For Kelsen, the notion of dualism represented a dual nature of law consisting of natural law on the one hand, and state and positivist law on the other, which is considered as supreme. As a positivist, Kelsen rejected this natural law-driven interpretation.⁸² Kelsen can nonetheless be regarded as a monist and leaning towards the unity of public international law and the domestic legal order.⁸³ Kelsen even considered a monist construction of law to be inevitable.⁸⁴

Kelsen was a visionary, as he seemed to predict that the international system could be reinforced by increasing the degree of centralization. In this development, adjudicative bodies would have a pivotal role to play.⁸⁵ The lack of adjudicative bodies with necessary powers seems to be a deficiency in the international regulation on nuclear safety. The same does not hold true for European law, which is superior to national law and has an effective adjudicative body, the CJEU, carrying out legal review. The possibility of effective sanctions also makes a difference in

⁸¹ International nuclear law is a field of law which include a significant amount of legally non-binding elements, such as guidelines, which individual States have made legally binding in their national nuclear legislation.

⁸² H. Kelsen, *Reine...*, pp. 39–40.

⁸³ A. Somek, *Kelsen Lives*, "European Journal of International Law" 2007, no. 18(3), p. 421.

⁸⁴ H. Kelsen, *Die Einheit von Völkerrecht...*, pp. 235–238.

⁸⁵ A. Somek, *op. cit.*, p. 418.

the field of nuclear safety between the EU and international spheres.⁸⁶ It can be concluded that national law and EU law have the option of hard sanctions, while international law does not. The means of the incentive conventions are different. The application of hard law is carried out through softer means, namely peer reviews. However, this does not mean that regulation with softer methods, by international peer reviews, would be less effective.

Therefore, the position of international nuclear safety legal instruments should not be underestimated. Nevertheless, it would be difficult to identify the nuclear safety basic norm in the sphere of international law, despite the fact that we would have many good reasons to do that. The nuclear safety standards are set at the international level more specifically under the auspices of the IAEA and in terms of substance and content, all the IAEA Member States adhere to these safety standards. They form the basis of standards applied at the national level. The underlying reason for international nuclear safety law not being the *Grundnorm* can be traced back to its rather soft form of enforcement and the lack of potential sanctions.

In this context, one must bear in mind that this is a rather formalistic approach to legal norms, enforcement and sanctions, but so is Kelsen's approach. Another question is the added value of either a 'soft' or 'hard' enforcement mechanism of legal norms. Given the peculiarities and specificities in the field of nuclear safety, the added value comes from 'soft' peer reviews but from a formalistic point of view, we are addressing the efficiency of norms.

From a structural and systemic point of view, strengthening the EU dimension may not seem particularly dramatic but through an adjudicative and legislative lenses things look different. The case of EU nuclear safety directives opens up the situation in legislative terms in the EU. In its interpretation practice on the Euratom Treaty and its relation to secondary EU law the CJEU has confirmed that the competence for law-making in the field of nuclear safety exists. The extent of this shared competence has not been ultimately defined by the court but

⁸⁶ Kelsen found that "[s]anctions are provided by the legal order to bring about certain human behavior which the legislator considers to be desirable. The sanctions of law have the character of coercive acts in the sense developed above". H. Kelsen, *General Theory of Law and State*, Clark, NJ 2007, p. 50. For further elaboration of Kelsen on sanctions, see H. Kelsen, *Unrecht und Unrechtsfolge im Völkerrecht*, "Zeitschrift für Öffentliches Recht" 1932, no. 12, p. 481.

despite this, the case-law of the CJEU very clearly brings the domain of nuclear safety within the realm of EU regulation. If we transfer Kelsen's thinking to this legal-theoretical framework, the hierarchical order of the two legal systems – observed again from the angle of an EU Member State – looks quite clear. In line with the primacy of EU law, national law is subordinate to EU law. In practice this means that should EU law be in breach with EU law, Member States are obliged to amend their national law in accordance with EU law. This sets the Kelsenian *Grundnorm* tightly to the soil of EU law. We can even claim that the Kelsenian basic norm can be found in Articles 31 and 32 of the Euratom Treaty, which is the legal basis for EU nuclear safety legislation. This is the substantive law angle to the research question. Even if the nuclear safety legal provisions in practical terms are about national law, which is implementing both EU and international law, the EU law is purely from an institutional-legal angle the primary one, which national law is subordinate to. During the drafting phase of Euratom Treaty Member States did not foresee competence or primacy to be vested in the Euratom Community and no primary law provisions on nuclear safety to be incorporated in the Euratom Treaty.⁸⁷ This only became reality because of CJEU interpretation practice.

In the axis of Member States and the Community, a case-by-case approach is needed but the hierarchical order of the legal systems goes along the lines of the general principles. It is worth noting that despite the confirmed competence of Euratom Community, the EU legislator has not yet gone very far in exercising these competences. This may naturally change and also have major impacts on the operational level of nuclear safety sector.

All these developments set in motion by judicial review of the CJEU and gathered momentum by the legislative activities the Council marks a slow but significant change in the regulatory environment with more emphasis moving to the EU.

In the EU, competence is divided in the Treaties. Nevertheless, the practical extent of the competence is often specified by the CJEU in its interpretation practice. Furthermore, for its part EU secondary legislation shapes the boundaries of competence. From a Kelsenian perspective, this brings clarity to the hierarchical order.

⁸⁷ See J. Handrlica, *The splendid durability...*, pp. 176–177.

Conclusion

The main finding of this paper is that from an EU Member State's point of view, the primary legal system in relation to normative hierarchy and nuclear safety is EU law, or rather in this case, Euratom law, if we approach the topic from a legal-technical point of view.

This only applies to an EU Member State. It is similarly clear that from a Kelsenian perspective international law is not subordinate to EU law. For an EU Member State, international law in the field of nuclear energy also takes precedence over national nuclear law and States – as Contracting Parties – have to fulfill legal obligations under the international nuclear conventions. The difference is that international conventions of an incentive nature, although with a legally binding form, only gain hard law status, *stricto sensu*, when they are implemented and applied at the national level. Furthermore, there are differences between EU Member States when it comes to incorporating these international legal provisions in their national law.⁸⁸

Even if the Euratom legal system is the primary one for an EU Member State, the Euratom Community⁸⁹ has not been too keen to test the limits of its competence in nuclear safety. This is related to the somewhat cautious position of the Commission, which also has the monopoly of the right of initiative in the field of EU nuclear law and is on the other hand the 'Guardian of the Treaties' in assessing the implementation of EU law by the Member States.⁹⁰ With this quite pragmatic approach, the Euratom Community has left enough room for international law and national law levels to function for the benefit of nuclear safety.⁹¹ It will be interesting to see whether this approach will be preserved in

⁸⁸ For some Member States with a dualist legal system, the transposition of these international rules requires national implementing acts, while for monist EU Member States the legal obligations stemming from international law do not require formal implementation and the conventions are rather considered self-executing.

⁸⁹ After the entry into force of the Lisbon Treaty, the Euratom Community still possessed a legal personality of its own alongside the EU.

⁹⁰ The infringement procedure for the non-implementation of EU legislation has been set out in Article 258 of TFEU.

⁹¹ In this context, it should be borne in mind that the Euratom Community has shared competence with regard to certain Articles of the IAEA nuclear safety conventions. According to the implied powers doctrine construed by the CJEU, where the Community has internal competence, it also has external competence. This has now been encapsulated in Article 217 of the TFEU on conclusion of international agreements.

the near future or if it is bound to be drawn again as EU energy policy and EU law develop.⁹²

If one looks at the prospects for future research from a practical point of view, one could ponder two following questions: What if the international law sphere was strengthened, for example, by introducing powers to IAEA inspectors of nuclear safety in the same vein as is the case with nuclear safeguards. This would clearly require fundamental amendments to the CNS and tilt the balance from the national towards the international sphere. Would Contracting Parties to the CNS be ready for that? This is highly unlikely. Another interesting topic is whether there should be an EU nuclear safety agency with robust powers to conduct an overview of the safety of Member States' nuclear power plants. As this paper suggests, the final say rests with the EU legislator. Should the key stakeholders, in this case the Member States in the Council of the European Union, have the political will to go for that option? The answer to this question, at least in the short and medium term, is probably no. This option would require far-reaching substantive changes at least to Euratom nuclear safety legislation. Such a radical change would require in-depth analysis of such amendments to primary EU law, especially Euratom legislation. Moving in this direction would inevitably entail a major examination of the extent of competences of the Euratom Community vis-à-vis the competences of EU Member States. This change might even require an amendment to the Euratom Treaty, which is not likely in the near future.

An EU Member State is obliged to implement and apply both international and EU law. The Kelsenian *Grundnorm* can therefore be seen as substantive law, at least in theory, in both the international and transnational layers. The ultimate and practical choice would eventually lean towards EU law, due to the *sui generis* nature of EU law in terms of its application and enforcement in comparison with international law. Nonetheless, this question is somewhat theoretical, as international and Euratom law in the field of nuclear safety is very similar content-wise and does not *prima facie* entail collisions of legal norms derived from different legal systems. As the EU has increasingly utilized its legislative powers in this field, we can even speak about shifting basic norms

⁹² Pursuant to Article 194 of the TFEU, EU Member States have the right to decide on their own energy mix.

for an EU Member State towards the EU sphere. This is a significant change when considering legal pluralism in this sector and it opens up interesting avenues for further developments. In line with Kelsen's teaching, the centralization and the strengthening of the possibility to utilize sanctions with regard to EU nuclear safety law has reinforced the EU level in the general regulatory framework.

In order to maintain the nuclear safety legislation effective at all levels and not to blur the responsibilities in this sensitive field, coherence of legislation is needed. It would be of utmost importance to preserve the *status quo* with a strong role and powers of the national level. Nevertheless, there is a possibility to move towards stronger international and EU levels in the field of nuclear safety. In Kelsen's sense, this would require more centralization towards either of these levels. Another question is whether this was a preferred option from the nuclear safety point of view. A strong national level should be maintained, as in practice, the most important work is conducted at the operators' and national level, for example, by the national regulatory authority. This is why the national level should still play a pivotal role and the focus of nuclear safety legislation should not be moved significantly more from national legal systems towards the legal systems of international and EU law.

For an EU Member State, the three layers should not be considered as too distinctive. So far the three legal systems have been able to live in a rather 'peaceful co-existence', striving for a high level of nuclear safety. No major convergences have taken place, except for the EU nuclear safety package two decades ago, which happened in the legislative phase. For an EU Member State, the international nuclear safety law provides legally binding rules but softer incentive mechanisms in the form of peer reviews, for example, aim at continuous improvement. Furthermore, EU law brings a harder enforcement mechanism of mainly the same provisions of international nuclear safety law. Moreover, the national nuclear safety legislative framework with legal norms at different hierarchical levels proffers a practical everyday frame for operating nuclear power plants in a safe manner. Perhaps this is a token of the cognitive unity of all EU law, which was already addressed by Hans Kelsen? This also brings the spirit of Kelsen to the nuclear power plants, whose safe operation is regulated by elements of the three different legal systems, although the basic norm can be considered to be in motion.

KELSEN IN THE REACTOR HALL? THE COMPLEX INTERRELATIONSHIP OF NATIONAL LAW, EUROPEAN UNION LAW AND INTERNATIONAL LAW IN THE REGULATION OF NUCLEAR SAFETY

Summary

This paper focuses on a highly specialized field of law, namely nuclear law. This is characterized, on the one hand, by strong national competences and the primary position of national law, but also, on the other hand, by the international dimension, which has a major impact on national law. For a European Union Member State, the picture is even more wide-ranging, as European Union law, in this case the Euratom Treaty, adds another important layer to the legal-regulatory framework in the nuclear energy sector. The point of departure for this paper is therefore that of an EU Member State, which in nuclear energy issues functions in a legal field consisting of three interdependent main elements – national law, European Union law and international law. Thus, the article seeks to answer the question of which of these three legal systems is the primary one for an EU Member State in the area of nuclear safety, and also to shed light on their interrelationships. The theoretical framework for this analysis aimed at systematization is Hans Kelsen's classical theory of legal systems.

The argument presented here is that for an EU Member State the primary legal system from a legal-hierarchical point of view is the legal system composed of EU law. This is the case mainly because the EU has competence in the area of nuclear safety, albeit shared with the EU Member States. Although the EU/Euratom has not yet significantly expanded regulation in this field, this will most likely change as EU energy policy and legislation develops further in the future. This evolution will most likely have both legislative and enforcement impacts, despite the fact that the substantive content of legislation on all three levels is quite similar. In spite of this, the three legal systems co-exist in constant interaction and without major collisions. Kelsen's perspective can prove beneficial for understanding the boundaries of the three interdependent legal systems and the shift of the basic norm towards EU law over the past two decades.

Keywords: nuclear law – nuclear safety – legal system – legal theory

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