

CONFERENCES AND REPORTS

Report from the International Conference “Integrating Nuclear Strategy with Energy Transition Towards Sustainability” 3rd February 2026

The integration of nuclear strategy into the European Union’s sustainable development framework is a key issue in current energy policy. Nuclear energy is seen as an important low-carbon source that will help achieve the goal of climate neutrality by 2050. At the same time, however, fundamental challenges remain, particularly in ensuring the highest safety standards, long-term and responsible management of radioactive waste, and building public trust. Although Member States have different approaches to the use of nuclear energy, at the European Union level, there is a clear effort to harmonise regulatory frameworks, support technological innovation and develop a skilled workforce with the aim of strengthening strategic cooperation and increasing the resilience of the European energy system. In addition to traditional nuclear technologies, growing attention is also being focused on new types of facilities, in particular small modular reactors and microreactors, which are used, for example, to meet the energy needs of data centres or remote areas. These innovations raise new questions, not only technical, but also legal and institutional. On 3 February 2026, these topics were addressed at an online conference entitled “*Integrating Nuclear Strategy with Energy Transition Towards Sustainability*” organised by the Milan Department of Administrative Law in cooperation with the Prague Department of Administrative Law. The members of the scientific committee, **Prof. Jacques Ziller** (professor emeritus Université Paris 1 Panthéon-Sorbonne), **Prof. Diana-Urania Galetta** (University of Milan), **Prof. Jakub Handrlica** (Charles University) and **Alessia Monica** (University of Milan), are to be thanked for their expert guidance, careful review of the papers and their significant contribution to the high professional level of the conference.

I. CHALLENGES IN NUCLEAR LAW

The meeting was opened by **Prof. Jacques Ziller** (professor emeritus Université Paris 1 Panthéon-Sorbonne) and **Alessia Monica** (University of Milan), who also moderated the first block of the conference focused on current challenges in nuclear law. **Kaleb Scott Palmer** (University of Wyoming) opened the discussion on the long-term dependence of states on suppliers in the nuclear sector, particularly due to long-term service contracts covering technical support, staff training, the interpretation or enforcement of regulatory requirements, and long-term fuel supply. He emphasised that while these relationships may be beneficial in terms of ensuring stable and high-performance energy production, they also create a long-term and sometimes multigenerational link between one country and another, or between states and specific business entities, which can have a direct impact on political relations and strategic autonomy. He also pointed out that international restrictions, particularly those related to nuclear safety and control regimes, such as International Atomic Energy Agency safeguards, are necessary but may also limit access to nuclear energy development for countries with no prior experience in this field. He therefore considers it necessary to

* The event was organised within the framework of the Jean Monnet Module “Public Administrations in the EU Energy Policies and Communities” (registration number 101175226) and the project “A fleet of small modular reactors on the horizon! Do we need a new nuclear law?” (awarded by the Czech Science Agency, registration number 24-10062S).

transform the energy sector in a way that would strengthen the ability of states to build their own expertise and diversify financing so that they are not solely dependent on technology suppliers.

In the second lecture, **Prof. Jakub Handrlica** (Charles University) focused on microreactors as the most technologically advanced category within the broader group of small modular reactors and their potential to contribute to decarbonization and energy transformation in Europe. The speaker explained that microreactors are devices with very low output compared to traditional nuclear power plants, but with a high degree of flexibility in their use. They can be used for stable electricity and heat production in remote or poorly connected regions, as well as to supply local networks, data centres, water treatment facilities and municipal heating systems. A significant advantage is their transportability and rapid deployment, which also opens opportunities for their use in crisis situations, such as restoring power supplies after natural disasters or in humanitarian aid. These characteristics make microreactors a relevant complement to renewable energy sources rather than a competitor, and strengthen their role in the long-term strategy to reduce emissions.

From a legal perspective, he emphasised that the development of microreactors could contribute to a new definition of Euratom's role in the European legal framework. Although Euratom was founded in the 1950s, its founding treaty is formulated in a technologically neutral manner and is therefore applicable to current and future nuclear technologies. The speaker highlighted four areas where Euratom can play a key role: supporting research and development, coordinating investments including financial instruments, establishing joint ventures for the development of new technologies and possibly harmonising liability insurance. Particular emphasis was placed on the fact that the success of microreactors will depend not only on technical parameters, but also on institutional support, public confidence and the ability of European authorities to create a stable and predictable framework that will enable their safe and socially acceptable use.

In the third lecture, **Gianluigi delle Cave** (University of Milan) focused on the relationship between the European decarbonization strategy and nuclear energy from the perspective of European Union administrative law. The speaker started from the premise that the original form of the 2019 Green Deal underwent a fundamental transformation as a result of the pandemic, the energy crisis and geopolitical changes, gradually evolving into a broader industrial and strategic framework. In this new context, nuclear energy is no longer outside the European Union's climate policy but is gradually being integrated as a low-carbon source that can contribute to achieving emission targets. A key legal moment is the regulation establishing a framework to facilitate sustainable investments, which, subject to strict safety and environmental conditions, allows certain nuclear projects to be considered environmentally sustainable. This marks a significant shift in the legal recognition of nuclear energy as part of the European climate transformation, despite ongoing political disputes between member states.

The speaker examined the significance of the regulation on the net-zero emissions industry, which explicitly includes nuclear technologies among strategic projects and allows for simplified licensing procedures and access to selected European Union financial instruments. This step represents a fundamental change in European energy policy, as it responds to long-standing criticism of the complexity and length of licensing processes for nuclear facilities. In conclusion, he identified three key directions for further development: extending the life of existing reactors while maintaining the highest safety standards, building new facilities using modern technologies and supporting a new generation of reactors, including small modular reactors. The speaker argued that nuclear energy can function as a stable complement to renewable sources in this context and contribute not only to meeting climate targets but also to strengthening the European Union's energy security and strategic autonomy.

II. NEW NATIONAL NUCLEAR LAW FRAMEWORKS

Prof. Jakub Handrlica (Charles University) moderated the second block of the conference, which focused in detail on specific challenges in nuclear law and a comparison of national regulations in European countries. **Kamila Balounová** (Charles University) presented her contribution on the issue of spatial planning in connection with the preparation of the construction of small modular reactors (hereinafter also referred to as “SMRs”) in the Czech Republic. The speaker outlined the basic structure of the spatial planning system, which consists of three levels – national, regional and local. She placed particular emphasis on the local level, since it is the municipalities that decide on the functional use of individual plots of land through spatial plans, in other words, whether they can be used for energy purposes, housing, industry, or nature conservation. These decisions are fundamental, as without the designation of areas for energy production, a small modular reactor project cannot even enter the permitting process.

The next part of the presentation focused on the link between spatial planning and environmental impact assessment processes. The speaker pointed out that strategic environmental impact assessment is applied at all levels of planning, while each specific small modular reactor project is subject to mandatory environmental impact assessment. She identified brownfield sites as a specific advantage of small modular reactors for spatial planning, noting that they offer continuity of land use, existing infrastructure, more favourable environmental conditions, and a higher degree of social acceptability. At the same time, however, she emphasised that these projects must also meet all other requirements for nuclear facilities, particularly regarding geological conditions, waste management, cooling water availability and connection to the power grid.

Vladimír Sharp (Charles University) and **Gabriela Blahoudková** (Charles University) followed up on **Kamila Balounová’s** (Charles University) presentation with an analysis of the newly adopted nuclear legislation in the Czech Republic, intended to address the advent of innovative technologies, particularly small modular reactors. Czech nuclear legislation has historically been designed as a conservative system, with the main objective of ensuring the highest level of nuclear safety. According to the speaker, this approach is understandable, but at the same time, it creates tension in relation to new technologies that are difficult to subject to rules created for traditional large reactors.

The presentation focused on the new exemption regime under Section 228b of the Atomic Energy Act, which allows a state authority to grant exemptions from certain legal requirements. The speaker pointed out the vague wording of the conditions of this regime, in particular, undefined terms such as the justification of the exemption or the maintenance of the required level of nuclear safety. In his opinion, while this approach offers a high degree of flexibility, it also weakens legal certainty and decision-making predictability. This can have negative impacts on both the investment environment and the division of responsibilities between legislators and regulatory authorities.

In the next part of his speech, he expanded on his criticism of the exemption regime from a systemic risk perspective. He emphasised that transferring decision-making powers to a regulatory body, even one that is professionally competent, could lead to a weakening of democratic accountability and to a problematic blurring of the roles of the legislature and the administrative authority. At the same time, he drew attention to the structural vulnerability of such a system to undesirable phenomena such as discrimination and corruption. In conclusion, he pointed out that the exemption regime cannot be considered a long-term solution, but only a transitional tool. In his opinion, it should serve as a bridge to a more systematic and clearly structured legal framework that would combine flexibility with a sufficient degree of legal certainty. He warned against a situation in which exceptions become the rule and called for the creation of a more comprehensive framework that would better meet the needs of developing nuclear technologies.

Mádl Miklós Vilmos (University of Miskolc) continued the presentation of national legislation. He began his lecture with a brief introduction to the Hungarian context of nuclear energy and its importance for the domestic energy balance. He recalled the long tradition of nuclear energy use, from research reactors in the 1960s to the construction of a nuclear power plant in the 1980s, to the extension of operating licences for existing units with a view to 2032 and 2037 and considerations for further extensions. Nuclear power plants in Hungary currently cover approximately 44% of total electricity production, making nuclear energy a strategic pillar of the Hungarian energy sector. Against this backdrop, he outlined Hungary's interest in small modular reactors, but this is accompanied by several specific challenges, particularly in licensing processes and supervision. He identified these institutional and legislative issues as key factors influencing the practical feasibility of new projects.

The focus of the presentation was an analysis of four SMR characteristics that create new difficulties in the licensing process. He focused on technological innovation, noting that the number of proposals and new technical solutions burdens regulatory authorities with longer assessments. At the same time, he pointed out that some implementing regulations may, in practice, favour certain types of technology. In the next section, he discussed Hungary's current political steps towards SMRs, in particular the draft amendment to the Atomic Energy Act. This proposal is broadly formulated and allows preparatory work to begin without a specific project. He highlighted the introduction of clear definitions of terms, mechanisms for expert consultation and preliminary opinions and the new possibility of design certification, which should shorten the subsequent procedure by focusing primarily on local conditions, as positive elements of the amendment. Overall, he concluded that effective SMR licensing is difficult to reconcile with the requirement not to compromise nuclear safety, but without amendments to the legal framework, their realistic implementation cannot be expected. He therefore considers it important to monitor national solutions and derive best practices from them, even though their functionality will only be tested in practice.

Kris Wauters (Catholic University of Leuven) presented the development of Belgian nuclear energy policy between 2003 and 2025, situating it within the framework of theories of public policy change. He highlighted three basic phases in this development: the initial confirmation of nuclear energy through 2003, the subsequent decision to phase it out, motivated by climate commitments, a political shift towards renewable sources, and, finally, the return to nuclear energy in 2025 in response to concerns about energy supply security. He emphasised that the ban on the construction of new nuclear power plants and the planned decommissioning of seven reactors by 2025 were gradually corrected by a series of decisions to extend their operation, culminating in the adoption of a new law that re-established nuclear energy as part of Belgium's energy mix and opened space for small modular reactors.

In the analytical part of his presentation, the speaker identified several characteristic features of the Belgian approach, the most significant of which is the constant tension between energy security and environmental protection. He pointed to the fundamental role of the case law of the Court of Justice of the European Union, which established the obligation to conduct environmental impact assessments even when the legislature approves the extension of the life of nuclear power plants. Another specific feature is the high degree of contractual arrangements between the state and power plant operators, which are necessary for the implementation of political decisions but, at the same time, raise questions about parliamentary control and democratic accountability. In conclusion, the speaker emphasised the importance of the state's active role in setting the legal framework, financing and ensuring public participation, noting that the Belgian case provides important lessons for other European countries.

CONCLUSION

The conference provided a forum for the systematic exchange of views on legal, institutional, and strategic issues related to the development of nuclear energy in the context of energy transformation. The individual contributions showed that although there is considerable variation in national approaches to small modular reactors, microreactors and new nuclear technologies, all countries face similar challenges, particularly with regard to licensing processes, the role of public administration, the relationship to environmental protection and ensuring long-term energy security. The discussions confirmed that the legal frameworks created for traditional nuclear facilities are often under pressure from rapidly evolving technologies and require thoughtful adaptation.

A significant contribution of the conference was the sharing of national experiences, particularly in debates on the role of Euratom, strategic autonomy and reducing dependence on external suppliers of technology and services. The final discussion emphasised that the success of new nuclear technologies will depend not only on technical progress, but above all on the ability to create a predictable, transparent and socially acceptable legal and institutional framework. The conference thus confirmed that dialogue between legal science, energy policy and technical disciplines is a prerequisite for the responsible use of nuclear energy in the decarbonization process. The meeting not only summarised the current state of knowledge but also offered ideas for further professional cooperation and for finding common European solutions in the field of nuclear energy. Selected written versions of the contributions will be published in a special issue of the Milan-based journal *Ceridap* in 2026, following a review process.

Lucie Vonásková**

** Lucie Vonásková, Department of Administrative Law and Administrative Science, Faculty of Law, Charles University in Prague, Prague, Czech Republic. E-mail: lucka.vonaskova@email.cz. ORCID: <https://orcid.org/0009-0001-1473-1985>.