

Environmental policy in the Visegrad Group countries during 20 years of EU membership¹

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Abstract

The aim of the article is to indicate the areas of the European Union's environmental policy, posing the greatest challenge for the Visegrad Group countries (Czech Republic, Poland, Slovakia, Hungary – V4) during the 20 years of their membership in the EU. For this purpose, the accession documents and infringement proceedings initiated by the European Commission against these countries in relation to legal acts in the field of environmental protection were analysed. In the study, the desk research as well as document and statistical analysis methods were used. The conducted research revealed that, despite a similar past and the shaping of environmental policy under the influence of EU policy, V4 countries differ in terms of the importance of individual environmental problems. This may be an additional factor limiting their cooperation in the discussed area.

Keywords: Visegrad Group countries (V4), accession to the European Union, EU legislation, environmental policy, infringement procedure

Polityka środowiskowa państw Grupy Wyszehradzkiej w okresie 20 lat członkostwa w UE

Streszczenie

Celem artykułu jest wskazanie obszarów polityki środowiskowej Unii Europejskiej, których wdrożenie stanowiło największe wyzwanie dla państw Grupy Wyszehradzkiej (Czechy, Polska, Słowacja, Węgry – V4) w okresie 20 lat ich członkostwa w UE. W tym celu przeanalizowane zostały dokumenty akcesyjne oraz postępowania o naruszenie zobowiązań państwa członkowskiego wszczęte przez Komisję Europejską wobec tych państw w odniesieniu do aktów prawnych w dziedzinie ochrony

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środowiska. W badaniu zastosowano metody analizy danych zastanych i analizy dokumentów oraz analizę statystyczną. Przeprowadzone badanie pozwoliło ustalić, że mimo podobnej przeszłości, a także kształtowania polityki środowiskowej pod wpływem polityki UE, kraje V4 różnią się pod względem znaczenia poszczególnych problemów środowiskowych. Może być to dodatkowy czynnik ograniczający ich współpracę w omawianym zakresie.

Słowa kluczowe: państwa Grupy Wyszehradzkiej (V4), akcesja do Unii Europejskiej, prawo UE, polityka środowiskowa, postępowanie o naruszenie zobowiązań państwa członkowskiego

"With relatively few exceptions, the world's modern environmental problems began with or were greatly exacerbated by the Industrial Revolution. [...] The global challenges of widespread water and air pollution, reductions in biodiversity, destruction of wildlife habitat, and even global warming can be traced back to this moment in human history." (Rafferty 2017).

For many years since the beginning of the industrial revolution, environmental risks and threats, and especially human response to them (understood as shaping long-term environmental policy) have not attracted particular interest from politicians or society. The situation has changed in the late 1960s with increasing concern over air and water pollution, chemicals, and nuclear energy. The new concept of the environment, going beyond traditional nature conservation and calling for urgent political action, has emerged, both at the level of international organisations and national governments (Meyer 2011: p. 10). At the turn of the 1970s many Western European countries developed environmental programmes and implemented relevant legislation. In the early 1970s environmental policy was formally founded at the European Community level and has become increasingly important and comprehensive. The Single European Act of 1986 created first basis for the policy and successive treaties conferred on the Community, and later the European Union (EU), more and more powers in the field. Environmental issues, have been integrated into various EU's activities and environmental policy, became one of its flagship policies (Meyer 2024: p. 2).

In Central European (CE) countries, including Czechoslovakia, Hungary and Poland, the situation was extremely different. Socialist/communist regimes were not interested in the issue nor involved in international efforts, although significant environmental damage has occurred as a consequence of striving for the rapid economic growth and extensive development (Singleton 1987; Turnock 2001). Environmental issues appeared on political agendas sporadically, mainly in connection with the ecological disasters. As a consequence, CE countries lagged behind in developing of environmental policy when compared to Western Europe. The most serious environmental problems related to air and water pollution.

Only in the 1990s the attitude of the CE countries towards the environment and its protection has changed, mainly due to the environmental catastrophes and external pressure² (Waisová 2018: p. 59). Environmental legislation begun to develop: faster in

² Including willingness to access the Organisation for Economic Cooperation and Development (OECD), and the European Union.

Hungary and Poland, where effective environmental movements were active in the 1980s, and slower in the other two V4 countries, that became more active only after the Velvet Revolution (Turnock 2001: p. 503). Generally, OECD and EU established the basic framework for domestic environmental laws and policies in the V4.

The following years became a time of difficult struggles in the field of environmental protection. In addition to the legacy of centrally planned economies, additional problems have arisen related to reindustrialisation of the CE countries, as well as the EU's growing ambitions in the field of environmental protection.

In these circumstances research on environmental issues was also developed. Some of the research covered assessments of the environmental policy,³ while others were concentrated on selected aspects or specific sectors.⁴ The present study contributes to the first group of research.

The aim and methodology of the research

The aim of this study is to assess the V4 environmental policies in the light of European Commission's infringement procedures. This approach allows to identify the main challenges in pursuing environmental policy in accordance with EU regulations and possible areas of cooperation between V4 countries in this field. Another novelty of the study is that it can be treated as some kind of summary of the 20 years of their membership in the EU.

The **hypothesis** assumes that during the period of the EU membership, the V4 countries encountered difficulties with timely implementation of the environmental legislation resulting from unfinished pre-accession adjustments (transition periods), administrative weaknesses, as well as numerous new and amended EU regulations in this field.

The **research questions** are as follows:

- 1) how far V4 countries lag behind other Member States (EU-23) in terms of implementation of EU environmental law?
- 2) what were the main types of infringements and their topic structure?

In order to answer the research questions and to verify the hypothesis, V4 accession documents were analysed (to identify the most problematic issues covered by the transitional periods) and statistics on infringement proceedings initiated by the European Commission (EC) against the V4 countries in the period 1.05.2004–30.04.2024, as well as EC's reports on implementation of environmental legislation by each Member State.

The following **research methods** were used in this study: literature review, analysis of the EU legislation and reports, statistical analysis. Trend analysis turned out to be useless, because the number of infringements in each year is strongly influenced by the number of directives to be transposed and the level of difficulty of their implementation. Thus, differences between individual years are quite marked.

³ Changes in attitudes towards the policy, the analysis of strategic documents or implementation efforts (Turnock 2001; Šauer et al. 2013; Bocquillon, Maltby 2017; Waisová 2018; Riepl, Zavarská 2023; Kovács et al. 2024).

⁴ E.g. energy; Surwillo, Popovic 2021; Godawska, Wyrobek 2021.

In the first part of this article, main approaches to environmental policy research in the V4 countries will be presented. Next part will be devoted to analysis of derogations in the field of environment provided for in the Accession Treaty (2003) and to statistical analysis of the level and structure of environmental infringement proceedings against V4 countries. The article ends with conclusions.

Existing research on environmental policy in the V4 countries

For many years there has been little research on environmental problems and policies in the V4 countries. The first expert analysis of their environmental situation and challenges appeared in the 1970s, but were biased due to the political authorities' reluctance to admit the environmental harm caused by their economic decisions, rising pesticide use and air pollution. The development of general environmental research began after the decline of the Communist regimes and was linked to increased movement of scholars and ideas, as well as "substantial support of international institutions like the World Bank and the Organisation for Economic Cooperation and Development" (Waisová 2018: p. 60).

At the beginning, comprehensive reports on environmental situation and policies were prepared by international organisations, for the purposes of diagnosis and evaluation. First reviews by the OECD were published at the turn of the 1990s and 2000s (see: OECD 1999, 2000, 2002, 2003). They include assessment of progress in pollution reduction, natural resource management, integration of environmental and economic policies, international co-operation in the field and recommendations on further development. Since 2016, the European Commission has issued *Environmental Implementation Review* (EIR) – country reports, which identified the gaps in the implementation of EU environmental legislation and policies in each Member State, their sources and recommendations for priority action. To date, the Commission has produced three such reports, in 2017, 2019 and 2022. Also governments of V4 countries were involved in analytical work, because after joining the OECD, NATO and the EU, "they were required to release environmental reports and national environmental assessments" (Waisová 2018: p. 67).

Over the years, environmental policy has become a very broad concept, and the environmental literature began to cover more and more issues. As a result, research on broad/general environmental policy is scarce. Most researchers focused on climate change and energy policy. Their studies were related to both analysis of basic strategic documents⁵ and their implications for particular sectors of the economy/industry (energy, transport, industry, agriculture, construction). Other studies referred to specific topics (waste management, pollution, human health, biodiversity, pollution control, etc.) and environmental impact assessment. All these topics were reflected in the extensive number of publications relating to environment, but far from comprehensive. The main used methods were analysis of the legislation, documents and statistics, as well as interviews.

⁵ Such documents as *National Climate Change Strategy*, *National Strategy for Adaptation to Climate Change*, *National Energy and Climate Plans*.

An attempt to assess the general environmental policy of the V4 was presented by Waisová (2018). This author had analysed environmental governance and cooperation in Central European countries, with the emphasis on the V4 and their cooperation in the field of environment. The study takes into account key problems and threats, policy tools to solve them, and perceptions about the environment. The author concludes that the V4 countries share a number of environmental problems, being the legacy of Communist rule and exploitative policies, but also the consequence of sharp economic growth, the efforts to enter Western markets, and weak environment policies after 1990. In general, interest in environmental issues in the V4 countries was to date quite low as in environmental cooperation. Developments in this field were generally encouraged, supported and managed by the EU, both before and after accession of the V4 countries to the EU. Author suggests that environmental cooperation in the region "cannot be expected and would only have limited value, because of their geopolitical situation and physical geography, scope of environmental problems and weak institutional and bureaucratic structures" (Waisová 2018: p. 57). "The only framework for cooperation [...] is the International Visegrad Fund, which is limited both financially and organisationally" (Waisová 2018: p. 68), and supports only non-state actors.

If we concentrate on the EU priority action – climate change mitigation and adaptation – one of the latest and quite comprehensive studies is that published by Kovács et al. (2024). The authors presented a broad review of the literature, therefore, I limited the scope of references in this study. Kovács' article discusses the V4 climate policy in the light of the climate policy paradigms (CPPs). It is focused on analysis of national climate strategies and programme documents/plans (to reveal adopted policy goals), and in-depth interviews (to explore the contradictions between climate policy documents and their implementation). Authors conclude that "the V4's climate strategy documents align with global climate policy efforts and follow EU standards" (Kovács et al. 2024), but countries are characterised by discrepancies between ideas and implementation of climate policy. They suggest that the main reasons for the situation are: (1) putting the national economic interests and energy security first; (2) lack of social will, and (3) the shortcomings of climate governance. Additionally, authors underline that the implementation of strategic documents depends on costs and financial resources (the EU funds). As a result, climate planning is pushed toward mandated planning, and the governments often make commitments according to EU expectations. In general they prefer a slower transition and, therefore, lag behind in climate governance (Kovács et al. 2024).

Research materials and sources

This research is a continuation of the study conducted for Poland in 2023 and published in the report *Poland in the European Union. Report 2024* (Błaszczuk-Zawiła 2024: p. 117-141).

The first part of the study is based on V4's accession documents (e.g. Act of 16 April 2003 concerning the conditions of accession, hereinafter: Act 2003). For each country the information on derogations from directives and regulations in field of environment

(being in force at that time) was selected and organised by policy area. This allows for comparison of the progress of implementation of EU legislation since V4 countries' accession to the EU, and identifying problems that were common and distinct for these countries.

The second part of the study used information from the database of *Environmental infringements interactive map* (EIIM). The EIIM presents active and closed infringement cases for non-compliance with EU environmental law, per country, per sector, type of case and reference year. All cases opened against V4 countries in the period from 1.05.2004 to 30.04.2024 were selected and analysed in terms of type of infringement and its topic. The database does not make it possible to indicate the exact time period, therefore it was necessary:

- 1) for 2004 – to subtract cases initiated before 1st of May;
- 2) for 2024 – to subtract cases initiated after 30th of April.

In a similar way information on proceedings against other EU Member States (EU-23) was prepared to compare two country groups. Information on new Member States is included into database from the date of their accession (for Bulgaria and Romania – from 1.01.2007, and for Croatia – from 1.07.2013). It should be also noted that topic's structure is to some extent biased by the fact that some proceedings are assigned to two or more topics.⁶

Environmental issues in V4 accession documents

As laid down in the Treaty on European Union (TEU), the EU "shall work for the sustainable development of Europe [...] and a high level of protection and improvement of the quality of the environment" (TEU: Article 3(3)). To achieve this, environmental protection requirements are integrated into the definition and implementation of the Union's policies and activities (according to Article 11 of TFEU).

Before the V4 countries could join the EU, they had to adopt the entire *acquis*, including in the field of environmental protection, and revise their national environmental norms. Prior to accession, majority of V4's legislation was consistent with the *acquis*, but implementation of some provisions required more time and significant investment. In such cases, the V4 countries requested transition periods and obtained consent.

Transition periods in the field of environmental protection covered all basic environmental policy areas (see: *Table 1*), wherein:

- all V4 countries have been granted of transitional periods in relation to waste management, water quality and industrial pollution control and risk management;
- Hungary, Poland and Slovakia were also granted of such periods for air quality,
- Poland was the only V4 country that obtained a transition period for radiation protection.

⁶ Detailed information on how to search the database can be found in section 'About' of the EIIM (see: *Environmental infringements interactive map* WWW).

Table 1: Transition periods granted to V4 countries with regard to environmental protection

Topic	Act, to which the transition period applied	Derogation from existing regulations	End of the transition period
Waste management	Regulation 259/93/EEC on the supervision and control of shipments of waste within, into and out of the European Community	Notification and processing requirements for shipments of waste for recovery Limitations on shipments of waste for recovery for facilities subject to a temporary derogation Objections to shipments of waste for recovery	HU: until 30.06.2005. PL: until 31.12.2012. SK: until 31.12.2011. HU: possible by 30.06.2005 at the latest. PL: possible by 31.12.2010 at the latest. SK: possible by 31.12.2011 at the latest. PL: until 31.12.2007; possible extension until 31.12.2012 (selected types of waste).
	Directive 94/62/EC on packaging and packaging waste	The recovery and recycling targets	CZ: intermediate targets for recycling of plastics and overall recovery rate for 2004. HU: intermediate targets for recycling of plastics and glass for 2004, and overall recovery rate for 2004 and from 2005 onwards. PL: intermediate targets for recycling of plastics and metal for 2004 and 2005, and overall recovery rate for 2004–2006. SK: intermediate targets for recycling of metals and overall recovery rate for 2004, 2005 and 2006.
Water quality	Directive 1999/31/EC on the landfill of waste	Requirements related to water control and leachate management, protection of soil and water, gas control and stability	PL: until 1.06.2012 limit values did not apply (except hazardous waste or industrial waste).
	Directive 82/176/EEC on limit values and quality objectives for mercury discharges by the chlor-alkali electrolysis industry	Limit values for discharges into the waters	PL: until 31.12.2007 the limit values did not apply.
	Directive 83/513/EEC on limit values and quality objectives for cadmium discharges		SK: until 31.12.2006 the limit values for discharges of mercury and benzopyrene (1 factory) did not apply.
	Directive 84/156/EEC on limit values and quality objectives for mercury discharges by sectors other than the chlor-alkali electrolysis industry		PL: until 31.12.2007 the limit values did not apply (except those relating to DDT, aldrin, dieldrin, endrin and isodrin). SK: until 31.12.2006 the limit values for discharges of PERC, TCE and IUPAC (1 factory) did not apply.
	Directive 86/280/EEC on limit values and quality objectives for discharges of certain dangerous substances	Requirements for collecting systems and treatment of urban waste water – intermediate targets agreed	CZ: by 31.12.2010 HU, PL, SK: by 31.12.2015.
Directive 91/271/EEC concerning urban waste water treatment	Requirements for biodegradable industrial waste water	HU: until 31.12.2015 did not apply for 10 plants. PL: until 31.12.2010 did not apply for selected sectors.	
Directive 98/83/EC on the quality of water intended for human consumption	Possible derogations from the parametric value for arsenic Derogations for boron, fluoride and nitrite	SK: until 31.12.2015 intermediate targets for biodegradable load). HU: until 25.12.2009 (except drinking water intended for food processing). HU: until 25.12.2006 did not apply.	

Topic	Act, to which the transition period applied	Derogation from existing regulations	End of the transition period
Air quality	Directive 94/63/EC on the control of VOC emissions resulting from the storage of petrol and its distribution from terminals to service stations	Requirements for: - existing storage installations at terminals - loading and unloading of existing mobile containers at terminals - existing mobile containers at terminals	PL: until 31.12.2005 did not apply. SK: until 31.12.2004 did not apply for 41 installations and until 31.12.2007 for 26 installations, depending on throughput. PL: until 31.12.2004 or 31.12.2005, depending on throughput.
		- loading into existing storage installations at service stations - loading and unloading equipment at terminals	PL: until 31.12.2005 did not apply. SK: until 31.12.2007 did not apply for 74 road tankers.
	Directive 1999/32/EC relating to a reduction in the sulphur content of certain liquid fuels	Requirements for the sulphur content of heavy fuel oils	SK: until 31.12.2004 did not apply at 3 terminals and until 31.12.2007 for 5 terminals.
	Directive 94/67/EC on the incineration of hazardous waste	Emission limit values and the requirements for measurements	PL: until 31.12.2006 did not apply; until 31.12.2004 use of heavy fuel oils with a sulphur content exceeding 1% by mass produced at the Glinar refinery possible within the Polish territory.
Industrial pollution control and risk management	Directive 94/67/EC on the incineration of hazardous waste and Directive 2000/76/EC on the incineration of waste	Emission limit values and the requirements for measurements	HU: until 30.06.2005 did not fully apply to 5 incinerators of waste oils and other liquid waste, 14 incinerators of hospital waste, 18 incinerators and co-incinerators of solid and liquid hazardous waste. SK: until 31.12.2006 did not apply to 11 hospital incinerators and 7 hazardous waste incinerators.
	Directive 96/61/EC concerning integrated pollution prevention and control	Requirements for granting of permits for existing installations	PL: until 31.12.2010 at the latest for 55 combustion installations, 91 landfills and 66 other installations. SK: until 31.12.2011 at the latest for 10 existing installations.
	Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants	Emission limit values for sulphur dioxide emissions	CZ: until 31.12.2007 did not apply to two boilers in two plants. HU: until 31.12.2004 did not apply to selected boilers in 8 plants. PL: until 31.12.2015 (at the latest) ceilings during the transitional period for boilers in 36 combustion plants.
		Emission limit values for nitrogen oxide emissions	SK: until 31.12.2007 did not apply for 3 heat production plants. HU: until 31.12.2004 did not apply to selected boilers in 8 plants. PL: until 31.12.2017 ceilings during the transitional period for 21 plants.
		Emission limit values for dust emissions	SK: until 31.12.2007 did not apply to 3 heat production plants. HU: until 31.12.2004 did not apply to selected boilers in 8 plants. PL: until 31.12.2017 did not apply to 29 municipal heat generating plants with limits on emissions in transitional period.
		Provisions on radiological equipment	SK: until 31.12.2007 did not apply to 3 heat production plants. PL: until 31.12.2006 did not apply.
Nuclear safety and radiation protection	Directive 97/43/Euratom on health protection of individuals against the dangers of ionising radiation in relation to medical exposure		

Notes: CZ – the Czech Republic; HU – Hungary; PL – Poland; SK – Slovakia. Source: author's own elaboration based on: Act 2003.

The Czech Republic was granted of transitional periods in relation to 3 directives, Hungary – to 1 regulation and 5 directives, Slovakia – to 1 regulation and 8 directives, and Poland – to 1 regulation and 12 directives. Transitional periods included areas, in which it was difficult to introduce changes in the short or medium term due to the necessity of: costly investments,⁷ changes in production processes (towards reducing/eliminating pollutant emissions and discharges) and consumer behaviour (new waste collection systems). The shortest transitional periods for the Czech Republic and Hungary were foreseen for recovery and recycling targets related to packaging waste (until the end of 2004), and the longest – in terms of collecting systems and treatment of urban waste water (until the end of 2010 and end of 2015, respectively). In Poland, transitional periods were related to volatile organic compound (VOC) emissions (end of 2005) and emissions from large combustion plants (end of 2017 at the latest), respectively. In Slovakia, the shortest transitional period was related to air quality – VOC emissions (end of 2007), and the longest – collecting systems and treatment of urban waste water (end of 2015).

To sum up, upon accession, the V4 countries had difficulties in implementing some provisions of the EU environmental law, but to different degree. The Czech Republic seemed to be the best performer (least and relatively short transition periods), while Poland was lagging behind (relatively long and many transition periods).

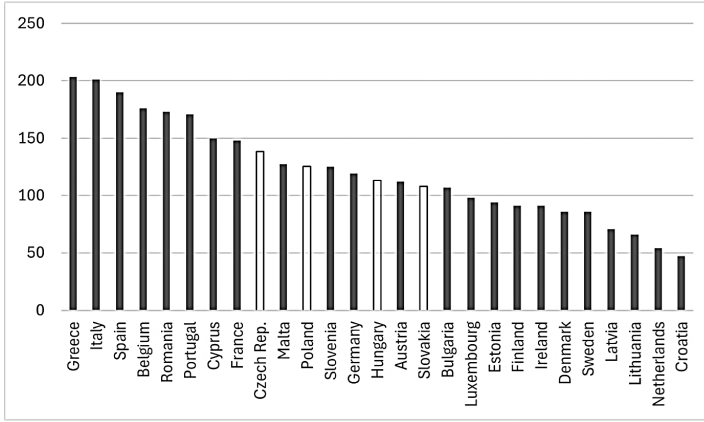
Infringements of the EU law in the field of environment

Proper adoption and application of the EU law is overseen by the European Commission. It ensures the conformity of the national laws of the Member States with *acquis* and monitors the uniform application of the law throughout the territory of the Union. It may initiate infringement procedure against states that adopted or maintain legislation inconsistent with the EU law and, where appropriate, bring the matter before the Court of Justice of the EU. After joining the EU, the V4 countries have become subject to such procedures, including the field of environment.

Between 1.05.2004 and 30.04.2024, the Commission launched 3270 infringement proceedings in the field of environment against the EU Member States, including 484 cases against V4 countries (some 14,8% of all). Most cases were related to Greece (203 proceedings), Italy (201) and Spain (190), followed by Belgium, Romania and Portugal (see: *Figure 1*). Among the V4 countries, most cases were related to the Czech Republic (138 cases, 9th place in the EU), followed by Poland (125 cases, 11th place), Hungary (113 cases, 14th place), and Slovakia (108 cases, 16th place).

⁷ E.g. modernisation of power plants and fuel refuelling infrastructure, construction of sewage treatment plants.

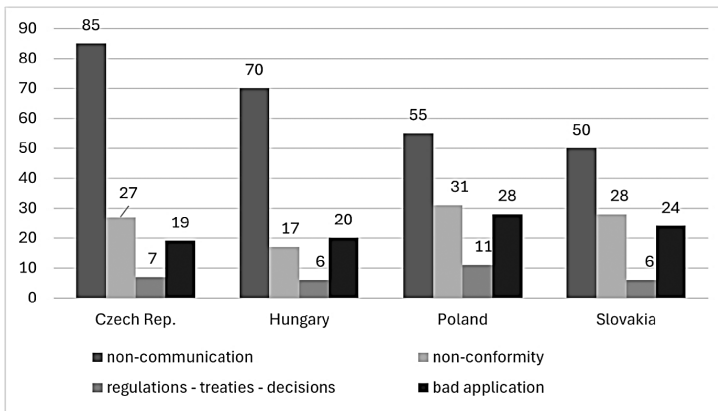
Figure 1: Environmental infringements procedures against EU Member States in the period 1.05.2004–30.04.2024.



Source: author's elaboration based on *Environmental infringements interactive map* WWWW (data as of 10.05.2024).

In terms of the type of infringement, failure to notify the Commission on time of national measures to turn a directive into national law (non-communication) dominated in V4 (260 cases). They account for 53.7% of all procedures initiated against V4, slightly more than the EU-23 average (52.7%). Non-communication was the most important infringement in all Visegrad Group countries, however in Hungary and the Czech Republic it strongly dominated the structure, accounting for nearly 62% of all cases (see: *Figure 2*). In Poland and Slovakia they were less important (44% and 46% of proceedings, respectively).

Figure 2: Proceedings against V4 countries by type of infringement in the period 1.05.2004–30.04.2024.



Source: author's elaboration based on *Environmental infringements interactive map* WWWW (data as of 10.05.2024).

Non-conformity (103 cases and 21.3%) and bad application (91 cases; 18.8%, respectively) procedures came next. On average, the non-conformity cases (when the Commission considers a Member State's law not in line with the requirements of EU directives) were less common in the EU-23 – they accounted for only 14%, whereas bad application (when EU law is not applied correctly, or not applied at all by national authorities) occurred more frequently (nearly 27% of all procedures).

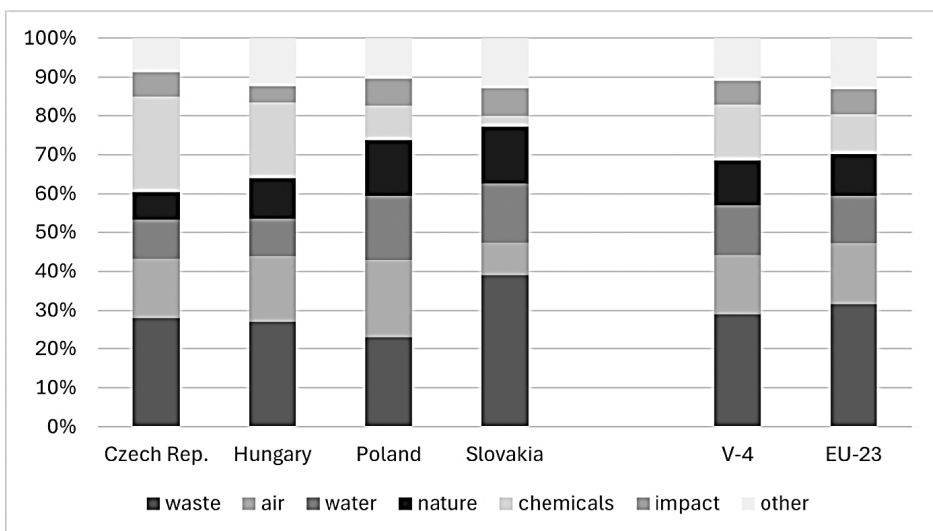
Non-conformity of national regulations with the EU law was the most serious problem in Slovakia and Poland, where such infringements accounted for about a quarter of all procedures in the field of environment. In Czech Republic and Hungary they were less frequent (some 20% and 15%, respectively), but still above EU-23 average.

In terms of bad application, proceedings against every V4 country were initiated less frequently than on average in the EU-23. In Poland and Slovakia, their share was the highest (22% each). Hungary was the only V4 country, where bad application occurred more often than non-conformity.

Proceedings related to infringements of regulations, treaties or decisions accounted for nearly 9% in Poland (above the average), and just 5–6% in other V4 countries.

When it comes to main topics being subject to infringement procedures, waste management dominated (142 cases, 29% of all procedures), followed by air quality (74 and 15%, respectively) and chemicals (70, about 14%) – see: *Figure 3*. These were followed by cases involving water quality (63 cases, 13% of procedures) and nature conservation (56 and 11.5%, respectively). Topic's structure for V4 was slightly different from that of EU-23. In particular, infringement procedures concerning chemicals played more important role in the V4, while waste management was in V4 less problematic than in other EU Member States on average.

Figure 3: Proceedings against V4 countries and other EU Member States by field of infringement in the period 1.05.2004–30.04.2024.



Source: author's elaboration based on *Environmental infringements interactive map WWW* (data as of 10.05.2024).

Waste management was the main topic for all V4 countries, wherein ensuring compliance with EU law in this regard was the most difficult for Slovakia and Czech Republic. All analysed countries were subject to infringement procedures in relation to Waste Framework Directive setting the basic concepts and definitions, but also directives concerning: waste electrical and electronic equipment (WEEE), management of waste from extractive industries, restrictions of the use of certain hazardous substances, disposal of equipment containing PCBs, packaging and packaging waste, landfill of waste, manufacture and disposal of batteries and accumulators, waste from end-of-life vehicles and lightweight plastic carrier bags. Most countries lag behind in relation to implementation of directives on single use plastics (apart Hungary). Some proceedings were country-specific, for example these on incineration of waste against the Czech Republic and on environmental product charge law towards Hungary.

Next important topic – air quality – was clearly the issue of great importance in Poland (occurring visibly more frequent than in other V4 countries, and in EU-23 on average). Czech Republic and Hungary followed. None of V4 countries managed to ensure full compliance of its legislation with directives on ambient air quality, including ensuring PM₁₀ limit values, and its assessment, as well as Integrated Pollution Prevention and Control (IPPC) Directive referring to industrial emissions. The Czech Republic, Hungary and Poland were not successful in timely establishing a scheme for greenhouse gas (GHG) emission allowance trading; policies, measures and GHG projections for monitoring Community emissions; as well as establishing assessment methods for noise and harmful effects of environmental noise. The Czech Republic, Hungary and Slovakia were subject to infringement procedure in relation to directive on the limitation of VOC emissions (use of organic solvents in paints and varnishes), whereas Hungary, Poland and Slovakia – obligations arising from National Emission Reduction Commitments Directive. Some other procedures were country-specific, e.g. reduction of NO₂ emission.

Infringement procedures involving chemicals appeared mainly in the Czech Republic and Hungary. In all analysed countries the Commission revealed shortages in relation to classification, packaging and labelling of substances and mixtures (including dangerous substances), prevention of chemical accidents (SEVESO Directives) and protection of animals used for scientific purposes. The Czech Republic, Hungary and Poland had also improperly implement the EU directives on the placing of biocidal products on the market.

In the field of water quality and nature protection, visibly more procedures were initiated against Poland and Slovakia than Czech Republic and Hungary. In all V4 countries, infringements concerning water included Water Framework Directive, the quality of water intended for human consumption and of bathing water, protection of groundwater against pollution and deterioration, assessment and management of flood risks and environmental quality standards. In terms of nature, the V4 countries failed most of all to fulfil commitments of conservation of wild birds, of natural habitats and of wild fauna and flora, as well as of environmental impact assessment and invasive alien species (apart Hungary).

As at 30.04.2024, 8 environmental infringement cases were pending against Hungary, followed by the Czech Republic (9), Slovakia (15) and Poland (20). The oldest pending procedures against Hungary, Poland and Slovakia have been ongoing since 2009, and against the Czech Republic – since 2010. All of them are related to PM10 limit value exceedances (air quality).

Summing up, during the 20 years of the EU membership, the V4 countries were subject to 484 infringement proceedings initiated by the EC. Some of them were related to the directives, for which transitional periods were granted. Most cases were related to the Czech Republic, followed by Poland, Hungary and Slovakia. Taking into account the type of infringement, they refer mostly to non-communication, and to waste management, when it comes to infringement topic. Nevertheless, there were differences between the analysed countries. It's worth mentioning, that infringement procedures initiated against the V4 countries referred not only to the environmental problems themselves, but also to other provisions of the EU directives, for example: (1) environmental impact assessment (that had an impact on the legality of the projects, which fall under the EIA Directive); (2) planning and reporting requirements, (3) access to justice, or (4) participation of civil society.

Conclusions

Despite a similar communist/socialist past, as well as shaping environmental policy under the influence of solutions promoted by the OECD and the EU, the V4 countries are heterogeneous, when it turns to environmental issues. The study demonstrates differences between V4 countries in terms of adaptation to the EU policy both before and after accession to the EU. Upon accession, the Czech Republic seemed to be the best performer (least and relatively short transition periods), while Poland was lagging behind (relatively long and many transition periods). For Poland, chapter "Environment" turned out to be one of the most difficult during the accession negotiations (Mazur-Wierzbicka 2011: p. 275). At the same time, the countries share some problems: derogations obtained by them were related to waste management, water quality and industrial pollution control.

During the 20 years of the EU membership, the V4 countries did not fully fulfil their obligations in adopting EU environmental law, which resulted in infringement procedures initiated against them by the EC, but they didn't lag behind other Member States. In terms of number of cases, V4 were somewhere in the middle, with the Czech Republic being the worst (overtaking Poland) and Slovakia – the best performer.

Across the EU-27, environmental protection is one of the areas, in which the EC opens the most cases. Many problems faced by V4 remain a major challenge for most or a large group of EU Member States. It can be attributed to high level of environmental protection provided by the EU law, and rising EU ambition in the field.

Results of analysis of infringement procedures by type suggest that the main V4 problem was failure to notify on time national measures to turn directives into national law. In Hungary and the Czech Republic it was relatively often, suggesting problems with

administrative efficiency. More efficient operation of the administration could improve the situation in this respect. On the other hand, Slovakia and Poland had struggled more often with non-conformity and bad application. The Commission's actions resulting from better regulation principles⁸ have proven their effectiveness (European Commission 2023) and may be helpful in the future. However, in the future the increase in the number of proceedings could be expected as a result of the growing number of environmental regulations at the EU level.

Regarding the issue of infringement, waste management was the most important for all V4 countries, especially for Slovakia and the Czech Republic. Problems with waste management stay unsolved since the pre-accession period. Desirable changes require not only costly investments, but also a change in awareness among citizens and in waste segregation habits. Although we have seen some changes in this regard over recent years, the increased influx of immigrants (from countries where similar rules do not apply) is becoming a serious challenge to the waste segregation policy.

Air quality was clearly the issue of great importance in Poland. This is largely due to unfavourable energy mix and the inability to make a significant change in this respect in the short or even medium term. Other V4 countries use nuclear energy and less solid fossil fuels. Procedures relating to chemicals are relatively frequent in case of the Czech Republic and Hungary, and that relating to water quality and nature protection – in Poland and Slovakia.

As at 30.04.2024, Hungary and the Czech Republic were subject to relatively small number of environmental infringement proceedings, while Slovakia and Poland had relatively many such cases. After the 20 years of the EU membership, results of the Czech Republic are visible better than that of Poland. However, the oldest pending procedures against all V4 countries last for about 15 years, already. As experience demonstrates, adoption and implementation of environmental policies in the V4 countries heavily depend on external financial resources. Their scarcity hinders the implementation of investment projects in individual countries, and it is not a good sign for cooperation even if the V4 defined common goals for such cooperation.

The conclusions of this study support findings by Waisová (2018) that the V4 countries share a number of environmental problems. At least several reasons can be given for this situation. They include low importance of environmental issues during the socialism/communism period and early years of transformation (long-term neglect of environmental protection in many areas), the desire of societies to quickly improve the quality of life (a significant increase in the number of waste with relatively minor changes in the existing infrastructure and collection systems), financial constraints (limitations to financing large infrastructure projects, especially multi-annual) or low priority (reluctance) to long-term planning (political decisions often prevailed over long-term thinking). The shape of administrative reforms and the division of competences (which led, among others, to

⁸ Development of guiding principles and interpretation documents, discussions in technical committees, bilateral contacts, including through the informal dialogue mechanism *EU Pilot*, and package meetings.

difficulties in the integration of environmental policy) also had an impact on the countries' results in implementing EU regulations. On the other hand, the countries differ to some extent due to the pre-transformation structure of their economies as well as the shape of the reindustrialisation process before and after their accession to the EU. In addition, it can be attributed to differences in administration efficiency, decisions of individual governments,⁹ or cultural heritage.¹⁰

The present study fills in the knowledge gap related to the V4 performance in environmental issues during 20 years of their EU membership, as well as some differences and similarities between them. The research results reveal possible areas of cooperation and main sources for their financing (EU funds). The financial perspective for 2021–2027, which provides for increased funds for environmental projects, may support the implementation of joint projects at various levels of administration in V4 countries, local government units in particular.

The research also leads to new research questions. Areas for further research work may include: detailed analysis of factors influencing the quality of environmental policy in V4 countries, as well as the oldest infringement proceedings (to find original sources of problems, and possible solutions), or sectoral studies.

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⁹ E.g. regarding the highway route or forest management in Poland, genetically modified micro-organisms or environmental product charges in Hungary.

¹⁰ E.g. goose hunting in Poland, insufficient protection of wolfs in Slovakia.

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