



EUROPEAN COURT OF HUMAN RIGHTS
COUR EUROPÉENNE DES DROITS DE L'HOMME

THIRD SECTION

CASE OF PAVLOV AND OTHERS v. RUSSIA

(Application no. 31612/09)

JUDGMENT

Art 8 • Positive obligations • Private life • Failure to diligently address long-standing and excessive industrial air pollution and to take adequate protective measures to reduce its effects, so as to prevent applicants' exposure to related health risks • Art 8 applicable • Excessive pollution levels affecting adversely and to a sufficient extent applicants' private life • Fair balance between competing interests not struck

STRASBOURG

11 October 2022

This judgment will become final in the circumstances set out in Article 44 § 2 of the Convention. It may be subject to editorial revision.

In the case of Pavlov and Others v. Russia,

The European Court of Human Rights (Third Section), sitting as a Chamber composed of:

Georges Ravarani, *President*,

Georgios A. Serghides,

María Elósegui,

Anja Seibert-Föhr,

Peeter Roosma,

Frédéric Krenç,

Mikhail Lobov, *judges*,

and Olga Chernishova, *Deputy Section Registrar*,

Having regard to:

the application (no. 31612/09) against the Russian Federation lodged with the Court under Article 34 of the Convention for the Protection of Human Rights and Fundamental Freedoms (“the Convention”) by twenty-two Russian nationals (“the applicants”), on 6 August 2009;

the decision to give notice to the Russian Government (“the Government”) of the complaint concerning the applicants’ right to respect for their private life and the decision to declare inadmissible the remainder of the application;

the parties’ observations;

Having deliberated in private on 6 September 2022,

Delivers the following judgment, which was adopted on that date:

INTRODUCTION

1. The main issue in the present case is whether the authorities failed to take protective measures to minimise or eliminate the effects of industrial air pollution in the city of Lipetsk, in violation of the applicants’ right to respect for their private life under Article 8 of the Convention.

THE FACTS

2. The applicants’ names, dates of birth, city of residence, representative’s name, where applicable, and other details of their cases are set out in Appendix I.

3. The Government were represented by Mr M. Galperin, Representative of the Russian Federation to the European Court of Human Rights and then by his successor in that office, Mr M. Vinogradov.

4. The facts of the case may be summarised as follows.

I. BACKGROUND OF THE CASE

5. The applicants live in Lipetsk, an industrial city and the administrative centre of Lipetsk Region. It is situated about 500 km south-east of Moscow

and has a population of more than half a million people. The applicants' homes are located several kilometres from the sites of large industrial undertakings in Lipetsk.

6. From the early twentieth century to the present day some of the main industrial undertakings operating around the city have included:

Name of plant	Established	Operations suspended/ceased (for economic reasons)	Current status
Svobodny Sokol Steelworks	1902	2009-2013	Svobodny Sokol Pipe Company (since 2017)
Novolipetskiy Steelworks ("the NLSP")	1931	no	Active
Lipetsk Tractor Plant	1943	2004	Lipetsk Mechanical Plant (since 2009)
Lipetsk Pipe Plant	1952	2002-2014	Inactive
Lipetsk Cement Plant	1959	1990 and 2000s (temporarily)	Lipetskcement (Eurocement Group (since 2002))

7. In 1993, in order to delimit the areas in which pollution caused by these plants could exceed the applicable safety standards, the regional authorities ordered them to create, by 1996, buffer zones around their premises (*санитарно-защитные зоны* – "sanitary protection zones") within which pollution could exceed safe levels (Ruling no. 7 of 10 January 1993 issued by the head of the administration of Lipetsk Region). The municipal administration of Lipetsk was assigned to oversee the creation of the sanitary protection zones.

II. DOMESTIC PROCEEDINGS

A. Proceedings brought by the applicants

8. On an unspecified date, the applicants brought court proceedings against fourteen federal and regional government agencies for failure to protect their right for respect of their private and family life under Article 8

of the Convention. In particular, they claimed that the concentration of harmful substances in the atmospheric air and drinking water in Lipetsk had consistently exceeded the maximum permitted levels and that the authorities had failed, in breach of Article 8 of the Convention, to take meaningful measures, such as, for example, creating sanitary protection zones around the city's industrial undertakings, in order to improve the environmental situation in Lipetsk. They requested the court to order the defendants to take relevant measures with a view of protection of their rights and they also claimed 10,500 euros (EUR) in non-pecuniary damage.

9. On 19 January 2009 the Sovetskiy District Court of Lipetsk ("the District Court") examined the applicants' claim.

10. In particular, the District Court found as follows:

"... In accordance with [the provisions of the domestic law] everyone has the right to a safe environment, protection of environment from negative effects of industrial activities, ... compensation for harm ... sustained as a result of environmental wrongdoing or as a result of the State bodies' acts or omissions ...

... The court has established that the claimants live in Lipetsk ... Before 2008 the level of air pollution had been checked at five air monitoring stations ...

... The circumstances established during the examination of the case and the evidence presented before the court demonstrate that the level of air pollution in Lipetsk is high. The concentration of many chemical substances exceeds the sanitary standards. The main sources of air pollution are emissions from large-scale steelworks and construction undertakings. Until 2004 Lipetsk was listed as one of the cities where air pollution was at its highest ...

... In the course of the examination of the present case, the court has established that ... environmental protection measures are financed annually by the regional budget. In addition, financial resources are allocated for the construction and maintenance of waste disposal sites and sewage treatment facilities, environmental educational programmes, the support of specially protected territories, the preservation of rare or endangered species ...

... Regard being had to the previously adopted and current domestic regulations, it may be concluded that the Lipetsk authorities are not vested with the power to establish and control sanitary protection zones. [Therefore], the plaintiffs' argument concerning the failure of the administration of Lipetsk to act on the matter is unfounded ... Under Regulation 3.2 of Sanitary Regulations 2.2.1/2.1.1.1200-03, an obligation to create [such] sanitary protection zones is imposed on the management of the relevant industrial undertakings ...

... The court has further established that as at the date of examination of the present case, 50 of the 69 undertakings in Lipetsk have developed project documentation concerning sanitary protection zones, with 42 projects having been approved; the projects of 16 undertakings are pending and three undertakings (Lipetsk Tractor Plant, [Lipetsk] Management Company undertakings ... and Teplichniy Agricultural Enterprise) have failed to submit the relevant project documentation; they have been fined and ordered to implement the relevant plans ...

... [The applicants'] reference to the [2007] report of the Audit Chamber of [the Russian Federation] concerning a lack of action on the part of [the Ministry of Natural Resources and the Environment] and its regional agencies in the environmental sphere

do not serve as proof of inaction on the part of [the Ministry's] Lipetsk department. [The report's findings] in respect of the NLSP's discharging emissions without a permit and in the absence of limit values for emissions only prove unlawful action on the part of the NLSP ... [see paragraph 22 below for reference to the report]

... No evidence has been presented that would enable [the relevant authorities] to order the polluting undertakings to cease their activities ...

... The plaintiffs' references to [*Fadeyeva v. Russia*, no. 55723/00, ECHR 2005 IV] ... are misguided ... Non-pecuniary damage sustained as a result of air pollution should be compensated at the expense of the natural or legal persons [directly] liable for such pollution ... Accordingly, the plaintiffs can bring their respective claims against [these] natural or legal persons ...

... the facts that that the level of pollution of air and soil in Lipetsk is high, that no part of Lipetsk can be considered as the least polluted and that air pollution is the main health risk factor for the residents of Lipetsk cannot, by themselves, serve as proof that [the government agencies in question] caused that harm ...”

11. The District Court further stated that between 1998 and 2008 various municipal and regional authorities, *inter alia*, regularly conducted either planned or unannounced assessments of the atmospheric air, water and polluting industrial activities in Lipetsk, and imposed fines, issued warnings and instituted administrative proceedings in the event of violations of the applicable standards by the relevant undertakings. In particular, between 1998 and 2008 the Lipetsk Consumer Protection Authority (“the Lipetsk CPA”) had imposed 171 fines for violations of air pollution regulations in the amount of 334,125 Russian roubles ((RUB) – about EUR 9,600 at the time) and twenty fines for violations of water protection regulations in the amount of RUB 4,610 (about EUR 130 at the time). The Environmental Unit of the Prosecutor's Office had uncovered 4,468 violations of environmental regulations in 1998-2008 and issued 755 reprimands in respect of them. The Svobodny Sokol Steelworks had been ordered to suspend the use of some of its equipment, and the suspension of operations of two of the NLSP's coke ovens had been considered. The District Court also established that on average RUB 63 million (about EUR 1.8 million at the time) were allocated every year from the regional budget for the implementation of regional environmental protection programmes. It further held that the government agencies against which the civil claim had been brought had not failed to take environmental protection measures and that there were thus no grounds for awarding the applicants compensation in respect of non-pecuniary damage.

12. Seven of the applicants (the first, seventh, tenth, twelfth, thirteenth, nineteenth and twenty first – see Appendix I) appealed against the judgment. On 18 February 2009 the Lipetsk Regional Court upheld it in full.

B. Proceedings brought by the NLSP

13. On 2 August 2019 the NLSP brought a cassation appeal against the judgments of 19 January and 18 February 2009. It requested that the cassation

court exclude reference to the findings in the report drawn up by the Audit Chamber of the Russian Federation concerning its discharging emissions without a permit and in the absence of limit values for emissions (see paragraphs 10 above and 22 below). On 1 October 2019 the Lipetsk Regional Court refused to examine the NLSP's cassation appeal on the merits. On 23 March 2020 the Supreme Court of the Russian Federation upheld that refusal.

III. POLLUTION LEVELS IN LIPETSK 1998-2018

A. Information and evidence provided by the applicants

14. The applicants submitted that although executive orders to create sanitary protection zones and reduce air pollution in Lipetsk had been issued as early as in the 1960s and 1970s and later, in the 1990s (see paragraph 7 above), those orders had never been implemented and sanitary protection zones around the premises of industrial undertakings had not been created.

15. The applicants further submitted that the levels of industrial air pollution had been excessive in Lipetsk for many years. In support of their claim, they submitted copies of reports issued by State agencies (see Appendix III).

16. The applicants also provided copies of reports or extracts of reports drawn up by federal and regional State bodies concerning the environmental situation in Lipetsk between the late 1990s and 2019. A summary of the most relevant parts of those reports is as follows.

17. The 2000 regional environmental report stated that between 1995 and 2000 the average concentration of pollutants had declined by 50% but had nevertheless exceeded the average daily maximum permitted levels (MPL). The main sources of air pollution (95%) had been: carbon monoxide, nitrogen dioxide, sulphur dioxide and dust (all emitted by the NLSP, Lipetsk Tractor Plant and Svobodny Sokol Steelworks). The concentrations of the following toxic substances had exceeded the average daily MPL in 2000: dust (1.04 times the MPL), nitrogen dioxide (1.8 times the MPL), phenol (2 times the MPL) and formaldehyde (9.4 times the MPL).

18. The 2003 regional environmental report identified vehicle emissions pollution as one of the main sources (about 30%) of air pollution in Lipetsk Region and stated that the concentrations of certain air pollutants in the vicinity of the major motorways had exceeded the permitted levels. It also stated that there had been no significant difference between the levels of air pollution in all parts of Lipetsk, which was indicative of the fact that no part of the city could be classified as the least polluted.

19. According to the 2004 regional environmental report, despite some decrease in the levels of air pollution in Lipetsk, they remained "high", with the emission levels for ten of the twenty-five hazardous substances (hydrogen

sulphide, camphor, phenol, nitrogen dioxide and suspended particles and others) being 1.2 to 3.7 times the MPL in the vicinity of the NLSP. The report also stated that (i) among large industrial undertakings, the NLSP and Svobodny Sokol Steelworks had no projects for creating a sanitary protection zone; (ii) a comparative analysis of data from air quality monitoring posts had showed no difference in levels of pollution in different parts of Lipetsk, indicating that no part of Lipetsk had the lowest pollution level and (ii) the main health risk factor in Lipetsk was air pollution.

20. The 2005 regional environmental report indicated that the quality of the atmospheric air in Lipetsk in 2005 had not, in general, deteriorated compared to 2004. According to that report, the emissions of harmful substances exceeding the maximum permitted levels had been caused by different undertakings, including the NLSP and the Svobodny Sokol Steelworks. The peak concentrations exceeding the applicable standards were detected at stationary air monitoring post no. 2, near Lipetsk Pipe Plant: nitrogen dioxide (4.9 times the MPL), suspended particles (1.1 to 2.8 times the MPL), formaldehyde (1.2 to 4.7 times the MPL), phenol (1.1 to 3.0 times the MPL) and hydrogen sulphide (1.1 to 4.6 times the MPL). The maximum number of unsatisfactory tests (exceeding the MPL) – forty-six – had been detected at stationary post no. 8 (in the 23rd micro-district of Lipetsk) and the lowest number – twenty-one – in the vicinity of the NLSP, where nine of the twenty harmful substances had exceeded the MPL (carbon monoxide, nitrogen dioxide, hydrogen sulphide, hydrogen chloride, formaldehyde, ammonia, phenol, suspended particles and ethylbenzene). In the vicinity of the Svobodny Sokol Steelworks nine harmful substances (carbon monoxide, nitrogen dioxide, suspended particles, phenol, formaldehyde, ethylbenzene, toluene, xylols and benzol) had exceeded the MPL. The concentrations of nitrogen dioxide had been on average twice the MPL, while the concentrations of carbon monoxide, acrolein and formaldehyde had each been 1.4 times the MPL. According to the report and studies conducted, a decrease in the number of health risks related to air pollution (malignant tumours and cardiovascular diseases) was predicted in the light of the planned implementation of the relevant environmental policies. It was also pointed out that the index of compound environmental pollution was the highest in Lipetsk among six most polluted parts of the region and that polluted air, water and soil were the main negative environmental factors. According to the report, increased morbidity rates, especially for cardiovascular diseases, had been observed in areas where the index of pollution was the highest and the incidence rate for tumours, respiratory, vascular and other diseases had been directly linked to pollution and quality of drinking water and food products.

21. In 2006 the head of the regional CPA reported that the main health risk factor for residents of Lipetsk in 1998-2004 had been air pollution and that the situation concerning public health had been unfavourable. Studies

carried out in 2001-2003 had shown that high level of industrial air pollution had adverse impact on the health of residents of Lipetsk. In 2005 the concentration of twelve toxic substances (carbon monoxide, hydrogen sulphide, ammonia, nitrogen dioxide, suspended particles, phenol formaldehyde, hydrogen chloride, benzene, toluene, xylene and ethylbenzene) had been 1.1 to 4.2 times the MPL within 1 kilometre from the NLSP.

22. According to the 2007 report of the Audit Chamber of the Russian Federation, the environmental situation in Lipetsk had been critical, owing to emissions from the NLSP. According to the 2002-2003 State report on environment, Lipetsk was one of the most polluted towns owing to the presence of formaldehyde, benzopyrene, phenol and nitrogen dioxide in the atmospheric air, with the NLSP having been responsible for 88% of the city's total emissions. In particular, in 2001 excessive concentrations of nitric oxide, iron, copper and phenol had been detected in operational wastewater disposed by the NLSP. According to the report, the NLSP had not complied with licensing requirements concerning the quality of its operational wastewater and had not established limits on its emissions in 2000-2005. The soil in Lipetsk had been seriously contaminated with heavy metals (lead, copper, zinc and cadmium). It also stated that water protection measures taken in 2005 had allowed pollutants to be reduced by 11.4%. It was further noted in the report that no State funds had been allocated to the NLSP for environmental protection measures in 2000-2005 and that environmental improvement issues had been left completely in the hands of the industrial undertakings and municipal authorities, without any meaningful participation by the national authorities.

23. According to the 2007 regional environmental report, air pollution had been the main health risk factor between 1999 and 2005 in Lipetsk. In 2005, owing to the environmental protection measures taken to protect environment within the framework of different programmes, the general rate of air pollution had decreased by 66.4% (accounting for 44.94% of the overall pollution at the time). Polluted drinking water was named as the main health risk factor in 2005. The report stated that residents of Lipetsk consumed water containing an excessive concentration of selenium (up to 11 times the MPL), lead (up to 7.1 times the MPL), iron (up to 3 times the MPL), magnesium, cadmium and arsenic (up to 1.1 to 1.5 times the MPL).

24. The 2011 regional environmental report stated that industrial emissions in Lipetsk had reduced by 1% in 2011 compared to 2010. It further stated that the average concentrations of phenol in the air had increased by almost 50%, whereas the level of formaldehyde had decreased by 40%. The main sources of air pollution in Lipetsk in 2011 had been dust, nitrogen dioxide, phenol, hydrogen sulphide, formaldehyde and 3,4-benzopyrene. Since 2007 the proportion of unsatisfactory tests of atmospheric air in Lipetsk had increased from 1.42 to 4.15%, and in the vicinity of the industrial

undertakings from 1.46 to 2.8%, the report stating that the latter could likely be explained by an increase in production volumes and the use of old technology and outdated equipment, including inefficient filtration and purification equipment. According to the report, the oncological risks for the population had reduced in recent years owing to a significant decrease in emissions of benzol, ethylbenzene, toluene and xylol. At the same time, the presence of concentrations of dust, hydrogen sulphide, nitric oxide above the MPL in the air and an apparent shift towards their increase had been associated with the significant risk of contracting and developing respiratory illnesses. Furthermore, the presence of higher concentrations of phenol, carbon monoxide and formaldehyde had increased the risk of developing and aggravating cardiovascular, kidney and liver diseases. Benzopyrene, the concentrations of which had been above the MPL, had been found to have a carcinogenic effect. The report's statistics in respect of the number of residents affected by air pollution in 2011 (and in 2016-2018) are provided in Appendix III (Table 3).

25. The 2016-2018 regional environmental reports stated that air and water pollution had been the main contributing health risk factors in Lipetsk in particular. According to the reports, in recent years a decline in air quality had been detected in populated areas. Lipetsk and Lipetskiy and Volovski Districts had been named as the most polluted parts of the region. The main polluting substances in the atmospheric air in Lipetsk had been dust, phenol, formaldehyde, hydrogen sulphide and 3,4-benzopyrene. The dynamics of the air pollution in Lipetsk in 2016-2018 set out in the relevant reports are reflected in Appendix III (Table 4). The main source of air pollution in Lipetsk and Lipetsk region were emissions from industrial undertakings. Drinking water in Lipetsk had been polluted with nitrates, iron, manganese, fluorine and boron. The reports directly linked high levels of air, water and soil pollution to higher morbidity rates. The reports also mentioned the environmental protection measures taken by the industrial undertakings and the authorities that had contributed to a reduction in the overall harmful emissions in the air. For example, in 2017 some of the industrial undertakings in Lipetsk had carried out technical modifications to their operational and purification equipment and introduced energy reuse systems, and in 2018 the authorities had focused on various clean environment initiatives, such as the collection of hazardous and solid waste and recycling, as well as the restoration of certain water resources.

26. In 2019 the Consumer Protection Authority of the Russian Federation ("the Russian CPA" – *Федеральная служба по надзору в сфере защиты прав потребителей и благополучия человека*) and the Lipetsk CPA, together with the Lipetsk Regional Hygiene and Epidemiology Centre of Lipetsk Region, drew up a report on the sanitary and epidemiological well-being of residents of Lipetsk Region in 2018. According to the report, residents lived under the compound impact of chemical environmental factors

caused by pollution of the air, drinking water, soil and food with toxic substances. In 2015-2017 Lipetsk and two adjacent districts had been the most polluted part of the region, and the report identified air pollution as the leading health risk factor for residents (25.04% of the overall contributing pollutants). The report established that morbidity rates and medical and demographic indicators correlated with overall pollution levels and certain parameters of air, water and soil pollution. According to the report, the NLSP had been the main emitter of pollutants in Lipetsk and the main pollutants had been dust, phenol, formaldehyde, hydrogen sulphide and benzopyrene. Air quality in populated areas had declined in recent years. The proportion of unsatisfactory tests of air in Lipetsk had increased in 2018 as compared to 2017, with nitrogen dioxide, hydrocarbons, carbon monoxide and suspended particles exceeding the sanitary standards. More than 230,000 residents of Lipetsk had been affected by heightened levels of air pollution between 2011 and 2018 (see Appendix III, Table 3).

27. The 2019 report also indicated that, to further reduce its harmful emissions, the NLSP had carried out 139 projects in 2018, including technically modifying and installing various purification equipment and integrating industrial by-products and waste into its recycling scheme. According to the report, the Lipetsk CPA continued to supervise the work of the undertakings in respect of the sanitary protection zones.

B. Information and evidence provided by the Government

28. The Government submitted that air pollution monitoring in the vicinity of industrial undertakings and on the territory of Lipetsk was carried out, respectively, by the Lipetsk Regional Hygiene and Epidemiology Centre and the Lipetsk Regional Hydrometeorology and Environmental Monitoring Centre. The Government also submitted selected data on, *inter alia*, the quality of the air in Lipetsk in 2009-2018 (see Appendix IV).

29. The Government further submitted that the authorities had taken measures to protect the environment, reduce environmental pollution and alleviate its negative effects in Lipetsk and its region.

1. Sanitary protection zones

30. The Government submitted that the following projects to create sanitary protection zones had been developed and/or approved:

Undertaking	Project developed	Year of approval and approving State body	Other relevant information
Lipetsk cement production factory and Lipetsk Quarry Management Company	not specified	2009 by (not specified)	sanitary protection zone delimited in 2011
NLSP	2015	2006 and 2010 – approval of projects for preliminary sanitary protection zone by the Lipetsk CPA; 2016 – approval of project for permanent sanitary protection zone by the Lipetsk CPA	Transferred for examination to the Russian CPA in 2019
Svobodny Sokol Pipe Company	2019	not specified	not specified

31. The Government submitted that a municipal working group on sanitary protection zones created in 1999 had been disbanded in 2013 as all the major industrial undertakings had reported that they had developed projects to create sanitary protection zones. Furthermore, according to information from the Lipetsk CPA, no Lipetsk residents lived within the boundaries of any sanitary protection zones.

2. Russia-wide environmental programmes

(a) Clean Air project

32. On 28 December 2018, within the framework of the national Clean Air project, the Russian government approved clean air initiatives in twelve main industrial and most polluted cities, including Lipetsk. The specific measures have included:

(i) technical improvements and upgrades to key industrial equipment aimed at reducing harmful air emissions by 16.290 tonnes by 2024 in Lipetsk;

(ii) funding estimated at RUB 20 billion [about EUR 2 billion] for those measures in Lipetsk;

(iii) the following actions in cooperation with the Russian Ministry of Natural Resources and the Environment, the Federal Agency for the Protection of the Environment and the administration of Lipetsk Region:

- the NLSP planned and/or implemented large-scale technological modifications and the renovation of its equipment to reduce emissions of dust (by 9%), carbon monoxide (by 3.2%), phenol (by 33%) and hydrogen sulphide (by 18%);
 - the Lipetsk thermal power station replaced its outdated equipment; and
 - Lipetsk cement upgraded its purification filters.
- (iv) upgrading nine stationary and two mobile air monitoring posts in Lipetsk and its region;
- (v) constructing wastewater treatment facilities by the municipal water treatment company in order to reduce emissions of hydrogen sulphide in the air, prevent organoleptic effects of emissions and reduce emissions to the local river to acceptable levels (project documentation underway);
- (vi) buying 133 buses (thirty-six for Lipetsk) of EURO-V standard (2008 European emission standard for buses);
- (vii) planned construction of fifteen (three in Lipetsk) service facilities for gas-powered public transport.

(b) Clean Water project

33. The Clean Water project provided for different measures aimed at improving the quality of the drinking water in Russian cities in 2019-2024. As part of that project, various remedial measures in respect of centralised water equipment have been implemented in Lipetsk Region to ensure that at least 98.5% of urban residents are supplied with safe drinking water.

(c) National System of Chemical and Biological Safety (2015-2020)

34. Within the framework of this programme, remediation equipment was installed, and decontamination works started on a site that had been used to store toxic chemicals and pesticides.

3. Regional and municipal measures

35. The regional environmental protection programmes in 2002-2018 included the construction of housing for the resettlement of residents from within the NLSP's (*de facto*) sanitary protection zone (2003-2004), subsidising the acquisition of purification equipment for five asphalt plants (2017), maintenance and upgrading of the air monitoring system (2017) and a clean-up of the watershed between the NLSP's waste outlet and a river orifice (2018). On average, about RUB 400 million (about EUR 4 million) was allocated every year from the federal and regional budgets for the implementation of those programmes.

36. In 2017 a working group was created on the implementation of measures aimed at reducing transport emissions and their effects on the health of residents and the environment.

37. In line with the “Concept of State Policy on Providing Safe Drinking Water to the Population” issued in 2007, projects were developed and actively implemented in 2017-2018 to create water source protection zones. The regional water supply system has been constantly monitored. Every year the quality testing of water in Lipetsk was carried out by an accredited laboratory in accordance with the applicable regulations. At present the quality of the drinking water meets the applicable sanitary requirements and it can be consumed after disinfection with a small dose of sodium hypochlorite without additional decontamination, with 99.4% of Lipetsk’s residents being supplied with drinking water of satisfactory quality. If a deterioration in water quality is detected according to the protocols in force, the authorities suspend the water supply, inform the residents and organise deliveries of drinking water.

38. Furthermore, in 2008-2017, the municipal administration of Lipetsk has developed environmental protection programmes and implemented, *inter alia*, the following measures: managing the disposal of industrial, solid and hazardous waste, screening and remediating soil pollution, collecting and disposing of waste containing mercury, launching gas-powered public transport, reutilising a landfill site and maintaining and upgrading air quality monitoring systems.

4. Regulation of industrial activities in Lipetsk

39. The Government submitted that the State authorities had been taking all necessary measures to ensure the safe operation of the industrial undertakings in Lipetsk and its region. In particular, (i) in 2004-2005 ten inspections of the NLSP’s operations had been carried out and ten notices of violations of environmental regulations had been issued; (ii) between 2009 and 2019 seventy notices of violations had been issued in respect of the NLSP, Lipetskcement and Svobodny Sokol Steelworks; and (iii) disciplinary or administrative proceedings had been instituted against directors of the companies and the companies themselves, with 187 reports of administrative violations issued in respect of them between 2009 and 2019. Environmental compliance inspections had been carried out in respect of the NLSP every year. The remedial measures taken, in particular, by the NLSP of its own initiative and at the request of the supervisory bodies, had resulted in a 22.5% reduction in its emissions in 2000-2018.

40. On 15 October 2013 the Pravoberezhniy District Court of Lipetsk allowed a claim by the prosecutor and ordered Lipetskcement to replace two gas purification filters by 15 December 2015. That judgment was enforced.

41. The Government further submitted that the industrial undertakings in Lipetsk and its region (as elsewhere in Russia) had special operational permits for various types of industrial operations, without which their industrial activity could be declared unlawful and suspended, including by order of the court. The Government provided examples of such orders issued

by the courts in Kemerovo and Bryansk Regions. Furthermore, some of the industrial undertakings had significantly curtailed or stopped their operations.

OTHER RELEVANT INFORMATION

I. NATIONAL LEGISLATION AND STANDARDS

42. The Sanitary and Epidemiological Well-being of Population Act (Federal Law no. 52-FZ of 30 March 1999 – *О санитарно-эпидемиологическом благополучии населения*) established sanitary standards for protecting public health from environmental nuisances. In particular, these standards are applied in assessing air quality in cities: atmospheric pollution is assessed against the maximum permitted levels (MPL), the measure which defines the concentration of various toxic substances in the air.

43. Regulation 2.1 of the Sanitary Regulations (*Санитарные правила*) no. 2.1.6.1032-01 of 17 May 2001 and section 1 of the Atmospheric Air Protection Act (Federal Law no. 96-FZ of 4 May 1999 on the protection of the atmospheric air – *Об охране атмосферного воздуха*), as in force at the material time, provided that if the MPL was not exceeded, the air was safe for the health and well-being of the population living in the relevant area. Regulation 2.2 of the Sanitary Regulations provided that, for all categories of toxic elements, concentrations should not exceed the MPL in residential areas and 0.8 time the MPL in recreational zones.

44. The Hygiene Regulations (*Гигиенические нормативы*), in force from 1999 to 2021, set out the MPL for toxic substances in the atmospheric air in Russia, some of which were revised between 2003 and 2021. The relevant extracts of the Hygiene Regulations are provided in Appendix II.

45. Under the Directive of 1 February 2006 issued by the Federal Service for Hydrometeorology, prolonged urban air pollution is determined by a compound index calculated based on (i) the average annual concentration of a pollutant in the atmospheric air, (ii) its short-term peak concentration and (iii) its toxicity coefficient. The relevant calculated values of the index are directly proportionate to the four levels of urban air pollution and are determined as “low”, “heightened”, “high” and “very high” (see Appendix IV, Table 1).

II. AIR POLLUTION IN LIPETSK 2019-2020

46. The information provided below comes from public sources, and provides a background and follow-up for information submitted by the Government and summarised in paragraphs 28-41 above.

47. The level of pollution in Lipetsk in 2019 and 2020 was characterised as “low” by the Federal Service for Hydrometeorology. According to the

2020 and 2021 State environmental reports in respect of Lipetsk, fifty-five and twenty-nine harmful substances were detected in the atmospheric air of Lipetsk in 2019 and 2020 respectively. They included hydrogen sulphide, sulphur dioxide, phenol, formaldehyde, heavy metals, suspended particles and benzopyrene. Both reports stated that 86% of the overall harmful emissions were attributable to industrial undertakings and that the NLSP remained the main pollutant in Lipetsk in 2019 and 2020. The main pollutants in 2020 in the atmospheric air of Lipetsk had been nitrogen dioxide, hydrogen sulphide and benzopyrene. The annual average concentrations of dust, carbon monoxide, nitrogen dioxide, phenol, formaldehyde, sulphur dioxide and nitric oxide in the atmospheric air of Lipetsk in 2020 had not exceeded the permitted levels at the stationary air monitoring posts. Short-term peak concentrations of 1 to 3.97 times the MPL for various harmful substances had been detected at mobile air monitoring posts. The proportion of unsatisfactory tests of atmospheric air increased from 0.15% (2019) to 0.83% (2020) and there had been a decline in air quality.

48. The reports further stated that in 2019-2020 the NLSP had completed several projects aimed at reducing its emissions, which included significant technical modernisation of its equipment and facilities. In 2020 the NLSP had emitted 262,000 tonnes of pollutants, 4,000 tonnes less than in 2019. Lipetskcement and the Lipetsk thermal power station had also carried out technical modifications in accordance with the schedule stipulated by the Clean Air project. According to the report, the Lipetsk CPA continued to supervise the work of the undertakings in respect of sanitary protection zones.

THE LAW

I. *LOCUS STANDI* OF Ms MAMEDOVA AND Ms BAZAYEVA

49. The Court observes that the eighth and fourteenth applicants, Mr Mamedov and Ms Razhina, died while the case was pending before the Court. Mr Mamedov's wife (Ms Mamedova) and Ms Razhina's daughter (Ms Bazayeva) expressed their wish to continue the proceedings before the Court (see Appendix I for details).

50. The Government objected, stating that Ms Mamedova and Ms Bazayeva did not have a legitimate interest in pursuing the proceedings because the alleged pollution had not affected their own health and well-being and because, unlike their late relatives, they had not been party to the domestic proceedings. They also submitted that Ms Bazayeva had relocated to Belgorod Region.

51. The Court reiterates that where an applicant dies during the examination of a case, his or her heirs or close relatives may in principle pursue the application on his or her behalf (see *Ječius v. Lithuania*, no. 34578/97, § 41, ECHR 2000-IX). The Court also recognises the right of

the relatives of deceased applicant to pursue an application concerning Article 8 rights, provided that they have a legitimate and sufficient interest in the continued examination of the application (see, for example, *López Ribalda and Others v. Spain* [GC], nos. 1874/13 and 8567/13, §§ 71-73, 17 October 2019; *Mileva and Others v. Bulgaria*, nos. 43449/02 and 21475/04, § 72, 25 November 2010; and *Nicola v. Turkey*, no. 18404/91, §§ 14-15, 27 January 2009).

52. In the present case, the successors submitted documents confirming that they were close relatives of the eighth and fourteenth applicants respectively. In these circumstances, the Court considers that Ms Mamedova and Ms Bazayeva have a legitimate interest in pursuing the application in place of their late relatives.

II. ALLEGED VIOLATION OF ARTICLE 8 OF THE CONVENTION

53. The applicants complained that severe industrial pollution in Lipetsk had endangered their health and impaired the quality of their life for many years and that the State had failed to take effective protective measures in that regard. They relied on Article 8 of the Convention, which reads as follows:

“1. Everyone has the right to respect for his private and family life, his home and his correspondence.

2. There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others.”

A. Admissibility

1. *Exhaustion of domestic remedies*

54. The Government argued that the applicants had not exhausted the domestic remedies available to them in respect of their complaint. They stated, in particular, that the applicants should have either claimed damages or requested their resettlement by the companies that had allegedly caused the pollution.

55. The applicants submitted that the obligation had been on the authorities and their supervisory bodies to control the industrial activities in the city and take protective measures. They had not requested relocation because, according to the 2003 and 2004 State environmental reports submitted by them and a domestic court decision in an environmental case (unrelated to the present application), Lipetsk had been widely recognised as an environmentally polluted city and it had not been possible to establish which residential area had the lowest pollution levels.

56. Firstly, the Court notes that only seven of the twenty-two applicants appealed against the judgment of the District Court and that the fifteen other applicants did not do so, without referring to any impediment to their bringing an appeal (see paragraph 12 above). The Government did not specifically address this issue in their submissions but they did invoke their objection as to the non-exhaustion of domestic remedies by all the applicants and the Court considers that their general position as to the non-exhaustion of domestic remedies by all the applicants can be said to have implicitly encompassed that specific point and that it was duly raised (see paragraph 54 above). The Court considers however that the fifteen applicants in question were absolved from the obligation to exhaust domestic remedies because they were in a very similar situation as the other seven applicants who brought the appeal and they were affected in the same way by those proceedings (see, for example, *Yüksel Erdoğan and Others v. Turkey*, no. 57049/00, §§ 74-75, 15 February 2007, and *Bilbija and Blažević v. Croatia*, no. 62870/13, § 94, 12 January 2016). Therefore, the Court dismisses the Government's objection as to non-exhaustion of domestic remedies in this part.

57. Secondly, as to the non-exhaustion objection that the Government did raise explicitly (failure to bring proceedings against polluting undertakings), the Court reiterates that an applicant is required to make normal use of domestic remedies which are effective, sufficient and accessible. It also notes that, in the event of there being a number of remedies which an individual can pursue, that person is entitled to choose a remedy which addresses his or her essential grievance (see *Micallef v. Malta* [GC], no. 17056/06, § 58, ECHR 2009, and *Oluić v. Croatia*, no. 61260/08, § 35, 20 May 2010). The Court observes that in the civil proceedings before the District Court and Regional Court the applicants clearly formulated their main grievances concerning, in particular, industrial air pollution in Lipetsk and the failure of the authorities to protect them, and that both courts examined them accordingly (see paragraphs 10 and 12 above). Therefore, the applicants were not required, according to the Court's case-law concerning the exhaustion of domestic remedies, to institute additional civil proceedings against the relevant companies. The Court accordingly dismisses the Government's objection regarding the non-exhaustion of domestic remedies in respect of all twenty-two applicants.

2. *Applicability of Article 8 of the Convention in the present case*

58. The Government further submitted that there had been no interference with the applicants' Article 8 rights and that that provision was not therefore applicable in the present case. In any case, in their view, the alleged interference had been caused by the private companies solely responsible for the operations and harmful emissions.

59. The applicants submitted that Article 8 was applicable in their case because they had been exposed to continuing industrial pollution as long-time

residents of Lipetsk. In particular, they stated that the pollution from industrial activities in Lipetsk and the alleged failure by the authorities to take the relevant protective measures dated back to the 1960s and 1970s and persisted when Russia ratified the Convention on 5 May 1998 and to the present day. According to the applicants, as evidenced by the judgment of the District Court, since at least 5 May 1998 the concentration of toxic substances in the atmospheric air in all of Lipetsk had constantly exceeded and continued to exceed the safe levels laid down by law, with no part of the town being free from pollution and suitable for their resettlement. They also submitted that the industrial air pollution in Lipetsk had been far worse than it had been in the city of Cherepovets in the case of *Fadeyeva v. Russia* (no. 55723/00, ECHR 2005-IV). The pollution had been so severe that it had made them more vulnerable to various chronic diseases that they had developed, and it adversely affected their right to respect for their private life because they lived in a city where the levels of air pollution were abnormally and consistently high, they used drinking water contaminated with industrial chemicals and consumed agricultural products grown on polluted soils.

60. In the light of the parties' submissions, the Court's task is thus to determine whether Article 8 is applicable. The Court notes that even though the applicants' complaint concerns their continuing exposure to industrial pollution dating back many years ago (see paragraph 59 above), in making its assessment in the present case, the Court can only take into consideration the period after the Convention came into force with respect to Russia, that is to say, after 5 May 1998 (for similar reasoning, see *Fadeyeva*, cited above, §§ 81-82; *Dubetska and Others v. Ukraine*, no. 30499/03, § 82, 10 February 2011; and more recently, *Jugheli and Others v. Georgia*, no. 38342/05, § 65, 13 July 2017).

61. The Court reiterates that in order to fall within the scope of Article 8 of the Convention, complaints relating to environmental nuisances have to show, firstly, that there was an actual interference with the applicant's private sphere, and, secondly, that a level of severity was attained; in other words, whether the alleged pollution was serious enough to affect adversely, to a sufficient extent, the family and private lives of the applicants and their enjoyment of their homes (see *Fadeyeva*, cited above, § 70 (with further references); and *Çiçek and Others v. Turkey* (dec.), no. 44837/07, §§ 29-30, 4 February 2020). The assessment of that minimum level is relative and depends on all the circumstances of the case, such as the intensity and duration of the nuisance and its physical or mental effects on the individual's health or quality of life (see *Dubetska and Others*, cited above, § 105, with further references). While there is no doubt that industrial pollution may negatively affect public health in general and worsen the quality of an individual's life, it is often impossible to quantify its effects in each individual case. As regards health impairment, for instance, it is hard to distinguish the effect of environmental hazards from the influence of other relevant factors,

such as age, profession or personal lifestyle. “Quality of life”, in turn, is a subjective characteristic which hardly lends itself to a precise definition (ibid., § 106).

62. Taking into consideration the evidentiary difficulties usually presented by cases concerning the environment, the Court has had particular, though not exclusive, regard to the findings of the domestic courts and other competent authorities in establishing the factual circumstances of the case, analysing domestic legal provisions determining unsafe levels of pollution and environmental studies commissioned by the authorities (ibid., § 107). The Court has also held that it cannot rely blindly on the decisions of the domestic authorities, especially when they are obviously inconsistent or contradict each other. In such a situation, it has to assess the evidence in its entirety. The Court has furthermore taken account of domestic legal provisions determining unsafe levels of pollution and environmental studies commissioned by the authorities. Further sources of evidence for consideration in addition to the applicant’s personal accounts of events, will include, for example, his medical certificates as well as relevant reports, statements or studies made by private entities (ibid.).

63. The Court further observes that in a number of cases where it found that Article 8 was applicable, the proximity of the applicants’ homes to the sources of pollution was one of the factors taken into account by the Court (see, for example, *Jugheli and Others*, cited above (4.5 metres); *Dubetska and Others*, cited above (420 and 430 metres); *Giacomelli v. Italy*, no. 59909/00, ECHR 2006-XII (30 metres); *Tătar v. Romania*, no. 67021/01, 27 January 2009 (100 metres); *Fadeyeva*, cited above (450 metres); and *López Ostra v. Spain*, 9 December 1994, Series A no. 303-C (30 metres)).

64. In the present case it does not appear from the case material that the applicants in question lived or live in the immediate vicinity of any factory or plant; it appears that their homes are located several kilometres from sites of large industrial undertakings in Lipetsk (see paragraph 5 above). However, in the Court’s opinion, this fact, by itself, is not sufficient to exclude their complaint from application of Article 8, for the following reasons.

65. The Court reiterates that the question whether pollution can be regarded as adversely affecting an applicant’s rights under Article 8 of the Convention depends on the particular circumstances of the case and on the available evidence (see *Çiçek and Others*, cited above, § 30).

66. The Court notes that in the present case the District Court examining the applicants’ case in 2009 established that the applicants were residents of Lipetsk and it expressly acknowledged, without having regard to the distance between their homes and the polluting undertakings, that (i) the pollution in all parts of Lipetsk was higher than the maximum permitted levels of urban pollution established by the relevant national regulations; (ii) the main sources of that pollution were emissions from large-scale steelworks and construction undertakings and (iii) until 2004 Lipetsk had been listed as one

of the Russian cities where air pollution was at its highest (see paragraph 10 above). The District Court thus recognised, on the basis of evidence before it, that the emissions from the industrial undertakings were spreading and reaching the parts of the city where the applicants lived and contributing to serious degradation of air quality in all parts of it above the relevant norms. It also noted the fact that air pollution was the main health risk factor for the residents of Lipetsk (see paragraph 10 above). It therefore cannot be disputed that the applicants, as residents of Lipetsk, were exposed to this pollution and may have been affected by it. The Court has already found Article 8 to be applicable in a case where the applicants lived one kilometre away from a chemical factory and it was established that owing to the factory's geographical position, emissions from it were often channelled to the area where the applicants lived and thus had a direct effect on them (see *Guerra and Others v. Italy* [GC], no. 14967/89, § 57, Reports of Judgments and Decisions 1998-I). In another case, the Court held that the applicants who lived 250 kilometres from the source of pollution could arguably claim under the domestic law protection against damage to the environment caused by the hazardous activities, even though the risk that they ran was not the same as that ran by those living in the immediate vicinity of the plants (see *mutatis mutanda, Okay and Others v. Turkey*, no. 36220/97, §§ 61-69, ECHR 2005-VII). The Court therefore considers that the distance to the source of pollution is one of the relevant factors to be considered in the assessment of whether Article 8 is applicable, among other circumstances of a particular case.

67. The Court furthermore attaches particular importance to the fact that the District Court proceeded to examine the applicants' complaint on the merits, thereby recognising that the applicants had standing under the domestic law to bring proceedings and seek remedies in connection with harm allegedly sustained by them as a result of environmental pollution and they can therefore be considered to have been directly affected by industrial emissions in Lipetsk (see *Okay and Others*, cited above, § 67, and see, for similar reasoning, *Lemke v. Turkey*, no. 17381/02, § 36, 5 June 2007, a case in which Article 8 was applicable where the applicant lived 50 kilometres away from the source of pollution but, similarly to the applicants in the present case, had a right, under the domestic law, to seek recourse against polluting industrial activity in question).

68. The Court further observes that the findings of the District Court in respect of abnormally high levels of pollution in Lipetsk are consistent with the environmental reports drawn up by the regional State bodies showing that concentrations of certain toxic substances emitted by industrial undertakings in the atmospheric air have been detected in all parts of Lipetsk and that they seriously exceeded the maximum permitted levels (MPL) in 1998-2008 (see Appendix II and Appendix III, Table 1 and paragraphs 10, 17, 20 and 22 above). Furthermore, as to the period after 2008 (after the lodging of the

application), data submitted by the applicants and data from publicly available sources indicate that concentrations of toxic substances above the applicable MPL were detected in all parts of Lipetsk (see Appendix III, Tables 3 and 4 and paragraphs 24, 26 and 47 above). The submissions by the Government also confirm that over-concentrations of certain toxic substances (hydrogen sulphide and phenol) were consistently detected in 2009-2019 and that average annual concentrations of benzopyrene above the MPL were reported in 2009-2013 (see Appendix IV, Tables 2, 3 and 4). Russian legislation defines the MPL as the safe concentration of toxic elements (see paragraphs 42 and 43 above and *Fadeyeva*, cited above, § 87). The causal link between the excessive level of pollution and the harmful effects on the applicants' health cannot however be automatically presumed in every case. It is conceivable that, despite the excessive pollution and its proven negative effects on the population of Lipetsk as a whole, the applicants did not suffer any special and extraordinary damage (see *Fadeyeva*, cited above, § 87). The Court notes, in this regard, that the applicants did not, however, produce any medical evidence which could point to any conditions that they had allegedly developed as a result of air pollution in Lipetsk. The Court notes, on the other hand, that the State recognised that the environmental situation in Lipetsk and especially air pollution in the city had a direct influence on morbidity rates for its residents (see paragraphs 24 and 26 above). For example, it was determined that air and water pollution in Lipetsk had been main health risk factors in 1999-2005. It was further established that excessive concentrations of toxic substances in the atmospheric air of Lipetsk had been associated with a significant risk of developing respiratory illnesses and cardiovascular, liver and kidney diseases in 2011. Certain substances, such as benzopyrene, present in excessive amounts in the air of Lipetsk had been found to be carcinogenic (see paragraph 24 above). Even though it cannot be said, owing to the lack of medical evidence, that the industrial air pollution necessarily caused damage to the applicants' health, the Court considers it established, on the basis of the ample evidence submitted by both parties, including the official reports and the domestic courts' decisions, that living in the area marked by pollution in clear excess of applicable safety standards exposed the applicants to an elevated risk to health (see, for similar reasoning, *Cordella and Others v. Italy*, nos. 54414/13 and 54264/15, §§ 104-107, 24 January 2019; *Fadeyeva*, cited above, § 88; *Dubetska and Others*, cited above, § 111; and paragraphs 24 and 26 above).

69. Furthermore, the Court also reiterates that severe environmental pollution may affect individuals' well-being in such a way as to affect their private and family life adversely, without, however, seriously endangering their health (see *López Ostra*, § 51; *Tătar*, §§ 96-97, both cited above; and *Brândușe v. Romania*, no. 6586/03, § 67, 7 April 2009). Thus, even if the applicants' lives or health were not directly threatened, the applicants were forced to live in the environment where the levels of air pollution were

recognised by the domestic authorities as being consistently and abnormally high and they consumed drinking water which was found to have been contaminated with toxic substances. In the present case, the applicants' account of having been exposed to air pollution resulting from excessive industrial emissions and health risks associated with that is consistent with the domestic court's finding concerning unfavourable environmental situation in Lipetsk (see paragraphs 10 and 66 above). Furthermore, the environmental reports drawn by the State bodies and submissions from the parties also confirm that the applicants as long-time residents of Lipetsk were exposed to air pollution above relevant norms, the situation, which, in the Court's opinion, may have led to a deterioration of the applicants' quality of life to such a degree that their right to respect for their private life was adversely affected (see, for similar reasoning, *Di Sarno and Others v. Italy*, no. 30765/08, § 108, 10 January 2012, and *Taşkın and Others v. Turkey*, no. 46117/99, §§ 112-113, ECHR 2004-X).

70. The Court therefore considers that the present case can be distinguished from other cases in which the applicants lived at a considerable distance from a source of pollution and in which the Court found Article 8 to be inapplicable. In particular, in those cases, unlike in the present one, no reliable and relevant data on the nature of industrial emissions, their excessive concentrations and effects on the applicants was provided to the Court (see *Ivan Atanasov v. Bulgaria*, no. 12853/03, § 76, 2 December 2010; *Çiçek and Others v. Turkey*, cited above, §§ 30-32; and *Fieroiu and Others v. Romania* (dec.), no. 65175/10, § 22, 23 May 2017). The Court notes that the findings made in the State environmental reports submitted to it by the applicants were, to a large extent, confirmed by the domestic courts and consistent with their assessment of industrial pollution in Lipetsk.

71. The Court, accordingly, considers that the case material supports the applicants' allegations that the levels of pollution experienced by them for more than twenty years in the course of their everyday lives were not negligible and went beyond the environmental hazards inherent in life in every modern city (see *Hardy and Maile v. the United Kingdom*, no. 31965/07, § 188, 14 February 2012) and that the pollution emanating from the industrial undertakings in Lipetsk has affected, adversely and to a sufficient extent, their private lives during the period under consideration (see paragraphs 59 and 60 above and see, for similar reasoning, *Guerra and Others*, cited above, § 57; *Jugheli and Others*, cited above, §§ 67, 68 and 71; and *Tătar*, cited above, § 97). It accordingly dismisses the Government's objection as to the applicability of Article 8 of the Convention in the present case and holds that the complaint of all twenty-two applicants falls within the scope of that provision.

3. *Conclusion as to admissibility of the complaint*

72. The Court notes that the complaint brought by all twenty-two applicants under Article 8 is neither manifestly ill-founded nor inadmissible on any other grounds listed in Article 35 of the Convention. It must therefore be declared admissible.

B. Merits

1. *The parties' submissions*

73. The applicants claimed that, like in the case of *Fadeyeva*, the authorities had failed to take adequate measures to prevent and minimise industrial air pollution in their case. They submitted that the industrial emissions in excess of established limits for prolonged time without meaningful protection of the authorities had put their health at risk and adversely affected their private life. According to the applicants, sanitary protection zones had never been created around the industrial undertakings in question and the air pollution in all parts of Lipetsk had been consistently high. They further contended that after the judgment in the case of *Fadeyeva* (cited above) had been adopted in 2005, the MPL for nitrogen dioxide had been increased by 2.35 times and the MPL for average daily concentration of phenol had been doubled in 2015. Lastly, the applicants submitted that the domestic courts had not analysed their complaint in accordance with the standard of judicial review developed in the Court's case-law concerning Article 8 complaints about environmental pollution. In particular, even though the courts recognised that the applicants were exposed to excessive pollution, they failed to carry out a balancing exercise under Article 8 and carry out sufficient assessment of whether the measures taken by the authorities were in fact adequate for tackling industrial pollution in Lipetsk.

74. The Government submitted that (i) the applicants lived neither within the boundaries of any sanitary protection zones nor in the immediate vicinity of the industrial undertakings in Lipetsk; (ii) the case of *Fadeyeva* could not be compared to the applicants' situation because they had not requested in the domestic proceedings to be resettled to less polluted districts of Lipetsk and had not submitted any evidence that the pollution had affected their health; (iii) the industrial undertakings mentioned in the applicants' complaint were all privately owned and the alleged interference, in any case, could not be attributed to the State, and (iv) most of the applicants lived in the proximity of stationary air monitoring posts nos. 2 and 8, where the levels of pollution above the MPL had been the lowest. The Government further submitted that Lipetsk and its region had historically become a hub of steel production and that the operation of industrial undertakings had been critical for the economic development of that area and the country in general. Lastly, the Government submitted detailed information on the measures taken by the

authorities to improve the environmental situation in Lipetsk Region, a summary of which is presented in paragraphs 30-41 above, together with charts and information on the quality of the air, water and soil in Lipetsk and its region (see Appendix IV).

2. *The Court's assessment*

(a) **General principles**

75. The Court reiterates that whether the case is analysed in terms of a positive duty on the State to take reasonable and appropriate measures to secure the applicants' rights under paragraph 1 of Article 8 or in terms of an interference by a public authority to be justified in accordance with paragraph 2, the applicable principles are broadly similar. In both contexts regard must be had to the fair balance that has to be struck between the competing interests of the individual and of the community as a whole; and in both contexts the national authorities, who are in principle better placed than an international court to evaluate local needs and conditions, enjoy a certain margin of appreciation in deciding what is necessary for achieving one of the aims mentioned in Article 8 § 2 of the Convention (see *Hatton and Others v. the United Kingdom* [GC], no. 36022/97, § 98, ECHR 2003-VIII, and *Fadeyeva*, § 102, cited above). The scope of this margin of appreciation is not identical in each case but will vary according to the context (see *Buckley v. the United Kingdom*, 25 September 1996, § 74, *Reports of Judgments and Decisions* 1996-IV) and even in relation to the positive obligations flowing from the first paragraph of Article 8, in striking the required balance the aims mentioned in the second paragraph may be of a certain relevance (see *Hatton*, cited above, § 98). At the same time, while it is for the national authorities to make the initial assessment of necessity, the final evaluation as to whether the justification given by the State is relevant and sufficient remains subject to review by the Court (see *Fadeyeva*, cited above, § 102).

76. As in other cases concerning serious industrial pollution, in assessing whether the national authorities performed a balancing exercise in accordance with Article 8 of the Convention, the Court in the present case will examine primarily, although not exclusively, the findings of the domestic courts (see *Ledyayeva and Others v. Russia*, nos. 53157/99 and three others, § 90, 26 October 2006.). As a general rule, where domestic proceedings have taken place, it is not the Court's task to substitute its own assessment of the facts for that of the domestic courts and it is for the latter to establish the facts on the basis of the evidence before them (see *Giuliani and Gaggio v. Italy* [GC], no. 23458/02, § 180, ECHR 2011 (extracts)). However, it reiterates in this connection that, being sensitive to the subsidiary nature of its role and cautious about taking on the role of a first-instance tribunal of fact, the Court nevertheless is not bound by the findings of domestic courts and may depart from them where this is rendered unavoidable by the circumstances of a

particular case (see *Kolyadenko and Others v. Russia*, nos. 17423/05 and five others, § 215, 28 February 2012, with further references; *Dubetska and Others*, cited above, § 84 (with further references); and *Bărbulescu v. Romania* [GC], no. 61496/08, § 129, 5 September 2017). It is the Court's function to review the reasoning adduced by domestic judicial authorities from the point of view of the Convention and to determine whether the national authorities have struck a fair balance between the competing interests of different private actors in this sphere (see *Dubetska and Others*, cited above, § 84, see also *Bărbulescu*, cited above, §§ 125 and 128).

(b) Application of those principles to the present case

77. The present application concerns the alleged failure by the public authorities to take timely and effective action to protect the applicants' right under Article 8 from the alleged third-party breaches and to remedy them (*Moreno Gómez v. Spain*, no. 4143/02, § 57, ECHR 2004-X). The Court observes from the official reports that industrial air pollution was named as the main contributing factor to the overall environmental deterioration in Lipetsk. The authorities issued operating permits to the industrial undertakings in the city, regulated their activities, conducted environmental assessments and carried out inspections. The environmental situation complained of was not the result of a sudden and unexpected turn of events, but was, on the contrary, long-standing and well known and the domestic authorities were aware of the continuing environmental problems and applied certain sanctions in order to improve them (see, for similar reasoning, *Fadeyeva*, cited above, § 90). The Court therefore concludes that the authorities in the present case were in a position to evaluate the pollution hazards and take adequate measures to prevent or reduce them. The combination of these factors shows a sufficient link between the pollutant emissions and the State to raise an issue of the State's positive obligation under Article 8 of the Convention (see *Hatton and Others*, cited above, § 98, and *Fadeyeva*, cited above, § 92). Accordingly, the applicants' complaint should be examined from the standpoint of the State's duty to take reasonable and appropriate measures to secure their rights under Article 8 § 1 of the Convention (see *Fadeyeva*, cited above, § 89).

78. It remains to be determined whether the State, in securing the applicants' rights, has struck, within its margin of appreciation, a fair balance between the competing interests of the applicants and the community as a whole, as required by paragraph 2 of Article 8 of the Convention.

79. The Court notes that one part of the applicants' complaint about the failure of the authorities to regulate the operations of the NLSP and other industrial undertakings was that sanitary protection zones had not been established around the main plants and factories operating in Lipetsk.

80. The Court further notes that the creation of sanitary protection zones within which pollution may officially exceed safe levels is required under

Russian law and that their main purpose is to separate residential areas from sources of pollution. In the absence of an established sanitary protection zone, the industrial undertaking must be closed down or significantly restructured (see *Fadeyeva*, cited above, §§ 116-17).

81. It appears from the judgment of the District Court of 19 January 2009 that at the time when it was adopted, fifty out of sixty-nine undertakings in Lipetsk developed project documentation on the creation of sanitary protection zones and that forty-two of those projects were approved (see paragraph 10 above). Furthermore, it appears from the Government's submissions that in 1999 the municipal authorities formed a working group to oversee the undertakings' progress in creating sanitary protection zones and that that group was disbanded fourteen years later, in 2013, when all the major industrial undertakings had developed projects to create sanitary protection zones (see paragraph 31 above). Thus, for example, Lipetskcement and Lipetsk Quarry Management Company had their projects approved in 2009, the NLSP in 2015 and Svobodniy Sokol Pipe Company in 2019 (see paragraph 30 above). The 2019 and 2020 State reports stated that the Lipetsk CPA continued to supervise the creation of the sanitary protection zones (see paragraph 48 above). It is not however clear from the Government's submissions whether at the time the sanitary protection zones were in fact defined or whether they were still a "work in progress", subject to approval by State regulatory bodies (see paragraph 30 above). No additional information was submitted to the Court on this matter.

82. The Court is mindful of the fact that the creation of a sanitary protection zone is a long process that, like any complex multi-sectoral project, requires financial, logistical, technical resources and dutiful cooperation and efforts of the parties involved in it, including the State authorities. In the present case, it appears that it took the undertakings in Lipetsk a considerable period of time and administrative efforts to develop project documentation and have it approved. Even then, in the Court's view, such delays would not be possible without some inertia on the part of the authorities and their lenience in enforcing the regulations pertaining to the creation of sanitary protection zones. For example, even though the NLSP was named as one of the main pollutants of the atmospheric air in Lipetsk in the early 2000s and has had that status for years, including to the present day (see paragraphs 17 and 26 above), its final project documentation for the creation of a sanitary protection zone was only developed in 2015 and submitted for the approval of the Russian CPA in 2019; no cogent reason was submitted to the Court for this delay. The Court also notes that none of the undertakings in question (except the Svobodny Sokol plant) were ordered to suspend their operations or close for a violation of the relevant environmental regulations or failure to create a sanitary protection zone, as required by domestic law (see paragraph 80 above).

83. The Court notes that the uninterrupted operation of the NLSP and other industrial undertakings was important for the regional and national economy and aimed at achieving a fair balance between the competing interests of the applicants and the community, having regard to the consequences of a severe economic crisis the respondent State had to cope with during the relevant time. Furthermore, the Court reiterates that even where, as in the present case and unlike in cases of direct interference by the State, the domestic authorities did not comply with some aspect of the domestic legal regime, domestic legality is one but not the principal factor to be taken into account in assessing whether the State has fulfilled its positive duty, and the Court has held that the State can choose other means they see as appropriate to ensure “respect for private life” (see *Fadeyeva*, cited above, §§ 96-98).

84. In respect of the latter, the Court notes that little environmental protection and control measures in respect of the NLSP’s operations, in particular, were taken by the national (federal) authorities in 2000-2005 (see paragraphs 10 and 22 above). By contrast, the judgment of the District Court of 19 January 2009, the Government’s relevant observations and the regional reports demonstrate that, from approximately 2004-2005, the municipal authorities were taking measures, in accordance with the relevant legislation, to reduce air pollution in Lipetsk. Those included planned or unannounced assessments, fines, warnings, notices of violations and administrative or disciplinary proceedings (see paragraphs 11, 39 and 40 above). The Court observes that while the District Court recognised that air pollution in all of Lipetsk was high, it listed the comprehensive measures taken by the authorities to tackle it, concluding that the latter had not failed in their obligation to protect the environment (see paragraph 11 above).

85. At the same time the Court observes that the domestic court limited itself to merely establishing that the measures were taken by the authorities, without addressing a central issue in the proceedings of whether those measures were in fact effective and capable of remedying the adverse consequences of industrial pollution for the applicants, in the light of the State environmental reports. For example, it omitted to determine whether the pollution had reduced or was projected to reduce as a result of those measures and whether they were indeed sufficient to prevent further degradation of air quality and to reduce health risks linked to industrial pollution that the applicants, as residents of Lipetsk, were reportedly exposed to. The Court considers that some of the points in this line of inquiry of the domestic court could have been (i) whether, as a result of different inspections or administrative proceedings, the polluting undertakings introduced improvements of their equipment or to their technological processes; (ii) why the permitted emissions levels were not observed by them; and (iii) whether the funding allocated by the authorities for the protection of the environment or the fines imposed on the polluting undertakings were proportionate to the

environmental damage that was inflicted. It does not appear from the text of the domestic court's judgment that the applicants' interest in living in a safe environment was duly taken into consideration and that it had been fairly balanced against the general economic interest of the region.

86. The Court reiterates that it is mindful of its subsidiary role in deciding what is necessary for achieving one of the aims mentioned in Article 8 § 2 of the Convention (see paragraph 76 above), however in the present case, for reasons stated in paragraph 85 above, it appears that it cannot benefit from a prior assessment by the national courts of the balancing of the competing interests at stake and therefore will proceed to such an assessment on its own, taking account of the information available to the domestic court at the material time and all subsequent developments.

87. The Court observes that the data concerning air pollution (see paragraphs 15-23 above and Appendix IV, Table 1) show that before 2009 (when the applicants' case was examined by the District Court) and at least before 2014 (when the level of air pollution was classified as "low" for the first time in many years (see Appendix IV, Table 1)), the measures taken by the authorities did not have a significant effect on the reduction of industrial emissions or concentrations of harmful substances in the atmospheric air of Lipetsk, or other types of pollution. For example, it was noted in the 2007 environmental report that NLSP had been responsible for 88% of the city's total emissions, it had not complied with licensing requirements concerning the quality of its operational wastewater and had not established limits on its emissions in 2000-2005 (see paragraph 22 above). The report further stated that polluted drinking water was the main health risk factor in 2005 and that residents of Lipetsk consumed drinking water polluted with chemicals or heavy metals many times their safe limits (*ibid*). Furthermore, the 2011 regional environmental report identified the continuing use of outdated dust and gas purification equipment by the industrial undertakings as one of the main reasons for the excessive harmful emissions generated by them (see paragraph 24 above). It further stated that the presence of several harmful substances exceeding the permissible levels in the air increased the risks of developing or aggravating respiratory, cardiovascular kidney and liver diseases of residents of Lipetsk and benzopyrene (the excessive concentrations of which were consistently detected in the air of Lipetsk in 2009-2013 (see Appendix IV, Table 4)) had been found to have cancerogenic effect. The Court also notes that the fines imposed on the polluting undertakings with the aim of inducing their management to take the relevant remedial or protective measures appear to have been rather small in the light of the levels of pollution reported, and it cannot be said that they had any punitive and/or expected effect on the polluters (see paragraph 11 above). At the same time, more severe sanctions, such as the closure or suspension of operations, were not routinely imposed, as indicated above. The Court considers that all these factors, seen against the background of data on high

levels of air pollution in 1999-2013, are indicative of insufficiency of the measures taken by the authorities during that period in so far as they aimed at ensuring the private industry compliance with the relevant environmental standards and addressing poor environmental conditions to which the applicants were exposed.

88. Although the exact date would be difficult to define in view of the scope of the problem and the range of measures taken, the Court does not overlook the significant fact that from 2014 onwards the average annual concentrations of the main four of about forty toxic pollutants in Lipetsk (dust, nitrogen dioxide, phenol and formaldehyde) did not exceed the applicable average daily MPL in 2015-2018 (see Appendix III, Table 4) and the average annual concentrations of dust, carbon monoxide, nitrogen dioxide, phenol, formaldehyde, sulphur dioxide and nitric oxide in the atmospheric air of Lipetsk were within the acceptable limits in 2020 (see paragraph 46 above). The average annual concentrations of benzopyrene, which was declared as a potential carcinogen in the 2011 official report, was consistently below the MPL from 2014 onwards (see Appendix IV, Table 4). The Court notes that the MPL was increased by the regulatory bodies in 2017 and 2021 for nitrogen dioxide and in 2017 for phenol and formaldehyde and reduced for dust at the same time (see Appendix II). The Court also takes notes of the information that residents of Lipetsk at present are provided with drinking water of satisfactory quality (see paragraph 37 above).

89. The Court also notes that after 2017 federal environmental protection programmes were adopted and implemented in conjunction with regional programmes. Thus, the Court notes with satisfaction that within the framework of Clean Air project, the NLSP, Lipetskcement and the Lipetsk thermal power station upgraded some of their essential equipment, and each carried out other technical improvements on their premises (see paragraphs 32 and 48 above). Furthermore, subsidies were allocated for the purchase of purification equipment by five asphalt plants (see paragraph 35 above). Some of the other industrial undertakings also carried out improvements of their equipment and introduced reusable energy schemes (see paragraph 25 above). Those specific remedial measures either already made it possible to bring harmful emissions to lower levels or were predicted to contribute to their continuing reduction (see paragraphs 32 and 39 above). The air monitoring system in Lipetsk and its region was upgraded to ensure more accurate and complete measurements of emissions (see paragraph 35 above). Furthermore, a dedicated working group was created in 2017 at regional level to address transport-generated emissions; clean and energy-efficient public buses were bought, and the construction of appropriate infrastructure was planned to ensure their use (see paragraph 36 above). In addition, clean-up work on the watershed adjacent to the NLSP's waste outlet took place, and the construction of additional water treatment facilities began (see paragraph 35 above); essential interventions were made by the regional authorities in

respect of urban, industrial and hazardous waste (see paragraphs 25, 34 and 38 above). Lastly, the Court finds it significant that there has been a substantial increase in the funds allocated by the State for the support of environmental programmes in Lipetsk from about the equivalent of an average of EUR 4 million a year in 2002-2018 to about an average of EUR 37 million a year in 2018-2024, which should, without a doubt, reinforce the implementation of respective the relevant measures and promote further effective management of air quality and the environmental situation in Lipetsk (see paragraphs 11 and 35 (2002-2018 funding) and 32 (2018-2024 funding) above).

90. The Court reiterates that it is not its task to determine what precise practical steps should have been taken in the present situation to reduce pollution in a more efficient way. However, it is within its jurisdiction to assess whether the State approached the problem with due diligence and gave consideration to all the competing interests (see *Fadeyeva*, cited above, § 128). In view of all the above factors and in the light of the information on dynamics of the air pollution in 1999-2013 and 2014-2021, the Court considers that the measures taken jointly in Lipetsk in 2014 and onwards by the federal and regional authorities and the private industrial sector under the State monitoring have established and promoted a gradual shift to lower concentrations of harmful emissions in the atmospheric air and a reduction in water and soil pollution (see paragraphs 32 (v) - 37 above).

91. The Court accordingly finds that the entirety of the material submitted by the parties and examined by the Court allows it to conclude that, at least between 5 May 1998 and the end of 2013, the authorities did not diligently address the unfavourable environmental situation in Lipetsk and thus failed in their positive obligation to protect the applicants' right to respect for private life, safeguarded by Article 8 of the Convention, during that period.

92. The Court is prepared to accept that the measures and policies implemented by the respondent State after 2013, have been more targeted (especially from 2018) and have led to tangible progress in recent years in reducing the levels of industrial emissions and improving the air quality and environmental conditions in Lipetsk. That being so, the Court is nevertheless mindful of the environmental pollution that remains to be addressed, such as, for example, the short-term peak concentrations of toxic substances exceeding the MPL (see Appendix III, Table 4 and Appendix IV, Tables 2 and 3). Furthermore, the 2019 State report shows, *inter alia*, that (i) Lipetsk was among three most polluted parts of the region, (ii) air pollution was identified as the leading health risk factor for residents and (iii) there was a decline in the quality of air in Lipetsk in recent years (see paragraph 26 above). In the light of this information, the Court considers that despite improvements identified above, the industrial air pollution in Lipetsk has not been sufficiently curbed, so as to prevent that the residents of the city be exposed to related health risks. The domestic authorities therefore failed to

strike a fair balance in carrying out their positive obligations to secure the applicants' right to respect for their private life.

93. The Court accordingly finds that there has been a violation Article 8 of the Convention in respect of all applicants.

III. APPLICATION OF ARTICLE 41 OF THE CONVENTION

94. Article 41 of the Convention provides:

“If the Court finds that there has been a violation of the Convention or the Protocols thereto, and if the internal law of the High Contracting Party concerned allows only partial reparation to be made, the Court shall, if necessary, afford just satisfaction to the injured party.”

A. Damage

95. The applicants each claimed between 41,000 and 75,000 euros [EUR] in respect of non-pecuniary damage.

96. The Government claimed that no compensation should be awarded to the applicants and that in any case their claims were unsubstantiated and excessive.

97. The Court considers that the industrial air pollution and the failure of the authorities to regulate industrial operations between 5 May 1998 and the end of 2013 had an adverse effect on the applicants' right to respect for their private life which cannot be compensated for by the mere finding of a violation; however, the sums claimed by them appear to be excessive. Making its assessment on an equitable basis and having regard to the nature of the violation found, the Court awards the applicants EUR 2,500, each, in respect of non-pecuniary damage, plus any tax that may be chargeable on that amount.

B. Costs and expenses

98. The applicants claimed EUR 37 each in respect of costs and expenses. Regard being had to the documents in its possession and the relevant case-law, the Court awards EUR 10 to the applicants, each, under this head.

C. Default interest

99. The Court considers it appropriate that the default interest rate should be based on the marginal lending rate of the European Central Bank, to which should be added three percentage points.

FOR THESE REASONS, THE COURT

1. *Declares*, by a majority, the application admissible in respect of all applicants;
2. *Holds*, by six votes to one, that there has been a violation of Article 8 of the Convention in respect of all applicants;
3. *Holds*, by four votes to three, that the respondent State is to pay each applicant, within three months from the date on which the judgment becomes final in accordance with Article 44 § 2 of the Convention, EUR 2,500 (two thousand five hundred euros), plus any tax that may be chargeable, in respect of non-pecuniary damage, to be converted into the currency of the respondent State at the rate applicable at the date of settlement;
4. *Holds*, by six votes to one, that the respondent State is to pay each applicant, within three months from the date on which the judgment becomes final in accordance with Article 44 § 2 of the Convention, EUR 10 (ten euros), plus any tax that may be chargeable to the applicants, in respect of costs and expenses, to be converted into the currency of the respondent State at the rate applicable at the date of settlement;
5. *Holds*, by six votes to one, that from the expiry of the above-mentioned three months until settlement simple interest shall be payable on the above amounts at a rate equal to the marginal lending rate of the European Central Bank during the default period plus three percentage points;
6. *Dismisses*, unanimously, the remainder of the applicants' claim for just satisfaction.

Done in English, and notified in writing on 11 October 2022, pursuant to Rule 77 §§ 2 and 3 of the Rules of Court.

Olga Chernishova
Deputy Registrar

Georges Ravarani
President

PAVLOV AND OTHERS v. RUSSIA JUDGMENT

In accordance with Article 45 § 2 of the Convention and Rule 74 § 2 of the Rules of Court, the following separate opinions are annexed to this judgment:

- (a) Concurring opinion of Judge Serghides;
- (b) Concurring opinion of Judge Krenc;
- (c) Partly dissenting opinion of Judges Elósegui and Roosma;
- (d) Dissenting opinion of Judge Lobov.

G.R.
O.C.

CONCURRING OPINION OF JUDGE SERGHIDES

I. Introduction

1. This case concerns the applicants' complaint that severe industrial pollution in Lipetsk had endangered their health and impaired the quality of their life for many years and that the State had failed to take effective measures in that regard with the consequence that there had been a violation of their right to respect for their private life under Article 8 of the Convention in respect of all applicants.

2. Though I am in entire agreement with the judgment and its operative part for finding a violation of Article 8 in respect of all the applicants, I decided to write this concurring opinion in order to go deeper into the source or foundation of the environmental protection under Article 8 and to explain the relationship of such environmental protection with the right to respect for one's private life under Article 8.

3. It is to be noted that I am adopting the same legal analysis, regarding the right to respect for one's private life under Article 8 and the environmental protection guaranteed through that right, as in my concurring opinion appended to the judgment in *Kotov and Others v. Russia* (nos. 6142/18 and 13 others, 11 October 2022), delivered on the same day as the present judgment.

II. Interrelationship and interdependence between human rights and environmental protection

4. "In a real sense, all human rights are vulnerable to environmental degradation, in that the full enjoyment of all human rights depends on a supportive environment"¹. It is apparent that an unhealthy or generally degraded environment does not allow the right to respect for one's private life to be exercised and enjoyed effectively. Private life cannot be protected effectively if it is not shielded against environmental hazards. Stated even more accurately, a healthy environment is a "precondition" for the full enjoyment of the right to respect for one's private life, as is the case for almost any other substantive right protected by the Convention². This immediately shows the close relationship and linkage between an environment that is

¹ See paragraph 19 of the UN Report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox, A/HRC/22/43, 24 December 2012.

² See also paragraph 6 of "The Strasbourg Principles of International Environmental Human Rights Law – 2022", in *Journal of Human Rights and the Environment*, vol. 13, special issue, September 2022, 195 at p. 196. These Principles were drafted by a group of human rights and environmental law experts who were brought together by the Conference "Human Rights for the Planet" held in 2020 at the European Court of Human Rights in Strasbourg and by the said Special Issue of the *Journal of Human Rights and the Environment*.

unhealthy, non-viable or unsustainable and the right protected under Article 8. The protection of the environment and human rights are thus closely interconnected. In a very recent recommendation, issued shortly after the present judgment was adopted, the Council of Europe’s Committee of Ministers urged member States to “reflect on the nature, content and implications of the right to a clean, healthy and sustainable environment and, on that basis, actively consider recognising at the national level this right as a human right that is important for the enjoyment of human rights and is related to other rights and existing international law” and to “take adequate measures to protect the rights of those who are most vulnerable to, or at particular risk from, environmental harm”³.

As stated by the Human Rights Council in the United Nations General Assembly in 2018⁴:

“Human beings are part of nature, and our human rights are intertwined with the environment in which we live. Environmental harm interferes with the enjoyment of human rights, and the exercise of human rights helps to protect the environment and to promote sustainable development.”

In this connection, John H. Knox and Ramin Pejan observed⁵:

“In the last two decades, however, it has become more and more evident that human rights and environmental protections have a fundamental interdependence: A healthy environment is necessary for the full enjoyment of human rights and, conversely, the exercise of rights (including rights to information, participation, and remedy) is critical to environmental protection.”

5. In *Fredin v. Sweden* (No. 1) (no. 12033/86, § 48, 18 February 1991), it was held that “[t]he Court recognises for its part that in today’s society the protection of the environment is an increasingly important consideration”. As

³ Recommendation of the Committee of Ministers to member States on human rights and the protection of the environment (adopted by the Committee of Ministers on 27 September 2022 at the 1444th meeting of the Ministers’ Deputies).

⁴ See paragraph 1 of the UN Framework Principles on Human Rights and the Environment (2018), A/HRC/37/59, Annex to the Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of safe, clean, healthy and sustainable environment, available at:

<https://www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/FrameworkPrinciplesReport.aspx>

Also, the United Nations General Assembly A/76/L.75 of 26 July 2022 “[n]otes that the right to a clean, healthy and sustainable environment is related to other rights and existing international law.”

⁵ See John H. Knox and Ramin Pejan in their introduction to John H. Knox and Ramin Pejan (eds), *The Human Right to a Healthy Environment*, (Cambridge University Press, 2018), 1. See also on the link between human rights and the environment, Natalia Kobylarz, “Balancing its Way Out of Strong Anthropocentrism: Integration of ‘Ecological Minimum Standards’ in the European Court of Human Rights ‘Fair Balance’ Review”, in *Journal of Human Rights and the Environment*, vol. 13, special issue, September 2022, 16, at pp. 33-37.

rightly observed by Christina Voigt⁶, the Court “has acknowledged the link between the protection of the environment and human rights by describing it as ‘natural’ that the right to private and family life under Article 8 can be affected by environmental pollution ...”⁷. She adds that the Court “accepts that a healthy environment is a prerequisite for the realization of other human rights, without which the ECHR rights cannot be ensured”⁸. That there is a clear and explicit growing link between a healthy environment and human rights is also acknowledged by the European Committee of Social Rights in *Marangopoulos Foundation for Human Rights (MFHR) v. Greece* (Complaint No. 30/2005, paragraphs 194 and 195, 6 December 2006), where the Committee also highlights that the European Social Charter⁹ is a living instrument.

III. Whether there is a right to a healthy, clean, safe and sustainable environment under the Convention

6. Unlike the Charter of Fundamental Rights of the European Union of 2000¹⁰, there is no explicit or independent or autonomous right to a healthy environment under the Convention, a text which is fifty years older than the former. A healthy environment could and should, however, be secured through the protection of the right to private life and other Convention rights in an indirect way. As Ole W. Pedersen remarked¹¹:

“...the Court’s environmental case law now establishes that where acts of physical pollution attain a certain level of severity, to the extent that there is an ‘actual interference with the applicant’s private sphere’ application of the Convention is triggered.”

7. Although there is no such explicit right under the Convention, it has been argued by Irmina Kotiuk, Adam Weiss and Ugo Taddei that the Court “de facto recognises the right to a safe and healthy environment”¹². Similarly,

⁶ “The Climate Change Dimension of Human Rights: Due Diligence and States’ Positive Obligations”, in *Journal of Human Rights and the Environment*, vol. 13, special issue, September 2022, pp. 152 *et seq.*

⁷ *Ibid.*, p. 159.

⁸ *Ibid.*

⁹ See Article 11 of the European Social Charter.

¹⁰ See Article 37 of the Charter of Fundamental Rights of the European Union which provides that: “A high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development.”

¹¹ Ole W. Pedersen, “The European Court of Human Rights and International Environmental Law”, in John H. Knox and Ramin Pejan (eds), *The Human Right to a Healthy Environment*, cited above, 86, 88. The passage above is based on *López Ostra v. Spain*, 9 December 1994, § 51, Series A no. 303-C.

¹² See Irmina Kotiuk, Adam Weiss and Ugo Taddei, “Does the European Convention on Human Rights Guarantee a Human Right to Clean and Healthy Air? Litigating at the Nexus Between Human Rights and the Environment – The Practitioner’s Perspective”, in *Journal*

Natalia Kobylarz observes that, though the Convention “does not guarantee a substantive right to healthy environment and none of its provisions are specifically designed to ensure the general protection or the preservation of nature ... the link between the environment and human rights intrinsically exists”¹³.

8. Indeed, the Convention has been interpreted by the Court as a living instrument to be adapted to present-day conditions¹⁴, such as to include, apart from negative obligations, also positive obligations relating to the protection of the environment¹⁵. Consequently, like a number of other Convention provisions, Article 8 has been given an evolutive interpretation by the Court so as to encompass environmental protection.

IV. The emergence of a sub-right of an environmental character under Article 8

9. Here I will seek to explain what I believe is the derivation, foundation and nature of a sub-right of an environmental character under Article 8 and the form and place it takes within this provision.

10. I have extensively submitted elsewhere (in other separate opinions and in academic literature) that the principle of effectiveness or otherwise the principle of effective protection of human rights, which is the overarching principle of the Convention, underlying all Convention provisions safeguarding human rights, is not only a method or tool of interpretation, but also a norm of international law embodied in each of those provisions.

11. It is my further submission that the foundation of the environmental protection in the Convention is the norm of effectiveness enshrined in a Convention provision. It is the said norm of effectiveness, as a fundamental matrix or source which nurtures, generates and develops a right, in this case the Article 8 right, taking into account the object and purpose of the Convention¹⁶, in particular of Article 8, and which right also necessitates and entails the implicit sub-right to a healthy environment which is indispensable for the exercise and enjoyment of the right to respect for one’s private life. This sub-right of Article 8 is an implied or implicit or “emergent human

of Human Rights and the Environment, vol. 13, special issue, September 2022, 122, pp. 131-134.

¹³ See Natalia Kobylarz, “The European Court of Human Rights: An Underrated Forum of Environmental Litigation”, in Helle Tegner Ankder and Birgitte Egelund Olsen (eds), *Sustainable Management – Legal Instruments and Approaches* (Intersentia, Cambridge, 2018), 99, at p. 100.

¹⁴ *Ibid.*, at pp. 107-108.

¹⁵ See on States’ positive obligations to protect the environment and human rights, Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd, A/75/161, 15 July 2020.

¹⁶ See Article 31 § 1 of the Vienna Convention on the Law of Treaties of 1969.

right”¹⁷ of an environmental character. It is an implied right in the same way as the right of access to a court is an implied, ancillary or secondary right in relation to the right to a fair trial under Article 6 of the Convention (see *Golder v. the United Kingdom*, no. 4451/70, 21 February 1975 (Plenary)). The emergence of the sub-right in question under Article 8, from the norm of effectiveness, can be materialised through a broad, evolutive and dynamic interpretation given by the Court, aided by the living instrument doctrine adapting the Convention to present-day conditions and the developments of international law and the doctrine of positive obligations, according to which member States must take the necessary steps in order to ensure the exercise and enjoyment of the right to live a private life free from environmental hazards. These two doctrines are, in my view, capacities or functions or dimensions of the principle of effectiveness as a norm of international law, vested with a particular mission to assist in the development of the norm of effectiveness and to ensure that the Convention rights are always practical and effective. On the other hand, the principle of effectiveness as a method of interpretation can assist the norm of effectiveness in its pragmatic application in the particular circumstances of a case. The principle of effectiveness in both of its capacities, namely, as a norm of international law and as method of interpretation, may enable the flourishing of the “green” and moral dimension¹⁸ of the right concerned.

12. Without the expansion of the norm of effectiveness and the development of this sub-right, one aspect of the right to respect for one’s private life would be missing, completely unprotected, and in danger from environmental risks. Therefore this sub-right or indirect right deriving from the norm of effectiveness is extremely important for the protection of the environment. As Natalia Kobylarz insightfully argues¹⁹,

“Strasbourg’s system of indirect protection of the environment can ensure, on the one hand, a more adequate response to the human-rights claims of today’s society and, on the other hand, a more meaningful protection of the natural environment”.

13. It must be clarified that, by being expanded so as to protect the right in question from present and future risks, the norm of effectiveness and the right

¹⁷ A term used by Richard P. Hiskes, *Human Right to a Green Future – Environmental Rights and Intergenerational Justice* (Cambridge University Press, 2009, repr. 2014), at pp. 26-47.

¹⁸ Or “moral reading”, to use the term of Ronald Dworkin, “Law’s Ambitions for Itself” (1985), 71(2) *Virginia Law Review* 173, 176, 178, 181-182 and 185; Ronald Dworkin, *Law’s Empire* (Bloomsbury, 1986, Hart Publishing, 2021), 411; Ronald Dworkin, *Freedom of Law: The Moral Reading of the American Constitution* (Harvard University Press, 1997). See also on moral considerations on a human right to a healthy environment, in César Rodríguez-Garavito, “A Human Right to a Healthy Environment? Moral, Legal, and Empirical Considerations”, in John H. Knox and Ramin Pejman (eds), *The Human Right to a Healthy Environment*, cited above, pp. 155 *et seq.*

¹⁹ Natalia Kobylarz, “Balancing its Way Out of Strong Anthropocentrism: Integration of ‘Ecological Minimum Standards’ in the European Court of Human Rights ‘Fair Balance’ Review”, cited above, at p. 23.

concerned remain the same. The expansion of the norm of effectiveness so as to protect the right to be free from pollution, noise and other environmental problems should also be examined in the light of international law and can be influenced by the advancement of environmental conscience in Europe and globally, which is a value of civilization closely bound up with respect for human dignity. And dignity underpins every human right, including, of course, Article 8.

14. The norm of effectiveness, underlying environmental protection under Article 8, is not to be found only within the “right” itself, but also within the scope of the “victim” of an alleged violation (see Article 34 of the Convention dealing with individual applications). According to the Court’s case-law the term “victim” has an autonomous meaning (see *Gorraiz Lizarraga and Others v. Spain*, no. 62543/00, § 35, 27 April 2004), and like the term “right” it should be interpreted broadly and in an evolutive manner. The term “victim” should be read in conjunction with the word “everyone” in Article 8 § 1 of the Convention, so as to include without discrimination every person who is a victim of a violation of an environmental character, like the applicants in the present case. It is, in my view, the principle of effectiveness as a norm of international law and the interpretation made by the Court which broaden the scope of both the “right” and the “victim” so as to protect them from any environmental hazards.

15. For the purpose of finding a violation of the right to respect for one’s private life, there must always be a causal link between the environmental pollution or other environmental hazard and its harmful effects on an applicant’s health, like those which affected the applicants in the present case (see paragraph 68 of the judgment), or on an applicant’s well-being or quality of private life and home²⁰. Consequently, the Court rightly found a violation of Article 8 in respect of all applicants (see paragraph 93 of the judgment and point 2 of its operative provisions).

16. It is my submission that the norm of effectiveness, which is included in Article 8, is not only placed within its first paragraph, but is enshrined in the said Article in its totality, to the effect that, not only should the right to respect for one’s private life be interpreted broadly, so as to include a sub-right of an environmental character, but also: (a) any interference with the right is to be construed narrowly, and (b) in case of doubt in the fair balance test between the right and the interference (although such doubt was not present in the instant case), the right should prevail over the interference: *in dubio in favore pro jure/libertate/persona*. In the same vein, when the case is analysed in terms of a positive duty or obligation on the State to take reasonable and appropriate measures to secure an applicant’s rights under

²⁰ See *López Ostra v. Spain*, cited above, § 51 *in fine*; *Taşkın and Others v. Turkey*, no. 46117/99, § 113, ECHR 2004-X; *Tătar v. Romania*, no. 67021/01, § 97, 27 January 2009; *Dzemyuk v. Ukraine*, no. 42488/02, § 82, 4 September 2014; and *Hardy and Maile v. the United Kingdom*, no. 31965/07, § 189, 14 February 2012.

Article 8 § 1, in case of doubt in the fair balance test, the right should prevail over any other competing interests.

17. In my view, the part of the norm of effectiveness which concerns environmental protection, namely, the said sub-right, is not yet a *jus cogens* norm²¹, but it will not be too long before it is developed and becomes such a norm, considering the negative, sometimes cataclysmically negative, direct and indirect implications of climate change – and, of course, the other serious environmental hazards which plague the world – on the effective enjoyment of all human rights²².

V. The need for a new protocol

18. It must be underlined, however, that no new human right can be created under the Convention without the enactment of a new protocol and the jurisdiction of the Court is limited to interpreting and applying the rights guaranteed by the provisions of the Convention and its Protocols (see Article 32 § 1 of the Convention). In this connection, as observed by Natalia Kobylarz, “it is obvious that the ECHR has its limits in that it does not stipulate a substantive right to a healthy environment and thus does not provide the Court with infinite jurisdiction ...”²³.

19. Consequently, despite the evolutive case-law of the Court, there is a need for the inclusion of a substantive right to a healthy, clean, safe and sustainable environment in the Convention, by a way of a new protocol.

20. In 2009 the Council of Europe’s Parliamentary Assembly recommended that its Committee of Ministers draft an additional protocol to the Convention in which a right to a healthy environment would be incorporated. Regrettably, however, the Committee did not vote in favour of this, as it was argued that the Convention system had already indirectly contributed to the protection of the environment by the evolving case-law of the Court²⁴. Fortunately, a similar Resolution was passed again by the Parliamentary Assembly at the end of September 2021²⁵. However, no

²¹ See on whether a right to a healthy environment in international law is a *jus cogens* norm in Louis J. Kotsé, “In Search of a Right to a Healthy Environment in International Law: *Jus Cogens* Norms”, in John H. Knox and Ramin Pejman (eds), *The Human Right to a Healthy Environment*, cited above, pp. 136 *et seq.*

²² See the United Nations General Assembly A/76/L.75 of 26 July 2022.

²³ See Natalia Kobylarz, “The European Court of Human Rights: An Underrated Forum of Environmental Litigation”, *op. cit.*, at p. 118.

²⁴ See “Drafting an additional protocol to the European Convention on Human Rights concerning the right to a healthy environment”, Reply to Recommendation, Doc. 12298, 19 June 2010, available at:

<https://pace.coe.int/en/files/24830/html>, para. 9.

²⁵ See 2021 Council of Europe Parliamentary Assembly Resolution No 2396 (Anchoring the right to a healthy environment: need for enhanced action by the Council of Europe) 29 September 2021, which calls for the recognition of the right to a healthy environment also in its ecocentric dimension, (intrinsic value of nature, general protection of the environment,

decision has yet been taken. It is hoped that the Committee of Ministers will recognise this time the necessity and urgency of adopting such an additional protocol so as to ensure that environmental protection is institutionalised under the Convention.

21. Such an explicit provision in the Convention would be an incentive for stronger domestic environmental laws and a more protection-focused approach by the domestic courts, but, most importantly, it would provide broader and more complete Convention protection of the potential right secured by the Court.

22. It just so happened that the present case could receive the protection of the Convention without a new protocol being enacted. However, Natalia Kobylarz has pointed out, by referring to a number of cases, that “the lack of a formal legal basis, has led the Court to reject applications that were seeking a general protection of the environment or nature”²⁶. Thus the failure to secure such protection can only be resolved by an additional protocol.

VI. Conclusion

23. I have decided to follow the present judgment, having in mind not only the reasoning developed there, but also the above legal analysis. In order to ensure effective interpretation, by giving a “green” reading to Article 8 and other Convention provisions, it is a prerequisite that there should be an understanding of the interrelationship and interdependence between human rights and environmental protection, as well as an understanding of the source of this protection within Article 8, and how it can be developed in the future by the Court. This opinion humbly attempts to contribute towards these ends, and, at the same time, seeks to take a step further as to the legal basis, foundation and source of the environmental protection under Article 8 of the Convention.

see particularly paragraph 6). See for more details on this Resolution: “The right to a healthy environment: PACE proposes the draft of a new protocol to the European Convention on Human Rights”, available at:

<https://pace.coe.int/en/news/8452/the-right-to-a-healthy-environment-pace-proposes-draft-of-a-new-protocol-to-the-european-convention-on-human-rights->

For other ecocentric instruments, see the Council of Europe’s 1979 Bern Convention on the Conservation of European Wildlife and Natural Habitats, Preamble; 1982 World Charter for Nature (Annex, Convinced that: (a)); 1992 UN Convention on Biological Diversity (Preamble); 2000 International Covenant on Environment and Development from the International Union for Conservation of Nature (Article 2); and 2000 Earth Charter (Article 1).

²⁶ See Natalia Kobylarz, “International Conference on Human Rights and Environmental Protection” (Council of Europe, 2020), p. 19.

CONCURRING OPINION OF JUDGE KRENC

1. I agree with the finding of a violation of Article 8 of the Convention in this case.

2. I regret, however, that the judgment does not mention any international standards relating to the protection of the environment.

3. Referring to international sources is not purely cosmetic. The Court has repeatedly said that the Convention cannot be interpreted in a vacuum (see *Magyar Helsinki Bizottság v. Hungary* ([GC], no. 18030/11, § 123, 8 November 2016). The Court usually takes into account elements of international law in its reasoning (see for example, in so far as it concerns the respondent State, *Sergey Zolotukhin v. Russia* [GC], no. 14939/03, ECHR 2009; *Konstantin Markin v. Russia* [GC], no. 30078/06, ECHR 2012; *Khamtokhu and Aksenchik v. Russia* [GC], nos. 60367/08 and 961/11, 24 January 2017; and *Volodina v. Russia*, no. 41261/17, 9 July 2019). It refers in particular to international instruments (*hard law* but also *soft law*) which appear sufficiently indicative of a common standard between the member States (see on this interpretative approach *Demir and Baykara v. Turkey* ([GC], no. 34503/97, ECHR 2008, especially §§ 68, 76, 85-86, and *Bayatyan v. Armenia* [GC], n°23459/03, ECHR 2011).

4. In my view, the lack of any references to international sources is all the more regrettable as the present case addresses the environmental issue, which is a global one. It is true that the case concerns a national situation but deals with a problem (air pollution and general degradation of the environment) which is of concern to the whole international community.

5. As President Spano has observed, “two elements, in particular, have permitted the Court to develop its current environmental case-law in a manner which to some extent has already accepted that the human rights of the individual person, as protected by the substantive provisions of the Convention, cannot be completely divorced from his ecological surroundings. These two elements are the living instrument doctrine and developments in international law as analysed through the principle of harmonious interpretation.”¹

6. In this regard, it seems difficult in my view to overlook the major and recent developments at international level. Among these developments, the Resolution adopted on 28 July 2022 by the UN General Assembly (A/76/L.75) should be noted. This Resolution expressly recognises “the right to a clean, healthy and sustainable environment as a human right”. Moreover, it clearly confirms the link between the protection of the environment and human rights, by stating that “the impact of climate change, the unsustainable management and use of natural resources, the *pollution* of air, land and water,

¹ “Should the European Court of Human Rights become Europe’s environmental and climate change court?”, Conference on Human Rights for the Planet, Strasbourg, 5 October 2020.

the unsound management of chemicals and waste, the resulting loss of biodiversity and the decline in services provided by ecosystems interfere with the enjoyment of a clean, healthy and sustainable environment and that environmental damage has negative implications, both direct and indirect, for the effective enjoyment of all human rights” (emphasis added). In other words, human rights and the environment are intrinsically interrelated, as the Court has previously found^{2 3}.

7. It must be highlighted that *all* the member States of the Council of Europe voted in favour of this Resolution, whereas the respondent State abstained. This denotes that there is a clear measure of common ground between the member States. Therefore, this Resolution is, in my view, an important and recent element that the Court “can and must take into account” (*Demir and Baykara*, cited above, §§ 85-86).

8. It reflects a significant evolution since the Declaration of Stockholm adopted fifty years ago (1972), which considered the protection of the environment to be a major international concern. It could be added that the UN Human Rights Council had previously adopted, on 8 October 2021, a Resolution which “recognises the right to a safe, clean, healthy and sustainable environment as a human right that is important for the enjoyment of human rights” (Resolution 48/13).

9. Obviously, these international instruments – many others could be mentioned – do not bind the Court, whose role is to ensure respect for the Convention by the Contracting States (Article 19). However, they do exist and should at least have been mentioned in a section relating to relevant elements of international law, in accordance with the Court’s usual practice (see for example, as regards the environmental issue, *Öneryıldız v. Turkey* [GC], no. 48939/99, §§ 59-62, 30 November 2004; *Mangouras v. Spain* [GC], no. 12050/04, §§ 33-55, 28 September 2010; *Taşkın and Others v. Turkey*, no. 46117/99, §§ 98-100, ECHR 2004-X; *Tătar v. Romania*, no. 67021/01, 27 January 2009; *Di Sarno and Others v. Italy*, no. 30765/08, §§ 71-77, 10 January 2012; and *Association Burestop 55 and Others v. France*,

² See *López Ostra v. Spain*, 9 December 1994, § 51, Series A no. 303-C, where the Court ruled that severe environmental pollution may affect individuals’ well-being and prevent them from enjoying their rights enshrined by Article 8 of the Convention.

³ See also HCR, *Daniel Billy et al. v. Australia*, views of 21 July 2022, communication 3624/19, § 8.3: “The Committee further recalls that the obligation of States parties to respect and ensure the right to life extends to reasonably foreseeable threats and life-threatening situations that can result in loss of life. States parties may be in violation of article 6 of the Covenant even if such threats and situations do not result in the loss of life. The Committee considers that such threats may include adverse climate change impacts, and recalls that environmental degradation, climate change and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life. The Committee recalls that States parties should take all appropriate measures to address the general conditions in society that may give rise to direct threats to the right to life or prevent individuals from enjoying their right to life with dignity.”

no. 56176/18, §§ 42-47, 1 July 2021). They are also relevant for defining the States' margin of appreciation, which can no longer simply relate to a conflict between the protection of the country's economic system and the protection of the environment.

10. The Court is an international court and a court of human rights. As such, it must take into account the evolution of international law when it is called upon to interpret the Convention in the light of present-day conditions and to ensure the observance of its provisions⁴.

⁴ See *Demir and Baykara*, cited above, § 68, which emphasises that the Court “has always referred to the ‘living’ nature of the Convention, which must be interpreted in the light of present-day conditions, and that it has taken account of evolving norms of national and international law in its interpretation of Convention provisions”.

PARTLY DISSENTING OPINION OF JUDGES ELÓSEGUI AND ROOSMA

1. We voted against awarding the applicants a sum in respect of non-pecuniary damage. Although Article 8 of the Convention has been violated, we are of the opinion that the nature of the case – namely, large-scale and long-lasting industrial pollution covering a city of half a million people, involving no established specific damage to the health of the applicants – does not warrant the granting of such an award.

2. Moreover, in the present case several applicants failed to appeal against the District Court’s judgment. The judgment states that they were absolved from the obligation to exhaust domestic remedies because they were in a very similar situation to the other applicants who had lodged such an appeal and were affected in the same way by those proceedings (see paragraph 56 of the judgment). It would not be surprising were the Court to find in similar future cases that the applicants were not required to attempt national remedies at all, these having already proved ineffective (compare, albeit in a different context, *P.T. v. the Republic of Moldova*, no. 1122/12, 26 May 2020). In such a scenario, we could find ourselves with hundreds of thousands of potential applicants, each claiming thousands of euros directly before the Court in respect of non-pecuniary damage as a result of failures in countries’ environmental policies. The Court’s awards in respect of non-pecuniary damage in such instances would not be dissimilar to taxation and distribution of benefits, an area in which the Court lacks legitimacy and for which it was not created. It goes without saying that environmental measures are often costly; dispersing monies collected through taxation to individuals as awards for non-pecuniary damage, rather than using them to implement targeted environmental measures, does not seem to be the most efficient way to improve the living conditions of those affected.

3. We are not completely opposed to making awards in respect of non-pecuniary damage to victims of environmental pollution (see, for example, *Kotov and Others v. Russia*, nos. 6142/18 and 13 others, not yet final, adopted by the Court on the same date as the present case). Proximity to the source of pollution, its intensity and identifiable effects on specific victims are among the factors to be taken into consideration in assessing compensation

DISSENTING OPINION OF JUDGE LOBOV

1. The present case continues, on its face, a long journey of environment-related adjudication under Article 8 that has been steadily developed by this Court for almost 30 years (see, for example, *López Ostra v. Spain*, 9 December 1994, Series A no. 303-C; *Khatun and 180 Others v. the United Kingdom* (dec.), no. 38387/97, 1 July 1998; *Guerra and Others v. Italy*, 19 February 1998, Reports of Judgments and Decisions 1998-I; *Moe and Others v. Norway* (dec.), no. 30966/96, 14 December 1999; *Fadeyeva v. Russia*, no. 55723/00, ECHR 2005-IV; *Băcilă v. Romania*, no. 19234/04, 30 March 2010; *Apanasewicz v. Poland*, no. 6854/07, 3 May 2011; *Jugheli and Others v. Georgia*, no. 38342/05, 13 July 2017; *Dubetska and Others v. Ukraine*, no. 30499/03, 10 February 2011; and *Cordella and Others v. Italy*, nos. 54414/13 et 54264/15, 24 January 2019).

2. In reality, however, this Chamber judgment has gone way beyond everything that has been decided so far in the area, thus extending the scope of positive obligations under Article 8 to somewhat unrealistic limits. The majority have decided, in essence, that the mere fact of exceeding the national permissible standards of air pollution in a large industrial city is sufficient to find the State concerned in violation of its positive obligations to protect the right to respect for private life of its inhabitants (see paragraph 92 of the judgment). In addition, some of the applicants were allowed to proceed even without properly exhausting domestic remedies. The judgment has thus radically raised the Convention standard, so that any inhabitant of a European city where national standards of air pollution happen to be exceeded may automatically be considered a victim of a violation of the Convention and entitled to substantial compensation for damage.

3. The situation looks, in my view, untenable from both the legal and practical perspectives. While I have agreed with the finding that the applicants' private life was affected enough by harmful industrial emissions to bring Article 8 into play (see paragraphs 60-71 of the judgment), I fundamentally disagree with the majority's decision to do away with the requirement of exhaustion of domestic remedies in respect of fifteen applicants and their insufficient consideration of the delicate balance between the competing environmental, economic and social interests involved in the present case.

I. Non-exhaustion of domestic remedies

4. It is common ground that fifteen of the twenty-two applicants did not bring appeal proceedings and thus did not exhaust remedies under the domestic law as required by the Convention (see paragraph 56 of the judgment). The majority rejected the Government's non-exhaustion plea on

the ground that the other seven applicants did so without success, anticipating that the result would have been the same for the remaining fifteen applicants.

5. I respectfully disagree with such a loose approach to the exhaustion rule, which in the present circumstances deliberately opens a wide door to class actions. Indeed, allowing all applicants to proceed is tantamount to giving *carte blanche* to any one of the 500,000 inhabitants of the city to join any such application without first making a meaningful effort to press domestic courts for solutions.

6. To benefit from an exhaustion waiver on the ground of unsuccessful appeal proceedings brought by proxies, the applicants should have provided at the very least an explanation as to why they did not pursue the domestic proceedings to their end. Yet none of them gave any justification or explanation whatsoever. Nor were there any other circumstances that would have rendered the short-cutting of the domestic procedures acceptable.

7. According to domestic civil procedure, each of the applicants had independent standing *vis-à-vis* the respondent in domestic proceedings and it was not shown that any of the fifteen applicants had empowered the other seven to act on their behalf in lodging an appeal (see, for similar reasoning, *Vassis and Others v. France*, no. 62736/09, §§ 32-34, 27 June 2013, and *Bouras v. France*, no. 31754/18, §§ 44-45, 19 May 2022). Furthermore, on the merits, the applicants may have had different personal circumstances, such as specific documented health issues related to pollution, which may well have prompted a different resolution of the case at the domestic level (see, for example, *Yüksel Erdoğan and Others v. Turkey*, no. 57049/00, §§ 74-75, 15 February 2007, and *Bilbija and Blažević v. Croatia*, no. 62870/13, § 94, 12 January 2016). Lastly, none of the applicants was in a vulnerable position disclosing any special circumstances justifying a waiver of the exhaustion rule.

8. The Convention therefore required all the applicants to discharge the exhaustion burden individually. Allowing class actions in such circumstances without as little as an attempt to bring the issue to the attention of the national courts is incompatible with the subsidiarity spirit of which the exhaustion rule constitutes a major expression.

II. What was at stake in the present case

9. The nature and extent of the issues involved in the present case render them incomparable to those that, in other environmental matters, the Court has been called upon to decide so far.

10. The Court's case-law regarding environmental pollution has mostly developed on the basis of more targeted issues concerning applicants who lived within the immediate vicinity of polluting industrial sites (see for example, *López Ostra v. Spain*, 9 December 1994, Series A no. 303 C (30 metres); *Fadeyeva v. Russia*, no. 55723/00, ECHR 2005 IV (450 metres);

Giacomelli v. Italy, no. 59909/00, ECHR 2006 XII (30 metres); *Tătar v. Romania*, no. 67021/01, 27 January 2009 (100 metres); *Dubetska and Others v. Ukraine*, no. 30499/03, 10 February 2011 (420 and 430 metres); and *Jugheli and Others v. Georgia*, no. 38342/05, 13 July 2017 (up to 5 metres)).

11. In rare cases the Court found Article 8 to be breached in respect of larger groups of people living at a farther distance from the pollution source. For example, the municipal authorities' failure to ensure the proper functioning of waste collection, treatment or disposal were found to have adversely affected the applicants' right to respect for their homes and their private life in violation of Article 8 (see *Di Sarno and Others v. Italy*, no. 30765/08, 10 January 2012, and *Kotov and Others v. Russia*, nos. 6142/18 and 13 others, 11 October 2022, which potentially concerned whole municipalities of 35,000 and 80,000 inhabitants, respectively).

12. The present case is significantly different. The applicants do not live within the immediate vicinity of the polluting undertakings or within sanitary protection zones. Their homes are dispersed across the whole city at remote distances, ranging from 2 to 15 km from the polluting sites (contrast *Fadeyeva*, cited above, and *Ledyayeva and Others v. Russia*, nos. 53157/99 and 3 others, 26 October 2006). The alleged damage was not confined to specific municipal failures such as mismanagement of waste collection or disposal over a limited period (contrast *Di Sarno and Others* and *Kotov and Others*, both cited above). Nor did the applicants claim that the authorities had failed to comply with binding domestic judgments ordering remote polluting plants to cease their operation (contrast *Okyay and Others v. Turkey*, no. 36220/97, ECHR 2005-VII). Lastly, there was no issue of the authorities' having deprived the procedural guarantees available to the applicants of any useful effect (contrast *Taşkın v. Turkey*, no. 49517/99, §§ 112-113, 4 December 2003, and *Lemke v. Turkey*, no. 17381/02, 5 June 2007).

13. The present case confronted the Chamber with critical issues of unprecedented magnitude as to how to assess the State's compliance with its positive obligations under Article 8 in the context of its policy choices relating to the life and wealth of a modern industrial megapolis with a half-a-million population over more than twenty years.

III. Compliance with the positive obligations

14. The Chamber judgment demonstrates full awareness of the above complexities and of the ensuing challenges at stake. It rightly notes, for example, that “the creation of a sanitary protection zone is a long process that, like any complex multi-sectoral project, requires financial, logistical, technical resources and dutiful cooperation and efforts of the parties involved in it, including the State authorities” (see paragraph 81). In the same vein, the judgment shows a leading example of meticulous examination of the

environmental evolution in Lipetsk since 1998, resulting from the comprehensive measures that have increasingly unfolded to curb industrial pollution (see paragraphs 87-92).

15. The conclusion that the respondent State failed to fulfil its positive obligations does not sit well, in my view, with the complex picture provided in the preceding analysis. After everything that has been stated, “with satisfaction”, about the “significant” measures adopted by the authorities and the margin of appreciation they enjoy in such delicate matters, the majority nonetheless find a violation of Article 8 for the whole period from 1998 until the present day.

16. Are the judges in Strasbourg well placed to decide that the toxic effects of pollutants in the air of Lipetsk are thus more dangerous than those provoked by soot particles and respirable dust emissions in the heavy traffic areas of Hamburg, in respect of which the Court found no appearance of a violation of Article 8 (see *Greenpeace E.V. and Others v. Germany* (dec.), no. 18215/06, 12 May 2009)?

17. In the last-mentioned decision, the Court did not even evaluate the impact of the measures taken by Germany to curb diesel-vehicle emissions, satisfying itself that the authorities were attending to the problem by different means at their discretion. The Court justified its deference to the authorities’ choices and policies by the “*fundamentally subsidiary role*” of the Convention mechanism, the obvious fact that “*the national authorities [were] in principle better placed than an international court to evaluate local needs and conditions*” and by the “*complexity of issues regarding environmental protection*” that rendered the Court’s role “*primarily a subsidiary one*” and its power of review “*necessarily limited*” (ibid., emphasis added). In so deciding, the Court was fully aware that the problem of cancerogenic diesel-vehicle emissions was not sufficiently resolved and remained to be addressed by the authorities.

18. In the present case, the majority take a strikingly opposite approach, as they conclude that “the industrial air pollution in Lipetsk *has not been sufficiently curbed*”, citing the short-term peak concentrations of toxic substances exceeding the maximum permissible limits (MPL) and some other data from a particular national report (see paragraph 92 of the judgment). Turning an obligation of means into an obligation of result, this approach is also inconsistent with the well-established principle reiterated earlier in the judgment that “the domestic legal regime is not the principal factor to be taken into account in assessing whether the State has fulfilled its positive obligations” (see paragraph 83 of the judgment with reference to *Fadeyeva*, cited above, §§ 96-98).

IV. Broader consequences

19. Contrary to the well-established case-law, the Chamber has asserted the Court’s competence in the present case to review in far greater depth the environmental measures and policies adopted by the authorities in the context of a large industrial megapolis over a considerable period of time. It has been long acknowledged that the Court is not well prepared for such a task, which involves a wealth of economic, social, and ultimately policy-making issues, including, as in the present case, a delicate balancing exercise between, on the one hand, the reduction of industrial pollution, and on the other, the interest in maintaining the full operation of the core industrial enterprises on which the welfare of the whole megapolis fundamentally depend.

20. The Court’s extensive case-law on environmental matters has been instrumental in promoting useful national and international activities for protection of the environment in various ways¹. The increasing importance which is being attached to the topic worldwide raises expectations for the Court’s heightened activism in environmental cases. At the same time, the area in question is still widely regarded as one of evolving rights and the best ways to protect them domestically and internationally are still being sought, with no established consensus among the States on the limits of judicial competence in that area (see, for instance, the domestic courts’ restraint in reviewing the authorities’ policies in the present case and in *Greenpeace E.V. and Others*, cited above).

21. Be that as it may, the Court’s continuous adjudication of such cases should not develop, as in the present case, at the expense of the fundamentally subsidiary role of the Convention mechanism, which has been recently emphasised in its Preamble. Taking account of the nature and limited scope of its assessment and of the State’s margin of appreciation, the Court should be more prudent, realistic and respectful of national operational choices that yield such tangible improvements as those achieved in the present case² (see, for similar reasoning, *Arnar Helgi Lárusson v. Iceland*, no. 23077/19, § 63, 31 May 2022, a judgment recently adopted by the same Section, giving credit to the State’s policies which consisted in the “gradual realisation” of measures in respect of another social issue involving positive obligations under Article 8).

¹ In addition to the cases mentioned above, see a more extensive review in *Manual on Human Rights and the Environment* (3rd edition). *Principles emerging from the case law of the European Court on Human Rights and the conclusions and decisions of the European Committee of Social Rights*. Council of Europe, February 2022.

² According to the recent data (the 2021 and 2022 State environmental reports) available on the website of the Federal Service for Hydrometeorology (see paragraph 47 of the judgment), the level of pollution in Lipetsk continued to be characterised as “low” in 2020 and 2021 and the average annual concentrations of pollutants in the air of Lipetsk did not exceed their MPL in those years.

APPENDIX I

List of applicants:

No.	Applicant's Name Date of birth Place of residence Representative	Additional information
1.	Vyacheslav Aleksandrovich PAVLOV 15/02/1961 Lipetsk Mr U. Sommer	
2.	Nelli Valentinovna ANTONOVA 29/10/1957 Lipetsk Mr U. Sommer	
3.	Vladimir Viktorovich DROBYSHEV 01/12/1986 Lipetsk Mr U. Sommer	
4.	Sergey Aleksandrovich KALINKIN 01/04/1976 Lipetsk Mr U. Sommer	
5.	Tatyana Yevgenyevna KALINKINA 21/04/1987 Lipetsk Mr U. Sommer	As per letter of 30/04/2020, the applicant changed her last name to “Nesterenko”.
6.	Olga Alekseyevna KOLESNIKOVA 12/10/1971 Lipetsk Mr U. Sommer	
7.	Valeriy Viktorovich KULAKOV	

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	21/03/1966 Lipetsk Mr U. Sommer	
8.	Yadulla-Balatzha Ogly MAMEDOV 01/10/1945 Lipetsk Self-representation	On 10 July 2010 the applicant died. His wife, Ms Mamedova, expressed her wish to pursue the application on her late husband's behalf.
9.	Viktor Anatolyevich MAZUR 31/12/1960 Lipetsk Mr U. Sommer	
10.	Tamara Vladimirovna MIRONOVA 10/03/1950 Lipetsk Self-representation	
11.	Nataliya Fedorovna NEKRYLOVA 23/02/1961 Lipetsk Self-representation	
12.	Anton Vyacheslavovich PAVLOV 08/11/1992 Lipetsk Mr U. Sommer	
13.	Nataliya Vasilyevna PAVLOVA 20/01/1965 Lipetsk Mr U. Sommer	
14.	Irina Pavlovna RAZHINA 26/02/1961 Lipetsk Mr U. Sommer	On 16 May 2019 the applicant died. Her daughter, Ms Bazayeva expressed her wish to pursue the application in her mother's stead.
15.	Mikhail Ivanovich RYZHKIN 12/01/1979	

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	Lipetsk Self-representation	
16.	Nataliya Viktorovna SALAMATKINA 17/09/1976 Lipetsk Mr U. Sommer	
17.	Yuriy Vladimirovich SEMYNIN 21/06/1977 Lipetsk Mr U. Sommer	
18.	Mikhail Bogdanovich SHATALOV 20/11/1988 Lipetsk Mr U. Sommer	
19.	Nadezhda Mikhaylovna TORMYSHEVA 05/01/1953 Lipetsk Self-representation	
20.	Darya Vladimirovna VASILYEVA 31/08/1988 Lipetsk Mr U. Sommer	
21.	Mariya Ivanovna VORONETS 28/09/1952 Lipetsk Mr U. Sommer	
22.	Denis Viktorovich YEMELYANOV 14/08/1990 Lipetsk Mr U. Sommer	

Appendix II

Summary of MPL regulations in Russia for some of the toxic substances (in mg/m3)

Toxic substance	concentration	1999 ¹	2003 ²	2017 ³	2021 ⁴
Dust	av. daily	0.15	0.15	0.15	0.1↓ by 0.7 times
	short-term peak	0.5	0.5	0.5	0.3↓by 0.5 times
Carbon monoxide	av. daily	3.0	3.0	3.0	3.0
	short-term peak	5.0	5.0	5.0	5.0
Sulphur dioxide	av. daily	0.05	0.05	0.05	0.05
	short-term peak	0.5	0.5	0.5	0.5
Nitrogen dioxide	av. daily	-	0.04	0.04	0.1 ↑by 2.5 times
	short-term peak	-	0.085	0.2 ↑by 2.35 times	0.2
Nitric oxide	av. daily	0.06	0.06	0.06	-
	short-term peak	0.4	0.4	0.4	0.4
Hydrogen sulphide	av. daily	-	-	-	-
	short-term peak	0.008	0.008	0.008	0.008
Phenol	av. daily	0.003	0.003	0.006 ↑ by 2 times	0.006
	short-term peak	0.01	0.01	0.01	0.01
Formaldehyde	av. daily	0.003	0.003	0.01 ↑by 3.3 times	0.01
	short-term peak	0.035	0.035	0.05↑by 1.4 times	0.05

¹ Hygiene Regulations 2.1.6.695-98 of 29 April 1998 (red. of 13 November 1999) (MPL of Pollutants in the Atmospheric Air of Residential Areas);

² Hygiene Regulations 2.1.6.1338-03 of 30 May 2003 (red. of 3 August 2016);

³ Hygiene Regulations 2.1.6.3492-17 of 22 December 2017;

⁴ Sanitary Rules and Regulations 1.2.3685-21 of 28 January 2021 (Part I. Hygiene Regulations for Pollutants in the Atmospheric Air of Residential Areas).

Appendix III

Extracts of documents submitted by the applicants

Table 1. Concentration of Harmful Substances in the Atmospheric Air in Lipetsk in 1998-2008
Lipetsk Regional Hydrometeorology and Environmental Monitoring Centre
 (highlights added to indicate concentrations above the MPL)

Year	Dust		Carbon monoxide		Sulphur dioxide		Nitrogen dioxide		Nitric oxide		Hydrogen sulphide		Phenol		Formaldehyde		Sulfites	
	average daily MPL	short-term peak MPL																
	0.15	0.50	3.0	5.0	0.05	0.50	0.04	0.20	0.06	0.40	-	0.008	0.003	0.010	0.003	0.035	0.10	0.30
	average annual conc.	short-term peak conc.																
1998	0.26	3.40	1.4	8.0	0.006	0.084	0.10	0.59	0.08	0.43	0.003	0.070	0.008	0.078	0.021	0.140	-	-
1999	0.22	2.46	1.0	12	0.006	0.034	0.07	0.50	0.09	0.57	0.003	0.028	0.006	0.047	0.023	0.114	-	-
2000	0.16	1.80	1.6	7.0	0.004	0.080	0.06	0.50	0.08	0.45	0.005	0.040	0.008	0.080	0.026	0.150	-	-
2001	0.15	2.80	1.6	8.0	0.014	0.090	0.06	0.34	0.05	1.38	0.003	0.035	0.005	0.038	0.024	0.115	0.01	0.10
2002	0.17	2.90	1.9	13.0	0.08	0.110	0.09	0.68	0.04	0.47	0.004	0.038	0.004	0.038	0.021	0.153	0.01	0.06
2003	0.15	1.90	1.2	9.0	0.007	0.110	0.04	0.42	0.02	0.15	0.002	0.038	0.003	0.026	0.015	0.098	0.01	0.04
2004	0.10	1.60	0.9	9.0	0.007	0.060	0.03	0.42	0.02	0.35	0.002	0.039	0.004	0.025	0.012	0.127	0.01	0.04
2005	0.11	1.60	0.8	4.0	0.006	0.047	0.02	0.42	-	-	0.002	0.038	0.004	0.037	0.008	0.165	0.01	0.04

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2006	0.15	2.30	0.9	7.0	0.005	0.044	0.04	0.72	-	-	0.002	0.039	0.003	0.040	0.006	0.118	0.01	0.04
2007	0.14	2.40	1.0	12.0	0.007	0.059	0.02	0.20	-	-	0.002	0.039	0.003	0.035	0.007	0.064	0.00	0.04
2008	0.18	2.40	1.0	12.0	0.006	0.057	0.02	0.48	-	-	0.002	0.038	0.004	0.039	0.007	0.073	-	-

Table 2. Average annual concentrations of heavy metals and benzopyrene in Lipetsk in 2008

Month	Chrome	Manganese	Iron	Nickel	Copper	Zinc	Lead	Benzopyrene
	average daily MPL							
	1.5	1.0	-	1.0	2.0	50	0.30	1.0
	average annual concentration							
January	0.011	0.008	0.42	0.0088	0.016	0.11	0.0067	3.2
February	0.016	0.0042	0.46	0.011	0.006	0.11	0.015	2.27
March	0.012	0.019	1.2	0.0062	0.0081	0.11	-	2.13
April	0.0081	0.033	1.1	0.0066	0.0076	0.48	0.046	1.73
May	0.012	0.031	1.1	0.010	0.014	0.12	0.067	1.4
June	0.013	0.040	1.2	0.0074	0.013	0.16	0.061	0.9
July	0.014	0.030	1.3	0.010	0.014	0.35	0.037	0.73
August	0.011	0.050	2.0	0.009	0.011	0.24	0.046	0.93
September	0.013	0.028	1.1	0.016	0.030	0.14	0.021	1.57
October	0.012	0.012	0.61	0.010	0.011	0.14	0.029	2.1

Table 3. Number of residents affected by heightened levels of air pollution

Stationary post	Years	Main pollutants	Proportion of unsatisfactory tests (peak concentration above the MPL), %	Number of residents affected
Post no. 2 – near Lipetsk Pipe Plant	2011*	phenol, hydrogen sulphide, suspended particles	-	74,000
	2016	phenol, suspended particles	0.21	
	2017	phenol, hydrogen sulphide, suspended particles	0.13	
	2018	formaldehyde, suspended particles, phenol	0.23	
Post no. 3 – near the NLSP	2011	suspended particles, phenol	-	32,000
	2016	phenol, hydrogen sulphide	0.25	
	2017	phenol, hydrogen sulphide, nitrogen dioxide	0.37	
	2018	phenol, hydrogen sulphide	0.27	
Post no. 4 – near Lipetsk Tractor Plant	2011	suspended particles, formaldehyde, phenol	-	35,000
	2016	phenol, hydrogen sulphide	0.94	
	2017	phenol, hydrogen sulphide	1.06	
	2018	phenol, hydrogen sulphide, suspended particles	2.05	
Post no. 6 – near the Lipetsk Svobodny Sokol plant	2011	suspended particles, formaldehyde, phenol	-	39,000
	2016	phenol, hydrogen sulphide	0.36	
	2017	phenol, hydrogen sulphide	0.24	
	2018	phenol, hydrogen sulphide	0.25	
Post no. 8 (23rd micro district of Lipetsk)	2011	suspended particles, formaldehyde, phenol	-	52,000
	2016	phenol, hydrogen sulphide	0.26	
	2017	phenol, hydrogen sulphide	0.17	

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	2018	phenol, hydrogen sulphide	0.28	
Post no. 10 – near Lipetsk Silicate Plant	2011	suspended particles, phenol	-	4,392
	2016	phenol, hydrogen sulphide	0.61	
	2017	phenol, hydrogen sulphide	1.05	
	2018	phenol, hydrogen sulphide, suspended particles	0.49	

* As per the 2011 report, the air pollution in 2011 was 1.1 to 1.7 times the average daily MPL for a particular pollutant.

**Table 4. Comparative table of average annual and short-term peak concentrations of harmful substances 2015-2018
Lipetsk Regional Department of the Ministry of Natural Resources and the Environment
[highlights added to indicate concentrations above the MPL]**

	average annual concentrations in proportion to the average daily MPL				short-term peak concentrations in proportion to the short-term peak MPL			
	2015	2016	2017	2018	2015	2016	2017	2018
Dust	1.0	0.7	0.8	0.5	-	1.0	1.2	4.2
Carbon monoxide	0.3	0.3	0.1	0.2	-	<	1.0	1.6
Sulphur dioxide	0.1	0.1	0.1	0.1	-	<	<	<
Nitrogen dioxide	0.3	0.4	0.4	0.5	-	1.0	1.3	<
Nitric oxide	0.2	0.1	0.1	0.1	-	<	<	<
Hydrogen sulphide	-	-	-	-	-	4.9	11.0	7.1
Phenol	0.3	0.3	0.3	0.4	-	3.1	2.3	2.7
Formaldehyde	0.5	0.6	0.8	0.9	-	1.0	<	<

“-” – information not provided

Appendix IV
Extracts of documents submitted by the Government

Table 1

Air quality in Lipetsk

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	1st half of 2019
% of unsatisfactory tests	1.15	1.3	2.3	0.97	0.75	0.47	0.16	0.2	0.24	0.27	-
level of air pollution	high	high	high	high	heightened	low	low	low	heightened	low	low

Table 2

[highlights added to indicate concentrations exceeding the MPL indicated in Appendix II]

Hydrogen sulphide in Lipetsk

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
number of tests	5146	4808	4835	4964	5049	5142	5172	5200	5125	5080	5047
proportion of concentrations	0.9	2.2	2.9	1.7	2.1	2.0	1.1	1.6	1.7	2.1	1.2

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above the MPL, %											
maximum concentrations above the MPL, mg	2.9	4.0	4.4	4.5	6.6	4.9	4.7	4.9	11.0	7.1	8.9
stationary posts where concentrations above the MPL were detected	no. 6	no. 6	no. 4	no. 6	no. 6	no. 4					

Table 3

Phenol in Lipetsk

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
number of samples	5152	4808	4834	4961	5049	5167	5172	5198	5125	5076	5027
proportions of concentrations above the MPL, %	5.4	2.0	6.9	1.7	1.3	1.0	1.1	0.8	0.4	0.9	0.1

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maximum concentrations above the MPL, mg	2.4	2.5	3.7	3.9	4.2	4.1	3.2	3.1	2.3	2.7	3.4
stationary posts where concentrations above the MPL were detected	no. 3	no. 2	no. 3	no. 8	no. 8	no. 3	no. 4	no. 8	no. 4	no. 3	no. 3

Table 4

Benzopyrene in Lipetsk

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Average annual concentration, mg/m ³	1.7	1.9	1.5	1.8	1.3	0.9	0.6	0.6	0.5	0.4	0.6