

THE ENVIRONMENT AND THE WAR IN UKRAINE

MEDIA MONITORING OF COVERAGE OF THE THEME IN
MASS MEDIA AND SEARCH REQUESTS OF THE UKRAINIANS
(24 FEBRUARY TO 27 APRIL 2022)

The media monitoring has been performed in pursuance of the Environmental Policy and Advocacy Initiative for Ukraine (EPAIU) by the International Renaissance Foundation with financial support from Sweden.

The copyright to this publication is held by the International Renaissance Foundation. Any use of the information that represents the content of this publication without written consent is forbidden, except for common scientific quoting standards.

The Environmental Policy and Advocacy Initiative for Ukraine (EPAIU) is aiming at the development of the civil society organisations that operate in the environmental field – institutionally capable, transparently governed, accountable and publicly recognised, and facilitate reforms in Ukraine, implementation of the applicable clauses of the Association Agreement between Ukraine and the EU, fulfilment of other international arrangements of Ukraine by introducing environmental policies and advocating environmental protection. The Initiative is supported by Sweden.

The International Renaissance Foundation is one of the largest charitable foundations in Ukraine that has been helping develop an open society based on the democratic values in Ukraine since 1990. For the years of its activities, the Foundation has supported about 20 thousand projects that involved more than 60 thousand of the Ukrainian organisations and activists for the amount of more than 200 million US dollars.



TABLE OF CONTENT

Introduction	4
The Environment and the War	7
● Climate Changes	10
● Green Energy	13
● Radiation Hazard	16
● Radioactive Pollution	19
● Air Pollution	22
● Water Pollution	25
● Chemical Pollution	28
● Forest Fires	31
● Starting Grass Fires	33
Google Trends	35
Environment in the President's Speeches	44
Conclusions and Recommendations	47

INTRODUCTION

The full-scale invasion of the Russian Federation into Ukraine, which started on 24 February 2022, has dramatically changed the Ukrainian reality: political life, daily routine and information environment. The news from the battle field have filled and defined our media scene. However, after the first shock had faded, we realised that the war raised and sometimes even made us look at the pre-war themes and issues from the new angle. One of them is environmental problems.

We have decided to see how the environmental matters are covered by the Ukrainian media scene during the full-scale war. We have focused on the period from **24 February until 4 April**, the first forty days after the war had started. Although it is rather a coincidence, that period actually coincided with the so called “first phase” of the intensification of the war between Russia and Ukraine in 2022, the phase when the aggressor intended to quickly conquer and control the entire country, the so called blitzkrieg. It used the attack methods that were supposed to force the Ukrainian political leaders and the society to lay down arms quickly. In particular, there were air and artillery attacks on the infrastructural facilities, destruction of which materially damaged the environment and posed a threat for human lives. The fires caused by various types of weapons polluted the air, and the water and soil were also affected by the hostilities. The occupants even turned to open nuclear terrorism by seizing the Chornobyl Exclusion Zone and two Ukrainian nuclear power plants. That first phase, the period from the end of February until the beginning of April, expressly demonstrated that Russian Juggernaut had practically no limitations to its destructive path, as to neither its opponents at the battle field nor civilians, cities and villages, economic facilities and nature and the environment.

The purpose of the media monitoring was to trace how the Ukrainian media and therefore the Ukrainian politicians, the civil society, ordinary citizens responded to the environmental situation changing as a result of the Russian invasion. We also considered the themes traditional for the national environmental protection discourse and tried to detect how its media coverage had changed during that dramatic period.

The study was based on the content analysis method that helped form the body of sources in ten themes that were essential for environmental protection during the war. The search base was formed with the materials of the Ukrainian online media (5,798 resources), printed media (249 editions), television (32 TV channels) and radio (11 stations). The general theme “The Environment and the War” resulted from the broad search where the data to be analysed were formed from all the news items that mentioned the war, hostilities and the environment at the same time. The sources for nine other themes were formed based on the clear matches in the key categories. The results of such search and analysis thereof can be found below in the themed sections:

- Climate Changes
- Green Energy
- Radiation Hazard
- Radioactive Pollution
- Air Pollution
- Water Pollution
- Chemical Pollution
- Forest Fires
- Starting Grass Fires

Each section worded the key internal sub-themes and defined the principal newsmakers. Based on the data obtained, the overall dynamics of media coverage of each specific theme, as well as the general structure of its coverage by the types of mass media (printed editions (press), online resources (Internet), television (TV), radio and information agencies (IAs)), can be observed.

The structure of coverage of the theme by the level of media (Top-100, national, regional and unpopular ones) is also added. Pertinence of the sources to Top-100 was determined pursuant to the latest version of the rating by the UIA (Ukrainian Internet Association) dated May 2021. The sources of the national level include the editions and resources with the audience of at least 35,000 (the audience of the source was determined as the monthly audience of the source based on the data of the public resource called SimilarWeb). Unpopular sources are the ones that have the audience smaller than the above indicator. In the end, regional sources are all the sources that clearly correlate to the specific regions of Ukraine (their audience was not considered under this condition).

The study also presents a similar structure for each theme based on the source orientation criterion:

- news agencies where materials of the news genre dominate;
- information agencies, i.e. resources connected with the information agencies with the official status that present without limitation new data at the media scene, make their own information products, etc.;
- social and political sources whose main activity is to focus on the political and social life;
- consolidators, i.e. the resources that do not produce their own content and merely aggregate and rebroadcast the existing one;
- governmental sources that are financed from the state budget,
- as well as sources with the narrow specialisation that are formed with the materials connected with the specific economic or social sector: agroindustrial industry (AII), fuel and energy industry (FEI), HI-Tech (high technologies). The last group also includes the sources that pertain to the Environment category.

In addition to analysis of the monitoring data in the key categories in the theme “The Environment and the War”, peculiarities of the Ukrainians’ interest in environmental issues based on Google search, by means of Google trends, were studied. The longer observation period was selected: **from the beginning of the year until the end of April**. It enabled to see the dynamics of the Ukrainians’ interest in the environmental issues in the broader context, to compare the war-time data with the preceding period.

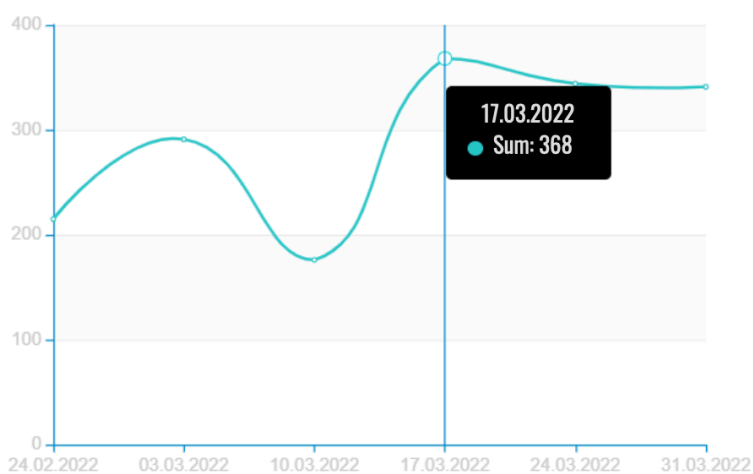
In the end, the last section of the study was analysis of the environmental protection matters in the speeches of the President of Ukraine Volodymyr Zelenskyy. His public speeches in the foreign parliaments, interviews by the global mass media, daily addresses to the citizens of his country and various assemblies abroad became the authentic voice of Ukraine, which is fighting for its freedom and freedom of the entire democratic world. Environmental issues were also considered in that versatile communication.

In general, this study does not claim to be exhaustive or representative for such a complex theme as The Environment and the War, applicability and significance of which keep growing as long as the hostilities continue. We have only recorded the way it looks in the mirror of the Ukrainian mass media, during the initial period of the full-scale armed conflict. We would be happy if the study became a sort of invitation to the broader, expert and possible public discussion of the effects of the Russian aggression for the environment of Ukraine, Europe and the world. In its turn, it could be a part of the extensive and very important conversation about the general price of this war.

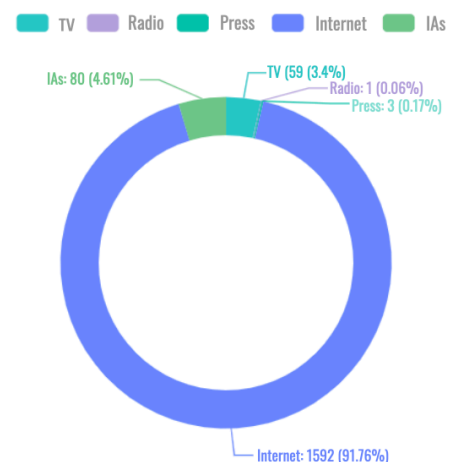
THE ENVIRONMENT AND THE WAR

The analysis involves the body of news items that consolidates general environmental issues that occurred or became applicable during the war as well as the ones that assessed their impact upon the environmental effects in general. The materials that focused on the specific cases and environmental issues were beyond the analysis, but are mostly presented in the following sections.

Mentioning dynamics



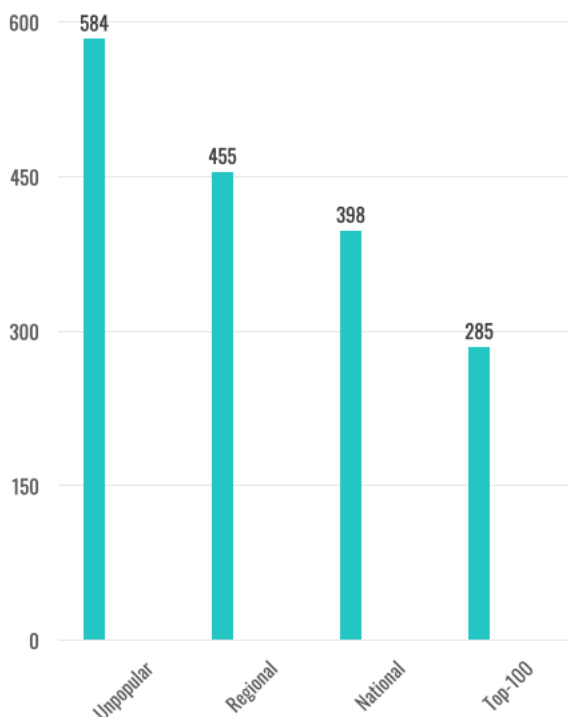
Types of media



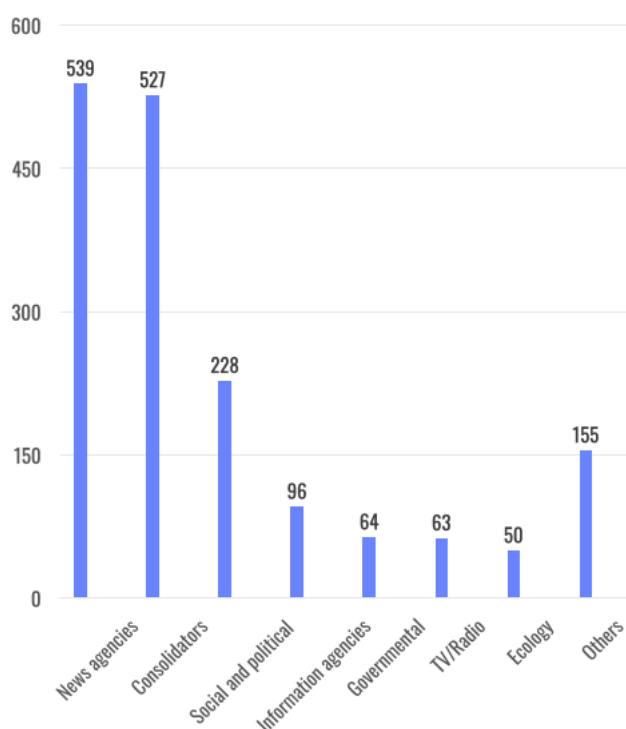
In general, there are grounds to state that the focus on the environmental issues as a result of the hostilities in the Ukrainian media space was considerable. During the entire period studied (from 24.02.2022 to 04.03.2022), 1,722 news items, including 955 original ones, were recorded. Moreover, the dynamics was relatively even, with a minor decrease in the coverage during the second week followed by the growth, which then stabilised at the level of around 350 news items per week.

Attention was paid to the theme by the national, top and regional media. Applicability of the theme “The Environment and the War” is emphasised by its stable coverage by the news agencies as well as consolidator resources, distribution at which strengthened the information signal. Quite a strong reaction to the theme in the state-owned media and in the electronic ones, more than 60 news items during the period for each category mentioned, also attracts attention.

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



The leading theme group was hazards and consequences of the Russian aggression against Ukraine for the environment. Some of the special materials emphasised the damage to the eco-system, elements of the man-made disasters (as a result fires at the petroleum storage depots, destruction of production facilities, suspended operations of poultry farms etc.), [destruction of the infrastructure](#) connected with the water supply and waste water drainage, power cuts at the facilities that discharge waste water; consequences for climate changes. Special attention was paid to the [nuclear and radiation hazards](#) in connection with the seizure of the Ukrainian nuclear power plants by the Russian army and destructive conduct around.

A large group of the news items was about recording crimes against the environment. In particular, it was dedicated to launch of the new Telegram bot service, SaveEcoBot, owing to which “every Ukrainian can send facts on the environmental damage to the Ministry of Environmental Protection and the State Environmental Inspectorate.” The news item on such opportunity specified that “[all the environmental crimes collected](#)” will be attached to the action to the UN International Court of Justice.” The overviews of the environmental crimes as a result of the Russian invasion were also accompanied by [comments of the representatives of the Ukrainian environmental organisations](#). The publication by the NGO “Center for Environmental Initiatives Ecoaction” on [111 recorded environmental crimes](#) (as of the end of March) committed by the Russian army in Ukraine since 24 February drew special response.

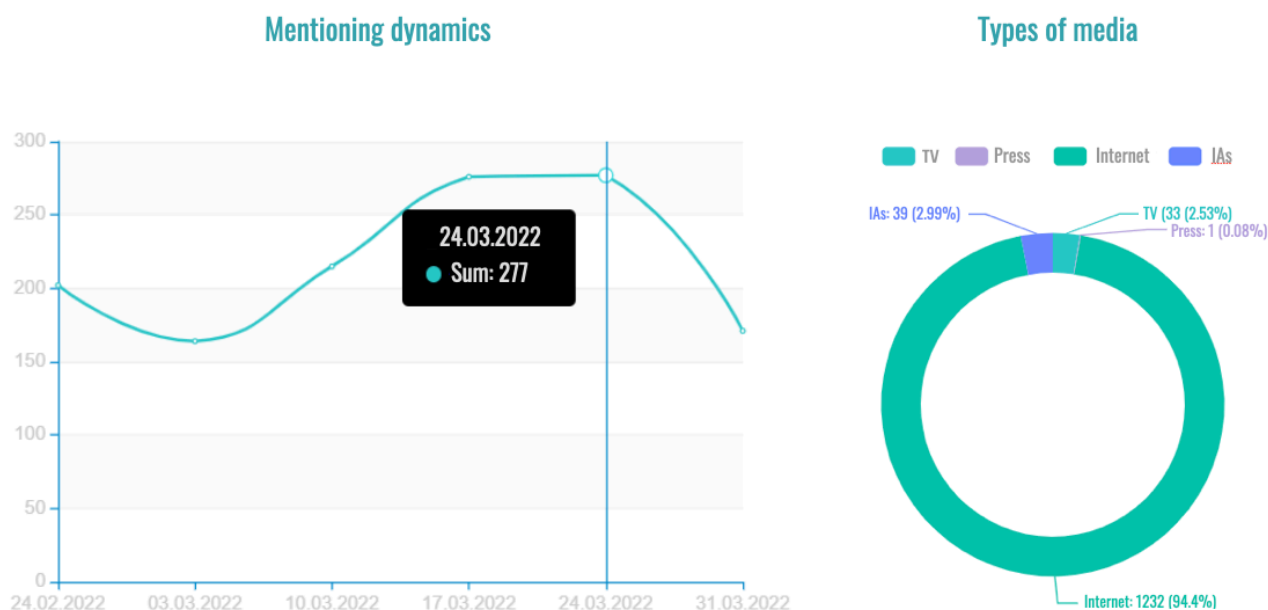
The theme of the war-time environment was also covered by the major media direction associated with the [overall situation](#) at the [nuclear facilities](#) of the country, their work under the [impact of hostilities and occupation](#) (more detailed information can be found in the sections “Radiation Hazard” and “Radioactive Pollution”).

The occupants' attacks on the infrastructural facilities (oil tanks, chemical enterprises) and resulting fires cause a wave of materials on the environmental consequences of those actions. In particular, there was information on the criminal proceedings instituted based on the facts of ecocide, on general environmental and economic losses, irrecoverable environmental losses and hazards of the level of environmental disasters. The series of attacks on the industrial infrastructural facilities made the chart of the quantitative dynamics of the theme coverage reach the top plateau at the second half of March.

The independent, yet high-profile issue on the theme was the speech made by V. Zelenskyy to the Parliament of Japan, where he emphasised the occurrence of the unprecedented “environmental and food challenges” as a result of the war.

CLIMATE CHANGES

Despite the shelling and hostilities that flooded the entire Ukraine on 24 February, the focus on the relatively non-military theme of the climate did not disappear. During the entire period studied, 1,315 news items, including 800 original ones, were recorded. The climate changes were paid a little less attention than the radioactive pollution and starting grass fires – the themes that were especially popular during the first month of the Russian invasion.

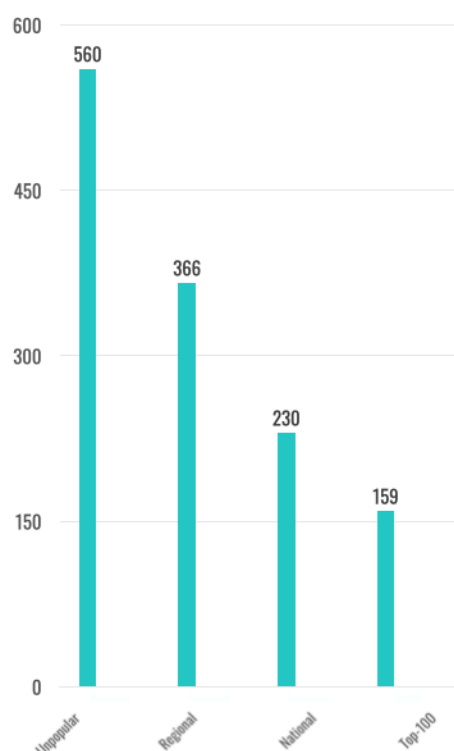


The peak of attention on the theme was on weeks 4 and 5 of the full-scale war, when it was mentioned in 276 and 277 news items. Gradual growth of the interest was recorded at the second week, though.

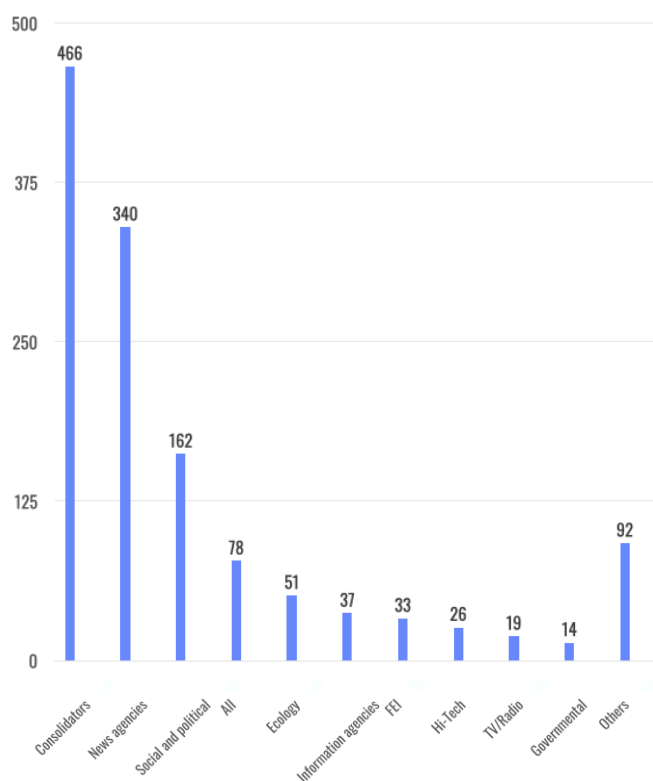
The climate changes were most often mentioned by the unpopular media, mentioning in which makes 42% (560 news items) of the total body of the news items. The regional media mention the theme somewhat more rarely, in 366 news items (27%). The national media and the media from the TOP-100 mentioned climate changes in their materials in 230 (17.5%) and 159 (12%) news items respectively. In comparison with the other themes studied, which were often tied to the news hooks (air pollution, radiation hazard, forest fires etc.), such focus of the unpopular media on climate changes is pleasantly surprising.

However, the same way as in the other cases, most attention was paid to the theme in the consolidators (news aggregators) and news media, where the total share of the news items made 61% of the entire body. The indicator shows how applicable and “viral” the theme is at the media scene. The specialised environmental media wrote about climate changes in 51 news items (4%). The quantity of references in the agroindustrial and fuel and energy industries seems considerable: 78 and 33 news items accordingly, which makes 8.4% in total.

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



As for the theme, the news items that referred or were dedicated to climate changes were most often about refusal from cooperation with the power industry of the Russian Federation and humanitarian effects of the war, both for Ukraine and globally. When it comes to the first theme, we can observe two main views on possible consequences of the EU's refusal from the Russian fuel. The first optimistic one is that this step will enable faster transition to the renewable energy and avoidance of numerous hazards resulting from climate changes. This opinion is also supported by Iryna Stavchuk, the Deputy Minister of Environmental Protection and Natural Resources for the European Integration, whose [column](#) for Ekonomichna Pravda has been quoted and distributed by the media many times. The second rather pessimistic one is that the refusal from the imported Russian fuel will make the EU countries resume their own production, which will considerably decelerate implementation of the Paris Agreement and pose a threat to the European Green Deal. As a result, it will entail more damage to the environment and climate changes.

This group of news items has a very interesting case. The Lviv regional media, The Vysokyi Zamok, [commented](#) on the results of the investigation by Die Welt, the German edition, on the reasons for dependence of Germany and the EU on the Russian fuel. It is claimed there that Russia had sponsored the European climate activists so that the EU production industry would not develop and would depend on the Russian one.

In the context of humanitarian effects of the war, climate changes are mostly mentioned in the news items on the food crisis to be faced by the world because of the war. The media distributed the speeches of the Ukrainian and world politicians on this theme, in particular the parts dedicated to the inevitable climate effects of the war.

For instance, the national media, The Holos Ukrainy, [posted](#) the speech of Chairman of the Verkhovna Rada of Ukraine Ruslan Stefanchuk to the Parliamentary Assembly of Francophonie where he emphasised that the russian aggression “had pushed the global joint efforts of the fight against climate changes many years backwards.”

The climate changes were indirectly mentioned in the news items on the EU-China Summit (1 April) and the plenary session of the European Parliament (4 April), where the matters of climate changes were to be discussed without limitation. However, discussion of the war in Ukraine and international security drew more attention in those news bulletins.

Much more attention was paid to climate changes in the news items on the environmental crimes and war effects. Almost each news item like that contains either a reference to or explanation of the impact of the russian military aggression on the environment and global climate changes. The clear and expected factors of influence include: carbon dioxide and water vapour emissions (greenhouses gases) as a result of shelling; remains of missiles and artillery shells that result in soil acidification and influence growth of plants; destruction of whole eco-systems, natural reserves; replacement of the russian fossil fuel with coal and liquefied gas, which are as harmful as oil and russian gas. The [unexpected](#) ones are reduction of governmental expenses for the environmental policies and fight against climate changes due to more expenses for weapons and defence all over Europe and the USA in response to possible expansion of the russian aggression. Some media also [spread](#) the statements from the article by German Der Spiegel titled “putin’s War Weakens the Fight against Climate Changes”, and the [column](#) by the journalist Serhii Didenko “Climate Matters: How the War in Ukraine Will Influence Decarbonisation Trends”.

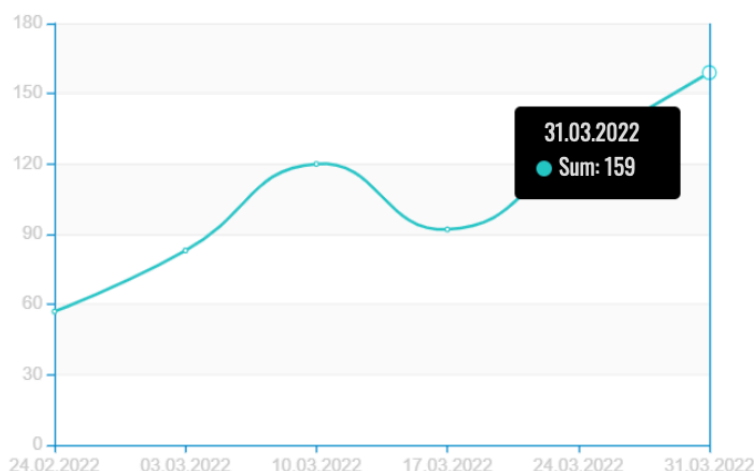
The themes of war and climate changes have even been combined in the [news items](#) on militarisation of the Arctic region. Even the media from Top-100 have written that the American military men had the first large-scale drill in the Arctic region, which was opening to navigational routes, extraction of resources and research due to climate changes, in March. Russia has been increasing its presence in the region for decades, but its aggression against Ukraine has driven the USA to strengthen its positions as well.

Contrary to the other themes studied, climate changes are mentioned in the news items that are not related to the war in Ukraine. The global climate changes cannot obviously be paused, but the interesting thing is that, even despite the war, the Ukrainian media published the news on the [glaciers melting in New Zealand](#) and [Antarctica, the increase in the level of the seven seas](#), and [changes in the reproductive behaviour of American birds](#). The same can be said about climate changes in Ukraine – the media have written about them in the context of the [start of the sowing season](#), [planting of trees in Ternopil Region](#) and... start of the mite season in [Cherkasy Region!](#)

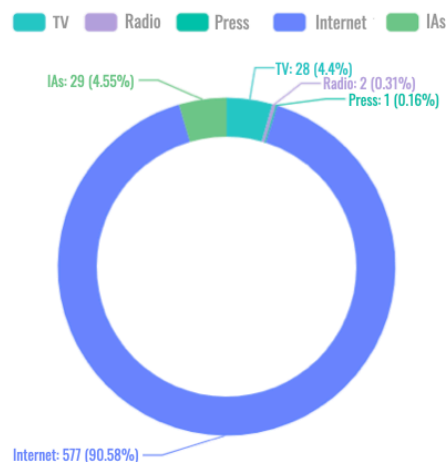
GREEN ENERGY

The theme of green energy did not draw a lot of attention in the Ukrainian media – out of ten themes studied, it was one of the least popular by the number of references, even despite the fact that the theme is strongly kept current in the public discourse due to the pressure on the EU Member States to refuse from the Russian fossil fuel.

Mentioning dynamics



Types of media

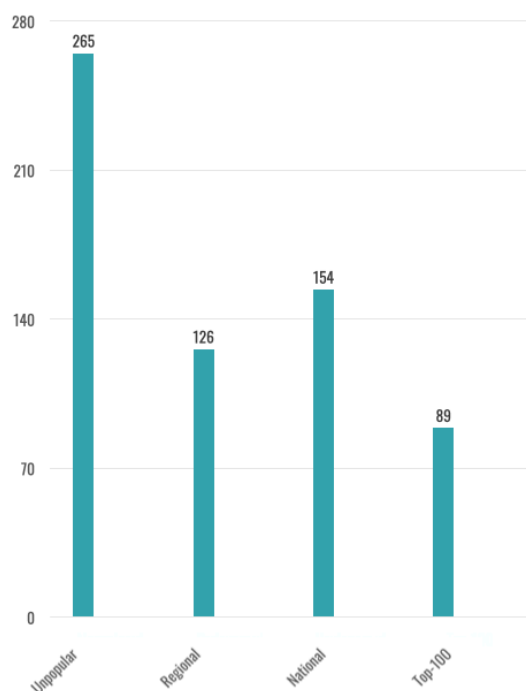


In general, 639 news items were recorded; more than half (378 news items) were original. The focus on the theme was of an ascendant nature, and its maximum growth during the period studied was demonstrated in its last part, when the theme was mentioned in 159 news items (24.9%).

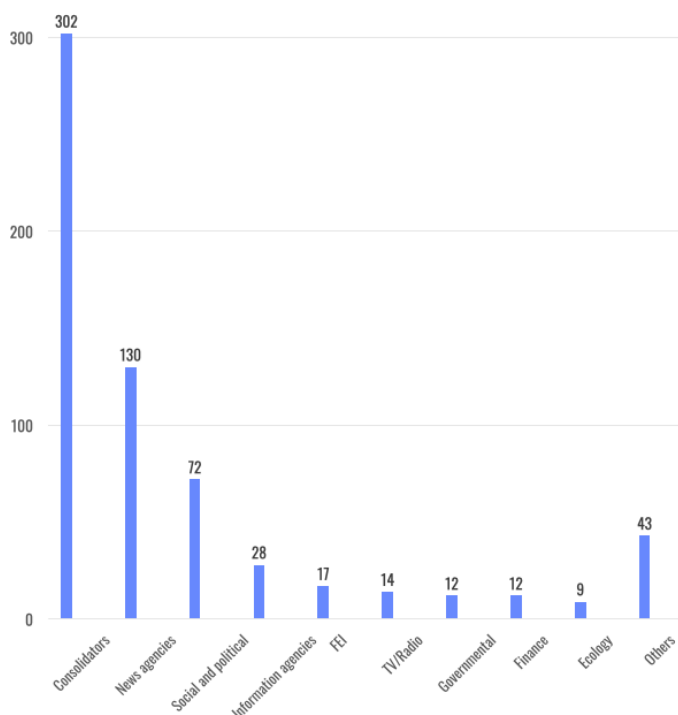
The green energy was most often mentioned in the unpopular media: 265 news items, which makes 41.5 % of the total mass. The theme was also covered by the national media – 154 news items during the entire period (24%). The regional media and the media from Top-100 mentioned the green energy more rarely – 126 (19.7%) and 89 (13.9%) news items respectively.

Almost a half of all the news items pertains to media consolidators whereas 20% are news media, and 11% are social and political ones. All the other profiles of the Ukrainian mass media mentioned green energy in up to 30 news items. The smallest indicator is demonstrated by the specialised environmental media – only nine news items during the entire period.

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



In general, it should be noted that the theme of green energy is the main publication focus rather than most of other themes studied. The lion's share of such news items is about coverage of the stance of the EU Member States, the USA and other countries as to import of the russian energy resources by the Ukrainian media. These publications can be provisionally divided into two themes – statements by the countries and politicians about the import of the russian fuel, and analytics/opinions of [journalists](#), [experts](#) and [public officials](#) on the [Green Deal](#), refusal from the russian fuel and [its impact on climate changes](#) russia's position on the international arena. The general context of such news items is rather positive – the media most often published the content on absolute refusal, embargo and reduction of import of the russian fuel or [changes in the attitude](#) of the EU Member States to the russian energy industry. The same is about the Green Deal, acceleration of which is mentioned as a positive consequence of the war between russia and Ukraine due to the sanctions imposed on the aggressor. Moreover, the Green Deal is often presented as a sort of weapons against the aggressor that will weaken its influence on the western countries and considerably reduce the state wallet that generously pays for the occupants' actions. Instead, some media published less optimistic news items on the possibilities of the green energy to fully replace the russian fuel in the EU.

Some of the news items are on the news about Ukraine joining the EU Integrated Energy System (16 March) and positive effects thereof, in particular, reduction of limitations for the green energy. However, much more attention was paid to that piece of news in the context of a possible decrease of electric power rates for the public in Ukraine.

The green energy is much more rarely mentioned in the context of consequences of the hostilities and overall environmental impact of the war. Some media [have written](#) about the damage to the solar panels and the occupants stealing the equipment of the green power plants. As for the general effects of the war for the green energy, the following can be stated.

Some of the media believe that the sanctions against Russia will considerably improve the potential of the green energy. However, the others [believe](#) that the war will decelerate development of this industry in Europe due to the reduced national budgets for the environmental policies and agrarian lobby. Also, it can probably occur due to Russia undermining the public opinion. The same group of news items quotes the statement by the Ukrainian Association of Renewable Energy regarding the effects of the war for the industry in Ukraine, in particular the fact that the latter “has found itself in the zone of the high risk of complete or partial destruction.”

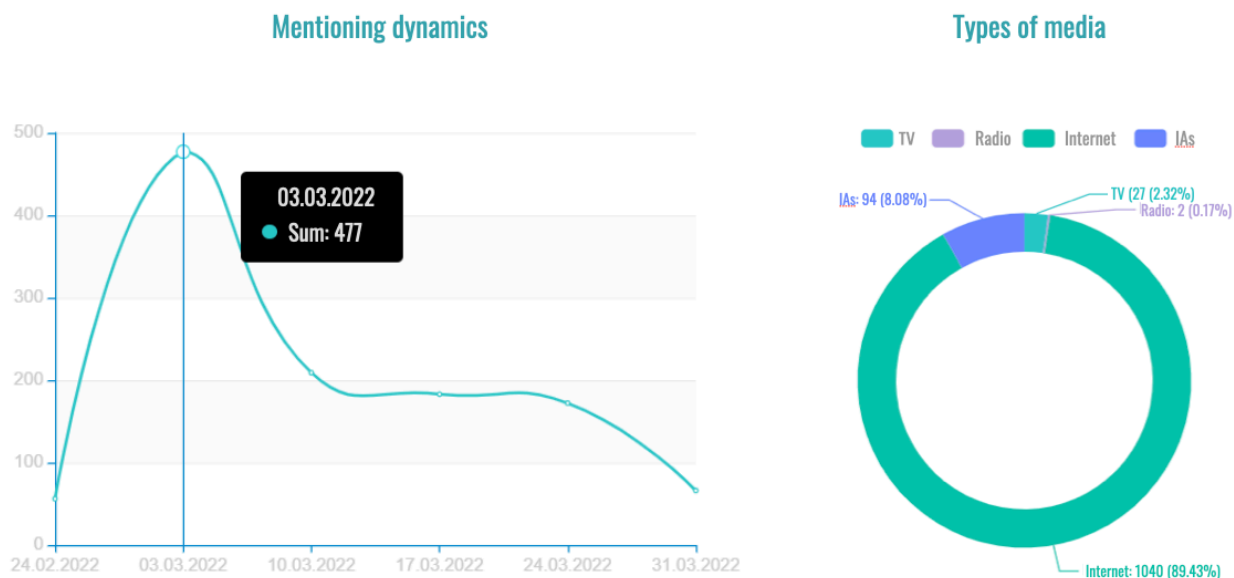
The green energy matters referred to in the statements of the national leaders of Germany, the UK and Ukraine, must also be mentioned. German Chancellor Olaf Scholz was one of the first national leaders who claimed the change of the national energy policy in response to the Russian aggression. On 28 February, in his speech to the Bundestag published by the Ukrainian media, he claimed that “the faster the progress of expansion of the renewable energy, the better”.

In the article for British The Telegraph, which was actively [spread](#) and quoted by the Ukrainian media in the middle of March, Boris Johnson said that the green energy was one of the tools that would allow getting rid of the dependence on the Russian energy resources. In addition, the Prime Minister noted that “It is crazy that we are importing oil and gas from Putin's Russia when we have our own resources in the North Sea.”

Volodymyr Zelenskyy's speech to the Parliament of Denmark (29 March) was quoted by the media with special interest. He urged the EU Member States to refuse from the Russian fuel and to accelerate the Green Deal and noted that “... the Russian aggression against Ukraine ... is an argument to accelerate green transformation on the continent.”

RADIATION HAZARD

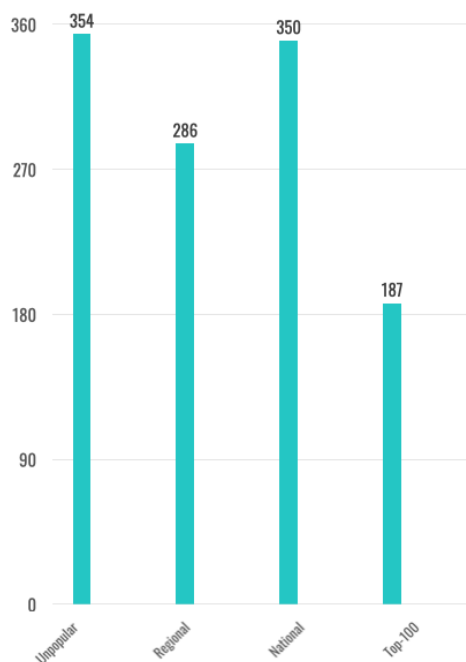
There was a lot of media attention from the first week of the full-scale war. In fact, it reached its maximum then: 477 news items. Then the intensity of references to the theme was reduced and stabilised at the level of approximately 200 news items per week.



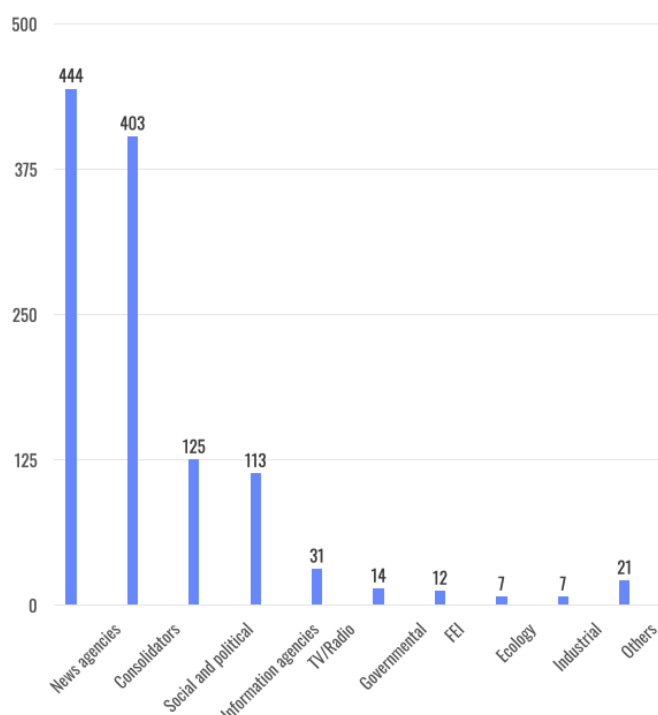
Almost half of the materials (48.7%) of the total mass were published in the media with the maximum coverage: 350 in national ones and other 187 media in Top-100. The main groups of sources for the theme are news agencies (444 news items) and consolidator resources (403 news items). The considerable share of news items by the information agencies is also worth attention – 113.

The peak indicators during the first week of the war were explained by the seizure of two Ukrainian nuclear power plants, Chornobyl and Zaporizhzhia ones, by the Russian army. During the battle for the latter, the shell hit the building of the plant and caused the local fire. Ukraine actively drew attention of the mass media and the world to the potentially disastrous consequences of the occupants' actions. In particular, the statement of Acting Minister of Environmental Protection and Natural Resources R. Strilets, who warned that "if the shell hit the nuclear waste storage at the ZNPP", radiation could cover an indefinite area", was on everyone's lips.

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



On 10 March, there was a video conference meeting of the Committee of the Verkhovna Rada on the Energy, Housing and Utilities, following which [the address to the parliaments of the foreign states was made](#) and emphasised the hazards of the global nuclear hazard due to the seizure of the ChNPP and ZNPP by the Russian Federation.

Minister of Foreign Affairs Dmytro Kuleba explained the difficulties associated with resolution of the issue during the national TV marathon, including with participation of the IAEA, [“there has been lots of different communication”](#) within which the Russians were principally made to understand that nuclear facilities were no toys, and that was an absolutely different level of threats and problems. You see that the situation has generally stabilised.”

Moreover, the Minister promised that the Russian Federation would be held liable and “be dragged to all the international institutions and, where necessary, courts for creating the nuclear hazard for the world by seizing the Zaporizhzhia NPP or Chornobyl.”

The practical recommendations to citizens in connection with radiation threats were actively given. In the first place, there were [Guidelines by the Public Health Centre](#) of the MoH. They were actively published on the webpages of the [local authorities](#). For the society to be furnished with reliable information and help with timely [protection from radiation hazards](#), the Ministry of Environmental Protection together with the partners and NGO “Save Dnipro” created the [Unified Map of the Radiation Background in Ukraine](#) SaveEcoBot. The local media used its data to [inform their own communities](#) of the radiation status and possible threats. Special attention was paid to the news on the [radiation level at the ChNPP](#).

The media paid considerable attention to the [hazard of transmission of the radiation from Chornobyl](#) to the Russian and Belarusian military basis because several hundreds of the military machines had been within the area with the top level of the radioactive pollution.

Another group of news items was about coverage of the regular shelling of another nuclear facility: Nuclear Subcritical Plant “Sources of Neutrons” (Kharkiv, National Science Centre Kharkiv Institute of Physics and Technology) and transfer of the plant into the deep subcritical condition. They warned that its damage because of the [shelling could result in](#) major radiation effects and contamination of the adjacent territories.

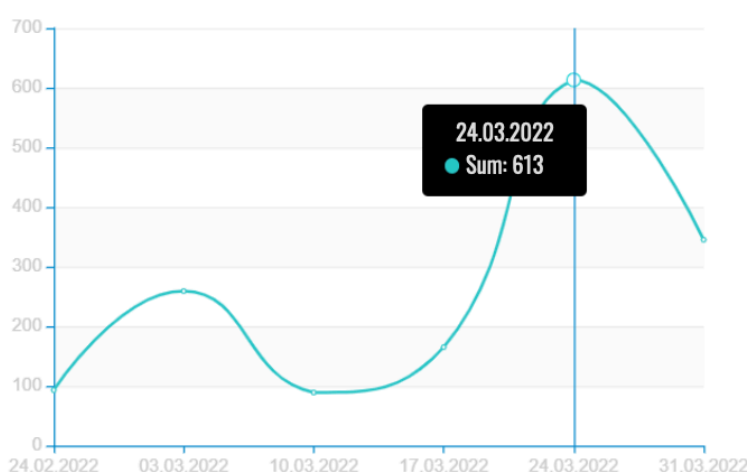
The speech of the President of Ukraine Volodymyr Zelenskyy to the Parliament of Australia where he emphasised that via the war against Ukraine the Russian Federation “[returned the worst pages of XX century to the world](#). The major hazard of the past century” was on everyone’s lips. He also mentioned the nuclear hazard, “The future of the global security is being shaped now. Nobody can manage wind and precipitation on the planet, so nobody will be able to save any part of the Earth from radioactive pollution as a result of use of the nuclear weapons.”

It should be noted that then the public activists who protect the environment contacted a number of international institutions and demanded to declare Russia the nuclear terrorist and to impose sanctions on the aggressor’s state enterprise “Rosatom”. Also, a series of international advocacy campaigns and applications to the IAEA with the same demands started. Publications on that theme also drew major response in the Ukrainian media, but they have not been included into our study since they were made after 4 April.

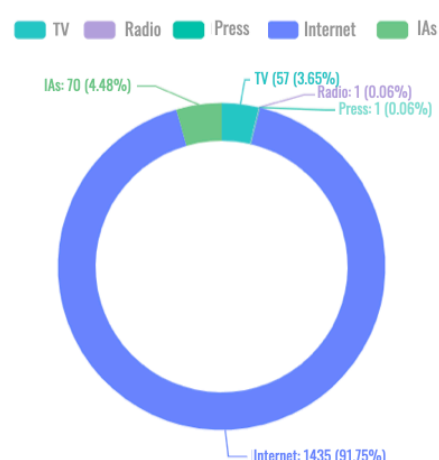
RADIOACTIVE POLLUTION

In comparison with the theme of the radiation threat, the media started paying attention to the radioactive pollution matters on the fourth week of the large-scale hostilities. 613 news items were recorded (39.1% of the total mass). However, there were some fluctuations during the first week. The theme of potential pollution accompanied the theme of the hazards, which was one of the most topical ones.

Mentioning dynamics



Types of media

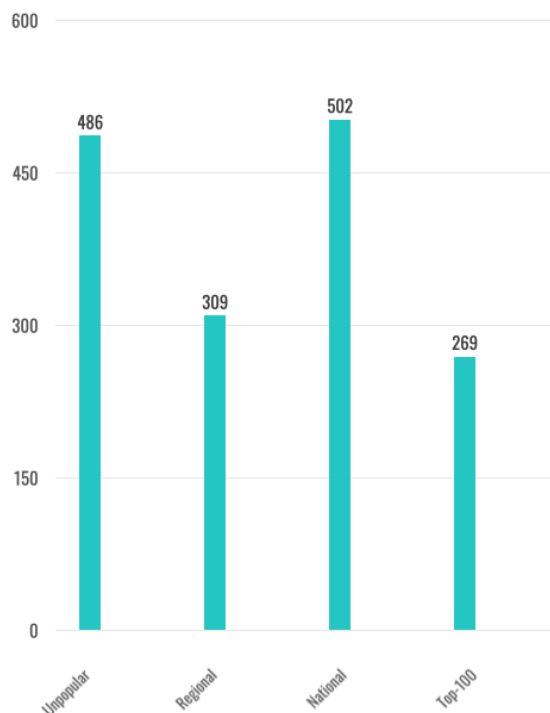


The status attention paid considerable attention: the largest group of the news items (502 or 32.1% of the total mass) were published at the resources of the national scale, and other 269 news items (17.2) – in Top-100. Also, 605 news items (38.6%) were spread by the consolidator resources, which demonstrates their “viral” nature to some extent.

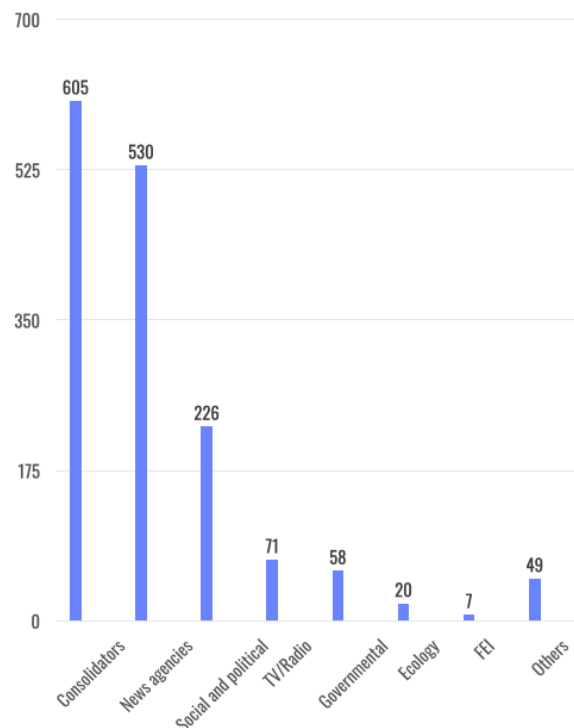
The information on deterioration of the radioactive pollution indicators in the Chornobyl Zone alongside with the news items on the large-scale fires with the [reference to the data](#) of the State Nuclear Regulatory Inspectorate drew significant response. However, it was noted that the automated radiation control system at the Exclusion Zone did not operate then (21 March) as it was controlled by the armed of the russian federation. Therefore, the assumptions of the scale and effects (namely threats for Ukraine and entire Europe) were of a hypothetical nature and were not based on the empiric data.

On 25 March, there were news items with the reference to the data of the automated radiation control system where excessive gamma rays were recorded in the real time at a considerable number of the observation points.

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



The growth of the pollution level was connected with “the movement of a considerable number of the military machines that made the radioactive dust rise.” It was also noted that the occupants in the Exclusion Zone “...did not possess the skills to maintain personal security while working within the radioactively contaminated area, ... so they were subject to the significant external and internal radiation.”

The separate large group was news items on the consequences of the russian occupants’ stay in the “red forest” which “even stalkers are afraid to enter.” It was noted that the “site was considered to be one of the most radioactively contaminated ones in the Exclusion Zone” and that “by performing the land works there, the occupation military men were subject not only to the powerful gamma rays, but also alpha and beta particles.”

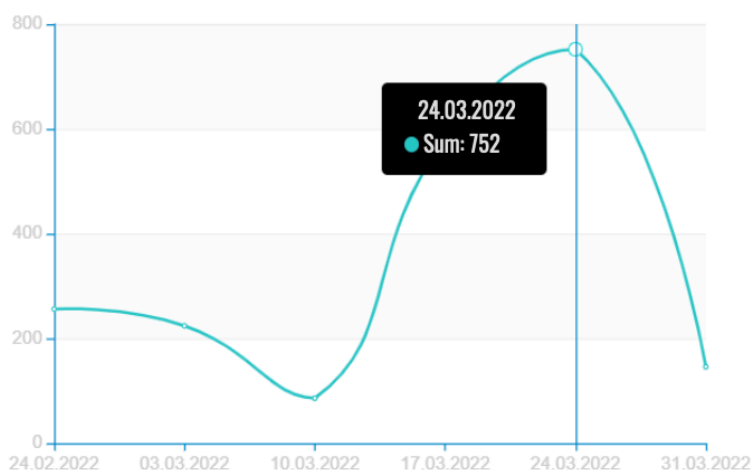
A notable pretext for attention to the theme was shelling of the Nuclear Subcritical Plant “Sources of Neutrons” in Kharkiv. The State Nuclear Regulatory Inspectorate of Ukraine noted that the institute “sustained disastrous damages” and warned that “the source of neutrons, just like any other nuclear plant, was not supposed to be operated during the hostilities. Continued shelling could result in major radiation effects and contamination of the adjacent territories.” However, it was stated later that “no damage that would affect the condition of the nuclear and radiation safety has been detected. The radiation situation at the site is within the standard rates. The staff keeps working to eliminate consequences of the shelling.”

The theme of radioactive pollution was first raised during the first two weeks of the war. The main pretext during that period was not even the fact that the aggressor has taken over the ChNPP, but the seizure and shelling of the Zaporizhzhia NPP, which even [caused the fire there](#). The media assessed probability of the accident and modelled the consequences. Since then and during the entire period studied, the media paid notable attention to [the materials](#) containing guidelines for citizens on the actions as a result of the radiation hazard.

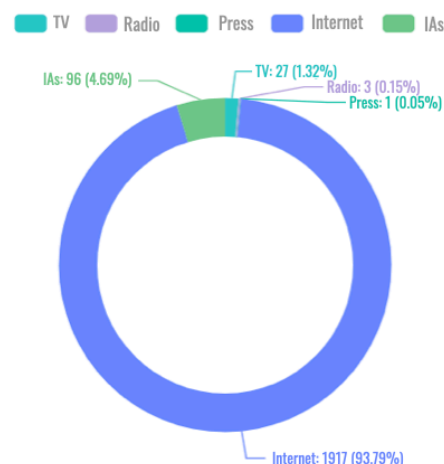
AIR POLLUTION

The theme of air pollution was mentioned by the Ukrainian media most often in comparison with all the other matters studied. In general, 2,050 news items were recorded; almost a half (999 news items) were original. The peak of attention to air pollution was on the fourth week of the full-scale war, when the theme was referred to in 752 news items, which was almost 37% of the general indicator for the selected period. However, gradual growth of attention to the theme was noted at the beginning of the third week.

Mentioning dynamics



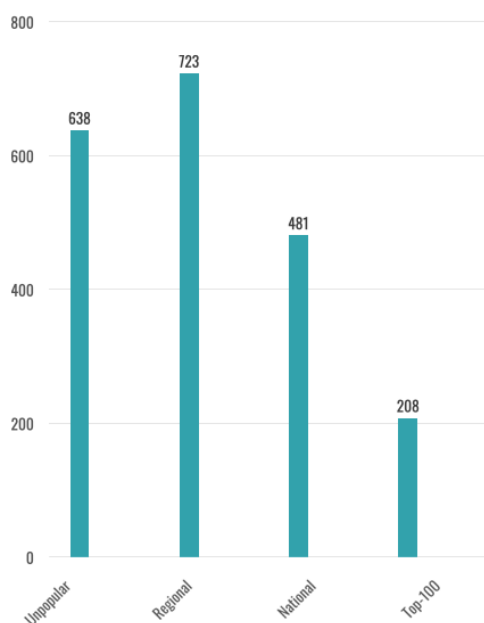
Types of media



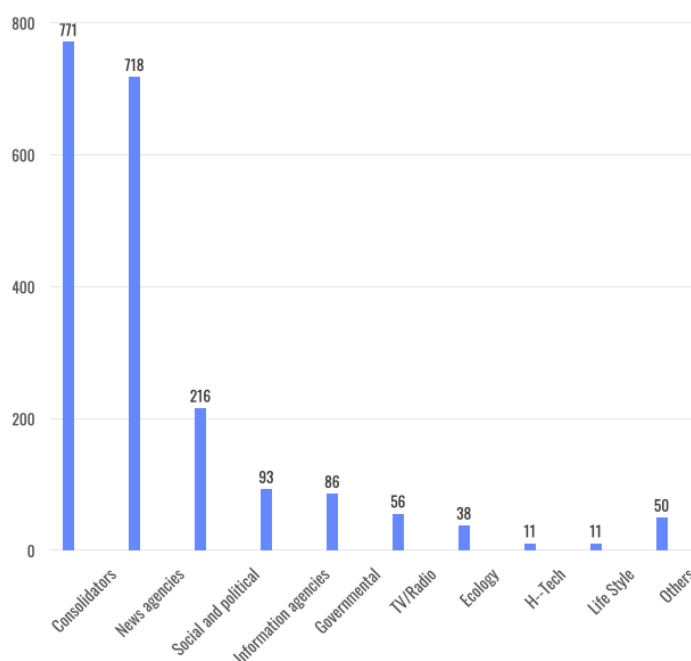
The theme was most often mentioned in the regional mass media: 723 news items recorded (35.3% of the total mass). The unpopular media wrote about air pollution a bit less, by 4% only. The share of references to the theme in the national media made 23.5%, and it was 10% in the mass media in Top-100.

Most news items were recorded in the news media and consolidators – 73% of all the news items. It was connected with the fact that the theme started to draw attention because of the news on large-scale fires, setting dry grass on fire and the situation at the ChNPP and surrounding areas. The problem was less mentioned in the social and political media (10.5%), governmental media (4.2%) and information agencies (4.5%). The specialised environmental media mentioned air pollution only in 38 news items during the entire period, which was less than 2%. They mostly published large analytical materials the share of which among other types of news items is the smallest.

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



The lion's share of the news items was about air contamination in the context of news on the ChNPP and hostilities in the Exclusion Zone. Most attention was paid to that theme at the end of March and after the electric power plant had been freed from the occupants. The powerful newsmakers were the [“voyage” of the russian machines via the Red Forest](#) which raised a huge cloud of radiation dust into the air and large-scale fires in the forests in the Exclusion Zone. The news item on them [was published](#) at the official page of the Ministry of Environmental Protection, with the reservation of the increased level of radioactive air pollution “as a result of the hostilities and fires set by the rashists.” The same news item was shared by the information agencies (for instance, [UNN](#)) and other media, with the reference to the [post](#) by Ombudsman Liudmyla Denisova on FB on 27 March and the website of the Ministry of Environmental Protection. By the way, the State Emergency Service [refuted](#) that information later.

Air pollution was also mentioned in the context of fires and smoke in Kyiv. The problem of smoke was mostly discussed on 24 and 30 March, when the newsmakers were the shelling and fires in the region. The media also informed, with the reference to the official resources of the Kyiv City State Administration, of the increased air pollution level all over the city,

“...as of the morning of 24 March, [Kyiv ranked eighth](#) among the cities with the dirtiest air. It all happened because of the regular fires as a result of the shelling. Thus, the concentration of air pollutants exceeds the standard recommended by the WHO 13 times”.

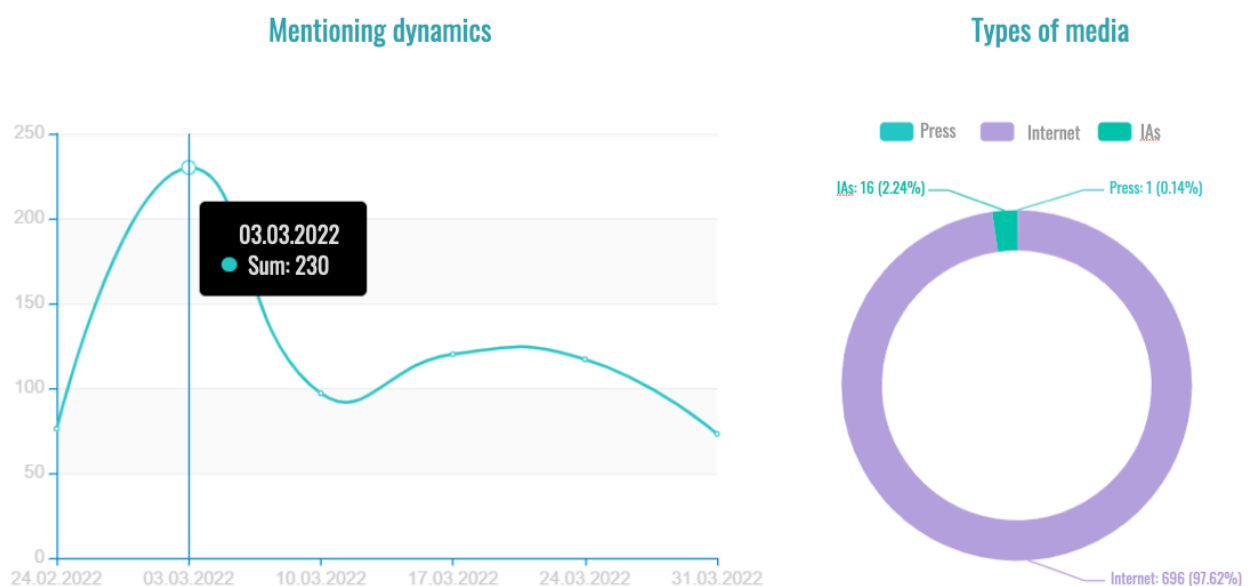
The internet media and information agencies from Top-100 also covered the smoke in the city. They mentioned that the air pollution standard rate was exceeded nine or ten times, and some of the media accompanied their [news items](#) with the data from SaveEcoBot.

Most news items on air pollution as a result of grass set on fire were also dated the end of March, the favourite season of those who burn grass. Such news items are almost always followed by the reminders of the criminal liability for setting the grass on fire and environmental damage, including air pollution. The governmental media, i.e. official webpages of the communities, city and village councils, can be noted in connection with this theme. For instance, the webpage of Iziaslav City Council even [called](#) the grass set on fire the crime against the environment, which “can now be treated as sabotage and looting.” The authors of the page also explained what damage was done to the environment by burning grass and rubbish.

The same way as in most themes we have studied, air pollution is often mentioned in major analytical materials on the environmental effects of the war. The general context of such references is emissions of hazardous substances into the air as a result of shelling of the industrial enterprises, emissions of toxic substances from lowland moors as a result of the hostilities on the outskirts of Kyiv and consequences of fires. The theme is also encountered in the news items that contain recommendations/guidelines on safety during emergencies. The articles with respective titles, such as [How to Reduce Health Damage from Polluted Air in the City](#), or [How to Save Yourself from Smog and Smoke – Advice to Stay Healthy](#), were published by all types of media. We can also see advice on how to behave in case of a chemical attack (chemical air pollution) or poisoning with hazardous substances that get into the air as a result of explosions: chloride, ammonia etc.

WATER POLLUTION

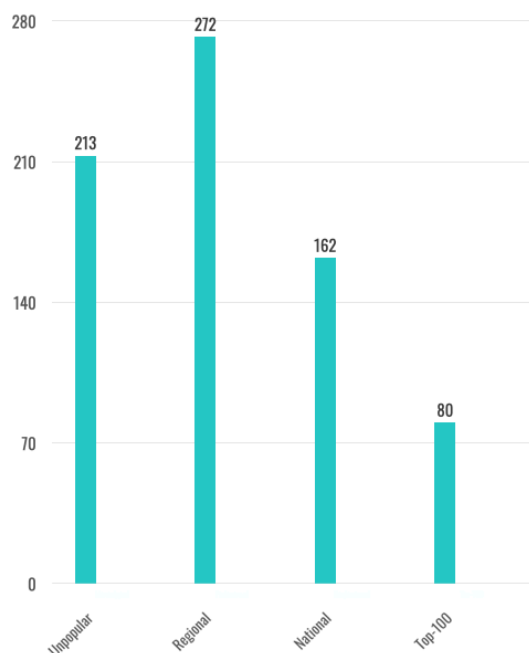
During the entire period, we recorded 727 news items on the theme, and it is one of the lowest indicators of attention. More than half of them, 399, were original news items. The peak of attention on the theme was on **week 2** of the full-scale war, when it was mentioned in 230 news items (32%). Gradual growth of attention could be seen from the very beginning of hostilities.



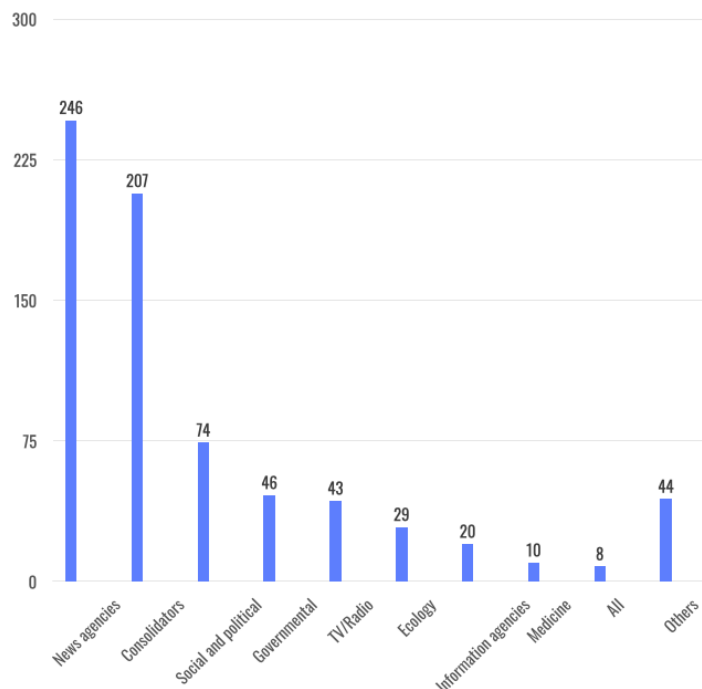
Water pollution was most often mentioned in the regional and unpopular media, references in which in total make 66.7% of the total mass studied. The same way as for many other themes, most attention to water pollution was paid by the news media, 33.8%, and the consolidators, 28.5%. Taken together, it is a bit more than half of all the recorded news items on the theme. The theme can be encountered in the social and political, governmental and TV and radio media almost twice as rarely. The specialised environmental media mentioned the problem in 29 news items (4%). The interesting thing is that this theme is also mentioned in the media of the agroindustrial industry (All on the chart).

The main problem in the context of which the theme was mentioned was water filtration. The media published advice on how to purify melted, rain, river and tap water at home. That interest in the theme could be connected with the fact that access to drinking water during the war is made complicated, and there are risks of water reservoir contamination. Even UNICEF Ukraine published the [advice](#) on water purification spread by the national and regional media with the reference to the initial source on its Facebook page.

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



However, most media note that this advice is not about the water contaminated with chemicals. The news items on the same theme take a separate place in the sources studied. Water contamination in the context of the [chemical attack](#) or [radiation hazard](#) is also mentioned, but is rather secondary and exists at the same level as the other hazards as a result of the occupant's criminal actions. The start of the new phase of the war with Russia also coincided with the spring preventive decontamination of wells, so the portion of news items on water pollution is [advice on how to clean wells](#), which can mostly be found in the unpopular and regional media.

The theme of water pollution was also mentioned as a result of two important newsmakers. The first one was death of rooks in Tuzly Lagoons Natural Park, which was written about by the park employee, ecologist Ivan Rusiev, [on his Facebook](#) page on 30 March. According to the ecologist, the possible causes of the birds' included consumption of contaminated water by the birds. Although Rusiev himself believed that cause was unlikely, the references thereto were spread by the regional (especially Odesa) and national media.

The second newsmaker was flooding of three mines in Luhansk Region. A number of the regional media informed of the complete flooding of Zolote and Toshkivska mines and partial flooding of Karbonit mine due to the damage to the water drainage system as a result of shelling by the enemy. In the opinion of the experts quoted in the [news items](#), it could result in "contamination of Popasna water inlet and local water supply sources" and, as a result, "the mine waters could reach a high level of hazard for the water supply sources in the district in approximately four to six months." If we focus on evaluation of the situation by the media themselves, the titles like [Inevitable Consequences. Three Mines Flooded by Shelling by the Occupants. Why it is Disastrous for the Region](#), or [Ecodisaster Coming to the Controlled Area of Luhansk Region](#) are eloquent.

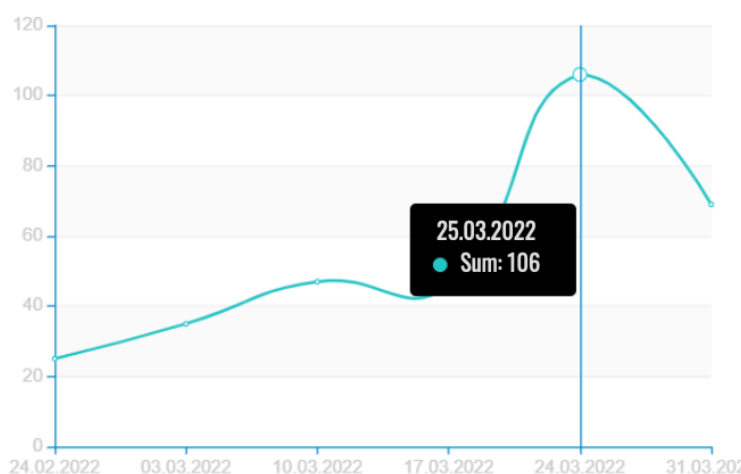
The separate group of the news items on water pollution are about burial of the occupants. Numerous media [mentioned](#) that the occupants had massively burnt their soldiers in the furnaces of the Starch Factory in Sedniv, Chernihiv Region. According to the many experts who made their comments to the Ukrainian mass media, the chemical substances emitted as a result of the bodies burning pollute not only the air, but also water reservoirs in the city. Even more damage is done to the water by the abandoned bodies of the occupants, which emit poisonous substances and hazardous bacteria that contaminate ground waters and water reservoirs of the country. According to some ecologists' estimates that were actively [distributed](#) by the media, such water pollution could result in the ecological disaster.

The theme of water pollution is also present in the analytical and summarising materials on the environmental effects of the war. In most cases, water pollution is mentioned in the context of chemical and radioactive pollution, environmental crime and damage of the water infrastructure, including water supply and waste water drainage systems, treatment facilities and sewage systems, by the occupants. Such news items can be found on the pages of various media and official governmental resources, for instance, at the website of the [Ministry of Environmental Protection](#). However, there are more specialised analytical materials. For instance, there is a substantial and detailed [material](#) with explanation of consequences of the seizure of Kakhovka HPP by the russians for water supply in Ukraine and Crimea. It also explained why “returning” water to Crimea via old and dirty pipes would rather damage the people on the occupied peninsula.

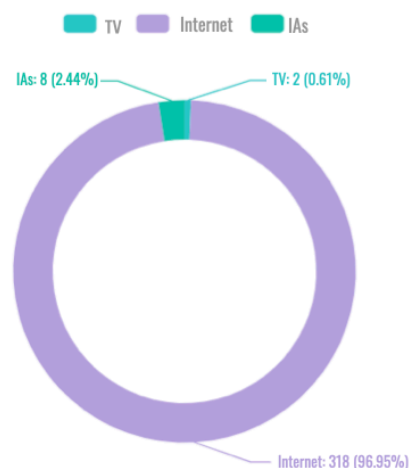
CHEMICAL POLLUTION

The Ukrainian media mentioned the theme of chemical pollution 332 times during the entire period studied. Almost half of the recorded news items (161) were original. It was the smallest indicator of attention among all the themes selected for the monitoring. The focus on the theme had been gradually growing since 24 February 2022 until it peaked on the fourth week of the full-scale war. During that period, it was mentioned in 106 news items, which made one-third of the total mass of the news items.

Mentioning dynamics



Types of media

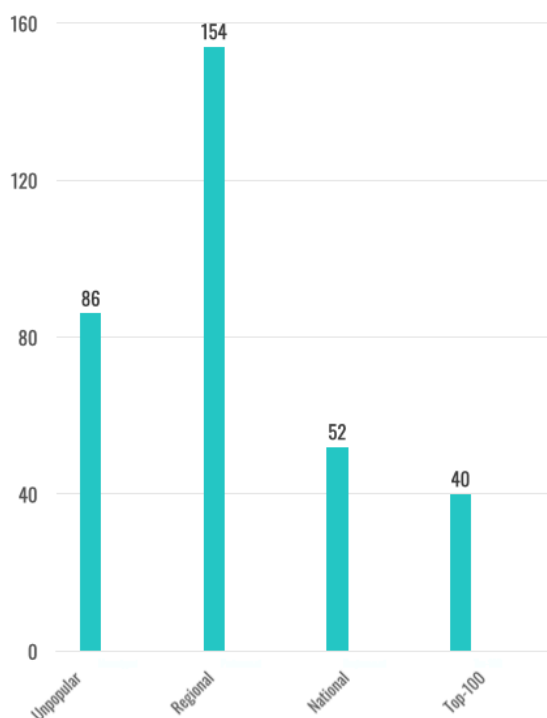


Most references to chemical pollution and related environmental hazards were recorded in the news media: 119 news items (35.8%). The media consolidators ranked second by the number of references: 86 news items (26%).

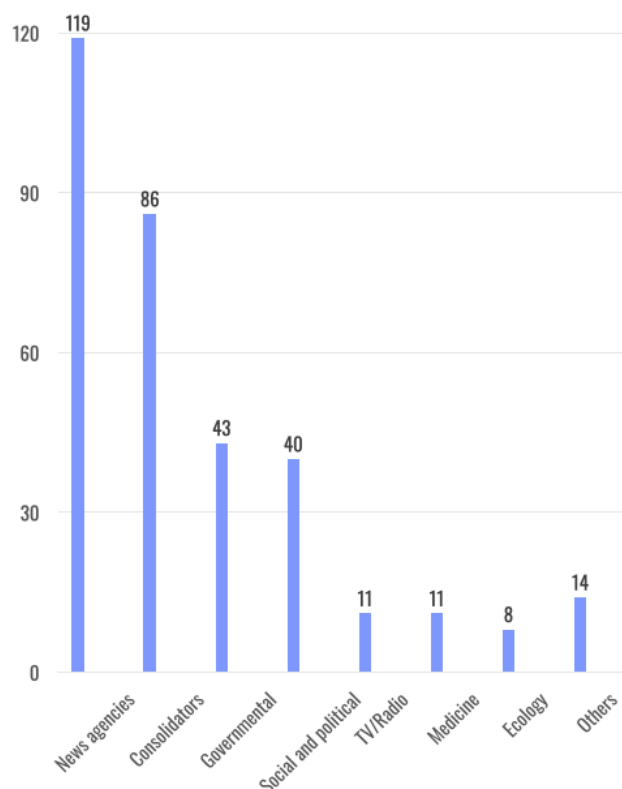
The problem was mentioned twice as little at the platforms of the governmental and social and political mass media: 43 and 40 news items accordingly (25% in total). The surprising thing is that the smallest number of references to chemical pollution can be found in the medical media, 11 news items, and the environmental media, 8 news items.

Most attention to the matter of chemical pollution was paid by the regional media: almost half of all the references during the entire period (154 news items) were made in the local mass media. However, the national media mention the problem three times less (52 news items), and only 40 news items were found in the media from Top-100.

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



If we consider the themes of the news items, chemical pollution was most often mentioned in the context of the hazards caused by the hostilities: shelling of industrial enterprises, emissions of hazardous substances during detonation of missiles and artillery shells, bombing of cities with the banned phosphorous bombs. Those themes were mentioned most often during the second half of March. The reason was a number of newsmakers, in particular, [shelling of Sumykhimprom](#) on 21 March and registered use of phosphorous bombs by the russians in [Kramatorsk](#) on 22 March (for the second time in Donbas) and in the [vicinity of Kyiv](#) on 23 March. The news on such cases were followed by the list of recommendations to the public on how to protect themselves in case of [phosphorous bombing](#) or emission of hazardous chemicals, for instance, [ammonia](#).

24 March created the additional newsmaker about probable use of chemical weapons by the russians and possible effects for the public and the environment. There was an extraordinary NATO summit that day, and NATO Secretary General Jens Stoltenberg [expressed his concern](#) about possible use of chemical weapons by russia. In his speech, he emphasised that the aggressor's actions would influence not only Ukraine, but also the NATO countries. Some media shared that news titled russia Creating a Pretext to Use Chemical Weapons or Contamination to Comer to the NATO Territory Too: Stoltenberg Warns russia against Using Chemical Weapons in Ukraine. Following Stoltenberg's statement, the number of references to the threat of chemical weapons and related contamination grew considerably. The number of notices with recommendations and action plan for the chemical attack increased as well.

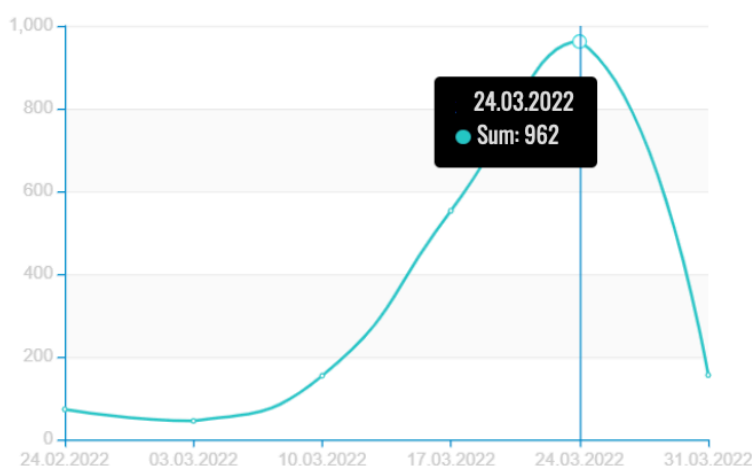
However, the theme of chemical pollution was present in the media even without loud newsmakers. The national and regional media published their [advice on how to purify water](#), access to which during the war can be difficult during the war or as a result of the contamination. There are also references to chemical pollution in the news items on how to behave during emergencies.

It should separately noted that chemical pollution is mentioned in the context of the general theme studied, The Environment and the War. Almost every detailed publication on the long-term environmental effects of the war and its immediate impact now refers to chemical pollution. The ecologists and other experts talk about the hazard of chemical pollution and changes in acidity of the ground because of the remains of the shells, fuel and lubricating materials, about emissions of hazardous substances into the air during missile detonation, about contamination of water reservoirs with chemicals and probable environmental disaster for entire Europe.

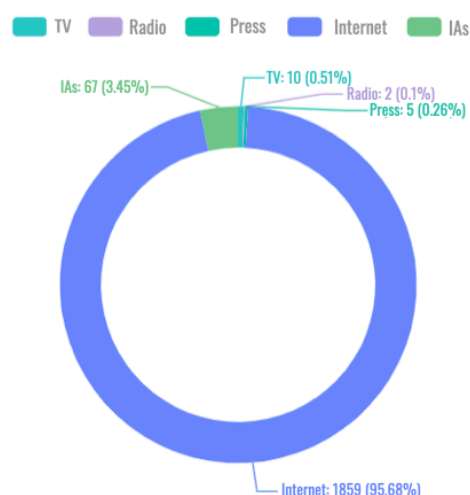
FOREST FIRES

The theme of forest fires has been actively accompanying the media agenda of the war. During the reporting period, such connection was also explained by the geography of the hostilities to a considerable extent: the most intense battles took place in the forest districts of Polissia, Sivershchyna and northern Slobozhanshchyna.

Mentioning dynamics



Types of media



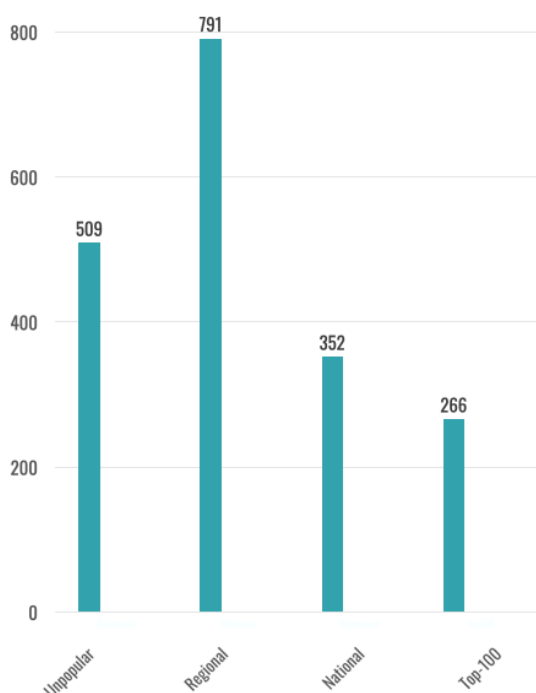
The focus on the theme was growing. The maximum number of the news items was on the fourth week after the start of the hostilities. During that week, more than half of all the news items on the theme were recorded: 962 news items (50.2%). The main reason is abrupt growth of forest fires as a result of the intense hostilities.

The theme was mostly covered by the regional media – 791 news items (41.2%), in the first place, from the northern regions (Kyiv, Chernihiv, Zhytomyr, Sumy). However, the attention in the national and top media was also noticeable. It made 18.4% (352 news items) and 13.9% (266 news items) accordingly. Therefore, one-third (32.3%) of the total mass was the media with the maximum coverage of the audience.

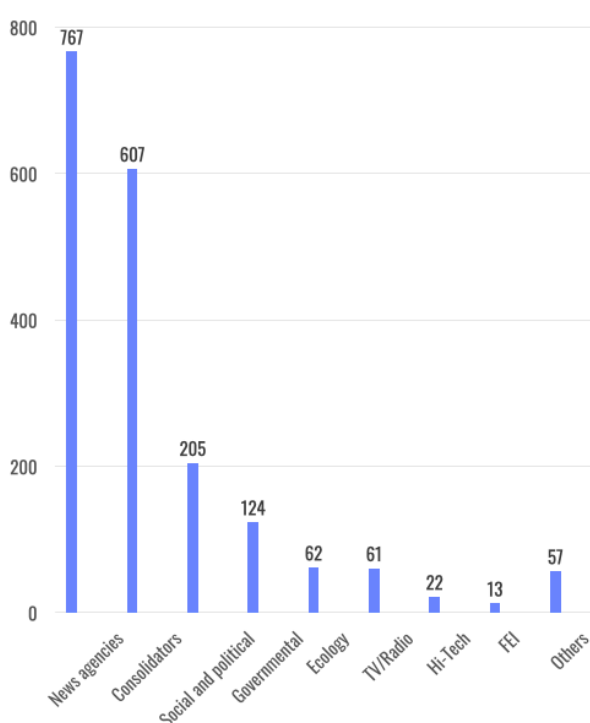
The loudest newsmaker on the theme was probable fires in the Chornobyl Zone and related hazards. The information thereon was published during the last ten days of March, when the area was occupied by the army of the Russian Federation.

Notices of those fires were closely related to the theme of radiation hazards and pollution and based on the principal news item: [Forests with Radioactive Pollution Burning in Chornobyl Exclusion Zone](#).

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



Moreover, they [specified](#) the cause (“due to the hostilities”), the scale (“more than ten thousand hectares of the forests burning, with 31 fires registered”), the effects (“increased level of radioactive air pollution”; “as a result of the fire, radio nuclides are released into the air and carried by the wind long distances. It poses a radiation threat for Ukraine, Belarus and European countries”) as well as difficulties extinguishing them (“control and forest fires are impossible due to seizure of the exclusion zone by the russian army”).

In this regard, [the forecasts were made](#) that “in the nearest future, it can result in huge fires covering dozens of thousands of hectares that are difficult to handle even when there is no war” and that “the fires can fully destroy not only numerous villages and towns in the north of Kyiv and Zhytomyr Regions, but also strategic nuclear facilities in the Chornobyl Zone itself.” However, even before the russian army was withdrawn from this area, on 28 March there were news items that the problem was exaggerated and [large-scale fires](#) in the Chornobyl Zone [had already been extinguished](#). Some authors even said that the information on the fires and their scale was “[fake](#)”. On the first days of April, there was news on complete [liquidation of fires](#) in Chornobyl forests, which actually coincided with some of the russian armed forces fleeing from there.

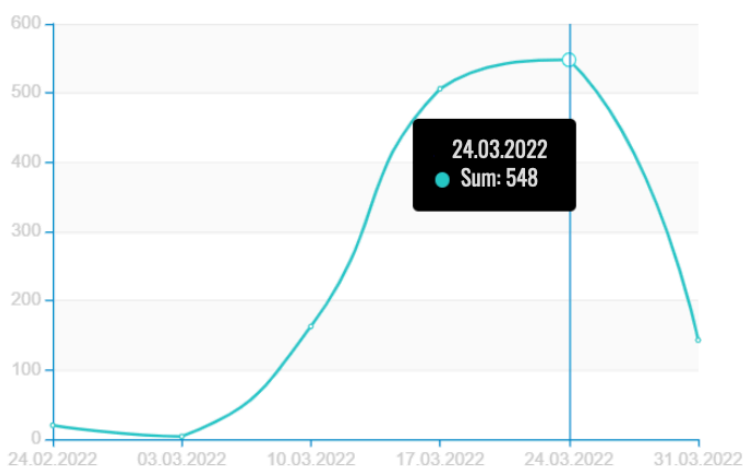
The theme of forest fires was closely related to the theme of starting grass fires (see the applicable section). The warnings by the local and law enforcement authorities about the danger of burning emphasised that “fire could quickly move to the settlement and forests nearby” and generally suggested “[burn the enemy rather than grass](#).”

The separate group of news items was the news items on the [specific fires](#) in the forests as a result of shelling by the russian army. In particular, they were about [criminal proceedings](#) instituted based on such actions and their effects. The statement of the Ministry of Environmental Protection dated 25 March that the “[russian occupational army is destroying the environment](#) of Ukraine and have already damaged almost 102 thousand hectares of the landscape, including forests, with fires as a result of the shelling” drew a lot of attention.

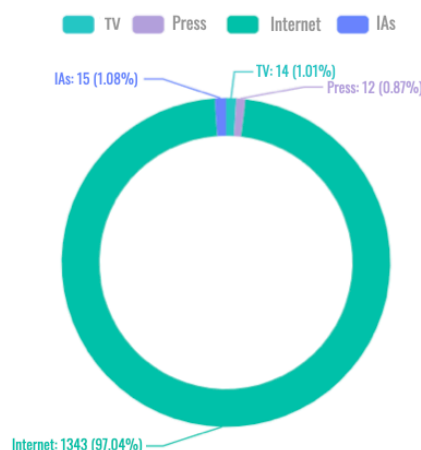
STARTING GRASS FIRES

During the first week of the hostilities, the Ukrainian media practically did not mention the theme of starting grass fires. There were other more important themes in the new medium agenda. However, their focus started growing from the third week and reached the maximum indicators during the period studied in the second half of March. The seasonal factors played their role: the media started to inform of numerous cases of burning the spring deadwood.

Mentioning dynamics



Types of media

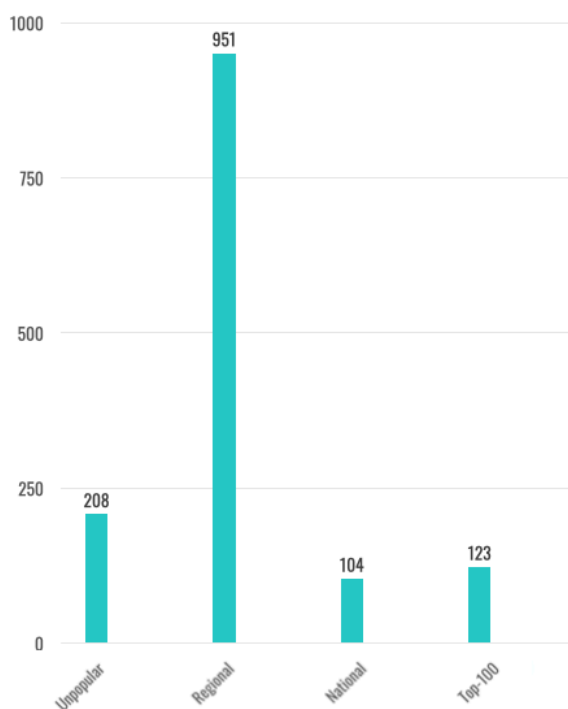


The peculiarity of coverage was demonstration of attention by the local media: more than two third (69.5% or 951 news items) of the materials on the theme were published by the local, regional mass media. In its turn, the share of the top media and resources of the national scale is low – 8.9% (123 news items) and 7.5% (104 news items) accordingly. The resources of the information and news profile also dominated evidently: more than half (50.4%, 698 news items) of the materials were published in such resources. In general, statistical and structural peculiarities of media coverage of the theme of starting grass fires demonstrated that it mostly mattered at the local level and based on the principal media trends caused by the war to a considerable extent.

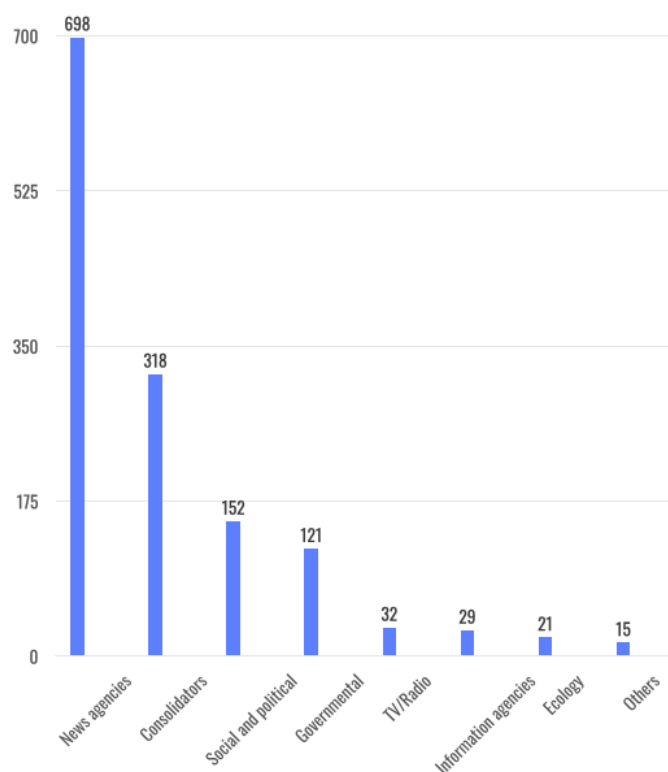
The brightest line in the media coverage of the theme of starting grass fires was publication of the materials with warnings regarding danger of such actions. However, it was admitted in the materials that appeared at the end of March and after the first burning wave that [“the preventive methods for fighting fires](#) in open areas are not always efficient.”

Therefore, the State Emergency Service and the police informed the citizens that they would have to impose fines. There was clear connotation with the terminology of the war – most materials with warning about burning grass, in particular, near critical infrastructure facilities, contained its [comparison with sabotage](#).

Distribution of materials by the category of sources



Distribution of materials by the profile of sources



In some of the communities with the especially tense situation as a result of grass burning, it was emphasised that “[conscious destruction of the environment during the war is CRIME!!!](#).” In its turn, Ukrenergo warned that starting a fire “with subsequent [damage to the power lines](#) ... for the period of the war could be treated as sabotage.” It was stated in the [analytical overview](#) of the problem that “even the war would not stop the people from starting fires. While Ukraine suffers from the fires caused by air strikes and bombs of the occupants, our citizens keep deliberately burning dry grass and other plants, thus causing fires and damaging the environment, people’s health and undermining the country’s ability to defend itself.” It was also noted that “as of 31 March 2022, in Ukraine ... 1,698 fires were registered according to SaveEcoBot and FIRMS.” The [map](#) attached clearly showed that “the fires occurred not only in the area of the hostilities. A considerable number of fires in the western regions of Ukraine demonstrate more active “setting dry plants on fire intentionally and without control.”

The considerable group of news items informed of the results of starting the fires. Although they contain facts in the first place, the materials almost always had clear criticism against those starting the fires and such practice itself. This method for covering the theme is presented by the title of Lviv newspaper The Ratusha: [Tragic Effects of Burning Grass](#).

Another group of news items was about a [ban on visiting forests in certain regions](#) for civilians and, in particular, going on picnics during the war. One of the arguments was the need to [avoid starting grass fires](#).

GOOGLE TRENDS

Study of the Ukrainians' Interest in the Environment Based on Google Search

More than 93% of Ukrainian Internet users search for information online by means of Google search engine. Therefore, popularity of specific requests in the search engine indirectly represents the level of the people's interest in specific themes. Nowadays, the natural response to interest in anything is search for more detailed information online.

In order to assess changes in the Ukrainians' interest in the themes associated with the environment, we collected the information from Google trends, which helps trace the frequency of various requests. We assessed the frequency of search in Ukraine from 1 January 2022 until 26 April 2022.

GENERAL CONCLUSION

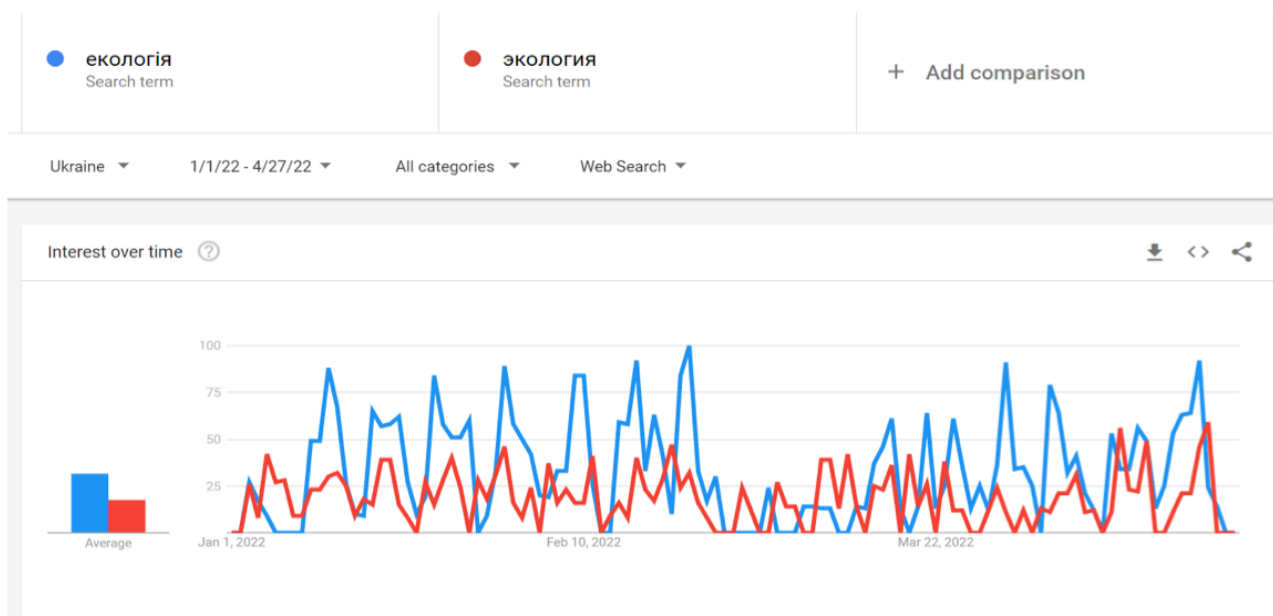
To sum up, we can claim that all the studied matters of environmental protection remained interesting for the Ukrainians following the Russian invasion. Although we expected the indicators to fall down after the war had started, both due to a shift in the focus and fewer users because more than four million Ukrainians had to move abroad, there was no decline during two months.

Moreover, the Ukrainians' interest in the environmental protection grew considerably in some spheres, sometimes substantially.

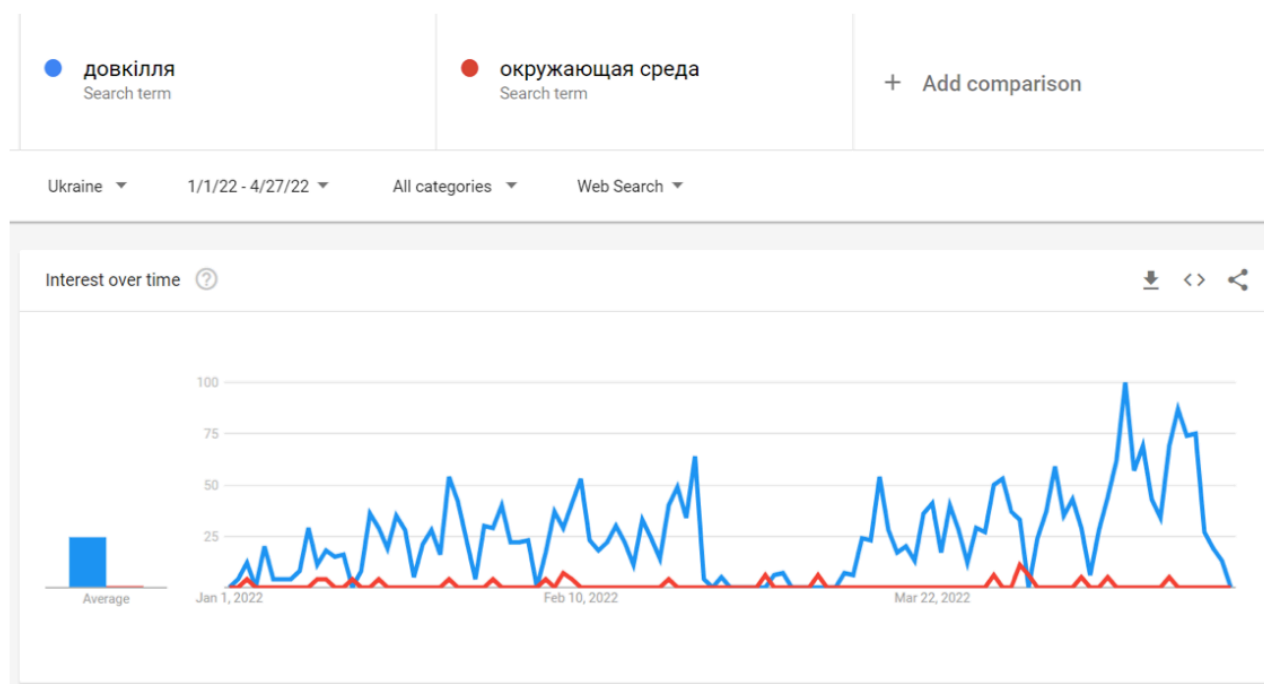
GENERAL REQUESTS

If the general requests, such as **environment** and **ecology** are studied, we can trace similar dynamics: the quantity of requests falls right after the Russian attack, but it recovers or gets a bit higher in approximately two or three weeks after the start of the major war.

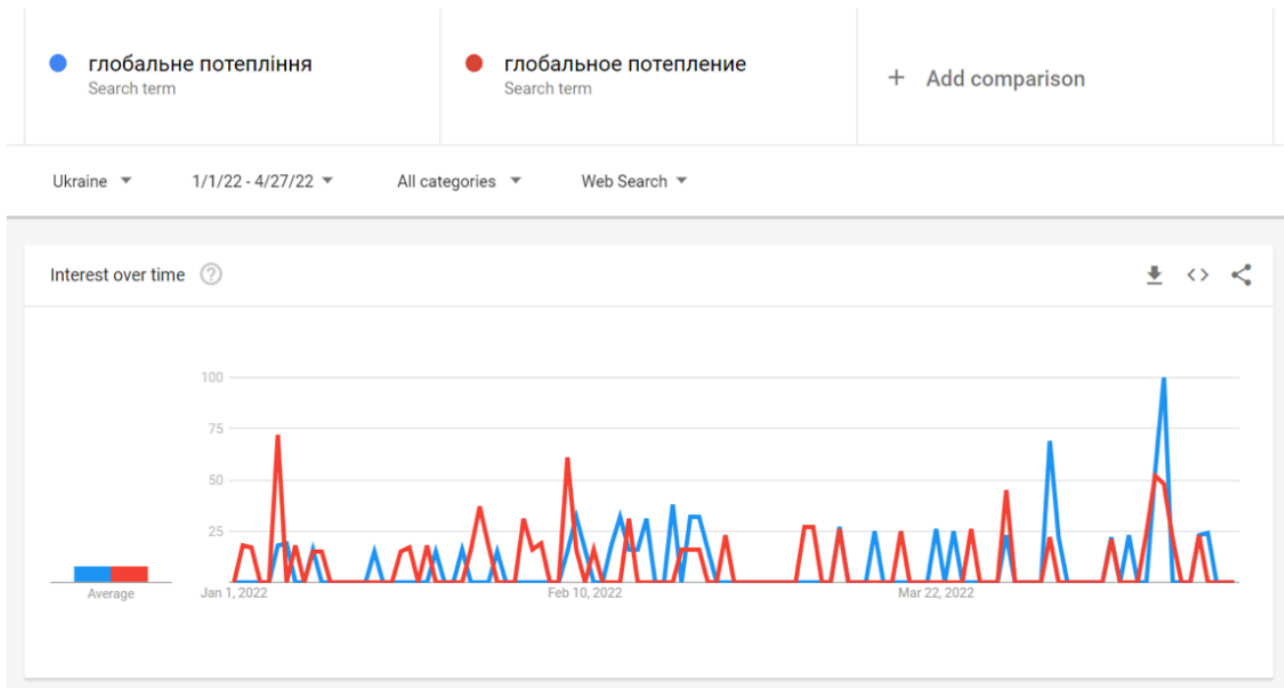
The requests about **ecology** practically reached their pre-war level.



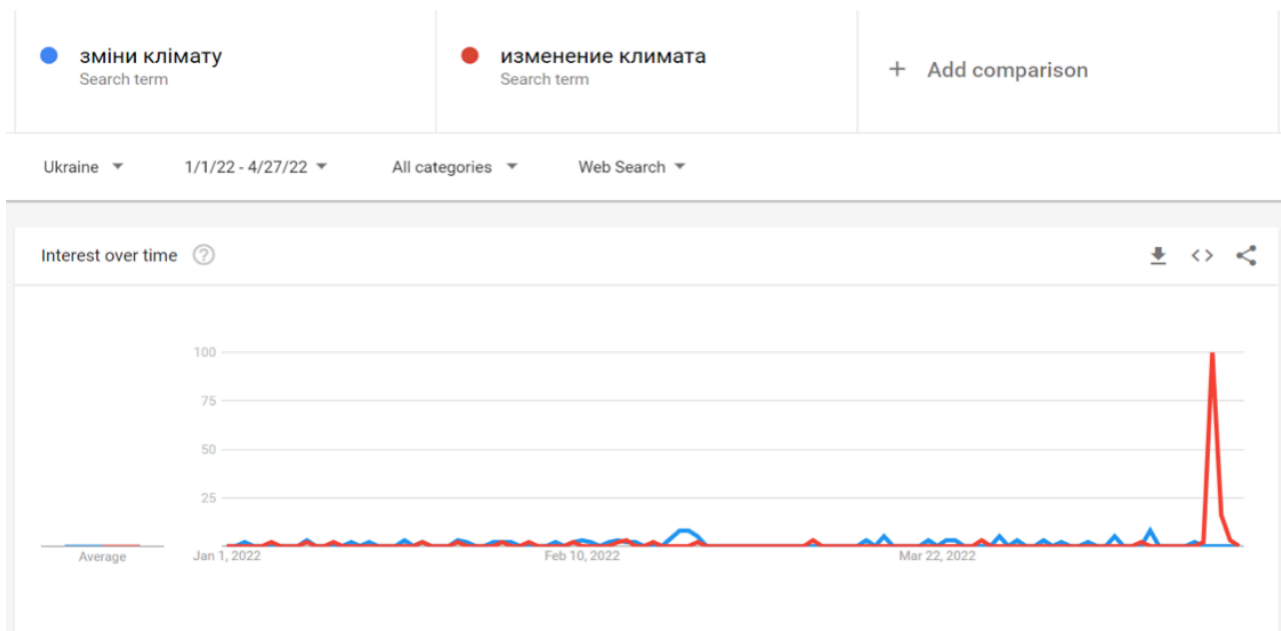
The number of requests that contain the word “**environment**” first recovered and then grew almost twice since the beginning of April.



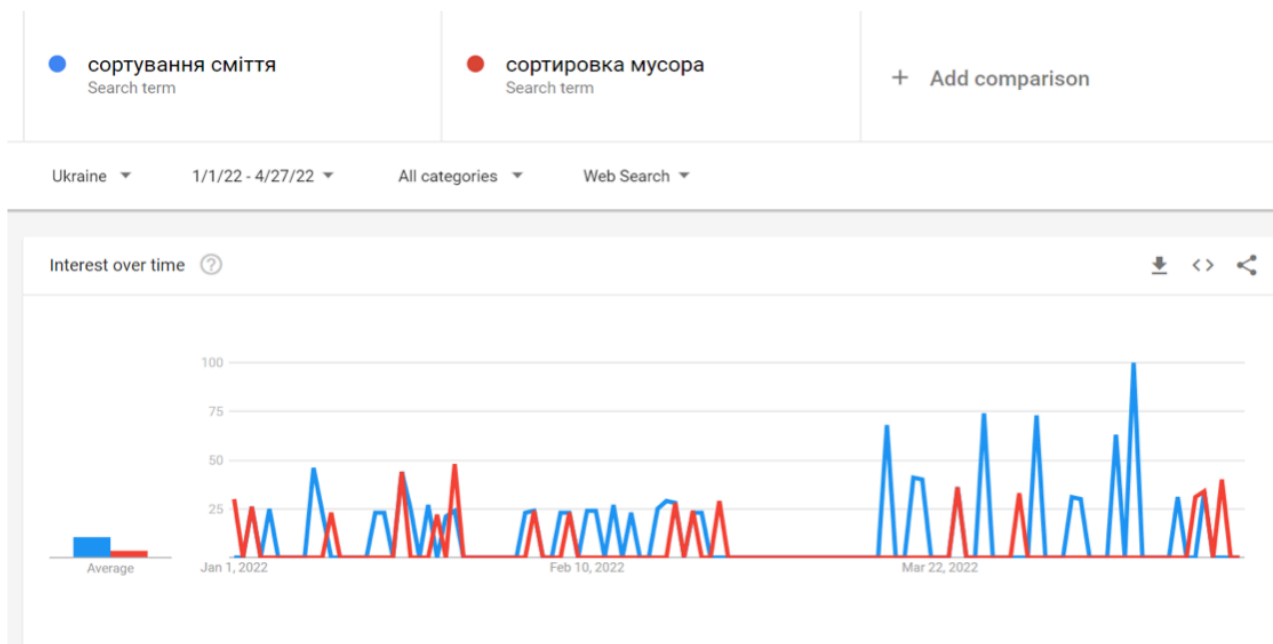
The requests about the **global warming** remain practically stable and even demonstrate outbursts of interest.



The requests regarding **climate changes** grew considerably in the Russian language on the Earth Day, but the growth in Ukrainian was minor. The causes of this phenomenon are not clear.



The requests about **sorting of garbage** also went down after the war had started, but they exceeded the pre-war level almost twice during the last month, which can be explained by considerable generation of different sorts of waste as a result of hostilities and displacement of people.

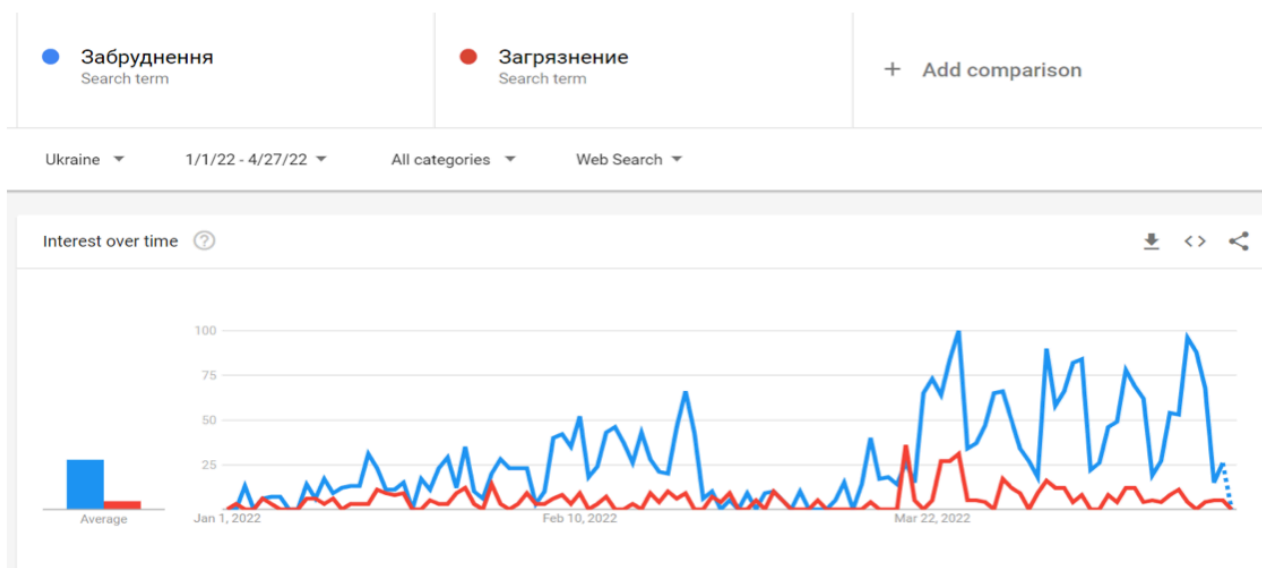


POLLUTION REQUESTS

Despite the decline right after the beginning of the war, the number of requests about **pollution** grew considerably from the beginning of March. Both average and peak days of requests demonstrate considerable growth of interest and worries about pollution matters.

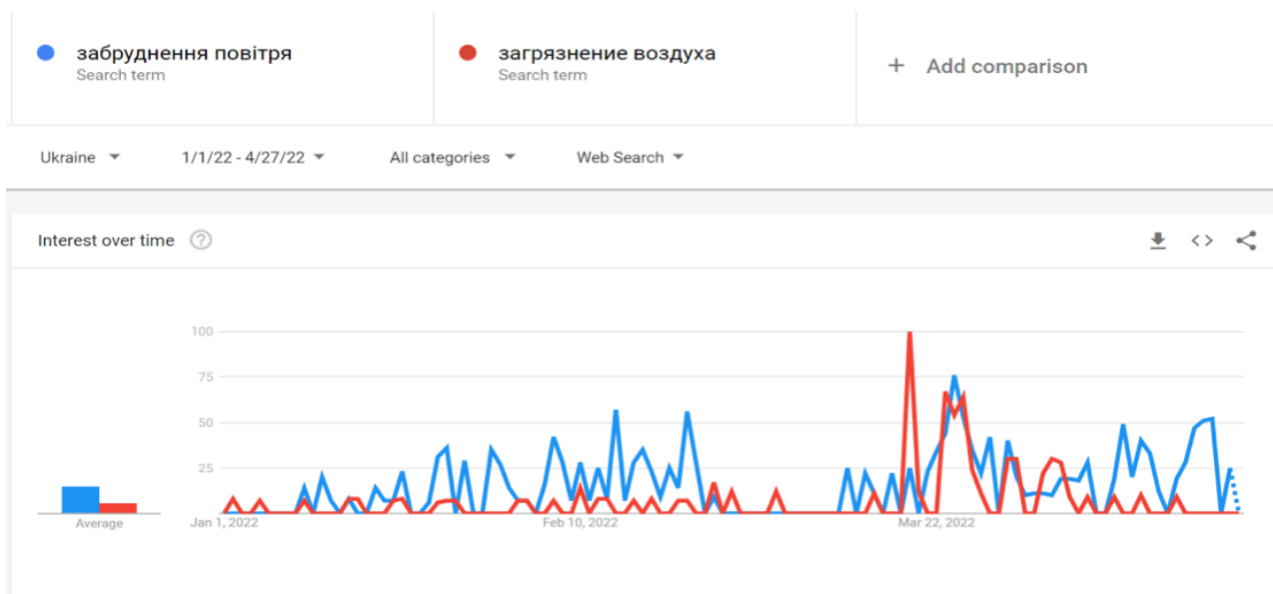
In the first place, it is about air, water and soil pollution. Such terms as **chemical pollution** and **biological pollution**, which used to be of practically no interest to the Ukrainians, gain considerable popularity for the first time.

The chart shows overall growth of the number of requests with the word “**pollution**” starting from

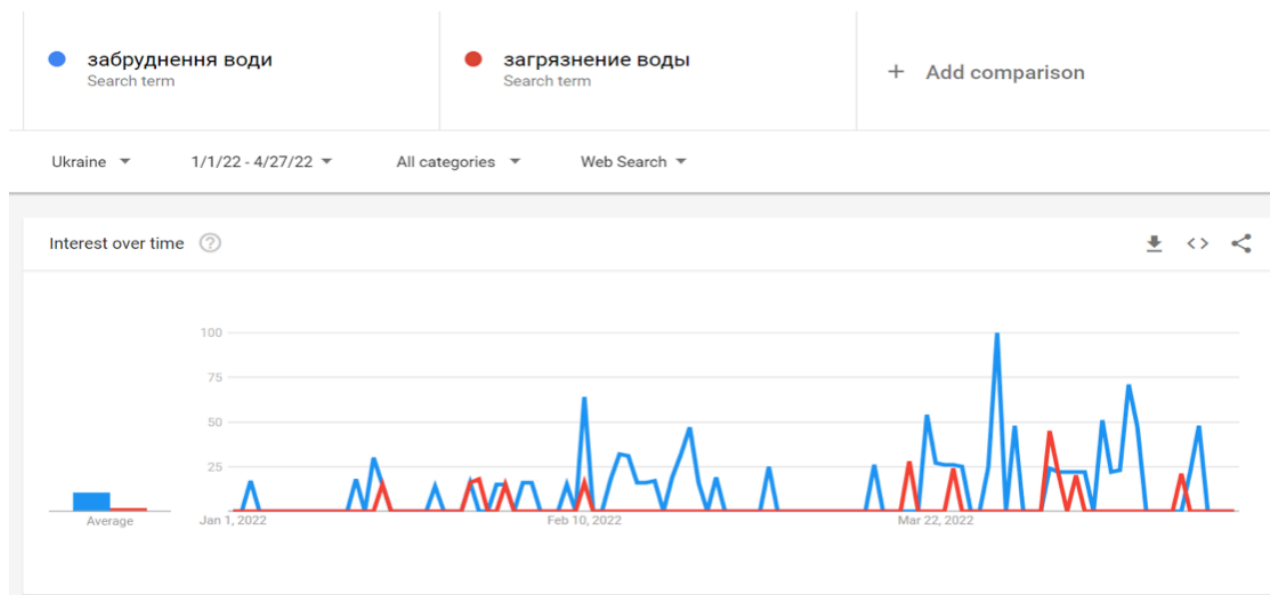


Similar trends can be traced for the specialised environmental pollution searches: **air pollution, water pollution, soil pollution, ground pollution**.

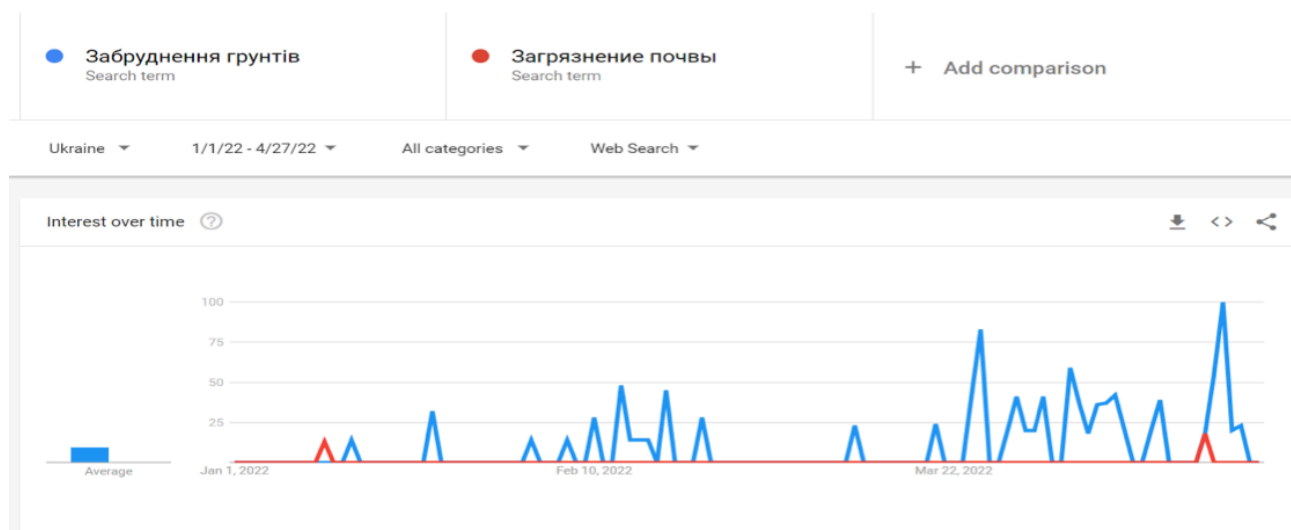
The term “**air pollution**” gained more popularity at the middle of end of March when there were hostilities in the vicinity of Kyiv, and the rubbish dumps burnt as a result of explosions.



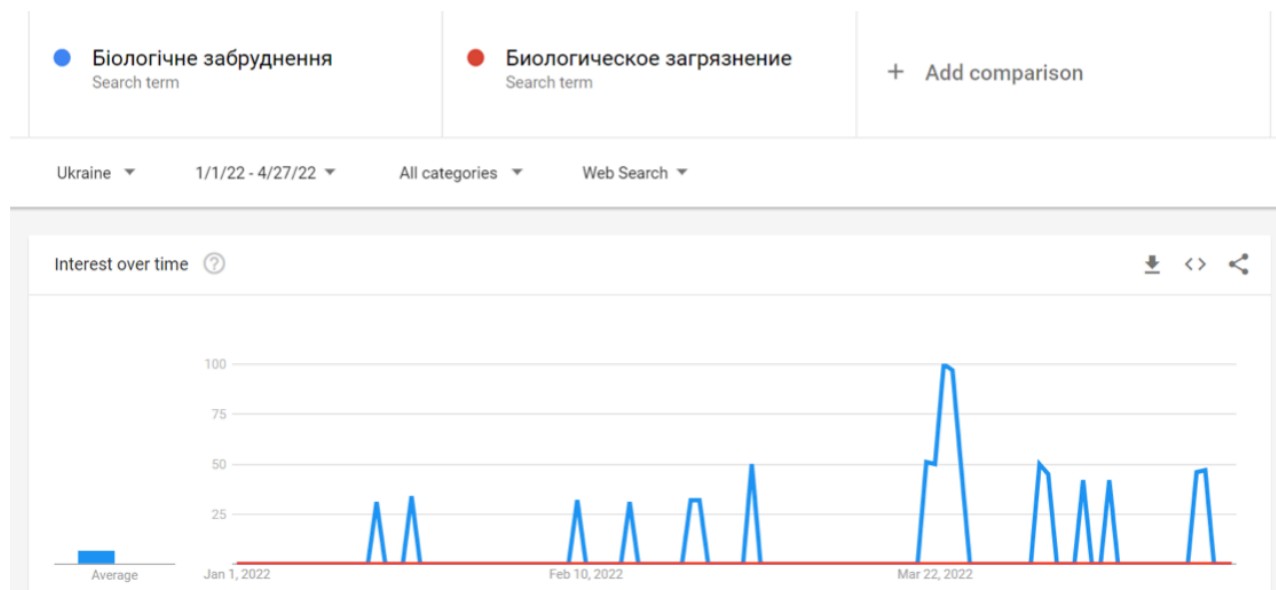
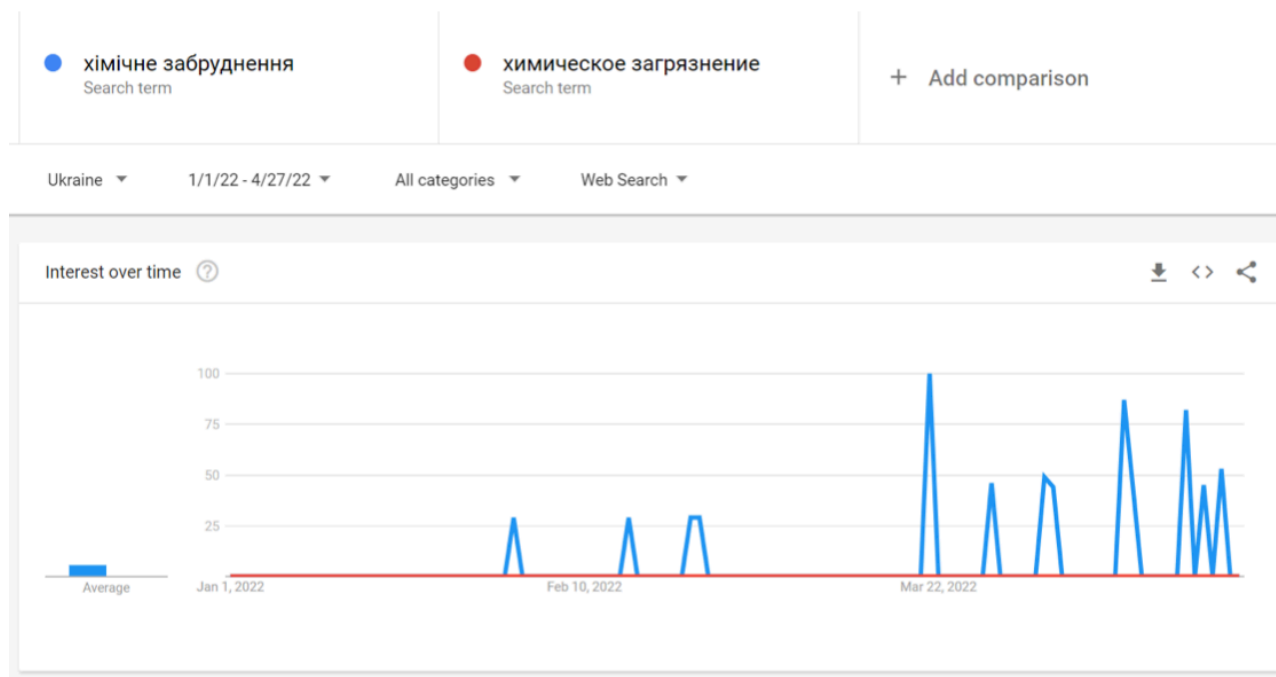
The theme of **water pollution** gets somewhat more popular.



The theme of **soil/ground pollution** obviously gets more interesting for Google users. It used to be of no interest to the Ukrainians before the war.



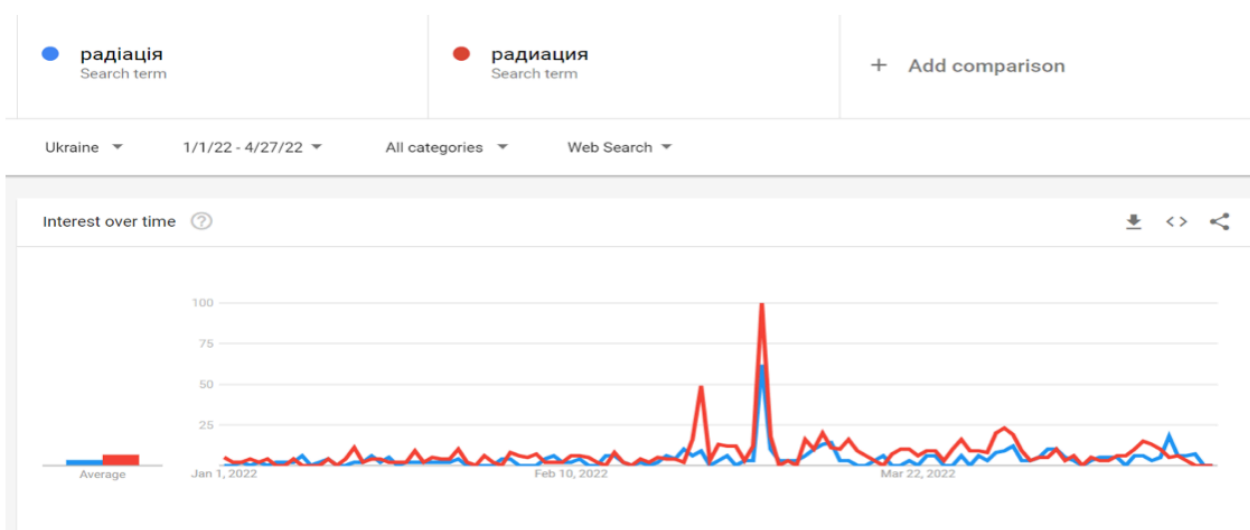
The same way, the theme of **chemical/biological pollution** gets obviously more interesting to the Ukrainians (although the interest is still minor).



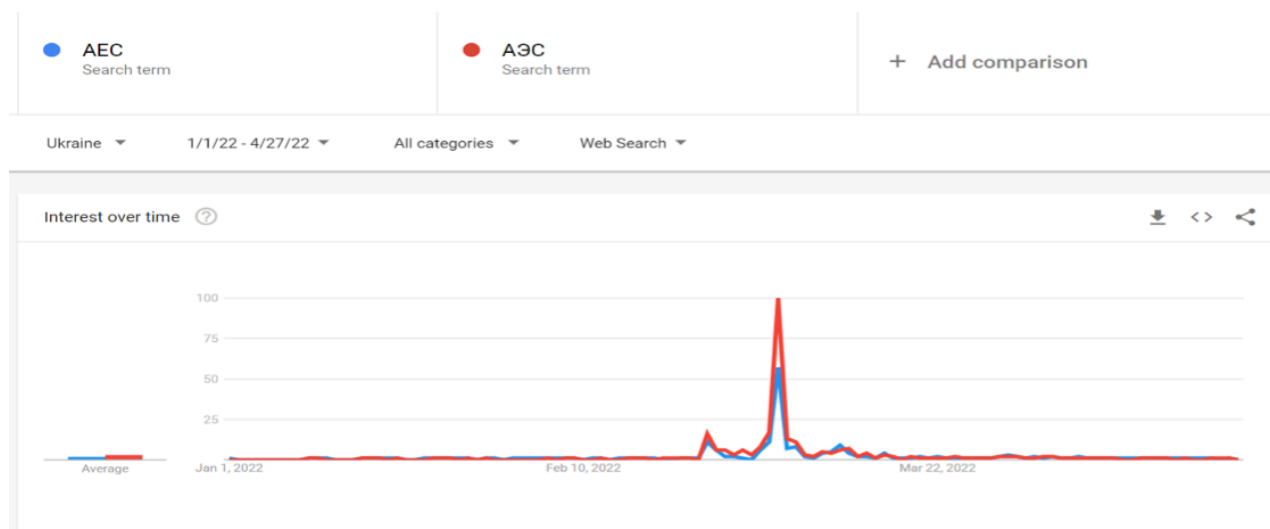
RADIATION HAZARD

The area interest in which grew most is the radiation hazard. During the hostilities, the russians occupied two nuclear power plants, one of which has already been freed by the Ukrainians. It has probably increased the concerns and, therefore, interest of the Ukrainians in the radiation and radiation hazard many times. The interest in the requests connected with this theme considerably grows after the beginning of the full-scale war.

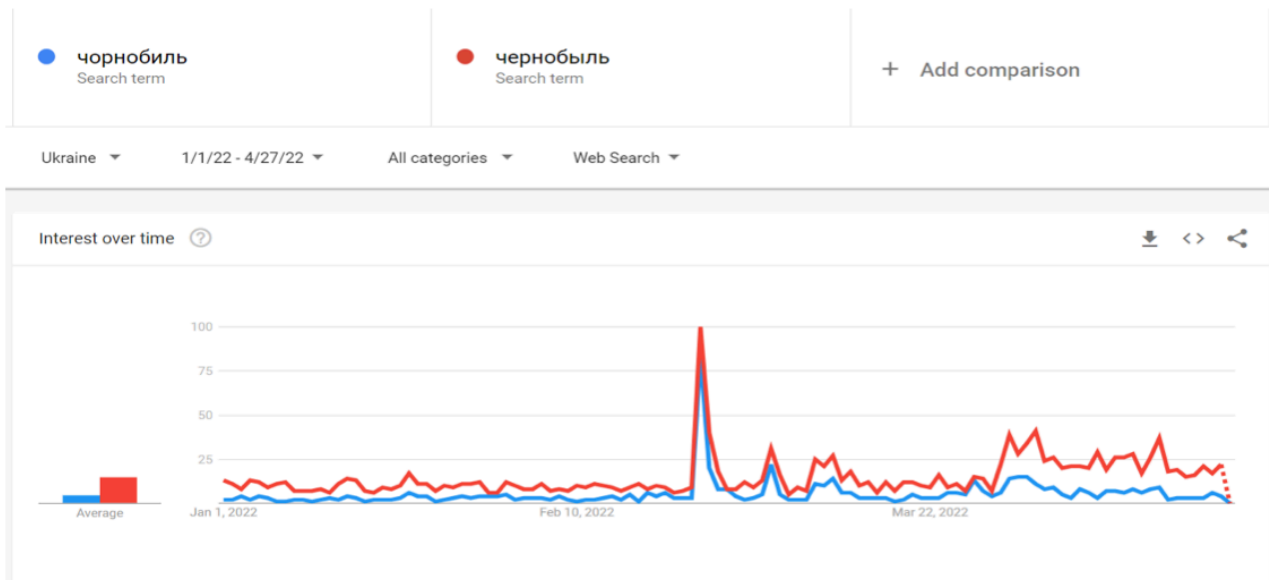
The peak values in the charts are the days when the Chornobyl and Zaporizhzhia NPPs were seized. As we can see, the peak attention to **radiation** on the day when the Zaporizhzhia NPP is seized grows ten times in comparison with the average pre-war values.



The related requests also demonstrate dramatic growth. For instance, the NPP.



The term “Chornobyl”, which had had peak annual search results for many years on the anniversary of the tragedy, 26 April, did not have such peak in 2022. However, the Ukrainians were actively interested in the theme of Chornobyl when the plan was occupied, and still are interested in this theme following the deoccupation.



THE ENVIRONMENT AND THE PRESIDENT

If the “collective Armed Forces of Ukraine” are omitted, the main newsmaker of the war is President of Ukraine and Commander-in-Chief Volodymyr Zelenskyy. Every day, he prepares addresses to the Ukrainians, and he has also prepared more than 30 addresses to the parliaments of the other countries and international organisations.

In his addresses, the President most often discusses the themes of war and future after-war reconstruction, atrocities by the russian occupants, resilience of the Ukrainians, and interaction with the partners of Ukraine. We have decided to study whether Volodymyr Zelenskyy mentions the environmental protection matters in his addresses. As it has turned out, although these themes are not of priority in Zelenskyy’s speeches, they also contain important natural protection messages.

NUCLEAR HAZARD

Among all the themes association with environmental protection, Volodymyr Zelenskyy most often mentioned nuclear contamination and nuclear safety.

Zelenskyy first mentioned the explosion in Chornobyl on 3 March, in the list of the calamities encountered by Ukraine for the last century. On 4 March, he dedicates the considerable part of his speech to the theme of nuclear safety. It happened the next day after the russians had started the fight and shelled the NPP near Enerhodar.

The Presidents paid attention to the dangerous actions of the russians, “We survived the night that could stop the history. History of Ukraine. History of Europe. **The russian army attacked Zaporizhzhia Nuclear Power Plant.** The largest in Ukraine. It could be like six Chornobyls.”

To address the russians, he started to speak russian and mentioned the disastrous effects of the Chornobyl disaster, “In 1986, we joined our forces to fight the **consequences of the Chornobyl disaster.** You must remember the burning graphite scattered around by the explosion. Victims. You must remember the light over the destroyed power unit. You must remember the evacuation from Prypiat and 30-kilometre zone. How could you have forgotten that? If you have not, you cannot keep silence. You must tell you government, go outside and say that you want to live. **Live on the planet without radioactive contamination. Radiation does not know where the russian borders are.**”

On 23 March, when he spoke in front of the Japanese Parliament, Volodymyr Zelenskyy mentioned Chornobyl and importance of environmental protection. He described the consequences of the Chornobyl tragedy in 1986 as well as barbarian actions of the russians in 2022 who “turned that facility into the arena of war.” He noted that the impact of russian upon the nature in the Exclusion Zone had to be studied, “After the russian army withdraws from the territory of Ukraine, **it will take years to study what damage they have done to the Chornobyl land.** Which radioactive material burial sites they have damaged. And how the radioactive dust has travelled the planet.”

On 31 March, Volodymyr Zelenskyy repeatedly mentioned radioactive pollution in the context of possible consequences of use of the nuclear weapons. He did that in his address to the Parliament of Australia, “Nobody can manage wind and precipitation on the planet, **so nobody will be able to save any part of the Earth from radioactive pollution** as a result of use of the nuclear weapons.”

On 26 April, the President dedicated the major part of his speech to the matters of nuclear safety again. It was connected with the anniversary of the accident at the Chornobyl NPP. Zelenskyy spoke about the hazard created by Russia with its actions around the NPP and the probability of the new disaster.

In the same speech, he described the hazard of actions in the 30-kilometre zone and carelessness of the Russians, “They have organised their operating sites at the land where you cannot even stand. They drove their armoured vehicles around the area where **the materials contaminated with radiation are buried, and where the quantity of radioactive particles is over the top**. They ruined the health monitoring stations. They broke down and stole the radiation control system at the ChNPP. They robbed the nuclear analytical laboratory... They even stole contaminated things confiscated from those who breached the exclusion zone rules!”

That speech was based on the urge to strengthen control over the Russian nuclear facilities, “If **Russia has forgotten what Chornobyl is**, it means that we need global **control over the Russian nuclear facilities** and nuclear technologies.”

FOSSIL FUEL HAZARDS

In his speeches both to the Ukrainians and parliaments of different countries, Zelenskyy often mentions the need to impose the embargo on the Russian oil and gas. He mostly reasons this decision with ethical principles and unreliability of Russia as a business partner. However, one of the arguments is the environmental unfriendliness of the fossil fuel.

This theme is discussed for the first time and in the most detailed manner in Zelenskyy’s speech to the Parliament of Denmark. He talks about the damage done to the environment by the fossil fuel and the need to use the green energy, “The era of coal and oil has done major damage to the environment and our planet. **The green technologies and green energy are a logic and fair response to this challenge.**

The European policy is already aimed at reduced consumption of environmentally hazardous resources. However, the Russian aggression against Ukraine and everything on which the life in Europe is based is an argument **to accelerate the green transformation on the continent**. Europe has to refuse from the Russian oil, refuse as soon as possible!”

On 8 April, when he spoke to the Parliament of Finland, the President said, “How long will Europe keep ignoring the need to introduce the embargo on the oil from Russia? **It is a matter of security in every sense of the word, from the environmental to the military one.**”

In his speech dated 9 April, the President noted on the refusal from gas, “The other source, gas, will also be turned off eventually. It is inevitable. **Not only for security purposes, but also for the sake of the environment.**”

OTHER IMPORTANT REFERENCES TO THE ENVIRONMENTAL MATTERS

In his speech dated 16 April, Volodymyr Zelenskyy noted that the cities and buildings there must be more environmentally-friendly after the war, “The historical moment has come. The moment when we can resolve many old issues of our life once and forever. When we can create quality urban planning in the places where it never existed. We can consider the real traffic. **Guarantee energy efficiency, environmentally friendly materials**, inclusion. I am talking about organisation of the living space and quality of construction.”

When he addressed the Parliament of Norway, Volodymyr Zelenskyy spoke about the natural hazards that could be created as a result of Russia blowing off the oil tankers in the Black Sea, “They could possibly be the tankers, explosion of which can result not only in human casualties, but also **the large-scale environmental disaster**. And then Russia will claim it is not its fault, as usual.”

When he spoke in front of the Parliament of Japan on 23 March, the President mentioned the environmental challenges among the ones being material in the context of the Russian war. “**The environmental and food challenges are unprecedented**,” he claimed.

On 24 March, in his address to the Parliament of Sweden, Zelenskyy mentioned his love to nature as one of the important attributes that made the Ukrainians and the Swedish similar. “We want the same, justice **and caring attitude to the natural world which we live in**. So Sweden is logically among the countries that support Ukraine most now.”

CONCLUSIONS AND RECOMMENDATIONS

According to the mass media monitoring, overviews of the social and search requests, the Ukrainians' interest in the themes associated with the environment grew after the Russian full-scale invasion. Everything demonstrates the mutual tendency: the citizens need more vital information on the environment, which makes the media and information platforms publish the materials on environmental protection, and the mass media focus on specific themes makes the citizens more interested in their coverage.

While the interest in some themes has grown inconsiderably, some of the matters have gained considerable popularity. In particular, that is about radioactive, chemical and biological pollution.

We can see several reasons for the growing interest of the Ukrainians in general and mass media in particular in the environmental protection.

The most obvious one is that the theme of environmental protection is associated with personal safety in the context of the Russian atrocities. When they write or read about the consequences of the occupants' actions, the citizens of Ukraine are mostly interested in the information that directly influences their safety. In particular, it is about all the types of pollution, chemical, biological, radioactive, air, water and other one.

Although the interest arises out of basic search for information on their own safety, the Ukrainians also obtain general information on the environment: how damage is done to the environment, what the consequences are, and how these effects can be overcome. In part, it also shapes the framework for the Ukrainians' mentality as to the environment, understanding of interconnection of the natural processes, importance of preservation of the clean environment, including to save their own health and well-being.

Another obvious reason for more attention to the environment is opinions of the public figures who mention the environment in their speeches, addresses and statements. In the first place, it is about the President of Ukraine as well as leaders of the partnering countries in the context of damage to the environment as a result of the Russian invasion as well as in the context of refusal from the Russian fossil fuel. These quotes are published by the media and, in the context of the increased focus of the Ukrainians on the news after the start of the war, actively shared by the citizens.

The less evident reason for more interest of the Ukrainians in the environment is growing patriotism, which among limitation turns into the desire to protect and preserve what you have: land, forests, rivers, fields etc. The war has naturally sharpened the deep Ukrainian feelings to the nature of their country. In psychological terms, the stable association is created: the occupant is destroying the nature, and the Ukrainians must preserve and restore it etc. Deforestation, which could have caused dull discussion in the local chats during the peaceful times at best, turns into the top theme if it is caused by the occupant's army.

In their turn, the arguments that the nature itself is protecting the Ukrainians from the war are spread actively: rivers overflowing, landscape, "General Green" (leaves) etc. It is discussed that the Ukrainians must be grateful to nature that it has helped them beat the occupants (for instance, the fact

that protection of the Kyiv forests from being cut down saved the city from the battles inside it, so the forests cannot be cut down).

It creates a window of opportunities to promote messages of environmental protection in the context of the fight against the occupants, preservation of the Ukrainian nature from their impact, post-military reconstruction at the new quality standards etc. Such public discussions develop the ecological thinking and, in the long term, can have a positive impact on development of the ecological mindset in Ukraine.

It is also facilitated by the situational applicability of the minor environmental narratives, which have also drawn additional attention as a result of the Russian aggression.

The theme of the fossil fuel, namely oil and gas, has been discussed since the beginning of the war in the toxic frame of financing and support by Russia. The fossil fuel is framed as something negative, as a tool of energy and political blackmail used by the aggressor in response to the sanctions, and as a source to finance the war against Ukraine. In some EU countries, you can see posters with “Putin’s gratitude” for financing the war that were placed by the Ukrainians to make the Europeans feel accountable. At the same time, the green technologies and energy efficiency are proposed as one of the alternatives to the Russian fossil fuel.

The shortage of fuel also provokes the discussion on the shift to electrically-driven cars, which is active both in the social and mass media.

The theme of energy efficiency and saving is not gaining applicability not only in the context of economy, but also counteraction to Russia, which uses energy carriers as weapons. There is a consensus of opinion in the society, which is confirmed by the national leaders, that energy efficiency can be one of the important principles of the post-war reconstruction. The attention to garbage sorting has also grown.

All of it is creating the window of opportunities to promote the ecological thinking, the mindset based on attention to the environmental matters among the citizens of Ukraine as well as importance of energy efficiency and the green transformation of Ukraine among the political leaders and public figures.