

## **Report from Croatia on the monitoring of the implementation of Regulation (EU) 2019/1021 on persistent organic pollutants (POPs Regulation)**

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## Introduction and background

Persistent organic pollutants (POPs) are organic substances that persist in the environment, accumulate in living organisms and pose a risk to our health and the environment. They can be transported by air, water or migratory species across international borders, reaching regions where they have never been produced or used. International agreements for the risk management of POPs have been established as no region can manage the risks posed by these substances alone.

POPs are regulated worldwide by the UNECE Protocol on POPs ("the Protocol"), adopted in 1998 in Aarhus as part of the Convention on Long Range Transboundary Air Pollution (CLRTAP) and by the Stockholm Convention on POPs, adopted in 2001 and entered into force in 2004 ("the Convention").

The Protocol and the Convention are implemented in the European Union by the Regulation (EU) 2019/1021 on persistent organic pollutants (the POPs Regulation) which repealed the original Regulation (EC) No 850/2004 on POPs. The POPs Regulation aims to protect human health and the environment with specific control measures that:

- prohibit or severely restrict the production, placing on the market and use of POPs;
- minimise the environmental release of POPs that are formed as industrial by-products;
- make sure that stockpiles of restricted POPs are safely managed; and
- ensure the environmentally sound disposal of waste consisting of, or contaminated by POPs.

POPs are listed in three Annexes to the Regulation (Annex I – banned, Annex II – restricted, Annex III – unintentionally released POPs).

POP subject to waste management provisions set out in Article 7 are listed in Annex IV.

[List of substances subject to the POPs Regulation](#)

For more information for the Stockholm Convention and the UNECE Protocol on POPs, see the following links:

[Stockholm Convention on POPs](#)

[The 1998 Aarhus Protocol on Persistent Organic Pollutants \(POPs\)](#)

## Scope and period of time covered by the national reports

Article 13 of the POPs Regulation covers the reporting requirements for Member States and the European Chemicals Agency. The Member States are required to draw up and publish a report containing information specified in its Article 13(1) and give the Commission and ECHA access to the information contained in it. The information contained in this report has been compiled by ECHA on the basis of the information provided by the Member State to ECHA in accordance of Article 8(g) of the POPs Regulation. The report has been published by ECHA in its webpage with the agreement of the Member State Competent Authority on POPs.

The information contained in the national reports pertains the period from 2019 onwards. However, some Member States might have included information from previous years in their national reports for completeness. The national reports are updated annually, as far as new information becomes available to the Member States, or at least every three years.

Information from previous years is reported in accordance with the Article 12 of the Regulation (EC) No 850/2004 and is available in the following Synthesis Reports:

[The first synthesis report for the period 2004-2006](#) [Annex I](#) [Annex II](#)

[The second synthesis report for the period 2007-2009](#)

[Summary of the third synthesis report for the period 2010-2012](#) [Part I](#) [Part II](#)

## **Section 1. Control of manufacturing, placing on the market and use of POPs**

In accordance with Article 3 of the POPs Regulation, the manufacturing, placing on the market and use of substances listed in Annex I to the POPs Regulation is prohibited, while substances listed in Annex II are subject to restriction. Currently no substances are listed in Annex II.

Specific exemptions to the prohibition on manufacturing, placing on the market and use for certain substances are specified in the relevant entries of Annex I. In addition, as specified in Article 4(1), the manufacturing, placing on the market and use of substances listed in Annex I and II and use is permitted: (a) for use for laboratory-scale research or as a reference standard; (b) when the substance is present as an unintentional trace contaminant, as specified in the relevant entries of Annex I or II, in substances, mixtures or articles.

In accordance with Article 4(2), for a substance added to Annex I or II after 15 July 2019, Article 3 shall not apply for a six-month period if that substance is present in articles produced before or on the date that this Regulation becomes applicable to that substance. Article 3 shall not apply in the case of a substance being present in articles already in use before or on the date that this Regulation or Regulation (EC) No 850/2004 on persistent organic pollutants became applicable to that substance, whichever date came first.

**Table 1. List of substances included in Annex I to the POPs Regulation.**

<b>Substance/group of substances (<a href="#">Link to substance infocard page</a>)</b>	<b>Uses</b>	<b>Specific exemptions for the manufacturing, placing on the market and use</b>
<a href="#">Aldrin</a>	Pesticide	No
<a href="#">Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)</a>	Industrial chemical	No
<a href="#">Bis(pentabromophenyl) ether (decabromodiphenyl ether; decaBDE)</a>	Industrial chemical	Yes. See Annex I to the POPs Regulation
<a href="#">Chlordane</a>	Pesticide	No
<a href="#">Chlordecone</a>	Pesticide	No
<a href="#">DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane)</a>	Pesticide	No
<a href="#">Dicofol</a>	Pesticide	No
<a href="#">Dieldrin</a>	Pesticide	No
<a href="#">Endosulfan and its isomers</a>	Pesticide	No
<a href="#">Endrin</a>	Pesticide	No
<a href="#">Heptabromodiphenyl ether</a>	Industrial chemical	Yes. See Annex I to the POPs Regulation
<a href="#">Heptachlor</a>	Pesticide	No
<a href="#">Hexabromo-1,1'-biphenyl</a>	Industrial chemical	No
<a href="#">Hexabromocyclododecane (HBCDD)</a>	Industrial chemical	No
<a href="#">Hexabromodiphenyl ether</a>	Industrial chemical	Yes. See Annex I to the POPs Regulation
<a href="#">Hexachlorobenzene</a>	Industrial chemical and pesticide	No

Substance/group of substances (Link to substance infocard page)	Uses	Specific exemptions for the manufacturing, placing on the market and use
Hexachlorobuta-1,3-diene	Industrial chemical and pesticide	No
Hexachlorocyclohexanes, including lindane	Pesticide	No
Mirex	Pesticide	No
Pentabromodiphenyl ether	Industrial chemical	Yes. See Annex I to the POPs Regulation
Pentachlorobenzene	Industrial chemical and pesticide	No
Pentachlorophenol and its salts and esters	Pesticide	No
Perfluorooctane sulfonic acid and its derivatives (PFOS) C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> X, (X = OH, Metal salt (O-M <sup>+</sup> ), halide, amide, and other derivatives including polymers)	Industrial chemical and pesticide	Yes. See Annex I to the POPs Regulation
Perfluorooctanoic acid (PFOA), its salts and PFOA-related substances	Industrial chemical	Yes. See Annex I to the POPs Regulation
Polychlorinated biphenyls (PCB)	Industrial chemical	No
Polychlorinated naphthalenes	Industrial chemical	No
Tetrabromodiphenyl ether	Industrial chemical	Yes. See Annex I to the POPs Regulation
Toxaphene	Industrial chemical	No

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## Section 1.1. Manufacturing and placing on the market of substances listed in Annex I and II of POPs Regulation

The table below contains information provided by Croatia concerning the production, import and/or placing on the market of substances listed in Annex I or II to the POPs Regulation in Croatia.

**Table 2. Data on the production, import and/or placing on the market in Croatia of substances listed in Annex I or II to the POPs Regulation.**

Substance name or group of substances	Substance name (when part of a group)	EC number	CAS number	Year	Quantities (tonnes)		Additional information
					Manufactured	Imported	
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	287-476-5	85535-84-8	2008	0.010	0.01120		
			2011	4.560			
			2012	9.120			
			2013	4.280			
Endosulfan	204-079-4	115-29-7	2003	0.008680	3.9980	6.9850	
			2004	6.6930	3.2410	4.0190	

Substance name or group of substances	Substance name (when part of a group)	EC number	CAS number	Year	Quantities (tonnes)		Placed on the market	Additional information
					Manuf-actured	Imported		
Endosulfan		204-079-4	115-29-7	2005		2.2860	6.120	
				2006		2.710	5.7050	
				2007	1.7960	0.8280	1.3560	
				2008			1.3890	
				2009			0.4590	
Hexachlorocyclohexanes, including lindane	γ-HCH or γ-BHC	200-401-2	58-89-9	2005			0.0650	

## **Section 1.2 Quantities manufactured and placed on the market per specific use**

No further information on the uses of the substances manufactured and/or placed on the market in Croatia. The provision of this information in the national report is considered as optional.

## **Section 2. Stockpiles notified in accordance with Article 5(2)**

In accordance with Article 5(2) of Regulation (EU) No 2019/1021, the holder of a stockpile greater than 50 kg, consisting of or containing any substance listed in Annex I or II, and the use of which is permitted shall provide the competent authority of the Member State in which the stockpile is established with information concerning the nature and size of that stockpile. Such information shall be provided within 12 months of the date that this Regulation or Regulation (EC) No 850/2004 became applicable to that substance, whichever date came first for the holder, and of relevant amendments to Annex I or II and annually thereafter until the deadline specified in Annex I or II for the restricted use.

The POPs Regulation defines 'Stockpile' as substances, mixtures or articles accumulated by the holder that consist of or contain any substance listed in Annex I or II.

The competent authority(ies) from Croatia have not received any notifications of stockpiles in accordance with Article 5(2) of Regulation (EC) No 850/2004.



### **Section 3. Releases to the environment of unintentionally produced POPs**

In line with the Protocol and the Convention, releases of POPs which are unintentional by-products of industrial and other anthropogenic thermal processes (e.g. residential combustion) should be identified and reduced as soon as possible, with the ultimate aim of eliminating the emissions, where feasible.

As set out in Article 6 of the POPs Regulation, the Member States draw up and maintain inventories for the substances listed in Annex III (see below) released into air, water and land, in accordance with their obligations under the Convention and the Protocol. Member States report on their action plans for reducing emissions of unintentionally formed POPs in their national implementation plans (see section 8).

#### **ANNEX III - List of substances subject to release reduction provisions**

Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)  
Polychlorinated biphenyls (PCB)  
Hexachlorobenzene (HCB) (CAS No 118-74-1)  
Polycyclic aromatic hydrocarbons (PAHs)  
Pentachlorobenzene (CAS No 608-93-5)  
Hexachlorobutadiene (CAS No 87-68-3)  
Polychlorinated naphthalenes (CAS No 70776-03-3 and others)

The reporting obligations for releases of unintentionally produced POPs is, in addition to the POPs Regulation, governed by other international, EU and national policy frameworks. Consequently, Member States and the industry sector report data on releases to various institutions, and the data is published in different databases and websites.

In the sections below, it is described which releases are reported where, and by whom and links are provided to the relevant data and reports.

The information on releases provided by the Member States to ECHA, and included in their national reports, does not include inventories which are reported in accordance with the Protocol and/or the European Pollutant Release and Transfer Register (E-PRTR) in publicly available databases (see below for more detail).

#### **Estimates on releases to air reported by Croatia under the Protocol.**

The European Union and its Member States report estimates of PCDD/PCDF, PCB, HCB and PAHs released to air to the European Environmental Agency (EEA) and the European Monitoring and Evaluation Programme - Centre on Emission Inventories and Projection (EMEP-CEIP) in accordance with the obligations under the Protocol.

Emission time trends in Europe of HCB, PCB, PCDD/PCDF and PAHs to air can be found as interactive graphs and tables in the EEA webpage below:

<https://www.eea.europa.eu/data-and-maps/indicators/eea32-persistent-organic-pollutant-pop-emissions-1/assessment-10>

“Persistent organic pollutants emissions in Europe” is an EEA indicator. The EEA publishes information about emission reduction of POPs to air in the EU, as well as in individual Member States, which can be accessed here:

<http://www.eea.europa.eu/ims/persistent-organic-pollutant-emissions-in-europe>

Emission data for Croatia displayed as a time trend for the substances below can also be found from the respective links to the EMEP-CEIP Data viewer.

[PCCD/PCDF](#)   [PAHs](#)   [PCBs](#)   [HCB](#)

Additional reports, as well as information on the review process of emission inventories under LRTAP Convention can be found in the CEIP webpage (<https://www.ceip.at/>).

The annual emission data reported by the Member States and the EU under the Protocol (Inventory files NFR), as well as the informative inventory reports (IIRs) can be downloaded from the EMEP-CEIP webpage (see annual submissions at the top of the page to view the overview table). The IIRs provide detailed information about the reported data, including explanations of pollutant trends and key sources of emission. In addition to POPs, emission data on other air pollutants covered by the different Protocols to the CLRTAP, such as heavy metals, nitrogen oxides and sulphur oxides, are also reported

<https://www.ceip.at/status-of-reporting-and-review-results>

The database (mdb file) of annual emission data for the EU Member States can also be downloaded from the EEA webpage:

<https://www.eea.europa.eu/data-and-maps/data/national-emissions-reported-to-the-convention-on-long-range-transboundary-air-pollution-lrtap-convention-15>

The EMEP/EEA air pollutant emission inventory guidebook provides guidance on estimating emissions of POPs and other air pollutants from both anthropogenic and natural emission sources and is designed to facilitate reporting of comparable and consistent air pollutant emissions inventory data.

<https://www.eea.europa.eu/publications/emep-eea-guidebook-2019>

### **Estimates on releases to air reported by Croatia under the Convention**

The Member States report data on unintentional releases to air water and land to the Convention. In order to assist the preparation of the inventories on releases, the Convention has developed The Toolkit for Identification and Quantification of Releases of Dioxins, Furans and Other Unintentional POPs. The data on emissions reported to the Convention can be accessed through the Convention Reporting Dashboard and the national report database.

[http://ers.pops.int/eRSodataReports2/ReportSC\\_DashBoard.html](http://ers.pops.int/eRSodataReports2/ReportSC_DashBoard.html)

<http://chm.pops.int/Countries/Reporting/NationalReports/tabid/3668/Default.aspx>

### **Additional information on emissions of POPs reported by industrial facilities under the E-PRTR**

The Regulation (EC) No 166/2006 on the establishment of a European Pollutant Release and Transfer Register (the E-PRTR Regulation) has established a publicly accessible electronic database containing key environmental data from industrial facilities in Europe. The European Industrial Emissions Portal provides easily accessible data on emissions reported under the E-PRTR. The portal replaced the E-PRTR website in June 2021.

<https://industry.eea.europa.eu/>

All Annex III POPs are covered by the E-PRTR, for a list of pollutants with their description, characteristics and reporting thresholds visit the Pollutants page of the European Industrial Emissions Portal. The legal reporting requirements are defined in the Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC.

### **Additional data on on emissions of POPs:**

Additional data on releases to air, land and water of Annex III substances, not covered by the Protocol or the E-PRTR, as reported by Croatia is available in the Appendix B.

#### **Section 4. Monitoring data on POPs available in IPCHEM**

The CA on POPs from Croatia has not indicated in their report whether environmental monitoring data on substances listed in Part A of Annex III of the POPs regulation has been made available in IPCHEM. Nevertheless, data collections covering POPs in Croatia might be available in the platform. Further information can be found in:

<https://ipchem.jrc.ec.europa.eu>

## **Section 5. Art. 7(4)(b)(iv) notifications on the derogation for waste treatment**

In accordance with Article 7(2) of the POPs Regulation, notwithstanding Council Directive 96/59/EC on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT), waste consisting of, containing or contaminated by any substance listed in Annex IV to the POPs Regulation shall be disposed of or recovered, without undue delay and in accordance with Part 1 of Annex V to the POPs Regulation, in such a way as to ensure that the POP content is destroyed or irreversibly transformed so that the remaining waste and releases do not exhibit the characteristics of POPs.

As specified in Article 7(4), by way of derogation from the second paragraph of Article 7, a Member State or the competent authority designated by that Member State may, in exceptional cases, allow wastes listed in Part 2 of Annex V containing or contaminated by a substance listed in Annex IV up to concentration limits specified in Part 2 of Annex V to be otherwise dealt with in accordance with a method listed in Part 2 of Annex V, provided that the following conditions are fulfilled.

- (i) the holder concerned has demonstrated to the satisfaction of the competent authority of the Member State concerned that decontamination of the waste in relation to substances listed in Annex IV was not feasible, and that destruction or irreversible transformation of the POP content, performed in accordance with best environmental practice or best available techniques, does not represent the environmentally preferable option and the competent authority has subsequently authorised the alternative operation;
- (ii) the holder concerned has provided information on the POP content of the waste to the competent authority;
- (iii) the operation is in accordance with relevant Union legislation and with the conditions laid down in relevant additional measures referred to in paragraph 5;
- (iv) the Member State concerned has informed the other Member States, the Agency and the Commission of its authorisation and the justification for it.

No authorisation for the derogation on the treatment of waste in accordance for the Article 7(4)(b)(i) have been granted by Croatia.

## **Section 6. Enforcement - controls, infringements and enforcement measures**

In order to ensure transparency, impartiality and consistency at the level of enforcement activities, Member States should lay down rules on penalties applicable to infringements of the POPs Regulation and ensure that they are implemented. Those penalties should be effective, proportionate and dissuasive, since non-compliance can result in damage to human health and to the environment.

The Member States are responsible for the enforcement of the POPs Regulation. In this section, the number of official controls carried out by Croatia in which the POPs regulation was covered, the number of cases of non compliance and enforcement measures are presented. The information on numbers of controls was reported by the Member States in their reports submitted under Art 13(1) of the POPs Regulation. The template for reporting the information on controls was agreed with the Forum for Exchange of Information on Enforcement.

Controls are understood as inspections or investigations or monitoring, or other enforcement measures carried out by enforcement authorities. Therefore, the number of controls takes into account the total number of enforcement related activities carried out by Croatia. Controls can relate to products (substances, articles, mixtures) in case of controlling some requirements (for instance restrictions on the manufacturing, placing on the market and use) and to duty holders in case of controlling other requirements (e.g. stockpiles).

**Table 2. Number of official controls carried out by Croatia in which the POPs regulation was covered and the number cases of non-compliance.**

Year	Total number of controls in which the POPs Regulation was covered and/or enforced	Number of official controls which addressed the following requirements:			Number of cases of non-compliance found for each of the following requirements (out of the total number of controls which addressed each requirement)		
		Manufacturing, placing on the market and use (Art. 3)	Stockpiles (Art. 5)	Waste management (Art. 7)	Manufacturing, placing on the market and use (Art. 3)	Stockpiles (Art. 5)	Waste management (Art. 7)
2019	211	207		4	0		0
2020	139	131		8	0		0

Note: The summed number of controls addressing the specific duties listed on the table does not have to equal the total number of controls for that year as there may also be controls of other duties under the POPs Regulation and overlap of provisions controlled within one interaction (inspection, desktop assessment etc.).

Data from the controls from the year preceding the publication of the report might be updated as new information becomes available to Croatia.

## **Section 7. Sites contaminated with POPs**

The Member States can optionally include in this section information concerning sites contaminated with POPs located in their country. Croatia has taken measures to identify sites contaminated by POPs. Information on the identified contaminated sites is included in table 3.

**Table 3. Sites contaminated with POPs in Croatia.**

Brief description of the site	POPs in the site	Management strategy developed for the site	Further information in the NIP
<p>Rehabilitation of the Sovjak pit - remediation is in preparation. Rehabilitation envisages extraction of floating hydrocarbons and their incineration outside Croatia, excavation of sludge / tar, its pre-treatment as preparation for transport and incineration outside Croatia, pumping of wastewater and its treatment and complete backfilling of the pit with inert material and final upper sealing with drainage system. In the sediment (tar), which is planned to be exported for incineration outside Croatia after pretreatment as preparation for transport, analyzes of composite tar samples by wells indicated the content of POPs, namely: PAHs (polycyclic aromatic hydrocarbons), expressed as total PAHs whose content consists of: benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene and indeno (1,2,3-cd) pyrene which make up the largest share in the sum and in the range of 2712 to 7668 mg / kg ST (MDK 10), and PCBs (polychlorinated biphenyls) ranging from 24 to 78 mg / kg S.T. (MDK 1).</p>	<p>Benzo[a]pyrene, benzo[b] fluoranthene, benzo[k]fluoranthene, indeno [1,2,3-cd]pyrene</p>		

Brief description of the site	POPs in the site	Management strategy developed for the site	Further information in the NIP
<p>Remediation of soil contaminated with coke tar and oil in part chemical sections of the coke plant in Bakar by the solidification process. It was contaminated land in the area of a former industrial location which, after remediation, was given another purpose (parking or some similar purpose as an open warehouse). Contaminated land which, according to analytical data, after the analysis by an authorized laboratory was qualified as hazardous waste (concentration of PAHs &gt; 100 mg / kg of dry matter is according to the Regulation on categories, types and classification of waste with waste catalog and lists of hazardous waste (OG 50/05) was hazardous waste) was treated in such a way that it was solidified and after the analytical data for the solidification corresponded to the concentration of PAHs that it does NOT exceed the limit value of 0.05 mg / l for non-hazardous waste , types and classification of waste with a catalog of waste and lists of hazardous waste (OG 50/05), the solidificate was returned to the excavation. We also used the conditions for a non-hazardous waste landfill because the solidification had to meet the conditions for disposal in a non-hazardous waste landfill, in accordance with the Ordinance on the methods and conditions of landfills, categories and operating conditions for landfills (OG 117/07). this &lt;of 10 mg / kg dry matter. Rehabilitation works lasted from April 2008 to July 2010. A total of approximately 30,000 m3 of contaminated material has been solidified, and the rehabilitated area is 5,500 m2. After the completion of the remediation, the obligation was to carry out monitoring for three years, ie to examine the stability of the solidification by applying the criteria prescribed by HRN EN 17993: 2008. Monitoring confirmed that the average value of the concentration of polyaromatic hydrocarbons (PAHs) (obtained as the arithmetic mean of the sum for all 33 wells) meets the set remediation criteria.</p>	<p>Benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, indeno [1,2,3-cd]pyrene</p>	<p>Yes: Project for the implementation of remediation of contaminated soil in the area of the former Coke Plant in Bakar by the solidification procedure, Environmental Impact Study of the remediation procedure and for the purpose of monitoring the remediation area:</p>	

Brief description of the site	POPs in the site	Management strategy developed for the site	Further information in the NIP
<p>Sanation of the location of the former Electrodes and Ferroalloys Factory in Šibenik. Rehabilitation of contaminated soil that was contaminated with organic pollution, polycyclic aromatic hydrocarbons (PAHs) and mineral hydrocarbons was carried out. Excavated soil for which analyzes have shown that it is contaminated with a concentration of PAHs higher than 1000 mg / kg has been heat treated, and non-hazardous waste obtained after heat treatment has been materially recovered in the production of stone aggregate used for road maintenance. 3,910.69 m<sup>3</sup> of excavated contaminated soil was recovered. Rehabilitation works began in 2008 when works related to the excavation and separation of hazardous non-hazardous waste were carried out. Heat treatment was completed at the end of 2013.</p>	<p>Benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, indeno [1,2,3-cd]pyrene</p>	<p>Yes: Environmental remediation program of the former Electrode and Ferroalloy Factory in Šibenik, Supplement to the Environmental Rehabilitation Program of the former Electrode and Ferroalloy Factory in Šibenik and study: Basic characteristics of waste in accordance with the Ordinance on methods and conditions of waste disposal, categories and working conditions for landfill (OG 117 / 07, 111/11 and 17/13).</p>	



## **Section 8. National implementation plans**

The national implementation plan (NIP) and its subsequent updates are prepared by the EU and its Member States in accordance with its obligations under the Stockholm Convention. The NIPs are publicly available in the Convention webpage:

<http://chm.pops.int/Implementation/NationalImplementationPlans/NIPTransmission/tabid/253/Default.aspx>

**Table 4. Status of the initial NIP from Croatia and its subsequent updates.**

	Status	Mechanisms for public participation during the development of the NIP
Initial NIP	Transmitted to the SC	Yes
Update addressing COP 4 amendments	Transmitted to the SC	Yes
Update addressing COP 5 amendments	Transmitted to the SC	Yes
Update addressing COP 6 amendments	Transmitted to the SC	Yes
Update addressing COP 7 amendments	Transmitted to the SC	Yes
Update addressing COP 8 amendments	Transmitted to the SC	Yes

## **Section 9. Provision of technical and financial assistance**

In accordance with Articles 12 and 13 of the Convention, the Commission and the Member States shall cooperate in providing appropriate and timely technical and financial assistance to developing countries and countries with economies in transition to assist them, upon request and within available resources and taking into account their particular needs, to develop and strengthen their capacity to fully implement their obligations under the Convention. Such support may also be channeled through Regional Centres, as identified under the Convention, non-governmental organisations or the European Chemicals Agency.

The task of regional and subregional centres (SCRCs) established by the Stockholm Convention is to provide technical assistance and to promote the transfer of technology to developing country Parties and Parties with economies in transition relating to the implementation of their obligations under the Convention. Information on their work plans and activity reports is available in the Convention website.

<http://chm.pops.int/Partners/RegionalCentres/Overview/tabid/425/Default.aspx>

Additional financial/technical assistance to third countries is also provided through multilateral channels such as the Global Environmental Facility (GEF), the Stockholm Convention Trust funds, Strategic Approach to International Chemicals Management (SAICM) Quick Start Programme, or the UN Special Programme. The financial contribution of the MS to the different instruments, as well as information about the projects founded is publicly available on the following websites:

- The GEF Projects database. Focal area: Chemicals and Waste. The GEF provides funding to assist developing countries in meeting the objectives of international environmental conventions. The GEF serves as a "financial mechanism" to the Stockholm Convention on Persistent Organic Pollutants (POPs).

[https://www.thegef.org/projects-operations/database?f%5B0%5D=focal\\_areas%3A2206](https://www.thegef.org/projects-operations/database?f%5B0%5D=focal_areas%3A2206)

- The SAICM Quick Start Programme Projects:

<http://www.saicm.org/QuickStartProgramme/Projects/tabid/5470/language/en-US/Default.aspx>

- The UN Special (chemical and waste) programme projects database:

<https://www.unenvironment.org/explore-topics/chemicals-waste/what-we-do/special-programme/special-programme-projects-database>

The Member States can optionally include in this section further information on the provision of financial and technical assistance to third countries.

## **Section 10. Information exchange measures and awareness programmes**

In accordance with Article 11(2) of the POPs Regulation, the Commission, the European Chemicals Agency and the Member States, as appropriate, shall promote and facilitate with regard to POPs:

- (a) awareness programmes, including relating to their health and environmental effects and their alternatives and on the reduction or elimination of their manufacture, use and release, especially for:
  - (i) policy- and decision-makers;
  - (ii) particularly vulnerable groups;
- (b) the provision of public information;
- (c) training, including workers, scientists, educators and technical and managerial personnel.

The Member States can optionally report on their information exchange activities under this section.

**Table 5. Information exchange activities carried out by Croatia.**

General description of the measure	Type of measure	Webpage (copy the URLs in your browser)	Period
1. Klinčić, D., Dvorščak, M., Jagić, K., Mendaš, G., & Herceg Romanić, S. (2020). Levels and distribution of polybrominated diphenyl ethers in humans and environmental compartments: a comprehensive review of the last five years of research. <i>Environmental science and pollution research international</i> , 27(6), 5744–5758. <a href="https://doi.org/10.1007/s11356-020-07598-7">https://doi.org/10.1007/s11356-020-07598-7</a> (scientific paper, Q2)	Awareness programme, and the provision of public information, and Training of workers, scientists, educators and technical and managerial personnel with regard to persistent organic pollutants		2020 - 2020
2. Jagić K, Analysis of polybrominated diphenyl ethers in house dust. 4th Student Symposium doctoral studies at the Faculty of Science; Zagreb, Croatia 2020. Book of Abstracts p. 109. 220.			
3. Jagić K, Dvorščak M, Klinčić D, Analysis of persistent and toxic polybrominated diphenyl ethers in household dust samples. 18. Ruzicka days, Vukovar, Croatia 2020. Book of abstracts p. '146' 121/221.			
4. Jagić K, Klinčić D, Dvorščak M, Solvent selection for effective extraction of polybrominated diphenyl ethers from house dust samples using microwaves. XIII 'encounter young chemical engineers; Zagreb, Croatia 2020. Book of Abstracts p. 163			

**Table 5. Information exchange activities carried out by Croatia.**

General description of the measure	Type of measure	Webpage (copy the URLs in your browser)	Period
<p>2019. lectures: M, Dvorščak: Persistent organic pollutants in the environment and humans (organochlorinated and organobrominated), Professional lectures (6 in total) within the subject: Hygiene and prevention medicine for fourth grade students of the School for Nurses Vrapce Zagreb, IMI, Zagreb (21.10. - 26.11.2019.)</p>	<p>Awareness programme, and The provision of public information, and Training of workers, scientists, educators and technical and managerial personnel with regard to persistent organic pollutants</p>		<p>2019 - 2019</p>
<p>2019. publication: M, Dvorščak: Persistent organic pollutants - from application to side effects, in: Scientific binoculars (5. Stipicevit, ed.), IMI, Zagreb: 2019, pp.27 -35 (ISBN: 978-953-96817-7-5)</p>	<p>Awareness programme, and The provision of public information</p>	<p>2019</p>	<p>2019 -</p>
<p>2020. lectures: M. Dvorščak: Persistent Organic Pollutants - From Application to Side Effects, County expert council for biology teachers in vocational schools of the City of Zagreb, Crafts School for personal services, Zagreb (2.3.2020). M, Dvorscak: Coexistence with polybrominated diphenyl ethers, County Teachers' Expert Council of Biology of the City of Zagreb, 05 J. J 'Strossmayera, Zagreb (8.7.2020). M. Dvorščak: Polybrominated diphenylethers - how are we exposed to them? colloquium IMI (2.12.2020).</p>	<p>Awareness programme, and The provision of public information, and Training of workers, scientists, educators and technical and managerial personnel with regard to persistent organic pollutants</p>		<p>2020 - 2020</p>
<p>Project: Development, validation and application of analytical methods for PBDE determination" (DeValApp, HrZZ-UIPI - principal investigator Darija Klinčić)</p>	<p>Awareness programme, and Training of workers, scientists, educators and technical and managerial personnel with regard to persistent organic pollutants</p>		<p>2020 - 2020</p>

**Table 5. Information exchange activities carried out by Croatia.**

General description of the measure	Type of measure	Webpage (copy the URLs in your browser)	Period
<p>Project: "Persistent Organic Pollutants - Environmental Impact Assessment and Stability of Human Genetic Material" - institutional financing of scientific activity, 2018'-2021. - principal investigator Snježana Herceg Romanić</p>			
<p>Project:"Persistent organochlorine compounds in human milk and their potential effect on the level of primary DNA damage in human cells", MSE, Croatian-Serbian bilateral cooperation, 2019- 2021,-principal investigator Snježana Herceg Romanić.</p>	<p>Awareness programme, and The provision of public information, and Training of workers, scientists, educators and technical and managerial personnel with regard to persistent organic pollutants</p>		<p>2019 - 2021</p>
<p>Publication: A. Stojić, M. Matek Sarić, S. Herceg Romanić, "Shapley Additive Explanations of Indicator PCB-138 Distribution in Breast Milk," in Sinteza 2020 - International Scientific Conference on Information Technology and Data Related Research, Belgrade, Singidunum University, Serbia, 2020, pp. 35-40. doi:10.15308/Sinteza-2020-35-40</p>	<p>Awareness programme, and The provision of public information, and Training of workers, scientists, educators and technical and managerial personnel with regard to persistent organic pollutants</p>		<p>2020 - 2020</p>
<p>Publications: 1. Klinčić, D., Herceg Romanić, S., Katalinić, M., Zandona, A., Čadež, T., Matek Sarić, M., Šarić, T., &amp; Aćimov, D. (2020). Persistent organic pollutants in tissues of farmed tuna from the Adriatic Sea. Marine pollution bulletin, 158, 111413. <a href="https://doi.org/10.1016/j.marpolbul.2020.111413">https://doi.org/10.1016/j.marpolbul.2020.111413</a>. (scientific paper Q1)  2.Klinčić, D., Herceg Romanić, S., Kljaković-Gašpić, Z., &amp; Tičina, V. (2020). Legacy persistent organic pollutants (POPs) in archive samples of wild Bluefin tuna from the Mediterranean Sea. Marine pollution bulletin, 155, 111086. <a href="https://doi.org/10.1016/j.marpolbul.2020.111086">https://doi.org/10.1016/j.marpolbul.2020.111086</a>. (znanstveni rad, Q1)</p>	<p>Awareness programme, and The provision of public information</p>		<p>2020 - 2020</p>



### **Appendix A. Stockpile notifications**

The competent authority(ies) from Croatia have not received any notifications of stockpiles in accordance with Article 5(2) of Regulation (EC) No 850/2004.



## Appendix B. Releases to the environment of unintentionally produced POPs - additional data

Additional data on releases to air, land and water of Annex III substances.

**Table 6. Additional data on unintentional releases of POPs to the environment.**

Year	Substance	Environmental compartment	Value (annual emissions estimate)	Units	Brief description of the methodology used for deriving the estimate
2019	Hexachlorobenzene	water	1.97	kg	measured; analytical method used
2019	Hexachlorobutadiene	water	0.55	kg	measured; analytical method used
2019	Polychlorinated Biphenyls (PCB)	water	0.22	kg	measured; analytical method used
2019	Polycyclic aromatic hydrocarbons (PAHs)	water	0.43	kg	measured; analytical method used
2020	Hexachlorobutadiene	water	0.14	kg	measured; analytical method used
2020	Polychlorinated Biphenyls (PCB)	water	0.02	kg	measured; analytical method used
2020	Polycyclic aromatic hydrocarbons (PAHs)	water	0.06	kg	measured; analytical method used

### **Appendix C. Art. 7(4)(b)(iv) notifications**

No authorisation for the derogation on the treatment of waste in accordance for the Article 7(4)(b)(i) have been granted by Croatia.