

National workshop on new POPs inventory

Project “*Integrated SC toolkit to improve the transmission of information under Articles 07 and 15*”

October 8, 9, 13, 15, 2020

Conference Hall Jazz-Hotel (*str. Vlaicu Pîrcălab 72, mun. Chișinău*)

MINUTES

Background

One of important milestone of the project “*Integrated SC toolkit to improve the transmission of information under Articles 07 and 15*” is the preparation and holding of the national workshop in each participating country.

EPPO-EPIU-MARDE in Republic of Moldova jointly with the BCCC-SCRC-LATU Institute Knowledge and Risk Unit of UNEP Chemicals and Health Branch made all necessary preparatory work in support of the four days National Workshop in Chisinau, Republic of Moldova. Initially scheduled as 2-day event, due to the restrictions imposed with COVID 19 pandemics and limitation of participating persons to 20 / group, the format of the meeting was changed to 4 days of thematic sector-based approach.

The purpose of the national workshop was to launch the national activities to be performed for POPs data revision/collection and the integrated articles 7 and 15 electronic toolkit testing.

Additional objectives of the workshops were:

- Familiarize the participants with the Stockholm Convention requirements in respect to Articles 7 and 5;
- Presentation of the national gap analysis report: overview on the quality and completeness of the National Implementation Plan(s) and national reports already submitted by Republic of Moldova, as well as other information systems, and conclusions and recommendations;
- Presentation of the overall POPs data revision/collection process: data to be revised/collected, timelines, national arrangements, stakeholders involved, necessary training for data revision/collection;
- Planning of the process of data collection/ revision and reaching the consensus with the representatives of the main target sectors on the process

Workshop presentations were based on the overview of the national reporting to SC, the key findings and existing tools for POPs data collection / revision. However, with reference to the methodologies the following **list of guidance** were used as key reference materials, available at Stockholm Convention web page¹:

¹ <http://www.pops.int/Implementation/NationalImplementationPlans/Guidance/tabid/7730/Default.aspx>

- General guidance on Persistent Organic Pollutants (POPs) inventory development
- Guidance on preparing inventories of short-chain chlorinated paraffins (SCCPs)
- Guidance on preparing inventories of decabromodiphenyl ether (decaBDE)
- Guidance on preparing inventories of pentachlorophenol and its salts and esters (PCP)
- Guidance on preparing inventories of polychlorinated naphthalenes (PCNs)
- Guidance on preparing inventories of hexachlorobutadiene (HCBD)
- Full guidance for preparing inventories of polybrominated diphenyl ethers (PBDEs) listed under the Stockholm Convention (full guidance)
- Guidance on preparing inventories of perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF) listed under the Stockholm Convention on Persistent Organic Pollutants
- Guidance on preparing inventories of perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF) listed under the Stockholm Convention on Persistent Organic Pollutants
- Guidance on preparing inventories of hexabromocyclododecane (HBCD)
- Draft full guidance for preparing inventories of short-chain chlorinated paraffins (SCCPs)

The invitation for the event has been signed by the State Secretary for Environment (letter nr.14-07/4523 dated 02.10.2020) and send to state institutions, agencies and economic operators.

List of attendees

<u>Nr</u>	<u>Name</u>	<u>Institution/ business</u>
1.	Tugui Tatiana	Manager EPPO, MARDE
2.	Echim Tatiana	Expert EPPO, MARDE
3.	Efros Natalia	Expert EPPO, MARDE
4.	Popescu Maria	Assistant EPPO, MARDE
5.	Svetlana Bolocan	Chief division waste and chemicals, National SC focal point, MARDE
6.	Virginia Galatonov	Senior Consultant, Division on Waste and Chemicals MARDE, Basel Convention Focal Point
7.	Alexandru Paraniuc	Consultant, Division on Waste and Chemicals MARDE

8.	Contedailova Oxana	IS Termoelectrica
9.	Melnicenco Nelli	IS Moldelectrica
10.	Iuriev Iuri	IS Moldelectrica
11.	Cernolevschi Lilian	ICS Premier Energy SRL
12.	Grosu Vladimir	Red Nord SA
13.	Sandu Alina	Red Nord SA
14.	Turcan Serghei	International Airport Chisinau
15.	Cerbusca Serghei	SA Moldtelecom
16.	Gorbatovschi Victor	Inspectorate for Civil Protection and Emergency Situation, Ministry of Internal Affairs
17.	Vladimir Mitrosenco	Inspectorate for Civil Protection and Emergency Situation, Ministry of Internal Affairs
18.	Bantas Ion	Inspectorate for Civil Protection and Emergency Situation, Ministry of Internal Affairs
19.	Boduren Vasillii	Inspectorate for Civil Protection and Emergency Situation, Ministry of Internal Affairs
20.	Pancenoco Iurie	CA AimAir SRL
21.	Barbarosie Svetlana	Agency for Technical Supervision within Ministry of Economy and Infrastructure
22.	Cosneanu Gheorghe	MCF Engros SRL
23.	Soimu Iurii	Nelimot Com SRL
24.	Arnaut Nicolae	Nelimot Com SRL
25.	Deliu Florin	SarkysPro SRL
26.	Coropcean Valeria	Tirotex SRL
27.	Solomon Aliona	IP UIPM/ MARDE climate change assistant
28.	Vasile Scorpan	IP UIPM/ MARDE climate change team leader
29.	Gandea Nadejda	Waste managemet environmental consultant
30.	Guvir Tamara	Environmental Expert / GIZ
31.	Ciugui Grigori	Environmental Protectoin Inspection - Chisinau
32.	Cervaciuc Nicu	Environmental Protectoin Inspection - Chisinau
33.	Perederco Iana	Environmental Protectoin Inspection - Chisinau
34.	Norocea Galina	Environmental Agency
35.	Belous Ion	Agentia Moldsilva
36.	Rodica Popartac	Environmental protection Inspection - Chisinau
37.	Chihai Maria	Environmental Protection Inspection - Straseni
38.	Melinte Valeria	Environmental Protection Inspection
39.	Bodaci Valeriu	National Food Safety Agency – Pesticide Department
40.	Cecoi Ana	National Food Safety Agency – Pesticide Department
41.	Ecaterina Melnicenco	AO EcoContact, consultant

AGENDA

The agenda has been conceptualized to cover the sector-based approach, that is based on the identification of specific POP/ sector and products in use that potentially contain the POPs. Another spectrum was also looking to potential POPs contaminated sites/ hotspots data.

Thus the following division per day was applied, relevant stakeholders being invited:

Day 1. October 8, 2020

Energy sector (energy production and distribution) – (PCB, PCN and PCP)

Day 2: October 9, 2020

Emergency situation & aviation & transport (PCB, PCN, (firefighting foams and aviation fluids)

Day 3. October 13, 2020 POPs in products (textile, wood processing, EEE, polystyrene producers/ importers)

Day 4. October 15, 2020

Agriculture and Environmental authorities – methodology for POPs inventory, pesticides, electronic toolkit testing presentation

Opening remarks:

The participants were greeted by **Svetlana Bolocan, chief division on Waste and Chemicals, SC focal point MARDE** (by skype). Mrs. Bolocan provided a short overview of Stockholm Convention adoption by the Republic of Moldova and the list of POPs, subject to convention.



Stockholm Convention overview

The Stockholm Convention on Persistent Organic Pollutants was adopted on 22 May 2001 and entered into force on 17 May 2004, 90 days after its ratification by the 50th Member State.

By November 2009, the Convention had been signed by 152 countries. The Republic of Moldova signed the Stockholm Convention on 23 May 2001 and ratified it on 19 February 2004.

The 12 POPs initially established are:
aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxafen, polychlorinated biphenyls (PCBs), as well as dioxins and furans (the latter are produced unintentionally generated as a result of incomplete combustion or industrial chemical reactions).

Persistent organic pollutants (POPs) have been recognized by the scientific community as the group of substances that pose a major danger to health and the environment, which requires immediate international efforts to eliminate them (the Stockholm Convention serves this purpose).



Stockholm Convention overview

At the Fourth Conference of the Parties (4-8 May 2009), amendments were adopted to Annexes A (elimination), B (restriction) and C (unintentional production) of the Stockholm Convention, which listed persistent organic pollutants. nine more substances were added:

chlordecone, hexabromobiphenyl, lindane, alpha-hexachlorocyclohexane and beta-hexachlorocyclohexane, tetrabromodiphenyl ether pentabromodiphenyl ether, hexabromodiphenyl ether and heptabromodiphenyl ether, perfluorooctane sulfonic acid, sulfur chloride and its salts.

States Parties to the Stockholm Convention shall take the following measures:

The production, use, import and export of the 21 POPs will be eliminated or restricted.

A special provision applies in the case of DDT, this product being still used in some developing countries to combat malaria,

In case of creation of new enterprises / installations, measures will be taken to minimize the unintentional generation of POPs,

POP-contaminated stocks and waste will be inventoried and disposed of in an environmentally safe manner,

The use of PCB-containing equipment is permitted until 2025, provided that safety and precautionary measures are taken,

By 2028, all PCB-containing equipment will be disposed of in an environmentally safe

Further she has reflected upon the sources of POPs, but also made the explanation of POPs as pesticide and industrial POPs. She provided the summary of the POPs substances that are either prohibited and aren't used in Moldova. With reference to industrial substances, it was mentioned the spectrum of products/ processes/ industries were the POP substance can be along with the analysis if the substance is or not included in the present inventory exercise.

POPs sources

Pesticide



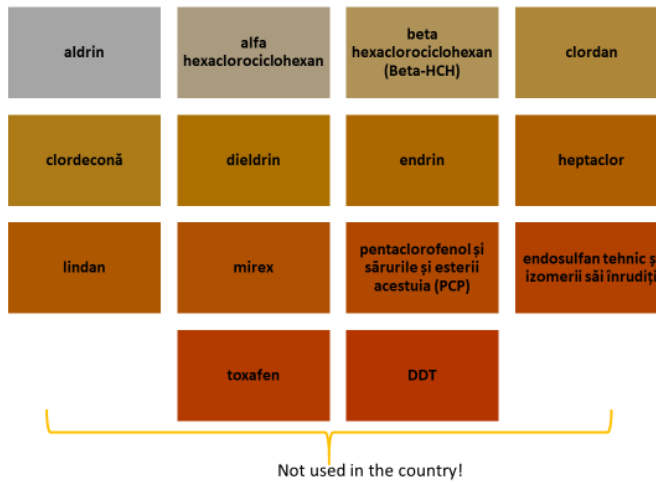
Industrial chemicals



Unintentional production



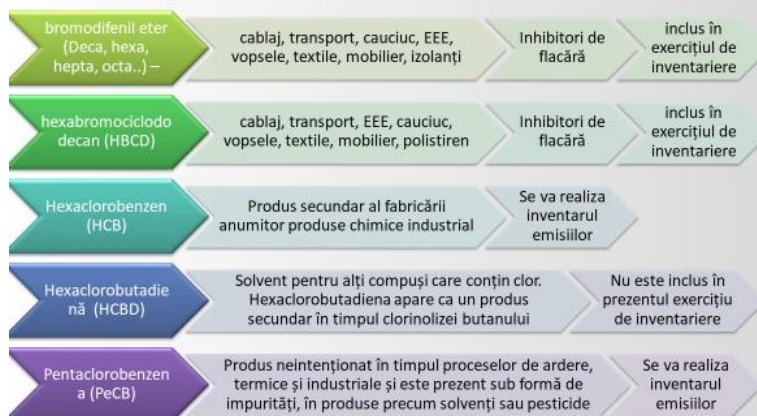
Pesticides



Produse chimice industriale



Produse chimice industriale



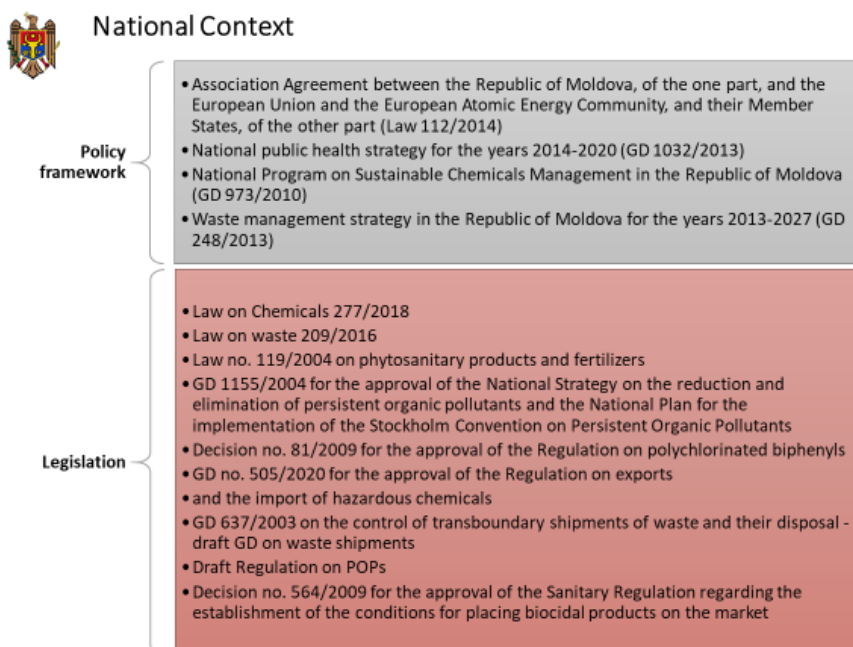
As main conclusion, Svetlana Bolocan pointed out that Republic of Moldova, being a party to the Stockholm Convention, along with the other countries within the region are having difficulties in revising and updating their NIPs to address the newly listed POPs. In particular, many countries seem to be facing challenges in identifying these newly listed POPs in products and articles.

Tatiana Tugui, project manager, EPPO MARDE in each day presented the scope of the meeting, the main POPs on concern/ sector, presented the overview of the findings of the National Gap Analysis Report, but also provided the overview of the legislation at force, the methodology of the inventory, the project team and the reporting obligations of the country under the Art 7 and 15.

With reference to the **project presentation**, she has outlined the main activity for Moldova as follows:

- Development and demonstration of an integrated Articles 7 and 15 electronic toolkit (by study of the current data stream and interaction of automatic information systems on chemicals and waste into the developed outline of the SC reporting electronic toolkit);
- Study and review of existent national arrangements for National Implementation Plan(s) and national reports development/completion;
- Conducting inventories/ assessments on new POPs in Moldova.

With reference to **existing national legal and policy framework**, Tatiana Tugui has presented the list of the documents that govern chemicals and waste related issues within the country and namely:



With reference to the provisions of Law no. 209/2016 on Waste, the specific Article 53 on POPs stock and waste was presented to the participants, including the obligations of such waste holders.

Art. 53 on Persistent Organic Pollutants Stocks and Waste para (1) prohibits marketing and using substances listed in the in Annex 6 (see table below), either individually or in preparations or as constituents of articles, in order to protect human health and the environment, and prevent the formation of hazardous waste. Para (2) contains provisions related to management of POPs waste. It should be noted that the article represents a general background for transposition of the EU POPs Regulation. The Annex 6 needs to be updated in accordance with the latest version of the Regulation 2019/1021 of 20 June 2019 on persistent organic pollutants (the annex shall be supplemented with Decabromodiphenyl ether (BDE-209) present in commercial decabromodiphenyl ether, Hexabromocyclododecane, Pentachlorophenol and its salts and esters).



Law no. 209/2016 on waste - Art. 53 Stocks and waste of persistent organic pollutants

(1) In order to ensure the protection of the environment and the health of the population, to prevent the generation of hazardous waste, the production, making available on the market and use of substances listed in section 1 of Annex 6 shall be prohibited, either individually or in preparations or under form of compounds of various articles.

(2) The prohibition referred to in paragraph (1) shall not apply in the case:

- a) a substance used for laboratory research or as a reference standard;
- b) a substance which appears as an unintentional contaminating trace element in substances, preparations or articles;
- c) substances that appear in the form of compounds of articles produced before the date of entry into force of this law or within a period of 6 months from this date;
- d) a substance that appears as a compound of articles already in use before or on the date of entry into force of this law.

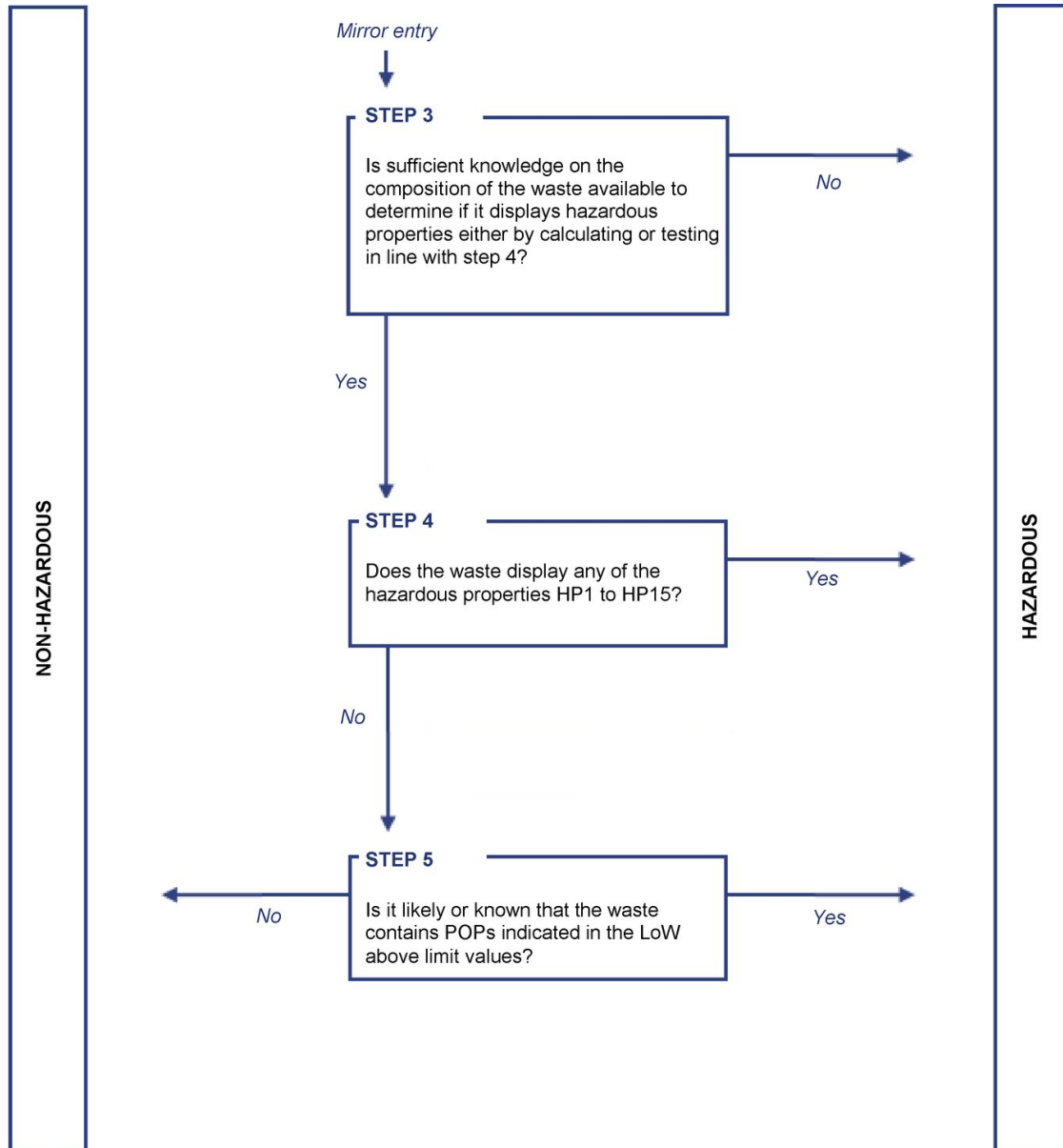
(3) The management of stocks of persistent organic pollutants provides as follows:

- a) the holder of a stock consisting of or containing any substance listed in section 1 of Annex No. 6, which is not permitted for use, administers that stock as waste in accordance with this law and in accordance with Article 6 of the Convention Stockholm on persistent organic pollutants, ratified by Law no. 40-XV of February 19, 2004;
- b) the holder of a stock of more than 50 kg consisting of or containing any substance listed in section 1 of Annex 6, the use of which is permitted, shall make available to the central environmental body of the public administration information on the nature and size of the stock respectively;
- c) the holder will manage the stock in a safe way from the point of view of the protection of the environment and the health of the population;
- d) the supervisory and control authority monitors the use and management of the notified stocks.

Further the additional explanations were made with **reference to identifying the POPs containing waste**, using the mirror entry approach.

The assessment of POPs content is important in the context of waste classification, in particular the assignment of MH or MNH entry. The following flowchart shall be used when choosing an appropriate mirror entry. They can also be used to determine the hazardous properties of a waste associated with an AH entry, as this information may be required for the fulfilment of the provisions on labelling of hazardous waste.

Having completed steps 3-5, it should be finally known whether the waste under consideration contains hazardous components and displays one or more hazardous properties (HP1 to HP15), and/or whether it contains any relevant POPs. Hence it can be decided whether the waste is hazardous or non-hazardous.



Finalizing the presentation of the topic, Mrs. Tugui made the reference to Annex 6 to Law on Waste no. 209/2016 that includes the LIST of Substances Subject to Provisions on the Management of Stocks and Waste of Persistent Organic Pollutants (Annex 3. List of Substances according to Art. 53/ Law on Waste)

Thematic presentations

DAY 1. October 8, 2020 Energy Sector

Attendees of the workshop were the representatives of the key national energy supplies and producers companies: Moldelectrica, Termoelectrica, RedNord SA, ICS Premier Energy. These companies cover the entire territory of the country with their services.

The key focus of the present days were the following POPs: **PCB, PCN and PCPs.**

At first **Tatiana Echim, environmental expert** has presented the legal framework at place in the country related to PCB regulation, the coverage of the regulation such as aspects of production, placement at the market, use, prohibition, storage, labelling and safe disposal of the PCB containing equipment.



Gov Decision Nr. 81/2009 for the approval of the Regulation on polychlorinated biphenyls

Purpose

Creating the legal framework for the harmless ecological management of polychlorinated biphenyls and equipment containing polychlorinated biphenyls,

Efficient implementation of international treaties in the field of chemical management to which the Republic of Moldova is a part


Alignment with the provisions of Regulation no. 850/2004 / EC on persistent organic pollutants and Directive 96/59 / EC on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCBs / TPCs)

Decontamination or disposal of PCB-containing equipment and / or disposal of used PCBs for complete disposal


She mentioned, that national gap analysis has revealed that under the PCB chapter the country has already conducted series of actions to identify the equipment, to decontaminate the condenser, to organize some contaminated site treatment assessment, etc.

An overview of the PCB equipment used in Moldova from 1970s was presented, with models and factories. It was mentioned, that a lot of such equipment is still in use. The estimates based on PCB equipment and oil inventory from 2010 were presented, however pointing the fact that due to economic situation, many enterprises that were subject to inventory, were sold, the owners were changed and there is no clarity at the moment on the real volumes of the PCB containing equipment is present in the country. Also it is not clear which enterprises complied with the 2015 target on PCB equipment that had to be dismantled and oil being treated in ESM manner.

Transformatoare cu PCB

Nr.	Tipul/modelul transformatorului	Greutatea tr-lui, kg	Conținutul de Sovtol, kg	Producător
1	ТНЗ-25/10	490	160	Uzina de transformatoare Circic
2	ТНЗ-40/10	610	205	
3	ТНЗ-630/10	3400	1100	
4	ТНЗ-1000/10	5000	1800	
5	ТНЗ-1600/10	8000	2850	
6	ТНЗ-2500/10	12000	4120	
7	ТНЗП-400/10	3250	1380	
8	ТНЗП-630/10	4000	1350	
9	ТНЗП-1000/10	5300	1970	
10	ТНЗП-1600/10	8250	2850	
11	ТНЗПН-1000/10	6000	2200	
12	ТНЗПН-2000/10	9000	3260	
13	ТНЗС-2500/10	11500	4160	

Transformatoare cu PCB

Nr.	Tipul/modelul transformatorului	Greutatea tr-lui, kg	Conținutul de Sovtol, kg	Producător
1.1	ТНП-400/10	-	1500	Uralelectrotiazhmash
1.1	ТНП-800/10	-	2750	
1.1	ТНП-1600/10	-	3500	
1.1	ТНПУ-1000/10	-	2500	
1.1	ТНПУ-2000/10	-	3350	
1.1	ТНП-420/0 5П	1900	800	

Transformatoare și Racorduri



Transformatoare cu PCB



Placa de identificare a transformatorului cu conținut de BPC de tip ТНЗ-1600/10 cu 3140 kg de sovtole, uzina Circic

Instalație de condensatoare



Înteruptoare



Next, the presentation on **Polychlorinated Naphthalenes (PCN)** **Pentachlorophenol (PCP)** was made, particularly related to potential use and presence within the sectors of economy.

Use of PCNs in closed and open applications

Sector	Applications
Transformators and condensator	<ul style="list-style-type: none"> Fluids for transformers and capacitors
Plastic and cables	<ul style="list-style-type: none"> Compositions for covering cables Plastic additive Intermediate for polymers and as a fire retardant in plastic
Rubber	<ul style="list-style-type: none"> Additive in neoprene and possibly in another chloroprene for use in printing belts
Isolates	<ul style="list-style-type: none"> Waterproof insulator
Varnishes, paints, coatings	<ul style="list-style-type: none"> In anti-corrosion / underwater paints and varnishes
Preservative / fungicide for wood	<ul style="list-style-type: none"> Wood treatment
Textile and paper industry	<ul style="list-style-type: none"> Coating / impregnating paper and textiles for waterproofing Binders in paper coating and impregnation
Oil additives and lubricants	<ul style="list-style-type: none"> Oil additives for lubrication in tools and equipment Oils in the mining sector Engine oil additive Refractory index testing oils
Military purposes	<ul style="list-style-type: none"> Smoke ammunition; smoke grenades Artillery and mortar projectiles Paper filter for gas masks in WW1 Ship paints and possibly other metallic surfaces of military vehicles / equipment.

With reference to PCN, the energy company representatives have confirmed that there is no data on PCN in oil was ever collected and they do not have such data.

While referring to the PCPs the main focus of inventory is the use of PCPs in wood treatment. Practical comparative examples of wood treated with various substances were given.

Scope of the Pentachlorophenol (PCP) inventory



The Red Nord SA and the Premier Energy company representatives confirmed the fact, that the wood is continuously being procured by their companies, and most probably it is treated, so additional verifications with the company providing the electricity wood poles needs to be undertaken. At first due to black colour of wood, the assumption is that many of the wood slopes were treated with creosote.

Next, **Mr. Lilian Cernolevschi, responsible for environment in Premier Energy** – energy distributor company (center and south of the republic) presented the recent experience of the company in PCB inventory, in safe removal and treatment of PCB containing oil and equipment.

In the beginning, the overview of the inventory of equipment over last 10 years was presented to the participants:



Inventarierea IE la conținutul de PCB Rezultate teste anii 2009-2011, 2018

	2009	2010	2011	2018	TOTAL
Total probe	3.382	3.285	3.430	205	10.302
Testarea EXPRES (probe)*	3.382	3.285	3.430	205	10.302
Testarea EXPRES (probe contaminate)	318	283	221	2	824

Total IE contaminate PBC (după proba cromatografică)** - - - - 54

*testarea EXPRES s-a efectuat în laboratorul PE Distribution
** testarea CROMATOGRAFICĂ s-a efectuat în laboratorul SHS

3

Next, the types of the PCB containing equipment within the company along with the existing labelling was done:



Tipuri echipament contaminat cu PCB proprietate PE Distribution

Transformatoare 10/0,4kV



Întreruptoare 35 kV



4



Marcarea echipamentului inventariat

Fără BPC
Echipamentul nu conține BPC (bifenilii policlorurați)

ATENȚIE!
Substanța chimică periculoasă pentru om și mediu.
Substanța chimică BPC (bifenilii policlorurați) este clasificată ca fiind periculoasă în conformitate cu Regulamentul privind clasificarea, etichetarea și ambalajarea produselor chimice periculoase. În cazul de accident, urmați instrucțiunile de siguranță (H373).



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Next, he has mentioned, that in 2019 the company announced the tender and the Romanian Company Setcar was contracted to perform the works for PCB equipment containing oil dismantling and transportation for further treatment. The equipment was stored properly within the company premises, oil expecting to be transported to Germany. Due to COVID situation the procedure of receiving the signed agreements from competent authorities of transit countries, according to Basel Convention procedures is still in process, expected to be finalized by the end of 2020.



Depozitare echipament cu PCB

Foto 4. Instalațiile în interiorul depozitului



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Eliminare echipament cu PCB



HOME DESPRE NOI SERVICII TEHNOLOGII EVENIMENTE CONȚINUT

Servicii de eliminare echipamente electrice cu PCB



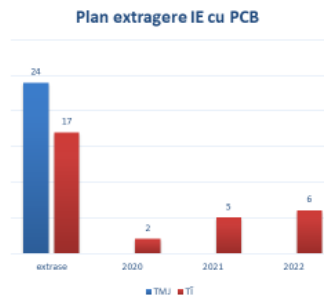
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Further he presented the company plan on remaining PCB equipment elimination. Yet, he has mentioned that the company for sure will not comply with the provisions of the PCB regulation stipulating elimination of equipment by 31 December 2020. The official note to the ministry was already submitted in this context.



Plan scoatere din funcțiune echipament cu PCB

extrase	2020	2021	2022
TMJ	24	2	5
TF	17	5	6



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Red Nord SA company mentioned that at the moment they have only few units of PCB containing equipment, however at the moment they are still functioning. The reflection of the meeting was placed at Red Nord Facebook <https://www.facebook.com/REDNordSA/>

Moldelectrica SA, the biggest company with the PCB containing equipment shall request additional time for data evaluation and provision for the purpose of inventory. They have also mentioned that the company shall benefit of a soil decontamination project in upcoming year, that will be implemented with the support of Czech development assistance program. More information shall be presented in the official company response by end of October.

Termoelectrica SA as well has pointed out that at company level the PCB equipment is still in use and less probable that it will comply with 2020 deadline for elimination of such equipment. She has also pointed out that the initially promoted regulation on PCB introduced a deadline for PBC elimination as per end of 2020 more restrictive that it is at EU level (2025), thus the recommendation to the Ministry of Environment shall focus on prolongation of this term.

At the end of all presentations Tatiana Echim concluded that at the moment the project experts with the target companies shall perform the following actions:

- Update data on equipment with expired PBC content in use
- Existence of data on performing oil analyses (PCB and PCN)
- Completion of the inventory according to HG81 / 2009
- Company management plan for equipment / oil containing PBC
- Analysis of the wood treated with the PCP for electricity poles
- Perfecting documents for equipment / oil disposal
- Reporting data to the Environment Agency on PCB quantities (annual)

DAY 2, October 9th, 2020

Emergency situation & aviation & transport (PCB, PCN, (firefighting foams and aviation fluids)

Participants were representatives of the Inspectorate for Civil Protection and Emergency Situation, Ministry of Internal Affairs, aviation companies, national agency of public service (transport registration division) and Moldtelecom SA.

The key focus of the presentations were the following POPs: **PFOS (firefighting foams, special textiles, hydraulic aviation fluids), PBDE.**

At start Tatiana **Echim, environmental expert** made the presentation on the PFOS use in the emergency response sector foams, textiles and other applications. She has specifically outlined the PFOS application applicable to Moldova and that are of potential subject of inventory.

Perfluorooctane sulfonic acid (PFOS)

- CAS Nr. 1763-23-1 (PFOS)
- CAS nr. 307-35-7 (PFOSF)

Trade Name: PFOS, FC-95

Salts and related substances:

- sulfonyl perfluorooctanic fluoride;
- potassium perfluorooctane sulfonate;
- ammonium perfluorosulfonate;
- diethanolammonium perfluorooctane sulfonate;
- tetraethylammonium perfluorooctane sulfonate;
- perfluorooctane didecyldimethylammonium sulfonate

- Historically, PFOS has been used for a variety of products due to its properties of forming a surface resistant to water, oil, grease or soil. PFOS is produced both intentionally and by degradation from a large group of related substances. Intended uses of PFOS can be found in electrical and electronic parts, fire-fighting foams, photographic images, hydraulic fluids, paper, textile and leather production..



PFOS is used in industrial and domestic applications:

- additives in surface treatments for stain resistance of textiles and carpets
- oil resistant coating for food paper and paper and cardboard packaging
- extinguishing foams
- surfactants for mining and oil exploitation
- insecticides and pesticides
- household and industrial detergents
- metal plating
- additives for hydraulic oils
- semiconductors, electrical and electronic components from colour printers
- medical devices
- photo mask for liquid crystal displays (LCD), anti-glare and photoresist treatments
- photographic and photolithography industry.

Next the overview of the firefighting foams containing PFOS was done, with the main focus on their application, properties and the producers.

AFFF foams

- Aqueous film-forming foam concentrates (AFFF) - are high-performance synthetic foaming agents, composed of detergent and fluorocarbon surfactant suitable for use on class B hydrocarbon fuel fires, such as petroleum fuels, including aviation .
- Alcohol-resistant aqueous foam concentrates (AFFF AR) are high-performance synthetic foaming agents composed of surfactant, fluorosurfactant, polymer and fluoropolymer suitable for use in class B fires, such as hydrocarbons and solvent polar fuels.

(FFFP), AR-FFFP,
FP-FFFP foams

Fluoride film forming foams (FFFP), AR-FFFP, FP-FFFP

Protein foams are agents produced primarily from natural hydrolyzed proteins. They are combined with foam stabilizers (metal salts), bactericides, corrosion inhibitors, frost protection additives and solvents to create the foam concentrate. A wide range of protein foams are available with different applications and performance levels.

More advanced fluoroprotein foams (FP-FFFP) and fluoride film-forming foams (FFFP) also include fluorochemical additives that increase foam performance by improving flame flow rate and fuel tolerance. The appearance of proteins also exists with alcohol-resistant capabilities (AR -FFFP).

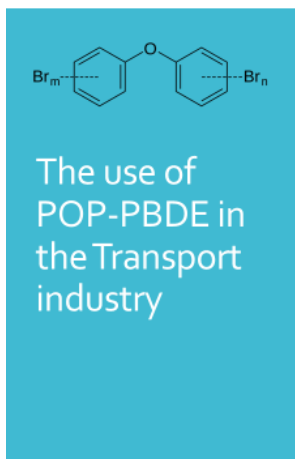
Next to foams the presentation of PFOS use in hydraulic aviation fluids was made. The aviation companies, present at the event talked of little probability of using such fluids, but also they consider that further check for SDS will reveal the concentration of PFOS in this products

Under the final part of the presentation, the PFOS containing waste issue with was presented, specifying the limit value of the concentration in waste regulated by art. 53 para. (3) Law on Waste.

Next Tatiana Tugui has presented the **PBDE in the Transport sector**. She has pointed out that guidance provides 2 tier approach, depending on availability of the data one or another can be used. She mentioned that PBDEs have been used since 1970 mainly as flame retardant additives that combine with the material in which it is used to inhibit ignition and slow down the rate of flame spread. It has a wide range of applications, including plastics, polymers, composites, textiles, adhesives, sealants, coatings and inks. Plastics containing PBDEs are used in the housings of computers and televisions, wires and cables, pipes and carpets. Moreover, it is also used in commercial textiles, mainly for public buildings and transport and in textiles for household furniture.

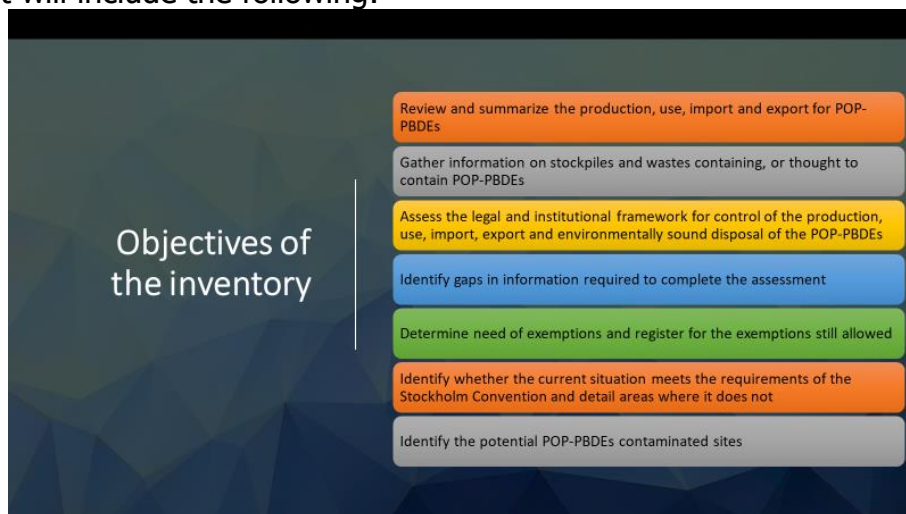
Next she described the use of PCDE in vehicle as a fire retardant in: Fabrics (PUR foam for seats, roof; back cover for seats); Hardened plastic; Under the hood or on-board polymers (eg cable sheath); Electrical and electronic equipment.

Further the explanation on conducting of the inventory and the entry data was provided to participants:



- POP-PBDEs were produced and used in the period 1975-2004, therefore only vehicles produced during this period need to be included in the inventory POP-PBDE
- Cars and other vehicles (trucks and buses) constitute the major portion of the transport sector that contains the largest volume of POP-PBDE
- Ships and aircraft are not included in the inventory methodology.
- Total PBDE production between 1970-2005:
- Approx. 100,000 tons of c-pentaBDE produced during this period worldwide, of which it is estimated that the use in Transport accounted for 36%. About 90-95% of uses are attributed to the treatment of polyurethane foam (PUR).
- It is estimated that 85,000 tons of c-pentaBDE were used in the United States and 15,000 tons in Europe. Production in the EU ceased in 1997.
- The total production of octaBDE is estimated at around 100,000 tons. In Transport, used in vehicle connectors based on PBT (Polybutylen Terephthalate).
- DecaBDE production is estimated to be between 1.1 and 1.25 million tons by 2005.

She mentioned that the objectives of the inventory that will be further conducted by the project will include the following:



POP-PBDEs estimation in transport sector – Tier II calculation equation

- In order to calculate the amount of POP-PBDEs in vehicles, information on vehicles fabrication year (distinguishing between vehicles fabricated 1975-2004 and 2005-2017) imported, in use (registered) and entering the end of life (ELVs)
- Based on global data from PBDEs in shredder residues and recalculated average of PBDEs content of individual cars, the POP-PBDE content is
 - 80 g decaBDE for vehicles produced before 2005 for all regions; except for the US with high use of c-PentaBDE of 40 g decaBDE and 40 g c-PentaBDE in average car* can be assumed
 - 20 g decaBDE for vehicles produced 2005 to 2017
 - 0 g decaBDE/PBDEs for vehicles produced 2017 onwards if no exemption for decaBDE is made
- Based on this practical approach the following formula can be used to estimate the PBDE amount in vehicles:

$$\text{Total PBDEs in vehicles (imported/in use/end of life)} = \text{Vehicles (1975 - 2004)} \times 80 \text{ g decaBDE}^* + \text{Vehicles (2005- 2017)} \times 20 \text{ g}$$

*For the US it is assumed that the content is 40 g decaBDE and 40 g c-PentaBDE were included in average vehicle before 2005

The participants have received the overview on how the data is expected to be collected. The State Agency for Public Services ASP (Transport registry) representative has pointed out that the vehicle import registry provides the detailed information after 2004, yet the prior data might be difficult to obtain.

Data collection

- To calculate the amount of POP-PBDE in vehicles, information on the year of manufacture of the vehicles (distinguishing between vehicles manufactured between 1975-2005 and 2005-2017) imported, in use (registered) and decommissioned (ELVs) is required.
- Based on the statistical data provided by ASP, it was estimated:
 - Number of vehicles in use or for sale in the Republic of Moldova that could contain POP-PBDE
 - Number of imported vehicles that could contain POP-PBDE
 - Number of end-of-life vehicles that may contain POP-PBDEs that have been removed from the State Register of Vehicles
 - The share of US vehicles that could contain POP-PBDE is estimated based on information on the brand of vehicles produced up to 2002 available from another project.

As conclusion, Tatiana Tugui, EPO manager pointed out that already some estimations on the inventory were done by experts, however there shall be further more cooperation with the state agency.

The question was raised by **Nadejda Gindea, environmental expert**. She has pointed out that if in case of US produced cars the investigations on POPs presence was made, when calculating the vehicles in use produced in USSR there is not clear methodology on potential of pop PBDE presence in these cars. This matter shall be further consulted with UNEP experts.

DAY 3, October 13, 2020

Business /POPs in products (textile, wood processing, EEE, polystyrene producers/ importers)

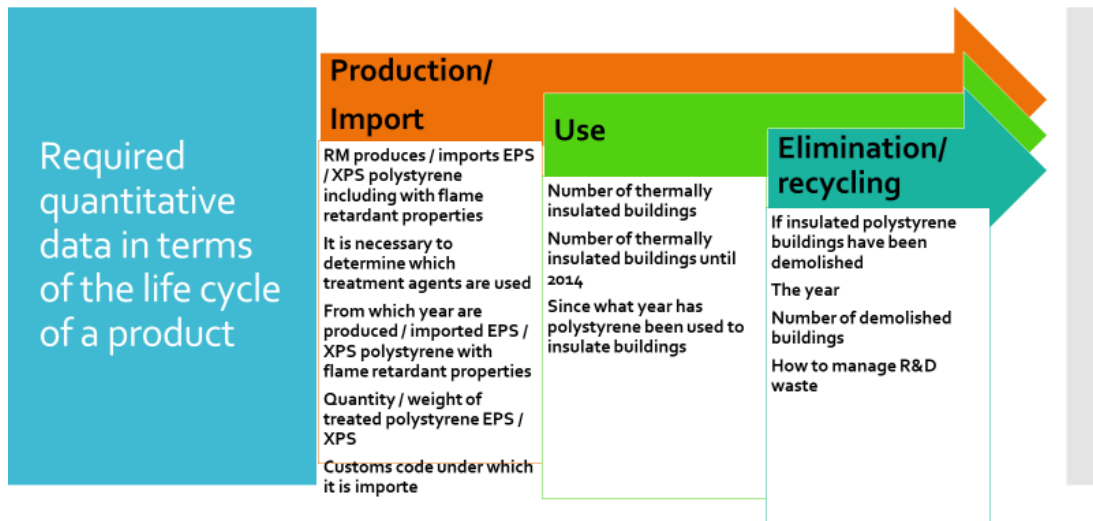
Participants were representatives of construction business mainly, importers of the EEE, polystyrene producers. Unfortunately, due to COVID pandemics many invited enterprises refused participation, due to restrictions introduced at enterprise level on participation in public meetings.

Key focus of the presentations were the following POPs: **HBCD and Deca-PBDE** (Polyurethane foam for building insulation, Expandable and extrudable polystyrene (EPS / XPS)

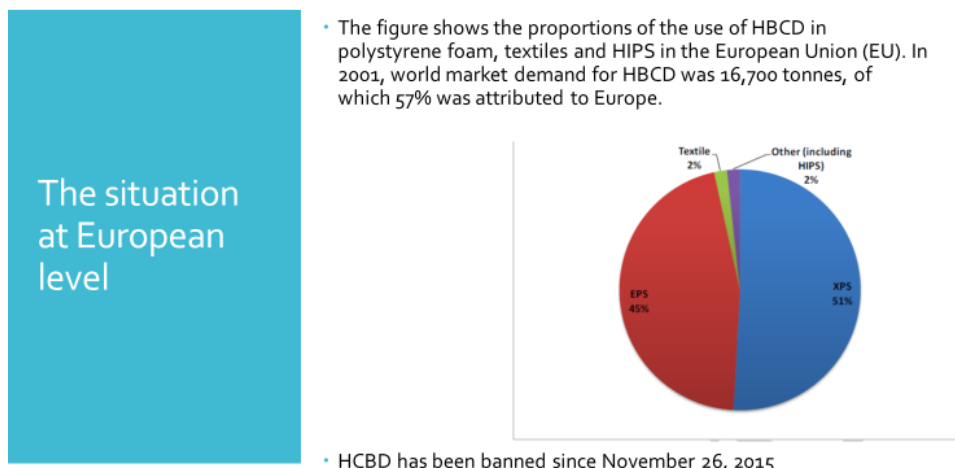
Natalia Efros, expert made the presentation on Hexabromocyclododecan (HBCD). She presented the general data on the chemical, the key properties and applications, as follows: Expandable and extrudable polystyrene (EPS / XPS) used in construction (> 90% of total HBCD). She mentioned that the only use exempted in the Stockholm Convention is polystyrene used in the insulation of building. When used, the plates must be marked in order to be easily identifiable.



Also when presenting the data necessary for the inventory, Natalia has pointed out the need for import, production, use by also the recycling and treatment data.



Next the situation at EU level was presented, since many imports to Moldova are imported from EU.




While stating the HBCD substances, the existing alternatives were presented and participants were asked when compiling the questionnaires to also check in Safety Data Sheets the alternatives as well.

It should be noted that the local distributors of polystyrene confirmed that their material is flame resistant, however they could not state which chemical was used to treat the polystyrene. As the biggest share of polystyrene used for insulation is produced at national level, it is recommended to consult the local producers on which chemicals are used for treatment as flame retardants.

Next, the presentation on DecaPBDE was done, focusing mainly on construction sector.

Former /
current uses
c-DecaBDE



Sector/ industry	Applications	End use
Electric and electronics industry	Electric and electronic equipment	<ul style="list-style-type: none"> • housings and internal components of TVs • mobile phones and fax machines • audio and video equipment; remote controls • communications cables; building cables • wire and cables, e.g., heat shrinkable tubes • connectors in E&E equipment • circuit breakers; coils of bobbins • printing and photocopy machine components - toner • cartridges and connectors • scanner components • heating fans and hair dryers
Private and public transportation	Automotive vehicles	<ul style="list-style-type: none"> • fabric (backcoating of article) • reinforced plastics • under the hood or dash polymers - terminal / fuse block - higher amperage wire & cable jacketing (sparkplug wire) • electric and electronic equipment
Maritime, aviation and aeronautic	Ships, boats, airplanes, space shuttles, rockets	<ul style="list-style-type: none"> • electrical wiring and cables • electric and electronic equipment (as above) • air ducts for ventilation systems - electrical ducts and fittings - switches and connectors • adhesive tape • composite materials e.g. epoxy
Textiles and furniture	Textiles and furniture	<ul style="list-style-type: none"> • automotive textiles • upholstery textiles e.g. sofas, offices chairs, mattresses • filters for cookers • blinds, draperies, blackout curtains • geotextiles, wall coverings • households/furniture appliances • PU Flexible foam • tents and tarps • interliners: foam fillings • carpets • other
Buildings/construction		<ul style="list-style-type: none"> • insulation (PUR and formerly XPS foams) • facing laminates for insulation panel • cladding panels • film for use under the roof and to protect building areas • cables and electrical ducts and fittings • piping insulation and pipes

Source: UNEP, 2014. Supporting information related to the draft risk profile on decabromodiphenyl ether. UNEP/POPS/POPRC.10/INF/5

Collection of information and data for DecaBDEs in construction sector (1)

Customs statistics

- Import of PUR foam used for construction purposes
- Import of waste PUR foam for recycling (rebond)
- Import of other polymers used in construction

Retailers and industry

- Sales of PUR foam and other polymers for construction containing decaBDE or other POPs (HBCD, SCCPs):
- Material and safety data sheets for suspected products
- Presence of decaBDE in the past in PUR foam and XPS foam and other polymers used in construction
- Current and former sales of fire-retardant paints containing decaBDE (or SCCP)
- Sales of fire-retardant paints containing decaBDE (or SCCP)

Collection of information and data for DecaBDEs in construction sector (2)

Construction sector	C&D waste sector
<ul style="list-style-type: none"> Insulation materials used and related flame-retardant standards and flame retardants used Material and safety data sheets for suspected products Practice on removal of paints (DecaBDE containing intumescent paints; PCB or lead paints) 	<ul style="list-style-type: none"> Amount of PUR foam and other foams in C&D waste Data on PBDEs, HBCD, PCBs and SCCPs in C&D waste fractions Management of PUR foam, XPS and other foams in C&D waste Management of other polymers Techniques on removal of POPs and lead containing paints

A brief presentation was given with reference to the use of POP-PBDE, PFOS and SCCPs in textile sector. There were mentioned the main applications of these chemicals and the particular properties they confer to the goods. So, the PentaBDE or OctaBDE can be present in recycled foam carpet padding.

PFOS in textiles

- It applies mainly to household textiles (eg upholstery, clothing) and outerwear, especially workwear, including uniforms.
- PFOS is found in socks and sportswear due to its sweat-repellent and dirt-repellent properties.
- Fluorinated compounds are widely used in the manufacture of synthetic carpets to provide protection against stains. This use ceased after 2003.
- Examples of products used before 2003 to treat the surface of synthetic carpets include:
 - Scotchgard (3M)
 - Baygard (Bayer)
 - Zonil (Dupont)



As for the SCCPs, it was noted that the current use in textiles is not exempted and is considered low. However, it can be applied in textiles, as flame retardants, water repellents and textile finishes that prevent rot.

Day 4. October 15, 2020

Agriculture and Environmental authorities – methodology for POPs inventory, toolkit testing presentation

Environmental and agriculture authorities were invited to attend the final day of the workshop, representatives of the ministry, Food Safety Agency, the environmental agency and the inspectorate for environmental protection.

The key focus of the day was to familiarize the participants with the obligations of the country on reporting under the Stockholm conventions (progress made, challenges, gaps) and also to provide the training on methodology on POPs inventory.

Tatiana Tugui, EPPO manager at first provided the overview of the inventory purpose, objective, POPs substances that are subject of investigation, along with the main outcomes of the national gap analysis.



5. Preparing the inventory report

Proposed Outline* of the Inventory Report

*This OUTLINE applies to each
inventory report !!!

- I. Summary of the inventory findings (2-4 pages) which contain key information
- II. Objectives and scope
- III. Data methodology used and how data were gathered
- IV. Final results of the inventory in each sector considered a priority for the country
- V. Results of the gap-analysis and limitations identified for completion of the inventory
- VI. Further actions to be taken to complete the inventory (e.g. stakeholder involvement, data collection strategies) and recommendations
- VII. Other information (e.g. stakeholder list)

Next, Tatiana Echim has provided the short overview for PCB, PCN, PCP and PFOS data status and inventory planning process (based on presentations provided in the previous days). Natalia Efros continued the series of the presentations on remaining POPs substances, subject to inventory in Moldova.

Separately, it was discussed the issues of pesticides and a separate presentation was prepared in this sense, which was delivered by Mrs. Tatiana Țugui. The presentation started by reminding the participants the POPs pesticides listed under the Stockholm Convention and the main objectives of an inventory of POPs pesticides, which are to:

POPs Pesticide

Aldrin	Annex A	Nici o exceptie
Chlordane	Annex A	Nici o exceptie
Chlordecone	Annex A	Nici o exceptie
Dicofol	Annex A	Nici o exceptie
Dieldrin	Annex A	Nici o exceptie
Endrin	Annex A	Nici o exceptie
Heptachlor	Annex A	Nici o exceptie
Hexachlorobenzene	Annex A	Nici o exceptie
Alpha hexachlorocyclohexane	Annex A	Nici o exceptie
Beta hexachlorocyclohexane	Annex A	Nici o exceptie
Lindane	Annex A	Exceptie specifică
Mirex	Annex A	Nici o exceptie
Pentachlorobenzene	Annex A	Nici o exceptie
Pentachlorophenol and its salts and esters	Annex A	Exceptie specifică
Technical endosulfan and its related isomers	Annex A	Exceptie specifică
Toxaphene	Annex A	Nici o exceptie
DDT	Annex B	Scop acceptabil
Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride	Annex B	Scop acceptabil

- Review and summarise production, use, import and export, disposal of pesticides listed in Annexes A and B to the Convention
- Collect information on stocks and wastes that contain or potentially contain POP pesticides
- Assess legal and institutional framework for the control of the environmentally sound production, use, import, export and disposal of pesticide waste listed in Annexes A and B to the Convention

- Identify gaps in the information needed
- Identify appropriate alternative products, methods and strategies for POP pesticides
- Determining exemption needs and recording exemptions
- Identification of potential lands contaminated with POP pesticides

It was noted that the Republic of Moldova is not using anymore any of the pesticides listed in the Stockholm Convention, as well as there are no stocks of such pesticides. Therefore, the main objective of the inventory exercise would be to collect data of alternatives, which shall be provided by the competent authority. The collected data shall focus on the following:

- Status of alternatives use
- Year of introducing the alternative
- Type of alternative
- Purpose
- Total annual use (kg/year)
- Risk assessment against POPs criteria listed in Annex D:
 - Persistence
 - Bio-accumulation
 - Potential for long-distance propagation in the environment
 - Harmful effects.

The detailed information on the restriction/prohibition of use of POPs pesticides in the Republic of Moldova is provided in the Annex. 12. In the end, Mrs. Țugui mentioned that a separate official request will be sent to the National Food safety Agency requesting information on use of alternatives.

Mr. Valeriu Bodaci, the representative of the National Food Safety Agency, confirmed that all the chemicals listed as POPs pesticides are not used in the Republic of Moldova, namely are not registered and authorisation is not granted. He also sought to mention that before assessing the registration of a new pesticide, it is checked whether it is registered in the EU - Pesticides database or is prohibited to be used in EU countries. If it is prohibited, Agency does not register this pesticide. It is recognizing and applying the European provisions.

However, Mr. Bodaci noted that the Agency has got some concerns in relation to the import and use of pesticides in the Administrative Territorial Units on the Left Bank of Dniester, which is a territory poorly controlled by the authorities from the Republic of Moldova. Due to this, it is difficult to assess what types of pesticides are used on this territory.

Also, Mr. Bodaci noted that the illegal traffic is another issue that the country is facing.

In the final part of the day, participants were informed about the project activities related to testing of the toolkit on reporting, on what actions the country must undertake to be able to fill in the fields, but also the discussions focused on how the existing data collection systems can be used/ adapted to provide relevant POP information.

Conclusions:

National workshop has reached its goals and objectives, by informing the selected pool of national stakeholders on the new POPs, on methodology of how the POPs data revision collection process will take place, on finding of national gap analysis report.

Most important that planning of the process of data collection/ revision and reaching the consensus with the representatives of the main target sectors.

Annexes:

- Annex 1. List of participants
- Annex 2. Invitation letter to national workshop
- Annex 3. Workshop Photo Documentary
- Annex 4. List of Substances according to Art. 53/ Law on Waste
- Annex 5. PP presentation on SC and legislation
- Annex 6. PP presentation on PCB
- Annex 7. PP presentation on PCN and PCP
- Annex 8. PP presentation on HCB
- Annex 9. PP presentation of PFOS
- Annex 10. PP presentation on POP PBDE in transport sector
- Annex 11. PP presentation on POP PBDE in textile sector
- Annex 12. PP presentation of POPs pesticides

Date: 5 November 2020

Drafted by: **Maria POPESCU**, assistant

Approved by: **Tatiana TUGUI**, EPPO manager, MoARDE