UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

SUSTAINABLE DEVELOPMENT GOALS

Project Implementation Report

(1 July 2022 – 30 June 2023)

Project Title:	***Full sized project to Implement an Environmentally Sound Management of PCBs in the Republic of Serbia***
GEF ID:	*4877*
UNIDO ID:	*100313*
GEF Replenishment Cycle:	*GEF-5*
Country(ies):	*Republic of Serbia*
Region:	*ECA - Europe and Central Asia*
GEF Focal Area:	*Persistent Organic Pollutants (POPs)*
Integrated Approach Pilot (IAP) Programs[1]:	*N/A*
Stand-alone / Child Project:	*N/A*
Implementing Department/Division:	*ENV / IPM*
Co-Implementing Agency:	*N/A*
Executing Agency(ies):	*Faculty of Technology and Metallurgy University of Belgrade*
Project Type:	*Full-Sized Project (FSP)*
Project Duration:	*48 (actual duration 87)*
Extension(s):	*3*
GEF Project Financing:	*USD 2,100,000*
Agency Fee:	*USD 199,500*
Co-financing Amount:	*USD 9,089,630*
Date of CEO Endorsement/Approval:	12/22/2014
UNIDO Approval Date:	1/28/2015
Actual Implementation Start:	2/11/2015
Cumulative disbursement as of 30 June 2023:	*USD 1,969,873*

[1] Only for **GEF-6 projects**, if applicable

Mid-term Review (MTR) Date:	4/12/2019
Original Project Completion Date:	12/31/2021
Project Completion Date as reported in FY22:	12/31/2021
Current SAP Completion Date:	11/19/2023
Expected Project Completion Date:	11/19/2023
Expected Terminal Evaluation (TE) Date:	6/19/2023
Expected Financial Closure Date:	12/31/2023
UNIDO Project Manager[2]:	*Vladimir Anastasov*

I. Brief description of project and status overview

Project Objective
The overall objective of this Full-Sized Project is to protect human health and the environment by reducing and eliminating the releases of and exposure to PCBs through establishment of an environmentally sound PCB management system and final disposal of 200 tons of PCB equipment. The power sector and other PCB equipment owners will be able to better manage their PCB contaminated equipment and implement the PCB disposal plan under which all PCB contaminated equipment shall be disposed of by 2028 at latest to meet the Stockholm Convention's mandate. This project will contribute to strengthening the national capacity for the environmentally sound management of PCBs and setting up the in-country final disposal option for PCB contaminated equipment with low PCB concentrations.

Baseline
During the NIP formulation NIP formulation, a lack of regulations related to the PCB management was identified. In order to meet the country's obligations towards the Stockholm Convention, the Ministry of Agriculture and Environment Protection (MoAEP) has improved the legislation by the adoption of legislative acts regulating PCB management. The law on Waste Management adopted in May 2009 provides the legal basis for the regulation of PCB management in Serbia. The law of Chemicals regulates integrated management of chemicals was adopted in 2009 with subsequent amendments in 2010, 2011 and 2012. There were no specific laws and regulations for the management of PCBs. It was noted during the project PPG phase that analytical and research capacities in the country needs to be strengthened and laboratories need to be have accreditations in accordance with ISO/IEC 17025 standard. It was noted that cross-contamination might occur during exchanging, or regeneration, reprocessing of the oi; and during the topping of the transformers and their maintenance and repair. The need for an in-depth PCB inventory and development of guidelines and standards operating procedures (SOPs) for PCB life-cycle management was identified. There are a large number of sites in Serbia generally contaminated sites and Serbia EPA identified 384 potential sites where long-term environmental pollution has been confirmed. The MoAEP led a pilot project for prioritization of contaminated sites using a survey form based on the Austrian methodology. A systematic and methodical approach to PCBs contaminated sites would need to be developed.

[2] Person responsible for report content

The Nikola Tesla Institute (NTI) of Serbia developed a PCB decontamination process on a semi-industrial scale with a treatment of capacity of 200 litres per day. The effectiveness of the process technology had been verified through the results of the laboratory tests carried out by NTI and Sea Marconi.

A survey of the population on environmental issues showed that there is low level of awareness and education among the general public. There is also an insufficient level of awareness and information about POPs. There is lack of appropriate education, training and lectures on environmental topics, as well as the absence of problem-solving options.

Please refer to the explanatory note at the end of the document and select corresponding ratings for the current reporting period, i.e. FY23. Please also provide a short justification for the selected ratings for FY23.

In view of the GEF Secretariat's intent to start following the ability of projects to adopt the concept of adaptive management[3], Agencies are expected to closely monitor changes that occur from year to year and demonstrate that they are not simply implementing plans but modifying them in response to developments and circumstances or understanding. In order to facilitate with this assessment, please introduce the ratings as reported in the previous reporting cycle, i.e. FY22, in the last column.

Overall Ratings[4]	**FY23**	**FY22**
Global Environmental Objectives **(GEOs)** / Development Objectives **(DOs)** Rating	*Highly Satisfactory (HS)*	*Satisfactory (S)*
Implementation Progress **(IP)** Rating	*Highly Satisfactory (HS)*	*Highly Satisfactory (HS)*
Overall **Risk** Rating	*Low Risk (L)*	*Low Risk (L)*

II. Targeted results and progress to-date

Please describe the progress made in achieving the outputs against key performance indicator's targets in the project's **M&E Plan/Log-Frame at the time of CEO Endorsement/Approval**. Please expand the table as needed.

Main activities conducted and achievements in the reporting period:

1. Technical activities:

Project Strategy	KPIs/Indicators	Baseline	Target level	Progress in FY23
Component 1: Legal Framework				
Outcome 1: Legal, regulatory and policy framework for sound PCB management				
Output 1.1: Existing legal acts updated based on the available Gap Analysis Evaluation Report	Number of environmental policies, strategies, laws and regulations approved/enacted		1 PCB management policy	**All activities and relevant deliverables achieved and completed at target level before FY23.** **All outcomes confirmed by UNIDO PM**
Output 1.2: Technical guidelines, protocols and procedures prepared and improved for ESM of PCB-containing electrical	Technical guidelines developed		Technical guidelines for life-cycle management of PCBs	**All activities and relevant deliverables achieved and completed at target level before FY23.** **All outcomes confirmed by UNIDO PM**

[3] Adaptive management in the context of an intentional approach to decision-making and adjustments in response to new available information, evidence gathered from monitoring, evaluation or research, and experience acquired from implementation, to ensure that the goals of the activity are being reached efficiently

[4] Please refer to the explanatory note at the end of the document and assure that the indicated ratings correspond to the narrative of the report

equipment, waste and contaminated sites				
Component 2 - Institutional capacities and awareness improved for sound PCB management				
Outcome 2:				
Output 2.4: Awareness and knowledge of POPs/PCBs issue among different target groups improved	Report on training at RECETOX Report on visit dedicated to PCB policy, EPA of Austria	Low level of awareness on the subject of ESM of PCBs in relation to the PCB policy	• Report on training at RECETOX • Report on visit dedicated to PCB policy, Austria	**All activities and relevant deliverables achieved and completed at target level. All outcomes confirmed by UNIDO PM** **Folder: 12. UNIDO PCB Report 2 Amendment 2\Output 2.4**
Output 2.4a: Awareness and knowledge on Open applications of PCBs and Unintentional POPs among different target groups improved	Open applications of PCB - Identification and Environmentally Sound Management Web site update for PCBs in open applications	Low level of awareness on the subject of Open applications of PCB -Identification and Environmentally Sound Management	• (1) Open applications of PCB - Identification and Environmentally Sound Management - Serbian • (2) Web site updated with PCBs in open applications	**All activities and relevant deliverables achieved and completed at target level. All outcomes confirmed by UNIDO PM.** **Folder: 12. UNIDO PCB Report 2 Amendment 2\Output 2.4a**
Component 3 - Detailed inventory of PCB containing equipment and waste carried out				
Output 3.3: Database prepared and maintained for PCB-containing equipment, waste, stockpiles and contaminated sites	Database: List of additionally identified PCB equipment, Updated database at least every year during the project period	Reporting system established with Serbian EPA; Activity ongoing and follows field analysis data	• (1) Database: List of additionally identified PCB equipment • (2) Updated database	**All activities and relevant deliverables achieved and completed at target level. All outcomes confirmed by UNIDO PM.** **Folder: 12. UNIDO PCB Report 2 Amendment 2\Output 3.3**
Component 4 - Pilot quantities of 200 tons of PCB- containing equipment and waste disposed of in an environmentally sound manner				
Output 4.1: Final disposal plan based on the PCB inventory report in Output 3.4 and with the support from international consultants, develop the PCB disposal strategy by comparing the BAT/BEP options available in the market for the identified PCB equipment profiles with the support of international consultants	BAT/BEP disposal options and technologies applicable to the disposal strategy validated • Optimization and improvement of the system of PCB treatment -optimizing treatment of small units with PCB content > 1000 ppm, Report and technical recommendation	Selected KPEG technology and mobile unit could be improved through process and unit optimization	• Technical assessment and feasibility study performed; BAT/BEP options evaluated • Optimization and improvement of the system of PCB treatment - optimizing treatment of small units with PCB content > 1000 ppm, Report and technical recommendation	**All activities and relevant deliverables achieved and completed at target level. All outcomes confirmed by UNIDO PM.** **Submitted previously in Report No 1, Amendment No. 2**
Output 4.5: PCB- containing equipment and waste disposed of in an environmentally sound manner	200 tons of PCB-containing equipment and waste disposed • Report on decontamination and disposal of PCB equipment	Meetings with PCB owners and service provider held in order to formulate the work plan and co-financing arrangement; Final disposal and decontamination in progress	Report on decontamination and disposal of PCB equipment within periodic progress reports	Treatment and disposal operation completed by the service provider. Overall quantity of PCB waste and equipment finally disposed during 2021: Scenario B - 90740 kg Scenario C - 240000 kg **TOTAL - 330740 kg**

	within periodic progress reports.			317.2 tons disposed in the previous phase of the project **TOTAL during project 647940 kg** **Target quantity of 200 tons exceeded by 224%.** Contract to dispose additional 110 tons has been signed with service provider and the activity is currently ongoing. **All activities and relevant deliverables achieved and completed above target level for the whole project.** **All outcomes confirmed by UNIDO PM.** **Folder: 12. UNIDO PCB Report 2 Amendment 2\Output 4.5**
Component 5 - Public private partnership (PPP) policy integrated into national assessment scheme for PCBs contaminated sites				
Output 5.4: Finalization of pilot remediation agreement under PPP scheme	• Report on follow-up related to PCB site clean-up and remediation through public-private partnership.		• Report on PCB site clean-up and remediation in 2022.	**All activities and relevant deliverables achieved and completed at target level.** **All outcomes confirmed by UNIDO PM.** **Folder: 12. UNIDO PCB Report 2 Amendment 2\Output 5.4**
Component 6 - Project progress properly monitored and evaluated				
Output 6.1: Project results monitored and reported including the gender dimension	Project results monitored and reported including the gender dimension Project monitoring and evaluation structure appropriate to control the execution of the project activities; Key stakeholders shared information critical for the project monitoring and evaluation; Reporting in 6-month progress reports on project outputs and execution; Minutes of the meetings	All initial tasks fully completed. Gender balance excellent.	• Progress Report No.2 Amendment 2 **Folder: 12. UNIDO PCB Report 2 Amendment 2** • Report from Regional preparatory meeting for the 2023 COPs for the Eastern Europe region Zagreb March 2023 – Serbian MoEP delegation • PMU contracts • Contracts with NEs **Folder: 12. UNIDO PCB Report 2 Amendment 2\Output 6.1**	**All activities and relevant deliverables achieved and completed at target level.** **All outcomes confirmed by UNIDO PM.**

III. Project Risk Management

1. Please indicate the overall project-level risks and the related risk management measures: (i) as identified in the CEO Endorsement document, and (ii) progress to-date. Please expand the table as needed.

	(i) Risks at CEO stage	(i) Risk level FY 22	(i) Risk level FY 23	(i) Mitigation measures	(ii) Progress to-date	New defined risk[5]
1	PCB owners including contaminated site may not be willing to	Low risk (L)	Low risk (L)	Meetings held, equipment identified and reported.	Done.	☐

[5] New risk added in reporting period. Check only if applicable.

	identify and report PCB containing equipment and related waste					
2	Reluctance among the local community against establishing of the final disposal treatment facility	High risk (H)	High risk (H)	Service provider with valid permit selected. Part of activities performed by mobile unit. The local community informed and the activities accepted.	Done.	☐
3	Lack of interest of the PCB owners to replace, phase out and dispose of the PCB equipment and waste due to high costs or lack of replacement equipment	Modest risk (M)	Modest risk (M)	Meetings with owners held and benefits as well as incentives explained.	Done.	☐
4	High environmental risk during the treatment operations including accidents and environmental releases during handling, packaging and transportation of PCB wastes	Low risk (L)	Low risk (L)	Specified in detail, preventive measures undertaken by service provider. All contracted quantities disposed without any incident.	Safety and occupational health issues incorporated in the Terms of Reference for the selection of the PCBs treatment technology. Done.	☐
5	(Climate Change Risk) There may be some contaminated sites that are more vulnerable to flood risks than others.	Low risk (L)	Low risk (L)	This consideration already incorporated into the criteria for prioritization of site investigation.	Done.	☐

6	Increased cost of treatment due to inflation and increased prices of chemicals, energy and transportation could delay the activity.	Moderate risk (M)	Moderate risk (M)	Since the initial financial offer by the consortium was very cost-effective the request for price increase could be approved (even increased cost is much lower than the cost which would have resulted by other financial offer).	The issue has been resolved. It was decided to accept new reality regarding cost levels as the inflation figures have been confirmed at international level by the relevant external reports. Even with cost increase inclusion the treatment cost is still much lower than the one offered by the competing bidder in 2019.	☒

2. If the project received a sub-optimal risk rating (H, S) in the previous reporting period, please state the actions taken since then to mitigate the relevant risks and improve the related risk rating. Please also elaborate on reasons that may have impeded any of the sub-optimal risk ratings from improving in the current reporting cycle; please indicate actions planned for the next reporting cycle to remediate this.

Not applicable

3. Please indicate any implication of the **COVID-19** pandemic on the progress of the project.

Major problems encountered during this project were associated with the Covid19 pandemic. Epidemic was officially announced in Serbia on March the 12th 2020 which was foreseen as the day to perform removal of “pure PCB” equipment from HBIS. Consecutive waves of COVID 19 epidemic have delayed some of the work schedules. Measures were taken to mitigate the effects of Covid19 related obstacles, but foreseen activities have been delayed by some months. Nevertheless, considerable amount of work has been done due to commitment and professionalism of service provider involved in this activity. Most activities have been delayed but the overall result was essentially on time. Good basis for successful extension of the activities has been established and additional quantities of PCB equipment were finally disposed/decontaminated in the 2021. It was agreed with the PSC, the Ministry and UNIDO to extend project activities, mainly within Output 4.5, and to move the end date of the project to the end of 2021. Further outbreak occurred in 2022, the main cause was omicron strain which spread across Serbia in January - March period of 2022, when all-time highs of infections were recorded. Measures taken in order to mitigate the effects of Covid19 omicron variant were mostly to postpone contacts and meetings. Regardless of this constraint, all of the foreseen activities have been completed as planned.

4. Please clarify if the project is facing delays and is expected to request an **extension**.

There were three extensions of the current project so far. First one, extended project up to the end of 2021. Second and third project extensions were also caused by unspent budget of the project. Namely, all the activities and decontamination and final disposal of the planed 200 tonnes of equipment were finished substantial fraction of the budget remaining unspent.
Consultations dedicated to the subject of extension in 2022 were held with the responsible staff at the Ministry of Environmental Protection and relevant stakeholders. These consultations were held during the PSC meeting and day to day communication with the Ministry. Support to utilize and implement the available remaining funds was confirmed at all levels of the decision making.
Third extension, to the end of 2023, was requested for the same reasons and activities were extended to PCBs in indoor air and to unintentionally produced PCBs waste like cross-wood ties and soil. The current

extension will expand the reach of project results, in terms of systemic approach related to ESM of PCBs in Serbia and will also result in greater extent of disposal of the existing PCBs.
No further extensions of the project duration are planned.

5. Please provide the **main findings and recommendations of completed MTR**, and elaborate on any actions taken towards the recommendations included in the report.

The mid-term evaluation of the UNIDO-GEF project "Environmentally sound management and final disposal of PCBs" in the Republic of Serbia was conducted from April – June 2019. The mid-term evaluation covered the whole duration of the project from February 2015 till the cut-off date of the evaluation, 12 April 2019.
Project commenced in February 2015; however, the project suffered a delay of 2 years due to initial organizational delays. Project was found to be on the right track, although with delay. All outputs and outcomes were seen as helpful for Serbia in the field of PCBs.
Suggested legislation is in the process of being adapted and adopted; capacity building activities have been conducted, Management Plans and Guidelines prepared; Ministry of Environmental Protection has committed to continuing awareness-raising activities; Results of the project were estimated to be used as inputs for the forthcoming waste management plan for the next 6 years. Owing to the reiterations of commitment from the MEP and other stakeholders, the likelihood of financial and economic resources not being available after project completion was estimated as low. Socio-political risks were considered to be low, as the Republic of Serbia is committed to fulfilling its obligations under the Stockholm Convention and ownership at the MEP and other stakeholders is considered to be high.
Recommendations of MTR were focused on the following:
• Quick PCB screening to be carried out by the EPS and Serbian Railways when the transformer is at the workshop for repair or maintenance.
• Continued cooperation and active participation of all stakeholders including financial support and planning for future activities (also after project completion), possibly via inclusion in national/MEP budget.
• Participation of MEP in all technical evaluations of public bidding procedures.
These recommendation were followed in the subsequent phase of the project: through field screening of transformers at Serbian Railways and by continuous cooperation and consultation with stakeholders on the aspects of planning and financing of future activities (meeting with representatives of the industry and power sector).

IV. Environmental and Social Safeguards (ESS)

1. As part of the requirements for **projects from GEF-6 onwards**, and based on the screening as per the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP), which category is the project?

☐ Category A project

☐ Category B project

☐ Category C project

(By selecting Category C, I confirm that the E&S risks of the project have not escalated to Category A or B).

Please expand the table as needed.

	E&S risk	**Mitigation measures undertaken during the reporting period**	**Monitoring methods and procedures used in the reporting period**
(i) Risks identified in ESMP at time of CEO Endorsement	NA	NA	NA
(ii) New risks identified during project implementation (if not applicable, please insert 'NA' in each box)	NA	NA	NA

V. Stakeholder Engagement

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes** regarding engagement of stakeholders in the project (based on the Stakeholder Engagement Plan or equivalent document submitted at CEO Endorsement/Approval).

The MoEP is actively involved in the project in that it participates actively in the meetings and workshops of the project, is updated on project activities, and provides support via official communication/letters, as necessary. The Serbian Railways, HBIS and HIP have participated actively in all relevant meetings and workshops of the project, as well as in investigation and disposal activities in the field. They have emphasized their strong commitment to PCB-disposal and both HBIS and HIP have carried out PCB-disposal via the project's mobile facility, and also though financial and operational support of the activities. The Serbian Railways has brought attention to the issue of PCBs in the waste wooden railway cross-ties and this activity is now being investigated more closely. National Power Company of Serbia – EPS contributed considerably to the activities of the project, especially in early stages when they were supplying initial data on PCB equipment in the country.

Institute Nikola Tesla, which has manufactured the mobile PCB-disposal unit itself, is a member of the consortium, which won the tender for the PCB-disposal activity in Serbia. It has also carried out the testing of the oil samples in its own certified laboratory.

National experts were recruited for different activities within the project and have carried these out as required.

There were no major challenges related to the engagement of the stakeholders in the decontamination and disposal operations.

The last project steering committee (PSC) meeting was held in November 2022 to update members on the progress of implementation of the project especially in relation to the remaining budget of the project. The work plan for proposed future activities was presented by the PMU, discussed and endorsed by the PSC. Due to the fact that considerable remaining fraction of the project budget was still available, it was agreed to extend the project activities and duration. New Contract was awarded to national implementation agency (FTM UB) as well as the extended Contract for disposal of additional quantities of PCB equipment and waste. For relevant documentation please consult the attached documents.

2. Please provide any feedback submitted by national counterparts, GEF OFP, co-financiers, and other partners/stakeholders of the project (e.g. private sector, CSOs, NGOs, etc.).

The planned activities generally are implemented in a timely manner, by inclusion of all relevant stakeholders and upon consultations with the respective contractors. Minor delays were experienced as a result of the restrictive measures due to the corona virus pandemic.

The project progress has been regularly reported to the NGOs and through the project web site.

The cooperation and communication with all relevant stakeholders resulted in disposal activities surpassing the initial project plan. Additionally further activities, like the clean-up of PCB site, have been completed by development of project results (site investigation and technical guide).

GEF_4877_Co-financing report Serbian Railway UNIDO 2023.pdf

GEF_4877_Co-financing report - Ministry of Environmental Protection - UNIDO PCB Project in Serbia.pdf

3. Please provide any **relevant stakeholder consultation** documents.

- Project Steering Committee minutes; Meeting held on 3rd November 2022
- GEF_4877_PSC Meeting minutes PCB project 3 November 2022 english.docx

VI. Gender Mainstreaming

1. Using the previous reporting period as a basis, please report on the **progress** achieved **on implementing gender-responsive measures** and **using gender-sensitive indicators,** as documented at CEO Endorsement/Approval (in the project results framework, gender action plan or equivalent),.

In the course of implementing the project special consideration was given to gender issues and hence balanced participation of both genders, especially women in meetings, seminars, workshops and other activities organized by the project. Participation of both genders in the trainings and workshops organised by the project was achieved as can be evidenced on the photos of the workshops, and/or the workshop/training reports. During the training programmes, PCB issues were discussed and their impacts, especially on women and youth, were emphasized.

The awareness-raising activities were conducted in a gender-sensitive manner. This has been carried out, as some brochures have been prepared especially for pregnant women and/or women planning to have a baby, to inform them about the effects of PCBs on health.

Workshop reports have been prepared including gender-disaggregated data.

Both genders are represented in the stakeholder institutions and the national PMU, while both women, and men, are expected to benefit from project results.

VII. Knowledge Management

1. Using the previous reporting period as a basis, please elaborate on any **knowledge management activities / products**, as documented at CEO Endorsement / Approval.

A website has been created in the last half of 2016 – www.pcbsserbia.rs. It contains information about PCBs, inter alia, POPs chemicals, what are PCBs, where PCBs could be found, Health impact of PCBs, as well as on the Stockholm Convention in Serbia, Main Legal Acts and some relevant references of publications. During last year, Web site is updated with Open applications of PCB -Identification and Environmentally Sound Management documents.

The inventory system for PCB equipment introduced in Serbia provides for easy screening and monitoring of the PCB polluted transformers since each piece of equipment is assigned a unique number and the initial inventorying is done by the PCB owner. Once completed the inventory is to be sent to Serbian EPA while all future changes and modifications can be performed by the owner.

Disposal technology to be selected has to provide solutions to the majority of PCB contamination observed in a given country. In case of Serbia, the adopted strategy comprises: the export of “pure PCB equipment and waste”, decontamination of “low POPs” equipment to be returned to service, and decontamination of “low POPs” equipment for final disposal prior to equipment decommissioning followed by materials recycling and reuse. Local conditions regarding the spread, locations and presence of PCBs in Serbia justified the use of mobile decontamination unit.

Methodology to address investigation and potential remediation of PCB sites applied in this project consists of low cost screening of potential PCB site, which is then followed by in-depth investigation (tiered approach is recommended). Such in-depth investigation, which is high cost activity, has to provide all relevant data to decision makers, including the data on costs, risks and results to be achieved.

2. Please list any **relevant knowledge management mechanisms / tools** that the project has generated.

- Project web site www.pcbsserbia.rs
- Projects banners used in public events and project flyers:
  GEF_4877_flyer PCBs Serbia project.pdf
- Dissemination through participation in relevant public events/conferences, the media and education
- National database of PCB contaminated equipment developed
- Flyers on ESM of PCB and Health effects of PCBs, and workshop on awareness raising:
  GEF_4877_PCB and health flyer.pdf
  GEF_4877_Leaflet PCB ESM 2028.pdf
- Guidelines for management of PCB contaminated sites - https://docs.unido.org/OTCS/cs.exe/link/17912394

- Cost Benefit Analysis for environmentally sound management of PCBs in equipment - https://docs.unido.org/OTCS/cs.exe/link/17912395
- Safety handbook for PCB management - http://www.pcbsserbia.rs/sr/pcbs-informacije
- Safety Handbook for PCB sampling and analysis - http://www.pcbsserbia.rs/sr/pcbs-informacije
- Site investigation report – https://docs.unido.org/OTCS/cs.exe/link/17911796
- GEF_4877_ Output 5.4 Technology review and technology screening matrix
- Open applications of PCB -Identification and Environmentally Sound Management – Serbian http://www.pcbsserbia.rs/documents/PCB%20u%20otvorenim%20aplikacijama%20Identifikacija%20i%20ekolo%C5%A1ki%20prihvatljivo%20upravljanje.pdf
http://www.pcbsserbia.rs/documents/Objedinjeni%20vodi?%20za%20PCB%20u%20otvorenim%20aplikacijama.pdf

VIII. Implementation progress

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes achieved/observed** with regards to project implementation.

The major activities during the reporting period centred on the execution of Contract for disposal of PCB waste and equipment, improvements related to process of decontamination of small transformers containing high PCB contents and management plan for the remaining PCB transformers in the country, technical design documentation for remediation of PCB contaminated site, guidelines for PCBs in open applications, ToR for analysis of PCBs in indoor air at schools, and ToR for analysis of railway wooden cross-ties and soil at storage sites. The contract for the treatment and disposal of 110 tonnes of PCB equipment was awarded to consortium led by MITECO and the overall quantity of 654 tonnes was disposed so far through this project. All the activities and developments under Outputs 4 and 5 of the project on PCB treatment and disposal were closely related to continuation of activities to consolidate outcomes and achievements of the project.

Within the reporting period it was established, through contacts with the Environmental Office of Autonomous Province of Vojvodina, that the selected PCB site (Radijator Company in Zrenjanin) has been privatized. Following change of ownership the site remediation was performed in accordance with the Law and technical documentation generated within this project. This operation was funded entirely by the new owner of the site.

Due to the fact that considerable remaining project budget was still available, it was agreed to extend the project activities and duration. New Contract was awarded to national implementation agency (FTM UB) as well as the extended Contract for disposal of additional quantities of PCB equipment and waste. FTM UB activities will focus on the screening of indoor air in schools, analysis of waste railway wooden cross-ties, training and exchange of knowledge and experience for MoEP and other stakeholders related to PCBs in the environment, and proposal of technical solutions for final treatment of potentially contaminated waste wooden cross-ties. With substantial amount of project funds still remaining unspent it has been proposed to extend project till the end of December 2023. This extension will contribute to extend further project results as well as project's development objectives.

2. Please briefly elaborate on any **minor amendments**[6] to the approved project that may have been introduced during the implementation period or indicate as not applicable (NA).

Please tick each category for which a change has occurred and provide a description of the change in the related textbox. You may attach supporting documentation, as appropriate.

☒	Results Framework	*The initial plan of project results has been extended. Disposal quantities have been overachieved (by*

[6] As described in Annex 9 of the *GEF Project and Program Cycle Policy Guidelines*, **minor amendments** are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5%.

		around 320% so far) and additional activities have been introduced: PCBs in open applications, technical proposals for the remaining PCB equipment and disposal of PCBs contaminated waste wooden cross-ties.
☐	Components and Cost	**N.A.**
☐	Institutional and Implementation Arrangements	**N.A.**
☐	Financial Management	**N.A.**
☒	Implementation Schedule	*Project has undergone three annual extensions and will terminate on December 31 2023. Main reason to extend activities was the fact that the initially planned results were achieved and there were still considerable funds available in the project budget.*
☐	Executing Entity	**N.A.**
☐	Executing Entity Category	**N.A.**
☐	Minor Project Objective Change	**N.A.**
☐	Safeguards	**N.A.**
☐	Risk Analysis	**N.A.**
☐	Increase of GEF Project Financing Up to 5%	**N.A.**
☐	Co-Financing	**N.A.**
☐	Location of Project Activities	**N.A.**
☐	Others	**N.A.**

3. Please provide progress related to the **financial implementation** of the project.

Update project budget is attached to this report.

IX. Work Plan and Budget

1. Please provide **an updated project work plan and budget** for the remaining duration of the project, as per last approved project extension. Please expand/modify the table as needed.

Outputs by Project Component	2022				Comments	GEF Grant Budget Available (US$)
	Q1	Q2	Q3	Q4	Description of work to be done	
Component 2						
Outcome 2: Institutional capacities and awareness improved for sound PCB management						
Output 2.4a: Knowledge dissemination among key stakeholders on aspects of sustainable and ESM chemical supply chains	☐	☐	☐	☐	(1) PCB web page updated periodically and newspaper interviews	

Output 2.4: Training of professionals working in the field of open PCBs applications		☐		☐	(1) Report on training at Vienna. (2) Report on training at UNITAR Geneva	
Outcome 3: Detailed inventory of PCB containing equipment and waste carried out						
Output 3.3: Database prepared and maintained for PCB-containing equipment, waste, stockpiles and contaminated sites - Additional testing results included in the national inventory	☐			☐	(1) Database: List of additionally identified PCB equipment, (2) Updated database at least every year during the project period.	
Output 3.2a: Sampling plan and PCB presence determined by screening and laboratory analysis	☐	☐			(1) Agreed PCB sampling plan for PCBs testing in wooden cross-ties, (2) Agreed PCB sampling plan for PCBs testing in soil below wooden cross-ties, (3) Terms of Reference for PCB analysis	
Outcome 4: Pilot quantities of 200 tons of PCB-containing equipment and waste disposed of in an environmentally sound manner						
Output 4.1a: Disposal management plan for the remaining PCBs contaminated equipment in Republic of Serbia.	☐	☐	☐	☐	Report on BAT/BEP recommendations for railway wooden cross-ties. Report on strategy/management plan for the disposal of PCBs contaminated railway wooden cross-ties	
Output 4.5: 200 tons of PCB-containing equipment and waste disposed	☐	☐	☐	☐	Report on monitoring of decontamination and disposal of PCB equipment within periodic progress reports. Around 110 tons of different types (scenarios A, B and C) of PCB equipment to be disposed, owned by 3 owners from industrial sector.	
Component 6 – Project progress properly monitored and evaluated **Outcome 6: Project progress properly monitored and evaluated**						
Output 6.1: Project results monitored and reported including the gender dimension	☐	☐	☐	☐	- Project monitoring and evaluation structure appropriate to control the execution of the project activities; - Key stakeholders share information critical for the project monitoring and evaluation; - Reporting in 6-month progress reports on project outputs and execution; - Minutes of the meetings; - Project Closure Report	

X. Synergies

1. **Synergies** achieved:

The project has been implemented in close linkage with the UN Environment/GEF project titled: “Enhanced Cross-sectoral Land Management through Land Use Pressure Reduction and Planning” (project duration: October 2015 – October 2018). Under the UN Environment project, a total of 39 potentially contaminated sites had been selected from the Inventory managed by the State Environmental Protection Agency (SEPA). All 39 potentially contaminated sites are Brownfield's sites. In April 2017, UNIDO and PMU, made a collaboration agreement with this project, SEPA and MoEP to include PCBs investigation in their project activities. In January 2019, the investigation of the PCB contaminated site was completed and a methodology and guidelines were developed for the sustainable management of PCBs contaminated sites. Consultations, information exchange and experience sharing on the tools developed by the PCB project are ongoing with the MoEP and other stakeholders on the remediation options for the selected PCB site and how the methodology can be applied to other identified sites in Serbia. Relevant synergies have been achieved in cooperation with PCB owners who have provided considerable support for the project activities. Also, additional synergies were achieved with previous EU supporting actions related to PCBs in the power sector and in-house projects of the Power Company of Serbia. These activities are also complemented by the ongoing activities of PCB disposal in the Republic of Serbia, which are funded by the PCB owners and

which proceed under contemporary market conditions.

3. Stories to be shared (Optional)

N/A

XI. GEO LOCATION INFORMATION

The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate.

Web mapping applications such as OpenStreetMap or GeoNames use this format. Consider using a conversion tool as needed, such as: https://coordinates-converter.com

Please see the Geocoding User Guide by clicking here

Location Name	Latitude	Longitude	Geo Name ID	Location and Activity Description
Smederevo ironworks factory Serbia RS » Central Serbia SE » Podunavlje » Opština Smederevo	44.60214	20.96867	8658935	Final disposal of PCB equipment
PetroHemija Serbia RS » Vojvodina VO » South Banat 4 » Pančevo-grad	44.83683	20.6727	787237	Final disposal of PCB equipment
Azotara Serbia RS » Vojvodina VO » South Banat 4 » Pančevo-grad	44.84211	20.66914	787237	Final disposal of PCB equipment

Please provide any further geo-referenced information and map where the project interventions is taking place as appropriate.

N/A

EXPLANATORY NOTE

Explanatory note

1. **Timing & duration:** Each report covers a twelve-month period, i.e. 1 July 2022 – 30 June 2023.

2. **Responsibility:** The responsibility for preparing the report lies with the project manager in consultation with the division chief and director.

3. **Evaluation:** For the report to be used effectively as a tool for annual self-evaluation, project counterparts need to be fully involved. The (main) counterpart can provide any additional information considered essential, including a simple rating of project progress.

4. **Results-based management**: The annual project/programme progress reports are required by the RBM programme component focal points to obtain information on outcomes observed.

Global Environmental Objectives (GEOs) / Development Objectives (DOs) ratings	
Highly Satisfactory (HS)	Project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as "good practice".
Satisfactory (S)	Project is expected to achieve most of its major global environmental objectives, and yields satisfactory global environmental benefits, with only minor shortcomings.
Moderately Satisfactory (MS)	Project is expected to achieve most of its major relevant objectives but with either significant shortcomings or modes overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environmental benefits.
Moderately Unsatisfactory (MU)	Project is expected to achieve some of its major global environmental objectives with major shortcomings or is expected to achieve only some of its major global environmental objectives.
Unsatisfactory (U)	Project is expected not to achieve most of its major global environmental objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (HU)	The project has failed to achieve, and is not expected to achieve, any of its major global environmental objectives with no worthwhile benefits.

Implementation Progress (IP)	
Highly Satisfactory (HS)	Implementation of all components is in substantial compliance with the original/formally revised implementation plan for the project. The project can be presented as "good practice".
Satisfactory (S)	Implementation of most components is in substantial compliance with the original/formally revised plan except for only few that are subject to remedial action.
Moderately Satisfactory (MS)	Implementation of some components is in substantial compliance with the original/formally revised plan with some components requiring remedial action.
Moderately Unsatisfactory (MU)	Implementation of some components is not in substantial compliance with the original/formally revised plan with most components requiring remedial action.
Unsatisfactory (U)	Implementation of most components in not in substantial compliance with the original/formally revised plan.
Highly Unsatisfactory (HU)	Implementation of none of the components is in substantial compliance with the original/formally revised plan.

Risk ratings	
Risk ratings will access the overall risk of factors internal or external to the project which may affect implementation or prospects for achieving project objectives. Risk of projects should be rated on the following scale:	
High Risk (H)	There is a probability of greater than **75%** that assumptions may fail to hold or materialize, and/or the project may face high risks.

Substantial Risk (S)	There is a probability of between **51%** and **75%** that assumptions may fail to hold or materialize, and/or the project may face substantial risks.
Moderate Risk (M)	There is a probability of between **26%** and **50%** that assumptions may fail to hold or materialize, and/or the project may face only moderate risk.
Low Risk (L)	There is a probability of up to **25%** that assumptions may fail to hold or materialize, and/or the project may face only low risks.