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Project title: Comprehensive Environmentally Sound Management of PCBs in Montenegro		
Country: Montenegro	Implementing Partner: UNDP Montenegro	Management Arrangements: Direct Implementation Modality (DIM)
UNDAF/Country Programme Outcome: <i>Balanced and equitable regional economic growth based on sustainable planning and use of natural resources that will provide high quality of life and long term economic opportunities for its inhabitants</i>		
UNDP Strategic Plan Output: <i>Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste.</i>		
UNDP Social and Environmental Screening Category: <i>either low, moderate or high. See further information at http://www.undp.org/content/undp/en/home/operations/social-and-environmental-sustainability-in-undp/SES.html</i>		UNDP Gender Marker: 1
Atlas Project ID/Award ID number: 00088794		Atlas Output ID/Project ID number: 00095303
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Planned start date: January 2017		Planned end date: December 2021
LPAC date: TBD		
Brief project description: The proposed project intends to support the country with the necessary technical and financial assistance to ensure that all the remaining PCBs in the country (estimated in not less than 900 t of PCB contaminated equipment and waste) are identified and disposed of. The project will be implemented side by side with the relevant institutional and industrial stakeholders, i.e. the Ministry for Sustainable Development and Tourism, EPCG, KAP and other holders of PCB containing equipment. Although the project expects to solve all remaining PCBs issues in the country, it will also ensure that enough capacity for the sound management of PCBs would have been built for the management of any further such hazardous waste identified in time after project's closure. The project will consist of the following four components which are:		

Component 1. Capacity strengthening on PCB management;		
Component 2. PCB Inventory, planning and establishment of public-private partnership;		
Component 3. Environmentally Sound Management (ESM) of PCBs, and		
Component 4. Monitoring, Learning, Adaptive Feedback and Evaluation		
FINANCING PLAN		
GEF Trust Fund	USD 3,500,000	
UNDP TRAC resources	USD 50,000	
Cash co-financing to be administered by UNDP	N/A	
(1) Total Budget administered by UNDP	USD 3,550,000	
PARALLEL CO-FINANCING (<i>all other co-financing that is not cash co-financing administered by UNDP</i>)		
Government	USD 200,000	
Private Institutions	USD 19,603,691	
(2) Total co-financing	USD 19,803,691	
(3) Grand-Total Project Financing (1) +(2)	USD 23,303,691	
SIGNATURES		
Signature: print name below	Agreed by Government	Date/Month/Year:
Signature: print name below	Agreed by Implementing Partner	Date/Month/Year:
Signature: print name below	Agreed by UNDP	Date/Month/Year:

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List of Acronyms and Abbreviations

CO	Country Office
CPAP	Country Programme Action Plan
FSP	Full Sized Project
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
MSP	Medium Sized Project
PAC	Project Appraisal Committee
PIF	Project Identification Form
PIR	GEF Project Implementation Report
PMC	Project Management Cost
POPP	Programme and Operations Policies and Procedures
PPG	Project Preparation Grant
GEF-STAP	GEF Scientific Technical Advisory Panel
TOR	Terms of Reference
UNDP	United Nations Development Programme
UNDP-GEF	UNDP Global Environmental Finance

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II. DEVELOPMENT CHALLENGE

The global environmental and/or adaptation problems, root causes and barriers that need to be addressed;

It is well known that the exposure to Persistent Organic Pollutants (POPs) can lead to serious health effects including certain cancers, birth defects, dysfunctional immune and reproductive systems, greater susceptibility to disease and damages to the central and peripheral nervous systems. The Stockholm Convention on POPs has been established based on the consideration that, given the long range transportation of POPs, no one government acting alone can protect its citizens or its environment from POPs.

PCBs are among the most toxic and persistent POPs listed in the Stockholm Convention. The so-called dioxin-like PCBs are characterized by a toxicity and environmental persistence which is very similar to the one of dioxin. Based on the re-assessment of scientific evidence, PCBs have been recently re-classified as class 1 carcinogens from the International Agency for Research of Cancer (IARC-WHO). Although PCBs were mostly used in closed systems, like transformers and capacitors, very often these equipment are recycled at the end of their operational life and the PCB oil contained therein can be either directly wasted in the environment, recycled, or even sold as fuel oil.

Montenegro has been a state party to the Stockholm Convention on Persistent Organic Pollutants (hereinafter referred to as POPs) since March 2011 and in response to Article 7 the country developed its National Implementation Plan (NIP) in November 2013. After the institutional strengthening (listed as the first priority in the NIP), PCB management and elimination of equipment containing PCBs is the highest priority identified in the NIP.

In Montenegro, the following barriers need to be addressed to ensure the Environmentally Safe management of PCBs and avoid that PCBs are released in the environment as a consequence of improper disposal:

- Limited amount of data available to establish a comprehensive national PCB inventory;
- The limited capacity on monitoring and inspection hinder the enforcement of the national regulation framework on PCBs;
- Information on cross-contaminated transformers (i.e. transformers originally designed as non-PCB and contaminated as a result of mismanagement) is scarce, as most of the information concerns pure PCB equipment, therefore the extent of the PCBs oil contamination spread is not completely clear. Some of PCB equipment and waste holders have (i.e. EPCG - the national electric company), started the activities for sampling, testing and labeling PCB equipment, which however progress very slowly;
- As one of the consequences, holders of PCB contaminated equipment mostly do not keep updated records of PCB equipment and waste (including PCB equipment phase-out plans) and this does not fully comply with a legal reporting obligation, hindering the process of national PCB disposal planning and appropriate dissemination of information to general public.
- There are no disposal technologies for PCBs in place in Montenegro or national know-how for comprehensive PCB management (beside occasional export practice). Although due to the size of the country and the expected amount of PCB waste it may still be more cost effective to send PCB waste abroad for disposal, an in-depth cost estimation on the matter has not been undertaken to allow documented and informed decision making;
- Some of the companies cannot afford the cost of replacement of old transformers contaminated by PCBs with new non-PCB equipment which implies that such aging equipment will be still in operation for certain period of time before being disconnected. In addition, some of the companies have ceased to legally exist (e.g. bankruptcy), posing the question of liability for “orphan” PCB equipment and waste.

The baseline scenario or any associated baseline projects

Legislation concerning PCBs in Montenegro.

While generally Montenegrin legislation on PCBs is in compliance with that one of the EU, there are differences among the national PCB legislation and both the EU directive on PCBs management and the Stockholm Convention. Some of these deviations are minor, whilst other would need to be addressed to ensure compliance with the Stockholm convention's obligation. For instance, the Montenegrin legislation sets labeling obligations only for decontaminated equipment and not for all inventoried equipment, although general safety/health hazard related signs are required through the Law on occupational safety. Further the national legislation defines PCBs in compliance with the EU directive, which means that in addition of the 209 PCB listed molecules, also PCT falls under the scope of the regulation. Treatment and disposal requirements for PCB contaminated equipment also follows the EU legal framework.

National legislation on PCB management is provided specifically by two key pieces of legislation: special provisions established under the Law on waste [OGM 64/11] and the Montenegrin Legislation (Rulebook on the treatment of equipment and waste containing PCB [OGM 48/12] and Rulebook on handling waste oils [OGM 48/12]). Based on this legal framework, holders of PCB contaminated equipment (that contain more than 5 dm³ of PCB) and waste are obliged to keep special records in a logbook on such waste or equipment. These logbooks should have been firstly submitted by early 2012 (and subsequently on an annual basis), however due to poor enforcement and low technical capability, most of the PCB owners did not submit these logbooks yet.

Under the regulation, holders of PCB contaminated equipment and waste are obligated to prepare their PCB management plan for contaminated equipment and waste 60 days before starting of disposal or decontamination. Holders should transfer PCB contaminated equipment and waste for disposal or decontamination, within two years from the end of their operational live times (equipment) or their generation (waste), the latest. Within this period, such equipment and waste should be stored separately to reduce fire risk. Overall, after December 2020, only PCB free equipment may be still in use.

In addition, the national legal framework also prescribes certain requirements for temporary storage of waste (including temporary PCB storage) while some guidelines for the identification of contaminated soil is prescribed only on a general level. Further, Decree (64/11) prescribes minimal required conditions to be fulfilled for temporary disposal sites. For contaminated soil, existing legal framework mostly focuses on soil for agricultural production – therefore MACs are usually too strict to be achieved for industrial sites.

Non-compliance with the Law's provisions is considered to be a misdemeanor and a fine is prescribed to be in ranges of 1,000-40,000 EUR or 500-20,000 EUR (depending on the character of the violation). Additionally, fines in range from 500-2,000 EUR or 500-6,000 EUR are prescribed for entrepreneurs for the same misdemeanor (e.g. for non-compliance with legal provisions regarding lack of waste management plans for PCB contaminated equipment and waste; a prescribed fine can be in range from 500-20,000 EUR for legal entity or 500-6,000 EUR for entrepreneur level). The State Administration for Inspection Affairs of Montenegro (i.e. ecological inspection) has the authority (as prescribed by the Law on waste) to enforce legal compliance.

With respect to the Stockholm Convention on POPs, Montenegro ratified it in March 2011 and in response to Article 7 developed its National Implementation Plan (NIP) in November 2013.

Additionally, Montenegro ratified the Convention on Long Range Trans-Boundary Air Pollution with three (3) protocols of which one is the Protocol on Persistent Organic Pollutants. According to the POPs-related Protocol the Parties are obliged to eliminate the use of PCBs in equipment (transformers, capacitors and the like) containing more than 5 dm³ or concentration equal to or exceeding 0.005% PCBs no later than 31 December 2015 in case of countries with economies in transition.

Montenegro has also been a Party to the Basel Convention since 1999. This is an important MEA as regards the transboundary transportation (import and export) of waste, its disposal and relevant international rules, standards and guidelines on sounds POPs. Transport of PCBs is regulated in Montenegro and must be carried out in accordance

with the provisions of the Law on transport of hazardous materials (OGM 33/14). Notwithstanding the above, the level enforcement of PCB legislation is low for the following three main reasons:

- low level of awareness on the PCBs related issue (hazards, environmental impacts, sound management ways, global outlook);
- lack of appropriate knowledge/experience/tools by power equipment holders/users for proper PCB identification (including sampling and analytical capacity), management and reporting;
- insufficient inspection capacity from the authority and a resulting widely spread perception that the risk of being fined for non-compliance is much lower than the cost of replacing PCB contaminated equipment.

Current PCB situation in Montenegro

Available data on PCBs inventory. Under the NIP, a preliminary inventory of PCB contaminated equipment was carried out in 2013. Data were obtained from the Administration for Inspection.

The PCB inventory is not exhaustive, and for most of the equipment listed in the inventory traceability is not ensured. A large part of the equipment listed in the PCB inventory still needs to be tested to ascertain whether the PCB content exceeds the Stockholm Convention's limits.

During the Project Preparation stage, two (2) activities have been carried out for verifying the available information on PCB contaminated equipment:

- Verification, carried out by the Ministry of Sustainable Development and Tourism (MoSDT) through inspections, of the correctness of data related to previously existing PCB inventory (Annex A of the project document). Based on this verification, the amount of pure PCBs, PCB waste, and of equipment containing PCBs reaches around 299.8 tons. An additional amount of 180 tons pertains to equipment which is categorized as PCB cross-contaminated; however still needing verification. There is also a certain number of equipment of unknown weight which is "suspected" of being contaminated by PCB.
- Preliminary inventory of PCB containing equipment. In Table 1 below, the information available at PIF stage related to the presence of PCBs in the country is summarized. At PIF stage more than 500 t of PCB contaminated material were identified. This amount of PCB is stored at the KAP site pending additional characterization and disposal. Around 316 t of this material have been officially listed by KAP either as pure PCB online equipment or PCB contaminated waste, whilst around 200 t of contaminated soil have been preliminary estimated through visual inspection during site visit.

Table 1: amount of PCB contaminated equipment and waste in Montenegro listed at PIF stage

Type of PCB oil contained in online equipment	No. of equipment	Oil weight (t)	Equipment or waste weight (t)
Online transformers	37	35.4	106.2
Online capacitors	325	28.5	85.5
Other equipment	2	4.8	14.4
PCB oil (stored)			12.1
Silicone oil contaminated by PCB			17
Mineral oil contaminated by PCB			0.8
Transformers contaminated by PCB (in use)			22
Capacitors contaminated by PCB (in use)			29.89
Barrels and containers contaminated by PCB			13.15
Other PCB contaminated material			0.646
Sludge			2.9
Soil contaminated with PCBs (in barrels)			9.1
Alumina contaminated by PCB oil			4
Soil and infrastructures contaminated by PCB (estimated) based on site visit observations (in December 2014)			200
Total amount of PCB contaminated equipment and PCB waste (t)			517.686

Subsequently, during the PPG stage, a preliminary inventory, based on PCB sampling and analysis, was carried out to gather more detailed information on the expected frequency of PCB contaminated equipment in the country. The list of equipment which has been sampled is reported in Annex B. Totally, 230 transformers were sampled, out of which:

- 67 transformers in Podgorica, of which 26 are in operation and 41 waste transformers (owned by Elektroprivreda Crne Gore A.D. Nikšić, ED Podgorica);
- 11 waste transformers in Kolasin,
- 8 transformers in operation and 8 waste transformers in Ulcinj (owned by Elektroprivreda Crne Gore A.D. Nikšić, ED Podgorica)
- 14 transformers in operation in Cetinje (owned by Elektroprivreda Crne Gore A.D. Nikšić, ED Podgorica)
- 1 waste transformer and 9 online transformers at KAP.
- 112 transformers in operation in Niksic (owned by Elektroprivreda Crne Gore A.D. Nikšić, ED Podgorica)
- In addition, three soil samples in the vicinity of the PCB storage in KAP where taken.

All oil checks (analysis) have been carried out by the the CETI (Centar za Ekotoksikoloska Ispitivanja - Center for EcoToxicological Research) laboratory in Podgorica, adopting the official GC/ECD method BS EN 61619: 1997. Due to the accuracy of the method, the results are not affected by false positives or negatives values usually associated with fast-screening methods based on the measurement of chlorine, like in the instance of use of LX2000 chlorine detector or Chlor-n-oil fast kits. Chain of custody has been ensured through photos of the equipment sampled, analytical certificates and labeling of the samples and the transformers sampled.

The result of this preliminary inventory is reported in Table 2 below¹.

Based on this preliminary inventory, and some degree of uncertainty that may be implied by the limited number of transformers having been sampled, some simple projections of the amount of PCBs which will be possibly identified through more comprehensive inventory can be attempted as following:

- In the electric sector, six (6) pieces of equipment out of two hundred twenty (220) tested were found contaminated by PCBs, for an overall amount of 19.4 tons. If projected to the number of equipment that will be sampled during the full inventory (3,000 samples), an overall amount of 264 tons of PCB contaminated equipment may be further identified. The average level of contamination was in the order of 250 ppm, demonstrating that in the electric sector very likely the issue of PCB is associated with cross-contamination.
- At the KAP factory, 9 out of 10 pieces of the equipment tested were found contaminated at very high concentration (35,000 ppm), accounting for an amount of 28.2 t. Currently, 35 transformers are currently in use at KAP: these transformers were not listed as PCB contaminated at the time of PIF preparation. It is very likely that PCB contaminated transformers are more frequent in the manufacturing industry than in the power generation industry.
- The difference in PCB concentration also highlights that a two-way approach has to be pursued for the PCB destruction. Based on this result, the project, in the course of PCB inventory will obviously dedicate specific effort on the identification of PCB contaminated electric equipment in the manufacture industry.
 - on one side, highly contaminated equipment need to be exported for disposal in compliance with the Basel Convention requirements, as there are no disposal technologies available in Montenegro;
 - As for the low – contaminated equipment which will be identified, it is likely more cost effective to rent or import a technology for the removal and destruction of PCB from these transformers. Commercially available dehalogenation technologies are effective at PCB concentration up to some thousands ppm.

Table 2: Result of the preliminary inventory carried out at PPG stage. Only PCB contaminated transformers listed.

Transformer code	Location	Status	Brand	Power Kva	Manufact. year	Amount of oil (t)	PCB (ppm)	Estimated weight of the transformer (t)
PG-WT-020	Warehouse of disused transformers Podgorica, 4. jul- ED Podgorica	Phased out	Rade Koncar	30	1968	0.05 (*)	68.5	0.15
PG-TR-040	Warehouse of disused transformers Podgorica, 4. jul- ED Podgorica	Phased out	Rade Koncar	2500	1971	1.8	70	5.4
PG-WT-232	Warehouse 4. July, Service Import, Podgorica	Phased out	Rade Koncar	4000	1978	3.21	115	9.63
UL-WT-078	Depo of reserve transformers Ulcinj	Phased out			1969	0.067 (*)	740	0.2
NK-TR-146	Street Vuka Karadžića (EPCG), TS number 7, T2, Nikšić	Online	Energoinvest, Ljubljana	1000	1984	1(*)	226	3
NK-TR-203	Building Montex, TS broj 43, T1, Nikšić	Online				0.38(*)	260	1

¹ The amount of PCB equipment contaminated (47.6 tons) has to be added to the amount already identified at PIF stage.

Transformer code	Location	Status	Brand	Power Kva	Manufact. year	Amount of oil (t)	PCB (ppm)	Estimated weight of the transformer (t)
KAP TR 100	Aluminum Factory Podgorica, TS Radionica, Cell No. 7	Phased out		1250		1.28	21000	3.84
KAP TR 101	Aluminum Factory Podgorica, TS Anode, Cell No. 14	Stored	Minel	1250	1970	1.1	14000	3.3
KAP TR 102	Aluminum Factory Podgorica, TS Anode, Cell No. 15	Stored	Italtrafo	1250	1974	0.65	80000	1.95
KAP TR 103	Aluminum Factory Podgorica, TS Anode, Cell No. 7	Stored	Minel	600	1989	0.55(*)	6500	1.65
KAP TR 104	Aluminum Factory Podgorica, TS Kompresorska stanica Livnica, Cell No. 3	Stored	Minel	1250	1970	1.1(*)	13000	3.3
KAP TR 105	Aluminum Factory Podgorica, TS Livnica, Cell No. 7	Stored	Minel	1250	1970	1.1(*)	72000	3.3
KAP TR 106	Aluminum Factory Podgorica, TS Livnica, Cell No. 6	Stored	Minel	1250	1970	1.1(*)	95000	3.3
KAP TR 107	Aluminum Factory Podgorica, TS Silumini, Cell No. 5	Stored		1650		1.43(*)	7300	4.29
KAP TR 108	Aluminum Factory Podgorica, TS Duplex, Cell No. 3	Stored	Minel	1250	1978	1.1(*)	6100	3.3
Total amount (t)						15.8(*)		47.6

Legend: (*) Estimated weight

Based on the above results, it seems that the contaminated transformers in the electric sector are mostly cross-contaminated with PCB concentration ranging from 68.5 to 740 ppm, whilst the transformers in the industrial sector are previously pure-PCB transformers which experienced one refilling round with non-PCB oil, resulting in a very high residual contamination ranging from 6,100 to 80,000 ppm.

Consistency with National Priorities.

The proposed project is fully consistent with National strategies as follows:

- PCBs are listed as the most urgent priority in the Montenegro's National Implementation Plan. The following priority actions for solving the PCBs issue are identified in the NIP document:
 - a. Organize training in environmentally safe use and disposal of PCB containing equipment;
 - b. Establish a system for collecting data on the use of PCBs in the industry;
 - c. Establish a temporary storage for equipment and waste containing PCBs pending final disposal;
 - d. Develop Plans for replacement of equipment containing PCBs in accordance with the Law on Waste Management;
 - e. Ensure financial support for resolving PCB elimination.
- The project's design is in line with the national regulation on PCBs and waste, and indeed intends to provide substantial technical and financial support to the Government of Montenegro for the more effective and timely enforcement of this regulation, which requires the phasing out and disposal of PCB containing equipment by 2020.
- The project further plans to address the currently found obstacles in Montenegro in aligning the country's PCB regulation with basic international benchmarks which are also in line with the EU regulation on PCBs and POPs, namely:
 - a. Lack of inventories of the existing PCB equipment;

- b. Unavailability of data on storage and removal of the obsolete equipment and waste oils containing PCB;
 - c. Lack of consistent instructions for identification, decontamination, use, transport, storage and disposal of PCB equipment or products;
 - d. Need of particular efforts for the safe disposal of the PCB containing equipment.
- The Strategy on Sound Chemicals management for 2015-2018 (adopted by Government in 2015) requires the following key activities to be implemented in period 2015-2018 requires:
 - a. Facilitation of control and surveillance of imported equipment and devices that may contain PCBs;
 - b. Sound management and phasing-out of PCB contaminated equipment, taking into account its age, and commercial and economic situation in Montenegro, as well as the European regulations governing deadlines for displacing devices with PCBs.
- The draft of the revised Law on Environment (article 47) includes the prohibition of manufacturing, trading and using POPs in mixtures or as product constituents.

Based on the above it can be affirmed that the objective of the project, to ensure an environmentally sound management of PCB in the country, is fully compliant with country national policies.

III. STRATEGY

General strategy and theory of change for the project. The disposal or decontamination of PCBs in Montenegro presents a number of issues and risks.

First of all, the reliability of initial PCB inventory is very low and mostly limited to phased out equipment that needs to be disposed of. In Montenegro where most of information on PCBs from NIP inventory comes from disconnected equipment. This is due to the fact that electrical equipment (transformers, capacitors) when in good operating condition are usually not inspected for PCB content. The reasons are that:

- the cost of replacing transformer and capacitor is capital intense (very high), and
- the sampling and analysis of in-use equipment is a complex task requiring a significant coordination effort (for instance, coordination with maintenance schedule of electric equipment).

A second feature is that, being not immediately perceived as a hazard by the common public, the issue of PCBs is very often given a low priority from the authorities. Therefore, the existing legislation on PCB is not effectively enforced. As explained in the chapter above, although the Montenegrin legislation is well advanced and generally compliant with the Stockholm convention and the EU directive on PCBs management, and the government updated the inventory of PCB waste, the requirements related to the PCB management plans, and PCB “logbooks” are almost completely disregarded. In the absence of a sound level of enforcement of current legislation, even the industry’s commitment to address the issue of PCBs – given the high costs related to the decontamination or disposal (with subsequent replacement) of contaminated equipment – is low. For this reason, the national PCB management situation can be effectively addressed only if the government’s commitment and capacity are high.

A third feature is the lacking of PCB treatment technologies at local level. This is a common feature in many countries supported by UN/GEF projects in PCBs management. This usually results in industries undertaking substantial investment for shipping PCB contaminated equipment for abroad, typically EU, for disposal. In the case of Montenegro, there are no technologies for treatment of low PCB-contaminated equipment or disposal facilities

available for high PCB contaminated equipment or waste, therefore until now only the highly PCB contaminated equipment has been to date treated by shipping and disposal abroad.

The project strategy would therefore be designed to address simultaneously all these important aspects as outlined below.

1) Increasing national PCB management capacities and the enforcement of the legislation. This will require working side by side with the control authorities (mainly the Ministry for Sustainable Development and Tourism) and the key stakeholders (the electric power industry and other potential owners of PCB containing equipment) to:

- develop and implement a practical guidance on PCB environmentally sound management (ESM);
- provide assistance in fulfillment of legal obligations towards recording and reporting PCB related information;
- conduct inspections at sites where electrical equipment (transformers, capacitors) operates,
- train operators and officers on both sides – the governmental authorities and PCB equipment/waste owners.

2) Increasing the industry and general awareness. PCBs are very often a not very well known environmental issue. Except for extremely high pollution levels, resulting in acute and immediate health impacts, the toxic effect of PCBs (increase of cancer probability) is delayed in time and not associated to any “visible” pollution like black smoke from open burning or factories’ stacks or turbidity in water. Therefore, the PCB hazard is usually not perceived as an immediate threat by many. However, an unsafe disposal of PCBs results in the contamination of food chain and other environmental media (like, for instance, sediments and soil) which may last for years. PCBs have been recently (March 2013) re-assessed by the IARC and are now classified as “known human carcinogens (class 1)” compared to the previous “probable human carcinogens (class 2)” category. There is therefore the need to inform the main stakeholders and the public at large on the benefit brought by the project so that the government and the industry are encouraged in undertaking necessary actions.

3) Engagement of stakeholders. As in other environmental programmes, only in case of key stakeholder’s buy-in, the project’s goals can be satisfactorily achieved. No major change in current practices can be achieved if there is little or no awareness of the risks posed by PCBs, and if stakeholders do not feel the need to address the PCB management issue once and for all. As previously described in more detail, the project had identified at PIF stage a number of important stakeholders which will be involved in all project activities during its implementation. Besides MoSDT, which will be the national implementing institution, key PCB holders, like EPCG (both for electricity generation and distribution) and KAP were informed on the project’s related benefits and on the expected and required level of commitment towards it. As a result, they participated proactively in all the project development activities, including providing lists of their power equipment and facilitating oil sampling and analysis for PCB content. More stakeholder engagement, by involving other line Ministries, academic institutions and NGO sector is planned during the project implementation which will too include civil society associations, trade unions, and other beneficiaries.

4) Strengthening the reliability of information through updating of the PCB inventory. At PIF stage, the only available information was related to the list of phased-out PCB equipment and waste, a few pure PCB transformers, online or stored at KAP, oil tanks and contaminated material (sawdust, soil, waste) potentially contaminated by PCBs. Due to the low enforcement of the legislation, there was very little information available on the concentration of PCB online equipment. The information concerning the number, age and level of contamination of PCB equipment is indeed essential for both management purposes and identification of the proper treatment / disposal technologies. This situation was already evident at the PIF formulation stage, and therefore the main focus in the preliminary inventory carried out during preparation of the FSP project document concerned existing offline and online equipment at EPCG company. At same time, only limited PCB content in transformers stored or online at KAP was re-confirmed, including that data on PCB contaminated soil. The project will continue consolidating the PCB inventory by undertaking dielectric oil sampling and analytical determination of PCBs in 3,000 pieces of equipment during the first two years of its implementation.

5) Provide know-how and financial support on the technologies for the disposal of PCB equipment. Clearly, one of the central issues on the side of PCB ESM concerns the availability of technical and financial resources for PCB disposal. In the absence of a sound know-how related to disposal operations of PCB contaminated equipment, the cost / benefit ratio is always very high, for the following reasons:

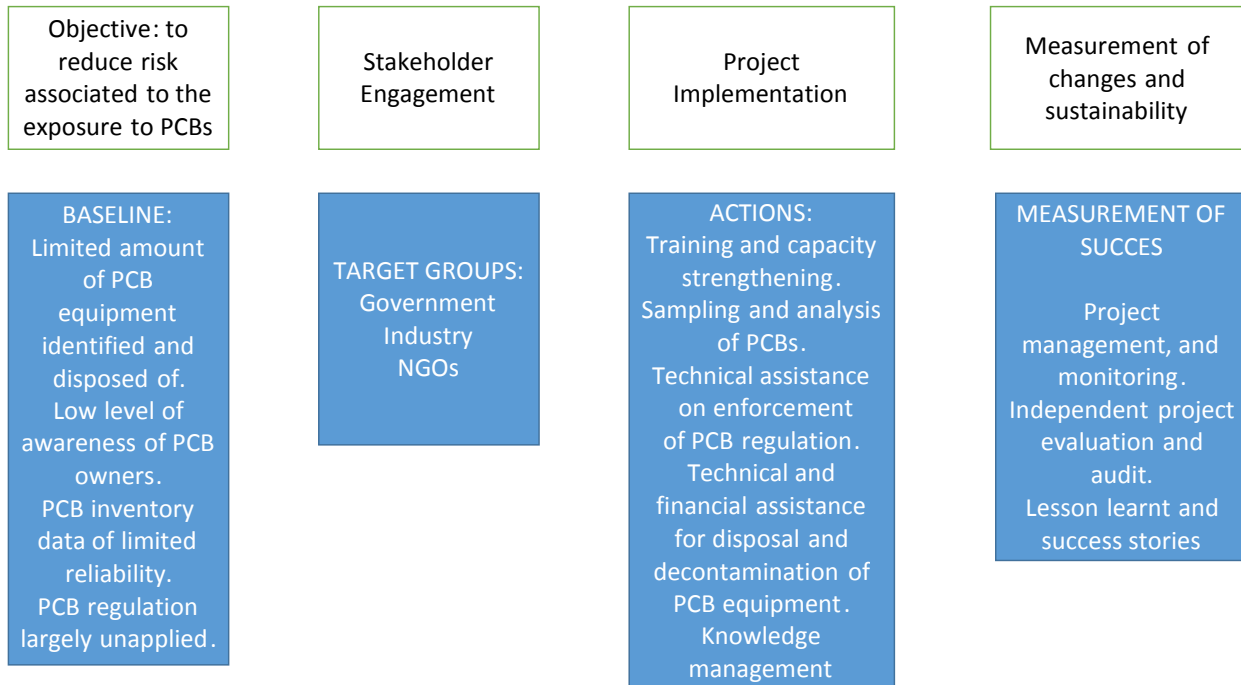
- the options allowing the chemical destruction of the PCBs in the dielectric oil without destroying the oil itself are usually not considered, so that the dielectric oil, which is usually a very expensive asset, is lost;
- the planning of PCB equipment phasing out is not aligned with their residual value, so that very often a strategy aimed at minimizing the cost of disposal of PCB contaminated equipment is not pursued; and
- the legal aspects related to the storage of PCB containing equipment under maintenance versus PCB phased out equipment (to be considered waste) are usually neglected, exposing therefore owners of PCB equipment to a severe liability risk.

The project will therefore assist the country in developing and implementing a sound national PCB management programme which will take into consideration all the above to increase the commitment of the potential PCB owners to comply with the Montenegro regulation on PCB and to have their PCB contaminated equipment treated or disposed under the project.

The strategy discussed above is summarized in the Theory of Change diagram below (

Figure 1).

Figure 1: Theory of Change for the project



The strategy discussed above is the basis for the proposed alternative scenario which is discussed below.

The Proposed Alternative Scenario

The proposed alternative scenario intends to support the country with the necessary technical and financial assistance to ensure that all the remaining PCBs in the country (estimated in not less than 900 t of PCB contaminated equipment and waste) are identified and disposed of.

The project will be implemented side by side with the relevant institutional and industrial stakeholders, i.e. the Ministry for Sustainable Development and Tourism, EPCG, KAP companies and other confirmed or potential holders of equipment contaminated by or containing PCB.

Although the project expects to solve all the remaining PCBs issues in the country, it will ensure that enough capacity for the sound management of PCB is built for the management of any further PCBs identified after project’s closure.

The project consists of the following four (4) components:

- Component 1. Capacity strengthening on PCB management;
- Component 2. PCB Inventory, planning and establishment of public-private partnership;
- Component 3. Environmentally Sound Management (ESM) of PCBs, and
- Component 4. Monitoring, Learning, Adaptive Feedback and Evaluation.

The description of the project by component, outcome and output is presented in the section “Result and Partnership” below.

The Monitoring and Evaluation component is described in detail in Section VI (Monitoring and Evaluation Plan). As for the knowledge management, the work of the project will build on existing experience gained in similar programmes from the regional network. UNDP has to-date been implementing such similar approaches in Latvia, Kazakhstan, Kyrgyzstan, Jordan, Morocco, Mexico, Pakistan, Turkey, formulating new programmes in Belarus and other partner countries for PCBs and a range of projects on POPs pesticides re-packaging and disposal. Information exchange between these is expected to happen via accumulated knowledge at UNDP Regional Hub (Istanbul, Turkey), that provides technical oversight to ongoing UNDP-PCB initiatives in the region and through engagement of qualified technical expertise that will be beneficial to the project in Montenegro.

The Stockholm Convention's mechanisms like the PCB Elimination Network (PEN) and participation in collective information events such as Webinars organized by the Basel Convention Secretariat provided will be utilized as knowledge management tools. On the national level, during project implementation, a web portal for sharing relevant project information will be designed and launched. Public access will be granted to all resources which are of public relevance such as project performance, guidance on PCB material management, environmental impact assessment documents etc. User-friendly summaries and multi-media materials of the project activities will be periodically uploaded in the portal. Further, project will plan for workshops and conferences will be held with the purpose to introduce previous experiences on POPs and PCBs management from other countries.

Incremental cost reasoning. In the table below, the incremental and catalytic contribution of the alternative scenario in comparison with the baseline project is summarized by project component.

Table 3. Incremental Cost Reasoning

Baseline project components	Incremental reasoning as from alternative scenario (GEF project components)
<p>Aligning the country legislation and PCB situation to the SC and EU requirements.</p> <p>Being under the procedure for the accession to the EU, the country is currently undertaking a number of activities on PCBs in compliance with the national and EU legislation. However, the following difficulties are reported by the government in implementing PCB regulation:</p> <ul style="list-style-type: none"> • lack of inventories of the existing PCB equipment; • unavailability of data on storage and removal of the obsolete equipment and waste oils containing PCB; • lack of consistent instructions for identification, decontamination, use, transport, storage and disposal of PCB equipment or products <p>Co-financing from the government of Montenegro:</p> <ul style="list-style-type: none"> • USD 200,000 in-kind for legal support <p>Co-financing from private industries:</p> <ul style="list-style-type: none"> • EPCG FUD: USD 975,555 for staff participating in project activities and office space over 5 years. 	<p>Component 1. Capacity strengthening on PCB management.</p> <p>The project will complement the baseline project with the following activities which will ensure a timely and more complete implementation of the PCB legislation:</p> <ul style="list-style-type: none"> • Training and development of guidance document on PCBs management for operators; • Training and development of procedural and guidance documents on the Stockholm and Basel conventions, EU regulation on POPs and PCBs, BAT and BEP for PCB treatment and disposal operations for environmental authorities; • Awareness raising for the general public and the workers on issues related to PCBs and POPs, with enhancement on gender related issues • Gap analysis and assistance in further improvement of the country technical regulation • Technical assistance to the environmental authorities on the enforcement of the law and regulation related to PCBs • Development of guidelines and instructions for identification and assessment of contaminated soils • The procedure for remediation of area contaminated with PCB, and remediation technology - BAT/BEP <p>GEF Grant: USD 283,000</p>
<p>PCB Inventory and environmental monitoring</p> <p>EPCG company already started the inventory of PCBs by carrying out a survey of available documentation on PCB content of transformers.</p> <p>Activities concerning the identification of PCB equipment containing or contaminated by PCB have started, in compliance with the country's regulation. However, the industrial sector (both on the side of manufacturing industry and electric power company) has limited technical and</p>	<p>Component 2. PCB Inventory, planning and establishment of public-private partnership.</p> <p>The project will support industries and the government with a range of activities related to inventory planning, sampling and analysis of PCBs, drafting of a sound PCB management plan based on priorities and inventory results.</p> <p>The activity of the project will ensure that technical and financial resource, as well as personnel, are enough for completing an exhaustive PCB inventory countrywide within 3 years from project's starting, whilst after one year for project</p>

Baseline project components	Incremental reasoning as from alternative scenario (GEF project components)
<p>financial capacity to conduct the inventory, and the government has limited resources for ensuring an effective enforcement of the legislation. Therefore, inventory of PCBs is proceeding at a very slow pace.</p> <p>The baseline activities are currently being financed as follows:</p> <ul style="list-style-type: none"> • EPCG FUD² allocated budget for sampling and analysis of dielectric oil, including cost related to the loss of electricity production; it also allocated a budget for the associated environmental monitoring over 5 years, for a total amount of USD 2,070,212 (cash) • EPCG FUD allocated budget for Storage areas and buildings (i.e. for hosting PCB decontamination units) and future EPCG – CAPEX Storage of USD 348,098 	<p>implementation all priority PCB equipment will have been identified and tested. Identification and assessment of contaminated locations PCB soil, setting of priorities.</p> <p>The PCB management plan will be updated yearly in the course of project implementation, based on new inventory data, to ensure its implementability.</p> <p>GEF Grant: USD 350,000</p>
<p>Replacement and maintenance of old transformers and cleanup of contaminated sites.</p> <p>KAP company is placing a substantial investment in replacing its old PCB contaminated transformers with new transformers, to ensure the continuation of industrial activities. KAP and the electric power industry (EPCG) also allocated funds for the decontamination of transformers, replacement of old transformers, upgrading of transformer storage, preparation of transformers disposal, clean-up of PCB contaminated sites.</p> <p>In addition, EPCG allocated budget for covering the cost of EPCG staff who will participate in project activities. Due to financial and technical constraints, a limited amount of resources is allocated for PCB disposal, improvement of PCB storage, decontamination of PCB contaminated equipment. In addition, the lack of local knowledge concerning the full range of technologies which can be used for disposing of or decontaminating PCB contaminated equipment hinder the possibility to manage this equipment in an environmentally sound and efficient way. A detailed PCB management plan has still to be developed and implemented by the industry and the government.</p> <p>Total co-financing from private industries is as follows:</p> <ul style="list-style-type: none"> • KAP: Capital investment for replacement of equipment USD 4,460,340 • KAP: Removal, storage and re-installation of equipment USD 673,000 • KAP: Maintenance of equipment through project duration: USD 2,268,500 	<p>Component 3. Environmentally Sound Management (ESM) of PCBs</p> <p>The project will ensure that suitable and cost effective technologies and disposal options, compliant with the Stockholm Convention's requirements, are used for the treatment and disposal of PCB contaminated equipment, therefore allowing for a greater cost saving on treatment of PCB equipment, especially on the side of low-contaminated PCB equipment.</p> <p>The project will provide financial support for the disposal of 900 tons of PCB waste, tentatively as following:</p> <ul style="list-style-type: none"> • PCB transformers and capacitors: 300 t • Transformers and capacitors contaminated by PCBs: 400 t • PCB contaminated soil and sludge: 200 t <p>GEF grant: USD 2,550,000</p>

² FUD – Functional Unit Distribution

Baseline project components	Incremental reasoning as from alternative scenario (GEF project components)
<ul style="list-style-type: none"> EPCG: Resources allocated for the replacement of PCB transformers, for the maintenance of transformers pending their disposal; for the decontamination of PCB contaminated transformers; for the upgrading of storage facilities and for the cleanup of contaminated areas. USD 8,757,986 	

Innovation, sustainability and Potential for Scaling up.

The project will make use of consolidated technologies for the disposal of PCBs. High concentration PCB waste and soil contaminated by PCBs will be pre-treated as necessary, packaged and shipped for destruction through high temperature incineration (HTI) or co-incineration in BAT/BEP compliant plants in compliance with the Basel convention rules. The project will be however open to other technological options, as suggested by the GEF-STAP (GEF Scientific Technical Advisory Panel) in the comments to the PIF. In the course of project implementation, due care will be taken to give to emerging and commercially established technologies the opportunity to qualify for the disposal of PCBs soil. This – as suggested by the GEF-STAP - will include consideration of mechano-chemical or thermal desorption technologies, as long as the proposed technologies are consolidated for PCB treatment, commercially available and competitive. It has however to be considered due to the limited amount of contaminated soil envisaged (200 t) the on-site testing and mobilisation of a dedicated disposal plant may be not the most cost effective option, and soil export for HTI disposal may eventually be selected.

Provider of the service of waste pre-treatment, packaging, shipment and disposal will be selected through competitive bidding in compliance with UN and Montenegro rules.

As for low-concentration PCB equipment, the choice will be between the import (renting or purchasing) into the country of a technology for the dehalogenation of PCB contaminated oil, which will be established in one of the industrial areas owned by a project partner; or, again, export of the equipment to be treated in compliance with Basel Convention rules. The selection among the two options will be based on technical and economical consideration, the main drivers being:

- residual value of the equipment to be treated, including dielectric oil;
- level of PCB concentration in the oil;
- overall amount of low-concentration PCB equipment to be treated;
- capital investment and operational cost of the technology;
- packaging and shipment cost.

In case of PCB dehalogenation technology for cross-contaminated oils, it is proposed as a viable option for relatively new transformers and for end of life electrical equipment, provided that the PCB concentration is low (i.e. <10,000 ppm). For PCB dehalogenation it is intended to focus on fully commercial PCB dehalogenation technologies falling in the family of “Alkali Metal/ Metal Hydroxide Reduction (Sodium Reduction, A-PEG), classified by the GEF-STAP as “Fully commercial and well established with multiple technology vendors and stable licensee arrangements capable of competitive tendering worldwide.”³.

³ Selection of Persistent Organic Pollutant Disposal Technology for the Global Environmental Facility” available at: <https://www.thegef.org/gef/pubs/STAP/selection-persistent-organic-pollutant-disposal-technology-gef>.

On the technological side the project is therefore based on a consolidated, although, advanced approach, which will ensure the achievement of the planned Global Environmental Benefits (GEBs).

Given the very good level of cooperation observed in the course of project preparation among private industries (KAP and EPCG), L.L.C laboratories (CETI) and the government (MoSDT), the project will adopt an innovative Public Private Partnership (PPP) approach to implement all the in-field activities related to PCBs storage and disposal. The PPP approach will have the following advantages:

- Developing, promoting and enhancing collaborative processes among the key project stakeholders,
- Facilitating access to the industrial sites for conducting sampling and analysis of equipment and waste, as well as for storage and packaging of PCB contaminated equipment before export;
- Through PPP, the culture and views of the public and private partners will be properly integrated with an increased mutual understanding.

IV. RESULTS AND PARTNERSHIPS

Expected Results:

Project Objective: Comprehensive identification and disposal/treatment of PCB contaminated equipment and waste in the country

Global Environmental Benefits (GEBs): It is envisaged that under the project, 700 tons of PCB contaminated equipment, and 200 t of PCB containing waste including contaminated soil will be properly disposed of in such a way that the PCB content in these equipment or waste will be irreversibly destroyed. Therefore, the project will contribute to the implementation of the Stockholm Convention's requirements by Montenegro.

Socio – Economical Benefits. The project will bring direct and indirect social and economic benefits. The direct and immediate benefits are those related to the implementation of the project itself, including employment of project staff and operators; establishment of a public-private partnership for the management of the PCB contaminated equipment and waste; financial incentive for the PCB owners for the sampling, analysis and treatment of their PCB-contaminated equipment.

The project will also bring obvious indirect benefits. The removal of PCB sources (equipment, waste, contaminated soil) from the environment will prevent the contamination of the environment by these substances. This will translate in a reduced mortality and morbidity of the population in the long term, with specific reference to the pathologies associated to exposure to PCBs, resulting in the reduction of social and economic costs. In addition, the technical capacity developed by the project partners (project staff, consultants, stakeholders) in the management of PCB waste will allow for the creation of skills and capacities on the management of hazardous substances and waste in general that will result in the creation of specialized jobs in the country.

Knowledge Management. The project will generate a significant account of knowledge which will be carefully managed during the project implementation, so that the project results will be properly communicated and disseminated during the whole project lifecycle, lesson learned and success stories will be shared among other countries / UN country offices. More details on project management methodologies and mechanisms have been provided under Chapter II of this project document (Strategy).

Project Description

Component / Outcome 1. Capacity strengthening on PCB management.

Operators of the electric sector and of the environmental control authority will be trained on the ESM of PCBs. On the side of sampling and analysis, training and guidance documents will include, among others: preparation for sampling for grid-connected equipment in electric and manufacturing industry; prevention of electric shock accidents during sampling; spill prevention measures to be adopted; safety measures for operation in elevated or hard-to-reach locations (i.e. transformer located on pole or with difficult access); procedure to be followed for re-connecting the equipment after sampling, etc; sample preservation and chain of custody. Training will be also provided for the use of portable analytical tools for determining PCBs (chlorine specific electrodes), by complementing standard laboratory testing (ECD or GC/MS methods) and for identification, site characterization, risk assessment and possible remediation techniques for PCB contaminated soils, as well as format for data collection and reporting, and PCB labeling procedures.

Guidance and training will be also provided for handling, storage and transportation of PCB waste in compliance with the Basel Convention and ADR rules and for the selection of the Stockholm Convention compliant disposal technologies (HTI, non-combustion for pure PCBs/waste materials and dehalogenation for cross-contaminated equipment/oils) taking into account cost/benefit analysis based on the residual life of the PCB contaminated equipment

Besides training on international standards and requirements, guidance and training will be provided for integrating national PCB data management, development of national monitoring and evaluation system and PCB holders' national legal requirement compliance.

This outcome envisages the achievement of the following outputs:

Output 1.1. Operators of the electric sector and of the environmental control authority are trained on the ESM of PCBs.

Under this output, two training sessions covering comprehensively 20 power equipment operators (engineers and technicians) from the electric utility sector will be carried out. Guidance documentation for sampling of online and offline equipment, handling storage and disposal of PCB containing waste and equipment will be drafted and discussed in one dedicated workshop. Two training sessions covering at least 20 officers from the relevant line Ministries and research institutions will also be implemented. Procedural and guidance documents for environmental authorities on the Stockholm and Basel conventions, EU regulation on POPs and PCBs, BAT and BEP for PCB treatment and disposal operation, standardized procedures for collecting the PCB equipment and waste, as well as draining PCB contaminated oils will be drafted and discussed in a dedicated workshop. As part of the training activities special methodology for labeling of PCB containing equipment, according the relevant international guidelines, will be provided to the PCB equipment holders. Labeling is the responsibility of the equipment holders, but the project will ensure that correct labels are available for their use, in order to facilitate the implementation of future PCB ESM activities, equipment traceability and sustainability of the overall approach.

Simultaneously, project objectives and results will be disseminated through establishment of a website, broadcasting, workshops, with enhancement on gender related issues.

Output 1.2. Enforcement of the Montenegro law on PCB management strengthened

The relevant control authority will be provided with proper training and technical support on the specific, Stockholm and Basel conventions and related EU regulation's requirements concerning PCB equipment and waste, including waste classification, shipment and disposal requirements, tailored inspections in specific industrial installations, prevention of improper maintenance and handling operation, accident prevention at sites containing PCB equipment. Technical assistance to the environmental authorities on the enforcement of the law and regulations related to PCBs will be delivered through joint participation of project staff and government representatives in at least 10 site inspections followed by assessment of these practical cases.

Close partnership in development of the National PCB Management Plan based on developed comprehensive PCB equipment and waste's database will serve as a tool for enhancing existing national monitoring and evaluation system of PCB holders and their compliance with national legal requirements.

As the proper management of PCBs equipment starts with awareness raising, an awareness raising campaign specifically aimed at communicating environment and health-related issues associated to PCBs exposure will be implemented for the general public, workers and national authorities. The project will ensure regular work with media and NGOs, training for NGOs on ESM of POPs/PCBs, and hearing for public on project plan and results.

Under this output, a Study on the Gender Dimension on POPs issue in Montenegro will be conducted. The study is aimed at understanding the differential effect among women, men and infants of the exposure to POPs; understanding whether there are differential access to information on POPs related aspects, with specific reference to PCB in industrial settings and in the environment; identify the needs for communication actions on POPs specifically targeted to women; and identify the opportunities related to POPs, hazardous waste and hazardous chemicals where a better gender mainstreaming would be needed.

Component / Outcome 2. PCB Inventory, planning and establishment of a public-private partnership.

In Montenegro, national legislation established that all the PCB contaminated equipment has to be decontaminated or phased out before 2020. At the current pace, although initial achievements have been made in terms of PCB identification and disposal, it is likely that the country will not be able to achieve the currently set 2020 deadline fully under business-as-usual scenario, which is with partial investments into the PCB equipment phase-out. The targets of this component will be achieved through the following outcomes and outputs.

Output 2.1. PCB inventory updated and completed with sampling and analysis of phased out and in-use equipment

With the alternative scenario envisaged by the project, the Government of Montenegro and the main stakeholders will be assisted in updating the current inventory of PCB equipment, articles and wastes which will serve as main tool for the definition of the national strategy for PCB phase out.

The inventory will cover at least 3,000 pieces of equipment, in addition to the 220 already sampled during PPG stage. It is expected that the inventory will be completed in the first 2 or 3 years of project implementation, whilst the prioritized sampling and analysis will be conducted in the first 12 months of project implementation to enable first rounds of PCB export for pure PCB waste and PCB oil decontamination locally if such option is feasible for cross-contaminated equipment. Under this output, the following activities will therefore be/were carried out:

- a preliminary survey during the preparation stage of the project, with sampling and analysis of at least 220 pieces of equipment and soil samples (completed);
- an inventory preparatory activity and formulation of a sampling plan for 3,000 pieces of equipment as the target quantity;
- procurement through international bidding of qualified services for the sampling, analysis of 3,000 pieces of equipment and for the establishment of PCB inventory;
- actual sampling and analysis process for the target quantity,
- establishment of a dynamic PCB inventory which will be made available to authorities and PCB holders through a dedicated online database with specific access policies.

Opportunities for integration with existing and planned environmental information database systems will be carefully evaluated.

Output 2.2. PCB national management plan drafted and approved.

Considering the urgency of starting the PCBs' disposal operations, the PCB national management plan will be initially drafted soon after project's start on the basis of priority and preliminary PCB inventory information gathered during the PPG stage. The national PCB management plan will be subsequently revised and improved on a yearly basis until project's closure. The plan will contain the following key elements:

- Regulatory and institutional framework governing the sound management of PCBs;
- Preliminary results of the PCB inventory, arranged by equipment age and PCB concentration;
- Based on the previous element, guiding information on selection of suitable disposal / decontamination technologies and the timing of PCB equipment phase out, including definition of technical, environmental and economic criteria for decontamination and disposal of PCB contaminated equipment and waste in compliance with the Stockholm Convention BAT and BEP and the country's technical legislation;
- Preliminary costing estimates (budgets) for the storage, decontamination and disposal activities required under the action plan, including revenues coming from the recycling of metal scraps (steel, aluminum, copper) after decontamination.
- Identification of further PCB inventory related activities;
- Workplan timeframes for PCB equipment to be decontaminated or disposed of, based on the outcome of the inventory, established following the criteria of risk priority, residual lifetime of the equipment, PCB concentration etc;
- Alignment of the project's PCB equipment inventory processes and cleaning/disposal activities to company specific equipment maintenance and replacement plans;
- Listing of PCB contaminated sites; their assessment, priority action related description, including sampling criteria and methodologies for the determination of PCB quantification in environmental media (soil, water, sediment)
- Additional plan for sampling and analysis of equipment potentially contaminated by PCB
- Review of existing maximum allowable concentrations (MACs) for PCBs in environmental media consistent with international standards;
- Community participation, education and training

Output 2.3. Establishment of an innovative public-private partnership (PPP) for the management of PCB contaminated equipment and waste.

Most of the larger holders of PCB contaminated equipment are totally or partially owned by the government. For instance, the government owns the majority of shares of EPCG company, whilst another significant share is owned by international private investors. There is therefore the need to establish a public/private partnership operating in all the stages of PCB identification, storage and disposal, and which can remain sustainable and operational after project's closure for carrying out remaining PCB-related activities or other activities on POPs and chemical safety.

The public-private partnership is necessary to operate as an independent body providing services in the field of sampling of equipment's oil and contaminated soil, planning/designing PCB waste handling/management infrastructure, transportation of hazardous waste, import/establishment of PCB dehalogenation technologies, in compliance with the needs of the Government and PCB equipment owners and in order to be more prompt in procurement of required services and coordination of project activities. A business plan with sustainability considerations prepared in support of the PPP approach will be verified and amended based on the experience gathered after one initial year of the project's activities.

Component / Outcome 3. Environmentally Sound Management (ESM) of PCBs

This component will be undertaken building on the experience and activities already carried out by the country, and further ensuring that the activities of PCB disposal will be carried out in compliance with BAT/BEP and at the best cost/effectiveness ration. The component will need the achievement of the following outputs:

Output 3.1. Selected storage facilities upgraded for the safe storage of PCB equipment pending disposal or decontamination.

Currently, a significant amount of PCBs is stored at storage facilities in industrial plants, like at the KAP aluminum factory or transformer substations at ECPG. The project will select one or more storage facilities to be upgraded up to the required environmental and safety standards. A limited number of site cleanup activities - for instance for the PCB storage facility located at the KAP plant - will be also conducted. These will include conducting site assessments and formulation of remediation plans/monitoring plans before and after remediation action, risk-reduction operations, clean-up design and clean-up implementation.

It is expected that the cleanup and upgrade of the KAP storage facility would require the treatment or disposal of around 200 tons of contaminated soil. An analysis of 3 samples of soil taken in the vicinity of the KAP storage revealed a very high PCB concentration (in the order of 1,600 ppm).

The cleanup of the KAP storage site will include the following activities:

- detailed characterization of the area surrounding the storage and the storage itself, based on environmental impact assessment (EIA) and environmental management plan (EMP), including the amount of contaminated material needing disposal or treatment and safeguarding measures
- site cleanup, including the removal of contaminated soil and the packaging of contaminated waste
- disposal of contaminated soil and waste
- post-monitoring activities.

The PCB contaminated soil and waste will be treated in compliance with the Stockholm and Basel conventions' requirements, as well as with the EU POPs regulation, i.e. safely landfilled if the PCB contamination is above the cleanup level and less than 50 ppm or treated with soil clean-up or HTI disposal technological solutions, if the PCB contamination exceeds 50 ppm level.

Output 3.2 Identification, assessment and procurement of environmentally sound PCBs disposal technologies or services.

There are a number of technologies available to solve the PCB issue in the most cost-effective way. The following will be considered in the process of technology identification:

- Transformers and equipment filled with pure PCB oil will need to be safely dismantled at the qualified hazardous waste HTI plants or their PCB waste management partners, and the PCB oil destroyed by means of thermal processes (incineration or co-incineration). For this type of waste therefore the most suitable option is export, to be further treated at suitable hazardous waste incineration plants. Transformers are usually drained with PCB oil put in UN certified drums, and impregnated porous material contained therein are destroyed along with the PCB oil, while steel and copper core materials are solvent washed for re-use in the secondary metal market
- For relatively new transformers with low PCB contamination (cross contaminated transformers), the most cost-effective technologies are those allowing the decontamination of transformers and dielectric oil, by chemically destroying PCBs contained therein (so called chemical dehalogenation process). Dehalogenation technologies are a class of quite consolidated processes commercially available both as large, fixed facilities and as relatively small mobile units that could be rented. This process allows for the recovery of clean mineral oil after the PCB contained in that oil has been extracted and destroyed and the mineral oil reprocessed, with a net saving in the order of US\$ 2,000 to 3,000 per ton of oil recovered. Therefore this option is the most attractive for the electric power industry who wants to preserve the capital asset of relatively new transformers, ensuring at the same time the destruction of PCBs.
- Old transformers at the end of their operational life can still be treated by means of dehalogenation if the PCB concentration is not high. The decontaminated carcasses can be sold as steel scrap, the oil

contaminated by PCB decontaminated (through dechlorinating their PCB content) and regenerated for future reuse, whilst other solid waste (impregnated wood and cardboard) needs to be thermally processed

- For PCB contaminated soil, it must be considered that both the Stockholm convention and the EU regulation allows the landfilling of PCB contaminated soil only if the PCB concentration is below 50 ppm. For higher concentration, the PCBs must be "destroyed or irreversibly transformed so that they do not exhibit the characteristics of persistent organic pollutants". Given the expected low quantity of such waste (200 t) in Montenegro, the most probable solution would be the export of this waste along with pure PCB equipment for HTI disposal

Based on the above consideration, and on the updated figures for the inventory, the proper PCB disposal options will be identified and the relevant terms of references for procurement of qualified and reputable hazardous waste management services and equipment drafted.

Outcome 3.3. Equipment and waste containing or contaminated by PCB disposed or treated in an environmentally sound way.

This will envisage the following activities based on established sub-contracts:

- Export and sound disposal of pure PCB equipment/oil and PCB contaminated soils, to thermal disposal facilities (either HTI or co-incineration)
- Dehalogenation of low-contaminated electric equipment (i.e. PCB concentration in oil less than 5,000 ppm), either through shipment to established facilities abroad or treatment in the country with a rented or purchased dehalogenation equipment. In case of renting/purchasing the dehalogenation equipment, a preliminary proof of performance test on a significant amount of PCB waste will be carried out to ensure their reliability, environmental performance and compliance with national regulation, the Stockholm and Basel convention's requirements;
- PCB destruction and remediation certificates will be obtained to complete the disposal operations

Exposure to comprehensive export/transit and disposal procedures will be a part of the capacity building effort as for the governmental authorities so for the participating PCB waste holders.

In case of import of PCB dehalogenation equipment, required environmental and social impact assessment processes will be supported under guidance from the related line Ministries to allow the operation of such equipment in the country.

Partnerships:

The project will be implemented side by side with the relevant institutional and industrial partners, i.e. the Ministry for Sustainable Development and Tourism, EPCG, KAP companies and other potential holders of PCB equipment.

Each one of these partners will play a specific role in ensuring that the change needed for the project implementation are achieved.

Ministry of Sustainable Development and Tourism (MoSDT) The role of the MoSDT, in terms of regulatory controls and associated public-wide and sector-specific communication of PCB management rules under the national legislation, and for providing guidance to the targeted industries to fulfill their obligation, is a key for the success of the project. Therefore, the project will work together with MoSDT on the development of technical guidance materials, ensuring compliance of the legislation with the Stockholm Convention's requirements and strategic management and communication with stakeholders. As focal point of the Stockholm Convention, MoSDT will be the implementation institution of the project in Montenegro.

Environmental Protection Agency (EPA), as a regulatory body in the field of environmental quality monitoring and protection, will assist in PCB inventory data collection and management, licensing for the current and future waste treatment activities, development of technical guidelines and environmental monitoring. At the same time, EPA will benefit from the Project implementation in terms of obtaining a comprehensive national PCB equipment and waste database, country's PCB management plan and various training and building capacity activities.

The Administration for Inspection Affairs will assist in the enforcement of legal provisions and control over the PCB owners, and will work closely with MoSDT and EPA, and the project, in order to secure that PCB holders are familiar with all legal requirements and fulfilling them in substantial manner in order to secure sustainability of project activities. The Administration will benefit from project as well through strengthening of capacity by related targeted project activities (e.g. joint participation of project staff and government representatives in at least 10 site inspections followed by assessment of the cases).

Potential PCB owners (like EPCG and KAP). The owners of power equipment potentially contaminated by PCB are at the same time the direct beneficiaries of the project and one of the key partners. Without the support of the electric power industry as a whole in facilitating the identification of their PCB contaminated equipment and planning for the progressive treatment / phasing out of PCB containing equipment and waste, there is a risk that the project would address only the currently confirmed/known PCB waste (500 tons). The project will therefore identify the needs of these partners to address their main concerns and minimize the costs associated to the identification, storage, treatment and disposal of PCB contaminated equipment and waste. The project will provide PCB owners with financial support for the destruction of PCBs up to an overall amount of 700 tons of PCB pure and contaminated equipment and 200 tons of PCB waste (soil and other residual construction or contaminated material), and will promote the technology information exchange on PCB decontamination and disposal. The project will work side by side with the holders of PCB equipment to assist them in fulfilling their legal obligations (proper recording and reporting including development/update of sound management plans and labeling) which will be an important input for quality and sustainability of other project activities.

CETI is a L.L.C research center located in Podgorica, Montenegro. It has capacity to carry out sampling and analysis of soil, waste sediments, surface water, groundwater, seawater, wastewater and drinking water, as well as the monitoring of air, ionizing radiation, noise, vibration and radon pollution. Established in 1996 by a Governmental Decree to serve as research center and to implement various state environmental monitoring programmes and conduct targeted analyses, it has significant historical record on PCB contamination in the environment as well as on PCB contaminated equipment (obtained through industries' voluntary or mandatory testing in cooperation with ecological inspectorate). CETI is the only laboratory in Montenegro with ISO/IEC 17025 accreditation to test POPs compounds. CETI already conducted the preliminary inventory of PCBs in the course of project preparation, carrying out sampling and analysis of dielectric oil and soil.

Institute for public health – The activities of the Institute of Public Health are focused on the preservation and promotion the health of all citizens and among other things these include organization of training in public health activities;

Other partners will play mainly a supportive and advisory role within the project's implementation lifetime, in alignment to their respective mandates and specific project activity. More data about their potential role within the Project is provided in Table 3 below.

Stakeholder engagement:

It has to be anticipated that the project will not result in any adverse social or environmental impacts on the population, as its main purpose is the actual removal and destruction a potential source of environmental hazard to remove such environmental and health related burden. Indeed, specific PCB equipment/waste holders and their workers, the general public, consumers and communities will benefit from the removal of PCBs as potential source of environmental contamination.

The civil society and the public at large will be kept informed of project objectives, its activities and achievements through an awareness campaign. In addition, the project will give the community several opportunities to provide comments on project activities:

- Participation of civil society NGOs in related forums/seminars/round tables related to decision making over project’s implementation plans;
- Through establishment of moderated discussion forums on the project’s website;
- As a part of the social and environmental impact assessments (SIA and EIA) procedures, in case the project will envisage the rental/establishment of a PCBs dehalogenation facility for low-contaminated PCB oil.

A list of the project partners and stakeholders, with their relative roles, is provided in Table 4 below.

Table 4. List of the main project partners and stakeholders with relative roles

Stakeholder type	Name	Key function and mandate	Role in the project
Government	Ministry of Sustainable Development and Tourism (MoSDT)	The main governmental authority responsible for policy making on Environment and Sustainable Development, with two key Directorates (for Waste Management and Utility Development, and for Environment) are in charge for Waste and Chemicals Management policy, and Control of Industrial Pollution.	Project’s implementing institution
	Agency for Environmental Protection (EPA)	The mandate of EPA is to ensure implementation of environmental legislation, and includes implementation of strategies, programmes, laws and regulations in the field of environment, implementation of international treaties within its jurisdiction, environmental permitting, EIA/SIA on rental/establishment of PCB dehalogenation technology, strategic environmental assessment (SEA), Integrated Pollution Prevention Control (IPPC) licensing, environmental monitoring, keeping relevant registers and databases, and reporting and coordination of reporting on the state of the environment. The EPA is also responsible for the provision of associated environmental information/data to national and international organizations and to the public.	Institutional partner (regulatory aspects, monitoring, data management) and beneficiary

	Administration for Inspection Affairs	This Administration was established in 2012 to consolidate and integrate the majority of previously existing inspectorates (in order to facilitate better cooperation between inspections and enforcement functions), including the environmental inspectorate (previously within EPA), thermal energy plants inspectorate (supervision on compliance with technical norms and standards), and health and sanitary inspectorates.	Institutional partner (supervision and enforcement) and beneficiary
	Ministry of Economy	The Ministry is in charge (among others) of development and energy policies, energy efficiency and production activities. It is also in charge for support in development of small and medium-sized enterprises and industries, new industrial technologies, and industrial production overall, including sectors of electricity production, metal processing and energy efficiency.	Institutional partner (Key partner for with main PCB holders such as EPCG and KAP companies)
	Ministry of Finance	Ministry of Finance has a mandate (among others) in the development of economic policy, budgetary issues, finances, tax and custom control, coordination of activities financed by IFIs, control of tender procedures and state financial assistance.	Institutional partner (development of Public-private partnership, state financial assistance)
	The Ministry of the Interior-Directorate for Emergency Situations	The department is responsible for risk management and civil protection and rescue in the event of natural and technological disasters and other emergency situations, as well as emergencies with regard to radiation safety.	Institutional partner (emergency preparedness during hazardous waste handling and transportation, and PCB dehalogenation technology operation time, supervision on implementation of prevention and protection safety measures during (re) construction of objects and beneficiary
	Ministry of Transport and Maritime Affairs	The Ministry's mandate is related to the prevention of and response to marine pollution from vessels, and	Institutional partner (transportation of

		transportation of hazardous materials by air, water and rail.	hazardous substances)
Local municipalities	Local Municipality Golubovci	Urban Municipality of Golubovci is a subdivision of the Podgorica Municipality. The town is located some 15 km south of the city of Podgorica, in the Zeta valley near where KAP facility is located.	Project Beneficiary, environmentally impacted by management of temporary PCB storage at KAP
Industry	KAP	Aluminum Plant Podgorica (KAP) is an aluminum smelter company in Podgorica.	Owner of PCB contaminated equipment and waste.
	ECPG (FU distribution, FU supply and FU generation)	Production, distribution and supply of electricity are the main activities of the Montenegrin Electric Enterprise (EPCG).	Owner of PCB contaminated equipment and waste
	CGES	Company for maintenance and exploitation of electric power system elements (1,300 km of overhead lines with voltage levels of 400kV, 220kV and 110kV, and substations of 400kV, 220kV and 110/x kV voltage levels), in majority owned by state of Montenegro (55,00 % of shares).	Owner of PCB contaminated equipment and waste
	Chamber of Economy of Montenegro	The main function of the Chamber is the business interests' representation of Montenegrin companies and the creation of favorable conditions for improving their competitiveness in the global economic environment.	Institutional partner (helps coordinate contacts in the private sector)
	Other identified owners of PCB equipment and waste	As provided in Annex(es) to the project document	Owners of PCB contaminated equipment and waste
NGO	Ozon	The NGO is dedicated, among other matters, to the issues of waste management, air pollution, global warming, and ozone depletion.	Stakeholder (awareness raising, information dissemination)
	Green Home	The NGO is dedicated to environmental protection and environmental improvements that foster a sustainable future and lead to social and economic improvements in the communities at national level.	Stakeholder (awareness raising, information dissemination)
Academy / Laboratory	CETI	The CETI, a limited liability company, deals with the analysis of soil, waste sediments, surface water, groundwater, seawater, wastewater and drinking water, as well as the monitoring of air, ionizing radiation, noise, vibration and radon pollution. CETI has accreditation ISO/IEC 17025	Stakeholder (laboratory which has the capacity to test POPs compounds)

		to test POPs compounds in the samples from the environment.	
	Faculty of Mechanical Engineering	Faculty of Mechanical Engineering of the University of Montenegro is the only faculty in Montenegro covering the fields of Mechanical Engineering, and Power Plants	Stakeholder (advisory function)
	Montenegrin Academy of Sciences and Arts	The Academy is the most important scientific institution of Montenegro which deals with scientific aspects (among others) in energy use, waste and chemical management fields	Stakeholder (advisory function)
	Institute for public health	The Institute is a highly specialized health institution on the tertiary level health care, whose activity is focused on preserving and improving the health of all citizens, including from anthropogenic impacts such as waste/chemicals misuse.	Stakeholder (advisory function)

Mainstreaming gender:

There are no direct gender considerations, apart from direct exposure to PCBs in a work setting by staff of participating PCB equipment/waste owners, which may be identified under the project beyond the overall issues related to the higher risks generally associated with POPs being distributed in the broader environment. This is especially true for women, specifically related to their bioaccumulation and transfer through breast milk. However, it is fully acknowledged that particular attention has to be given to the connections between gender concerns and chemicals, and in work settings appropriate capacity building personal protection equipment are planned. Namely, women, men and children differ in their physiological susceptibility to the effects of exposure to toxic chemicals. Furthermore, women are particularly influenced by the adverse impact of the hazardous chemicals due to the structure of their reproductive systems.

POPs and particularly PCBs are particularly harmful due to their capacity to accumulate in body fats and in breast milk, therefore representing a significant risk for women and infants. Usually, risk-based environmental standards and risk-based corrective actions, following a precautionary approach, are designed taking into account the highest risk for the most sensitive and exposed population categories, therefore environmental and toxicological limits already take into account the specific issue of women and infants. Nevertheless, specific awareness raising initiatives will be adopted to further reduce the risk of exposure of women and infants given their specific sensitivity.

In addition to that, in the course of project implementation, compliance with UN policies on equal opportunities and the GEF policy on Gender Mainstreaming will be maintained at any stage to ensure that the project supports women's capabilities and their enjoyment of rights, and women's equal and meaningful participation as actors, leaders and decision makers. A related study on gender dimension will be commissioned by the project in cooperation with UNDP-Montenegro's gender team.

V. FEASIBILITY

Cost efficiency and effectiveness:

In general, cost effectiveness will be ensured at each stage of the project by adoption of tender-based (quality for affordable costs) UNDP procurement procedures for all the activities, including the selection of PCB management services and decontamination equipment rental/establishment based on the best quality/cost ratio.

UNDP has accumulated a significant experience on the procurement and testing of disposal services for POPs contaminated materials. If carried out with local technologies / facilities, the disposal is usually preceded by extensive testing of the technology conducted on significant amount of POPs waste, to certify its compliance with Stockholm and Basel Convention rules and standards. In case instead the disposal services are carried out through shipment abroad for disposal, detailed technical specification are prepared always envisaging the full range of services, from carrying out Basel convention procedures for shipment, to packaging to final disposal and certification of waste destruction. This approach always resulted in very high quality/cost ratio. UNDP also has a unique experience in the pre-commercial testing of disposal technologies, through for instance the on-site testing conducted on technologies for the disposal of soil highly contaminated by PCDD/F in Vietnam, including the mechano-chemical technology.

Risk Management:

As per standard UNDP requirements, the Project Manager will monitor risks quarterly and report on the status of risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. when impact is rated as 5, and when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported to the GEF in the annual PIR.

Overall project’s risk rating is considered as Medium.

SESP related risks are accommodated within the broader risk framework, and are separately described in the SESP tool with proposed areas of attention/monitoring/follow-up actions for UNDP Country Office defined to guide the compliance process.

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
Delayed or incomplete PCB inventory due to the absence of coordination, and technical and economic difficulties in carrying out sampling of dielectric oil	Organizational	Delay I 3 P 3	The project intends to address this risk by establishing a feasible and cost-effective inventory plan integrated with the maintenance schedule of electric equipment in participating companies.	PMU, UNDP	N/A at this stage
Lack of commitment of PCB owners hindering the prompt identification and inventory of PCB equipment	Strategic	Incomplete achievement of GEB I 4 P 2	The project fully acknowledges the technical and financial impact of PCB management for manufacturing and electric power industries. An open discussion with the main industrial stakeholders (KAP and EPCG) already started at PIF stage, so that their commitments has preliminary secured and tentative co-	PMU, MoSDT	N/A at this stage

			financing identified. At this stage, the commitment from main industrial stakeholders is high.		
Project resources are not sufficient to ensure the disposal or decontamination of all the PCB containing equipment.	Financial	Incomplete achievement of GEB I 4 P 2	The project allocated enough grant and co-financing resources to dispose of and/or decontaminate 700 tons of PCBs containing equipment and 200 tons of PCB contaminated soil. This amount is a realistic threshold which - based on the available information from recent tenders within the portfolio - should cover all the PCB contaminated equipment and waste in the country. Based on the PCB inventory, the exact quantity of PCBs will be better estimated to verify that the allocated resources are adequate.	UNDP	N/A at this stage
PCB contaminated equipment not secured for disposal at the project's start.	Environmental Organizational	Incomplete achievement of GEB I 4 P 2	Commitment with the main PCB owners will be obtained at the PPG stage. At this stage, commitments from both KAP and EPCG, which are the 2 largest PCB owners in the country, have been already obtained.	PMU, UNDP	N/A at this stage
Chemical accidents or spillage of PCBs during sampling, transport, storage or disposal	Environmental	Environmental damage I 4 P 1	Procedures and associated training for the safe handling and disposal of PCBs will be established since the very beginning of the project. Reputable and qualified international waste management firms will be selected to ensure best standards are followed, and local capacity is improved for future similar work.	PMU, MoSDT, UNDP	N/A at this stage
Exposure to PCBs by workers involved in the management of PCB containing equipment.	Environmental Social	Health hazard I 4 P 1	Workers will receive practical training of safety matters related to handling of such specific hazardous waste and on the use of PPE since the very beginning of the project. Health checks for workers involved in PCB management operation will be ensured.	PMU, MoSDT, UNDP	N/A at this stage
Improper or unsafe technology selected for the disposal of PCBs.	Environmental Social	Incomplete achievement of GEB Environmental	The project will be built on the experience of many other GEF financed projects related at PCB management. There are already a clear information and	UNDP, PMU, MoSDT,	N/A at this stage

		I hazard I 4 P 1	experience both available on suitable technologies for treatment of particular categories PCB containing equipment and waste. In addition, the fact that Montenegro already has in place and enforced a national legislation on hazardous waste management inspired by the EU regulation and compliant with the Stockholm and Basel conventions on Best available Technologies (BAT) will ensure that the requirements of these conventions will be fulfilled. GEF STAP guidance material on selection of disposal/decontamination technologies will also be used in the project's implementation.		
Difficulties in establishing a complete regulatory system within project timeframe.	Regulatory Strategic	Reduced enforcement of legislation and associated impact on GEB I 3 P 2	Montenegro already has a foundational legislation on PCBs which is inspired by the EU directive on PCBs and which is compliant with the Stockholm and Basel conventions' requirements. The project intends to assist the country in drafting national technical level guidance documents, which will be therefore approved under a procedure which is faster compared to the approval of a new or amended overarching legislation.	PMU, MoSDT	N/A at this stage

Social and environmental safeguards:

The project is a direct response to the sound management of accumulated hazardous PCBs waste (including liquids and soils) in Montenegro to reduce harmful impacts on human health and support facilitated sustainable development by removing these wastes from the chemicals production and consumption cycles, stopping further contamination of clean power equipment with these waste materials, reducing contamination of land exposed to continuous or occasional uninformed, and therefore irresponsible, spillages of such wastes, and protecting the health of employees of those PCB holder organizations in the private and public sector as well as neighboring population and global spread of these chlorinated wastes to other geographic areas.

This GEF project will build awareness on the links between waste management and public health (including occupational exposures), with a special focus on the health implications of exposure to the chlorinated PCB wastes for particularly vulnerable populations, such as female workers, pregnant women, and children who could live nearby these industrial areas.

The project will contribute to the ongoing national processes (refer to PIF) of enhancing institutional capacities to control and manage PCB wastes streams that will result in a broader and sustained capability to work with other

hazardous halogenated wastes. Regulatory improvements will be planned to improve the PCB control framework and to support the PCB phase-out activities in a longer run and prepare the country to meet its obligations under the Stockholm Convention by 2025. The Government and the private/public industrial sector will obtain required skills and direct experience with hazardous waste management all-step cycles to its complete disposal to be able to perform such operations in future on their own, but with application of internationally acceptable minimum operation standards to avoid human and environmental impacts.

The overall risk rating under the Social and Environmental Environmental Screening Procedure (SESP) is “High” for this project, and EIA procedures will be prepared, and strong oversight and safety principles will be applied by UNDP Montenegro during the project implementation process. Regular communication with MPU/Chemicals on key project’s milestones such as recruitment of international expertise, step-wise project implementation, and oversight missions are all advised. A through tendering process to select qualified sub-contractors with good track record and performance of similar contracts with UNDP or other GEF implementing agencies is strongly recommended.

It should be noted, however, that, at the same time, the overall risk rating related to the project’s implementation to achieve the designed GEBs is based on a broader range risks including political, institutional, financial, and inclusive of SESP section on the potential impacts of the project on social and environmental systems.

An environmental assessment (EA) and environmental management plan (EMP) will be designed in the project document for all expected hazardous waste management operations. This will cover the design of PCB equipment draining procedures, needed infrastructure and the sequencing of local works at PCB locations.

PCB materials will be transported through a tender for processing to certified hazardous waste facilities outside the country, mostly located in the Western Europe. Operationally any future work will be undertaken by qualified, experienced service providers contracted by UNDP using specifications requiring current international standards and with substantive due diligence independent oversight and supervision. All operations, once the project is approved by the GEF, will be undertaken using rigorous but well established and documented international hazardous waste and dangerous goods management practices and procedures and standards, including those set out by Basel and Stockholm conventions and GEF STAP guidelines, and internationally referenced OHS procedures for on-site workers. No direct social impacts are associated with this operation and public consultation in the local community will be provided for during future project’s implementation.

For all components, capacity building and training programmes will ensure the provision of internationally available expertise and advisory support, and specifically to local personnel involved in direct work on project sites.

Due to the general objective of this project, which is to reduce environmental and health risk associated with PCB waste through the establishment of Environmentally Safe Management of PCBs, it is not expected that environmental disputes or grievances may arise during project implementation. In case the project would require operations or installation of equipment for the disposal / treatment of POPs, these will undergo the full procedure of environmental impact assessment as envisaged by the national and European legislation, with the associated hearings of public and private stakeholders. In any case, Environmental and social grievances will be reported to the GEF in the annual PIR.

Sustainability of Results:

Sustaining: It has to be noted that the project intends to provide a comprehensive solution to the issue of PCBs use in Montenegro. Therefore, after project completion, it is assumed that only residual activities related to PCB disposal will remain in place. However, the country will still have the obligation to periodically report to the Stockholm convention’s Secretariat on the PCB inventory, and to progressively destroy all the PCBs found after project’s completion.

Through updating of the official guidance on PCB management, establishment of a PCB inventory database, training, implementation and demonstration of PCB disposal technologies, the project will ensure that the governmental

institutions and the private sector will be in possession of all the technical capacity to comply with the requirements of the Stockholm Convention up to the 2025 deadline.

Further, since the conceptual approach to PCB management (safety measures during maintenance/handling, storage, transportation and disposal) can be similar to other hazardous waste, including any POPs residual chemicals such as pesticides, the country will have the required capacity at the governmental level to manage those streams using these case studies, inclusive of the practical knowledge related to transboundary movement of wastes for disposal in line with the Basel Convention and ADR.

Mainstreaming: The management of PCBs requires sophisticated scientific, technical, legal and managerial competences in many fields, including sampling and laboratory determination of chlorinated organics, selection and practical demonstration (before granting full procurement clearance) of the most suitable PCB decontamination technologies, strategic and financial planning of disposal and clean-up operations, chemical risk assessment, waste classification, etc. All these competences, and the related lessons learned during project implementation, are the same competences needed to address broader issues in the field of hazardous waste, chemical management and POPs. The capacities built thanks to the project will therefore represent an important resource allowing Montenegrin expert to take part in broader activities either in the country or as regional center of excellence.

Scale-up and Replication: As the project is expected to solve completely or almost completely the PCB issue in Montenegro, scaling up and replication in this specific area are not expected to occur. However, the capacity which will be developed under the project will be useful to undertake similar activities in other POPs or hazardous waste related activities in the same country, or to allow the Montenegrin PCB team to participate as regional experts in another PCB project in the region. Any accumulated experience within this programme could at the same time be replicated in other GEF programmes if found useful.

VI. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s):					
This project will contribute to the following country outcome included in the UNDAF/Country Programme Document: Balanced and equitable regional economic growth based on sustainable planning and use of natural resources that will provide high quality of life and long term economic opportunities for its inhabitants.					
This project will be linked to the following output of the UNDP Strategic Plan:					
Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste.					
	Objective and Outcome Indicators	Baseline	Mid-term Target	End of Project Target	Assumptions
Project Objective: <i>Comprehensive identification and disposal/treatment of PCB contaminated equipment and waste in the country</i>	<i>National environmentally sound management (ESM) system of PCB chemicals and waste drafted, and implemented by 2020</i> <i>700 tons of pure PCBs and 200 tons of low-concentrated PCBs/related waste are safely managed and disposed of/decontaminated by the end of the project, thus reducing global and local environment from exposure to these hazardous wastes</i>	<i>People and workers are currently exposed to the risk posed by PCB equipment stored or online. Financial resources were used to buy disposal service abroad without creating job opportunities in the country.</i> <i>Current PCB management regulation has some deficiencies and requires appropriate capacity and cooperation from PCB equipment/waste owners to be enforced</i> <i>No national PCB management plan prepared and</i>	<i>Comprehensive national PCB inventory is mid-way through</i> <i>ESM guidance materials drafted and an initial training of PCB holders planned for and carried out</i> <i>The risk for the population surrounding plant and storage facilities containing PCBs is minimized thanks to safety measures preventing PCB release in the environment.</i>	<i>Existing storage facilities for PCBs are assessed and upgraded to international standard to allow PCB removal/decontamination operations</i> <i>The risk for the population surrounding plant and storage facilities containing PCBs is minimized through sound disposal of at least 700 + 200 tons of PCB contaminated equipment and waste</i> <i>Local firms / institutions benefitting from the establishment of a public-private partnership on PCB management.</i>	<i>Identified PCB contaminated equipment are under control and secured for disposal until technologies or service delivered by the project are available. Handling of PCB equipment and disposal activities are carried out in an environmentally safe way without any harm to the environment and the health. The public-private partnership established is effective and sustainable and will continue to bring economic and environmental benefit to the Montenegrin population after project closure.</i>

		<p><i>comprehensively implemented as of now.</i></p> <p><i>No comprehensive ESM system is in place to address the national PCB situation, and power equipment is exposed to continuous cross-contamination</i></p>			
	<p><i>Amount of PCB equipment identified and listed in the PCB inventory and included in the national management plan</i></p>	<p><i>A systematic PCB inventory, including PCB identification and labelling is missing.</i></p>	<p><i>At least 2,000 pieces of equipment tested to verify their PCB content, out of which PCB containing equipment is identified and labelled for future treatment or disposal.</i></p> <p><i>National PCB database established and maintained to help with priority decision-making</i></p>	<p><i>At least 3,000 pieces of equipment tested to verify their PCB content.</i></p> <p><i>PCB containing equipment is identified and labelled for future treatment or disposal out of which PCB containing equipment is stored or secured for disposal under the GEF project.</i></p> <p><i>Measures to prevent release of PCBs in the environment are in place.</i></p>	<p><i>Potential PCB owners are willing to facilitate sampling and analysis of their equipment.</i></p> <p><i>The capacity of the country to carry out sampling and analysis of dielectric oil and waste for PCB quantification is large and reliable enough to timely carry out sampling and analysis activities.</i></p>
	<p><i>Amount of PCB contaminated equipment and waste treated or disposed of</i></p>	<p><i>Around 173 tons of equipment containing PCBs sent abroad for disposal from 2007 to 2009.</i></p> <p><i>Around 36 tons of PCB</i></p>	<p><i>Based on final inventory amounts, temporary storage locations identified and upgraded to meet international standards.</i></p> <p><i>Pure PCB waste is prepared for export to</i></p>	<p><i>At least 700 tons of equipment containing PCB (in pure and contaminated forms) and at least 200 tons of PCB containing waste or soil are treated or disposed of in compliance with</i></p>	<p><i>Identified PCB containing equipment and waste amount to at least 700+200 tons and is properly stored for treatment or disposal under the project.</i></p> <p><i>The technology or service for the disposal of PCB equipment and waste (within the country or</i></p>

		<p>contaminated soil sent abroad or disposal.</p> <p>No PCBs disposal/decontamination technology available in the country.</p>	<p>HTI plants for final disposal, and PCB contaminated oil is treated via rented or purchased PCB dehalogenation technology.</p> <p>The most cost-effective PCB dehalogenation technology has been selected and rented/procured.</p> <p>Appropriate EIA/SIA procedures for making the rented/procured technology operational are completed, and location to host the technology selected and confirmed.</p>	<p>Stockholm Convention and Basel Conventions' requirements.</p> <p>Disposal/cleaning certificates obtained.</p>	<p>abroad) will be selected and procured/rented in a cost-effective manner to stay within the project's budget and timing constraints.</p> <p>Disposal of 700+200 tons of PCB equipment or can be completed within project and budget constraints.</p>
<p>Component/Outcome 1 Capacity strengthening on PCB management.</p>	<p>Number of operators of the electric sector and of the environmental control authority trained on and feel confident in practically applying the ESM system for PCBs.</p> <p>Number of technical and procedural guidance documents compliant with Stockholm Convention and national regulation completed and endorsed.</p> <p>Gender Dimension in the context of PCBs issue in Montenegro completed, strategies for better Gender Mainstreaming in POPs related activities identified.</p>	<p>No or insufficient technical level guidance materials on ESM for PCB management exists.</p> <p>No training on PCB issued delivered to operators in the electric sector countrywide.</p> <p>Only staff at the central level in MoSDT and research institutions is knowledgeable</p>	<p>- Guidance document drafted for sampling of online and offline equipment, handling storage and disposal of PCB containing waste and equipment, and discussed in one dedicated workshop.</p> <p>- Using the guidance material, at least one training session covering 50 operators of the electric sector implemented</p> <p>- Procedural and guidance documents for environmental authorities on Stockholm and Basel convention, EU regulation on POPs</p>	<p>- Guidance document for sampling of online and offline equipment, handling storage and disposal of PCB containing waste and equipment developed and adopted.</p> <p>- Two training session covering at least 20 equipment operators (engineers and technicians) in the electric power sector</p> <p>- Procedural and guidance documents for environmental authorities on Stockholm and Basel</p>	<p>Prospects for adoption of technical guidance lines are high, and related consultations initiated and ongoing.</p> <p>Equipment operators willing to attend training and apply knowledge practically in joint work with the project.</p> <p>Trainers have extensive experience in the field of PCB management.</p>

		<p><i>about POPs in general and PCB issues in particular</i></p> <p><i>No gender dimension study ever carried out on POPs in Montenegro.</i></p>	<p><i>and PCBs, BAT and BEP for PCB treatment and disposal operation drafted and discussed in a dedicated workshop.-</i></p> <ul style="list-style-type: none"> <i>- One training session covering at least 25 officers from the relevant ministries and research institutions carried out.</i> <i>- Dissemination of project objectives and midterm results through establishment of a website, broadcasting, workshops, with enhancement on gender related issues</i> <i>- Gender Dimension study completed.</i> 	<p><i>convention, EU regulation on POPs and PCBs, BAT and BEP for PCB treatment and disposal operation adopted.</i></p> <ul style="list-style-type: none"> <i>- Two training sessions for at least 20 officers from the relevant ministries and institutions carried out. .</i> <i>- Dissemination of project achievements through regular updating of website content, broadcasting, workshop, with enhancement on gender related issues</i> 	
	<p><i>Level of enforcement of the Montenegro's law on PCB management strengthened, measured through the number of owners of electrical equipment complying with the regulation.</i></p>	<p><i>The national regulation on PCB is not enforced.</i></p> <p><i>No or insufficient technical level guidance materials on ESM for PCB management exists.</i></p> <p><i>Individual (company-specific) PCB Management plans and logbooks required under the regulation are not submitted.</i></p>	<ul style="list-style-type: none"> <i>- Gap analysis with special reference to enforcement needs completed at mid-term.</i> <i>- Technical assistance to the environmental authorities on the enforcement of the law and technical regulation related to PCBs delivered through specialized trainings and joint participation of project staff and government representatives in at least 5 site inspections followed by assessment of the cases.</i> <i>- Company-wide PCB management plans</i> 	<ul style="list-style-type: none"> <i>- Advisory support and required technical assistance in the implementation of the country technical regulations and guidance on PCBs and POPs in view of the alignment with EU regulation delivered through continuous project support.</i> <i>- Technical assistance to the environmental authorities on the enforcement of the law and regulation related to PCBs delivered through joint participation of</i> 	<p><i>A fruitful cooperation among project staff, government, and key stakeholders on technical, legal and financial matter is ensured so that the amended / improved regulatory package is implementable, enforceable and sustainable.</i></p>

		<i>The current penalty policy is not applied or not effective due to the low enforcement level.</i>	<i>drafted by participating companies</i>	<i>project staff and government representatives in at least 10 site inspections followed by assessment of the cases.</i>	
Component/ Outcome 2 PCB Inventory, planning and establishment of public-private partnership	<i>One consolidated country-wide PCB inventory updated and completed, with appropriate data of sampling dates and analysis results of phased out and in-use equipment</i>	<i>An incomplete inventory report developed by MoSDT without analytical data and not including electric equipment from the electric power sector.</i> <i>Central consolidated PCB database to track inventory and PCB disposal process is not available</i>	<i>- Preliminary survey carried out through sampling and analysis of at least 300 pieces of equipment at PPG stage. Inventory sampling activity plan for 3,000 equipment is well underway at mid-term point. Services for the sampling, analysis of this equipment and establishment of PCB inventory procured</i> <i>- Sampling and analysis of at least 2,000 pieces of PCB suspected equipment carried out.</i> <i>- PCB containing equipment labelled and entered in a computerized database.</i>	<i>- At least 3,000 equipment oil samples have been taken and analysed for quantifying PCB concentration.</i> <i>- A dynamic PCB inventory established and made available to authorities and PCB holders through a dedicated website with access policies.</i>	<i>Owners of PCB contaminated equipment and waste will facilitate the access to their facilities and the sampling operations.</i> <i>Proper chain of custody and quality control procedures is established to ensure the reliability of sampling and analysis operations.</i>
	<i>2.2 The PCB national management plan is drafted and approved.</i>	<i>No national PCB management plan developed or available to guide action on addressing PCB matters in the country</i> <i>No industry-wide coordinated action is taken to address PCB ESM</i>	<i>- The national PCB management plan drafted.</i> <i>- First upgrade of the National PCB Management Plan at midterm based on preliminary inventory data.</i> <i>- Resulting one (1) individual PCB management plan drafted by participating companies at mid-term</i>	<i>- The national PCB management plan reviewed and adopted.</i> <i>- Second upgrade of the National PCB Management Plan at midterm based on inventory data.</i> <i>- Resulting (overall) two (2) individual PCB management plans drafted by participating companies (confirmed as a final</i>	<i>Government-led communication strategy on national PCB related effort (legislation, technical regulations, PCB equipment inventory and phase-out/disposal/decontamination) is in place and implemented to ensure better support from PCB equipment/waste owners and other stakeholders.</i> <i>A fruitful cooperation among project staff, government, and key stakeholders on technical, legal</i>

				achievement by terminal evaluation time)	and financial matter is ensured so that the PCB management plan is implementable and sustainable.
	2.3 An innovative public-private partnership for the management of PCB contaminated equipment and waste is established and supports national PCB disposal/decontamination effort.	No public-private partnership established in the country for the management of PCBs. Cooperation with private sector is not strong to support effective national PCB disposal/decontamination effort.	- A public / private partnership for management of PCB contaminated equipment and waste established to conduct the activities related to ESM system on PCBs (completed at mid- term) - Business plan and sustainability plan for the public/private partnership drafted - Appropriate level national communication on the PCB management plan ensured for better cooperation with the private sector	- Business plan and sustainability plan for the public/private partnership verified and amended based on experience gathered in the 1 st and 2 nd years of project's activities.	A public private partnership to conduct ESM of PCB is more effective than a purely private or public institution due the fact that most PCB holders are public/private companies. Public institutions and private industry willing to establish a partnership to conduct ESM of PCB.
Component/ Outcome 3 Environmentally sound management (ESM) of PCBs	3.1 National PCB storage capacity, in terms of a mass of PCB equipment and waste that can be safely stored, of selected storage facilities in the country is available and up to international standards. Storage facilities are upgraded and monitored under the project for the safe storage of PCB equipment/oils/waste pending final disposal or decontamination procedures	Storage facilities available in industrial sites needing checking and upgrading, in some cases contaminated by PCBs. Some industrial companies plan dismantling of storage facilities after all identified PCBs are removed from their industrial territories	- Storage facilities for the temporary storage of PCB contaminated equipment are identified (to be completed at mid-term) - Upgrade of safety and emergency response in selected storage facilities - PPE equipment for personnel is available to ensure safe operations - Monitoring over quality of storage over time is ensured by enforcement authorities	- At least 2 storage facilities have been upgraded to ensure safe storage of PCB equipment and waste in fulfilment of national and international rules on PCBs.	Storage facilities needs only limited intervention to ensure the increase of their safety up to the required standards. Storage facilities can be upgraded and permitted within planned budget and timeframe.
	Documentary and direct evidence that environmentally sound technologies or services for PCBs disposal/dehalogenation have been identified, assessed and procured	No PCBs disposal technology available in the country to address	- Identification and technical-economic feasibility analysis of disposal options based	All planned preparatory already achieved at mid-term	UNDP experts and national stakeholders establish cooperation so that the technical specification and identification of proper technologies are really suited to the

	<p><i>pure PCB oils/waste</i></p> <p><i>No PCB dehalogenation technology is available in the country to address cross-contaminated PCB oils</i></p> <p><i>No PCB contaminated soil remediation technology is available in the country</i></p>	<p><i>on the amount of pure and low-concentration PCBs identified (to be completed at mid-term)</i></p> <p><i>- Drafting of TORs for the procurement of PCBs disposal/decontamination service and equipment (to be completed at mid-term).</i></p> <p><i>- EIA process over decontamination plants carried out if needed to enable technology to operate locally (to be completed at midterm)</i></p>	<p><i>PCB dehalogenation technology is rented/installed in the country to treat low-concentrated PCB oils</i></p>	<p><i>specific country situation and needs.</i></p> <p><i>Technologies for the safe disposal of waste with high PCB content – up to 60% - and for the treatment of equipment with low PCB content – up to few thousands ppm – are commercially available and vendors of these technologies will submit bids to UNDP tenders.</i></p>
<p><i>Amount of equipment or waste containing or contaminated by PCB disposed in an Environmental Sound Way.</i></p>	<p><i>Before GEF/UNDP project, around 173 tons of equipment containing PCBs sent abroad for disposal from 2007 to 2009.</i></p> <p><i>Similarly, around 36 tons of PCB contaminated soil sent abroad or disposal.</i></p>	<p><i>- For pure PCBs, existing qualified service providers informed and invited and tender for hazardous waste handling</i></p> <p><i>- The selected PCB decontamination technologies demonstrated in action as part of procurement activity for their reliability, environmental performance and compliance with national regulation, Stockholm and Basel conventions' requirements (to be completed at mid-term).</i></p> <p><i>- Associated sub-contracts for export of pure PCB waste and decontamination of low-concentrated in place, and pre-bid conferences for interested bidders</i></p>	<p><i>-Destruction /treatment of 700 tons of PCB contaminated equipment in progress with disposal certificates obtained</i></p> <p><i>- Disposal / treatment of 200 t of PCB containing waste including contaminated soil completed with disposal certificates obtained</i></p>	<p><i>UNDP uses experience from other projects to ensure the effectiveness and reliability of technology's choice for both pure/high-concentrated and low-concentrated wastes.</i></p> <p><i>Selected vendors already familiar with the requirements and activities related to testing of their technologies.</i></p> <p><i>PCB contaminated equipment and waste are identified, safely stored and secured to their disposal under the project</i></p> <p><i>No PCB waste transit limitations are in place to block waste export operations</i></p> <p><i>EIA/SIA assessments are completed to allow PCB dehalogenation technology to be put into operation</i></p>

			<i>held to improve quality of received bids</i>		<i>for low-concentrated PCB containing oils.</i>
Component/ Outcome 4 Knowledge Management and M&E	<i>Documentary evidence that project's results sustained and replicated through proper M&E and Knowledge Management actions.</i>	N/A	<i>- Inception activities carried out, project management structure implemented, KM system including project website established (to be completed in the 1st year of project implementation)</i>		<i>All the relevant stakeholders well aware on GEF/UNDP rules as well as National Legislation, and willing to cooperate in the timely establishment of project management structures.</i>
		N/A	<i>- Project reporting and planning established and implemented</i>	<i>- Project reporting and planning continued until project end</i>	<i>Project reporting and planning mechanisms and templates timely communicated and agreed with project management staff at all level.</i>
		N/A	<i>- Midterm Evaluation and auditing activities carried out.</i>	<i>- Terminal and auditing activities carried out; terminal reporting completed and submitted to GoM, UNDP and GEF.</i>	<i>Project stakeholders actively cooperating in all evaluation and auditing activities.</i> <i>Evaluation and auditing are carried out in an independent and professional way, with the purpose to enhance project activities and generate recommendations for project success and sustainability after project closure.</i>

VII. MONITORING AND EVALUATION (M&E) PLAN

The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP](#) and [UNDP Evaluation Policy](#). While these UNDP requirements are not outlined in this project document, the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the [GEF M&E policy](#) and other relevant GEF policies.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF Agencies.

M&E Oversight and monitoring responsibilities:

Project Manager: The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

The Project Manager will develop annual work plans based on the multi-year work plan included in Annex A, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. gender strategy, KM strategy etc..) occur on a regular basis.

Project Board: The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

Project Implementing Partner: The Implementing Partner is responsible for providing any and all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes, and is aligned with national systems so that the data used by and generated by the project supports national systems.

UNDP Country Office: The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The annual supervision missions will take place according to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Board within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the

annual GEF PIR, the *independent mid-term review* and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the [UNDP POPP](#). This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.

The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

UNDP-GEF Unit: Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

Audit: The project will be audited according to UNDP Financial Regulations and Rules and applicable audit policies on DIM implemented projects.⁴

Additional GEF monitoring and reporting requirements:

Inception Workshop and Report: A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:

- a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project implementation;
- b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
- c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
- d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;
- e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; Environmental and Social Management Plan and other safeguard requirements; the gender strategy; the knowledge management strategy, and other relevant strategies;
- f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
- g) Plan and schedule Project Board meetings and finalize the first year annual work plan.

The Project Manager will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board.

GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Adviser will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR.

⁴ See guidance here: <https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx>

The PIR submitted to the GEF will be shared with the Project Board. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

GEF Focal Area Tracking Tools: The following GEF Tracking Tool(s) will be used to monitor global environmental benefit results:

The baseline/CEO Endorsement GEF Focal Area Tracking Tool(s) – submitted in Annex D to this project document – will be updated by the Project Manager/Team and shared with *the* mid-term review consultants and terminal evaluation consultants (not the evaluation consultants hired to undertake the *MTR* or the *TE*) before the required review/evaluation missions take place. The updated GEF Tracking Tool(s) will be submitted to the GEF along with the completed Mid-term Review report and Terminal Evaluation report.

Independent Mid-term Review (MTR): An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 3rd PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and approved by the Project Board.

Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board. The TE report will be publically available in English on the UNDP ERC.

The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality

assessment and validate the findings and ratings in the TE report, and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

Final Report: The project’s terminal PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Mandatory GEF M&E Requirements and M&E Budget:

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ⁵ (US\$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office	USD 10,000		Within two months of project document signature
Inception Report	Project Manager	None	None	Within two weeks of inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office	None	None	Quarterly, annually
Monitoring of indicators in project results framework	Project Manager	Per year: USD 2,500 (Total USD 12,500 for 5 years)		Annually
GEF Project Implementation Report (PIR)	Project Manager and UNDP Country Office and UNDP-GEF team	None	None	Annually
DIM Audit as per UNDP audit policies	UNDP Country Office	Per year: USD 3,000 (Total USD 15,000 for 5 years)		Annually or other frequency as per UNDP Audit policies
Lessons learned and knowledge generation	Project Manager	None		On-going
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Manager UNDP CO	None		On-going
Addressing environmental and social grievances	Project Manager UNDP Country Office BPPS as needed	None for time of project manager, and UNDP CO		
Project Board meetings	Project Board UNDP Country Office Project Manager			At minimum annually
Supervision missions	UNDP Country Office	None ⁶		Annually

⁵ Excluding project team staff time and UNDP staff time and travel expenses.

⁶ The costs of UNDP Country Office and UNDP-GEF Unit’s participation and time are charged to the GEF Agency Fee.

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ⁵ (US\$)		Time frame
		GEF grant	Co-financing	
Oversight missions	UNDP-GEF team	None ⁶		Troubleshooting as needed
Knowledge management as outlined in Outcome 4	Project Manager	USD 32,850		On-going
GEF Secretariat learning missions/site visits	UNDP Country Office and Project Manager and UNDP-GEF team	None		To be determined.
Mid-term GEF Tracking Tool to be updated by (add name of national/regional institute if relevant)	Project Manager	USD 10,000		Before mid-term review mission takes place.
Independent Mid-term Review (MTR) and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 30,000		Between 2 nd and 3 rd PIR.
Terminal GEF Tracking Tool to be updated by (add name of national/regional institute if relevant)	Project Manager	USD 10,000		Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 30,000		At least three months before operational closure
Translation of MTR and TE reports into English	UNDP Country Office	USD 0		
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		USD 150,350		

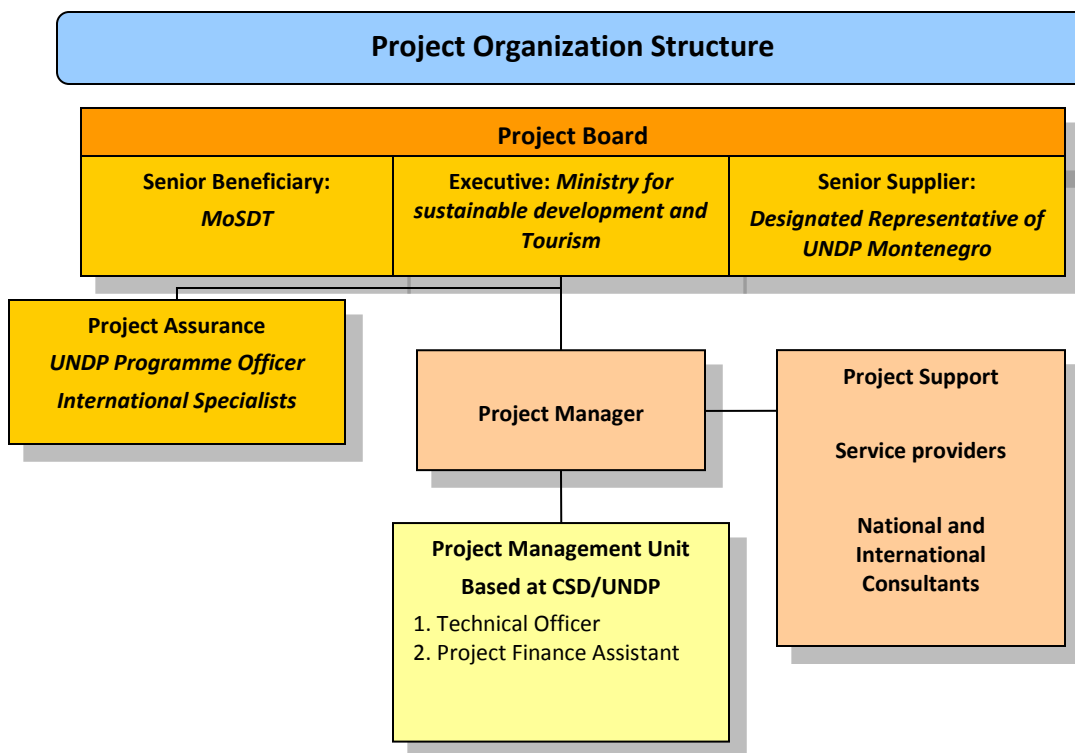
VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Roles and responsibilities of the project's governance mechanism: The project will be implemented following UNDP's direct implementation modality, according to the Standard Basic Assistance Agreement between UNDP and the Government of Montenegro, and the Country Program Action Plan (CPAP).

The **Implementing Partner** for this project is UNDP Country Office in Montenegro.

The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

The project organisation structure is as follows:



The **Project Board** (also called Project Steering Committee) is responsible for making by consensus, management decisions when guidance is required by the Project Manager, including recommendation for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP’s ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Programme Manager. The terms of reference for the Project Board are contained in Annex. The Project Board is comprised of the following individuals:

- Ministry of Sustainable Development and Tourism: Director of the Directorate for Environment;
- EPCG: legal representative;
- KAP: legal representative;
- UNDP: program officer.

The **Project Manager** will run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the Board. The Project Manager function will end when the final project terminal evaluation report, and other documentation required by the GEF and UNDP, has been completed and submitted to UNDP (including operational closure of the project).

The **project assurance** roll will be provided by the UNDP Country Office specifically

Additional quality assurance will be provided by the UNDP Regional Technical Advisor as needed.

Governance role for project target groups:

Both the PMU (which is indeed established at UNDP offices) and the PSC will implement mechanisms to ensure ongoing stakeholder participation and effectiveness with the commencement of the Project by conducting regular stakeholder meetings, issuing a regular project electronic newsletter, conducting feedback surveys, implementing strong project management practices, and having close involvement with UNDP Montenegro as the GEF implementing agency.

UNDP Direct Project Services as requested by Government (if any):

The project is a direct implementation modality (DIM) project, in line with the Standard Basic Assistance Agreement (SBAA, 2006) between the UNDP and the Government of Montenegro, and the Country Programme Action Plan (CPAP) for 2012-2016.

Agreement on intellectual property rights and use of logo on the project’s deliverables and disclosure of information:

In order to accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy⁷ and the GEF policy on public involvement⁸.

Project management:

The project office will be established at UN Eco House, Stanka Dragojevic bb 81000 Podgorica, Montenegro. The UN ECO house is the new building hosting under one roof the UN agencies operating in the country. The UN Shared Eco Premises is conceptualised using efficient, ecological technology and a modern design that would equally satisfy the Montenegro Government's commitment to the Ecological State and provide the appropriate joint roof for the UN family in Montenegro. The project is a result of a joint collaboration between the Government of Montenegro, Government of Austria, Municipality of the Capital City Podgorica and the United Nations team in the country. The management of the UN-ECO house is flexible, and allocated physical resources based on the needs. Establishing the PMU at the UN ECO house will facilitate the coordination with UNDP staff and exchange of information with GEF projects implemented by other agencies.

IX. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is USD 23,303,691. This is financed through a GEF grant of USD 3,500,000 and USD 19,803,691 in parallel co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP bank account only.

Parallel co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process and will be reported to the GEF. The planned parallel co-financing will be used as follows:

Co-financing source	Co-financing type	Co-financing amount	Planned Activities/Outputs	Risks	Risk Mitigation Measures

⁷ See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

⁸ See https://www.thegef.org/gef/policies_guidelines

EPCG FUD (*)	In-kind	975,555	Office space, staff participating in project activities	<i>Difficulties related to the accounting of in kind support</i>	<i>Accounting mechanisms and rules will be clearly established at inception</i>
MoSDT	In-kind	200,000	Legal support to PCB issues	<i>Difficulties related to the accounting of in kind support</i>	<i>Accounting mechanisms and rules will be clearly established at inception</i>
EPCG FUD (*)	Cash	2,070,212	Allocated budget for sampling and analysis of dielectric oil, including costs related to the loss of electricity production, it also allocated budget for environmental monitoring	<i>Coordination issues may arise. Investment may be subjected to the sustained financial capacity of the enterprise.</i>	<i>Coordination ensured through participation of EPCG on PSC. EPCG provided assurances that no change on the proposed investments are expected.</i>
EPCG FUD (*)	Cash	348,098	Storage areas and buildings (I.e for hosting PCB decontamination units) and future EPCG –CAPEX Storage		
EPCG FUD (*)	Cash	8,757,986	Resources allocated for the replacement of PCB transformers, for the maintenance of transformers pending their disposal; for the decontamination of PCB contaminated transformers; for the upgrading of storage facilities and for the cleanup of contaminated areas.	<i>Coordination issues may arise. Investment may be subjected to the sustained financial capacity of the enterprise.</i>	<i>Coordination ensured through participation of EPCG on PSC. EPCG provided assurances that no change on the proposed investments are expected.</i>
KAP	Cash	4,460,340	Capital investment un replacement of PCB equipment	<i>Coordination issues may arise. Investment may be subjected to the sustained financial capacity of the enterprise.</i>	<i>Coordination ensured through participation of KAP on PSC. KAP provided assurances that no change on the proposed</i>

					<i>investments are expected.</i>
KAP	In -kind	673,000	Removal, storage and re-installation of equipment	<i>Difficulties related to the accounting of in kind support</i>	<i>Accounting mechanisms and rules will be clearly established at inception</i>
KAP	Cash	2,268,500	Maintenance of equipment throughout project duration		
UNDP	Cash	50,000	Project management		
Total		19,803,691			

Legend: (*) Co-financing committed in EUR, converted to USD based on EUR to USD rate of 1.101575 (24/02/2016)

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the UNDP-GEF team as these are considered major amendments by the GEF:

- a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more;
- b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.

Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Refund to Donor: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

Financial completion: The project will be financially closed when the following conditions have been met:

- a) The project is operationally completed or has been cancelled;
- b) The Implementing Partner has reported all financial transactions to UNDP;
- c) UNDP has closed the accounts for the project;
- d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed within 12 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and settle all financial obligations

and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

X. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas Proposal or Award ID:	00088794	Atlas Primary Output Project ID:	00095303
Atlas Proposal or Award Title:	Comprehensive Environmentally Sound Management of PCBs		
Atlas Business Unit	MNE10		
Atlas Primary Output Project Title	Comprehensive Environmentally Sound Management of PCBs		
UNDP-GEF PIMS No.	5562		
Implementing Partner	UNDP Montenegro		

GEF Outcome/Atlas Activity	Responsible Party (Implementing Agent)	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount (USD) Year 1	Amount (USD) Year 2	Amount (USD) Year 3	Amount (USD) Year 4	Amount (USD) Year 5	Total (USD)	See Budget note
Component / Outcome 1. Capacity strengthening on PCB management	Ministry for Sustainable Development and Tourism	62000	GEF	71200	International Consultants	10,800	10,800	0	0	0	21,600	1
				71300	Local Consultants	54,150	44,500	10,000	10,000	5,000	123,650	2
				71400	Contractual Services Individual	30,000	20,000	12,675	12,675	13,500	88,850	3
				71600	Travel	5,000	5,000	5,000	5,000	5,000	25,000	4
				74500	Miscellaneous	1,500	1,500	1,500	1,500	1,500	7,500	5
				72100	Contractual Services- Companies	4,000	5,000	3,700	3,700	0	16,400	6
				TOTAL OUTCOME 1						105,450	86,800	32,875
Component/Outcome 2. PCB Inventory, planning and establishment of public-private partnership	Ministry for Sustainable Development and Tourism	62000	GEF	71200	International Consultants	9,000	3,000	3,000	5,000	4,000	24,000	7
				71300	Local Consultants	8,000	10,000	10,000	9,000	3,000	40,000	8
				71400	Contractual Services Individual	3,000	5,000	10,000	5,000	5,000	28,000	9
				71600	Travel	3,000	3,000	3,000	3,000	3,000	15,000	10
				72100	Contractual Services- Companies	0	113,000	118,000	4,000	4,000	239,000	11
				74500	Miscellaneous	0	2,000	2,000	0	0	4,000	12
				TOTAL OUTCOME 2						23,000	136,000	146,000
Component / Outcome 3. Environmentally Sound Management (ESM) of PCB	Ministry for Sustainable Development and Tourism	62000	GEF	71200	International Consultants	10,000	10,000	10,000	10,000	8,000	48,000	13
				71300	Local Consultants	10,000	13,000	10,000	10,000	10,000	53,000	14
				72100	Contractual Services- Companies	290,000	400,000	800,000	640,000	200,000	2,330,000	15
				71400	Contractual Services Individual	20,000	17,000	15,000	15,000	13,000	80,000	16
				71600	Travel	5,000	5,000	5,000	5,000	2,000	22,000	17
				74500	Miscellaneous	5,000	0	5,000	5,000	2,000	17,000	18

					TOTAL OUTCOME 3						340,000	445,000	845,000	685,000	235,000	2,550,000
Component/Outcome 4. Monitoring, Learning, Adaptive Feedback and Evaluation	Ministry for Sustainable Development and Tourism	62000	GEF	71200	International Consultants	0	24,000			30,000	54,000	19				
				71300	Local Consultants	3,000	12,000	3,000	4,000	10,000	32,000	20				
				75700	Training, Workshops and Conferences	5,000	11,000	10,000	3,000	5,000	34,000	21				
				71400	Contractual Services Individual	3,000	3,000	5,000	2,000	7,350	20,350	22				
				74500	Miscellaneous	0	4,000	2,000	1,000	3,000	10,000	23				
					TOTAL OUTCOME 4						11,000	54,000	20,000	10,000	55,350	150,350
Project Management Costs	Ministry for Sustainable Development and Tourism	62000	GEF	71400	Contractual services – indiv.	19,730	19,730	19,730	19,730	19,730	98,650	24				
				72200	Equipment	3,000	1,000	0	0	0	4,000	25				
				74598	Direct Project cost	10,000	14,000	18,000	14,000	8,000	64,000	26				
	4000	UNDP	72400	Communication	1,000	1,000	1,000	1,000	1,000	5,000	27					
			72500	Office supplies	500	500	500	500	500	2,500	28					
			73100	Rental & maintenance –prem.	8,500	8,500	8,500	8,500	8,500	42,500	29					
						TOTAL OUTCOME 5						42,730	44,730	47,730	43,730	37,730
					TOTAL						522,180	766,530	1,091,605	797,605	372,080	3,550,000

Summary of Funds:⁹

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	Total
GEF	522,180	766,530	1,091,605	797,605	372,080	3,500,000
(e.g. UNDP)	10,000	10,000	10,000	10,000	10,000	50,000
ECPG FUD (Investment)	2,235,259	2,235,259	2,235,259	2,235,259	2,235,260	11,176,296
ECPG FUD (In kind)	195,111	195,111	195,111	195,111	195,111	975,555
KAP (Cash)	1,345,768	1,345,768	1,345,768	1,345,768	1,345,768	6,728,840
KAP (in kind)	134,600	134,600	134,600	134,600	134,600	673,000
MOSDT (in kind)	40,000	40,000	40,000	40,000	40,000	200,000
TOTAL	4,482,918	4,727,268	5,052,343	4,758,343	4,332,819	23,303,691

⁹ Summary table should include all financing of all kinds: GEF financing, cofinancing, cash, in-kind, etc...

Budget Notes

- 1) One international consultant for around 30 days @ 700 USD/day to provide technical assistance on legislation, drafting of guideline and guidance, training; to assist on technical revision of document, drafting of technical specification, reviewing technical reports, etc.
- 2) Team of 3 local consultants for 205 days each @ 200USD/day with experience in environmental legislation/policies, waste management, disposal technologies to provide technical assistance on legislation, drafting of guideline and guidance, and training
- 3) Fee for full time project staff (Project Manager, Technical Coordinator and Project Assistant)
- 4) National and international travel for project staff and consultants
- 5) Various miscellaneous expenses which are permitted by the rules
- 6) Contractual services for website development and maintenance, dissemination of project results, training facilities, translation
- 7) International consultant to provide training, guidance and quality control on sampling and laboratory work, total of 35 days @700USD/day
- 8) National consultant to supervise and facilitate the work of the contractor in charge of PCB sampling and analysis, totally 200 days at @200USD/day
- 9) Fee for full time project staff (Project Manager, Technical Coordinator and Project Assistant)
- 10) National and international travel for project staff and consultants
- 11) Contractual services for sampling and analysis of dielectric oil from transformers, entered in a database
- 12) Various miscellaneous expenses which are permitted by the rules
- 13) International consultant to carry out a) training on PCB disposal technologies b) assistance on technical specification and procurement for disposal technologies c) supervision of technology acceptance procedure; d) supervision of PCB handling and disposal operations.
- 14) National consultants to provide technical assistance on TOR development, design of storage facilities, supervision of contract operations, environmental permitting, reporting, and liaising with environmental authorities and owners of PCB contaminated equipment
- 15) Contractual services for a) upgrading 2 PCB storage facilities b) disposal of PCB equipment c) treatment services or treatment technology for low contaminated PCB equipment d) environmental monitoring
- 16) Fee for full time project staff (Project Manager, Technical Coordinator and Project Assistant)
- 17) National and international travel for project staff and consultants
- 18) Various miscellaneous expenses which are permitted by the rules
- 19) International independent consultant to carry out mid-term and terminal evaluation, and to provide assistance on project management including development of annual plans and knowledge management.
- 20) a. National consultant to carry out monitoring of indicators in result framework b. Final GEF tracking tool to be updated c. Independent national evaluation consultant
- 21) Contractual services for a. Knowledge management services b. translation c. organization of inception workshop
- 22) Fee for full time project staff (Project Manager, Technical Coordinator and Project Assistant)
- 23) Various miscellaneous expenses which are permitted by the rules
- 24) Fee for full time project staff (Project Manager, Technical Coordinator and Project Assistant)
- 25) Acquisition of equipment and other peripherals in connection to project activities
- 26) Direct Project Cost. Direct project costs will be charged at the end of each year based on the UNDP Universal Pricelist (UPL) or the actual corresponding service cost. The amounts indicated here are estimations, however as part of annual project operational planning the Direct Project Costs to be requested during that calendar year would be defined and the amount included in the yearly budgets. Total cost: \$64,000 (@ \$12,800 per year).
- 27) Communications (phone and internet) for the project staff
- 28) Office supplies

29) Utilities, office maintenance, security charges

XI. LEGAL CONTEXT

The project is a direct implementation modality (DIM) project, in line with the Standard Basic Assistance Agreement (SBAA, 2006) between the UNDP and the Government of Montenegro, and the Country Programme Action Plan (CPAP) for 2012-2016.

Any designations on maps or other references employed in this project document do not imply the expression of any opinion whatsoever on the part of UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

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XII. MANDATORY ANNEXES

- A. Multi year Workplan
- B. Monitoring Plan
- C. Evaluation Plan
- D. GEF Tracking Tool (s) at baseline
- E. Terms of Reference for Project Board, Project Manager, Chief Technical Advisor and other positions as appropriate
- F. UNDP Social and Environmental and Social Screening Template (SESP)
- G. Environmental and Social Management Plan (ESMP) for moderate and high risk projects only
- H. UNDP Project Quality Assurance Report
- I. UNDP Risk Log
- J. Results of the capacity assessment of the project implementing partner and HACT micro assessment
- K. Additional agreements

Multi Year Work Plan

EXPECTED OUTPUTS and RESULT INDICATORS	PLANNED ACTIVITIES	TIMEFRAME					RESPONSIBLE PARTY	PLANNE D BUDGET			
		Y1	Y2	Y3	Y4	Y5		Funding Source	Budget Description	Amount (USD)	
<p>Output 1.1 Operators of the electric sector and of the environmental control authority trained on the ESM of PCBs Result indicator 1: Number of operators successfully trained. Final target: 150 Baseline (2015): 0 Target (Y1:0, Y2:50, Y3:50, 0): Result indicator 2: Number of training session and workshops: Final target: 4+2 Baseline (2015):0 Target (Y1:1+1, Y2: 2+1, Y3:1+0, Y4:0+0): Result indicator 3: Number of guidance and procedural Documents completed: Final target: 2 Baseline (2015):0 Target (Y1:1, Y2:1, Y3:0, 0):</p>	<p>Activity 1.1.1 Two training sessions covering totally 20 operators of the electric sector. Guidance document for sampling of online and offline equipment, handling storage and disposal of PCB containing waste and equipment drafted and discussed in one dedicated workshop. Also, they included use of the field test kits and on analytical equipment, as well as formats for data collection and reporting, and design for printing of the labels for equipment from which samples were taken, PCB free equipment and PCB containing equipment (above 50ppm of PCB).</p>						UNDP	GEF	GEF Grant	\$40,000.00	
							MoSDT	MoSDT	Co-financing	\$50,000.00	
							EPCG	EPCG	Co-financing	\$120,000.00	
	<p>Activity 1.1.2 Two training session covering totally at least 20 officers from the relevant ministries and research institutions carried out. Procedural and guidance documents for environmental authorities on Stockholm and Basel convention, EU regulation on POPs and PCBs, BAT and BEP for PCB treatment and disposal operation drafted and discussed in a dedicated workshop. Standardized</p>							UNDP	GEF	GEF Grant	\$30,000.00
								MoSDT	MoSDT	Co-financing	\$50,000.00
								EPCG	EPCG	Co-financing	\$175,500.00

	<i>procedures for collecting the PCB equipment and wastes, as well as procedures for draining PCB contaminated oils from the transformers and its treatment developed, as well as methodology for labelling electrical equipment according to the relevant international guidelines.</i>										
	<i>Activity 1.1.3 Dissemination of project objectives and midterm results through establishment of a website, broadcasting, workshops, with enhancement on gender related issues Public awareness activities Regular work with media and NGOs. Training for NGOs on ESM of POPs/PCBs Hearing for public on project plan and results</i>						UNDP	GEF	GEF Grant	\$75,000.00	
							EPCG	EPCG	Co-financing	\$300,000.00	
Output 1.2 <i>The enforcement of Montenegro law on PCB management strengthened</i> Result indicator 4: <i>Gap analysis with special reference to enforcement needs completed</i> <i>Baseline (2015): 0</i> <i>Target (Y1:1, Y2:0, Y3:0, 0):</i> Result indicator 5: <i>Technical assistance delivered, number of sites inspected</i> <i>Baseline (2015): 0</i> <i>Target (Y1:0, Y2:5, Y3:5, 0):</i>	<i>Activity 1.2.1 Gap analysis with special reference to enforcement needs and technical assistance on the implementation of the law</i>						UNDP	GEF	GEF Grant	\$18,000.00	
							MoSDT	MoSDT	Co-financing	\$50,000.00	
							EPCG	EPCG	Co-financing	\$250,000.00	
	<i>Activity 1.2.2. Technical assistance to the environmental authorities on the enforcement of the law and regulation related to PCBs delivered through joint participation of project staff and government representatives in at least 10 site inspections followed by assessment of the cases</i>							UNDP	GEF	GEF Grant	\$100,000.00
								EPCG	EPCG	Co-financing	\$130,055.00
	<i>Activity 1.3.3. Gender dimension study on POPs issues in Montenegro</i>						UNDP	GEF	GEF Grant	\$20,000.00	

<p>Output 2.1 PCB inventory updated and completed, at least 3000 samples and analysis of phased out and in-use equipment carried out. Result indicator 6: Preliminary survey carried out Baseline (2015): 0 Target (Y1:1, Y2:0, Y3:0, Y4: 0):</p> <p>Result indicator 7: Number of equipment sampled and analyzed for PCB Baseline (2015): 0 Target (Y1:2000, Y2:1000, Y3:0, Y4:0):</p> <p>Result indicator 8: Dynamic PCB inventory established. Baseline (2015): 0 Target (Y1:0 Y2:1, Y3:0, Y4:0):</p>	<p>Activity 2.1.1 Preliminary survey carried out through sampling and analysis of at least 300 equipment ad PPG. Inventory preparatory activity and sampling plan for 3000 equipment. Services for the sampling, analysis of 3000 equipment and establishment of PCB inventory procured</p>						UNDP	GEF	GEF Grant	\$30,000.00
							EPCG	EPCG	Co-financing	\$200,000.00
	<p>Activity 2.1.2 Sampling and analysis of at least 3000 PCB equipment carried out.</p>						UNDP	GEF	GEF Grant	\$250,000.00
							SERVICE PROVIDER	EPCG	Co-financing	\$1,400,000.00
	<p>Activity 2.13 A dynamic PCB inventory of the electrical equipment, articles and wastes established and made available to authorities and PCB holders through a dedicated online database with access policies.</p>						UNDP	GEF	GEF Grant	\$30,000.00
							SERVICE PROVIDER	EPCG	Co-financing	\$100,000.00
	<p>Output 2.2 PCB national plan drafted and approved Result indicator 9: National PCB management plan drafted and approved Baseline (2015): 0 Target (Y1:0, Y2:1, Y3:0, Y4: 0):</p> <p>Result indicator 10: National PCB management plan is reviewed for the first time based on inventory data Baseline (2015): 0 Target (Y1:0, Y2:0, Y3:1, Y4:0):</p>	<p>Activity 2.2.1 The national PCB management plan drafted and adopted.</p>					UNDP	GEF	GEF Grant	\$20,000.00
							MoSDT	EPCG	Co-financing	\$200,000.00
<p>Activity 2.2.2 First upgrade of the National PCB Management Plan at midterm based on inventory data.</p>							UNDP	GEF	GEF Grant	\$10,000.00
							EPCG	EPCG	Co-financing	\$90,000.00
							EPCG	EPCG	Co-financing	\$30,212.00
<p>Activity 2.3.2 Business plan and sustainability plan for the public/private partnership drafted, verified and amended based on experience gathered in the 1st year of activity.</p>							UNDP	GEF	GEF Grant	\$10,000.00

						EPCG	EPCG	Co-financing	\$50,000.00	
Output 3.1 Selected storage facilities are checked and upgraded under the project for the safe storage of PCB equipment pending disposal or decontamination Result indicator 13: Capacity (tons) of upgraded PCB storage facilities. Baseline (2015): 0 Target (Y1:0, Y2:100, Y3:150, Y4:0):	Activity 3.1.1 Identification of storage facilities for the temporary storage of PCB contaminated equipment					UNDP	GEF	GEF Grant	\$20,000.00	
						KAP	KAP	Co-financing	\$50,000.00	
	Activity 3.1.2 Upgrade of safety and emergency response in selected storage facilities						UNDP	GEF	GEF Grant	\$430,000.00
							MoSDT	EPCG	Co-financing	\$348,098.00
Output 3.2 Identification, assessment and procurement of environmentally sound PCBs disposal technologies or services. Result indicator 14: Technology or services is identified based on inventory data, assessed and procured Baseline (2015): 0 Target (Y1:1, Y2:1, Y3:0, Y4:0)	Activity 3.2.1 Identification and technical-economic feasibility analysis of disposal options based on the amount of pure and low-concentration PCBs identified					UNDP	GEF	GEF Grant	\$30,000.00	
	Activity 3.2.2 Drafting of TORs for the procurement of PCBs disposal service and equipment.					UNDP	GEF	GEF Grant	\$10,000.00	
	Activity 3.2.3 EIA process and other related permits for the procured technology or services carried out if needed to enable technology to operate locally						UNDP	GEF	GEF Grant	\$60,000.00
							KAP	KAP	Co-financing	\$80,000.00
Output 3.3 Equipment and waste containing or contaminated by PCB disposed or treated in an environmentally sound way. Result indicator 15: Disposal technologies or services are	Activity 3.3.1 Disposal technologies tested for their reliability, environmental performance and compliance with national regulation, Stockholm and Basel convention requirements as part of acceptance of delivery under procurement.					UNDP	GEF	GEF Grant	\$100,000.00	

<p>tested or certified for their compliance with the Stockholm Convention BAT/BEP</p> <p>Baseline (2015): 0</p> <p>Target (Y1:0, Y2:1, Y3:0, Y4:0):</p> <p>Result indicator 16: Amount of equipment or waste containing or contaminated by PCB disposed in an Environmental Sound Way</p> <p>Baseline (2015): Around 173 tons of equipment containing PCBs sent abroad for disposal from 2007 to 2009. Around 36 tons of PCB contaminated soil sent abroad or disposal</p> <p>Target (Y1:0, Y2:0, Y3:500 t of PCB containing equipment, Y4:200 t of PCB containing equipment and 200 t of PCB containing waste including soil):</p>	<p>Activity 3.3.2 Destruction /treatment of 700 tons of PCB contaminated equipment</p>					UNDP	GEF	GEF Grant	\$1,500,000.00
						MoSDT	EPCG	Co-financing	\$8,757,986.00
						KAP	KAP	Co-financing	\$7,271,840.00
	<p>3.3.3. Disposal / treatment of 200 t of PCB containing waste including contaminated soil</p>					UNDP	GEF	GEF Grant	\$400,000.00
<p>Output 4.1 Project's results sustained and replicated through proper M&E and Knowledge Management actions.</p> <p>Result indicator 17: Monitoring activities carried out</p> <p>Baseline (2015): N/A</p> <p>Target (Y1:yes, Y2:yes, Y3:yes, Y4: yes):</p> <p>Result indicator 18: Evaluation activities carried out</p> <p>Baseline (2015): 0</p>	<p>4.1.1. Inception activities carried out, project management structure implemented, KM system including project website established (to be completed in the 1st year of project implementation)</p>					MoSDT	GEF	GEF Grant	\$40,000.00
	<p>4.1.2. Project reporting and planning established and implemented</p>					UNDP	GEF	GEF Grant	\$50,350.00

<p>Target (Y1:0, Y2:yes, Y3:0, Y4: yes): Result indicator 19: Knowledge management system established and sustained Baseline (2015): 0 Target (Y1:KMS established Y2:KMS sustained, Y3:KMS sustained, Y4:KMS sustained):</p>	<p>4.1.3 Midterm Evaluation and auditing activities carried out.</p>						<p>UNDP</p>	<p>GEF</p>	<p>GEF Grant</p>	<p>\$60,000.00</p>
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Monitoring Plan: The Project Manager will collect results data according to the following monitoring plan.

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
<p>Project objective from the results framework:</p> <p>Comprehensive identification and disposal/treatment of PCB contaminated equipment and waste in the country</p>	<p>Indicator 1</p> <p>National environmentally sound management (ESM) system of PCB chemicals and waste drafted, and implemented by 2020</p>	<p>Updates to the PCB management framework adopted and implemented</p> <p>Skills and knowledge exists on PCB ESM management in the private/public sector owning electric equipment</p>	<p>Project/PSC/UNDP CO reports</p> <p>Workshop reports</p> <p>Published legislative updates</p>	<p>Annually</p> <p>Reported in DO tab of the GEF PIR</p>	<p>MoSDT; UNDP Country Office; Project office; Project consultants</p>	<p>Project progress reports/PIRs</p> <p>Consultant reports</p>	<p>Identified PCB contaminated equipment are under control and secured for disposal until technologies or service delivered by the project are available.</p> <p>Handling of PCB equipment and disposal activities are carried out in an environmentally safe way without any harm to the environment and the health.</p> <p>The public-private partnership established is effective and sustainable and will continue to bring economic and environmental benefit to the Montenegrin population after project closure.</p> <p>Potential PCB owners are willing to facilitate sampling and analysis of their equipment.</p> <p>The capacity of the country to carry out sampling and analysis of dielectric oil and waste for PCB quantification is large and reliable enough to timely</p>

							carry out sampling and analysis activities.
	Indicator 2 700 tons of pure PCBs and 200 tons of low-concentrated PCBs/related waste are safely managed and disposed of/decontaminated by the end of the project, thus reducing global and local environment from exposure to these hazardous wastes	National PCBs inventory updated and database is operational to monitor this equipment Sub-contracts placed for pure PCB disposal and decontamination of low-concentrated electric oil	Reports from private sector/laboratory reports PCB database Project progress report/UNDP CO reports	Annually/MTR/TE reports Reported in DO tab of the GEF PIR	MoSDT; UNDP Country Office; Project office; Project consultants	Project progress reports/PIRs GEF tracking tool at MTR/TE time	Identified PCB containing equipment and waste amount to at least 700+200 tons and is properly stored for treatment or disposal under the project. The technology or service for the disposal of PCB equipment and waste (within the country or abroad) will be selected and procured/rented in a cost-effective manner to stay within the project's budget and timing constraints. Disposal of 700+200 tons of PCB equipment or can be completed within project and budget constraints.
Project Outcome 1: Capacity strengthening on PCB management	Indicator 3: Number of operators successfully trained.	Measures the success of the training in term of training effectiveness and number of operators trained	PMU (for TORs) Training consultants, training service companies, trainees, trainers. Data collected through questionnaires, surveys and direct interviews.	Quarterly.	UNDP Project Management Unit	Pre and post training tests. Training Reports. Training materials. List of training attendees. Feedback questionnaire from the trainees.	Assumptions: Pre ad post training tests are duly carried out. Training reports are drafted. List of trainees is filled and signed. Risks: the above documents are not drafted / not made available.
	Indicator 4 Number of training session and workshops	Measures that the committed number of training sessions and workshops have been carried out	As above	Quarterly	UNDP Project Management Unit	List of workshop attendees. Workshop and training minutes and reports	Assumptions: Training minutes are duly drafted and signed. Risks: the above documents are not drafted / not made available
	Indicator 5 Number of guidance and procedural	Verifies that guidance procedural documents have	PMU (for TORs) International consultants and experts, MoSDT.	Quarterly	UNDP Project Management Unit	Draft and final guidance and procedural documents for PCB	Assumptions Guidance and procedural documents have been prepared and made available.

	<i>Documents completed</i>	<i>been drafted and are compliant with the Stockholm Convention.</i>	<i>Collection of reports and direct interview.</i>			<i>management. Meeting minutes.</i>	<i>Risks: time to achieve agreements on the content of guidance document too long</i>
	Indicator 6: <i>Gap analysis with special reference to enforcement needs completed</i>	<i>Verifies that the gap analysis of the Montenegrin PCB legislation has been carried out with special focus in enforcement issues.</i>	<i>(PMU for TORs) International consultants and experts, MoSDT. Collection of reports and direct interview.</i>	<i>Quarterly</i>	<i>UNDP Project Management Unit</i>	<i>Draft and final gap analysis report. Meeting minutes.</i>	<i>Assumptions: Gap analysis has been carried out with good quality and is available. Risks: Gap analysis not made available within the expected deadline.</i>
	Indicator 7: <i>Technical assistance delivered, number of sites inspected</i>	<i>Measures the number of site inspected under the project to verify compliance with PCB regulation and the amount and quality of technical assistance delivered</i>	<i>National authorities, national and international consultant. Collection of report, direct interviews.</i>	<i>Quarterly</i>	<i>UNDP Project Management Unit</i>	<i>Site inspection reports. Technical assistance reports.</i>	<i>Assumption: Site inspection report are duly filled. Risk: National authorities / inspected entities may be not willing to share information.</i>
Project Outcome 2: PCB Inventory, planning and establishment of public-private partnership	Indicator 8: <i>Preliminary survey carried out</i>	<i>Measures the level of successful completion of the preliminary survey</i>	<i>PMU (for TORs) Inventory service provider, national and international consultant. Collection of reports, direct interviews.</i>	<i>Annually</i>	<i>UNDP Project Management Unit</i>	<i>Draft and final preliminary survey and inventory reports. Sampling plans.</i>	<i>Assumption: The preliminary survey completed within the expected timeframe and made available. Risks: Survey reports incomplete / not made available</i>
	Indicator 9: <i>Number of equipment sampled and analyzed for PCB</i>	<i>Measures the number of equipment sampled and analyzed for PCB with reference to the expected target</i>	<i>PMU (for TORs) Inventory service provider, national and international consultant. Collection of reports, direct interview</i>	<i>Annually</i>	<i>UNDP Project Management Unit</i>	<i>Sampling plan. Draft and final inventory reports. Analytical certificates.</i>	<i>Assumption: The detailed inventory completed within the expected timeframe and made available. PCB sampling and analytical data properly collected. Risks: Inventory reports incomplete / not made available</i>
	Indicator 10: <i>Dynamic PCB inventory is established.</i>	<i>Verifies that the PCB inventory has been established and is functional</i>	<i>PMU (for TORs), IT service provider, national and international consultant. Examination of</i>	<i>Annually</i>	<i>UNDP Project Management Unit</i>	<i>PCB inventory data. PCB inventory online database</i>	<i>Assumption. The PCB inventory database has been placed in a website and made available.</i>

			<i>the software through accessing the website. Collection of reports, direct interview</i>				<i>Risks: Delay in completing the sampling and analysis. PCB inventory is not made available</i>
	Indicator 11: <i>PCB national plan is drafted and approved</i>	<i>Verifies that the PCB national plan has been drafted and adopted, measures its level of completeness</i>	<i>PMU. National authorities, national and international consultant. Collection of reports, direct interviews</i>	<i>Annually</i>	<i>UNDP Project Management Unit</i>	<i>Draft and final PCB national plan. Meeting minutes.</i>	<i>Assumption: National plan has been timely drafted and endorsed by the government. Risks: the approval of the national plan by the Government longer than expected.</i>
	Indicator 12: <i>National PCB management plan is reviewed for the first time based on inventory data</i>	<i>Verifies that the National PCB MP has been reviewed based in inventory data</i>	<i>PMU (for TORs), National authorities, national and international consultant. Collection of reports, direct interviews</i>	<i>Annually.</i>	<i>UNDP Project Management Unit</i>	<i>Draft and final review of the national plan based on updated inventory information.</i>	<i>Assumption: National plan has been timely amended and endorsed by the government. Risk: inventory data not available in time to upgrade the national plan, therefore the NP is not available</i>
	Indicator 13: <i>Public/private partnership on PCB management is established</i>	<i>Verifies that the public-private partnership is established</i>	<i>PMU. Representative partner of the newly established PPP. National consultant, interviews.</i>	<i>Annually</i>	<i>UNDP Project Management Unit</i>	<i>Meeting minutes. Legal documents related to the establishment of PPP on PCB management.</i>	<i>Assumption: public and private bodies established a PPP within project timeframe Risk: No PPP established within the expected timeframe, therefore relevant document are not made available.</i>
	Indicator 14: <i>Business and sustainability plan for the PPP is drafted and verified</i>	<i>Measures the level of completeness of the business and sustainability plan for the PPP</i>	<i>PMU. Representative partner of the newly established PPP. National consultant, interviews</i>	<i>Annually</i>	<i>UNDP Project Management Unit</i>	<i>Meeting minutes. Draft and final versions of the Business plan and of the sustainability plan,</i>	<i>Assumption: as above. Risk: no PPP established within project timeframe therefore relevant documents including business and sustainability plans are not available.</i>

Project Outcome 3: Environmentally sound management (ESM) of PCBs	Indicator 15 Capacity (tons) of upgraded storage facilities.	Measures the amount of storage capacity PCBs waste and equipment that	Contractors, PMUs (for TORs),	Quarterly in the first 2 years, then annually.	UNDP Project Management Unit	TOR for upgrading of storage facilities. Layout of storage facilities, site visits reports (before, during and after storage upgrading)	Assumptions: storage facilities identified and upgraded within project timeframe, reports made and TORs made available. Risks: storage facilities not upgraded or relevant documents not made available.
	Indicator 16 Technology or services is identified based on inventory data, assessed and procured	Verifies that technology or services for PCB disposal have been assessed, identified and procured in compliance with SC requirements, UNDP and GoM rules	PMU (for TORs). Collection of National and international consultant reports.	Annually, quarterly in the last 3 years.	UNDP Project Management Unit	Technology / disposal service assessment reports. Technical specifications and TORs for the procurement of PCB technology or services. Bidding documents	Assumptions: vendors committed to provide updated information on their technologies. Bidding documents and procurement completed within project timeframe. Risks: Bidding document / procurement not completed or made available within project timeframe.
	Indicator 17 Disposal technologies or services are tested or certified for their compliance with the Stockholm Convention BAT/BE	Verifies that the disposal technologies have been tested for their compliance with SC BAT/BEP or that the PCB disposal services are certified for the same.	PMU (for TORs). Collection of National and international consultant reports. Analytical laboratories. Direct interviews with vendors and consultants.	Quarterly	UNDP Project Management Unit	Technology testing technical plans. Technology testing reports. Site visit minutes during technology testing. Analytical certificates	Assumptions: Testing of PCB disposal technologies completed within project timeframe. Risks: Testing of PCB disposal technologies not completed within project timeframe, therefore relevant document are not made available
	Indicator 18 Amount of equipment or waste containing or contaminated by PCB disposed in an	Measures the amount of PCB waste and equipment, including contaminated soil, which have been treated or	PMU (for TORs and reports), international consultants, PPP operating the disposal technology, provider of disposal services. Direct interviews and collection of reports.	Quarterly	UNDP Project Management Unit	Hazardous waste manifests / certificate of storage, transportation and disposal of the amount of PCB waste treated-in compliance with Montenegro legislation. Site visit reports to	Assumptions: Information on PCB disposal made available throughout the whole disposal activities. Equipment disposed / treated properly tracked. Risks: data on PCB handling and disposal not properly collected during project implementation. Hazardous

	<i>Environmental Sound Way</i>	<i>disposed in an environmental sound way</i>				<i>storage and disposal facilities during operations. Analytical certificates,</i>	<i>waste manifest system poorly established.</i>
Project Outcome 4: Knowledge Management and M&E	Indicator 19: <i>Monitoring activities have been carried out</i>	<i>Measures whether project monitoring activities have been carried out and project management structures have been established.</i>	<i>Collection of minute and reports during inception and meetings of the PSC. Collection of project management report at UNDP or PMU offices. Direct interviews with persons in charge.</i>	<i>Quarterly</i>	<i>PMU, UNDP, Project Steering Committees.</i>	<i>Inception report, PIRs, APW and QPW, APR and QPR, meeting minutes</i>	<i>Assumptions: Key project management and monitoring steps carried out timely. Project started within expected deadline. Project Steering Committee and Project Management Unit established timely and working effectively. Risk: delay in project signature and starting. PSC and PMU not effective in the day to day management and monitoring of the project.</i>
	Indicator 20: <i>Evaluation activities have been carried out.</i>	<i>Measures whether MTE and TE have been properly carried out.</i>	<i>Independent consultants</i>	<i>After 2nd PIR submitted to GEF and after final PIR submitted</i>	<i>PMU, UNDP, Project Steering Committees.</i>	<i>Mid-term evaluation report, Terminal evaluation report.</i>	<i>Assumptions: Project activities carried out within the timeframe set. Independent evaluators and auditors will carry out their evaluation task timely, effectively and independently. Risks: delay in project activities and in carrying out evaluations. Mid-term evaluation reports and terminal evaluation reports not available.</i>
	Indicator 21: <i>Knowledge management system established and sustained</i>	<i>Measures whether the Knowledge Based System has been implemented.</i>	<i>Providers of web based services, PMU, UNDP</i>	<i>Annually</i>	<i>PMU, UNDP, Project Steering Committees.</i>	<i>Website, PCB information system.</i>	<i>Assumptions: Website and PCB information system, including PCB inventory, have been developed and are available. Risks: delay in carrying out knowledge management system, incompleteness of reporting</i>

Evaluation Plan:

Evaluation Title	Planned start date Month/year	Planned end date Month/year	Included in the Country Office Evaluation Plan	Budget for consultants	Other budget (i.e. travel, site visits etc...)	Budget for translation
Terminal Evaluation	September 2021	November 2021	Yes	USD 30,000	USD 0	USD 3,000
Total evaluation budget				USD 33,000		

Terms of reference for project personnel

Project Title	Comprehensive Environmentally Sound Management of PCBs in Montenegro
Consultancy Title	Project Manager of the Project Management Unit
Contractual Modality	Full time – one year renewable up to 5 years.
Duty Station	Podgorica with travel in Montenegro
Supervision	PSC and UNDP

Duties and responsibilities

Overall, the PM will be responsible for the day-to-day running of the project, including overall coordination, planning, management, implementation, monitoring & evaluation and reporting of all project activities:

Prepare and update project work plans, and submits these to the PSC and UNDP for clearance.

Participate in quarterly work planning and progress reporting meetings with the PSC, PMU, and UNDP;

Ensure that all agreements with implementing agencies are prepared, negotiated and agreed upon.

Prepare TORs for key inputs (i.e. personnel, sub-contracts, training, and procurement) and submits these to the PSC and UNDP for clearance, and administers the mobilization of such inputs.

With respect to external project implementing agencies/ sub-contractors:

- a. ensuring that these agencies mobilize and deliver the inputs in accordance with their letters of agreement or contracts, and
- b. providing overall supervision and/or coordination of their work to ensure the production of the expected outputs.

Assume direct responsibility for managing the project budget by ensuring that:

- a. project funds are made available when needed, and are disbursed properly,
- b. expenditures are in accordance with the project document and/or existing project work plan,
- c. accounting records and supporting documents are properly kept,
- d. required financial reports are prepared,
- e. financial operations are transparent and financial procedures/regulations for DIM projects are properly applied; and

f. be ready to stand up to audits at any time.

Assume direct responsibility for managing the physical resources (e.g. vehicles, office equipment, and furniture) provided to the project by UNDP.

Supervise the project staff and local or international short-term experts/consultants working for the project.

Prepare project progress reports of various types and the Final Project Report as scheduled, and organizes review meetings and evaluation missions in coordination with UNDP.

Report regularly to and keeps the PSC and UNDP CO up-to-date on project progress and problems.

Required Qualifications

University degree (post-graduate degree would be considered as an asset) in environment management, economy, management, chemicals or related fields;

Knowledge of Result-based management and at least 5 years of experience in project management and implementation;

Strong analytical skills, good inter-personal and team building skills – Leading skills;

Full time availability for project management duties;

Working level of English language is an absolute necessity;

Familiarity with technical assistance projects and UN/GEF programme on POPs and PCBs disposal is an asset.

Project Title	Comprehensive Environmentally Sound Management of PCBs in Montenegro
Consultancy Title	Administrative / Finance Assistant
Contractual Modality	Full time – one year renewable up to 5 years.
Duty Station	Podgorica with travel in Montenegro
Supervision	PM and UNDP

The Administrative/Finance Assistant is responsible for all the administrative and accounting matters under the Project. Under direct supervision of the Project Managers, the incumbent will:

- Maintain administrative files relevant to the Projects;
- Maintain day-to-day communication with PMU regarding the Projects' administration matters: procurement, human resources and finance matters; provide administrative support regarding recruitment of experts and procurement of goods and services under the Projects;
- Provide support to procurement processes related to the Projects' implementation: provide inputs for preparation of procurement plans for the office; provide support to organization of procurement processes including preparation of tender documents, receipts of quotations, bids or proposals, and their preliminary evaluation;
- Perform regular financial and administrative duties necessary for the successful and timely Projects' implementation:
 - Enter daily transactions in Atlas system (vouchers, requisitions, etc.);
 - Keep track of all transactions in a budget notebook;
 - Perform regular budget revisions;
 - Provide regular delivery estimation and monthly expense estimation to the Finance Unit; provide regular reporting regarding the Projects' expenditures;
 - Prepare periodic Projects' asset/inventory reports;
 - Ensure completeness of documentation, check accuracy of calculation for all financial transactions related to the Projects, and prepare/process financial transactions in the system in accordance with UNDP rules and procedures.
- Draft routine correspondence, facsimile, memoranda and reports from oral instructions, previous correspondence or other available information sources, in accordance with the standard office procedures, and ensure appropriate follow-up; write minutes from the meetings; provide translation/interpretation services into English and vice versa when needed.
- Provide logistical support to the Projects and ensure provision of adequate secretarial and interpretation facilities (organization of Projects' events, meetings and study tours, arrangement of shipments, project vehicles maintenance, conference facilities arrangements, visits of experts, timely processed daily subsistence allowances, etc.).

A. Competencies:

Corporate Competencies:

- Demonstrates commitment to UNDP's mission, vision and values;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability.

Functional Competencies:

Knowledge Management and Learning

- Shares knowledge and experience;
- Actively works towards continuing personal learning, acts on learning plan and applies newly acquired skills.

Development and Operational Effectiveness

- Ability to perform a variety of standard tasks related to Results Management, including screening and collecting of programme/projects documentation, projects data entering, preparation of revisions, filling, provision of information;
- Ability to provide input to business processes re-engineering, implementation of new systems.

Leadership and Self-Management

- Focuses on result for the client and responds positively to feedback;
- Consistently approaches work with energy and a positive, constructive attitude;
- Remains calm, in control and good humored even under pressure.

B. QUALIFICATIONS AND EXPERIENCE:

- Secondary Education; University Degree in Economy, Management or related sciences is desirable, but it is not the requirement;
- Minimum 4 years of relevant administrative experience at the national or international level;
- Experience in office management, preferably with an international organization;
- Experience in UN/UNDP or other international organization financed projects will be an advance;
- Excellent working knowledge of written and spoken English language;
- Excellent computer skills; experience in operating in web management systems.
- Excellent inter-personal and communication skills;
- Excellent organizational skills with developed attention to detail;

- Ability to work independently and in a team.

Project Title	Comprehensive Environmentally Sound Management of PCBs in Montenegro
Title	Technical Officer of the Project Management Unit
Contractual Modality	Full time – one year renewable up to 5 years.
Duty Station	Podgorica with travel within Montenegro
Supervision	PMU Project Manager

Duties and responsibilities

This assignment is for a full time PMU Technical Officer who will be recruited with the objective to provide PMU with technical assistance and advice on all the activities to be carried out under the Project, to help on routine technical coordination and supervision and to prepare or assist in the preparation of relevant project documentation and training materials. The TO will work under overall supervision of Project Manager.

The Technical Officer will, in general, be responsible for:

1. Assisting PMU in drafting the inception report of the project;
2. Assisting PMU in overall technical management and coordination of all project activities;
3. Technical support to PMU on the supervision of all the technical activities related to institutional strengthening, policy framework, POPs and PTS cleanup plans, project monitoring and evaluation, and replication program development;
4. Technical support to PMU in participating in meetings with UNDP and the PSC;
5. Technical support to PMU in coordinating the work of international consultants;
6. Providing comments on project implementation progress at different stages;
7. Assisting PMU in drafting Terms of References for all the services and equipment to be procured under the project;
8. Assisting PMU in drafting technical reports and management reports like the Project Implementation Reports, (PIR), Annual and Quarterly Progress Reports (APR, QPR) and Annual and Quarterly Workplans (AWP, QWP);
9. Assist PMU in drafting minutes of the meetings with special reference to the technical part;
10. Perform site visits and inspections at project implementation sites during various implementation stages (site visits and inspection at EPCG, KAP, facilities for the storage of PCB, transformer substations, industrial sites, trainings)
11. Provide comments on the reports related to the technical activities and review the related plan under the Project to ensure their technical feasibility and most appropriate measures and actions taken.

12. Supervise the work of service provider to guarantee the quality and consistency of the reports and deliverables, and help them finalize reports before their dissemination to concerned parties;
13. Timely and proactively provide recommendation for the improvement of all project activities.

Duration of this assignment, duty station and expected places of travel

This is a full time assignment of the duration of one year. The contract may be renewed yearly for maximum 4 years (the duration of the Project) on the basis of the satisfactory evaluation of the performance of the work carried out by the Technical Officer in the preceding year.

The Technical Officer will work at the PMU office in the UN ECO-House in Podgorica, Montenegro.

The Technical Officer is expected to travel within the country at the implementation sites, to supervise project implementation activities. The exact number of travels will be specified in the course of project implementation based on project needs. Travel and subsistence during travel will be paid by the project.

Deliverables

The following deliverables will be submitted to the PMU by the Technical Officer:

- Short quarterly work-plan of the activities to be carried out under this assignment;
- Draft Inception report of the Project;
- Quarterly reports of the activities carried out under this assignment (three reports per year);
- Comments reports and supervision reports as relevant for the different project activities;
- Draft TORs for the required project activities;
- Draft PIR, APR, QPR, AWP, QWP
- Mission report and debriefing for the field visit;
- Meeting minutes, with special reference to the technical parts.

Required qualifications

The Technical Officer shall have as a minimum the following qualifications:

- Advanced degree (Master of Science as a minimum) in Engineering, Industrial Chemistry, Environmental Science, Biology.
- Sound experience on POPs and Stockholm Convention,
- At least 5-year experience in the field of chemical risk assessment, or in projects related to the implementation of Stockholm Convention on POPs, or in the management of hazardous chemicals and waste;
- Previous experience as supervisor / Technical Officer in projects related to environmental protection or hazardous waste management;
- Previous experience in the implementation or supervision of projects related to the management and disposal of POPs or PCBs is an asset.

In addition, the Technical Officer should be independent and should not have any personal interest related to project activities which may hinder its independency and which may distort or bias his performance.

