Strengthening national capacity to manage industrial POPs within the framework of national and international guidelines on chemical substances and hazardous waste management

Part I: Project Information

GEF ID
10202

Project Type
FSP

Type of Trust Fund
GET

Project Title
Strengthening national capacity to manage industrial POPs within the framework of national and international guidelines on chemical substances and hazardous waste management

Countries
Colombia,

Agency(ies)
UNDP,

Other Executing Partner(s)

<table>
<thead>
<tr>
<th>Other Executing Partner(s)</th>
<th>Executing Partner Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Environment and Sustainable Development</td>
<td>Government</td>
</tr>
</tbody>
</table>
**GEF Focal Area**
Chemicals and Waste

**Taxonomy**

**Rio Markers**
**Climate Change Mitigation**
Climate Change Mitigation 1

**Climate Change Adaptation**
Climate Change Adaptation 0

**Duration**
60 in Months

**Agency Fee($)**
492,765

**Submission Date**
4/2/2019
### A. Indicative Focal/Non-Focal Area Elements

<table>
<thead>
<tr>
<th>Programming Directions</th>
<th>Trust Fund</th>
<th>GEF Amount ($)</th>
<th>Co-Fin Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CW-1-1</td>
<td>GET</td>
<td>5,187,000</td>
<td>25,900,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Project Cost ($)</strong></td>
<td><strong>5,187,000</strong></td>
</tr>
</tbody>
</table>
### B. Indicative Project description summary

**Project Objective**
To reduce the releases of industrial POPs and other Hazardous Chemicals, such as PCB, SCCP, PFOS and Brominated POPs, in an integral approach to promote compliance of Stockholm Conventions, in Colombia

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Financing Type</th>
<th>Project Outcomes</th>
<th>Project Outputs</th>
<th>Trust Fund</th>
<th>GEF Amount($)</th>
<th>Co-Fin Amount($)</th>
</tr>
</thead>
</table>
| Component 1: PCB Management and Elimination in Priority Sectors | Technical Assistance | Power sector, state entities and individual PCB holders capacitated to meet 2025 PCB phase-out deadline | 1.1 Identify, label and classify 6,000 electrical transformers owned by individuals (located in poor rural and urban areas) and set-up financial and technical support programmes for disposal  
1.2 Support the disposal of 1,500 tons of equipment and waste contaminated with PCBs  
1.3 Technology / approaches established to extract PCBs from porous materials/waste for ultimate disposal through existing installed capacity  
1.4 Assessment undertaken to identify the extent/amount of PCBs used in open applications and an elimination plan prepared | GET | 1,740,000 | 11,800,000 |
### Component 2: Identification of feasible alternatives to Industrial POPs and improved management of wastes containing such POPs

<table>
<thead>
<tr>
<th>Technical Assistance</th>
<th>National capacity in place to identify Industrial POPs (in products) and suitable alternatives, in support of the phase-out of industrial POPs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.1 National capacity built to conduct an in-depth inventory of Industrial POPs contained in products and wastes</td>
</tr>
<tr>
<td></td>
<td>2.2 Feasible alternatives recommended by Stockholm Convention to Industrial POPs promoted</td>
</tr>
<tr>
<td></td>
<td>2.3 An elimination plan for products and wastes containing Industrial POPs developed</td>
</tr>
<tr>
<td></td>
<td>2.4 Industrial POPs containing waste treated</td>
</tr>
</tbody>
</table>

### Component 3: Development of National Capacity to avoid the use of Industrial POPs and promote the use of alternative substances, as established by the Stockholm Convention

<table>
<thead>
<tr>
<th>Technical Assistance</th>
<th>National capacity developed to replace industrial POPs by using alternative substances as established by the Stockholm Convention.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.1 Industrial Chemicals Registry established (covering import, trade, production and use of industrial POPs and their substitutes)</td>
</tr>
<tr>
<td></td>
<td>3.2 Four (4) demonstration Projects carried out to introduce four (4) substances identified as alternatives to Industrial POPs (linked to Output 2.2)</td>
</tr>
<tr>
<td></td>
<td>3.3 Capacity for GHS implementation built and GHS implementation completed for four (4) potential alternatives to industrial POPs (linked to Output 2.2 and 3.2)</td>
</tr>
<tr>
<td></td>
<td>3.4 PRTR established</td>
</tr>
<tr>
<td></td>
<td>3.5 Standard / guidelines developed on POPs limits in wastes and the sound storage, collection and final disposal of POPs containing wastes</td>
</tr>
</tbody>
</table>

---

Component 2: Identification of feasible alternatives to Industrial POPs and improved management of wastes containing such POPs

Technical Assistance

National capacity in place to identify Industrial POPs (in products) and suitable alternatives, in support of the phase-out of industrial POPs

2.1 National capacity built to conduct an in-depth inventory of Industrial POPs contained in products and wastes

2.2 Feasible alternatives recommended by Stockholm Convention to Industrial POPs promoted

2.3 An elimination plan for products and wastes containing Industrial POPs developed

2.4 Industrial POPs containing waste treated

---

Component 3: Development of National Capacity to avoid the use of Industrial POPs and promote the use of alternative substances, as established by the Stockholm Convention

Technical Assistance

National capacity developed to replace industrial POPs by using alternative substances as established by the Stockholm Convention.

3.1 Industrial Chemicals Registry established (covering import, trade, production and use of industrial POPs and their substitutes)

3.2 Four (4) demonstration Projects carried out to introduce four (4) substances identified as alternatives to Industrial POPs (linked to Output 2.2)

3.3 Capacity for GHS implementation built and GHS implementation completed for four (4) potential alternatives to industrial POPs (linked to Output 2.2 and 3.2)

3.4 PRTR established

3.5 Standard / guidelines developed on POPs limits in wastes and the sound storage, collection and final disposal of POPs containing wastes

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GET 1,750,000 8,000,000

GET 950,000 3,900,000
Component 4: Raising awareness, ensuring project monitoring and evaluation and collecting and disseminating project results and experiences on best practices for the LCM of Industrial Chemicals and POPs

<table>
<thead>
<tr>
<th>Technical Assistance</th>
<th>4.1 Awareness of project stakeholders raised on the management of Industrial (POPs) Chemicals, related wastes and safer alternatives</th>
<th>4.1.1 Awareness raised of 7,000 people (3,640 female and 3,360 male) on the sound management of Industrial (POPs) chemicals and related wastes through tailored training and awareness raising activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2. Project results sustained and replicated</td>
<td></td>
<td>4.2.1 Results, lessons-learned and best practices captured in knowledge products and disseminated at national, regional and global level to support replication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.2.2 M&amp;E and adaptive management applied in response to needs and Mid-Term Evaluation findings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Management Cost (PMC)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>247,000</td>
</tr>
</tbody>
</table>

| Sub Total($)                  | 247,000 | 250,000 |
|-------------------------------|--|
| GET                           | 500,000 | 1,950,000 |

| Sub Total ($)                  | 4,940,000 | 25,650,000 |
|--------------------------------|--|
| GET                           | 247,000 | 250,000 |

| Sub Total($)                  | 247,000 | 250,000 |
|--------------------------------|--|
| Total Project Cost($)         | 5,187,000 | 25,900,000 |
C. Indicative sources of Co-financing for the Project by name and by type

<table>
<thead>
<tr>
<th>Sources of Co-financing</th>
<th>Name of Co-financier</th>
<th>Type of Co-financing</th>
<th>Investment Mobilized</th>
<th>Amount($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Sector</td>
<td>Colombia electricity sector companies</td>
<td>Grant</td>
<td>Investment mobilized</td>
<td>11,800,000</td>
</tr>
<tr>
<td>Private Sector</td>
<td>Chemical Industry</td>
<td>Grant</td>
<td>Investment mobilized</td>
<td>3,900,000</td>
</tr>
<tr>
<td>Private Sector</td>
<td>Facilities for the management of WEEE</td>
<td>Grant</td>
<td>Investment mobilized</td>
<td>8,000,000</td>
</tr>
<tr>
<td>Government</td>
<td>Ministry of Environment and Sustainable Development</td>
<td>In-kind</td>
<td>Recurrent expenditures</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Private Sector</td>
<td>Electronics Industry</td>
<td>Grant</td>
<td>Investment mobilized</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

Total Project Cost($) 25,900,000

**Describe how any "Investment Mobilized" was identified**
The amounts listed under Investment mobilized are indicative figures based on preliminary discussions with the co-financiers. The final amounts will be confirmed during the PPG phase. Investment mobilized makes reference to additional investment that the private sector companies would have to do as a result of the project and can therefore not be considered recurrent expenditures. Recurrent expenditures have been listed under the Government in-kind contributions. Whereas the project will receive real and tangible support from the Ministry of Environment and Sustainable Development, the Human Resources (as well as other resources) will be part of the annual budget that is being allocated to the Ministry. Therefore, it has been listed as Recurrent expenditure. Under the PMC in the previous section, it should be noted that up to 105,000 US$ can be requested for DPC.
D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

<table>
<thead>
<tr>
<th>Agency</th>
<th>Trust Fund</th>
<th>Country</th>
<th>Focal Area</th>
<th>Programming of Funds</th>
<th>Amount($)</th>
<th>Fee($)</th>
<th>Total($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDP</td>
<td>GET</td>
<td>Colombia</td>
<td>Chemicals and Waste</td>
<td>POPs</td>
<td>5,187,000</td>
<td>492,765</td>
<td>5,679,765</td>
</tr>
</tbody>
</table>

Total GEF Resources($)  

<table>
<thead>
<tr>
<th>Amount($)</th>
<th>Fee($)</th>
<th>Total($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,187,000</td>
<td>492,765</td>
<td>5,679,765</td>
</tr>
</tbody>
</table>
### E. Project Preparation Grant (PPG)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Trust Fund</th>
<th>Country</th>
<th>Focal Area</th>
<th>Programming of Funds</th>
<th>Amount($)</th>
<th>Fee($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDP</td>
<td>GET</td>
<td>Colombia</td>
<td>Chemicals and Waste</td>
<td>POPs</td>
<td>150,000</td>
<td>14,250</td>
</tr>
</tbody>
</table>

**Total Project Costs($)**

<table>
<thead>
<tr>
<th>Amount($)</th>
<th>Fee($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>150,000</td>
<td>14,250</td>
</tr>
</tbody>
</table>
## Core Indicators

### Indicator 9 Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)

<table>
<thead>
<tr>
<th>POPs type</th>
<th>Metric Tons (Expected at PIF)</th>
<th>Metric Tons (Expected at CEO Endorsement)</th>
<th>Metric Tons (Achieved at MTR)</th>
<th>Metric Tons (Achieved at TE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polychlorinated biphenyls (PCB)</td>
<td>480.00</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Short-chain chlorinated paraffins (SCCPs)</td>
<td>10.00</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyle fluoride</td>
<td>1.00</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Hexabromobiphenyl</td>
<td>0.70</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)
Indicator 9.2 Quantity of mercury reduced (metric tons)

<table>
<thead>
<tr>
<th>Metric Tons (Expected at PIF)</th>
<th>Metric Tons (Expected at CEO Endorsement)</th>
<th>Metric Tons (Achieved at MTR)</th>
<th>Metric Tons (Achieved at TE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicator 9.3 Hydrochlorofluorocarbons (HCFC) Reduced/Phased out (metric tons)

<table>
<thead>
<tr>
<th>Metric Tons (Expected at PIF)</th>
<th>Metric Tons (Expected at CEO Endorsement)</th>
<th>Metric Tons (Achieved at MTR)</th>
<th>Metric Tons (Achieved at TE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

<table>
<thead>
<tr>
<th>Number (Expected at PIF)</th>
<th>Number (Expected at CEO Endorsement)</th>
<th>Number (Achieved at MTR)</th>
<th>Number (Achieved at TE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)
Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided.

### Indicator 9.6 Quantity of POPs/Mercury containing materials and products directly avoided

<table>
<thead>
<tr>
<th>Metric Tons (Expected at PIF)</th>
<th>Metric Tons (Expected at CEO Endorsement)</th>
<th>Metric Tons (Achieved at MTR)</th>
<th>Metric Tons (Achieved at TE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,500.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number (Expected at PIF)</th>
<th>Number (Expected at CEO Endorsement)</th>
<th>Number (Achieved at MTR)</th>
<th>Number (Achieved at TE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>3,640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3,360</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
2,000 tons of waste containing Brominated POPs (700 kg of Brominated POPs). This target was included under indicator 9. The methodology for the calculation of the pure PCB: National PCB inventory was used; based on the information collected about equipment characteristics (i.e. power, weight, PCB content, etc.), the ratio solid-liquid was determined and the average content of PCB calculated. So, the estimated ratio solid-liquid is 68%-32% and the average PCB concentration is 21,250 ppm. According to the inventory, for the 1,500 tons of equipment that will be eliminated under the project it is estimated that the amount of oil to be treated will be 480 tons. The Stockholm Convention establishes that equipment and oil with levels of contamination above 50 ppm must be taken out of use and disposed of, and the project aims at exactly that. During the PPG phase, further review of the methodology and baseline information will be conducted to improve the estimate of pure PCB.
Part II. Project Justification

1a. Project Description

1) THE GLOBAL ENVIRONMENTAL AND/OR ADAPTATION PROBLEMS, ROOT CAUSES AND BARRIERS THAT NEED TO BE ADDRESSED (SYSTEMS DESCRIPTION)

Although the country has advanced towards the implementation of the Stockholm and Minimata Conventions (see section 2), it still faces certain difficulties and challenges, especially related to the elimination of PCBs and the management, disposal/treatment and phase-out of industrial POPs. POPs and mercury related challenges listed below require to be addressed to ensure that environmental and human exposure to these chemicals is further minimized.

PCBs

Since 1998, 2,722 tons of electrical equipment and waste containing PCBs have been eliminated. Electrical power companies currently still owe an estimated additional 3,000 tonnes of PCBs that require elimination. As a result of the UNDP-GEF Project (GEF-ID 4417) "Development of National Capacity for the Environmentally Sound Management and Disposal of PCBs" implemented in the period 2013 – 2018, Colombia disposed of 1,544 tons of PCB, representing 56% of the total PCB disposal achieved by Colombia during the last 20 years. As a result of the GEF project, and thanks to investments from national companies, capacity at national level for PCB elimination has been established. The country has at its disposal 3 fully operational treatment facilities, 2 with oil declorination processes and 1 with a process to clean metal surfaces. Because of the capacity in place, the electrical power companies, industries and other companies are willing to cover the costs to identify, label and dispose of the PCB equipment and wastes they own.

The main challenge faced by Colombia in order to meet the 2028 deadline are the approximately 60,000 electrical equipment units owned by individuals located in urban and rural settings. These units have not been included in an inventory and have not been classified on the basis of PCB content. A conservative estimation is that approximately 2% of these units are expected to be contaminated with PCBs, which corresponds to about 1,200 equipment units, equivalent to 600 tonnes of PCBs wastes. Some of the equipment owners do not have the technical and financial capacity to sample, label and eliminate the equipment containing PCBs, and most of them are located in socially deprived areas in major cities (Bogota, Medellin, Cali and Cartagena) or in some of the rural areas with the highest poverty levels. As these equipment owners do not have the financial resources for proper PCB elimination, the risk exists that these PCBs will ultimately be released into the environment.
Additional challenges faced by Colombia with respect to the elimination of PCBs include i) the absence of a technical treatment solution for the elimination of types of PCB wastes that are generated during the process of disassembling PCB containing equipment (i.e. porous wastes such as wood, textiles or waste paper), and ii) absence of solutions to address PCB used in open applications, which are currently resulting in environmental exposure.

Furthermore, the Terminal Evaluation (TE) of the GEF-UNDP Project "Development of National Capacity for the Environmentally Sound Management and Disposal of PCBs" states the following: "In conclusion, the overall results of the Project, according to how they were proposed in the PRODOC, are considered **Highly Satisfactory**, mainly in achieving two key outcomes with a medium term impact as well as demonstrating that the most important outcomes were obtained satisfactorily. First, the preparation of guidelines and technical guides for PCBs management (grouped in the Manual) and their respective wide dissemination and adoption by the electricity sector (through training, of more than 2,000 people). Secondly, the development of a national infrastructure for the chemical elimination of PCBs, besides the destruction of 1,372 tons of materials with PCBs (almost 128% over the established target of 600 tons) and the beginning of the Resolution 0222 implementation (and its modification, Resolution 1741) by the electricity companies; additionally, the global co-financing provided was greater in approximately 100% than originally committed in the Project Document, as a tangible demonstration of the project's action and its internalization by the electricity companies and the country's authorities."

The TE indicates that the activities included in the first project were implemented successfully. However, there are still some areas that will require additional external assistance. The following is stated: "Specific attention will be required to solve PCBs elimination of small holders, mainly natural persons and public organizations (—terceros), such as municipalities, public water supply organizations, public hospitals, schools, mainly, some of them classified as sensitive sites (that was not part of the planning in the project design and therefore does not appear as an evaluable activity, however it is a problem that will undoubtedly appear in the future); a ratification of the above can be seen in the fact that neither Resolution 0222 nor the corresponding update Resolution 1741 establishes a reference to this matter."

The activities proposed under the component for PCB will put special attention to the group mentioned above (terceros or sensitive sites). This group will not be able to comply with its obligations under the Stockholm Convention without external assistance.

The second challenge is related to the implementation of Resolution 0222 and the corresponding update Resolution 1741 as it establishes the timeline for the implementation, to comply with the timeline is vital that small holders (terceros), besides the electrical companies, comply with the disposal goals established in those regulations and the convention. It is critical to plan in advance to disposal activities properly in country (spread management and disposal out over time) in order to assure that sufficient disposal capacity is in place when the demand from destruction comes.

The TE also identified that the issue of "enforcement" had not been addressed in the project 4417. It also stated that "In order to improve surveillance, it is noted that coordination between regional environmental authorities and the MADS should be closer". This recommendation has also been included in the project design of the current PCB component.
The PCB component of this project will assist Colombia with the planning of the management and disposal of remaining stocks of PCB contaminated equipment in the country and would put Colombia well on track to comply with its obligations under the Stockholm Convention on PCBs for the years 2025 and 2028. The country would not require additional assistance from the GEF for PCB management and disposal in the future.

Open applications of POPs

Environmental and human exposure to PCBs associated with electrical equipment is a major concern, however attention must also be paid to open applications of others POPs (including PCBs and Short-Chain Chlorinated Paraffins - SCCPs). For example, POPs are often used as additives in materials used in the construction of pipelines, ports, airports, military facilities, among others. An inventory of open applications of POPs in order to identify where they are being used, their concentration and potential exposure levels in Colombia would be an essential step in order to prepare and establish an elimination plan.

Industrial POPs

One of the main challenges that Colombia is currently facing with respect to POPs is the lack of capacity to control the import, trade, production and use of Industrial POPs listed under the Stockholm Convention. Of particular concern to the country are Short-chain Chlorinated Paraffins (SCCPs), Chlorinated Naphthalenes, Perfluorooctanesulfonic Acid (PFOS), PBDEs, PBBs and HBCD.

The concern is mostly related to the fact that the country lacks the information to determine the amount of these industrial POPs that have entered (or are entering) the country (through imports), the industries that currently use them or have used them in the past (trading, production and consumption), and the raw materials, articles, products and wastes that contain them. Furthermore the country is concerned about population exposure and the impact on the environment from these Industrial POPs. At the moment the country does not dispose of an import, commercialization and use registry for chemical substances used in industrial processes, the analytical capacity to identify and/or monitor these Industrial POPs, nor the capability to destroy materials, products or wastes containing them.

Additionally, there is a need to develop the country's capacity to phase-out Industrial POPs and promote the use of feasible alternatives; hence, capacity needs to be build to conduct exposure analyses and risk assessments for alternative substances to Industrial POPs and introducing changes to production processes where required. This issue was identified during the development of the NIP update that was published in 2017 and this project aims at implementing the recommendations that were identified in the NIP update.

Sound Management of Chemicals

In addition to “Industrial POPs” Colombia faces challenges with controlling the import, trade, production and use of chemical substances for its industry. The country's main challenge is related to a lack of information on the amounts used, applications, population exposure and the impact on the environment of industrial chemical substances. As such there is an urgent need to establish and develop a registry on the import, trade, production and use of industrial
chemical substances, as well as the establishment of a system for the assessment and management of risks related to industrial chemical substances. Particular emphasis should be placed on the assessment and management of alternative chemical substances to POPs and mercury.

2) THE BASELINE SCENARIO AND ANY ASSOCIATED BASELINE PROJECTS

Sound Management of Chemicals

The Government of Colombia issued a Policy on the Risk Management of Chemical Substances in 2016. The policy has the following objectives:

§ Establish technical and regulatory elements for risk management associated with the use of chemical substances for industrial use;
§ Establish technical and regulatory elements to prevent major accidents associated with the use of chemical substances;
§ Develop cross-cutting instruments to strengthen the institutional, financial and legal capacity for risk management associated with the use of chemical substances for industrial use and the prevention of major accidents.

The policy set out by the country is in line with chemicals related Multilateral Environmental Agreements (MEAs) such as the Stockholm Convention on Persistent Organic Pollutants (POPs); the Minamata Convention on Mercury; the Strategic Approach to International Chemicals Management (SAICM); the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade; the Montreal Protocol and the Vienna Convention for the Protection of the Ozone Layer; the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the Paris Agreement recently adopted within the framework of the same convention.

Given the shortfalls in the control of the import, commercialization, production and use of chemical substances in Colombia's industry, especially the lack of information about amounts used, applications, population exposure and the impact on the environment, the National Government elaborated a regulation on the comprehensive management of industrial chemical substances and other provisions. This regulation is currently under consultation by the World Trade Organization (WTO). The draft regulation establishes that, as of its publication date, a group of chemical substances used by industry or a group of chemicals used to manufacture certain products, require to be evaluated and requires programmes to reduce and manage environmental risks. Furthermore, the regulation stipulates the establishment of an import, commercialization and use registry for certain chemical substances used in industrial processes.

Through decree 1496 (August 6th, 2018), Colombia adopted the Globally Harmonized System of Classification and Labeling of Chemical Products (GHS). In addition, the Ministry of Environment and Sustainable Development published five (5) documents on this topic[1]:

§ “Analysis of the situation and gaps in the Globally Harmonized System of Classification and Labeling of Chemical Products (GHS) in Colombia”
§ "National strategy for the implementation of the Globally Harmonized System of Classification and Labeling of Chemical Products (GHS) in Colombia (2016 – 2020)"

§ "Hazards classification guide based on the criteria of the Globally Harmonized System of Classification and Labeling of Chemical Products (GHS)"

§ "Hazards communication guide based on the criteria of the Globally Harmonized System of Classification and Labeling of Chemical Products (GHS)"

§ "Intelligibility Test of the Globally Harmonized System of Classification and Labeling of Chemical Products (GHS)"

In line with Colombia's Policy on the Risk Management of Chemical Substances, which aims to meet international commitments and guidelines related to chemical substances, the Ministry of Environment and Sustainable Development is setting up a Pollutant Release and Transfer Register (PRTR). Currently, the Ministry is developing the PRTR’s IT platform and is establishing the list of substances to be included in the PRTR in coordination with the Ministry of Health and Social Protection, the Colombian Agricultural Institute and the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) which will manage and operate the IT platform and issue required reporting.

**PCBs contained in electrical equipment - Baseline Scenario & Baseline Projects**

Since 1998, companies from the electric power industry (private utility companies), owning approximately 90% of the equipment that might potentially contain PCBs and which own approximately 450,000 units, have undertaken activities to provide information to the National PCB Inventory (incl. location, weight, liquid content (kg), PCB content, manufacturer, country of origin, year of manufacturing) and other data required by the national PCB regulation. To date, up to 30% of this equipment has been tested for PCB content and has been labelled.

The table below provides an overview of the status of the equipment that contains dielectric oil, which is listed in the national electrical system and which, according to the regulations, must be reported in the national PCB inventory.

Table 1: Equipment (as December 31st, 2016)
<table>
<thead>
<tr>
<th>Classification according to PCB content</th>
<th>Status of Equipment</th>
<th>No. of equipment units</th>
<th>Total mass of equipment [tons]</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP 1: Equipment containing more than 10% (100,000 ppm) of PCBs</td>
<td>In Service</td>
<td>562</td>
<td>721</td>
</tr>
<tr>
<td></td>
<td>Out of Service</td>
<td>68</td>
<td>29</td>
</tr>
<tr>
<td>GROUP 2: Equipment containing more than 0.05% (500 ppm) of PCBs</td>
<td>In Service</td>
<td>42</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>Out of Service</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>GROUP 3: Equipment containing more than 0.005% (50 ppm) of PCBs</td>
<td>In Service</td>
<td>412</td>
<td>373</td>
</tr>
<tr>
<td></td>
<td>Out of Service</td>
<td>58</td>
<td>57</td>
</tr>
<tr>
<td>Total equipment tested and found to be contaminated</td>
<td>In Service</td>
<td>1,106</td>
<td>1,218</td>
</tr>
<tr>
<td></td>
<td>Out of Service</td>
<td>136</td>
<td>68</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>1,242</td>
<td>1,286</td>
</tr>
<tr>
<td>Equipment that has not been tested for PCBs</td>
<td>In Service</td>
<td>255,806</td>
<td>124,253</td>
</tr>
<tr>
<td></td>
<td>Out of Service</td>
<td>2,068</td>
<td>488</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>257,874</td>
<td>124,741</td>
</tr>
</tbody>
</table>

Out of the total number of tested equipment, 1,286 tons (less than 2%) has been indicated to be contaminated with PCBs and therefore needs to be eliminated/disposed of in an environmentally sound manner.

In order to estimate the number of electrical equipment units (those included in the National Inventory) that might be contaminated with PCBs, a conservative percentage of 2% has been assumed. Based on this assumption, of the 257,874 units that have not yet been tested, approximately 5,200 units might be found to be contaminated (equivalent to 2,500 tons). Pursuant to the national PCB Elimination Plan these units would have to be eliminated by 2028 by the owners of the equipment (mainly the electric power and industry sector).
In addition to the equipment owned by companies from the electric power industry, approximately 60,000 equipment units have not yet been included in the National PCB Inventory, nor have they been analyzed/tested for PCB content. These are mainly transformers owned by people in urban or rural areas who do not have the technical and financial capacity that electric power companies have, to label, classify and decommission equipment containing PCBs. Ultimately the main risk is that the potentially PCB contaminated oil contained in these transformers might be drained and not properly disposed of, resulting in PCBs being released into the environment.

It is assumed that 2% of these non-registered units will be found to be contaminated, which corresponds to ~1,200 units and ~ 600 tons of contaminated equipment (based on the assumption that each unit weights ~500 kg)). Many of these transformers are owned by people who live in socially deprived areas (mainly located in cities such as Bogotá, Medellín, Cali, and Cartagena, among other cities), or are installed in rural farmhouses located in areas with very high poverty levels.

Colombia has sufficient installed capacity at national level for the elimination of PCBs: A facility in Cali has the capacity to decontaminate metal surfaces and two other facilities (located in Medellín and Bogotá) have dechlorination processes in place to treat PCB oils. These plants are private facilities which require payments for their services.

During the past 5 years (2013 – 2018), approximately 1,544 tons of PCB contaminated equipment was eliminated through support provided by the GEF-UNDP Project "Development of National Capacity for the Environmentally Sound Management and Disposal of PCBs".

In order to meet the needs of the equipment owners who do not have the resources to properly dispose of PCB-containing equipment, it is necessary to mobilize financial resources to support testing and classification activities for dielectric oils and the elimination of identified PCB wastes. Companies from the electric power industry are willing to contribute some of the resources required to eliminate the equipment owned by individuals who obtain their energy supply from said companies.

Other than the national capacity to disposed of PCB equipment mentioned above, the country does not have the capacity to eliminate other types of PCB wastes. A particular challenge in Colombia is the disposal of porous wastes such as wood, textiles or waste paper that are generated when PCB contaminated electrical equipment is disassembled in order to wash the metal parts. Because the total weight amounts of these porous wastes are low and volumes are high, export becomes challenging and more expensive, impacting the potential for the environmentally sound management of these wastes. It is for these reasons that technologies should be assessed and alternatives should be identified in order to eliminate this waste at national level.

Open applications of POPs - Baseline Scenario & Baseline Projects
Even though the elimination of PCBs used in electrical equipment remains a priority for Colombia, one of the recommendations of the Stockholm Convention is to also address the management of POPs used in open applications (such as PCBs, Short-Chain Chlorinated Paraffins, among others) that have been used as additives in construction materials (paints, coatings and corrosion protection).

An inventory of open applications that may contain POPs has not yet been conducted in Colombia. In order for the country to be able to soundly manage POPs contained in open applications (e.g. pipelines, ports, airports, military facilities) it would be important to conduct such an inventory, to assess their concentrations and potential exposure levels and ultimately to draft and implement an elimination plan.

INDUSTRIAL POPs

Short-Chain Chlorinated Paraffins (SCCPs) - Baseline Scenario & Baseline Projects

Worldwide, chlorinated paraffins have been used as an additive for lubricants and refrigerants in metal molding operations. The second most common use for chlorinated paraffins was as a secondary plasticizer and flame retardant in plastics (especially PVC). Chlorinated paraffins are also used to produce lubricants for the leather industry, chlorinated rubbers, bituminous coatings and sealants. They are also used as a flame retardant in the manufacturing of certain textiles.

Colombia does not have any information available on the consumption of SCCPs in the country or the products that might contain them. In 2017, 1,235 tons of unidentified chlorinated paraffins were imported without properly identifying if they were SCCPs. In that same year, 1,860 tons of hydraulic fluids (potentially containing SCCPs) was imported for various uses including metal cutting. It is also possible that chlorinated paraffins have been (or are being) used in the production of PVC in the country. Colombia’s PVC consumption is estimated at approximately 200,000 tons per year.

As little information is available on the use of SCCPs in Colombia, a comparision has been made with Australia, which reported an annual use of ~25 tonnes of SCCPs in the metal working industry in 2002. Australia’s metal working industry represented approximately 20% of the global metal working industry that year[2]. In the case of Colombia, considering that the country is less industrialized and SCCPs are no longer being produced, it has been estimated that of the total amount of chlorinated paraffins consumed in a year, between 1 and 5% would have been SCCPs. That would imply that in 2017 Colombia could have consumed between 12 to 62 tons of SCCPs.

Chlorinated Naphthalenes (CN) - Baseline Scenario & Baseline Projects

Colombia does not have information available on the past consumption/use of chlorinated naphthalenes in production processes or its presence in products. It is assumed that chlorinated naphthalenes are no longer being used in manufacturing processes as their worldwide production has been virtually eliminated.
However in the past, lower chlorinated CN congeners might have been used as heat exchange fluids and as wood preservatives as they have fungicidal and insecticidal properties. Higher chlorinated congeners might have been used as wood preservatives, additives for motor and gear lubricants, galvanoplastic compounds, waterproof sealants, dielectric impregnators for capacitors/condensers and refractive index oils.

The potential releases of chlorinated naphthalenes in Colombia to the environment are assumed to be associated with the presence of traces of these substances in PCBs, their presence in electrical and electronic equipment or in preserved wood. However, as the country has never monitored these substances, the extent of these releases are currently unknown.

**Perfluorooctanesulfonic Acid (PFOS) - Baseline Scenario & Baseline Projects**

In Colombia, there is no accurate information available on the use of PFOS, nor information on the importation of the substance or its byproducts. However, the assumption is that PFOS has been used (or is being used) in products such as firefighting foams, photographic products, photolithography, semiconductors, hydraulic fluids and materials for metal plating/coating.

Airports in Colombia use Aqueous Film Forming Foam (AFFF) with fluorosurfactants from synthetic sources. Nevertheless, there are no inventory records available on the amounts of foam used at the 46 commercial airports throughout the country, nor the type of fluorinated compounds these foams might contain. In 2017, 250 tons of fire extinguishers were imported, but it is unknown whether these fire extinguishers are PFOS-free.

In 2016, Colombia looked into the possibility of undertaking an inventory of articles that could contain PFOS making use of the criteria presented in the "Guidance for the Inventory of perfluorooctane sulfonic acid (PFOS) and related chemicals listed under the Stockholm Convention on Persistent Organic Pollutants" (Draft document of Stockholm Convention, UNIDO, UNITAR, UNEP, 2014). At the time, the country aimed to undertake an Initial Assessment (Level I), but it was not possible to come up with a preliminary list of suppliers, consumers, exporters and importers of products containing PFOS and related chemicals since the tariff headings were not sufficiently disaggregated. Furthermore, companies that supplied products that contain PFOS did not specify its content, and importers did not request this information.

The only information the country was able to obtain at the time was on fire-fighting foams and textiles, in particular carpets and mats made of synthetic fibers. In order to estimate approximate PFOS amounts contained in fire fighting foams, a comparison between the seven biggest airports in the country (Bogota, Medellin, Cali, Bucaramanga, Barranquilla, Cartagena and Pereira) was drawn with a study carried out on U.S. airports. Based on the comparison (and the UNEP Guidance for the inventory of PFOS and related chemicals listed under the Stockholm Convention on Persistent Organic Pollutants (Draft, 31 March 2014)), it was estimated that the estimated quantity of PFOS in fire fighting foam in Colombia would be ~994 kg. With respect to textiles, approximately 200 tons of carpet end up in Colombian landfills each year, containing approximately 60 kg of PFOS.
Based on the difficulties faced in gathering information about the products that could contain PFOS, the Government of Colombia introduced in 2017 the following tariff heading: 2904.31.00.00 "Sulphonated, nitrated or nitrosated derivative organic chemical products of hydrocarbons, including halogenates, perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride, perfluorooctane sulfonic acid", however no importation of this substance was recorded in 2017. In the same year however, using tariff heading 2904.99.00.00, "Other sulphonated, nitrated or nitrosated derivatives of hydrocarbons, including halogenates", 50 tons of these compounds were imported, as well as 690 tons of chemical preparations for photographic use. Some of these imports might have contained PFOS.

As introducing tariff headings is only part of the solution in identifying PFOS containing products, the Government of Colombia is planning to undertake as part of the proposed project an inventory Level 3 in order to obtain precise information through site inspection, sampling and laboratory analysis to determine the types of fluorinated substances currently in use and to develop an elimination plan.

PBDE, PBB and HBCD - Baseline Scenario & Baseline Projects

In the framework of the GEF/UNDP project (GEF ID: 6928) "Reducing UPOPs and Mercury Releases from Healthcare Waste Management, e-Waste Treatment, Scrap Processing and Biomass Burning", Colombia is developing its capacity for the environmentally sound management of brominated flame retardants included in Annex A of the Stockholm Convention, in particular PBDE, PBB and HBCD. As part of the GEF/UNDP project, the content of such substances in plastic computers parts, end-of-life vehicles and polyurethane foam from end-of-life refrigerators is being analyzed and 1,500 tons of plastics containing brominated flame retardants will be treated or disposed of, resulting in the elimination of 225 kg of these substances.

In 2013, Colombia issued Law 1672 "through which the guidelines for the adoption of a comprehensive public policy on the management of waste electrical and electronic equipment (WEEE) and other provisions are dictated". Furthermore, the country published the National Policy on the Comprehensive Management of Waste Electrical and Electronic Equipment in 2017, and Decree 284 in 2018 that establishes guidelines for the Comprehensive Management of Waste Electrical and Electronic Equipment (WEEE). These regulations have led to the identification of a greater quantity of WEEE that may contain plastics containing brominated flame retardants. Such equipment should be properly avoided. To minimize the use of such materialize and improve their management the Government is developing a circular economy strategy. The strategy lays out that within the next four years, the Government of Colombia aims to establish the re-use of materials such as WEEE plastics into productive cycles.

According to the Ministry of Environment, the total mass of WEEE that is foreseen to be generated during the next 8 years could reach 4 million tons. Estimations indicate that by 2019 the WEEE generation per capita is almost 5 kg/year and by 2026 it is expected to further increase to 5,3 kg/year. It is also important to highlight that half of the WEEE mass is expected to come from five categories [4].

Table 2: Estimated tons of WEEE generation in Colombia (2018 – 2026)
<table>
<thead>
<tr>
<th>Category</th>
<th>WEEE to be generated (tons)</th>
<th>Weight share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2018</td>
<td>2019</td>
</tr>
<tr>
<td>Large household appliances</td>
<td>25,672</td>
<td>26,950</td>
</tr>
<tr>
<td>Cooling and freezing appliances</td>
<td>26,386</td>
<td>28,359</td>
</tr>
<tr>
<td>Audio &amp; video appliances (including TV)</td>
<td>23,240</td>
<td>24,826</td>
</tr>
<tr>
<td>Computers and other ICT equipment</td>
<td>20,463</td>
<td>20,985</td>
</tr>
<tr>
<td>Small domestic appliances</td>
<td>28,315</td>
<td>29,147</td>
</tr>
<tr>
<td>IT and telecommunications</td>
<td>31,121</td>
<td>31,994</td>
</tr>
<tr>
<td>Lighting equipment (including Lamps)</td>
<td>20,388</td>
<td>21,014</td>
</tr>
<tr>
<td>Other categories</td>
<td>52,177</td>
<td>112,882</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>227,764</td>
<td>235,015</td>
</tr>
</tbody>
</table>


The estimated amounts of decaBDE used in the different WEEE categories has been presented in table 3 below. The calculation was made based on data presented by Drague, et al (2018).[^5]

Table 3: DecaBDE estimated mass (2018-2026) associated with Colombian WEEE categories
Data on the consumption of electrical and electronic equipment in Colombia indicates that the country should strengthen even more the identification, classification and treatment of brominated flame-retardant plastics.

3) THE PROPOSED ALTERNATIVE SCENARIO WITH A BRIEF DESCRIPTION OF EXPECTED OUTCOMES AND COMPONENTS OF THE PROJECT

COMPONENT 1: PCB MANAGEMENT AND ELIMINATION IN PRIORITY SECTORS

**Outcome 1:** Power sector, state entities and individual PCB holders capacitated to meet 2025 PCB phase-out deadline

**Output 1.1:** Identify, label and classify 6,000 [6] electrical transformers owned by individuals (located in poor rural and urban areas) and set-up financial and technical support programmes for disposal.
This project output will support the identification, labeling, classification and elimination of 6,000 units of equipment and wastes that may contain PCBs and which are owned by low-income individuals (who do not have the technical and financial capacity to ensure sound PCB disposal), and which therefore, are not considered the responsibility of electrical power companies.

In coordination with environmental authorities, the project will support the capacity building of regional environmental authorities through the establishment of a training programme that will provide environmental authorities with the tools to identify PCB owners and help environmental authorities establish a monitoring and control programme. This will enable regional environmental authorities to conduct inspection and surveillance activities required to enforce the proper disposal of PCB-containing equipment by owners and to identify, label and classify potential PCB contaminated electrical equipment owned by individuals in order to include those electrical units in the national PCB inventory and ultimately eliminate them.

Furthermore this project output will support the establishment of a training programme on labelling, sampling and disposal for the staff of maintenance and service companies, located in regions where PCB owners and maintenance companies lack the training to undertake such procedures properly and safely.

In order to eliminate PCB-containing equipment owned by individuals who do not have the necessary resources to afford environmental sound management and disposal of PCB containing equipment, the project will support the establishment of a programme in partnership with the electric power industry. The programme will build upon available in-country treatment and disposal capacity, and provide technical and financial support to substitute and eliminate PCB-containing equipment owned by low-income PCB holders.

**Output 1.2: Support the disposal of 1,500 tons of equipment and waste contaminated with PCBs**

It is estimated that of the 6,000 electrical units that the project will test (Output 1.1), the project will identify approximately 200 tons of PCB contaminated equipment and wastes owned by low-income individuals. The project will fund the elimination and disposal of these 200 tons of equipment and waste contaminated with PCBs.

In addition, the project will also provide training to electrical power companies on the sound management of PCBs in line with the guidelines established by the Ministry of Environment. Subsequently, the electrical power companies are expected to apply their own financial resources to identify, replace/phase-out and eliminate/dispose of 1300 tonnes of equipment and waste contaminated with PCBs. The project will support capacity building of electrical power companies on PCB management through training, while the in-kind and financial contributions made by the electrical power companies for the identification and disposal of 1300 tonnes of PCB wastes will be considered co-financing to the project.

**Output 1.3:** Technology / approaches established to extract PCBs from porous materials/waste for ultimate disposal through existing installed capacity
Currently Colombia does not have the capacity to eliminate/treat porous PCB containing wastes such as wood, textiles or waste paper that is being generated in the disassembly process of PCB containing equipment. In order to further support the PCB disposal work carried out by the electrical power industry and support Colombia to put in place a full life-cycle approach for PCB management and disposal, it is necessary to establish technologies/approaches that allow for the extraction of PCBs from porous materials (wood, textiles and paper) so that these can subsequently be disposed of using final disposal plants already in place.

The project therefore aims to assess potential, viable and cost-effective technologies that can extract PCBs from porous materials (wood, textiles and paper) and after careful cost-benefit considerations establish and operationalize the most suitable BAT technology at national level.

**Output 1.4:** Assessment undertaken to identify the extent/amount of PCBs used in open applications and an elimination plan prepared

PCBs have often been used as additives in construction materials and elements (such as sealants, paints, coatings, cables, etc.). As such they can be found in industrial and institutional structures, including pipelines, ports, airports, military and government facilities, but also in construction debris. Yet, there is no inventory available in Colombia of open applications that may contain PCBs and, to a lesser extend, other POPs.

The project aims to conduct a study to identify which POPs are used in which type of open applications, assess their concentrations as well as their exposure levels, and ultimately prepare an elimination plan.

**COMPONENT 2: IDENTIFICATION OF FEASIBLE ALTERNATIVES TO INDUSTRIAL POPs AND IMPROVED MANAGEMENT OF WASTES CONTAINING SUCH POPs**

**Outcome 2:** National capacity in place to identify Industrial POPs (in products) and suitable alternatives, in support of the phase-out of industrial POPs

**Output 2.1** National capacity built to conduct an in-depth inventory of Industrial POPs contained in products and wastes

A Level 3 Inventory on Industrial POPs will be carried out with project support to assess the extent of the import of POP-containing substances and products and the use/consumption of Industrial POPs in the country. The inventory will assess/identify various industrial sectors, consumer products/goods, fire-fighting foams, aviation hydraulic fluids, pesticides, as well as wastes, related chemicals, and contaminated sites.
Considering that manufacturing and import data on the content of Industrial POPs in products is hard to find, products and wastes will be sampled in order to carry out a qualitative and quantitative physical or chemical analysis to determine the presence and concentration of Industrial POPs. The project will support the sampling of a representative collection of products and goods of concern. This analysis will help to establish, though statistical methods, an estimate of the type and number of products or waste quantities that may contain industrial POPs.

In order to develop national capacity for the identification, handling and disposal/treatment of products and waste containing industrial POPs, the project aims to equip two laboratories (training and certification) to support the identification of Industrial POPs contained in products and wastes.

After laboratory capacity has been built, an Industrial POPs monitoring programme will be undertaken to determine the impact of PFOS, PBDE and chlorinated paraffins by monitoring their presence and concentration in a number of biological matrices (human milk, blood and bivalves).

**Output 2.2  Feasible alternatives recommended by Stockholm Convention to Industrial POPs promoted**

As part of Output 2.2 the project will undertake an assessment (including a cost-benefit analysis) to support the selection of Stockholm Convention recommended feasible alternatives to replace industrial POPs (PBDE, HBCD, PFOS, chlorinated paraffins and chlorinated naphthalene) that are currently being used/consumed in Colombia. Furthermore, the assessment will help identify the technological requirements the country should have in place in order to be able to use such alternatives in production processes.

Criteria for the substitution of Industrial POPs chemicals will be drawn up and aligned with Colombia’s specific needs. The identification of the alternative substance(s) will be based on reliable sources in order to identify potential dangers and risks. Alternatives will be evaluated and compared in light of identified risks, and the safest, most feasible alternative(s) that fit(s) the intended use will be selected. Small scale pilot trials will be undertaken to identify required technological changes as well as environmental, health and consumer impacts, and to establish the necessary control measures. Finally alternatives will be introduced and changes/improvements to production processes will be made for four (4) demonstrative projects to foster the introduction of the identified alternatives, the sector(s) to be addressed will be defined during the PPG phase.

**Output 2.3  An elimination plan for products and wastes containing Industrial POPs developed**

The data originating from the Industrial POPs inventory (see Output 2.1) will contribute to establishing a plan for the management and treatment/disposal of products and wastes containing substances such as PBDEs, HBDEs, PFOS, short-chain chlorinated paraffins (SCCPs) and chlorinated naphthalenes.
Output 2.4  Industrial POPs containing waste treated

Under Output 2.4, activities will be carried out to demonstrate the management, treatment and/or disposal of products and wastes containing industrial POPs such as PBDE, HBCD, PFOS, chlorinated paraffins or chlorinated naphthalene.

In total, this output aims to eliminate (in an environmentally sound manner) up to 2,000 tons of waste containing brominated PBDEs (equivalent to 700 kg of brominated POPs), 1,000 kg of PFOS and 10 tons of short chain chlorinated paraffins (SCCP).

COMPONENT 3: DEVELOPMENT OF NATIONAL CAPACITY TO AVOID THE USE OF INDUSTRIAL POPS AND PROMOTE THE USE OF ALTERNATIVE SUBSTANCES, AS ESTABLISHED BY THE STOCKHOLM CONVENTION.

Outcome 3: National Capacity developed to replace Industrial POPs with alternative substances as established by the Stockholm Convention.

Output 3.1  Industrial Chemicals Registry established (covering import, trade, production and use of industrial POPs and their substitutes)

The project will support the set-up of an Industrial Chemicals Registry covering import, trade, production and use of Industrial Chemicals, Industrial POPs and their non-POPs alternatives. Project resources will support the design and set-up of the registry, while the implementation and management of the registry will be assumed by the Government of Colombia (and will be considered co-financing to the project). Project resources will also be used to develop a manual for the management of the registry and to train government personnel who will be populating and managing the registry on a day-to-day basis. Particular focus will be placed on the registration of substances that may be suitable alternatives to Industrial POPs.

When a producer/importer of an Industrial Chemical would like to register a substance, information prescribed by the authority managing the registry has to be provided (quantity, uses, country of origin, physical, chemical, toxicological or behavioral characteristics in the environment). The producer/importer also has to indicate if the substance will be used, or has been used, as a substitute for Industrial Chemicals listed under chemicals related conventions. The producer/importer also has to indicate information sources that support the provided data, in particular the properties of the substance.

The information submitted to the registry has to be validated by environmental and health authorities, who must verify the sources of information and the quality thereof, define whether the information presented is acceptable or, if it is necessary for the registrant presenting the data to make changes. Furthermore, the environmental and health authorities must notify respective control authority when substances due to their quantity, health risks,
environmental or physical hazards, or because they are prohibited, require a follow-up or a restriction on their uses.

The capacity of environmental, health/sanitation and trade authorities needs to be built for them to be able to verify, check and assess information submitted to the registry. Therefore, the project will train staff of these authorities which will ultimately result in better control on the trade and use of industrial chemicals and POPs at national level and support the promotion of the use of substitutes/alternatives (as the registry will also capture and generate information on alternatives to POPs substances).

**Output 3.2**  
Four (4) demonstration projects carried out to introduce four (4) substances identified as alternatives to Industrial POPs (linked to Output 2.2)

As part of Output 3.2 (and in conjunction with Output 2.2) the project will carry out four (4) demonstration projects for four (4) chemical substances that have been identified as feasible alternatives to industrial POPs (e.g. alternatives may substitute PBDE, HBB, HBCD, chlorinated naphthalene, short-chain chlorinated paraffins and/or PFOS). The four substances for which the demonstration projects will be carried out, will be selected based on their potential future consumption and the significance of the productive sector in which these alternatives would be used.

In order to carry out the demonstration projects, the project might make use of the risk assessment protocols established by the European Economic Community (Registration, Evaluation, Authorization and Restriction of Chemicals - REACH) or the risk assessment protocols applied by the United States of America or Canada. The project will opt for the risk assessment protocols that are deemed to fit best the circumstances of Colombia.

Furthermore, the project will build the capacity of 50 environmental authority professionals and 200 industrial sector professionals on how to introduce alternatives to industrial POPs.

**Output 3.3**  
Capacity for GHS implementation built and GHS implementation completed for four (4) potential alternatives to industrial POPs (linked to Output 2.2 and 3.2)

In addition to implementing the demonstration projects for four (4) chemical substances that have been identified as feasible alternatives to industrial POPs, the project will also support the GHS implementation for these four substances.

The project will also train (in coordination with Output 3.2) the 50 environmental authority professionals and 200 industrial sector professionals on GHS implementation (again with an emphasis on alternatives to industrial POPs).
Output 3.4  PRTR established

To ensure the comprehensive sound management of chemicals in the country, the project will also support the completion of the Pollutant Release and Transfer Register (PRTR) that is currently being established by the Ministry of Environment and Sustainable Development, in partnership with the Ministry of Health and Social Protection and the Colombian Agricultural Institute (ICA), and which will be managed by IDEAM (see also section 2. the baseline scenario and any associated baseline projects). Project resources will mainly be allocated to ensure the inclusion of POPs into the PRTR.

Output 3.5  Standard/guidelines developed on POPs limits in wastes and the sound storage, collection and final disposal of POPs containing wastes.

The Stockholm and Basel Conventions indicate that in order to establish a comprehensive regulatory framework to soundly manage POP wastes, regulatory measures to support the irreversible elimination of POPs need to be adopted. Legislation on hazardous wastes should define hazardous wastes. Wastes with a POP content above a specified “low POP content” should be safely disposed of. Legislation should define environmentally sound management (ESM) and require adherence to ESM principles, ensuring that Colombia has provisions for ESM of POP wastes, including their environmentally sound disposal. These provisions need to meet the requirements of the Basel and Stockholm Conventions.

With project resources, a standard and guidelines will be developed which will define the “low POP content” of POPs in waste, and provide guidance for storage, collection and final disposal of POPs containing wastes.

COMPONENT 4: RAISING AWARENESS, ENSURING PROJECT MONITORING AND EVALUATION AND COLLECTING AND DISSEMINATING PROJECT RESULTS AND EXPERIENCES ON BEST PRACTICES FOR THE LCM OF INDUSTRIAL CHEMICALS AND POPS

Outcome 4.1  AWARENESS OF PROJECT STAKEHOLDERS RAISED ON THE MANAGEMENT OF INDUSTRIAL (POPs) CHEMICALS, RELATED WASTES AND SAFER ALTERNATIVES

Output 4.1.1  Awareness raised of 7,000 people on the sound management of Industrial (POPs) chemicals and related wastes through tailored training and awareness raising activities
As part of Output 4.1.1, the project will develop a comprehensive communication strategy for all project activities in order to reach project stakeholders, project beneficiaries and anyone who requires to be informed on the activities the project will undertake and its expected results.

Directly, the project will support the awareness raising of ~ 6,000 PCB equipment owners on the need to identify and locate privately owned units and the availability of support that will provided to individual owners by the project as well as by the electrical power industry to test, label and dispose of these units in an environmentally sound manner. Furthermore, the project will also aim to create additional awareness among electrical power companies on the sound management of PCB containing equipment in their possession in line with the guidelines established by the Ministry of Environment, to encourage the management and disposal of remaining PCB containing equipment.

Furthermore, awareness will be raised of environmental authorities on the sound management of PCBs which will help them in the establishment of a monitoring and control programme, while the establishment of a training programme on labelling, sampling and disposal for the staff of maintenance and service companies, will create additional awareness on the importance of safe and proper PCB management located in regions where such awareness currently lacks.

The project will also create awareness among approximately 50 environmental authority professionals, 200 industrial sector professionals and 750 workers in the companies involved in the project activities on the importance of risk evaluations and GHS implementation and their benefits. In addition, the project will create awareness among staff of environmental, health/sanitation and trade authorities on the management of the Industrial Chemicals Registry, trade, use and control of industrial chemicals.

It is important to note that awareness will be created on the impact of PFOS, PBDE and chlorinated paraffins through the Industrial POPs monitoring programme. While the Industrial POPs inventory will create awareness on the current use and application of POPs in various sectors (industry, aviation, construction, waste management, among else) and their potential negative impacts. Finally, the assessment that will support the selection of Stockholm Convention recommended feasible alternatives to Industrial POPs, will create awareness among producers/manufacturers on potential POPs alternatives.

It is estimated that in total the project will raise awareness on the sound management and elimination of PCBs and Industrial POPs and their alternatives of ~ 7,000 people.

**Outcome 4.2. Project Results Sustained and Replicated**
Output 4.2.1  Results, lessons-learned and best practices captured in knowledge products and disseminated at national, regional and global level to support replication

Considering the project will support many “firsts” in Colombia as well as in the Latin American region/world in terms of identifying and introducing alternatives to Industrial POPs in various sectors, the project aims to collect lessons-learned, best practices and project experiences and capture them in easy to update, share and understandable communication materials to ensure that replication of project results is facilitated.

Output 4.2.2  M&E and adaptive management applied in response to needs and Mid-Term Evaluation findings

As is standard practice for every UNDP project, continuous monitoring of project results and achievements will be ensured, while the application of adaptive management of the project after conclusion of the Mid-Term Evaluation will be warranted.

4) ALIGNMENT WITH GEF FOCAL AREA AND/OR IMPACT PROGRAM STRATEGIES

The proposed project is fully aligned with the GEF-7 Programming Directions of April, 2018 and its Chemicals and Waste Focal Area Strategy. The project is aligned with the GEF-7 investment framework that aims (among other objectives) to:

§ Eliminate/restrict/control emissions of the chemicals listed in Annex A, B and C of the Stockholm Convention

§ Support the objectives of the Strategic Approach to International Chemicals Management (including building capacity for management and disposal of e-waste and eliminate chemicals of global concern from the supply chain of commercial and domestic products)

The project is in particular aligned with the Industrial Chemicals Program (Program 1) of the GEF-7 Chemicals and Waste Focal Area, which seeks to eliminate or significantly reduce chemicals subject to better management by:

§ The Stockholm Convention on Persistent Pollutants
§ The Minamata Convention on Mercury
§ The Strategic Approach to International Chemicals Management
§ The Montreal Protocol on Substances that Deplete the Ozone Layer

Through supporting projects and programs that address:
§ Chemicals and Waste at the end of life
§ Chemicals that are used or emitted from or in processes and products
§ Management of the waste, or waste containing these chemicals

The Chemicals and Waste MEA specific areas that will be addressed by the proposed project in line with the GEF-7 Industrial Chemicals Program, are the following:

**Chemicals and Waste at end of life:**
§ Elimination of the use of polychlorinated biphenyls (PCBs) in equipment by 2025.
§ Environmentally sound waste management/disposal of mercury/mercury containing waste or persistent organic pollutants including liquids containing PCBs and equipment contaminated with PCBs having a PCB content above 0.005%, in accordance with paragraph 1 of Article 6 and part II of Annex A of the Convention, as soon as possible and no later than 2028.
§ Prevention of waste/products containing persistent organic pollutants from entering material recovery supply chains (including e-waste management with the aim of preventing e-waste from entering solid waste).

**Chemicals used/emitted from/in processes and products:**
§ Elimination of the use of persistent organic pollutants in products (including brominated flame retardants, PFOS and short chained paraffins) by phasing our manufacturing of the pure chemicals and introduction of alternatives in the products with a preference to non-toxic chemicals.

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5) **INCREMENTAL/ADDITIONAL COST REASONING AND EXPECTED CONTRIBUTIONS FROM THE BASELINE, THE GEFTF, LDCF, SCCF, AND CO-FINANCING**

**Component 1: PCB Management and Elimination in Priority Sectors**

*Contributions from the baseline:* Colombia signed the Stockholm Convention on Persistent Organic Pollutants in May 2001, which was later ratified by Law 1196 in 2008. Since the Convention was signed, the country has conducted v
Various activities aimed at improving the management and elimination of PCBs.

Since 1998, 2,722 tons of electrical equipment and waste containing PCBs have been eliminated. Additionally, the country has put in place one (1) PCB washing facility, two (2) sodium dechlorination facilities and one (1) facility that uses supercritical fluid technology to eliminate equipment and waste containing PCBs. These facilities have been established with funds provided by the Global Environmental Facility (GEF) as well as significant investments from national companies. In addition the country has at its disposal 17 laboratories that are accredited (ISO standard 17025) for the analysis of PCB in dielectric oils.

Colombia has established a PCB inventory which requires that each piece of equipment (in service or out of use) either owned by utility companies or individuals, should have an ID number and must have a label. Procedures and capacity for the identification and labelling are in place and fully certified[9].

The cost of dielectric oil testing and classification activities for each piece of equipment (transformers and capacitors) is around USD $150. To date, this cost has been assumed by the utility companies. In terms of PCB elimination, the market value for treatment at national level is USD $1,500 per ton of waste, which is lower than the cost of exporting this waste to another country.

The proposed PCB related project interventions will build on the national capacity already in place, which includes capacity for labelling, classification and PCB analysis, as well as treatment/disposal plants.

Contributions from co-financing: In partnership with the electric power industry, the project will establish a support programme for individual financially retrained PCB owners, which will provide technical and financial support to substitute and eliminate 200 tons of PCB-containing equipment. Co-financing provided by the Colombian electrical power companies will cover costs related to the identification, classification, testing and labelling of electrical equipment owned by individuals who purchase their electricity from these companies (co-financing to Output 1.1). Furthermore, the electrical power companies are expected to apply their own financial resources to identify, replace/phase-out and eliminate/dispose of 1300 tonnes of equipment and waste contaminated with PCBs owned by them (providing co-financing to Output 1.2).

Contributions from GEFTF: Funding from the GEFTF will be allocated to i) Support the capacity building of regional environmental authorities through the establishment of a training programme that will provide environmental authorities with the tools to identify PCB owners and help environmental authorities establish a monitoring and control programme.
Global Environment Facility (GEF) Operations

Component 1: Training and awareness programmes to facilitate the elimination of waste containing PCBs

- With the tools to identify PCB owners and help environmental authorities establish a monitoring and control programme (Output 1.1); Support the establishment of a training programme on labelling, sampling and disposal for the staff of maintenance and service companies, located in regions where PCB owners and maintenance companies lack the training to undertake such procedures properly and safely (Output 1.1); Support the elimination and disposal of 2,000 tons of equipment and waste contaminated with PCBs owned by financial retrained individuals (Output 1.2); Support capacity building of electrical power companies on PCB management through training (Output 1.2); Assess potential, viable and cost-effective technologies that can extract PCBs from porous materials and establish and operationalize the most suitable BAT technology at national level (Output 1.3); Conduct a study to identify which POPs are used in which type of open applications, assess their concentrations as well as their exposure levels, and ultimately prepare an elimination plan (Output 1.4).

Component 2: Identification of feasible alternatives to Industrial POPs and improved management of wastes containing such POPs

**Contributions from the baseline:** In the framework of the GEF/UNDP project (GEF ID: 6928) “Reducing UPOPs and Mercury Releases from Healthcare Waste Management, e-Waste Treatment, Scrap Processing and Biomass Burning”, Colombia is developing its capacity for the environmentally sound management of brominated flame retardants included in Annex A of the Stockholm Convention, with a particular focus on PBDE, PBB and HBCD.

As part of the GEF/UNDP project, the presence and content of POPs in plastic computers parts, end-of-life vehicles and polyurethane foam from end-of-life refrigerators is being analyzed. In order to determine if such plastics contain brominated flame-retardant plastics, the total bromine content is determined using a portable fluorescent x-ray device (XRF)[10]. As Colombia does currently not have the analytical capacity for these tests, a laboratory from abroad has been contracted to conduct the tests, but costs are high at approximately 500 US$ per analyzed sample.

Colombia only has waste incineration facilities, and thus currently does not have the capacity to destroy brominated flame-retardant plastics. As part of the above mentioned project, potential technologies to soundly dispose of waste containing flame retardants will be assessed and put in place with the objective to dispose of 1,500 tons of plastics containing brominated flame retardants, resulting in the elimination of 225 kg of these substances. The project is assessing the possibility of making use of the waste disposal facility that uses “supercritical uid technology” as a treatment option or to generate intermediate products that could support the production of other substances.

In 2013, Colombia issued Law 1672 “through which the guidelines for the adoption of a comprehensive public policy on the management of waste electrical and electronic equipment (WEEE) and other provisions are dictated”. Further
more, the country published the National Policy on the Comprehensive Management of Waste Electrical and Electronic Equipment in 2017, and Decree 284 in 2018 that establishes guidelines for the Comprehensive Management of Waste Electrical and Electronic Equipment (WEEE). These regulations have led to the identification of a higher quantity of WEEE that may contain plastics with brominated flame retardants than initially anticipated. Such equipment should be properly identified, separated, managed and disposal.

In 2016, Colombia looked into the possibility of undertaking a Initial PFOS inventory (level 1) but at the time it was not possible to come up with a preliminary list of suppliers, consumers, exporters and importers of products containing PFOS and related chemicals, since the tariff headings were not sufficiently disaggregated. In 2017 Colombia therefore introduced the following tariff heading: 2904.31.00.00 "Sulphonated, nitrated or nitrosated derivative organic chemical products of hydrocarbons, including halogenates, perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride, perfluorooctane sulfonic acid" and 2904.99.00.00, "Other sulphonated, nitrated or nitrosated derivatives of hydrocarbons, including halogenates".

**Contributions from co-financing:** To further support the sound management of materials and wastes containing industrial POPs, the Government is developing a circular economy strategy. One of its strategic objectives is the re-use of materials (such as WEEE plastics) into productive cycles within the next four years.

In line with Colombian regulations, companies that trade in, distribute and/or manufacture electrical and electronic equipment, must establish collection and disposal programmes for generated waste (e-waste). In support of Output 2.4, these companies will finance the treatment of 2,000 tons of wastes containing Industrial POPs (which will be considered co-financing to the project).

Airports will make the necessary investments to replace PFOS containing foams with suitable alternatives, while the chemical industry will make necessary investments at its facilities in order to be able to replace Industrial POPs with feasible alternatives.

In addition, the Government of Colombia is receiving support from EMPA (Swiss Federal Laboratories for Materials, Science and Technology) through its Sustainable Recycling Industries (SRI) programme. The objective of the SRI programme is to engage and work with small- and medium sized enterprises from developing countries and countries with economies in in transition in terms of the global recycling of secondary resources. The SRI programme has worked with the Ministry of Environment and Sustainable Development on developing the legal and regulatory framework pertaining to WEEE, as well as the development of policies regarding WEEE management to allow for the elimination of brominated flame-retardant plastics. Furthermore the SRI programme is supporting the creation of projects that wi
I support the collection, separation and differentiated handling of brominated flame-retardant POPs in partnership with various stakeholders who are implementing mandatory WEEE recollection programmes. Funding for these recollection programmes is co-financed by the manufacturers and importers of products that contain toxic substances and which fall under the Colombian EPR law.

**Contributions from GEF TF:*** Contributions from the baseline and co-financing provide the regulatory and policy frame work for the elimination and improved management of products and wastes containing Industrial POPs, and ensure to some extent the long-term financial sustainability (through EPR measures) of the improved management of POPs containing products through partnerships with the private sector. However in order for Industrial POPs to be phased-out GEF TF support is critical to support capacity building to conduct in-depth inventories for Industrial POPs (Output 2.1); the identification of feasible alternatives to Industrial POPs (Output 2.2); An elimination plan for products and wastes containing Industrial POPs (Output 2.3) and demonstrating potential treatment options for wastes containing Industrial POPs (Output 2.4).

**Component 3: Development of National Capacity to avoid the use of Industrial POPs by using alternative substances, as established by the Stockholm Convention.**

**Contributions from the baseline:** Given the shortfalls in the control of the import, commercialization, production and use of chemical substances in Colombia's industry, especially the lack of information about amounts used, applications, population exposure and the impact on the environment, the National Government elaborated a regulation on the comprehensive management of industrial use chemical substances and other provisions. This regulation is currently under review by the World Trade Organization (WTO). The regulation establishes that, as of its publication date, a group of chemical substances used by industry or a group of chemicals used to manufacture certain products, require evaluations and programs to reduce and manage environmental risks. Furthermore, the regulation stipulates the establishment of an import, commercialization and use registry for certain chemical substances used in industrial processes.

Furthermore, through decree 1496 (August 6th, 2018), Colombia adopted the Globally Harmonized System of Classification and Labeling of Chemical Products (GHS). In addition, the Ministry of Environment and Sustainable Development published five (5) strategy, guidance and analysis documents on the topic (for a full list kindly refer to Section 2: The baseline scenario and any associated baseline projects).
Contributions from co-financing: In line with Colombia’s Policy on the Risk Management of Chemical Substances, which aims to meet international commitments and guidelines related to chemical substances, the Ministry of Environment and Sustainable Development is setting up a Pollutant Release and Transfer Register (PRTR). Currently, the Ministry is developing the PRTR’s IT platform and is establishing the list of substances to be included in the PRTR in coordination with the Ministry of Health and Social Protection, the Colombian Agricultural Institute and the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) which will manage and operate the IT platform and issue required reporting.

Contributions from GEFTF: Output 3.1 - Industrial Chemicals Registry established. GEFTF resources will be applied to support the design and set-up of the registry, while the implementation and management of the registry will be assumed by the Government of Colombia (and is considered co-financing). GEFTF resources will also be used to develop a manual for the management of the registry and train government personnel who will be populating and managing the registry on a day-to-day basis. Particular focus will be placed on the registration of substances that may be suitable alternatives to Industrial POPs. The capacity of environmental, health/sanitation and trade authorities will need to be built for them to be able to verify, check and assess information submitted to the Industrial Chemicals Registry. Therefore, GEFTF resources will also be used to train staff, which will ultimately result in better control on the trade and use of industrial chemicals and POPs at national level and support the promotion of the use of substitutes/alternatives (as the registry will also capture and generate information on alternatives to POPs substances). Output 3.2 – Four (4) demonstration projects carried out to introduce four (4) substances identified as alternatives to Industrial POPs. GEFTF resources will be applied to carry out four (4) demonstration projects for four (4) chemical substances that have been identified as feasible alternatives to industrial POPs, and in the process 50 environmental authority professionals and 200 industrial sector professionals will be trained on how to introduce alternatives to industrial POPs. As such national capacity on how to conduct identify alternatives will be built, which without GEF support is unlikely to take place. Output 3.3 - Capacity for GHS implementation built and GHS implementation completed for four (4) potential alternatives to industrial POPs. Building on the GHS system the government of Colombia has already put in place, GEFTF funding will be applied to support the GHS implementation for four selected Industrial POPs alternatives and train (in coordination with Output 3.2) 50 environmental authority professionals and 200 industrial sector professionals on GHS implementation (with an emphasis on alternatives to industrial POPs).

Output 3.4 - PRTR established. As the PRTR will be set up and managed on a day-to-day level by the Government, GEFTF resources will mostly be allocated to ensure the inclusion of POPs into the PRTR. Output 3.5 – Regulations/standards on Industrial POPs limits developed. GEFTF funding will be applied to develop regulations/standards on Industrial POPs limits.

The project’s Global Environmental Benefits (GEBs) can be summarized as follows:
§ Elimination/Disposal of 1,500 tons of equipment and waste contaminated with PCBs (including 480 tons of PCB-containing oils).
§ Eliminate (in an environmentally sound manner) up to 2,000 tons of waste containing brominated PBDEs (equivalent to 700 kg of brominated POPs),
§ Eliminate 1,000 kg of PFOS
§ Eliminate 10 tons of short chain chlorinated paraffins (SCCP).

7) Innovation, sustainability and potential for scaling up

Innovation: The proposed project is quite innovative – as compared to other POPs, chemicals and waste management related projects, not only at national level but also at international level. Many of the proposed project interventions have not yet been embarked on in GEF recipient countries.

Component 1: With respect to PCB management, the innovative project aspects are related to the fact that the project is based on the assumption that most of the necessary capacity, financial, analytical, management and treatment/disposal structures are in place to eliminate all PCBs from the electricity utility companies before the 2028 deadline and that additional support is predominantly required for individual/private PCB holders that do not have the technical or financial capacity to test, label and replace PCB containing equipment. Colombia might be one of the first countries where a GEF supported project focuses is redirected from the utility companies – as systems put in place with GEF and government support are thought to be sufficiently robust - to individual holders to ensure that also the “high hanging fruits” in terms of PCB phase-out are being addressed. Another innovative aspect of this project component is that the project, in partnership with the electrical power companies, will put in place a programme that will provide financial and technical support to financially deprived individual equipment holders, to enable and allow them to dispose of PCB contaminated equipment in an environmentally sound manner. Even though this equipment is not the responsibility of electrical power companies, the fact that they financially support its elimination is deemed very innovative. An additional innovative aspect of this component is the establishment of a technology to extract PCBs from porous materials/waste which would ensure that the country disposes of the full disposal/treatment cycle for all types of PCB wastes.

The sustainability of interventions proposed as part of this component lie in the fact that after this project has been fully implemented, Colombia has at its disposal the full disposal/treatment cycle for PCB waste and the human resource capacity to meet the 2025 deadline, ensuring that all PCB waste can be treated at national level and in a more cost-effective way than exporting such wastes. The establishment of the support programme for individual PCB holder who are financially restrained, will ensure that remaining PCB containing equipment can be disposed of in an environmentally sound manner and that financial resources required will be provided by electrical power companies, who in addition will also provide the resources for the elimination and disposal of their own PCB containing equipment and wastes.
Extending the financial programme's support from 6,000 individual holders (200 tons of suspected PCB contaminated equipment) to the remaining 52,000 holders (~ 1,080 tons of potentially contaminated equipment) is where the potential for scaling up lies. While the capacity for PCB management and disposal built by the proposed project and past GEF supported interventions (full disposal/treatment cycle + HR capacity and a strong regulatory framework) will allow Colombia to scale up PCB disposal from 1300 tons as envisaged by the proposed project to the disposal of the remaining PCB amounts in the country (~ 2,979 tons) which will be financed (as stipulated by law) the the electrical power companies.

Component 2: The innovative aspects of component 2 lie in the fact that Colombia as part of the proposed project, might be one of the first countries to use an in-depth Industrial POPs inventory to support the identification of feasible alternatives to Industrial POPs that are currently being used/consumed in Colombia (PBDE, HBCD, PFOS, chlorinated paraffins and chlorinated naphthalene). A cost-benefit analysis will support the selection of Stockholm Convention recommended feasible alternatives and technological requirements that should be put in place to use these alternatives will be identified. Another innovative aspect of the project will be the development of a plan for the management and treatment/disposal of products and wastes containing substances such as PBDEs, HBDEs, PFOS, short-chain chlorinated paraffins (SCCPs) and chlorinated naphthalenes (building on the inventory results) which will be followed by a pilot project to demonstrate the management, treatment and/or disposal of products and wastes containing industrial POPs. The demonstration project is expected to result in the elimination of up to 2,000 tons of waste containing brominated PBDEs (equivalent to 700 kg of brominated POPs), 1,000 kg of PFOS and 10 tons of short chain chlorinated paraffins (SCCP).

The approaches used for the identification of Industrial POPs alternatives will build the necessary capacity for Colombia to scale-up such efforts to replace additional POPs or other chemicals of concern, while the demonstration of the management, treatment and/or disposal of products and wastes containing industrial POPs, can be scaled-up significantly in order to put in place sustainable systems to dispose of and treat POPs containing wastes of which the generation cannot be avoided.

The fact that alternatives to Industrial POPs will be identified and introduced ensures the sustainability of the project which aims (among other objectives) to phase out the use of Industrial POPs and replace them with feasible, safe and cost-effective alternatives. Furthermore, by national regulations, companies that trade in, distribute and/or manufacture electrical and electronic equipment, must establish collection and disposal programmes for generated waste (e-waste). As co-financing to the project, these companies will finance the treatment of 2,000 tons of waste containing Industrial POPs. The project will built necessary capacity for the treatment of such waste, and after the project comes to an end, these companies will continue to finance treatment as stipulated by law, ensuring sustainability.

Component 3: The innovation related to component 3 lies predominantly in the aspect that with the project's support Colombia would be able build the necessary capacity to establish an Industrial Chemicals Registry (which currently does not exist). This would allow Colombia to better monitor and manage the import, trade, production and use of chemical substances for its industry and it would greatly help in the introduction of alternatives, in particular alternatives to Industrial POPs. Additional innovative aspects at national level will be building the capacity to carry out demonstration projects and GHS implementation for 4 alternatives to Industrial POPs.
Considering national capacity will be built to i) undertake Demonstration Projects for Industrial POPs alternatives, ii) ensuring GHS implementation of alternatives and iii) adding Industrial POPs and their alternatives to the PRTR system, sustainability is ensured. In particular because costs related to day-to-day management of these systems will be assumed by the government (and is considered co-financing to the project), implying that in the future the government has sufficient resources to continue managing and improving these systems.

In terms of scaling up – all capacity built as part of this project component, in particular related to building national capacity for managing the Industrial Chemicals Registry, undertaking analysis for alternatives to Industrial POPs, ensuring GHS implementation, and adding substances to the PRTR, has tremendous opportunity for scaling-up to any Industrial Chemical, in particular those of concern (including POPs that might be added to the Stockholm Convention in the future.

Component 4: The innovation related to this component lies mostly in the “Raising awareness” interventions. The project aims to raise the awareness of approximately ~70,000 project beneficiaries and stakeholders, of which ~60,000 are individuals (often poor), a portion of which are indigenous populations, who own potentially contaminated PCB electrical equipment. The project will work with national NGOs specialized in grass-roots awareness raising and their local counterparts as well as local CBOs to inform community representatives and equipment holders on the dangers of PCBs and ways in which the project and electrical power companies will help them to test equipment and financially support its safe disposal if equipment contains PCBs.

Documents can be downloaded through the following link: http://www.minambiente.gov.co/index.php/asuntos-ambientales-sectorial-y-urbana/sustancias-uimicas-y-residuos-peligrosos#informaci%3bn-de-inter%3cas.


Colombia did not adopt EU categories, instead, categories for WEEE were defined by the Ministry of Environment in the 2019 WEEE management regulation, based on EEE categories of the Central Product Classification (CPC) adapted for Colombia, and the current customs Harmonized System (HS).

Daniel S. Drage, Martin Sharkey, Mohamed Abou-Elwafa Abdallah, Harald Berresheim, Stuart Harrad. Brominated flame retardants in Irish waste polymers: concentrations, legislative compliance, and treatment options, Science of The Total Environment, Volume 625, 2018, Pages 1535-1543,

The remaining 54,000 electric transformers will be identified, labelled, classified and if necessary disposed of, with support of the environmental authorities and the electrical power companies from which individual holders receive their electricity.
For example, qualitative revision of samples of manufactured goods (e.g. textiles and synthetic carpets), to detect the existence of fluoride through screening methods and quantitative analyses of PFOS in products and goods with methods like liquid chromatography/mass spectrometry (LC-MS, LC-MS/M, etc.).


It is estimated that the current electricity network contains 450,000 pieces of equipment (transformers and capacitors), of which 160,000 have been marked and re tested for PCB content through gas chromatography.

Niton XL3t Ultra, from the brand Thermo Scientific and confirmed through a gas chromatography, coupled to the Mass Spectrometry (GC-MS). It follows the delines established by the IEC standard 623121-6:2015,

1] Documents can be downloaded through the following link: http://www.minambiente.gov.co/index.php/asuntos-ambientales-sectorial-y-urbana/sustancias-umicas-y-residuos-peligrosos#informaci%cc%83n-de-inter%cc%83s.
1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Project interventions will be undertaken in the following regions:

**PCB inventory and elimination**: Activities related to PCB contaminated equipment owned by individuals will be carried out in the rural areas of the departments of Antioquia, Cauca, Valle del Cauca, Boyacá, Cundinamarca, Santander, Nariño, Bolívar, Magdalena, Guajira and Norte de Santander, and in socially deprived areas of the following cities: Bogotá, Medellín, Cali, Barranquilla, Cartagena, Bucaramanga and Pereira.

**Industrial POPs**:

With respect to PFOS, activities that will support the replacement of fire fighting foams containing these Industrial POPs will be carried out at the airports of Bogotá, Medellín, Cali, Barranquilla, Bucaramanga, Cartagena, and Pereira. Regarding brominated POPs, SPPCs and other Industrial POPs, project interventions will be undertaken in the industrial zones of the country such as Barranquilla, Cartagena, Bogotá (Soacha), Cali (Yumbo), and Medellín (Itagui and Copacabana).

Coordinates of main cities have been included (for pilots or other project’s activities). The project would potentially cover the complete national territory as the aim is comply with Stockholm Convention obligations for PCBs to eventually dispose of all PCBs in Colombia by 2028 (all over the country). During the PPG phase, more precise geographic coordinates will be reported.

Please find below the coordinates for sites:

1) Bogotá: Latitude: 4.598077, Longitude: -74.076103
2) Medellín: Latitude: 6.244338, Longitude: -75.573553
3) Cali: Latitude: 3.451792, Longitude: -76.532494
4) Barranquilla: Latitude: 10.998909, Longitude: -74.798798
5) Bucaramanga: Latitude: 7.111461, Longitude: -73.117287
6) Cartagena: Latitude: 10.419584, Longitude: -75.527122
7) Pereira: Latitude: 4.814291, Longitude: -75.694645
2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

**Indigenous Peoples and Local Communities** Yes

**Civil Society Organizations** Yes

**Private Sector Entities** Yes

If none of the above, please explain why:

N/A

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

The project will support the elimination and environmentally sound disposal of PCB contaminated electrical transformers that are currently located in vulnerable and low-income communities in the Departments of Antioquia, Cauca, Valle del Cauca, Boyacá, Cundinamarca, Santander, Nariño, Bolívar, Magdalena, Guajira, and Norte de Santander, as well as vulnerable and low-income communities in the cities of Bogotá, Medellín, Cali, Barranquilla, Cartagena, Bucaramanga and Pereira. Indigenous populations of Colombia are predominantly located in the Departments of Cauca and Guajira.

The communities (including indigenous populations) will be involved in the development of the project through community outreach and information programmes and the involvement of local CBOs and NGOs to ensure that communities understand the danger of PCBs and in which ways the project would be able to provide financial and technical support to identify PCB contaminated equipment and support its removal.

Table 4: Stakeholder Engagement in Project Preparation

<table>
<thead>
<tr>
<th>Type of stakeholder</th>
<th>Name or description</th>
<th>How stakeholder will be engaged in the project’s preparation</th>
<th>Potential Role of stakeholder in the project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Sector Entities</td>
<td>Electrical Power Sector companies</td>
<td>Companies will be engaged to help design project Component 1</td>
<td>Finance and support the identification, labelling, testing and disposal of 1300 tonnes of PCB contaminated equipment owned by electrical power companies; the labelling and testing of 6,000 units of electrical equipment; and, the disposal of 200 tons of PCB contaminated equipment owned by financially retrained individuals.</td>
</tr>
<tr>
<td>§ Chemical companies (manufacturers and distributors)</td>
<td>Provide relevant data for inclusion in the Industrial POPs inventory; Support the identification of feasible alternatives to Industrial POPs:</td>
<td>Provide relevant data for inclusion in the Industrial POPs inventory; Support the identification of feasible alternatives to Industrial POPs:</td>
<td></td>
</tr>
<tr>
<td>Sector &amp; Mechnical Industries</td>
<td>Global Environment Facility (GEF) Operations</td>
<td></td>
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<td>-----------------------------</td>
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<td></td>
<td></td>
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<tr>
<td>§ Manufacturers and distributors of electrical and electronic equipment</td>
<td>Make necessary investments at facility level to replace Industrial POPs with feasible alternatives;</td>
<td></td>
<td></td>
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<tr>
<td>§ Wood treatment industry</td>
<td>Establish collection and disposal programmes for wastes containing Industrial POPs;</td>
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<tr>
<td>§</td>
<td>Support the development of standard/guidelines on POPs limits in wastes and the sound storage, collection and final disposal of POPs containing wastes.</td>
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<td></td>
</tr>
</tbody>
</table>

| Airport operators | Provide relevant data for inclusion in the Industrial POPs inventory (PFOS used in fire fighting equipment used at airports); |
|-------------------| Support a pilot project to demonstrate the disposal of 1,000 kg of PFOS; |
| Waste disposal companies | Make necessary investments to replace PFOS containing foams. |

| Waste disposal companies | Provide relevant data for inclusion in the Industrial POPs inventory; |
|--------------------------| Support the assessment of national capacity and needs for the disposal/treatment of waste containing Industrial POPs; |
| Public sector | Support the development of the elimination plan for products and wastes containing Industrial POPs; |
| Ministry of Environment and Sustainable Development | Support pilot projects to demonstrate the disposal of wastes containing Industrial POPs; |
| Ministry of Health and Social Protection | Support the development of standard/guidelines on POPs limits in wastes and the sound storage, collection and final disposal of POPs containing wastes; |
| Ministry of Environment and Sustainable Development | Provide co-financing in the form of investment in the technologies to treat wastes containing Industrial POPs. |

| Ministry of Environment and Sustainable Development | Lead the development of all project activities and coordinate the development of PRODOC with project stakeholders and beneficiaries; |
|------------------------------------------------------| The Ministry of Environment and Sustainable Development will be the Implementing Partner for this project. 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 GEF and UNDP resources. |
| Ministry of Health and Social Protection | Support the design of project components and activities related to the Development of National Ca |
| Ministry of Commerce, Industry and Tourism | Support the design of project components and activities related to control the trade of Industrial POPs and the products that contain them (Component 2 & 3) | Support the development of the in-depth inventory of Industrial POPs contained in products and wastes; Support the identification of feasible alternatives to Industrial POPs; Support the development of an elimination plan for products and waste containing Industrial POPs; Support the establishment of the Industrial Chemicals Registry, the PRTR and capacity building for Chemical risk Evaluations and GHS implementation. |
| Civil Aviation Authority of Colombia – “Aeronaftica Civil” | Airport operators will be engaged to help design project activities to eliminate PFOS containing AFF F foams and support their disposal (Component 2) | Provide relevant data for inclusion in the Industrial POPs inventory (PFOS used in fire fighting equipment used at airports); Support the design and implementation of a pilot project to demonstrate the disposal of 1,000 kg of PFOS; Support the replacement of PFOS containing aviation fire fighting foams with suitable alternatives. |
| Indigenous Peoples and Local Communities | Representatives of local communities and indigenous communities who might own PCB contaminated equipment, will be engaged to help design project Component 2 and project Component 3 | Communities, in partnership with local and national NGOs/CBOs and environmental authorities will supervise activities related to electrical transformers carried out in their areas; and will provide access to (for testing) and information on the electrical equipment owned within their communities. Communities will also participate in the PCB elimination programme financed by the project and electrical power companies. |
| CSO / NGOs | NGOs will be engaged to help design project Component 4 | Participate in the development of a comprehensive communication strategy for all project activities; Support awareness raising activities, in partnership with local CBOs and NGOs in order to reach project beneficiaries and stakeholders, with a particular focus on component 1 (raising awareness of all 60,000 individual PCB holders); Support dissemination of project results at national, regional and global level. |
3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

In daily life, men, women, and children are exposed to different kinds of chemicals in varying concentrations. Biological factors — notably size and physiological differences between women and men and between adults and children — influence susceptibility to health damage from exposure to toxic chemicals. Social factors, primarily gender-determined occupational roles, also have an impact on the level and frequency of exposure to toxic chemicals, the types of chemicals encountered, and the resulting impacts on human health.

As is standard practice during the preparation of UNDP-GEF projects (during the project's PPG phase), a detailed gender analysis will be conducted that will identify potential gender-responsive measures that can be introduced during project implementation in order to address gender gaps, promote gender equality, improve women's participation and decision-making (women empowerment) with respect to the sound management of chemicals and wastes.

The gender analysis will include the collection of sex-disaggregated data working closely with experts, organizations and/or institutions that have expertise on gender issues. The gender analysis will in particular focus on workers, children, pregnant women and fertile populations as well as other vulnerable population groups who might be exposed to chemicals and its negative impacts.

As indicated, the gender aspects of the proposed project will be assessed during its PPG phase. Subsequently project interventions will be designed and tailored to the various project beneficiaries, population groups at risk and project stakeholders to enable the project to employ gender sensitive approaches to reduce exposure risks to men, women, children and their families, and address gender gaps, promote gender equality, improve women's participation and decision-making (women empowerment) with respect to the sound management of chemicals and wastes.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? TBD

closing gender gaps in access to and control over natural resources;

improving women's participation and decision-making; and/or

generating socio-economic benefits or services for women.

Will the project's results framework or logical framework include gender-sensitive indicators?
TBD
4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

The proposed project is built on strong partnerships with the private sector. The project will work closely with private sector entities from various sectors including but not limited to: The electrical power sector, aviation, trade and production of electrical and electronic equipment, and the chemical industry.

Electrical power companies will be fully engaged to help design Project Component 1 on PCB Management and Elimination in Priority Sectors. Not only will these companies finance and ensure the elimination and disposal of 1300 tons of PCB contaminated equipment in their ownership, but they will also financially and technically support poor communities with the environmentally sound elimination of 200 tons of PCB contaminated equipment owned by poor individuals.

Companies that trade in, distribute and/or manufacture electrical and electronic equipment, will be engaged by the project to help design project component 2 on the identification of feasible alternatives to Industrial POPs and improved management of wastes containing such POPs. In line with Colombian regulations, these companies must establish collection and disposal programmes for generated waste (e-waste). Partnerships with these companies will be established during project preparation and continue during implementation to engage them in identifying the use of Industrial POPs (Output 2.1); Selecting alternatives to Industrial POPs (Output 2.2); Developing an elimination plan for Industrial POPs (Output 2.3) and implementing a pilot project to treat waste containing Industrial POPs (Output 2.4). These companies, as per national regulations, will also finance the treatment of wastes containing Industrial POPs (which will be considered co-financing to the project) and make investments to replace Industrial POPs with feasible alternatives.

Furthermore, the project will partner with the chemical industry which produces lubricants, cutting oils, and wood preservatives to help design project component 2 on the identification of feasible alternatives to Industrial POPs and improved management of wastes containing such POPs. The chemical industry will make necessary investments at its facilities in order to be able to replace Industrial POPs with feasible alternatives. These contributions will be considered co-financing to the project.

Last but not least, the project will also partner with the airports of Bogota, Medellin, Cali, Barranquilla, Bucaramanga, Cartagena and Pereira on the design and implementation of project component 2, in particular Output 2.1, which will focus on conducting an in-depth inventory of Industrial POPs contained in products and wastes (including PFOS used in fire fighting equipment used at airports); and Output 2.4 which will through a pilot project demonstrate the disposal of 1,000 kg of PFOS. Airports will make the necessary investments to replace PFOS containing foams (which will be considered co-financing to the project) with suitable alternatives.
5. Risks

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Risks and proposed mitigation measures

<table>
<thead>
<tr>
<th>Risk</th>
<th>Mitigation Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulties in obtaining the information required to developed the Industrial POPs Inventory</td>
<td>The project will ensure during its development and implementation to fully engage all stakeholders and to raise adequate awareness on the importance of the inventory and its objectives to keep workers, the population and the environment safe.</td>
</tr>
<tr>
<td>Authorities, civil servants and other stakeholders may lack the knowledge and skills necessary for the environmentally sound management of chemicals</td>
<td>An awareness-raising and training/capacity building plan will be developed and implemented for national authorities, civil servants and other stakeholders who are working on aspects related to chemicals and waste management, to ensure that they will obtain the necessary knowledge, expertise and experience to perform their tasks properly.</td>
</tr>
<tr>
<td>National waste treatment facilities in Colombia are unable to eliminate Industrial POPs in an environmentally sound manner, or they do not have sufficient capacity to do so</td>
<td>Assess technologies installed and operational in Colombia and define if technology changes can be made to treat/dispose of Industrial POPs. Promote the installation of new waste treatment technologies in Colombia such as PFOs, SPPCs, among others. As a last resort, export Industrial POPs containing wastes to countries that dispose of suitable installed capacity.</td>
</tr>
<tr>
<td>Industries are reluctant to replace Industrial POPs with alternative substances</td>
<td>Compile and share technical information on feasible substitutes for Industrial POPs and their application. Conduct training for technical staff so they are aware of the benefits of replacing Industrial POPs. Through pilot/demonstration projects, demonstrate the replacements of Industrial POPs.</td>
</tr>
<tr>
<td>Environmental, health and trade authorities do not actively participate in the development and implementation of project activities</td>
<td>A project team as well as a project steering committee will be established and will be made up of representatives from all involved authorities, in order to share regularly results of the project and to plan for upcoming activities. Meetings will be held with executives from different government organizations to communicate the relevance of their participation in the project. Project partners will benefit from the</td>
</tr>
<tr>
<td>Companies fear that participation in the project might affect their image or brand</td>
<td>Informative meetings with the interested and key parties will be organized to present the benefits of participating in the project. A communication strategy will be developed that emphasizes the benefits of the project.</td>
</tr>
</tbody>
</table>
6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

Institutional structure of the project

UNDP will not be performing any execution functions during the implementation of the project. Direct Project Cost of up to 105.US$ (if requested by the Government) would be confirmed during the PPG phase, as is standard practice for UNDP GEF funded projects.

The project will be implemented following UNDP's national implementation modality, according to the Standard Basic Assistance Agreement between UNDP and the Government of Colombia, and the Country Program Action Plan (CPAP). The Implementing Partner for this project is the Ministry of Environment and Sustainable Development. 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 organization structure is as follows:

Figure 1. Project Organization Structure
The Project Board (also referred to as the Project Steering Committee) is responsible for making by consensus, management decisions when guidance is required by the Project Manager, including recommendations for UNDP/Implementing Partner approval of project plans and revisions. To ensure UNDP’s ultimate accountability, Project Board decisions should be made following 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 by the Board, the final decision shall rest with the UNDP Programme Manager. The Project Board is comprised of the following individuals: the Director of Environmental Affairs and Urban Sector (MADS), who will act as Executive and will direct the Steering Committee; the Programme Officer – Poverty Reduction and Sustainable Development (UNDP Colombia) and a representative of the Ministry of Health and Social Protection. The Office for International Affairs of the MADS will act as an observer in the Project Board because of its capacity as GEF OFP in Colombia.

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 the operational closure of the project). The Project Manager will be the Director of Environmental Affairs and Urban Sector of MADS. The Project Manager will be in charge of guiding and advising the project implementation process, on behalf of the implementing agency, in accordance with the decisions taken by the project Steering Committee. The principal responsibility of the Project Manager is to ensure the achievement of the results presented in the PRODOC under the established quality standards, within the specified period and costs.

An advisory committee, representing the project beneficiaries, will be composed of the electrical power industry, chemical industry, WEEE sector, communities that own electrical equipment as well as health, environment and trade authorities. They will be regularly informed about and consulted on the progress and planning of the project's activities.

*Monitoring and evaluation coordination at the project level:*

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. *Supported by Component 4: Raising awareness, ensuring project monitoring and evaluation and collecting and disseminating project results and experiences on best practices for the LCM of Industrial Chemicals and POPs.*

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. 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[1].

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.[2]

Possible coordination with other relevant GEF-financed projects and other initiatives:

The project will ensure coordination with and aim to build on capacity built and knowledge gathered from the projects listed below:

- GoC/EMPA (Swiss Federal Laboratories for Materials, Science and Technology) project: “Sustainable Recycling Industries (SRI) Programme”
- Project on the establishment of the Globally Harmonized System of Classification and Labeling of Chemical Products (GHS) in Colombia US$ 150,000.
- GEF/UNDP (GEF-5) project: “Reducing UPOPs and Mercury Releases from Healthcare Waste Management, e-Waste Treatment, Scrap Processing and Biomass Burning” (GEF Grant US$ 5,800,000, co-financing US$ 32,915,018)
- GEF/UNDP (GEF-GOLD) project: “GEF GOLD Colombia: Integrated Sound Management of Mercury in Colombia’s ASGM sector” (GEF Grant US$ 6,000,000, co-financing US$ 23,444,511)
- GEF/UNIDO (GEF-6) project: “Minamata Convention Initial Assessment (MIA) in the Republic of Colombia” (GEF Grant US$ 200,000, co-financing: US$ 8,000)
- GEF/UNDP (GEF-6) project: “Review and Update of the National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs)” (GEF Grant US$ 250,000)


7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

The proposed project activities are in accordance with Colombia's National Implementation Plan (NIP) and in particular its National Action Plan for Industrial POPs, which lists the following actions and priorities:

§ To identify and promote alternatives focused on substitution, and the environmentally sound management of items of equipment contaminated with PCBs owned by stakeholders that are not part of the electricity sector.

§ To disseminate information on how to prevent risks associated with PCBs, and to raise awareness about PCB management among the stakeholders.

§ To verify that the installed capacities in the country meet the criteria established in the Manual for Comprehensive PCB management to handle polluted equipment, oils, and wastes, in line with the guidelines of the Stockholm and Basel Conventions.

§ To promote good practices and the prevention of cross-contamination at facilities that perform equipment maintenance and repair activities using dielectric oil.

§ To develop, maintain and update the national inventory of POP used for industrial purposes (types and quantities of substances, materials and wastes), including manufacturers (if any), importers and marketers of products or materials which may contain them, taking into account the stages of their life cycle. As well as, to have preliminary considerations for those which are proposed and are under evaluation to be included as POP.

§ To develop and assess demonstration projects for the replacement of chemical products (formulated from POPs, which are applied in imported or manufactured goods that are sold in the country) based on the available alternatives identified in international studies.

§ To maintain tariff sub-headings at the level of detail required to conduct inventories and studies on POP used for industrial purposes), and to establish the required control measures.

§ To strengthen personnel capacity at the approved laboratories to aid the characterization of POPs used for industrial purposes in the country.

§ To evaluate, harmonize and complement the existing regulations, and to develop more rules accordingly to regulate POPs used for industrial purposes in the country, including among other issues, the required guidelines for the BAT and BEP adoption, and improvement of the comprehensive management plan for wastes in accordance with the national policies.

§ To develop tools for effective communication and awareness of the risks associated with the management of materials or waste containing POPs used for industrial purposes within the sustainable production and consumption framework. Such communication is intended for workers, consumers, and other stakeholders.

§ To establish the guidelines for the sound environmental management of wastes containing or contaminated with POPs used for industrial purposes to reduce related risks.

§ To eliminate the waste stocks associated with materials that may contain POPs used for industrial purposes identified through the initial inventory of these substances.

§ To develop demonstration studies, including BAT and BEP promotion and implementation, for the identification and substitution of POPs used for industrial purposes and the sound management of the wastes containing them.

§ To establish Inspection, Surveillance, and Control mechanisms to be performed by the competent authorities for the comprehensive management of POPs used for industrial purposes.
§ To build the capacities of staff responsible for the Inspection, Surveillance, and Control at the competent authorities and within the framework of the comprehensive management of POPs used for industrial purposes.

§ To identify and implement incentives and mechanisms for the financing of the substitution of POP substances with alternative substances.
8. Knowledge Management

Outline the Knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

The knowledge management approach of the project will consist of the following activities:

§ Annually a report will be prepared which will summarize the progress of each of the project’s activities, achievements, difficulties, lessons learned, risk management and contribution to the SDGs.

§ The project team will draft and publish a guidance document that will describe how to identify products containing Industrial POPs, feasible alternatives for their substitution and how to dispose/treat wastes containing Industrial POPs.

§ Each year the project will organize a seminar to present the results of the project, to which national and international experts will be invited to speak on topics of interest to the project and its stakeholders.

§ National research centers will participate in the development of some project activities, such as the Center for Technological Innovation and Development of the Electric Sector (CIDET), and the Institute of Rubber and Plastic for Training and Research (ICIPC), as well as Colombian university research centers. These institutions will disseminate acquired knowledge to the scientific community and other stakeholders.

§ Electrical power companies, the chemical industry, the aviation sector and other sectors/industries that use Industrial POPs will be both project beneficiaries as well as project co-financers. They will be the direct recipients of the knowledge generated throughout the project and, in turn, will spread it throughout their organizations.

§ COLNODO (www.colnodo.apc.org), a nongovernmental organization that has participated in projects related to chemical substances such as PCB and lead, will contribute to the dissemination of the results of the project through the internet and social networks. This organization aims to facilitate the exchange of information for development and to improve the quality of life of citizens in Colombia, to transform the culture of information management, communication with the world and create new tools and spaces for everyone.

§ At the end of the project, a document capturing all lessons-learned during the project’s implementation will be published.
Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Ministry</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Felipe Olarte Amaya</td>
<td>Head of the International Affairs Office</td>
<td>Ministry of Environment and Sustainable Development</td>
<td>4/3/2019</td>
</tr>
</tbody>
</table>
ANNEX A: Project Map and Geographic Coordinates
Please provide geo-referenced information and map where the project intervention takes place

Coordinates of main cities have been included (for pilots or other project's activities). The project would potentially cover the complete national territory as the aim is comply with Stockholm Convention obligations for PCBs to eventually dispose of all PCBs in Colombia by 2028 (all over the country). During the PPG phase, more precise geographic coordinates will be reported.

Please find below the coordinates for sites:

1) Bogotá: Latitude: 4.598077, Longitude: -74.076103
2) Medellin: Latitude: 6.244338, Longitude: -75.573553
3) Cali: Latitude: 3.451792, Longitude: -76.532494
4) Barranquilla: Latitude: 10.998909, Longitude: -74.798798
5) Bucaramanga: Latitude: 7.111461, Longitude: -73.117287
6) Cartagena: Latitude: 10.419584, Longitude: -75.527122
7) Pereira: Latitude: 4.814291, Longitude: -75.694645