



## UNDP Project Document

Government of Kazakhstan

United Nations Development Programme

PIMS no. 3477 Atlas award 00057559, Project Id.00071180  
Design and Execution of a Comprehensive PCB Management Plan for Kazakhstan

### Brief description

Poly-Chlorinated Biphenyls, PCBs, are due to their harmful effects and tendency for long-range transboundary environmental transport included in the initial list of globally managed Persistent Organic Pollutants. Kazakhstan is committed to safe management of PCB as demonstrated by signature of the Stockholm Convention and its subsequent ratification on 7 June 2007 and inclusions in the list of parties to the Convention on 9 November 2007.

The project will implement a comprehensive PCB management plan for Kazakhstan. The overall objective is to ensure minimization of PCB releases and subsequent health and environmental impacts through systematic capacity development for sound PCB management in the country. The activities will consist of (1) regulatory and administrative institution strengthening; (2) capacity building for sound PCB management, identification of additional PCB sources; (3) replacement, setting-up safe dismantling of 850 tons of PCB transformers and their safe disposal; (4) regionally organized secure storages and disposal of PCB capacitors; and (5) monitoring, learning, adaptive feedback, outreach and evaluation.

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### Acronyms

ADR	International Carriage of Dangerous Goods by Road
ARR	Annual Review Report
AWP	Annual Workplan
BEP/BAT	Best Environmental Practice and Best Available Technologies
CDR	Combined Delivery Report
CEIT	Countries with Economies in Transition
CEO	Chief Executive Officer
CP	Country Programme
CPD	Country Programme Document
FAO	Food and Agriculture Organization
FSP	Full Size Project
GDP	Gross Domestic Product
GEF	Global Environment Facility
GOST	State Standards
HQ	Headquarters
IA	Implementing Agency
IBRD	International Bank for Reconstruction and Development
IW	Inception Workshop
M&E	Monitoring and Evaluation
MEA	Multilateral Environmental Agreement
MEP	Ministry of Environment Protection
NEAP	National Environmental Action Plan
NEX	National Execution
NGO	Non-governmental Organization
NIP	National Implementation Plan for the Stockholm Convention
ONP	Operational Focal Point
PB	Project Board
PBM	Project Board Meeting
PCB	Polychlorinated biphenils
PDF	Programme Development Facility
PIC	Rotterdam Convention on the Prior Informed Consent Procedure on Certain Hazardous Chemicals and Pesticides in International Trade
PIR	Project Implementation Report
PMU	Programme Management Unit
POPs	Persistent Organic Pollutants
PPG	Project Preparation Grant
RCU	Regional Coordination Unit
RK	Republic of Kazakhstan
SAICM	Strategic Approach to International Chemicals Management
SRF	Strategic Resource Framework
TOR	Terms of Reference
UKCP	Ust-Kamenogorsk Capacitors Plant
UN	United Nations
UNDAF	United Nations Development Assistance Framework
UNDP	United National Development Programme

UNDP CO      UNDP Country Office  
UNECE      United Nations Economic Commission for Europe  
UNEP      United Nations Environment Programme  
UNITAR      United Nations Institute for Training and Research

## **SECTION I: Elaboration of the Narrative**

### **PART I: Situation Analysis**

#### *Context and global significance*

##### (a) Geographical and socio-economic situation

1. The Republic of Kazakhstan is a Central Asian country situated at the heart of the Eurasian continent between 40°56' and 55°26' N and 45°27' and 87°18' E, with the total territory of 2 724,9 thousand km<sup>2</sup> (ninth largest place in the world). Total boundaries of Kazakhstan constitute approximately 14 thousand km, of which common borders with the following countries: the Russian Federation - 7,591 km, China - 1,782 km, the Kyrgyz Republic - 1,241 km, the Uzbek Republic - 2,354 km, Turkmenistan - 426 km, and about 600 km on the Caspian Sea.
2. In 2005, Kazakhstan's population was estimated at 15.1 mln. Some 56 percent of the population lives in urban areas. Proportion of women to men is 51.8. The rate of population younger than working age is 30.7 %, older than working age - 12.6%. Total number of working population is 5.85 mln people, of which industrial and office workers - 5.53, in agriculture - 0.32 mln people.
3. The climate is continental and dry. Most part of the country is inland which limits long-range environmental transport of POPs by water, but at the same time, encourages their concentration in the isolated inland areas.
4. Kazakhstan is an agrarian and industrial country. The industry dominates in the structure of GDP production. In 2004, it increased up to 31.1%. For the last ten years, the industrial development of Kazakhstan has been characterized by the stable and positive economy. If in 1995-2004 the annual production growth was 5%, then for the last 5 years it reached 11.8%. During the period of 1995-2004 the production growth increased: in the natural gas production - 4.2 times, crude oil and accompanying gas - 2.8 times, engineering - 2.1 times, in the metallurgical industry - 1.8 times. Chemical industry, production of rubber and plastics goods, other non-metal mineral products, machinery and equipment also experienced high rates of economic development. Certain years boast of the indexes of physical volume against previous periods - 140-200%. In 2004, in the industrial sectors 682.5 thousand people were engaged, which constitutes almost a quarter of all workers in the economy sectors of the country.
5. Cultivable areas of Kazakhstan comprise 24.8 mln ha (2005). Total crop area in 2004 was 18 mln ha and in comparison with 1995 it decreased to 37.1. The main crop is wheat. Natural pastures occupy 53.1 mln ha and can provide grazing to more than 100 mln cattle. In 1991-1998, due to the significant decrease of cattle and poultry, the country experienced a decline of livestock output. The following years the functioning of the livestock sector has significantly improved. Forests occupy 6.3 mln ha, forest areas of the territory is 2.3%.

##### (b) PCB situation analysis in Kazakhstan

6. PCBs is a significant environmental and health hazard in Kazakhstan. Indeed, as during the plan-economy as a part of the Soviet Union, Kazakhstan hosted a number of strategic industries and defense facilities. Such facilities would have procured the most stable electric equipment which during 1960-80's were PCB filled.
7. One of the few plants producing PCB capacitors in the Newly Independent States, NIS, countries was located in Kazakhstan. The plant is located in Ust-Kamenogorsk (North-Eastern

Kazakhstan) and was producing a major part of all PCB containing capacitors in the NIS. It should be noted that the actual PCB oil was not produced at the factory, but the PCB oils were filled to the final capacitor product. Improper handling of the PCB oils during the production caused significant contamination of the Ust-Kamenogorsk area.

8. While the initial inventory is far from complete it reveals significant stockpiles of PCBs in Kazakhstan. Altogether 22 companies/sites have approximately 56,000 PCB capacitors in their possession, equaling to 757 tons of PCBs in 2,500 tons of equipment.
9. PCB transformers have been identified, 106 of these at the Arcelor Mittal Steel at Temirtau steel plant, 5 transformers at oil refinery plant in Atyrau and 2 at public company Ferrochrom in Aktyubinsk. In addition, some 26 potential PCB transformer holders have filed data indicating uncertain data for up to 356 transformers. The situation with cross contaminated mineral oil transformers has not been investigated thoroughly. Indicative sampling and analysis indicate a low cross-contamination rate compared with international experiences.
10. Preliminary inventory identified 22 holders of PCB capacitors. Three of these holders (sites), Kazchrom and former military sites of Semei (Semipalatinsk) and Darial-U (Balkash) contain approximately 15,000 capacitors each. The Darial-U site by the Balkhash lake with 15,000 PCB capacitors was originally intended to become a military base for air defense. The construction commenced in the 1980's but was never completed, and agreed to be disbanded as a part of strategic arms reduction efforts. In 2004, 15,000 capacitors of IS and IM models with PCBs produced at Ust-Kamenogorsk Capacitor Plant were identified. About 1,500 pieces of these capacitors were located under the open sky and the rest installed in various buildings at the site. Many capacitors are destroyed and leakage of PCB oil occurred.
11. The remaining known 10,000 PCB capacitors are in possession of various industrial enterprises. Geographical location of transformers and capacitors is shown in the map below.

12. Map 2. Location of transformers and capacitors



• - PCB capacitors    ⊗ - PCB capacitors battery    ⚡ - PCB transformer

13. In addition to the above equipment some tons of PCB oils are held at Pavlodar chemical plant, where it used to be the heat carrier fluid in a chemical reactor. Restrictive sampling does not indicate PCBs in switch gear or other oil filled equipment.
14. The inventory process listed foreign transformer types for which no data on possible PCB content could be gathered. No sampling to investigate transformer cross-contamination has been undertaken as a part of the inventory process. Data on existence of PCB transformers indicate that the risk for cross-contamination is low, but needs to be verified.
15. There are several highly PCB contaminated sites in Kazakhstan. The inventory identified 8 PCB hot-spots: (i) the territory of Ust-kamenogorsk capacitors plant (UKCP); (ii) UKCP storage pond; (iii) the territory of Ekibastuz power substation; (iv) the department on production of cable and shoe elastomers of Pavlodar chemical plant; (v) Derzhavinsk polygon for elimination of defense technologies; (vi) Zhangiztobinski polygon for elimination of defense technologies; (vii) territories of former military bases in Northern Pribalkhashiye; (viii) territory of power substation in Kostanai city.
16. The PCB information is based on one round of inventory taking. It is estimated to cover some 70 % of potential PCB holders and has concentrated on identifying sources and equipment with pure PCBs rather than investigating potential contamination of oils. Smaller industries have not been targeted with PCB information and inventory compiling efforts.
17. There is no specific legislation covering PCB in Kazakhstan. Base laws of Republic Kazakhstan covering environmental issues such as: "About environmental protection" (1997), Ecological (2007), Land use (2003), Forest (2003) and Water (2003) codes cover in principle hazardous waste but do not specifically cover PCBs. Consequently, no binding guidance has been developed to require PCB reporting or specific management practices during various steps of the PCB life-cycle.
18. At international level the Republic of Kazakhstan has ratified the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure on Certain Hazardous Chemicals and Pesticides in International Trade through Legal Act 239 20 March 2007 and Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal through adoption of Law 389-11 dated 10 February 2003.
19. Despite of adoption of international agreements and existence of some outdated and non-enforced technical standards, the existing national regulatory framework for protection of human health and the environment from PCBs is not adequate in Kazakhstan. A new set of regulatory instruments needs to be developed and adopted in order to cover all stages of the PCB lifecycle and exposure due to releases. In addition, these new regulations and guidelines need to be closely integrated into the enforcement system at various levels and agencies of the government.
20. Much due to the non-existent and non-enforced regulative framework for PCBs, the PCB holders are unaware of safe handling and storage of PCB equipment. Indeed, many potential PCB holders can be expected to be unaware of them even being PCB holders as there is no legal requirement to report or mark/label PCBs. This has lead to several occasions of PCB releases and evidence collected during the PCB inventory and project preparatory stages indicate that more such releases will occur without a systematic approach to ensuring safe PCB management at all stages of the PCB life-cycle.
21. There are no facilities for safe disposal of PCBs in Kazakhstan. Indeed, major PCB holders in Kazakhstan have been approached by facilities in neighboring countries for disposal of PCB transformers. The concerned countries do not have Basel/Stockholm Convention adhering PCB disposal facilities, and the fact that these offers are not taken up are mainly thanks to the good will of the concerned PCB holders in Kazakhstan.

(c) Global significance and environmental benefits

22. The Republic of Kazakhstan, according to a PCB inventory conducted in Eastern Europe and the former Soviet Union, the second among the CEIT countries with 980 t PCB-containing oils and 255,000 t PCBs contaminated soils (the Russian Federation ranks first).
23. In addition to the national environmental benefits, the project will result in significant global environmental benefits. Firstly, the future releases from a potentially large PCB emitting country will be brought to a minimum ensured by an appropriate regulatory framework and its enforcement. Secondly, over 1,600 tons of equipment containing pure PCBs will be safely disposed and the approximate 500 tons of pure PCBs from these are for good eliminated from global re-distribution. This is particularly important bearing in mind PCB holders in Kazakhstan have had the opportunity to send PCBs for unsafe disposal. Thirdly, global benefits will come from demonstrating PCB management in large land locked areas, where both disposal and inland transportation issues and costs will have significant effects on the effectiveness of PCB management and disposal.

(d) Linkages with CP, UNDAF and CCA

The Project is in line with national environmental policies which focus on reducing pollution and eliminating related pressures and impacts to the natural and human environment. It is consistent with:

- Draft POPs National Implementation Plan;
  - Concept for Environmental Safety for the years 2004-2015;
  - Concept for the Transition of the Republic of Kazakhstan to Sustainable Development for the period 2007-2024; and
  - Program on Environmental Protection of the Republic of Kazakhstan for 2008-2010.
24. The programme is linked to the current UNDAF 2005-2009 in its output 4.2 (CP Outcome 4) "on the expanded cooperation between government, donors, civil society and the private sector in the area of environmental management and sustainable development for nature and energy conservation"<sup>1</sup>. The technical assistance in this area was also introduced into the next stage of UNDAF for 2010-2015 in Outcome 3.
25. As planned in the Country Programme Document (CPD) for 2005-2009 cycle, UNDP advocated "for the sustainable use of natural resources and assisted in the formulation and implementation of the National Environmental Action Plan (NEAP)"<sup>2</sup>. Priorities identified in the 1999 National Environmental Action Plan (NEAP) to be addressed by the proposed Project include: (i) hazardous wastes management; and (ii) support of improved environmental management in industrial enterprises
26. In line with the recently approved CPD for 2010-15, UNDP will promote the use of more effective mechanisms and partnerships for communities, national and local authorities to enable them to prepare, respond and recover from natural and manmade disasters. In particular, UNDP will direct its technical assistance to enhance technical capacities of the Ministry of Environmental Protection, local governments and industries for management, safeguarding and disposal of hazardous wastes.

<sup>1</sup> UNDAF 2005-2009, March 2004; url: [http://www.undp.kz/library\\_of\\_publications/files/2755-22038.pdf](http://www.undp.kz/library_of_publications/files/2755-22038.pdf)

<sup>2</sup> UNDP Country Programme Document for Kazakhstan 2005-2009, July 2004; url: [http://www.undp.kz/library\\_of\\_publications/files/3401-15799.pdf](http://www.undp.kz/library_of_publications/files/3401-15799.pdf)



*Threats, root causes and barriers analysis*

27. A number of barriers for safe and sustainable management of PCB and replacement of PCB containing equipment have been identified in Kazakhstan. These barriers can be roughly divided into legal, awareness and know-how related, technical capacity, economic and financial. The barriers can seldom be pinpointed to a specific policy or action but are embedded into overall structures and systems.
28. Legal barriers: There exists no legislation in Kazakhstan banning or restricting the use of PCBs in any applications. Consequently, the requirements of specific handling, pre-caution or disposal are absent in legal documentation or technical guidance. Therefore and quite naturally, the industrial inspections do not include PCB considerations when assessing handling or take into consideration risky situations/operations involving PCBs or PCB containing equipment.
29. Awareness barriers: One main barrier for not taking action on PCBs is the lack of awareness of the risks and consequences of unsustainable management of PCBs. The largest gap has so far been in awareness among the policy makers at various government institutions as well as among some major industry partners. Progress in understanding the PCB issues have been attained during the NIP and preparatory stages of this project.
30. However, the PCB awareness/knowledge is not at a sufficient level among regional environmental officials or among other government officials, i.e. customs officials who may be come in contact with PCB equipment and are a key group in avoiding further entry of PCBs in the country.
31. Though efforts in educating industrial partners in identifying PCBs and PCB containing equipment has been carried out, notably as a part of the POPs Enabling activity project, there still exists public sector entities and companies to which awareness/information has not reached. This is particularly the case for smaller companies who have only few potentially PCB containing equipment.
32. Awareness/know-how related barriers exist in the handling, maintenance and storage stages of PCB and PCB contaminated equipment management. As major holders of equipment are getting informed about the risks of PCBs, they are more and more needing advice on how to set-up their maintenance and daily operations in order to avoid exposure and releases. The barrier is hence not technical as the technical solutions are often quite simple; the barriers are related to know-how on good housekeeping and best practices for PCB contaminated material.
33. Technical barriers: Technical barriers for PCB management can be found at all stages of PCB management. At government level the technical barriers are mainly related to the lack of routine analyzing various sample matrices for PCB concentrations as well identification of equipment among officials. These technical obviously hinders an effective enforcement at customs entry points and controlling adherence to any planned regulative measures on PCBs.
34. The central laboratory of the State Hydro-meteorological Services, as well as some other laboratories in government structures and academia, have appropriate equipment for conducting PCB measurements, but lack the methods and routines for pre-treatment and analysis. Such methods and routines needs to be urgently established and supported. There is, in the medium to long-term, a need to establish a POPs/PCB monitoring in order to ensure that the exposure of PCBs is achieved through control measures applied.
35. There is some knowledge and expertise about transformers and other industrial sized electric equipment available thanks to well-established manufacturing operations in Kazakhstan.

However, particular risks with PCBs are not well known and in many cases smaller companies have problems in taking appropriate action on safety issues.

36. At handling level the technical barriers are not significant. When it comes to storage sites, transportation equipment and associated practices, there is room for improvement. Apart from storage, the barriers are more related to know-how and willingness to spend on properly separated equipment and oil management.
37. The unavailability of laboratory services in country creates also difficulties and barriers for potential PCB holders to get a certainty of the PCB concentration in their equipment or oils in their possession. Consequently, the technical barrier of laboratory capacity hampers the good intention of transformer owners and oil-recyclers to identify and manage their potential PCB sources properly.
38. Technical barriers also include possibilities of treating/disposing PCB contaminated equipment in country. The private and public sector partners are unaware of the different options and even more uncertain which option would be optimal for Kazakhstan and how to get it operationalized.
39. Economic Barriers: Replacement of PCB containing equipment is an expensive exercise for companies in Kazakhstan. Such investments is beyond the economic possibilities for many companies and entities.
40. Even if the financial means for replacement of equipment is found, often out of technical necessity because of breakdown, the resources are not enough for environmentally sound disposal. One should bear in mind that without clear legal requirements and corresponding enforcement, all specific efforts on managing PCBs are based on voluntary action and expense accrued are based on each individual company's willingness of committing financial resources to environmental protection and doing the "right thing".
41. In summary, in line with the identified barriers, the boundaries of the project have been analyzed and discussed during stakeholder workshops.

Stakeholder analysis

42. During the NIP development and preparation of the current project a stakeholder analysis was performed. The table below shows the analysis of jurisdiction and programs of the ministries and other governmental bodies that deal with and are responsible for various aspects of the chemical management in accordance with the current legislation on chemical management, including PCBs.

Table 1: Role of the governmental structures of the Republic of Kazakhstan in the PCB life cycle management

Phase of the life cycle	Governmental structure	Production*	Import****	Storage	Transportation	Label/distribution	Application/circulation	Wastes Disposal
				Environmental protection				
	Ministry of Environment			+	+	+	+	+
				Agriculture				
	Ministry of Agriculture:					+	+	+
				Health Care				
	Ministry of Health			+	+		+	+
				Labor protection				
	Ministry of Labor and Social Protection			+	+		+	+
				Industry				
	Ministry of Industry and Trade			+		+	+	+
	Ministry of Transport and Communications			+	+	+	+	+
	Ministry of Energy and Mineral Resources			+		+	+	+
				Education and Science				
	Ministry of Education and Science							+
				Internal affairs and defense				
	Ministry of Internal Affairs			+				+
	Ministry of Defence			+	+	+	+	+
				Justice				
	Ministry of Justice		+	+	+	+	+	+
				Customs				
	Customs Committee under the Ministry of Finance		+			+		
				Foreign relations				
	Ministry of Foreign Affairs				+			+

43. Responsibilities of the ministries and departments depend on their mandates and scope of activities. Their functions and competence are directed to certain spheres such as, for instance, environment, industrial safety, health care and occupational health. These functions are further elaborated in the table below:

Table 2: Functions of the ministries and departments participating in POPs management

Ministry, department	Function
Ministry of Energy and Mineral Resources of the RK	Assistance in the POPs inventory in oil-gas and refining companies and in the enterprises of the energy complex (inventory of the electrical equipment containing PCBs; annual consumption volume of solvents and reagents containing hexachlorbenzene and PCBs. In accordance with its functional responsibilities, participation in the NIP implementation on: (i) gradual replacement of the electrical equipment containing PCBs to environmentally sound alternatives; (ii) prohibition of use of solvents and reagents containing hexachlorbenzene and PCBs.
Ministry of Industry and Trade of the RK	Assistance in the POPs inventory in the enterprises of mining, metallurgical, chemical, engineering, paints and colors, wood-processing, furniture, textile, footwear and garment, construction industries and construction objects (inventory of the available electrical equipment containing PCBs, annual consumption volumes of solvents and reagents containing hexachlorbenzene and PCBs; annual volumes and compositions of emissions from metallurgical, chemical, cement, and other productions; cases of burning of the industrial and household wastes in the enterprises). In accordance with its functional responsibilities, participation in the NIP implementation on: (i) gradual replacement of the electrical equipment containing PCBs to environmentally sound alternatives; (ii) prohibition of use of solvents and reagents containing hexachlorbenzene and PCBs; (iii) reduction of dioxin and furan emissions from metallurgical, chemical, cement and other productions; (iv) elimination of cases of burning of the industrial and household wastes in the enterprises.
Ministry of Agriculture of the RK	Assistance in the POPs inventory in the agriculture (inventory of existing stockpiles and buried pesticides that exhibit POPs characteristics, inventory of the existing equipment containing PCBs in the rural areas and food industry; annual consumption volumes of solvents and reagents containing hexachlorbenzene and PCBs). In accordance with its functional responsibilities, participation in the NIP implementation on: (i) gradual replacement of the electrical equipment containing PCBs to environmentally sound alternatives; (ii) food safety
Ministry of Health of the RK	Assistance in the POPs inventory in the health care and medical industry (inventory of the existing electrical equipment containing PCBs, annual consumption volumes of solvents and reagents containing hexachlorbenzene and PCBs), including health effect of PCB exposure and monitoring of PCB residues
Ministry of Finance of the RK, Customs Committee	Provision of information, development of measures and their realization on prohibition of import and export of PCBs, electrical equipment containing PCBs.
Ministry of Education and Science of the RK	Inclusion of the PCBs information into the programs of environmental education; realization of research and development activities on alternative technologies for replacement of PCBs electrical equipment etc.
Ministry of Economy and Budget Planning of the RK	Participation in the NIP sections in accordance with the functional responsibilities; budget financing of the activities on temporary storage and disposal of electrical equipment containing PCBs.

44. An important stakeholder sector is represented by PCB equipment holders. After additional analysis performed, it was found that former strategic sites and industries are the major holders of PCB containing equipment (transformers and capacitors). The key industrial stakeholder possessing transformers identified is Arcelor Mittal in Temirtau. Consequently, a close cooperation with the company is established with the aim to gradually replace existing PCB equipment through setting-up effective transformer dismantling and washing operations. The

cooperation will also serve as a demonstration on private public partnership on responsible management of hazardous equipment and waste.

45. The project will be implemented in close coordination and collaboration with relevant government institutions, regional authorities, industries, public and local authorities and NGOs, as well as with other related relevant projects in the region.
46. Regional and local authorities will be involved at the Eastern Kazakhstan province (specifically the formerly known Semipalatinsk province), Karaganda province (large industrial province), and Aktobe province. According to planned activities PCB storage facilities are to be located in these three provinces. Therefore, these provinces will be targets for awareness raising activities particularly inviting NGOs which are active in the region to participate in ensuring safety issues of PCB movements and management. General public located in close vicinity to storage sites will also be targeted by awareness raising activities of the project.
47. In line with the cooperation with other UN agencies and development banks, during the development of the project proposal the following linkages and cooperation patterns were considered. The experiences and lessons learned from the World Bank/EU funded Ust-Kamenogorsk Environment Remediation Project have been taken into account. Further, UNDP has been in close consultations with the World Bank on an IBRD's initiative on establishing hazardous waste disposal capacity in Kazakhstan and has identified key stakeholders in that process to be important to the current project.
48. The project is divided in four interlinked outcomes differentiated by the main stakeholders primarily targeted by outputs. The four project outcomes are listed out below, with associated stakeholders groups:
  - (a) **Regulatory and administrative strengthening for sound PCB management:** stakeholders are line ministries according to existing mandates, policy-making authorities on the central level, regulatory bodies and PCB holders and associated entities, public, research and training institutes, and NGOs
  - (b) **Capacity building for sound PCB management, identification of additional PCB sources:** stakeholders are line ministries responsible for control over hazardous waste management and movements, industrial and environmental safety, occupational health, finance, environmental emissions; regional and local authorities, PCB holders (private/public enterprises), NGOs, national and regional cooperation with related initiatives supported by donors and international organizations
  - (c) **Dismantling and disposal of 850 tons of PCB transformers:** stakeholders are main PCB holder (Arcelor Mittal) particularly the health, safety and environmental division as well as workers representatives, permitting authorities; line ministries responsible for control over hazardous waste management and movements, industrial and environmental safety, occupational health, finance, environmental emissions; stakeholders on national and regional level involved in related initiatives (donors and international organizations)
  - (d) **Regionally organized secure storages and disposal of PCB capacitors:** stakeholders are regional and local authorities, line ministries responsible for control over hazardous waste management and movements, industrial and environmental safety, industrial and environmental safety, occupational health, finance, environmental emissions; public, NGOs, research and training institutes; stakeholders on national and regional level involved in related initiatives (donors and international organizations)

49. Additional details on the activities are summarized together with major risks and assumptions as well as indicators for success in Project Results Framework as well as Section IV Part IV Stakeholder Involvement Plan.

### Baseline analysis

50. PCB management activities in Kazakhstan has so far have taken place within the framework of the NIP investigation, site specific investigations of known PCB contamination as well as preparation of this project proposal. These processes have revealed a low awareness and even lower preparedness to management PCBs among various stakeholders, particularly the PCB holders. Though the Government initiated some actions for PCB management as part of the Programme on Environmental Protection (2008-2010), there are few indications that PCB management efforts at PCB holder level would be planned at all and it can be safely assumed that any efforts in this regard will be marginal without a GEF intervention.
51. In the baseline scenario, with ongoing Stockholm Convention and SAICM activities, some capacity building in PCB management, at least among key officials, would be acquired and accomplished without the project. However, with various priorities, it is likely that no concerted action for strengthening the legal framework for managing PCB would take place during project period without the support of the project.
52. In the baseline scenario the disposal operations for PCB-containing equipment would continue with oil mixing and recycling for various uses. Without project's proposal to establish disposal operations it is unlikely that PCB holders would commence developing PCB phase-out plans and budget additional resources for safe PCB disposal. In short the current unsafe practices would prevail. Analysis of the situation on the ground indicates that very little tangible outputs towards safe PCB management would take place in Kazakhstan without external inputs.

## ***PART II: Strategy***

53. The GEF Project Scenario will set in place a comprehensive system for PCB management in Kazakhstan. It will ensure that there is a modern fully-enforceable PCB regulatory system in place. The project will further implement for a period the PCB management system, on a trial basis, in order to ensure its workability and make further optimization as required.
54. The project will further work with two major PCB holders/sources in order to demonstrate safe PCB handling and disposal. The demonstration components include the former radar station Darial-U at Balkash and the PCB transformers at the possession of Arcelor Mittal in Temirtau. These demonstration components will, in cooperation with the waste holders, safely process 850 tons of PCB transformers (with 264 tons of pure PCB oils) and 600 tons of PCB capacitors from disconnection to safe storage (dismantling), packaging and disposal. In addition, a regionally based PCB collection and disposal system will put in place to assist smaller PCB holders in their management efforts.

### Institutional, sectoral and policy context

55. There is no specific legislation covering PCB in Kazakhstan. Base laws of Republic Kazakhstan covering environmental issues such as: "About environmental protection" (1997), Ecological (2007), Land use (2003), Forest (2003) and Water (2003) codes cover in principle hazardous

waste but do not specifically cover PCBs. Consequently, no binding guidance has been developed to require PCB reporting or specific management practices during various steps of the PCB life-cycle.

56. Some adopted general policy documents such as "Concepts of environmental safety of the Republic Kazakhstan for 2004-2015" notes that toxic wastes are presently stored and kept without meeting the appropriate environmental norms and requirements.
57. PCBs and PCB waste are not totally unregulated in Kazakhstan as certain technical as well as environmental and health quality standards are in place. These include: Maximum Allowable Concentration (MAC) for PCBs: in drinking water 0.0001 mg/l (no presence allowed in fishery water), Working area – 1.0 mg/m<sup>3</sup> air, soils 0.06 mg/kg. These limits are derived from state standards (GOST), sanitary rules and norms (SanPiN), and the governmental orders in force during the Soviet period in Kazakhstan. Adherence to these limit values would provide some protection. However, action is not taken based on these limits and the scientific methods described in these are outdated. In addition to the environmental and health quality limits, there exist a number of technical standards for transformers capacitors and the oils contained in such equipment.
58. At international level the Republic of Kazakhstan has ratified the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure on Certain Hazardous Chemicals and Pesticides in International Trade through Legal Act 239 20 March 2007 and Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal through adoption of Law 389-11 dated 10 February 2003.
59. Despite of adoption of international agreements and existence some outdated and non-enforced technical standards, the existing national regulatory framework for protection of human health and the environment from PCBs is not adequate in Kazakhstan. A new set of regulatory instruments needs to be developed and adopted in order to cover all stages of the PCB lifecycle and exposure due to releases. In addition, these new regulations and guidelines need to closely integrate into the enforcement system at various levels and agencies of the government.
60. From an institutional point of view the Ministry of Environmental Protection is the main institution with responsibilities in developing PCB policies and regulations. Despite of the clear role to lead the PCB work in Kazakhstan, the Ministry of Environmental Protection needs to coordinate with a number of institutions as seen in Table 1: Role of the governmental structures of the Republic of Kazakhstan in the POPs life cycle management and Table 2: Functions of the ministries and departments participating in POPs management. Also while Kazakhstan has ratified the central international chemicals conventions the communication and integrations of the actions are not always well- synchronized and would require a multi-ministerial working group to ensure policy coherence. Taken the number of facets involved in the comprehensive PCB management strategy including sound management through-out the lifecycle and the ministries having part responsibilities or are holders of PCBs designing a clear, fully encompassing but non-duplicative institutional set-up is needed.
61. The institutional coordination is planned to happen through a POPs centre established in the Ministry of Environmental Protection. This centre will ensure a concerted policy response to existing and emerging POPs issues, including PCBs. The project will support further institutional integration through developing the capacity for implementing PCB regulations and guidance in the public sector. Also work to support the further integration and clarification of responsibilities when it comes to major chemicals conventions is included in project activities. This will be achieved by assessment of the current status interlinkages among various international agreements covering chemicals in order to propose and adopt effective administrative response to international chemicals work.

### Project Rationale and Policy Conformity

62. The objective and outcomes of the project will directly contribute towards the Strategic Objective of GEF-4 for Persistent Organic Pollutants focal area (C.31.10) which sets the long term impact of GEF interventions as the protection of human health and environment by assisting countries to reduce and eliminate production, use and releases of POPs, consequently to contribute generally to capacity development for the sound management of chemicals. The project outcomes and activities explicitly support Strategic Objective 1: Strengthening Capacity for NIP Development and Implementation; and Strategic Objective 2: Partnering in Investments for NIP Implementation of POPs Focal Area Strategy for Persistent Organic Pollutants.
63. The Strategic Objective 1 (b): Strengthening Capacity for NIP Implementation aims at supporting countries to increase their capacity to implement their Stockholm Convention obligations and NIPs in a sustainable, effective, and comprehensive manner. The project works towards GEF POPs Strategic Objective 1 (b) by achieving, in particular, Outcome 1: Strengthening of the legal framework and administrative and technical preparedness for sound PCB management, which will develop a full-fledged PCB system and bring the skills of all stakeholders, including the enforcement officials, up to the technical knowledge level needed for efficiently implementing and enforcing PCB safety regulations developed.
64. The activities included in Project Outcome 1 and 2 will contribute towards the GEF Strategic Objective 1 indicators: (i) legislative and regulatory framework in place in supported countries for the management of POPs, and chemicals in general; (ii) strengthened and sustainable administrative capacity, including chemicals management administration within the central government in supported countries; and (iii) Strengthened and sustainable capacity for enforcement in supported countries.
65. The GEF Strategic Objective 2: Partnering in Investments for NIP Implementation aims at reducing POPs production, use, and releases as well as the stress on human health and the environment caused by POPs. The project as a whole is contributing towards POPs Strategic Objective 2, but specifically Project Outcomes 3 and 4 will contribute to the indicators of the GEF POPs Strategic Objective 2. This will address Strategic Objective 2 indicators: (i) POPs phased-out from use (tons and cost per ton per compound); and (ii) POPs destroyed in an environmentally sound manner (tons and cost per ton per compound and mode of destruction).
66. Further, the GEF Strategic Objective 2 indicator—Reduced exposure to POPs, measured as the number of people living in close proximity to POPs wastes that have been disposed of or contained—will also be contributed towards by the project activities, particularly Outcome 4—Regionally organized secure storages and disposal of PCB capacitors — as this outcome will ensure that the current unsafe PCB storage and re-cycling activities will cease.
67. The project will demonstrate a coordinated approach between government-private sector and international community in finding a common solution for hazardous chemical waste with transboundary effects, if not properly managed. The share size of the PCB issue in Kazakhstan makes GEF involvement imperative in its efforts of fulfilling the goals in the Stockholm Convention.
68. The proposed objectives in this project are well in-line with overall UNDP-GEF PCB portfolio. In addition to Kazakhstan, GEF funding has been approved for UNDP-supported PCB management activities in the following 10 countries: Argentina, Brazil, Ghana, Kyrgyzstan, Latvia, Mexico, Morocco, Slovak Republic and Uruguay. With respect to the management and disposal of PCBs, UNDP supports these countries in:



- Strengthening legal frameworks and improving enforcement capacity pertaining to PCB management by addressing gaps in national PCB management regulations and creating an enabling environment for the environmentally sound management and destruction of PCBs.
- Undertaking additional PCB inventories to identify remaining geographically dispersed PCBs and sensitive sites for example by identifying small and medium-sized enterprises possessing a portion of the remaining inventory.
- Improving PCB management practices (such as handling, storage, transport, and destruction) by providing technical guidance on management and safe disposal of PCBs and training for government officials, handlers of PCB-containing equipment, and other private sector entities, to ensure the sound management of PCBs throughout their life cycle.
- Ensuring safe disposal of PCBs in collaboration with PCB-containing equipment holders by developing safe domestic disposal facilities, facilitating export of PCB waste to safe disposal facilities abroad, and improving coordination among PCB holders to lower the cost of transport and destruction of PCBs.
- Implementing public awareness campaigns and communication strategies to support all of the above activities.

Project Goal, Objective, Outcomes and Outputs/activities

69. The project is divided in 4 interlinked outcomes differentiated by the main stakeholders primarily targeted by outputs. The 4 project outcomes are: (1) Regulatory and administrative strengthening for sound PCB management; (2) Capacity building for sound PCB management, identification of additional PCB sources; (3) Dismantling and disposal of 800 tons of PCB transformers. (Arcelor Mittal Temirtau); (4) Regionally organized secure storages and disposal of PCB Capacitors. Further details of the project activities are described in the paragraphs below and summarized together with major risks and assumptions as well as indicators for success in Projects Results Framework.

**Outcome 1 - Regulatory and administrative strengthening for sound PCB management (Overall budget US\$ 581,978, GEF US\$ 274,000, Co-financing US\$ 307,978)**

*Output 1.1:* Environmental Code and other PCB related legislation reviewed, changes developed. Environmental Code revised to include a chapter on PCB management and disposal.

*Output 1.2:* Responsibilities vis-à-vis International Chemicals Conventions in the government re-aligned

*Output 1.3:* Detailed PCB rules, guidelines, incentive schemes developed

*Output 1.4:* Capacity for implementing and knowledge of PCB regulations and guidance among public sector actors, including training of customs department in PCB identification, enhanced.

*Output 1.5:* Awareness raising campaigns on PCB risks and regulatory requirements among authorities and wider public conducted

70. This outcome will work towards establishing a clear legislative base and framework for the detailed regulatory provisions for safe PCB management at all stages of the PCB management scheme. As a part of re-shaping the PCB regulations, a thorough analysis of the responsibilities among public sector authorities and institutions will be undertaken, and re-distribution or re-affirmation of the duties and responsibilities will take place. The re-distribution/confirmation of responsibilities will be extended to cover Kazakhstan's external cooperation and obligations for PCBs under key chemicals conventions, particularly Basel, Rotterdam and Stockholm Conventions. In this regard, the work shall take into account the ongoing work to create synergies between the Conventions at international level.

71. As a part of the regulatory work, detailed technical and management guidelines as well as enforcement systems and guidance will be developed. In order to ensure the functionality and sustainability of the new rules a series of trainings will be carried out aiming at informing and raising capacity of various public sector entities to effectively carry out PCB management duties. The equipment labeling system supported by such training will assist in registering the movements of functional equipment.
72. Specifically customs department will receive training on identification of PCB equipment at borders, including means of analyzing oils for PCB content. In case of oils and metal scraps contaminated with PCBs, Customs department will be trained in Basel convention provisions on transboundary movements of such hazardous waste. For establishing an efficient enforcement system cooperation between customs and Kazhydromet laboratories will be strengthened. These activities will be synchronized to similar parallel work that is under development in Kyrgyzstan. These specific trainings will be complemented with awareness raising of authorities and the general public.
73. The work on strengthening the administrative capacity for PCB management will be integrated in the overall Government initiative of establishing a National Center for POPs, which will coordinate the NIP implementation and also work towards systematizing, realigning and synergizing the government approaches and policies vis-a-vis international chemicals conventions and initiatives.

**Outcome 2 - Capacity building for sound PCB management, identification of additional PCB sources (Overall budget US\$ 841,234, GEF US\$ 407,000, Co-financing US\$ 434,234)**

*Output 2.1:* Improved capacities of PCB holders and equipment service centers for sound PCB management

*Output 2.2:* PCB holder-wise management and replacement plans

*Output 2.3:* PCB inventory expanded and updated.

*Output 2.4:* Enhanced PCB analysis preparedness at State Hydro-meteorological Services and Ministry of Health laboratories.

*Output 2.5:* Risk based priority setting tools for PCBs management initiatives developed.

74. Outcome 2 is the technical, hands-on and on-the-ground complement for the regulatory and institutional work undertaken in Outcome 1. Outcome 2 will primarily work together with PCB holders in order to build their capacities to further identify PCB sources and to safely manage known PCBs. As a part of the further inventorying and PCB identification effort the analysis capacity will be strengthened in order to serve potential PCB holders at provincial level.
75. The project component will further assist and train PCB holders and equipment service centers to:
- (i) determine PCB content in all potentially contaminated equipment;
  - (ii) develop a phase-out/replacement plan for PCB equipment with clear timelines;
  - (iii) separate maintenance for PCB contaminated equipment in order to avoid cross contamination and labeling;
  - (iv) set-up workers safety procedures when handling PCB equipment with requirements for training and regular skills updating;
  - (v) occupational health protection requirements with regular health checks for exposure;
  - (vi) develop a plan for other company/site specific PCBs safety issues, i.e. movements between workshops and grid, temporary storage, leak containment, emergency considerations.
76. The investigation/determination of PCB content in additional equipment will commence with investigating the list of 116 transformers with unknown oils as identified during the initial inventory compiled under the NIP project. The identification work will continue by contacting further companies in order to ensure that their equipment are PCB free. A specific particular subcomponent will be developed in cooperation with the Ministry of Defense. As most of the sites that potentially, even probably, have PCB equipment, are classified, the ministry staff will be trained to undertake the PCB investigation and to plan for the replacement of the equipment.

While site specific data may not be published from this survey, aggregated PCB volume data and timeline for replacement will be expected as an output of this activity.

77. The augmentation of PCB analysis capacity will be mainly targeting Kazhidromet, state central environmental laboratory and its regional centres in Petropavlovsk, Atyrau, Shymkent and Astana. These laboratories have gas-chromatographs that can be re-tuned for PCB analysis at least for oil samples. This capacity building will include official adoption of methodical guidelines for PCB analyses as well as accreditation and certification of laboratories to carry out such analysis. The re-tuning of the laboratories for PCB analysis will be done in cooperation with RECETOX laboratory in the Czech Republic, which is also a Regional Center for the Stockholm Convention. For assisting the inventory work, other types of samples, particularly water and soil, 2 field tests equipment will be purchased and the regional centers will use these together with quick test for their inventory investigations.
78. The PCB analysis capacity within national food survey conducted by Ministry of Health will be assessed. In this regard, it will be ensured that at least central laboratory level food (feed) samples can be analyzed for PCBs and that steps are taken for including PCB analysis in the food survey, preliminary findings indicating such a need.
79. Recognizing that a full PCB risk reduction and disposal of existing sources cannot be achieved immediately a risk based priority setting tool will be developed. The tool would ensure that the most urgent problems with high potential of human exposure and environmental releases are tackled first. The tool would identify high risk locations, prone for seismic activity, flooding etc. The priority setting tool will also look into establishing schemes for financial incentives to encourage early replacement of PCB equipment.
80. Further, assistance to PCB holding companies and entities is envisaged for ensuring that their PCB management plans, in addition to complying with regulatory provisions, also initiate actions in areas where highest reduction of risks can be achieved.

**Outcome 3 - Disconnecting, dismantling and disposal of 850 tons of PCB transformers (in partnership with Arcelor Mittal Temirtau) (Overall budget US\$ 4,436,000, GEF US\$ 961,000, Co-financing US\$ 3,475,000)**

*Output 3.1:* Phase-out and procurement of replacement transformers planned and scheduled

*Output 3.2:* Transformers disconnected, drained, dismantled and cleaned, metals recycled

*Output 3.3:* Disposal of oils and associated waste

81. Arcelor Mittal in Temirtau is in possession of 106 PCB containing transformers. 23 of these have been disconnected and are held at factory site. The other 82 transformers are still in use. Altogether the PCB oil content is approximately 2 tons in some 850 tons of equipment. The company is knowledgeable of the hazardous PCB content and has developed PCB management plan for the transformers. In developing the management plan Arcelor Mittal rejected offers from foreign offers to dispose PCB transformers as these did not seem to adhere to appropriate environmental standards.
82. The PCB management plan includes a disposal of the PCB oils in the company's metallurgical furnaces. Though the temperature profile of the metallurgical furnace may correspond to minimum requirements for PCB disposal there are serious risks in both handling/loading and release stages of the proposed disposal.
83. These risks include worker exposure during loading of PCBs and the releases, particularly of dioxins and furans in air, may be significant. Therefore, the proposed disposal method does not meet international standards, particularly Best Environmental Practice and Best Available Technologies (BEP/BAT) as developed at international fora, mainly Basel and Stockholm Conventions. However, as no legal framework exists the proposed disposal could take place. It

should be further noted that during the current economic situation, hitting especially hard on steel-makers, every legally permitted actions bringing cost savings are preferred.

84. For avoiding the company to take proposed disposal action, the project will assist Arcelor Mittal to safely manage its PCB transformers and especially support the disposal of the PCB oils. The cooperation will be done in following steps: (i) planning of phase-out and procurement of replacement transformers; (ii) disconnection, draining, dismantling and cleaning of transformers; (iii) re-cycling of metals; (iv) storing of drained PCB oils and porous contaminated material; (v) disposal of oils and associated waste. Please see Arcelor Mittal co-financing letter for further details for this cooperation.

85. As a part of this cooperation Arcelor Mittal Steel will undertake the procurement of replacement transformers, their draining, dismantling and recycling. The project would assist in safety aspects of the dismantling process and sound disposal of the PCB oils and associated absorptive waste.

**Outcome 4: Regionally organized secure storages and disposal of PCB capacitors (Overall budget US\$ 14,133,324, GEF US\$ 1,215,000, Co-financing US\$ 12,918,324)**

*Output 4.1:* Secure, temporary PCB storage facilities upgraded.

*Output 4.2:* Safe operation of storage sites secured.

*Output 4.3:* Regional PCB collection and disposal put in place and implemented with up to 200 tons of PCB waste disposed

*Output 4.4:* 15,000 PCB capacitors at Darial-U Capacitor bank disconnected, packed and stored.

*Output 4.5:* Clean-up premises and pack all potentially PCB contaminated wastes

*Output 4.6:* Transportation and disposal of approximately 600 tons of PCBs and associated waste disposed.

86. Project Outcome 4 will primarily work with smaller PCB holders who typically have some 10 to a few hundred PCB capacitors in their possession. The PCB waste could also be smaller quantities of PCB oils, 1-2 transformers or small quantities of PCB contaminated materials or soils. The common denominator for these PCB holders and streams are that individual disposal efforts would become extremely expensive per unit. This project component will lower this barrier by establishing PCB storage disposal by pooling a number of smaller PCB sources together at a regional level by establishing government (project) initiated storage sites and establishing systems and term for how individual PCB holders can participate. Adhering to the "Polluter-pays" principle, it is envisaged that participating industries will pay for transport and disposal of their waste. However, as already indicated under project Outcome 1, incentive schemes may be put in place by the government as a part of the approach. Further the activities will be financially supported by project funds during a limited period in the start-up phase as a part of the testing of the established scheme.

87. It is planned that 3 such regional PCB centers are established (see Map 2 below). The approximate locations are plotted in Map 2. The regional PCB centers are placed at locations with highest occurrence of known PCB equipment also taking easiness of transport logistics into consideration. Therefore storages will be placed by major railway lines and traffic arteries of the country. The infrastructure, i.e. house utility connections and access will be co-financing from Government of Kazakhstan, mainly from railroad authorities. The project funds will be utilized for ensuring safety as well as safe handling of these storages. It is envisaged that one of the sites, in central or western part of the country, will be upgraded and used for draining, dismantling and cleaning of transformers.

**Outcome 5: Monitoring, learning, adaptive feedback, outreach and evaluation (Overall budget US\$ 118,369, GEF US\$ 113,000, Co-financing US\$ 5,369)**

*Output 5.1: M&E and adaptive management applied to project in response to needs and extract lessons learned*

*Output 5.2: Lessons learned and best practices are replicated at the national level*

Details of this project outcome can be found under PART IV: Monitoring and Evaluation Plan and Budget

**Map 2: Proposed 3 temporary storages for PCB contained equipment in Kazakhstan**



88. The main emphasis besides ensuring safe storage and PCB store handling is to build up the system including financial contribution and terms on which private PCB holders can deposit their PCB containing equipment and materials at the provincial storages and how these waste flows are further organized for safe disposal. The project component will include technical assistance for setting up the storages as well as training storage workers and management good store keeping, emergency action etc. Further training will be given on international rules and practices for packing PCB containing material for international transport.

89. In addition to the sizeable quantities of PCBs disposed, the project component will have important capacity development benefits by increasing the central and regional authorities' capacity to permit, oversee and implement complex and sizeable PCB management operations. These experiences will be very useful for other large PCB capacitor projects for example at Semipalatinsk, Darial-U etc.

90. The project activities conducted at Darial-U site by Lake Balkhash are largely co-financed by Government of Kazakhstan. The activities will redeem safe the source of PCB pollution in one of the major hot-spot sites in Kazakhstan. As the site contains some 15,000 PCB capacitor units the undertaking is a significant risk reduction even at regionally and globally level.
91. The site is abandoned and planned for redevelopment. Sampling of capacitors and the soil at the site verified PCB content and detected very high PCB contamination on the platform of unloading and by the radar station (up to 87 500 mg/kg of soil).
92. This project activities will secure the area from further releases of PCB oils, disassemble the capacitor installations, pack them and ensure their disposal in an environmentally safe manner. The stages will include: (i) detailed planning of capacitor bank disassembly and packing operations; (ii) Environmental Impact Assessment of undertaken PCB operations; (iii) construction of safe temporary premises with dirty and clean work zones for capacitor packing and loading; (iv) disassembling/demolition works for getting access to all capacitors; (v) conduct capacitors transfer and transport packing, as per international norms, of all 15,000 PCB capacitors operation and move them to the storehouse for temporary storage; (vi) clean-up premises and pack all potentially PCB contaminated wastes and material in transport packages and move these to temporary storage; (vii) solicit transportation and disposal bids from companies adhering to best disposal practices; (viii) dispose approximately 600 tons of PCBs and associated waste.
93. This project outcome will commence with detailed planning of the operations and premises in order to gain access and safely pack all PCB capacitors at site for further transportation. Following this an Environmental Impact Assessment is conducted, also identifying needs for technical skills and capacity development for achieving safe operation. Once plans with minimal environmental impacts are approved, reconstruction of existing premises to become suitable capacitor packing as well as temporary storage site will commence. This will entail chemical spill protection measures, including construction of barriers for separation of dirty and clean work zones, premises for preparing containers and pallets and packing of capacitors, storehouse for the capacitors. Construction of double floodgate for moving the capacitors to the dirty zone and passing of the personnel from the clean zone to the dirty one and back, equipping of deactivation zone (shower rooms and lockers). Further fire-systems and equipment (dry powdered fire-extinguishers for prevention from formation of waste waters containing PCB at fire extinguishing) is included in the re-furbishing of the premises.
94. For ensuring minimal worker exposure and environmental releases from re-packing operations, appropriate Personal Protective equipment is purchased, ventilation equipment with filters is procured and daily monitoring of PCBs in the air of the working zone and in waste waters, as well as for regular examination of the territory is conducted. The upgrading works include setting-up of temporary storage platforms, preparation and fencing of the area, and organizing appropriate lightning etc.
95. With appropriate safety consideration completed, the actual packing operation of PCB capacitors commence with loading individually packed capacitors in metal containers with appropriate amounts of absorbent as per Basel Convention and UNECE ADR rules. As batches of packed equipment are appropriately packed local hazardous waste licensed transport companies are contracted for shifting the PCB capacitors to Balkhash railway station for further shipping to safe disposal facilities.
96. Once all 15,000 PCB capacitors have been safely packed, the last consignments out of the site will consist of various PCB contaminated, or potentially contaminated wastes, including protective clothing. This will also wastes and soils PCBs as well as containing surface layer of the concrete floor of the dirty zone packing area

97. The details for shipment of collected PCB waste still need to be developed and agreed for this Outcome. Taken the large quantities of PCB capacitors at Darial-U these activities will arrange its own transport and disposal. For more dispersed PCB sources, the option of annual dispatch to most economical safe disposal adhering to Basel Convention and Stockholm Convention BAT/BEP guidelines seems as a likely possibility. Loading into separate railway wagons at each provincial site for international transport is the working assumption to be verified.

#### Project Indicators, Risks and Assumptions

98. The Project indicators Risks and assumptions are fully represented in the Strategic Results Framework (Section II) as well as the Risk Identification and Mitigation tables in the corresponding GEF CEO Endorsement Document.

99. The project indicators have been chosen to track changes in documented responsibilities and capacity development among PCB holders. These are captured in indicators covering: (i) adoption legislative and regulatory base for ensuring a framework for long-lasting impact; (ii) comprehensiveness of the outreach to PCB holders for ensuring PCB identification and sound management approaches.

100. Another important aspect of the project is to actually ensure that pure PCB substances are eliminated and taken out from global circulation as well as sustainability of the initiated concerted action. Hence for project component 3 and 4 indicators chosen are trying to capture: (i) tons of PCB soundly disposed; (ii) activity indicators at regional storage centers.

#### Incremental reasoning and expected global, national and local benefits

101. While many of the activities planned under the project will bring national and local benefits, little action would have been planned for PCBs purely for national reasons. The existence of the project is totally due to the requirements in the Stockholm Convention, and can hence be considered incremental to the Baseline Scenario

102. In the baseline scenario, with ongoing Stockholm Convention and SAICM activities, some capacity building in PCB management, at least among key officials, would be acquired and accomplished without the project. However, with various priorities, it is likely that no concerted action for strengthening the legal framework for managing PCB would take place during project period without the support of the project.

103. In the baseline scenario the disposal operations for PCB-containing equipment would continue with oil mixing and recycling for various uses. Without project-established disposal operations it is unlikely that PCB holders would commence developing PCB phase-out plans and budget additional resources for safe PCB disposal. In short the current unsafe practices would prevail.

104. Analysis of the situation on the ground indicates that very little tangible outputs towards safe PCB management would take place in Kazakhstan without external inputs. In addition, the project activities are well in-line with Stockholm Convention requirements and obligations making the whole project incremental from a GEF perspective. Further details are provided in the Incremental cost calculation tables in corresponding GEF CEO Endorsement Form.

105. The main global benefit from the project will be the safe disposal of minimum 600 tons of pure PCB oils within 1,600 tons of equipment. This equipment will be destroyed and the risk that will be globally redistributed will be eliminated. The introduction of safe in-country

management practices for PCB contaminated transformers will contribute to the global benefits as the global community can be assured that the remaining PCBs in Kazakhstan are being responsibly and sustainably managed and disposed.

106. Nationally there can be expected environmental and health benefits, thanks to decreased releases as less PCB containing equipment are in operation. Further it can be assumed that less PCBs are reaching the environmental and food sources further contributing to health status among the local population. Health related benefits are difficult to assess, quantify and evaluate.
107. Another important national benefit is the experience and capacity gained by most stakeholders in developing a clear plan from cradle-to-grave on how to sustainably manage a particularly problematic industrial chemical. The overall approach and tools developed in the project can with modifications be utilized for other problematic chemicals within and beyond the sphere of Stockholm Convention POPs. Hence, the project experience and adopted approaches will contribute towards overall sustainable chemicals' control.
108. Apart from the global environmental benefits, the final beneficiaries of the project will obviously be the people of Kazakhstan and their environment. A more direct beneficiary is the Ministry of Environmental Protection, which will get access to technical and managerial support for preparing POPs legislation and to develop educational and information material on PCBs as well as their dissemination. The environmental inspectors and customs officials will benefit from increased professional competence from the training activities.
109. Other major beneficiaries will private sector entities with hazardous waste, PCBs, in their possession. Though they will be required to dispose the PCB they will be given an affordable option of disposing the waste. All private sector partners are expected to gain technical capacity thanks to the project.

#### Country Ownership: Country Eligibility and Country Drivenness

110. The commitment of the Government of Kazakhstan to hazardous waste management has been evident since the country signed and then ratified Stockholm (2001, 2007), Basel (2003), Rotterdam (2007) Conventions. Yet, not before investigations leading to initial PCB inventory as a part of the UNDP/GEF POPs Enabling Activity project and actual drafting of the POPs National Implementation Plan, did PCB management issues gain required attention.
111. The Project is in line with national environmental policies which focus on reducing pollution and eliminating related pressures and impacts to the natural and human environment. It is consistent with the: (a) Draft POPs National Implementation Plan; (b) Concept for Environmental Safety for the years 2004-2015; (c) Concept for the Transition of the Republic of Kazakhstan to Sustainable Development for the period 2007-2024; and (d) Program on Environmental Protection of the Republic of Kazakhstan for 2008-2010. Priorities identified in the 1999 National Environmental Action Plan (NEAP) to be addressed by the proposed Project include: (i) hazardous wastes management; and (ii) support of improved environmental management in industrial enterprises.
112. The POPs NIP action plan for PCBs lays down the specific national plans for PCBs. The proposed project contributes towards most of the priority areas of activities as laid down in the (draft) POPs NIP in Kazakhstan.



Table 4. PCB activities as outlined in NIP and as addressed in the proposal

NIP PCB Activity	Addressed in proposal
Establishment and functioning of the National or Subregional Center on POPs under MEP (RGP or RGKP status with budget financing).	Outcome 1
Development of normative requirements regulating turn, use, storage and elimination of PCB-containing equipment and wastes.	Outcome 1
Making detailed inventory of PCB-containing equipment in the republic, including the institutions under the Ministry of Defense.	Outcome 2
Examination of industrial dumps to identify PCB-containing equipment and PCB-contaminated territories.	Outcome 2: Inventories
Establishment of a center on training personnel of enterprises and supervising bodies on PCB management.	Activities included in Outcome 2 Government to consider need of specific center during implementation
Organization of temporary storages at enterprises	Partly, Outcome 3
Defining of places for construction of state storages for PCBs-containing equipment.	Outcome 4
Organization of state storages	Outcome 4
Scientific studies on development technologies on elimination of PCB-containing equipment and wastes and rehabilitation of polluted soils	Not included
Rehabilitation of polluted territories	Not included, see IBRD activities
Selection of the technology on elimination of PCB-containing equipment and wastes	No technology to be selected
Construction of a plant for elimination of the equipment and wastes containing PCBs	Not included, see IBRD activities
Preparation and transportation of PCB-containing equipment for elimination	Included in Outcomes 2, 3, and 4 for PCB waste covered by project activities.
Elimination of PCB-containing equipment and wastes	Included in Outcomes 2, 3 and 4 for PCB waste covered by project activities.

113. In response to the Stockholm Convention's obligations, the Parliament of Kazakhstan approved the POPs budget allocations for 2008-10 in the Program on Environmental Protection. The Government intends to target PCBs through financing the improvement of storages for PCB capacitors; preparation of POPs (including PCB) monitoring programmes as well as further refinement of PCB (and POPs pesticides) inventories and PCB equipment management. These activities have been incorporated in the current project proposal.

### Sustainability

114. The sustainability of the mechanisms created by the project will be ensured by integrating all project components in existing structures or under the responsibility of existing entities which are assisted by project activities to take on these additional responsibilities during project implementation. The following processes will be utilized for ensuring the sustainability.

115. For integration of PCB issues in governmental regulatory, administrative, and control structures. The project is implemented fully through National Execution modality, which will ensure that the relevant government institutions are driving the process and their capacity, responsibility, and knowledge of their role in PCB management is clarified and integrated. All training conducted under the project will be required to submit proper training material ensuring that there are both "trained trainers" as well as suitable material to be used for future training of new personnel.
116. For integration of PCB management at holder level. It is expected that PCB management plans will be developed for all PCB equipment holders during the project. Following and completing these plans will require action and activity beyond the project completion. The follow-up on these plans is envisaged to be integrated with ongoing industrial inspection processes, linking enforcement action into PCB holder management plans and hence building sustainability. As already noted, all training given under the project will require proper training material ensuring that there are both "trained trainers" as well as suitable material to be used for future training of new personnel. This will ensure that PCB holding companies have training material available for giving refresher courses in PCB safety.
117. Disposal of PCBs. The two major PCB demonstration disposal operations on capacitors and transformers do not pose sustainability concerns as these will be fully accomplished during the implementation of the project. For the regionally established storages, pooling together PCB waste for disposal, the sustainability is going to be ensured by cost recovery of the storage and disposal operations. While this will mean that after the project PCB holders will have to fully pay for the management of their waste. The actual expenses they are facing with pooling of their waste through the regional storages will be significantly less than before the project.
118. Though some PCB transformer holders may be tempted to return to old unsustainable disposal practices, the baseline situation at end of the project is, however, very different from the today's situation. Firstly, PCBs and PCB-containing equipment will be clearly subject to legislation at the end of the project. Secondly, the PCB holders already know the procedures/costs, etc. and can budget accordingly when replacing pure PCB equipment. Thirdly, it can be expected that the PCB holders have been informed of PCB risks and appropriate action during the five years of the project. PCB holders will include in their budgets the additional resources to safely ship such equipment for disposal.
119. With raised, awareness, legislation, equipment tracking and other enforcement steps it can, therefore, be expected that the safe PCB disposal operations will be continued after completion of the project.

### Replicability

120. Many parts of the project activities can be replicated in different country contexts. The regulatory, administrative, and inventory measures are as such not trying to introduce any novel approaches. However, being the first single country PCB project in Central Asia, important lessons can be gathered for replication in other countries. The project outcomes/outputs can to a varying degree be replicated internationally and regionally.
121. The project combines capacity building and hands-on minimization of releases and disposal, demonstrating the whole range of PCB management steps. Further, the project approach follows the guidance of the Stockholm Convention by prioritizing pure PCBs and particularly when found in large quantities. Adhering to such guidance does not necessarily make the project well replicable, however, if successful, the replication of the project would be very effective for reducing PCBs globally and consequently interesting for the Stockholm Convention and the GEF.

122. Of the specific project components, the regulatory strengthening component of the project has a large potential to be replicated internationally. The PCB awareness and baseline situation in Kazakhstan is, albeit larger, quite similar in nature compared with other Central Asian countries, including awareness among government officials and un-systemized action taken by private sector partners.
123. As the PCB baseline situation is more prominent than in neighboring, the approach and most of the actions can, after vetted through and appropriate lessons learnt screen. be applied wider in the region. Indeed, some of the guidelines can be directly applied in various contexts and it can be expected that the project can provide very valuable guidance and material which can be used particularly in Central Asian countries, as technical guidance on the relevant topics are less well available in Russian language.
124. Regional cooperation, also at project level, will be fostered in establishing of appropriate environmental and food quality guidelines, including the setting-up of an appropriate enforcement system for these guidelines.

### ***PART III : Management Arrangements***

125. The project will be executed following established UNDP national execution (NEX) procedures. The Executing Agency/Implementing Partner will be the Ministry of Environmental Protection (MEP). The Executing Agency/Implementing Partner will appoint a National Project Director and will hire with GEF funding a Project Manager and an administrative/financial assistant. A summary of the roles and responsibilities of the National Project Director, the Project Manager, and the Administrative and Financial Assistant are provided below.
126. The National Project Director will be a high-level government official primarily responsible for overall implementation of the Project. This responsibility includes representing and supporting project objectives at high decision making levels within the Government of Kazakhstan. The National Project Director also takes the primary responsibility for representing the Project to co-financiers, as well as for ensuring that the required government support to reach the milestones of the Project is available.
127. The Project Manager will assume overall responsibility for the successful implementation of project activities and the achievement of planned project outputs. S/he will work closely with the national and international experts hired under the project, as well as the Project Assistant, and will report to the National Project Director and to the UNDP Country Office. The Administrative and Financial Assistant will provide assistance to the Project Manager in the implementation of day-to-day project activities. S/he is responsible for all administrative (contractual, organizational and logistical) and accounting (disbursements, record-keeping, cash management) matters related to the project.
128. The Executing Agency/Implementing Partner will establish a Project Board (PB) to give advice and guide project implementation. This will be chaired by the National Project Director. The PB will consist of representatives of all key stakeholders and will ensure the inclusion of industries' interests. The participants will include but not limited to: Ministry of Environmental Protection, Ministry of Agriculture, Ministry of Health Care, Ministry of Emergency Control, Ministry of Labor and Social Security, Ministry of Industry and Trade, Ministry of Transport and Communications, Ministry of Energy and Mineral Resources, Ministry of Education and Science, Ministry of Internal Affairs, Ministry of Defense, Committee of Customs Control at the Ministry of Finance, Industry representation, NGOs. Ministry of Environmental Protection will represent the interests of Senior Beneficiary. UNDP CO will play the role of Senior Supplier—

being a GEF Implementing Agency represented in the country. Project assurance will be ensured by GEF OFP, UNDP CO together with the UNDP GEF RCU. The PB will monitor the project's implementation, provide guidance and advice, and facilitate communication, cooperation, and coordination among stakeholders and other project partners. At the initial stage of project implementation, the PB may, if deemed advantageous, wish to meet more frequently to build common understanding and to ensure that the project is initiated properly. Further details on the PB are provided in the monitoring and evaluation section of the document.

129. The project will hire short-term national and international experts for specific project assignments for indicative scope of the assignment of key experts/ consultants). Project activities will be contracted out on a competitive basis through tenders.
130. The project will be implemented in close coordination and collaboration with all relevant government institutions, regional authorities, industries and NGOs, as well as with other related relevant projects in the region. The UNDP-CO will be an active partner in the project's implementation. It will support implementation by maintaining the project budget and project expenditures, contracting project personnel, experts and subcontractors, undertaking procurement, and providing other assistance upon request of the National Executing Agency. The UNDP-CO will also monitor the project's implementation and achievement of the project outcomes and outputs, and will ensure the proper use of UNDP/GEF funds. Financial transactions, reporting and auditing will be carried out in compliance with national regulations and established UNDP rules and procedures for national project execution. Disbursements for project Outcome 4—fully funded by the government—will be done as per existing government rules in place. PCB holding companies will operate through their revised internal guidelines in procuring replacement equipment and other services as their part of project financing.
131. In order to accord proper acknowledgement to GEF for providing funding, a GEF logo will appear on all relevant GEF project publications, including, among others, project hardware purchased with GEF funds. Any citation on publications regarding this project will also accord proper acknowledgment to GEF. The UNDP logo will be more prominent (and separated from the GEF logo if possible), as UN visibility is important for security purposes.

#### ***PART IV: Monitoring and Evaluation Plan and Budget***

132. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the project team and the UNDP Country Office (UNDP-CO) with support from the UNDP/GEF Regional Coordination Unit in Bratislava. The Logical Framework Matrix in Project Results Framework provides performance and impact indicators for project implementation along with their corresponding means of verification. The M&E plan includes: inception report, project implementation reviews, quarterly and annual review reports, mid-term and final evaluations. The following sections outline the principle components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The project's Monitoring and Evaluation Plan will be presented and finalized in the Project's Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

##### ***Monitoring and reporting***

###### ***Project Inception Phase***

133. A Project Inception Workshop will be conducted with the full project team, relevant government counterparts, co-financing partners, the UNDP-CO and representation from the

UNDP-GEF Regional Coordinating Unit, as well as UNDP-GEF (HQs) as appropriate. A fundamental objective of this Inception Workshop will be to assist the project team to understand and take ownership of the project's goal and objective, as well as finalize preparation of the project's first annual work plan on the basis of the logframe matrix. This will include reviewing the logframe (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise, finalizing the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project. Additionally, the purpose and objective of the Inception Workshop (IW) will be to: (i) introduce project staff with the UNDP-GEF team which will support the project during its implementation, namely the CO and responsible Regional Coordinating Unit staff; (ii) detail the roles, support services and complementary responsibilities of UNDP-CO and RCU staff vis-à-vis the project team; (iii) provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Review Report (ARR), as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget rephrasing. The IW will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed again, as needed, in order to clarify for all, each party's responsibilities during the project's implementation phase.

#### *Monitoring responsibilities and events*

134. A detailed schedule of project review meetings will be developed by the project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time frames for Project Board Meetings and (ii) project related Monitoring and Evaluation activities. Day-to-day monitoring of implementation progress will be the responsibility of the Project Manager based on the project's Annual Work Plan and its indicators. The Project Manager will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion. The Project Manager will fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the Inception Workshop with support from UNDP-CO and assisted by the UNDP-GEF Regional Coordinating Unit. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the Annual Work Plan. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.
135. In order to report on progress as well as POPs risk reduction, a comprehensive monitoring and evaluation component will be included. Apart from standard progress/administration and financial monitoring, the project aims at reporting comprehensively towards the GEF Strategic Objective 2 indicator "Reduced exposure to POPs, measured as the number of people living in close proximity to POPs wastes that have been disposed of or contained". As there are no clear guidelines on how this would be reported in such a project context, the project monitoring team will need to develop a system with baseline and intermittent observation points to report towards this indicator. The development of such PCB risk indicators could include restricted sampling and analysis or data collection from existing environmental or health statistics.

136. Annual monitoring will occur through the Project Board Meetings (PBM). This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to PBMs two times a year to review project progress, provide strategic guidance, and approve annual work plans and budgets. The first such meeting will be held within the first six months of the start of full implementation.
137. The Project Manager in consultations with UNDP-CO and UNDP-GEF RCU will prepare a UNDP/GEF PIR/ARR and submit it to PBM members at least two weeks prior to the PBM for review and comments. The PIR/ARR will be used as one of the basic documents for discussions in the PB meeting. The Project Manager will present the PIR/ARR to the Project Board, highlighting policy issues and recommendations for the decision of the PBM participants. The Project Manager also informs the participants of any agreement reached by stakeholders during the PIR/ARR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary. The Project Board has the authority to suspend disbursement if project performance benchmarks are not met. Benchmarks will be developed at the Inception Workshop, based on delivery rates, and qualitative assessments of achievements of outputs.
138. The terminal PBM is held in the last month of project operations. The Project Manager is responsible for preparing the Terminal Report and submitting it to UNDP-CO and UNDP-GEF RCU. It shall be prepared in draft at least two months in advance of the terminal PBM in order to allow review, and will serve as the basis for discussions in the PBM. The terminal meeting considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation of formulation.
139. UNDP Country Offices and UNDP-GEF RCU as appropriate, will conduct yearly visits to project sites based on an agreed upon schedule to be detailed in the project's Inception Report/Annual Work Plan to assess first hand project progress. Any other member of the Project Board can also accompany. A Field Visit Report/BTOR will be prepared by the CO and UNDP-GEF RCU and circulated no less than one month after the visit to the project team, all Project Board members, and UNDP-GEF.

#### *Project Reporting*

140. The Project Manager in conjunction with the UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process. The first six reports are mandatory and strictly related to monitoring, while the last two have a broader function and the frequency and nature is project specific to be defined throughout implementation.
141. A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year/ Annual Work Plan divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan will include the dates of specific field visits, support missions from the UNDP-CO or the Regional Coordinating Unit (RCU) or consultants, as well as time-frames for meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update

of any changed external conditions that may affect project implementation. When finalized, the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF's Regional Coordinating Unit will review the document.

142. An Annual Review Report shall be prepared by the Project Manager and shared with the Project Board. As a self-assessment by the project management, it does not require a cumbersome preparatory process. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the Project Progress Report (PPR) covering the whole year with updated information for each element of the PPR as well as a summary of results achieved against pre-defined annual targets at the project level. As such, it can be readily used to spur dialogue with the Project Board and partners. An ARR will be prepared on an annual basis prior to the Project Board meeting to reflect progress achieved in meeting the project's Annual Work Plan and assess performance of the project in contributing to intended outcomes through outputs and partnership work. The ARR should consist of the following sections: (i) project risks and issues; (ii) project progress against pre-defined indicators and targets and (iii) outcome performance.
143. The Project Implementation Review (PIR) is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, a Project Implementation Report must be completed by the CO together with the project team. The PIR should be participatory prepared in July and discussed with the CO and the UNDP/GEF Regional Coordination Unit during August with the final submission to the UNDP/GEF Headquarters in the first week of September.
144. Quarterly progress reports: Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF RCU by the project team.
145. UNDP ATLAS Monitoring Reports: A Combined Delivery Report (CDR) summarizing all project expenditures, is mandatory and should be issued annually. The Project Manager should send it to the Project Board for review and the Implementing Partner should certify it. The following logs should be prepared: (i) the Issues Log is used to capture and track the status of all project issues throughout the implementation of the project. It will be the responsibility of the Project Manager to track, capture and assign issues, and to ensure that all project issues are appropriately addressed; (ii) the Risk Log is maintained throughout the project to capture potential risks to the project and associated measures to manage risks. It will be the responsibility of the Project Manager to maintain and update the Risk Log, using Atlas; and (iii) the Lessons Learned Log is maintained throughout the project to capture insights and lessons based on good and bad experiences and behaviours. It is the responsibility of the Project Manager to maintain and update the Lessons Learned Log.
146. Project Terminal Report: During the last three months of the project the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project, lessons learnt, objectives met, or not achieved, structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.
147. Periodic Thematic Reports: As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the project team will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in

key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the project team.

148. Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.
149. Project Publications will form a key method of crystallizing and disseminating the results and achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

#### *Independent evaluations*

150. The project will be subjected to at least two independent external evaluations as follows: An independent Mid-Term Evaluation will be undertaken at exactly the mid-point of the project lifetime. A mid-term review of the project will be conducted by a team of an independent international expert and independent national expert assisted by nominated government officials. The Mid-Term Evaluation will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. As an output of this mid-term evaluation, an amended workplan will be developed and appropriate support for re-directing to project activities facing unforeseen challenges. The information and outreach material developed and particularly the lessons learned sections will also provide tools for evaluation. These sections will be partly based on review and evaluation findings and their wide distribution will generate feedback, further providing data on the impacts of the project. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the UNDP-GEF Regional Coordinating Unit.
151. An independent Final Evaluation will take place three months prior to the terminal Project Board meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. It will contain a lessons learned section for wide distribution to other countries planning similar PCB disposal and replacement projects. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the UNDP-GEF Regional Coordinating Unit.



152. The findings of the final evaluation together with lessons learned documentation will be presented in a final project workshop which operationally closes the project. In preparation of this final workshop, the sustainability issues, particularly the legal enforcement and complete phase-out of both pure PCB and PCB-contaminated transformers (including safe continuation of the washing operations), will be given the highest importance.
153. Financial monitoring and adherence to adopted yearly budgets will be controlled through annual project audits. The financial audits will, in addition to ensuring adherence to bidding and other procedures, emphasize the cost-effectiveness of the action undertaken. The financial audits will further validate the input utilization or "budget-delivery" which may to a certain degree be used for monitoring the implementation efficiency or speed of the project.

Table 5: Project Monitoring and Evaluation Plan and Budget

Type of M&E activity	Lead responsible party	Budget (indicative)	Time frame
Inception workshop	Project manager UNDP-CO UNDP GEF	10,000	Within first two months of project start up
Inception Report	Project Team	None	Immediately following IW Once a year
Measurement of Means of Verification for Project Purpose Indicators, including development of M&E system	Project manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members	42,000+ 5.369 government in-kind	
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	Oversight by Project manager. Project team, Project Steering Board	45,000	Annually prior to ARR/PIR and to the definition of annual workplans
Project Implementation Review (PIR) and ARR	Project Team, UNDP CO, UNDP GEF	None	Annually
Quarterly progress reports	Project team	None	Quarterly
CDRs	Project manager	None	Annually
Issues Log	Project manager, UNDP CO Programme staff	None	Quarterly
Risks Log	Project manager, UNDP CO Programme staff	None	Quarterly
Lessons Learned Log	Project manager, UNDP CO Programme staff	None	Quarterly
Mid-term Evaluation	Project team, UNDP CO, UNDP-GEF Regional Coordinating Unit, External consultants (evaluation team) National Executing Agency.	26,000	Approximately 24 months from inception
Final Evaluation, including lessons learned	Project team, Independent Evaluators, UNDP Country Office, UNDP-GEF Headquarter and Regional Coordinating Unit, National Executing Agency	35,000	At the end of project implementation: 3 months prior to the Terminal Project Implementation Review
Terminal Report	Project Team, UNDP CO	None	At least one month before the end of the project
Audit	National Executing Agency, UNDP Country Office, Project Team	20,000 (total for project duration)	Yearly
Visits to field sites	UNDP CO, UNDP GEF Regional Coordinating Unit (as appropriate), Government representatives	Paid from IA fees and operational budget	Yearly
<b>TOTAL INDICATIVE COST</b>			
Excluding project team staff time and UNDP staff and travel expenses		<b>183,369</b>	

<sup>3</sup> This amount corresponds to staff time which the Project Manager will be contributing towards monitoring of the project. Budget allocation is included in the salary of the Project Manager and the administrative budget of the project.

***PART V: Legal Context***

154. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Kazakhstan and the United Nations Development Programme, signed by the parties on 4 October 1994. The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.
155. The UNDP Resident Representative in Astana, Kazakhstan is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:
- a) Revision of, or addition to, any of the annexes to the Project Document;
  - b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
  - c) Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
  - d) Inclusion of additional annexes and attachments only as set out here in this Project Document

**SECTION II : STRATEGIC RESULTS FRAMEWORK (SRF) AND GEF INCREMENT**

**Strategic Results Framework, SRF (formerly GEF Logical Framework) Analysis**

<b>Project Strategy</b>	<b>Objectively verifiable indicators</b>	<b>Baseline</b>	<b>Target</b>	<b>Sources of verification</b>	<b>Assumptions</b>
<b>Objective:</b> To enhance the capacity for safe management of PCB oil and PCB-containing equipment at all stages of the PCB management cycle in Kazakhstan	Clear regulation anchored scheme for PCB management with identified roles and deadlines in Kazakhstan established	No specific regulations, guidelines or enforcement for PCB management through-out their lifecycle. Roles and responsibilities of PCB holders and authorities at regional and central level not elaborated .	1. Environmental Code amendment and technical specifications adopted. And integrated by environmental authorities. 2. Clear PCB reporting and enforcement set up nationally. PCB holder submitted management plans integrated in environmental inspections.	1. Official Gazette and MEP documents	
	Site and regional based PCB disposal systems developed and demonstrated from planning to disposal.	No safe PCB disposal undertaken. No organized system for assisting PCB holders in finding optimized PCB management solutions.	1. One major PCB capacitors and one major PCB transformer site management demonstrated from planning to disposal. Resulting in 1,400 tons PCB waste processed. 2. Regionally based PCB collection/disposal scheme in place with 200 tons PCB waste processed.	1. PCB holder documentation. Disposal certificates. 2. Government documents. Disposal certificates	

Project Strategy	Objectively verifiable indicators	Baseline	Target	Sources of verification	Assumptions
<b>Outcome 1:</b> Regulatory and administrative strengthening for sound PCB management	<p>1. Proposed changes in Environmental Code and changes in associated laws finalized.</p> <p>2. Changes ensuring safe PCB management in Env. Code adopted.</p> <p>3. Development of technical guidance implementing PCB regulative framework</p> <p>4. Development and adoption of PCB environmental and food quality guidelines</p>	<p>1. Code exists without PCB amendments.</p> <p>2. Code exists without PCB amendments.</p> <p>3. No legislation/ guidelines covering PCBs</p> <p>4. No food and environmental quality guidelines exist</p>	<p>1. Fully consulted proposal submitted 1 year.</p> <p>2. Legislation adopted within 2 years.</p> <p>3. 5 guidance documents covering various stages and stakeholders of PCB life-cycle</p> <p>4. Specific quality guidelines developed covering abiotic environment and food</p>	<p>1. Documents from Min. Env. to Cabinet of Ministers.</p> <p>2. Signed law published in Official Gazzette</p> <p>3. MEP official publications</p> <p>4. Official Gazette. MEP official publications</p>	<p>Risk: Delays due to complexity of amendments in associated laws or changes in government.</p> <p>Development of quality guidelines assumed to prioritize monitoring efforts</p> <p>Risk: Capacity constraints postpone application of quality guidelines</p>
<b>Outcome 2:</b> Capacity building for sound PCB management, identification of additional PCB sources	<p>1. Number of PCB holder management plans developed.</p> <p>2. Number of PCB holder replacement plans developed.</p> <p>3. Number of new approaches for PCB data collection initiated. (Separate investigation for Min. of Defense, collection through Ministry of industries channels, reward system)</p>	<p>1&amp;2. No PCB holder specific management and replacement plans developed</p> <p>3. Survey type initial investigation carried out as part of POPs EA project.</p>	<p>1. All PCB holding companies submit management plans.</p> <p>2. 20 plans during 2 first years of project</p> <p>3. 100 additional companies surveyed. Complete PCB data from Ministry of defense.</p>	<p>1&amp;2. MEP, official management plan filings by companies.</p> <p>3. MEP PCB database. Ministry of defense PCB data base exists and at least aggregated data accessible to other authorities</p>	<p>Assumption: All companies willing for change</p> <p>Risk: Unsafe PCB oil/equipment disposal due to economic benefit to some parties.</p> <p>Assumption: Adopted legislation requires PCB holders to develop management and replacement plans</p> <p>Assumption: Ministry of Defense willing to investigate PCB situation before legal requirements enter into force.</p>

Project Strategy	Objectively verifiable indicators	Baseline	Target	Sources of verification	Assumptions
<b>Outcome 3:</b> Replacement, setting-up safe dismantling of 850 tons of PCB transformers and their safe disposal	1. Company phase out plans developed.  2. Safe workshop and storage assigned up dated for PCB dismantling and storage.  3. Number of PCB contaminated transformers drained and dismantled.  4. Tons of PCB contaminated oil and associated waste disposed through exports	1. Basic intention of PCB phase-out.  2(a). No space assigned. Disconnected transformers are in the stored in the main production building  2(b). Workers barely aware of PCB dangers or proper pre-cautions  3. Zero  4. Zero, no safe PCB disposal carried out	1. 105 PCB transformer  2(a). Safe transformer dismantling site established within first year of project.  2(b). Disconnection and dismantling personnel fully trained for safe PCB handling  3. 30 transformers drained and dismantled within 36 months of project implementation. All transformers by end year 4.  4. Target: 850 tons of PCB waste safely disposed.	1. Company records  2(a). Regional environmental inspector International expert reports. 2(b). Training records and reports  3. Company warehouse book-keeping and regional inspector reports  4. Freight documents and disposal certificates	Assumption: Economic situation does not deteriorate further for keeping the investment company plan.  Risk: budgeting Fluctuating currencies may increase or decrease final transportation and disposal prices budgeted in US\$

Project Strategy	Objectively verifiable indicators	Baseline	Target	Sources of verification	Assumptions
<b>Outcome 4:</b> Regionally organized secure storages and disposal of PCB capacitors	<p>1. Storage manned with professional workers</p> <p>2. System of storages operational</p> <p>3. Disposal of regionally collected PCB containing equipment and waste.</p> <p>4. Tons of PCB capacitors disposed at Darial-U site</p>	<p>1. No safe storages exist.</p> <p>2. No safe PCB storages exist.</p> <p>3. None.</p> <p>4. First batches exported</p>	<p>1. All storage personnel under-gone safe handling, fire, spill containment training.</p> <p>2. PCB waste received within 30 months of project inception</p> <p>3. 200 tons of PCB equipment and waste disposed.</p> <p>4. All Darial-U capacitors disposed by end year 2.</p>	<p>1. Project documents, list of training attendees and training report.</p> <p>2. Diary/log for incoming material at storage site.</p> <p>3. Certificate of disposal by final disposal facility.</p> <p>4. Freight documents and disposal certificates</p>	<p>Risk: Delays due to prolonged permitting due to site selection, and approvals for their release, NIMBY etc.</p> <p>Assumptions: sites selected to ensure that no major local resistance to storing hazardous waste delay approval process.</p> <p>Assumption: companies willing to participate in early storage</p> <p>Risk: first bidding and disposal quantities may be low due to the fact that legislation has been approved close to target date</p>
<b>Outcome 5:</b> Monitoring, learning, adaptive feedback, outreach and evaluation	<p>1. M&amp;E and adaptive management applied to project in response to needs, mid-term evaluation findings with lessons learned extracted.</p>	<p>1. No Monitoring and Evaluation system</p> <p>2. No evaluation of project output and outcomes</p>	<p>1. Monitoring and Evaluation system developed during year 1.</p> <p>2. Mid-term-evaluation of project output and outcomes conducted with lessons learnt at 30 months of implementation.</p>	<p>1. Project document inception workshop report.</p> <p>2. Independent midterm-evaluation report.</p>	
<p><i>Outcome 1: Regulatory and administrative strengthening for sound PCB management</i></p> <p>Output 1.1: Environmental Code and other PCB related legislation reviewed, changes developed. Environmental Code revised to include a chapter on PCB management and disposal.</p> <p>Output 1.2: Responsibilities vis-a-vis International Chemicals' Conventions in the government re-aligned</p> <p>Output 1.3: Detailed PCB rules, guidelines, incentive schemes developed</p> <p>Output 1.4: Capacity for implementing and knowledge of PCB regulations and guidance among public sector actors, including training of customs department in PCB identification, enhanced.</p> <p>Output 1.5: Awareness raising campaigns on PCB risks and regulatory requirements among authorities and wider public conducted</p>					

Project Strategy	Objectively verifiable indicators	Baseline	Target	Sources of verification	Assumptions
<i>Outcome 2: Capacity building for sound PCB management, identification of additional PCB sources</i>					
Output 2.1: Improved capacities of PCB holders for sound PCB management					
Output 2.2: PCB holder-wise management and replacement plans					
Output 2.3: PCB inventory expanded and updated					
Output 2.4: Enhanced PCB analysis preparedness at State Hydro-meteorological services and Ministry of Health laboratories					
Output 2.5: Risk based priority setting tools for PCBs management initiatives developed.					
<i>Outcome 3: Replacement, setting-up safe dismantling of 850 tons of PCB transformers and their safe disposal</i>					
Output 3.1: Phase-out and procurement of replacement transformers planned and scheduled					
Output 3.2: Transformers disconnected, drained, dismantled and cleaned, metals recycled					
Output 3.3: Disposal of oils and associated waste					
<i>Outcome 4: Regionally organized secure storages and disposal of PCB capacitors</i>					
Output 4.1: Secure, temporary PCB storage facilities identified, constructed/upgraded					
Output 4.2: Safe operation of storage sites secured					
Output 4.3: PCB collection and disposal put in place and implemented					
Output 4.4: 15,000 PCB capacitors at Darial-U Capacitor site disconnected, packed and stored.					
Output 4.5: Clean-up premises and pack all potentially PCB contaminated wastes.					
Output 4.6: Transportation and disposal of approximately 600 tons of PCBs and associated waste disposed.					
<i>Outcome 5: Monitoring, learning, adaptive feedback, outreach and evaluation</i>					
Output 5.1: M&E and adaptive management applied to project in response to needs and to extract lessons learned					
Output 5.2: Lessons learned and best practices are replicated at the national level					



**SECTION III : Total Budget and Workplan**

Award ID:	00057559
Award Title:	PIMS 3477 POPs FSP: PCB Management in Kazakhstan
Business Unit:	KAZ10
Project Title:	Design and Execution of a Comprehensive PCB Management Plan for Kazakhstan
Project ID: PIMS no.	00071180, PIMS 3477
Implementing Partner (Executing Agency)	NEX Ministry of Environmental Protection- Republic of Kazakhstan

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)
1. Regulatory and administrative strengthening for sound PCB management	NEX	62000	GEF	71200	International Consultants	37,000	35,000				72,000
				71300	Local Consultants	40,000	47,000				87,000
				72100	Contractual services	30,000	25,000				55,000
				71600	Travel (in-land & int.)	15,000	10,000				25,000
				72100	Workshops	10,000	25,000				35,000
					<b>Total Outcome 1</b>	<b>132,000</b>	<b>142,000</b>				<b>274,000</b>
2. Capacity building for sound PCB management, identification of additional PCB sources.	NEX	62000	GEF	71200	International Consultants	30,000	60,000	30,000			120,000
				71300	Local Consultants	30,000	50,000	22,000			102,000
				71600	Travel	20,000	50,000	15,000			85,000
				72100	Contractual services	10,000	10,000	5,000			25,000
				72200	Safety disposables	15,000	10,000	5,000			30,000
				72100	Workshops	20,000	25,000				45,000
	<b>Total Outcome 2</b>	<b>125,000</b>	<b>205,000</b>	<b>77,000</b>			<b>407,000</b>				

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)
3. Replacement, setting-up safe dismantling of 850 tons of PCB transformers and their safe disposal.	NEX	62000	GEF	71200	International Consultants	18,000	44,000				62,000
				71300	Local Consultants	10,000	8,000				18,000
				71600	Travel	10,000	13,000				23,000
				72100	Contractual services		200,000	200,000	200,000	258,000	858,000
					<b>Total Outcome 3</b>	<b>38,000</b>	<b>265,000</b>	<b>200,000</b>	<b>200,000</b>	<b>258,000</b>	<b>961,000</b>
4. Regionally organized secure storages and disposal of PCB capacitors	NEX	62000	GEF	71200	International Consultants	12,000	24,000	8,000			44,000
				71300	Local Consultants	30,000	60,000	60,000	60,000	60,000	270,000
				71600	Travel	8,000	15,000	11,000			34,000
				72100	Contractual services		300,000	150,000	150,000	146,000	746,000
				72200	Operational and Safety disposables		35,000	36,000			71,000
				72200	Equipment		50,000				50,000
					<b>Total Outcome 4</b>	<b>50,000</b>	<b>484,000</b>	<b>265,000</b>	<b>210,000</b>	<b>206,000</b>	<b>1,215,000</b>
5. Monitoring, leaning, adaptive feedback, outreach and evaluation	NEX	62000	GEF	71200	International Consultants			12,000		18,000	30,000
				71300	Local Consultants	15,000	5,000	10,000		9,000	39,000
				71600	Travel			8,000		8,000	16,000
				72100	Workshops	10,000					10,000
				72100	Contractual services	5,000	5,000		5,000	3,000	18,000
					<b>Total Outcome 5</b>	<b>30,000</b>	<b>10,000</b>	<b>30,000</b>	<b>5,000</b>	<b>38,000</b>	<b>113,000</b>
Project Management	NEX	62000	GEF	71300	Local Consultants	50,000	50,000	50,000	50,000	60,000	260,000
				71600	Travel	3,000	3,000	4,000	3,000	3,000	16,000
				72200	Equipment	8,000	2,000				10,000
				74500	Miscellaneous (office supplies and Communication)	5,000	5,000	5,000	5,000	4,000	24,000
				74500	Miscellaneous (Audit)	4,000	4,000	4,000	4,000	4,000	20,000
					<b>Total Management</b>	<b>70,000</b>	<b>64,000</b>	<b>63,000</b>	<b>62,000</b>	<b>71,000</b>	<b>330,000</b>
<b>PROJECT TOTAL</b>						<b>445,000</b>	<b>1,170,000</b>	<b>635,000</b>	<b>477,000</b>	<b>573,000</b>	<b>3,300,000</b>

Summary of Funds:		Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)
		GEF	445,000	1,170,000	635,000	477,000	573,000
	Gov. of Kazakhstan Grant/in-kind	5,000,000	2,500,000	1,500,000	1,000,000	901,356	10,901,356
	Private sector international (Outcome 4)	500,000	500,000	500,000	500,000	983,000	2,983,000
	Private sector national (outcome 3.)	500,000	1,500,000	500,000	500,000	475,000	3,475,000
	Private sector national (Outcome 4.)		120,000	40,324			160,324
	<b>TOTAL</b>	<b>6,445,000</b>	<b>5,790,000</b>	<b>3,175,324</b>	<b>2,477,000</b>	<b>2,932,356</b>	<b>20,819,680</b>

### Indicative Outputs, Activities and quarterly workplan

Outcomes	Out put s	Quarte r/year	I/1	II/1	III/1	IV/1	I/2	II/2	III/2	IV/2	I/3	II/3	III/3	IV/3	I/4	II/4	III/4	IV/4	I/5	II/5	III/5	IV5	
1. Regulatory and administrative strengthening for sound PCB management.	1.1:		■	■	■	■																	
	1.2			■	■	■																	
	1.3:				■	■	■	■															
	1.4:				■	■	■	■	■														
	1.5:					■	■	■	■														
2. Capacity building for sound PCB management, identification of additional PCB sources.	2.1:				■	■	■	■	■	■	■	■	■	■									
	2.2																						
	2.3:																						
	2.4:				■	■	■	■															
	2.5:																						
3. Replacement, setting-up safe dismantling of 850 tons of PCB transformers and their safe disposal.	3.1:				■	■																	
	3.2:			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	3.3:				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4. Regionally organized secure storages and disposal of PCB capacitors	4.1:					■	■	■															
	4.2:																						
	4.3:																						
	4.4:				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	4.5:				■	■	■	■	■														
	4.6:					■	■	■	■														
Outcome 5. Monitoring, Learning Adaptive Feedback, Outreach and Evaluation	5.1		■	■																			
	5.2:					■	■	■	■				■	■								■	■

## **SECTION IV : ADDITIONAL INFORMATION**

### **PART I: Other agreements**

GEF OFP endorsement and in-kind/cash commitment letters are attached to the submission separately in Adobe Acrobat format.

### **PART II : Organigram of Project (optional)**

### **PART III : Terms of References for key project staff and main sub-contracts**

#### **Terms of Reference: National Project Manager**

Poly-Chlorinated Biphenyls, PCBs, are due to the harmful effects and tendency for long-range transboundary environmental transport included in the initial list of globally managed Persistent Organic Pollutants.

Kazakhstan is committed to safe management of PCB as demonstrated by signature of the Stockholm Convention and its subsequent ratification on 7 June 2007. For planning appropriate action in the field of controlling POPs substances and releases as well as fulfilling the reporting requirements of the Convention, Government of Kazakhstan developed an Action Plan for PCB management as a part of its draft National Implementation Plan (NIP) on POPs

The PCB Action Plan evolved into a project called "Design and Execution of a Comprehensive PCB Management Plan for Kazakhstan" which is a joint undertaking by The Government of Kazakhstan, private sector partners and UNDP. The Global Environment Facility is providing substantive grant funding for co-financing the project.

The Project includes the following components

1. Regulatory and administrative strengthening for sound PCB management
2. Capacity building for sound PCB management, identification of additional PCB sources
3. Replacement, setting-up safe dismantling of 850 tons of PCB transformers and their safe disposal
4. Regionally organized secure storages and disposal of PCB capacitors

Reporting directly to the National Project Director, A Project Manager will be recruited for the entire implementation period of the project.

As per UNDP guidelines in force the Project Manager is responsible for

- Timely implementation of the workplan as endorsed by the PSC.
- General and financial administration.
- Work planning, scheduling and project progress reporting.
- Monitoring project deliverables and ensuring M&E activities are fed back in project planning.
- Writing of Terms of Reference for project consults.
- Tendering of contractual services
- Monitoring and the quality control, particularly on safety, of input from consultants and subcontractors providing assistance to the project.

- Tendering for international services pertaining to PCB waste transportation and disposal.
- Documentation related to transboundary shipment of hazardous waste.

The Project Manager shall coordinate the contracting of entities responsible for the training, transporting and collection as well as final disposal of the PCB equipment and monitor their performance.

Duration of assignment: 5 years

Qualifications:

- A degree in Management, Engineering, physical sciences or economics;
- Thorough knowledge of legislation and management of hazardous waste
- Knowledge of industrial sized power equipment and their management desirable.
- Minimum of five years post qualification experience at mid-management level
- Knowledge of the Stockholm Convention and Persistent Organic Pollutants highly desirable;
- Experience in the management of Environmental issues desirable;
- Must be fully IT literate.
- Working knowledge of Russian and English

Additional TORs will be developed when the programme will be initiated.

#### **PART IV: Stakeholder Involvement Plan**

The stakeholders in the project will be a cross section of the society. The Ministry of Environmental Protection will coordinate the project and chair the Project Board. Other ministries relevant to different project activities such as Ministry of Energy and Mineral Resources Ministry of Industry and Trade, Ministry of Agriculture Ministry of Health Care, Ministry of Finance Ministry of Education and Science Ministry of Economy and Budget Planning will be also included in the PB. These ministries will be closely involved in the strategic planning of project activities as part of the PB project guidance. The PB will be meeting on a quarterly basis and the key ministries will be providing their strategic input as preparation and follow-up to these meetings.

Much of the stakeholder involvement from the government authorities will be coordinated by the Project Board. Apart from the official PB it is envisaged that a broader group of organizations and interests will be represented in a series of technical consultations at various stages of the project. These include PCB holders NGOs and academia.

For other stakeholders the major interactions will be established as a part of trainings and other outreach activities particularly under project outcome 2. Capacity building for sound PCB management, identification of additional PCB sources.

These training and contacts are planned to result in addition to direct activity at holder level, also to engage the institutions and PCB holders beyond the minimum results and to for example extend PCB identification to potential holders not included in the PCB inventory. Also regionally based NGOs are to be included in the outreach during the Outcome 2. Activities and hence create a positive cycle of influence from NGOs to PCB holders to regional enforcement authorities.

Further details of the roles and responsibilities as well as project stages where various stakeholders involvement is expected is given in the tables below.

Stakeholder	Roles and Responsibilities
Ministry of Environmental Protection, Kazhydromet	Current role of the Ministry of Environmental Protection (MEP) is to develop state policies and programs on environmental protection and hazardous waste management, and to coordinate with the secretary of the POPs Convention. MEP will contribute to the project by making joint decision on PCB management including amendments to the EcoCode, linking the project's actions with Kazakhstan's commitments vis-à-vis Stockholm, Basel and Rotterdam conventions. MEP with its oblast branches and Kazhydromet with its regional laboratories will lead detailed inventory of POPs
Ministry of Energy and Mineral Resources of the RK	MEMR will provide assistance in the POPs inventory in oil-gas and refining companies and in the enterprises of the energy complex (inventory of the electrical equipment containing PCBs; annual consumption volume of solvents and reagents containing hexachlorbenzene and PCBs.
Ministry of Industry and Trade of the RK	MIT will assist in the POPs inventory in the enterprises of mining, metallurgical, chemical, engineering, paints and colors, wood-processing, furniture, textile, footwear and garment, construction industries and construction objects (inventory of the available electrical equipment containing PCBs, annual consumption volumes of solvents and reagents containing hexachlorbenzene and PCBs; annual volumes and compositions of emissions from metallurgical, chemical, cement, and other productions; cases of burning of the industrial and household wastes in the enterprises)
Ministry of Agriculture of the RK	MoA will assist in the POPs inventory in the agriculture (inventory of existing stockpiles and buried pesticides that exhibit POPs characteristics, inventory of the existing equipment containing PCBs in the rural areas and food industry; annual consumption volumes of solvents and reagents containing hexachlorbenzene and PCBs).
Ministry of Health of the RK	MoH will assist in the POPs inventory in the health care and medical industry (inventory of the existing electrical equipment containing PCBs, annual consumption volumes of solvents and reagents containing hexachlorbenzene and PCBs). MoH is also expected to contribute to assessment of health effect of PCB exposure and to monitoring of PCB residues.
Ministry of Finance of the RK, Customs Committee	Customs committee will contribute to development of measures/rules to ban import and export of PCBs, electrical equipment containing PCBs and will ensure enforcement of the measures/rules.
Ministry of Education and Science of the RK	MES will ensure inclusion of the PCBs information generated by the project into environmental education programs. MES will also contribute to research on alternative technologies for replacement of PCBs-containing electrical equipment etc.
Ministry of Economy and Budget Planning of the RK	MEBP approves national budgets, develops the country's economic sectors, and promotes effective implementation of social, environmental and economic development priorities. MEBP will provide financial advice and monitoring of investment projects related to disposal of PCBs.
MEP Oblast (Province) Departments	MEP Oblast Departments will assist in detailed inventory of POPs stockpiles and wastes, in establishment of temporary storages for PCB equipment
Karaganda Oblast Department of MEP	KOD MEP will assist in establishment of temporary storages for disconnected PCB capacitors; will oversee project related activities at Arcelor Mittal
Arcelor Mittal	Arcelor Mittal will undertake the procurement and replacement PCB containing transformers, their draining, dismantling and recycling of metal parts. Please refer to the co-financing letter for details.
PCB small holders	Small holders of PCB equipment will commit itself to invest in new PCB-free capacitors and transport the old PCB containing equipment to the regional storages to be established by the project.
NGO Ecomuseum (Karaganda), NGO "Green women"(Almaty), NGO "Center for chemical safety" (Astana), "Self-governance Center" (Ust-Kamenogorsk)	NGOs working on hazardous waste management will be an extended hand of the project in the regions and will assist the project in conducting public awareness campaigns and actions, issuing and dissemination of brochures, leaflets, other materials, lectures, in delivering trainings/workshops for communities in the targeted areas. NGOs will also assist the project in identification of PCB equipment during the detailed inventory to be conducted by the project.

Category	Stake-holder	Outcome 1: Regulatory and administrative strengthening for sound PCB management	Outcome 2: Capacity building for sound PCB management, identification of additional PCB sources	Outcome 3: Replacement, setting-up safe dismantling of 850 tons of PCB transformers and their safe disposal	Outcome 4: Regionally organized secure storages and disposal of PCB capacitors	Outcome 5: Monitoring, learning, adaptive feedback, outreach and evaluation
Government	Ministry of Environmental Protection	x	x	x	x	x
	Ministry of Industry and Trade	x	x		x	x
	Ministry of Interior	x	x		x	x
	Ministry of Health Care	x	x		x	x
	Ministry of Energy and Mineral Resources	x	x			x
	Ministry of Defense					x
	Ministry of Finance of the RK, Customs Committee	x	x			x
	Ministry of Economy and Budget Planning		x	x	x	x
	Oblast (Province) Akimats (Administration)					
PCB holders	Transformer and oil recyclers	x		x		x
	Private industries			x	x	x
Others	Kazhydromet,	x			x	x
	Environmental NGOs e.g. Ecomuseum	x	x		x	x
	Academia	x	x			x



**Part V: Signature page**

**SIGNATURE PAGE**

Country: Republic of Kazakhstan

UNDAF Outcome(s)/Indicator(s):

Reduced (income and human) poverty at national and sub-national levels

Expected Outcome(s)/Indicator (s):

A comprehensive approach to sustainable development is integrated into national development planning and linked to poverty

Expected Output(s)/Indicator(s):

Expanded collaboration between government, donors, civil society and the private sector in the area of environmental management and sustainable development

Implementing partner:

Ministry of Environment Protection

Other Partners:

UNDP-Kazakhstan

Programme Period: 2005-2009  
Programme Component: Environment  
Project Title: Design and Execution of a Comprehensive PCB Management Plan for Kazakhstan  
Project ID: Atlas 00057559, Project Id.00071180, PIMS 3477  
Project Duration: 60 months  
Management Arrangement: NEX

Total budget:	20,819,680
Allocated resources:	
• Government	9,775,000
• Private sector	6,618,324
• Other:	
○ GEF	3,300,000
• In kind contributions	
○ Government	1,126,356

Agreed by (Government): \_\_\_\_\_

Agreed by (Implementing partner/Executing agency): \_\_\_\_\_

Agreed by (UNDP): \_\_\_\_\_

**Annex I. Detailed budget**

Project component.	Sub-activity	Input	Amount	Total	GEF	Co-fin
1.1. Review, development changes in existing legislation	Review, gap analysis of existing PCB legislation and official management guidelines	National experts	95 months	286,497		x
		International expert	1 months	12,000	x	
		Travel+subs		5,000	x	
		National expert	2 months	6,000	x	
1.2. Chemicals Conventions administrative responsibilities re-aligned	Assessment of the current status interlinkages among various international agreements covering chemicals. Propose and adopt effective administrative response to international chemicals work.	National expert	3 months	9,000	x	
		Workshop		5,000	x	
1.3. Detailed PCB rules, guidelines, incentive schemes developed	Development of detailed rules and technical documentation for all PCB management stages from source identification to disposal	National experts	6 months	16,108		x
		International expert	2 months	24,000	x	
		Travel+subs		15,373	x	
		National expert	10 months	30,000	x	
1.4. Capacity for implementing PCB regulations and guidance in the public sector (authorities) built.	Development of administrative tools and procedures as well as training central and regional authorities in implementing the provisions	International expert	3 months	36,000	x	
		Travel+subs		10,000	x	
		National expert	10 months	30,000	x	
		Subcontracts		20,000	x	
		Workshops		30,000	x	
1.5. PCB Awareness raising among authorities and wider public	Development of information and awareness material. Its replication and dissemination	National expert	4 months	12,000	x	
		Subcontracts (printing etc )		25,000	x	
		Dissemination		10,000	x	
			<b>Sub-total</b>	<b>581,978</b>		
	GEF		274,000			
	Government in kind		307,978			

Project component.	Sub-activity	Input	Amount	Total	GEF	Co-fin
2.1. Capacity building for sound PCB management (PCB holders)	Develop of training material, central workshop with train the trainers. Provincial workshops and company visits	International expert	2 months	24,000	x	
		Travel+subs		10,000	x	
		National expert	10 months	30,000	x	
		workshops	15	45,000	x	
2.2. Support development of PCB holderwise management and replacement plans.	Development of PCB holder wise PCB management plans with support from project experts	International expert	1 months	24,000	x	
		Travel+subs (also inland)		10,000	x	
		National expert	10 months	30,000	x	
		Company experts	50 months			
2.3. PCB inventory expanded and updated	Further refinement of the PCB inventory by sampling and analyzing transformers identified during initial inventory as well as other potentially PCB sources. Expansion of PCB inventory to Ministry of Defense.	National experts	12 months	35,657		x
		Inland travel		5,000	x	
		National expert	10 months	30,000	x	
		sampling, safety expendables		5,000	x	
		quick tests		5,000	x	
		laboratory analysis		20,000	x	
2.4. Capacity for POPs monitoring and PCB analysis preparedness at State Hydrometeorological Services and Ministry of Health laboratories enhanced.	Capacity building of PCB (and POPs) analysis capacity at the Hydrometeorological services in order to assist with PCB analysis and preparedness for broader POPs monitoring preparedness in Kazakhstan. These activities are planned in cooperation with RECETOX, Masaryk University Stockholm Convention regional center.	International experts (material and conducting PCB analysis training in Kazakhstan and Brno, development of POPs monitoring plan	5 months	60,000	x	
		Ministry monitoring expert	7 months	20,657		x
		Kazhydromet lead experts for core training	15 months	45,000		x
		International travel+DSA		30,000	x	
		In land travel to trainings		25,000	x	
		Regional environmental department expert	5 months	15,000		x
		Regional expert input sampling and analysis	60 months	150,000		x
		Training premises		15,000		x
		Analysis premises central and regional		70,000		x
		Analysis equipment, maintenance and expendables		82,920		x
		Analysis expendables		20,000	x	
		International analysis		5,000	x	

Project component.	Sub-activity	Input	Amount	Total	GEF	Co-fin
2.5. Risk based priority setting tools for PCBs management initiatives developed.	Development of a PCB priority tool and ranking of PCB sites and issues in Kazakhstan for action.	International expert	1 month	12,000	x	
		Travel+subs		5,000	x	
		National expert	4 months	12,000	x	
		<b>Sub-total</b>		<b>841,234</b>		
	GEF		407,000			
	Government co-finance:		434,234			
	- Kazhydromet		362,920			
	- Ministry of Environment		71,314			
3.1 Phase-out and procurement of replacement transformers planned and scheduled.	In company planning and scheduling of transformer replacement programme. Bidding and procurement of replacement equipment	Company experts	10 months	30,000		x
		Company procurement and financial experts	3 months	9,000		x
		Procurement of replacement transformers		3,000,000		x
		Workshop building		100,000		x
3.2. Transformers disconnected, drained, dismantled and cleaned. Recycling scheme for metals set-up.	Workshop premises for transformer dismantling and cleaning. Safety assessment and update, minor civil works, safety equipment PPE, metal cleaning disposables, containers for PCBs, Dismantling of PCB transformers	International expert (safety assessment)	2 months	24,000	x	
		Travel		10,000	x	
		Safety equipment PPE, PCB wipes.		30,000		x
		Civil works		50,000		x
		Cleaning material, solvents, disposables		50,000		x
		Containers for PCB storage		30,000		x
		International expert (dismantling training, storage safety )	2months	24,000	x	
		Travel		7,000	x	
		Dismantling staff time	60 months	126,000		x
		Workshop for temporary storage of drained PCBs		50,000		x
3.3 Disposal of oils and associated waste.	Final disposal tendering	National Expert	6 months	18,000	x	
		Int. Expert	1 months	14,000	x	

Project component.	Sub-activity	Input	Amount	Total	GEF	Co-fin
		Travel		6,000	x	
	Packaging	Stowing as per ADR and rail transport regulations	260 tons x 100	26,000	x	
	Transportation	Subcontract	270 tons x 1,300	350,000	x	
	Disposal	Subcontract	270 tons x 1,800	482,000	x	
			<b>Sub-total</b>	<b>4,436,000</b>		
	GEF		961,000			
	Co-financing		3,475,000			
			4,436,000			
4.1. Secure, temporary PCB storage facilities upgraded.	3 Regional Storage facilities	Warehouses				x
		National Expert	2 month	5,369		x
	Safety planning, EIA and permitting	Int. Expert	1.5 months	18,000	x	
		National expert	12 months	34,000	x	
		Travel		10,000		x
		Subcontracts		60,000		x
	Minor modifications of premises	Subcontracts	3 x	46,000	x	
4.2 Safe operation of storage sites secured.	Safety equipment PPE		3 x	15,000	x	
	Packaging material Lifting devices			50,000	x	
	Replacement capacitors and transformers	Planning procurement		160,324		x
	Development of regional replacement system	International expert	1 month	12,000	x	
		Travel (mainly inland)		18,000	x	
		National expert	18 months	48,000	x	
		Supervisor at regional warehouses	3x 12 months	72,000	x	
	Operation of ware house (before system self-sustaining)	Personnel	6x 12 months	98,000	x	
		Operational costs	3x 12 months	36,000	x	
		National Expert	6 months	18,000	x	
	Final disposal tendering	Int. Expert	1 months	14,000	x	



	Private sector (international)		2,983,000			
	PCB holders		160,324	12,918,324		
Develop M&E system	Monitoring scheme based on project outcomes and output	National expert		3 m	9,000	x
		National expert			5,000	x
	Validation of M&E system	Workshop (also inception workshop)			10,000	x
	Up-date against baseline. Compiling project results and technical information as well as lessons learned.	National exp. input			10,000	x
		Measurements, analysis			18,000	x
		National exp			5,369	
Mid-term evaluation		National expert		2m	6,000	x
		Int. Exp		1 month	12,000	x
		Travel+subs			8,000	x
Final evaluation		Gov.expert+review				
		National expert		3 months	9,000	x
		Int. Exp		1.5 month	18,000	x
		Gov.expert+review				
		Travel+subs			8,000	x
				<b>Sub-total</b>	118,369	
	GEF		113,000			
	Government in kind		5,369			
	Government oversight	National Project Director		24 months	115,000	
	Government administrative input	Ministerial experts		15 months	30,000	
	Project manager			60 months	170,000	x
	Administrative assistant			60 months	90,000	x
	Office premises			60 months	233,775	
	Office equipment				10,000	x
	Supplies and communication			60 months	24,000	x

	Travel +DSA			16,000	x	
	Audit		4 times	20,000	x	
			<b>Sub-total</b>	<b>708,775</b>		
		GEF		330,000		
		Gov in-kind		378,775		
				<b>708,775</b>		
		Grand total		20,819,680		
		GEF		3,300,000		
		Government		10,901,356		
		Private sector		6,618,324		