PROJECT INFORMATION DOCUMENT (PID)
CONCEPT STAGE

Report No.: PIDC2514

Project Name	Hazardous and Persistent Organic Pollutants Waste Management Project (P114830)
Region	EUROPE AND CENTRAL ASIA
Country	Kazakhstan
GEF Focal Area	Persistent Organic Pollutants
Sector(s)	Solid waste management (100%)
Theme(s)	Pollution management and environmental health (100%)
Lending Instrument	Specific Investment Loan
Project ID	P114830
Borrower(s)	Republic of Kazakhstan
Implementing Agency	Ministry of Energy
Environmental Category	A-Full Assessment
Date PID Prepared/ Updated	27-Jan-2015
Date PID Approved/ Disclosed	28-Jan-2015
Estimated Date of Appraisal Completion	10-Apr-2015
Estimated Date of Board Approval	08-Jul-2015
Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

During the Soviet era, Kazakhstan was under extensive heavy industrial development, which focused on maximizing output with little regard for the associated environmental degradation. Environmental policies were weak and little effort was made to regulate industries and ensure that they would not pollute the environment with hazardous substances. As a result of this practice and continuing today, industries are storing hazardous and non-hazardous waste on their premises. This practice is highly inadequate due to the absence of appropriate landfills and treatment facilities as well as incentives to reduce waste generation. In some oblasts, current inappropriately stored hazardous waste at factory sites are causing contamination of ground and surface waters that may lead to significant health hazards for the exposed population.

In terms of Persistent Organic Pollutants (POPs) waste stocks, the Republic of Kazakhstan is the

second state after the Russian Federation, and among Eastern and Central European countries with the highest presence of volumes of wastes that contain POPs.

Targeted investments in industrial pollution management have been made in recent years, in particular to remediate contamination caused by historic polluting sources. The Bank supported the Nura River Clean-up Project, a US$100 million investment supporting the remediation of mercury contaminated sites and river clean-up and the Ust-Kamenogorsk Environmental Remediation Project, currently under implementation which supports the remediation of seven industrial waste dumps in Ust-Kamenogorsk and the establishment of a groundwater treatment system.

Historic pollution is a responsibility of the Government of Kazakhstan, which is also reflected in the Law on the Natural Resources of Kazakhstan. The law classifies the cleanup responsibility for the hazardous waste dumps as follows: for those dumps accumulated and located on the territory of [an industrial] plant before May 30, 1992, cleanup will be the Government's responsibility; those after this date are the responsibility of the plant itself.

Sectoral and Institutional Context

A pre-feasibility study for remediation of POPs contaminated sites was conducted in 2011 , with financing from a Canadian Trust Fund. Detailed site investigations, sampling and laboratory analysis have been executed to analyze the extent of PCBs and POPs contamination in the soil for the following sites: (i) Ust-Kamenogorsk Condensing Plant territory (UKCP) and river banks; (ii) Storage pond of the Ust-Kamenogorsk Condensing Plant; (iii) Ekibastuz City power substation area; (iv) Derzhavinsk polygon for military machinery destruction; (v) Zhangiztobinsk polygon for military machinery destruction; (vi) Territory of former military facilities in the northern Pri-Balkhash; (vii) Kostanai City power substation area; (viii) Pavlodor Chemical Plant; (ix) Second Derzhavinsk polygon; (x) Third Derzhavinsk polygon: (xi) Waste disposal site of Zhetekshi former agriculture cooperative; (xii) 7-Aul central pesticide storage; (xiii) Kalkaman pesticide landfill; and (xiv) Derzhavinsk agricultural complex. Subsequently, further detailed site investigations and an update of the pre-feasibility study were carried out for the following sites: (i) Ust-Kamenogorsk Capacitor Plant (UKCP) territory; (ii) Ekibastuz power substation; (iii) Derzhavinsk agricultural complex; (iv) Daryal-U site; (v) Zhetekshi former agriculture cooperative waste disposal site; (vi) 7-Aul former central pesticide storage; and (vii) Kalkaman pesticide landfill. These investigations were done with modern laboratory equipment which was installed in the laboratories in Ust Kamenogorsk accompanied with substantial international training in sampling and laboratory protocols and QA/QC under the Ust-Kamenogorsk Environmental Remediation Project.

The results from the pesticide analysis for all sites investigated showed no notable soil or groundwater contamination. This was different for the sites contaminated with PCBs, for which the site investigations, quantified the pollution into three categories using the following criteria:
• Slightly Contaminated (0.5 to 5 mg PCBs/kg of soil);
• Heavily Contaminated (5 to 50 mg PCBs/kg of soil); and
• Hazardous Waste (> 50 mg of PCBs/kg of soil).

In line with the requirements of the Stockholm Convention, PCB contamination with a concentration of more than 50 mg per kg of soil has to be considered as hazardous waste and therefore requires off-site final treatment, such as incineration, rather than in-situ encapsulation of the contaminated materials. The sampling and laboratory analysis of the site investigations from the

pre-feasibility study of the contaminated sites showed that between 50,000 and 150,000 cubic meters of soil is contaminated with a concentration of more than 50 mg of PCB per kg of soil, which means that the soil would have to be treated as hazardous waste. In addition, the Ust Kamenogorsk Environmental Remediation Project, financed by the World Bank and the Government of Kazakhstan, is currently remediating the Capacitor Sludge Pond and will construct an interim disposal cell where the PCB-contaminated soil in the category of hazardous waste in the estimated amount of 21,000 cubic meter will be temporarily stored until final treatment is available in Kazakhstan as currently there are no sound technologies in Kazakhstan that can destruct PCBs and export abroad is very costly due to the high volumes and the fact that neighboring countries do not allow transit of hazardous waste across their territory.

Relationship to CAS

Under the new Country Partnership Strategy for the period FY12-FY17, the Project is included under the third Area of Engagement: "Ensuring Development is Environmentally Sustainable" and Kazakhstan's country goal: "Fight Climate Change with a cleaner environment". The Project is also in line with the “Concept on Transition to Green Economy” which was adopted by GoK on May 24, 2013 which lists management of industrial waste in line with international best practices as one of the key focal points under their waste management pillar.

II. Proposed Development Objective(s) / Global Environmental Objective(s)

A. Project Development Objective(s)

The proposed Development Objective is to create a hazardous and POPs waste treatment facility with appropriate environmental controls and to remediate selected PCB contaminated sites, reduce public and environmental exposure to these now contaminated lands

The Project will achieve its objective through: (i) creation of a facility to treat hazardous and POPs waste with appropriate environmental controls; (ii) remediation of selected historic PCBs contaminated waste disposal sites; and (iii) disposing the PCBs waste, PCBs equipment and PCBs contaminated soil with hazardous waste classification from these sites, remediated under the Project, in the constructed facility in line with the Stockholm Convention.

B. Global Environmental Objective(s)

The overall Global Environment Objective of the proposed project is to reduce the environmental and health hazards associated with stockpiles of PCB-containing materials and waste and POPs-based pesticides, by eliminating stockpiles, establishing a treatment facility and safeguarding sites contaminated with these materials consistent with the country’s obligations under the Stockholm Convention. For this purpose, the Global Environment Facility has in principle approved a US $10.35 million Grant.

Key Results (From PCN)

Key Result Monitoring Indicators for the Project are:

(a) Industrial waste disposal capacity created under the Project (tons), core sector indicator;
(b) Contaminated land managed or (industrial) dump sites closed under the Project (hectares), core sector indicator;
(c) Reduced number of people potentially exposed to pollution (people)
(d) POPs and POPs waste destroyed, disposed of, or contained in an environmentally sound manner (tons), core sector indicator; and

(e) Improved capacity in remediation of PCB contaminated land and industrial hazardous waste management

III. Preliminary Description

Concept Description

The proposed project will have four components: (1) development of a treatment/destruction facility; (2) remediation of selected historic PCB contaminated sites, including treatment of present PCB waste/equipment and PCB contaminated soil; (3) Strengthening Institutional and Regulatory Industrial Hazardous Waste Management Capacities; and (4) project management.

Component 1 – Creation of a Treatment/Destruction Facility (indicative costs US$40-50 million)

This component aims to create a facility for treatment and destruction through incineration of hazardous waste and POPs and PCBs in line with Kazakhstan's obligations under the Stockholm convention. The siting process for this facility will be concluded during project preparation.

Site suitability for such central facility is based on an analysis of sites which have been pre-selected by the Ministry of Energy on the basis of technical site suitability criteria and based on support of local authorities. The technical site suitability selection criteria consist of: (i) possibilities for regular maintenance and servicing requirements, and intensive control procedures, including analytical facilities (PCB testing capacity); (ii) a continuous supply of fresh water, large quantities of chemicals for the scrubber and a reliable supply of electricity and fuel as well as an analytical facility to monitor and demonstrate environmental compliance; (iii) requirements for highly trained personnel. One of the possible sites is located in one of Kazakhstan's industrial zones (Pavlodar), and all are relatively far removed from population centers. The finalization of site selection will further be based on Kazakhstan legislation, the quantities and location of POP-containing wastes at the priority sites and the quantities, types and origin of other industrial hazardous waste suitable for co-incineration/destruction in the same facility as well as the Environmental Impact Assessment and public consultations.

Suitable fixed (non-mobile) incineration/treatment technologies are determined in the feasibility study currently ongoing during project preparation (funded by a Project Preparation Grant from the Global Environmental Facility and the Kazakhstan Republican Budget) and will also include a landfill cell or cells, possibly with some basic pre-treatment possibilities (e.g. for stabilization and/ or dewatering). These technologies will be based on commercial availability of the technology, as technologies which still contain technological or scape-up risk cannot be considered for financing, and taking into account that the disposal/destruction facility should be designed to handle solids and liquids as well as contaminated soil, materials, containers and packed waste with high levels of PCB contamination (> 50 mg/kg).

Component 2: Remediation of selected historic PCB contaminated sites, including treatment of present PCB waste/equipment and PCB contaminated soil (>50 mg/kg) (indicative costs US$30-40 million)

Based on the executed pre-feasibility study for remediation of POPs contaminated sites was with detailed site investigations, sampling and laboratory analysis to investigate the extent of PCBs and POPs contamination in the soil, the proposed project will focus on environmental remediation of a

selection of priority sites for historic PCB contamination that urgently need remediation measures. The priority of sites was determined based on the detailed site investigations and risk assessment which were executed for the sites identified in the NIP as priority sites. All the sites to be included in the remediation component will be sites for which the clean-up is the responsibility of the Government. These priority sites are:

1. Ust-Kamenogorsk Capacitor Plant (estimated amount of waste that would require off-site treatment between 50,000-150,000 cubic meter, to be determined based on the remediation plan)
2. Ust-Kamenogorsk Capacitor Sludge Pond (estimated amount of waste requiring off-site treatment: 21,000 cubic meter).

A third priority site will be included during execution of the Feasibility Study. The Feasibility Study will also prepare the full remediation plan for the priority sites before appraisal which will also define in more detail the amounts of soil which should be excavated and brought to the treatment facility. As there is no further PCB production on any of the sites, the Project will only focus on the historic legacies which are a government responsibility and no solution has to be found for ongoing PCB production from these sites.

Remediation approaches are expected t o include excavation and removal of the contaminated soil with contamination > 50 mg/kg and the PCBs waste and PCB containing equipment as well as POPs containing pesticides for final treatment/destruction in the central facility and in-situ stabilization and full encapsulation of the lesser contaminated soil with reshaping, top cover and re-vegetation.

This component will also integrate readily available "orphan" stocks of PCB containing transformers, capacitors or POP containing pesticides warehouses that fall under the responsibility of the Government of Kazakhstan and for which the remediation plan and costs can be incorporated under the proposed Project and Loan with GEF co-financing and this will further be defined in the course of project preparation. Collaboration also exists with the Food and Agricultural Organization who are undertaking more detailed inventory of the POP containing warehouses in Kazakhstan and for which POP containing pesticides could also be disposed in the facility and brought under the project if GoK agrees. This proposed project is the first lending operation on Industrial Hazardous Waste Management in the country and will focus on the most urgent POPs treatment and disposal issues; however with a treatment facility operational further destruction of other sites and stocks will be available in the country.

Component 3 – Strengthening Institutional and Regulatory Industrial Hazardous Waste Management Capacities (indicative costs US$3-5 million)

This component will strengthen institutional and regulatory capacities in the field of industrial hazardous waste management and support improvements to the regulatory framework to establish adequate and sustainable management of these industrial hazardous waste categories in Kazakhstan.

The component will support development of the establishment of a hazardous waste registry in the Ministry and strengthen the institutional and regulatory capacity of the Ministry of Energy in the following areas: (i) hazardous waste producers' responsibility to classify, store and transport hazardous waste; (ii) how companies would be obliged to use the hazardous waste treatment facility; (iii) control of hazardous waste producers' compliance with the hazardous waste management legislation and their responsibility to report to the environmental authorities regarding

hazardous waste generation; and (iv) penalty system for hazardous waste producers in case of violation of the legislation.

This component will also help develop the necessary arrangements for the treatment of hazardous waste in the facility that will be developed under Component 1. These arrangements include ownership, public or private operational management, tariff setting, license provisions of hazardous waste treatment plants, control of hazardous waste treatment facility's compliance with the environmental legislation, penalty system for hazardous waste treatment plants in case of violation of environmental legislation.

The project preparation will also explore the possibility to include specific funding under this component for public and stakeholder awareness, engagement, consultations etc.

Component 4 – Project Management

The objective of this component is to manage project resources in accordance with the project's objectives and procedures as outlined in the Project Operations Manual (POM) which will be developed during project prepa ration.

This component will finance the operating costs of a Project Implementation Unit within the Ministry of Energy to carry out project management functions for Components 1, 2, and 3. Support will be provided for procurement, financial management, coordination, reporting, and monitoring and evaluation. It will also be explored if a communication officer could be part of the PMU to work with the communities and stakeholder engagement plan.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	×		
Natural Habitats OP/BP 4.04		×	
Forests OP/BP 4.36		×	
Pest Management OP 4.09		×	
Physical Cultural Resources OP/BP 4.11		×	
Indigenous Peoples OP/BP 4.10		×	
Involuntary Resettlement OP/BP 4.12			×
Safety of Dams OP/BP 4.37		×	
Projects on International Waterways OP/BP 7.50		×	
Projects in Disputed Areas OP/BP 7.60		×	

V. Financing (in USD Million)

Total Project Cost:	92.45	Total Bank Financing:	34.00
Financing Gap:	0.00		

Financing Source	Amount
Borrower	48.10

International Bank for Reconstruction and Development	34.00
Global Environment Facility (GEF)	10.35
Total	92.45

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