

**INTEGRATED SAFEGUARDS DATA SHEET  
APPRAISAL STAGE**

**Report No.: ISDSA8259**

**Date ISDS Prepared/Updated:** 25-Jul-2014

**Date ISDS Approved/Disclosed:** 28-Jul-2014

**I. BASIC INFORMATION**

**1. Basic Project Data**

<b>Country:</b>	Lebanon	<b>Project ID:</b>	P122540
<b>Project Name:</b>	LB: PCB Management in the Power Sector Project (P122540)		
<b>Task Team Leader:</b>	Maria Sarraf		
<b>Estimated Appraisal Date:</b>	11-Aug-2014	<b>Estimated Board Date:</b>	20-Nov-2014
<b>Managing Unit:</b>	GENDR	<b>Lending Instrument:</b>	Specific Investment Loan
<b>GEF Focal Area:</b>	Persistent Organic Pollutants		
<b>Sector(s):</b>	General energy sector (100%)		
<b>Theme(s):</b>	Pollution management and environmental health (100%)		
<b>Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?</b>			No
<b>Financing (In USD Million)</b>			
Total Project Cost:	2.54	Total Bank Financing:	0.00
Financing Gap:	0.00		
<b>Financing Source</b>			<b>Amount</b>
Borrower			0.00
Global Environment Facility (GEF)			2.54
Total			2.54
<b>Environmental Category:</b>	A - Full Assessment		
<b>Is this a Repeater project?</b>	No		

**2. Global Environmental Objective(s)**

The proposed GEO/PDO is to dispose of high risk PCBs and improve the inventory management of transformers in the power sector in an environmentally sound manner.

### 3. Project Description

PCBs in Lebanon are mainly encountered in the electric power sector. Prior to the mid-1990s, they were widely used in power transformers and capacitors at various levels – power stations, sub-stations and distribution transformers. Most of this equipment is owned by Electricité du Liban (EDL), the state-owned power utility, but some are owned by some smaller private distribution utilities.

Subsequent to ratifying the Stockholm Convention for the management of Persistent Organic Pollutants (POPs), the Government of Lebanon requested the Bank to execute a GEF-financed project that would deal with priorities in POPs management. Risks of environmental contamination from PCBs come from three major sources: a) equipment manufactured with PCBs as dielectrics; b) equipment containing oil that is contaminated with PCBs; and c) sites contaminated from leaking oil containing PCBs. The Proposed Project addresses two of these priorities and comprises the following three components:

#### Component 1. Inventory of PCB contaminated transformers (US\$0.79 million)

This component will support a countrywide inventory of PCB contaminated transformers in the power sector in Lebanon. The inventory will focus on the entire stock of transformers in Bauchrieh (about 2,000) and in the EDL's distribution network (about 19,000). The purpose of the inventory is twofold. At the country level, it will identify the contaminated transformers and their level of contamination in each site, thus providing a clear picture of the extent of PCB contamination in the power sector. At the local level (Bauchrieh), the inventory will result in good engineering practices, particularly in terms of health and safety protocols, sampling, testing and labeling of PCB oil. These practices will be reflected in on-site training of local staff during the period of inventory, as well as in written guidelines to be used for the management of incoming transformers in Bauchrieh after the end of the project.

Conducting the inventory of PCB contaminated transformers is based on four steps: (i) desk review of EDL database to identify the number of transformers potentially contaminated; (ii) sampling, which involves taking a 50 ml sample of oil from each transformer; (iii) on-site testing of PCB, which identifies the PCB-free transformers by testing the samples through a rapid method (Clor-N-Oil technique); and (iv) lab testing of PCB, which identifies the PCB contaminated transformers and their contamination level by testing the samples through an accurate laboratory method (Gas Chromatography analysis, GC).

#### Component 2. Disposal of high-content PCB equipment and contaminated oil (US\$1.10 million)

This component will support the disposal of high content PCB equipment owned by the EDL and potentially by the private sector, and of the PCB contaminated oil from Bauchrieh.

(i) Disposal of out-of-service high content PCB equipment (US\$0.21 million): EDL's out-of-service equipment includes 12 Askarel transformers and 489 capacitors, with a total weight of 44 tons . Removing this equipment will also require to dispose of 10 tons of contaminated soil and concrete from PCB leakages, particularly from Zouk. Thus, this component will finance the disposal of about 44 tons of high-content PCB equipment and 10 tons of contaminated soil and concrete. The limited number of high-content PCB equipment in Lebanon does not justify the establishment of a permanent local disposal facility; the most cost-effective solution is exporting them to licensed

facilities abroad (such as in Germany, Denmark, Sweden, or other countries) in accordance with the requirements of the Basel Convention. This operation will be the responsibility of a contractor selected based on international tendering procedure. The contractor will provide all required packaging materials and will perform drainage of transformers, collection of empty transformers, liquid, and capacitors, packaging, transport and destruction abroad.

(ii) Disposal of in-service high content PCB equipment and contaminated oil (US\$0.89 million):

- In-service high content PCB equipment in Jieh includes 17 Askarel transformers and 6 capacitors, with a total weight of 147 tons. All in-service Askarel transformers are located in Jieh power plant.

The Jieh plant includes 5 old units (with 5 in-service transformers) and 2 new units (with 12 in-service transformers). This component will finance the disposal of all in service Askarel transformers and capacitors in Jieh. As part of the project co financing, EDL will be responsible for purchasing and replacing these transformers to allow continuity of electricity generation.

-Capacitors in the private sector. The rapid inventory (COWI, 2011) also identified three private companies that held PCB containing capacitors with a total weight of about 5 tons. MOE will contact these companies and check their willingness to dispose of these capacitors through the proposed project.

-Contaminated oil in Bauchrieh. As mentioned previously EDL's repair and storage site in Bauchrieh contains about 2,000 transformers; a large percentage of them being contaminated. The inventory undertaken under Component 1 will identify all contaminated transformers. The proposed project will finance the drainage, packaging and disposal aboard of the contaminated oil. It is estimated that about 100 tons of contaminated oil will be disposed of from Bauchrieh.

The most cost-effective way of disposing in-service equipment and contaminated oil is export to licensed facilities abroad in accordance with the requirements of the Basel Convention. The responsibility of this work will be with a contractor selected based on international tendering procedure. The contractor will provide all required packaging materials and will perform drainage, dismantling and removal of all in-service Askarel transformers, collection of transformer carcasses, liquid, and capacitors, package, transport and destruction abroad

Component 3. Capacity building and project management (US\$0.65 million): This component will support: (i) establishment of a Project Management Unit (PMU) within MOE; (ii) monitoring of indicators and reporting on project performance; (iii) training and capacity building of MOE, EDL and other stakeholders (e.g. customs administration, on site workers technicians etc.) on sustainable management of PCB equipment and storage sites.

#### **4. Project location and salient physical characteristics relevant to the safeguard analysis (if known)**

The proposed project has a localized reach as it targets 3 specific sites (Zouk and Jieh power plants and Bauchrieh repair shop) which contain high content PCB transformers and capacitors and 7 EDL substations which have PCB capacitors. In addition, the project will target the PCB capacitors owned by the private companies which express their willingness to dispose of them.

#### **5. Environmental and Social Safeguards Specialists**

Chaogang Wang (GURDR)

Suiko Yoshijima (GENDR)

6. Safeguard Policies	Triggered?	Explanation (Optional)
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Environmental Assessment OP/ BP 4.01	Yes	The nature of the project is to safely manage polluting PCB-containing equipment and thus project investments will yield significant environmental improvements and long term public health benefits. However there are risks associated with the handling of PCBs, both to humans and the environment, if appropriate and stringent safeguards measures are not implemented. Risks to the environment include long-term and far-reaching contamination of soil, surface and ground water with PCBs (oils, leaking equipment etc). The persistent and toxic nature of PCBs has high risks to human health, including being a potential carcinogen and having possible developmental impacts. Poor management of PCB clean-up can involve a high risk to the neighborhood community and to the project site employees. Instituting sound occupational health and safety measures for the workers is critical who will be handling toxic PCB wastes. Due to the diverse nature of the risks associated with the project activities, the project is classified as Category A, for the purposes of OP 4.01, requiring a full environmental and social impact assessment, and extended disclosure, including multiple rounds of consultations.
Natural Habitats OP/BP 4.04	No	There are no registered or known natural habitats in the project area and no adverse impacts are anticipated.
Forests OP/BP 4.36	No	There are no registered or known forests near the project sites and no adverse impacts are anticipated.
Pest Management OP 4.09	No	It is not envisaged to procure or use any pesticides under the project.
Physical Cultural Resources OP/ BP 4.11	No	The project is not expected to impact on physical cultural resources, as there is no excavation planned in the existing project sites.
Indigenous Peoples OP/BP 4.10	No	No indigenous people will be impacted by project activities
Involuntary Resettlement OP/BP 4.12	No	
Safety of Dams OP/BP 4.37	No	The project will not finance construction or rehabilitation of any dams as defined under this policy.
Projects on International	No	None of the project sites are near or impact

Waterways OP/BP 7.50		international waterways.
Projects in Disputed Areas OP/BP 7.60	No	None of the project sites are near or impact disputed areas.

## II. Key Safeguard Policy Issues and Their Management

### A. Summary of Key Safeguard Issues

<p><b>1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:</b></p> <p>The nature of the project is to safely manage polluting PCB-containing equipment and thus the project, by its very nature, is a public good and will result in significant environmental improvements and long-term public health benefits.</p> <p>However there are risks associated with the handling of PCBs, both to humans and the environment, if appropriate safeguards measures are not implemented. The potential risks associated with the inadequate management of PCBs with a concentration of more than 50 ppm by weight include contamination of soils, groundwater and surface water resulting in long-term local and global impacts. The persistent and toxic nature of PCBs has high risks to human health, including being a potential carcinogen and having possible developmental impacts. Poor management of PCBs can involve a high risk to the neighborhood community and to the project site employees.</p>
<p><b>2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:</b></p> <p>PCB oils if not properly treated and eliminated may affect the surface and groundwater basis downstream of the sites of the PCBs equipment.</p>
<p><b>3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.</b></p> <p>Effective PCB management in accordance with Stockholm convention guidelines involves treatment and disposal using technologies that meet best available techniques and best environmental practices. A certain technology could be cost-efficient in large countries (China), but very expensive in remote locations (due to added cost of transport, for example). The proposed project has made a comprehensive assessment of technology options in order to choose the cost-effective ones that best meet the site-specific requirements (e.g. export and destruction of the high-content PCB equipment and contaminated oil by licensed facilities).</p>
<p><b>4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.</b></p> <p>The Project triggers one safeguard policy OP 4.01 on EAs because it has the potential to significantly impact the environment adversely due to disposal of high-content PCB equipment and contaminated oil. Accordingly, a comprehensive Environment and Social Impact Assessment (ESIA) was undertaken by MOE and EDL and completed in January 2013, which details status of baseline environment and describes the potential impacts of project activities. The report also includes an Environment and Social management Plan (ESMP) which defines safeguard measures needed to be taken with respect to project activities and identifies capacity building and institutional strengthening activities. Although the current ESMP is comprehensive, it will be updated as more information on three proposed sites becomes available to ensure its steady implementation in each site. The entire operation of disposal of high-content PCB equipment and contaminated oil including packaging, transport, dismantling and cleaning of transformers and the</p>

final disposal will be the responsibility of an international contractor. The Contractor is required to have in place an Environmental Management System (EMS) to implement the necessary mitigating measures and includes training of local staff and occupational health and safety measures. A qualified expert (from MOE or PMU) will monitor the work of the contractor.
<b>5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.</b>
Multiple rounds of consultations have been held, including individual discussions with key stakeholders and two workshops (November 2012 and May 2013). The Executive Summary has been translated into Arabic and the draft ESIA was disclosed in-country and in the Bank Infoshop on March 21, 2014.

### ***B. Disclosure Requirements***

<b>Environmental Assessment/Audit/Management Plan/Other</b>	
Date of receipt by the Bank	20-Mar-2014
Date of submission to InfoShop	21-Mar-2014
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	
"In country" Disclosure	
Lebanon	21-Mar-2014
<i>Comments:</i> The EA was published on the Ministry of Environment website.	
<b>If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.</b>	
<b>If in-country disclosure of any of the above documents is not expected, please explain why:</b>	

### ***C. Compliance Monitoring Indicators at the Corporate Level***

<b>OP/BP/GP 4.01 - Environment Assessment</b>	
Does the project require a stand-alone EA (including EMP) report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>The World Bank Policy on Disclosure of Information</b>	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>All Safeguard Policies</b>	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

Have costs related to safeguard policy measures been included in the project cost?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

### III. APPROVALS

Task Team Leader:	Name: Maria Sarraf	
<b><i>Approved By</i></b>		
Regional Safeguards Advisor:	Name: Nina Chee (RSA)	Date: 28-Jul-2014
Practice Manager:	Name: Benoit Paul Blarel (PMGR)	Date: 28-Jul-2014