HESCO 6th STG Project

Environmental and Social Assessment

Volume 1 of 2 – Main Report

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Executive Summary

The Hyderabad Electric Supply Company (HESCO) is planning to undertake the 6th Secondary Transmission and Grid (STG) project in various parts of its territory. HESCO is seeking financing from the World Bank (WB) for this 5-year project. In line with the prevailing legislation in the country and WB safeguard policies; an environmental and social assessment (ESA) of the project has been carried out. This document presents the report of this assessment.

Study Methodology

The present study was conducted using a standard methodology prescribed by national and international agencies. Various phases of the study included screening, scoping, data collection and compilation, stakeholder consultation, impact assessment, and report compilation.

Legislative Framework

The Pakistan Environmental Protection Act, 1997 (PEPA 1997) requires the proponents of every development project in the country to conduct an environmental assessment and submit its report to the relevant environmental protection agency.

In addition, the World Bank Operational Policy 4.01 (OP 4.01) requires that environmental and social assessment be carried out before commencing projects such as the 6th STG. The OP 4.12 specifies the procedure that needs to be followed to address the involuntary resettlement the project would cause.

The present ESA has been carried out in response to the above-mentioned Act and WB safeguard policies.

Project Overview

The overall objective of the HESCO’s 6th STG project is to help increase the efficiency, reliability, and quality of its electricity supply. The project seeks to decrease technical as well as commercial losses, increase electricity availability, and improve the voltage profile within the HESCO’s electricity network.

In its total span of five years, the 6th STG project envisages establishment of fifteen new grid stations, in addition to converting seven, augmenting nineteen, rehabilitating 216, and extending another ten of the existing grid stations. The project also includes laying of 451 km of new and rehabilitation of 2,980 km of existing transmission lines.

The present ESA addresses the project components that will be undertaken during the Year 2006-07. These include the establishment of four new grid stations, in addition to the extension of one and conversion of four grid stations. A total of about 111 km of new transmission lines will also be added to the existing HESCO system during this period.
Description of the Environment

The project area lies in the Lower Indus Plain, which essentially forms the western extension of Indo-Gangetic Plain. The Indus Plain has been made up of the silt brought by the Indus and its numerous tributaries, such as Jhelum, Chenab, Ravi and Sutlej on the east bank, and Kabul, Kurram, Tochi, and others on the west bank. The Indus Plain is known for its agricultural fertility and cultural development throughout history.

Topographically, Sindh can be divided into four distinct parts with the dry and barren Kirthar Range in the west, a central alluvial plain bisected by the Indus River, a desert belt in the east, and the Indus delta in the south. The entire project area is located in the central alluvial plain on either sides of the Indus River.

The agriculture is by far the main economic activity in the project area, which lies within the Indus Basin Irrigation system – one of the most extensive canal irrigation systems in the world. The groundwater extraction augments the canal water for irrigation in the area.

Ecologically, the project area was once part of the thorn forest ecozone. However, urban centers, villages and agriculture activities have greatly modified this ecozone in most parts of the project area. Whatever wild species now found in the area are essentially those which have adapted to the modified conditions and presence of human beings.

Administratively, the project area falls under various districts of Sindh. These include Jacobabad, Shikarpur, Larkana, Sanghar, Hyderabad, Mirpur Khas, Badin and Thatta.

Stakeholder Consultation

Stakeholder consultations were carried out as part of the ESA study. These consultations were conducted with the institutional as well as the grassroots stakeholders. It was ensured that the rural women were also included during these consultations. The main objectives of the consultations were to: apprise the stakeholders about the proposed project activities; obtain their views, concerns and recommendations; and address/incorporate them in the project design - thus enhancing the environmental and social performance of the project.

Impact Assessment and Mitigation

During the present ESA, the project's potential social and environmental impacts were identified. Each identified impact was then characterized with respect to its nature, reversibility, geo-extent, consequence-severity and likelihood. Based upon this characterization, the impacts were then assessed to be of high, medium or low significance.

The ESA revealed that most of the impacts of the proposed project would be confined to the construction phase and temporary in nature. Appropriate control and housekeeping measures – recommended in the ESA – would address these issues adequately. The environmental and social monitoring would ensure compliance to and effectiveness of these control measures.

The key social issues identified and assessed as described above included land procurement, damaged crops and safety hazards. The ESA has recommended that the
land for the grid stations should be acquired in accordance with the Land Acquisition Act of 1894, on the basis of willful seller – willing buyer, mutually agreed prices and the owner having the option to refuse selling the land. The project will acquire a total of about 16 acres of land in this manner. To mitigate the damaged crops – caused by the transmission line construction activities – the ESA has recommended payment of compensation to the landowners/ cultivators. The ESA has estimated that crops would be damaged over a total of about 793 acres of land belonging to about 400 landowners/ cultivators. The associated compensation amount has been estimated to be about Rs. 6.9 million. Finally, to address the safety concerns associated with the construction activities, and the electrocution risk, precautionary measures have been included in the ESA.

The key environmental impacts of the proposed project as identified in the ESA included soil erosion and degradation and water contamination. The soil erosion would be caused by the grid station and transmission line construction activities, particularly in the hilly terrain of the project area. These concerns will be addressed through appropriate siting, design and construction techniques employed during the proposed project. The soil and water contamination could be caused by the inappropriate waste disposal and leakage/spillage of oils and chemicals. These concerns will be forestalled through waste disposal system recommended in the ESA.

The total cost of the environmental and social management of the project, including implementing the mitigation measures has been estimated to be about Rs. 13.8 million. This includes the crop compensation of about Rs. 6.9 million mentioned earlier.

**Environmental and Social Management Plan**

An environmental and social management plan (ESMP) has been developed to provide an implementation mechanism for the mitigation measures identified during the ESA. The ESMP provides the organization structure for the environmental and social management system during the project, and defines the roles and responsibilities of various players. The ESMP includes a mitigation plan, a monitoring plan, the communication and documentation requirements, and training needs, in the context of the environmental and social management of the project.

**Findings and Recommendations**

On the basis of the overall impact assessment and, more specifically, the nature and magnitude of the residual environmental and socioeconomic impacts identified during the present ESA, it is concluded that the proposed project is unlikely to cause any significant, lasting impact on the social, physical and biological environment of the area, provided that the proposed activities are carried out as mentioned in this report, and the mitigation measures included in this report are completely and effectively implemented.

The key recommendations pertaining to the environmental and social performance of the proposed project are as follows:

- The ESA and ESMP should be included in the project tender documents. The ESMP should be included in the construction contracts, so that the mitigation measures become a contractual binding over the contractors.
- HESCO should follow the Resettlement Plan (RP) for acquiring land for the project, and to compensate the project affected persons (PAPs).

- HESCO should acquire in-house environmental management capacity. For this purpose, an Environment and Social Cell should be established with in the Company. Initially, at least one each of environmental and socioeconomic experts should be part of the Cell.

- The Company should develop a comprehensive program to eliminate the PCB-containing transformer oil from its entire system. To start with, the grid stations and workshops should be provided with the PCB testing kits. The present status of soil contamination in the grid stations, warehouses and workshops should also be determined through site investigations.

- HESCO should develop its Environmental and Social Policy, which should demonstrate the Company’s commitment towards sound environmental management practices throughout its operations. The Company should adhere to the environmental legislation and regulations, particularly for conducting environmental and social assessments for all its future projects.