



**GOVERNMENT OF SINDH  
SINDH COAL AUTHORITY**

**PC – II**

**“Undertaking SESA and Devising Appropriate ESMFs  
for Individual Coal Fields of Sindh”**

**Total Cost Rs. 46.050 Million**

**OCTOBER 2016**

|    |   |   |
|----|---|---|
| 1) | <b>Name of Project</b>                            | Undertaking SESA ( <b>Strategic Environment &amp; Social Assessment</b> ) and devising appropriate ESMF ( <b>Environmental and Social Management Framework</b> ) for Individual Coal Fields of Sindh  |
| 2) | <b>Administrative authorities responsible for</b> |   |
|    | <b>i) Sponsoring</b>                              | Energy Department, Government of Sindh  |
|    | <b>ii) Execution</b>                              | Sindh Coal Authority, Government of Sindh   |
| 3) | <b>Details of Survey/Feasibility Study</b>        |   |
|    | <b>i(a). General description:</b>                 | <p>To carry out SESA with the formulation of ESMF studies for individual coalfields of Sindh as it has already been conducted for Thar coalfield in the past. Strategic Environmental and Social Assessment (SESA) as a key means of integrating at early stages environmental and social considerations into policies, plans and programs, particularly in sector decision making.</p> <p>SESA is study to provide a high level of protection of the environment and to contribute to the integration of environmental consideration into the preparation and adoption of plans and programs with a view to promoting sustainable development, by ensuring that an environmental assessment is carried out of certain plans and programs which are likely to have significant effects on the environment. Environmental assessment means the preparation of an environmental</p> |

|  |  |  |
|--|--|--|
|  |  | <p>report, the carrying out of consultations and the taking into account of the environmental report and the results of the consultation in decision making.</p> <p>Province of Sindh comprises 98% of total coal deposits of the country (184.658 billion tonnes). Lower Indus Basin has number of coal basins. These basins extend westward from Thar coalfield, through Tando Muhammad Khan, Badin to Lakhra – Sonda - Thatta area. The western part falls in the folded belt zone, whereas most of the eastern part covers the Platform slope. Shelf platform and carbonate deposits ranging in age from Triassic to Recent overlie the basement slope.</p> <p>The major coalfields of Sindh are following;</p> <ul style="list-style-type: none"> <li>• Thar Coalfield                      175.506 billion tonnes</li> <li>• Lakhra Coalfield                      1.328 billion tonnes</li> <li>• Badin Coalfield                      0.016 billion tonnes</li> <li>• Sondha Coalfield                      7.112 billion tonnes</li> </ul> <p><b><u>Objectives of the Project</u></b></p> <p>The purpose of this document is to undertake SESA (Strategic Environmental &amp; Social Assessment) studies for individual coalfields (Sindh) as has been done for Thar coalfield and then to devise Environmental Social Management Framework (ESMF).</p> <p>A framework for consideration in the preparation of the Environmental and Social Management Strategy</p> |
|--|--|--|

|  |  |  |
|--|--|--|
|  |  | <p>will include:</p> <ul style="list-style-type: none"> <li>• Linking measures to the SESA process e.g. objectives and targets, likely significant effects and proposed mitigation measures. Monitoring will be focused on significant effects that indicate a breach of international, national legislation or standards that may give rise to irreversible damage and where uncertainty exists over possible adverse effects.</li> <li>• The type (quantitative or qualitative) and level of detail of monitoring information specified will depend on the characteristics and level of detail of the Project and its predicted environmental and social effects. When selecting the indicators to monitor, consideration needs to be given to how they will be analyzed;</li> <li>• Consider the existence of existing sources of monitoring information. Confirm whether there are any gaps in this existing information and how these can be filled;</li> <li>• Define a response mechanism for if and when adverse effects arise which may identify criteria or thresholds for remedial action, potential remedial actions and those responsible for taking remedial action;</li> <li>• Define who is responsible for the various</li> </ul> |
|--|--|--|

|  |  |  |
|--|--|--|
|  |  | <p>monitoring activities including collection, processing and evaluation; when the activities should be carried out and the frequency and geographical extent. A tabular format is recommended for documenting how the monitoring process could be managed;</p> <ul style="list-style-type: none"> <li>• Define an appropriate format for presenting the monitoring results and prescribe the frequency of reporting and which parties will receive the reports.</li> </ul> <p>The SESA report will be based on individual chapters with following tasks but not limited to;</p> <ul style="list-style-type: none"> <li>• The report will present's the best practice standard to be used on this Project and introduces the SESA process, explaining how the assessment will inform the above individual coal fields.</li> <li>• The report will describe the approach and methods to be applied to the SESA including developing alternatives and assessment of effects</li> <li>• The report will describe the existing energy requirements and resources</li> <li>• The report will describe the current status of individual coal fields include Lakhra, Badin &amp; Sonda Jherruck, although it is noted that this is an on-going development</li> <li>• The report will present a description of coal to</li> </ul> |
|--|--|--|

|  |  |  |
|--|--|--|
|  |  | <p>power technologies</p> <ul style="list-style-type: none"> <li>• The report will present a summary of scoping stage including the plans and programs review, baseline information, key issues and opportunities and SESA framework. The scoping results will be reviewed and updated in the report following consultation and completion of the baseline collection exercise and other parallel studies</li> <li>• The report will present the results of the environmental and social assessment of the coal to power technologies.</li> <li>• The report will present the results of the environmental and social assessment of the individual coalfields development scenarios.</li> <li>• The report will present the environmental and social assessment policy framework</li> <li>• The report will describe the governance, financial and decision-making mechanisms.</li> <li>• The report will describe the monitoring proposals for monitoring the environmental and social effects of implementing the project</li> <li>• Overall conclusion of the SESA including recommendations.</li> </ul> <p><b><u>Scope of Project</u></b></p> <p>The purpose of this project is to conduct a study for</p> |
|--|--|--|

|  |  |   |
|--|--|---|
|  |  | <p>the individual coalfields of Sindh which includes are;</p> <ul style="list-style-type: none"> <li>• Sondha Jherruck Coalfield.</li> <li>• Lakhra Coalfield</li> <li>• Badin Coalfield</li> </ul> <p>The scope of work of the project shall include, but not be limited, to the following tasks:</p> <ul style="list-style-type: none"> <li>• To present the significance and importance of development and thorough assessment in all aspects of sustainable development for coal mines in Sindh.</li> <li>• Highlight the importance of a properly designed SESA that develops and utilizes appropriate algorithm to assess the environmental efficiency and cost efficiency of mining production processes, in order to devise the most appropriate technology for different Sindh coal field geology, topography and coal types.</li> <li>• Highlight innovative prospects for rehabilitation / reforestation of abandoned coal mine lands of various coal fields in Sindh.</li> <li>• Highlight the lack of rigorous and sophisticated / complex analyses concerning the application of costs and benefits of running mining activities in Sindh which may be presented to calculate the eco-efficiency of coal mines in Sindh.</li> <li>• Highlight the specific negative impacts associated</li> </ul> |
|--|--|---|

|  |                            |  |
|--|----------------------------|--|
|  |                            | with the various coal fields of Sindh with a view to devise proper assessment of their effective management.   |
|  | <b>i(b). Justification</b> | <p><b><u>Need or Demand</u></b></p> <p>Currently Pakistan's energy portfolio is primarily dominated by natural gas and oil with at least 1/3 of power being reliant on imported oil. The supply of natural gas for power generation is declining, and there is little or no natural gas supplied for power generation during the 3 month winter period. New gas discoveries are expected to only partially compensate for depleting supply. The GoP expects a significant demand supply gap to remain in the short to medium term, even after the concerted promotion of energy conservation and energy efficiency, and the expanded deployment of lower-carbon energy resources. Coal is a cheap indigenous energy resource and, after the discovery of coal in the Thar area, Pakistan's coal power potential has increased manifold. It is anticipated that, if properly exploited, Pakistan's coal resources may generate more than 100,000 MW of electricity for the next 30 years. It is not considered an option to continue with the status quo situation.</p> <p><b><u>Legal Requirement for the SESA</u></b></p> <p>Strategic Environmental and Social Assessments are legal requirement in Sindh. According to the section 18 of Sindh Environmental Protection Act (SEPA),</p> |



|  |  |   |
|--|--|---|
|  |  | <p>2014 which states that;</p> <p><i>“ All provincial government agencies, departments, authorities, local councils and local authorities responsible for formulating policies, legislation, plans and programs to be implemented in Sindh province which may cause any environmental impact in the jurisdiction of the province shall, before submitting the same to the competent authority for approval, forward to the Sindh Environmental Protection Agency a strategic environmental assessment containing –</i></p> <p><i>(a) Description of the objectives and features of the proposed policy, legislation, plan or program that are in consonance with the principles of sustainable development</i></p> <p><i>(b) Assessment of the adverse environmental effects, if any, likely to be caused during implementation of the policy, legislation, plan or program along with proposed preventive, mitigation and compensatory measures;</i></p> <p><i>(c) Analysis of possible alternatives; and</i></p> <p><i>(d) Identification of those components of the policy, legislation, plan or program, if any, in respect of which specific environmental impact assessment</i></p> |
|--|--|---|

|  |   |   |
|--|---|---|
|  |   | <i>need to be carried out in due course.</i>  |
|  | <b>ii. Duration &amp; Implementation Period</b> | <p>2016-17 &amp; 2017-18</p> <p>Eighteen (24) months during 2016-18.<br/>(Study period is 18 months and remaining 06 months are for advertisement and pre-qualification process of consulting firms). The implementation period will start from release of funds by Sindh Government.</p>   |
|  | <b>iii. Year-wise cost estimates</b>            | <p>Total Capital Cost: - 46.050 million (PKR)</p> <ul style="list-style-type: none"> <li>- Cost of Consultant's fee 43.17 Million</li> <li>- Advertisement &amp; Publicity 0.75 Million</li> <li>- IT Equipment 0.93 Million</li> <li>- Miscellaneous : 1.2 Million</li> </ul> <p>2016-17 ----- Rs.17.80 million<br/>2017-18----- Rs. 28.25 million</p> <p><b>Total Rs. 46.050 million.</b></p>                                     |
|  | <b>iv. Manpower Requirement</b>                 | <p>Proposals to provide this consultancy will be invited from well-established consulting firms and/or solution providers having collaboration with firms/ consultants. Owing to the interdisciplinary nature of the discipline of environmental protection and energy, it will be imprudent to straitjacket and independent consulting firm and/or a solution provider with educational qualification and years of experience.</p> |

|    |  |  |
|----|--|--|
|    | <b>v. Financial Plan</b>   | The study is planned to be funded through Sindh Government<br>2016-17 & 2017-18  |
| 4) | <b>Expected outcome of the survey feasibility study and details of projects likely to be submitted after the survey:</b> | <ul style="list-style-type: none"> <li>• Identify the positive and negative social and environmental impacts and the risks associated with the likely evolution of the coalfields of Sindh.</li> <li>• To assess the policy, legal and institutional framework and capacity to manage these issues.</li> <li>• Providing a broad overview of the current state of knowledge regarding mining and power development for the individual coal fields of Sindh.</li> <li>• Reviewing the technologies being used for energy, power generation and other uses in coalfields with summary information on similar ventures in Pakistan and elsewhere in the region as well as other prominent global exploration and production ventures;</li> <li>• Compiling an overview in the form of different scenarios or models that show progressive mining and power development options in each priority coal field with predicted environmental and social impacts (both positive and negative) at the local, regional and global level (e.g., local groundwater impacts, surface water and drainage impacts, larger regional ecosystem impacts, GHG impacts);</li> <li>• Developing mechanisms-with set of monitoring</li> </ul> |

|  |  |  |
|--|--|--|
|  |  | tools-for monitoring the progress of the near to longer term proposals and implementation activities and recommending adaptive learning regarding how to improve implementation. |
|--|--|--|

**Prepared by: -**

Name: Tanzeel Nazir

Designation: Deputy Director (Env:), Sindh Coal Authority

**Checked by:**

Name: Danish Saeed

Designation: Director General, Sindh Coal Authority.

**Recommended by: -**

Name: Agha Wasif Abbas

Designation: Secretary Energy Department, Government of Sindh.

Phone #