



FARCAN ENERGY GENERATION INC. CO.

ACWA POWER



ESER NATURAL GAS COMBINED CYCLE POWER PLANT PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

ANKARA

SEPTEMBER 2011



ESER PROJECT AND ENGINEERING INC. CO.

PROJECT NAME

ESER NATURAL GAS COMBINED CYCLE POWER PLANT PROJECT

PROJECT LOCATION

Kırıkkale Province, Yahşihan County, Kılıçlar Municipality

PROJECT OWNER

-FARCAN ENERGY GENERATION INC. CO.

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MONITORING PLAN

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DATE / REVISION

30.09.2011 / 00

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Introduction

This ESAMP has been prepared in accordance with EBRD Performance Requirements to document the key management and monitoring actions to be implemented during construction and operation of the project. The plan has been developed from ESIA recommendations on the mitigation measures. This plan will be extended to include the overhead transmission lines at late date.

This ESAMP has been developed to provide the frame work for the implementation of specific measures to ensure compliance with EBRD Performance Requirements and Turkish Environmental Standards throughout construction and operation phases.

The action plan provides the following information:

- Environmental and Social Aspects,
- Details of required management actions,
- Rationale or key performance indicators,
- Parties responsible for implementations,
- Implementation Timetable

EBRD Performance Requirements relevant to this action are as follows:

- PR 1: Environmental and Social Appraisal and Management
- PR 2: Labour and Working Conditions
- PR 3: Pollution Prevention and Abatement
- PR 4: Community Health, Safety and Security
- PR 5: Land Acquisition, Involuntary Resettlement and Economic Displacement
- PR 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- PR 8: Cultural Heritage
- PR 10: Information Disclosure and Stakeholder Engagement

No.	Aspect	Action	Rationale	Responsibility	Timetable
1.0 Social Environmental Management					
1.1 Construction					
1.1.1	Management Program	Integrate Environment Management Actions from the ESIA into the EPC Project Environmental Health and Safety Plan (EHSP)	To provide guidance for environmental management actions, and to ensure compliance with PR1 during construction	Project Owner and EPC	Within one month of Financial Close
1.1.2	Management Program	Subcontractors to integrate requirements of EPC Construction Environmental Management Plan (CEMP) into their own documents and procedures.	To provide guidance for environmental management actions, and to ensure compliance with PR1 during construction	EPC and Subcontractors	Within one month of Financial Close
1.1.3	Monitoring Program	Undertake sufficient and necessary monitoring measures: • Noise survey around the site boundary • Chemical analysis of effluents before discharge to river. • Dust monitoring by visual inspection along the site boundary.	To ensure compliance with environmental limits and the CEMP.	EPC and Subcontractor	Throughout construction period.
1.2 Operation					
1.2.1	Management Program	Establish and manage an Operation Management Plan (OEMP) which has to be consistent with actions identified in the ESIA	To provide guidance for environmental management actions, and to ensure compliance with PR1 during operation	O&M (Operation and Maintenance Company)	OEMP to be established prior to initial operation of the plant
1.2.2	Monitoring Program	Undertake sufficient and necessary monitoring measures to check against compliance with environmental limits and OEMP: • Continuous monitoring of NOx. • Sampling before direct discharge to the river	To ensure compliance with specified emission and discharge limits.	O&M	Throughout operation period.

2.0 Labor and Working Conditions					
2.1 Construction					
2.1.1	Wellbeing of workers	• Protect and promote the health of workers, especially by promoting safe and healthy working conditions. • Establish and maintain a sound worker-management relationship. • Promote the fair treatment, non-discrimination and equal opportunity of workers. • Comply with labor laws. • Provide grievance mechanism.	To ensure safe working practices and to maintain workers' rights and benefits. To ensure compliance with PR2.	Project Owner, EPC and Subcontractors	Throughout the construction phase
2.2 Operation					
2.2.1	Wellbeing of worker	• Prepare Human Resources Policies	To ensure workers rights and benefits and workers' duties	O&M	Within three months of commencing operation
2.2.2	Wellbeing of workers	• Protect and promote the health of workers, especially by promoting safe and healthy working conditions. • Establish and maintain a sound worker-management relationship. • Promote the fair, treatment, non-discrimination and equal opportunity of workers. • Comply with labor laws. • Provide grievance mechanism.	To ensure safe working practices and to maintain workers' rights and benefits. To ensure compliance with PR2	O& M	Throughout the operation phase

3.0 Pollution Prevention Abatement					
3.1 Construction					
3.1.1	Air Quality	Implement measures identified in the ESIA and CEMP and EHSP. • Reduce dust effects, • Minimize emissions from vehicles and construction equipments,	Ensure safety and wellbeing of workers. To ensure compliance with PR3.	EPC and Subcontractors	Throughout construction period
3.1.2	Soil and Ground Water	Implement measures identified in the ESIA and CEMP and EHSP. • Prevent and/or minimize contaminations of soil and ground water from oils, fuels, and chemicals.	To maintain the quality of soil and ground water in construction and lay down areas. To ensure compliance with PR3.	EPC and Subcontractors	Throughout construction period.
3.1.3	Surface Water	Implement measures identified in the ESIA and CEMP and EHSP. • Divert natural storm water away from construction site. • Prevent discharge of contaminated water directly to the river.	To prevent pollution of the river water and protect river ecology. To ensure compliance with PR3.	EPC and Subcontractors	Throughout construction phase
3.1.4	Solid Waste	Implement measures identified in the ESIA and CEMP and EHSP. • Collect and segregate solid waste materials for reuse, recycling. • Minimize disposable wastes.	Encourage a safe working environment and good housekeeping and promote recycling. Minimize the risk of fire. To ensure compliance with PR3.	EPC and Subcontractors	Throughout construction phase
3.1.5	Noise	Implement measures identified in the ESIA and CEMP and EHSP. • Perform regular maintenance on static and mobile noise sources. • Provide noise protection gears.	To provide a healthy, safe working environment. To avoid impacting sensitive receptor off-site. To ensure compliance with PR3.	EPC and Subcontractors	Throughout construction phase

3.2 Operation					
3.2.1	Air Quality	Implement measures identified in the ESIA and OEMP and EHSP. • Use of low NOx burners, • Compliance with NOx limits during operation. • Engage an independent environmental consultant to audit the CEMS data.	To control NOx emissions. To ensure compliance with PR3.	O & M	Integrate into the plant design and construction
3.2.2	Wastewater	Implement measures identified in the ESIA and OEMP and EHSP. • Use of wastewater treatment plant. • Comply with discharge limits during operation.	To protect and maintain river water and its ecology. To ensure compliance with PR3.	O & M	Integrate into the plant design and construction.
3.2.3	Noise	Implement measures identified in the ESIA and OEMP and EHSP. • Comply with noise limits for boundary and sensitive receptors.	To provide a healthy, safe working environment. To ensure compliance with PR3.	O&M	Throughout the operation phase.
3.3.3	Solid Waste	Implement measures identified in the ESIA and OEMP and EHSP. • According to analysis results of sludge, if it is dangerous waste, than sludge will be disposed by giving to a licensed contractor • Collect and segregate solid waste materials for reuse, recycling.	To reduce the use of natural resources through recycling. Encourage a safe working environment and good housekeeping and promote recycling. Minimize the risk of fire. To ensure compliance with PR3.	O&M	Throughout the operation phase.

4.0 Community Health, Safety and Security					
4.1 Construction					
4.1.1	Community	• Prevent or minimize impact on community by implementation of EPC EHSP. • Construct a fence line around project. • Prepare Emergency Response Plan. • Maintain open communication channels with local communities.	Ensuring minimum risks to local communities. To ensure compliance with PR 4.	EPC and Subcontractors	Throughout construction period.
4.2 Operation					
4.2.1	Community	• Prevent or minimize impact on community by implementation of O&M EHSP. • Prepare Emergency Response Plan. • Maintain open communication channels with local communities.	Ensuring minimum risks to local communities. To ensure compliance with PR 4.	O&M	Throughout operation phase.
5.0 Land Acquisition, Involuntary Resettlement and Economic Displacement					
5.1 Construction					
5.1.1	Physical or Economic Displacement	Not applicable for the project site(CCPP)	Project site is owned by Turkish gov. and no properties exist on the project site. To ensure compliance with PR5	Not applicable	Not applicable.
6.0 Biodiversity Conservation and Sustainable Management of Living Natural Resources					
6.1 Construction					
6.1.1	Protect and conserve Biodiversity	• Minimize land use. • Retain top soil for future habitat restoration. • No introduction of non-native species. • Pollution prevention measures as mentioned in above PR3. • Restore habitat of land used for lay down area.	To conserve biodiversity by the project site and surrounding areas, including the river. To ensure compliance with PR6	EPC and Subcontractors	Throughout construction phase.

6.2 Operation					
6.2.1	Protect and conserve Biodiversity	- Minimize land use. - No introduction of non-native species. - Pollution prevention measures as mentioned in above PR3.	To conserve biodiversity by the project site and surrounding areas, including the river. To ensure compliance with PR 6	O&M	Throughout operation phase.
7.0 Cultural Heritage					
7.1 Construction					
7.1.1	Protection of cultural heritage	Upon discovering of cultural and or archeological assets during site excavation, immediate stopping of work and then notification of relevant authorities.	To conserve cultural heritage and archaeologies. To ensure compliance with PR8	EPC and Subcontractors	During excavation phase of the project.
8.0 Information Disclosure and Stakeholder Engagement					
8.1 Construction					
8.1.1	Information disclosure	Preparation of SEP, NTS and ESIA. Updating SEP, NTS as necessary.	To provide transparent process by which stakeholders and interested parties can raise their concerns or observation. To ensure compliance with PR 10	Project Owner	At early planning stage throughout the construction period.
8.2 Operation					
8.2.1	Information disclosure	Updating SEP as necessary.	To provide transparent process by which stakeholders and interested parties can raise their concerns or observation. To ensure compliance with PR 10	Project Owner	Throughout the whole operation period.