# INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

# PRIVATE SECTOR RENEWABLE ENERGY AND ENERGY EFFICIENCY PROJECT

# INDUSTRIAL DEVELOPMENT BANK OF TURKEY (TSKB)

# OPERATIONAL MANUAL

## V. SAFEGUARD REVIEW PROCEDURES

This section summarizes the procedures that Participating Financial Intermediaries (FIs); specifically TSKB, shall apply to Sub-loans/Financing Leases to be financed under the additional loan for Renewable Energy and Energy Efficiency Project (REEE) with regard to Environmental Assessment (EA).

The goal of this document is to represent a tool to ensure that the proposed investments implemented through the Project comply with the existing environmental protection laws, regulations and standards in Turkey as well as with the World Bank's Environmental and Social Operation Policies and Practices, and will not have a lasting adverse impact on the country's population, the natural environment or assets of particular cultural heritage value. Moreover, through implementation of above mentioned policies a shift will try to be made from "do no harm provisions," aimed at addressing adverse impacts, to the "do good" aspects that focus on proactive development measures.

All sub-projects to be financed under REEE will be subject to an environmental and social review process by the FIs incorporating the procedures described in this section (including selected joint reviews and clearance by the World Bank). The environmental procedures and requirements incorporate the Republic of Turkey's regulatory requirements for Environmental Review (Regulation on Environmental Impact Assessment, Official Gazette, dated 17 July 2008, Number 26939, with a latest amendment on June 30, 2011) from the Ministry of Environment and Urbanization (MoEU), good civil engineering practice and World Bank safeguard policies. The policies on Environmental Assessment (OP 4.01), Natural habitats (OP 4.04), Forests (OP 4.36) and Safety of the Dams (OP 4.37) are the most likely to be relevant to sub-projects under REEE. The social procedures and requirements incorporate Turkish laws on expropriation and resettlement as well as on cultural heritage; and WB's OP4.11 Physical Cultural Resources and OP4.12 Involuntary Resettlement to ensure that cultural heritage is adequately protected and the Project Affected Persons (PAPs) are adequately compensated or provided with assistance.

The environmental impact assessment process is carried out to determine the possible positive or negative impacts of proposed sub-projects and to evaluate the precautions to be taken in order to prevent or minimize negative impacts which may damage the environment and in some cases to enhance the environment. The process of environmental assessment can also be used to determine the scope for supervision and inspection of sub-project implementation.

The environmental assessment will be done according to Turkish environmental and WB safeguards policies. Nevertheless, it has also been recognized that under the REEE the FIs will, in many cases, be approached for financing of sub-projects by sponsors after the sponsors have obtained environmental approvals by Turkish authorities. To align the procedures with this manual and WB safeguards policies, the responsibility of the FIs will be to ensure that: (a) all Turkish approvals are in place before it is considered for

World Bank financing, (b) any discrepancies or inconsistencies in project description, environmental issues, proposed mitigation schemes between environmental assessment documentation, feasibility studies, or design documents are corrected and updated, (c) supporting files are complete and available, and (d) gap analysis has been done and based on it any additional safeguard requirements described in this OM of the World Bank are met.

The outcome of Turkish environmental impact regulations classification of sub projects by relative environmental risk is in many cases similar to that of the World Bank; however there are some cases where the outcomes differ. Therefore it will be necessary for FIs to screen the project regarding the WB criteria in line with OP 4.01 and guidance provided in the OM and request additional information, or request additional measures to be taken by the sub-project sponsors when necessary as a condition of funding.

## V.1 SUBPROJECT ENVIRONMENTAL ASSESSMENT PROCEDURES

The seven elements of subproject EA procedures are listed below:

- Screening
- Documentation
- Consultation
- Disclosure
- Review and Approval
- Conditionality
- Monitoring and Reporting

Details of procedures required for each of these elements are subsequently described. It should be noted that, while conducting the steps of environmental assessment, not only the sub-project itself but all the integrated elements required for construction and full operation of the sub project (construction of access roads, extraction of material from material borrow sites, transmission line which will be established by the realization of the hydroelectric or wind power plant, etc.) should also be assessed as a whole integrated project. Where documentation prepared under Turkish EA regulation does not cover all elements of the project, the FIs will advise the sub-borrower on how to fill this gap before the sub-project can be considered for financing. The auxiliary structures which are built within the scope of a project or built for the project such as access roads, material borrow sites, transmission lines, etc. are some examples for this gap between national law and WB requirements since the Turkish EA documents do not always assess the project together with its sub components but WB standards requires an integrated approach. Detailed information on this issue is given under Documentation section.

***SCREENING***

In accordance with Turkish Environmental Regulations, the Ministry of Environment and Urbanization (MoEU) is responsible for initial sub-project screening. The REEE FIs will review the documentation prepared in accordance with the screening made by MoEU and FIs will conduct a screening according to WB criteria set in the OM to identify those cases where World Bank safeguards require additional due diligence.

***Under the Turkish EA system***, projects are classified as either Annex I or Annex II, and by default, No Annex. Projects that are not presented in Annex I or Annex II require no further consideration under the Turkish EA regulatory system. If a subproject is identified under Annex I of the Turkish EIA Regulation, an EIA Report is automatically required (Environmental Impact Assessment Necessary). Turkish requirements for carrying out an EIA Report, including public consultation, expert review and revisions to the EIA Report are outlined in the regulations.

Sub-projects identified under Annex II of the Turkish regulations are expected to be the most commonly encountered by the FIs. As a first step, the sub-project sponsor is required to prepare and submit a “Project Introduction File” (hereinafter PIF) to the Provincial Directorate of MoEU. Based on PIF, the Provincial Directorate of MoEU determines whether an Environmental Impact Assessment Report (EIA Report) is

required or not. The content of the PIF is also defined in the Turkish regulation (see Appendix V.1.3. of this OM). It is important to note that the PIF itself should constitute a brief environmental assessment of sub-project environmental implications as well as key mitigation requirements. The Provincial Directorate of MoEU reviews the PIF and then makes a determination as to whether or not an EIA Report (equivalent to the requirement of an Annex I) project is required.

For renewable energy projects to be financed under REEE a summary of Annex I and Annex II projects according to current Turkish EA regulation (according to latest amended version, dated June 30, 2011) are presented below.

| | **Hydro** | **Wind** | **Solar** | **Geothermal** | **Biomass** | **Energy Eff.** | **Due diligence according to EIA Regulation** | |
|---|---|---|---|---|---|---|---|---|
| **Annex I** | more than 25 $MW_m$<br><br>Reservoir size - more than 10 million $m^3$ | more than 75 $MW_e$ | more than 75 $MW_e$ | more than 25 $MW_e$ | more than 300 $MW_t$ | | Full Environmental Impact Assessment (EIA) | |
| **Annex II** | 0 - 25 $MW_m$<br><br>Reservoir size – 5-10 million $m^3$ | 10 -75 $MW_e$ | 10 -75 $MW_e$ | 5-25 $MW_e$ | more than 10 $MW_t$ | depending on the type/scale | Project Introduction File (PIF) | EIA Necessary (then the Annex I process applied)<br><br>EIA Not Necessary |
| **No Annex** | - | less than 10 $MW_e$ | less than 10 $MW_e$ | less than 5 $MW_e$ | less than 10 $MW_t$ | depending on the type/scale | No requirements | |

*Under the World Bank EA system* projects are classified as Category A, Category B or Category C depending upon estimated potential environmental risk.

In short, Category A project is likely to have significant adverse environmental impacts on human populations or environmentally important areas-including wetlands, forests, grasslands, and other natural habitats, that are sensitive, diverse, unprecedented and/or irreversible. These impacts may affect an area broader than the sites or facilities subject to physical works. Category B project has potential adverse environmental impacts are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects.

According to the criteria listed above in the table, under additional financing REEE, a majority of renewable energy subprojects (HEPPs, wind, biomass and geothermal projects) are likely to require some type of EIA documentation (either full EIA of PIF) under national legislation. By contrast most energy efficiency projects are likely to be No Annex according to Turkish regulation (with a few exceptions falling into Annex II). Many will likewise be Category C under the World Bank screening system (as described below), but some are likely to be Category B and will require at least preparation of a

simple EMP. The energy efficiency projects are not easily recognized in the listings (national annexes) since they can range from replacement of process equipment with higher efficiency equipment, rearrangement of process flows for greater heat recovery to simply improving insulation. In general, any projects which involve engagement of a civil works contractor should be evaluated to determine whether it meets the criteria for Category B or for Category C.

Two specific aspects of EE projects need special attention during screening: (a) utilization of materials banned from use by the EU would be prohibited, and (b) any industrial facility that proposes an investment must have all the necessary environmental licenses, permits and no outstanding unpaid environmental fees or fines for the facility as a whole.

However, regarding (b), if the proposed investment is required to enable the facility to meet their environmental requirements or eliminate environmental liabilities it could be considered as a candidate for investment. In some cases a facility is not covered by Turkish environment regulations (for example, because it was established prior to the enactment of these regulations and the Government granted it a certain period of time to meet them or because previously it did not carry out any activities which were subject to these regulation but is now adding such activities) and hence does not have the necessary licenses at this point. In such cases the sub-borrower would be required to provide a detailed investment and implementation plan that, once implemented, would result in the facility obtaining all necessary licenses within in the period of time which was approved by the Government. These sub-project proposals will be reviewed by the Bank prior to their approval by the Borrower.

As the screening systems differ, it is not technically very easy to cross-match the project screening among national and WB system. For example, it cannot be assumed that Annex I under the national system equates directly with World Bank Category A or Annex II with Category B. The differences in the two systems may arise, and it is possible for some Annex I projects to be considered Category B, or conversely, some Annex II projects to be considered Category A if for example they are planned in sensitive areas. Likewise, some No Annex projects may be screened as Category B especially if they could lead to modest negative impacts to the human or natural environment and the impacts confined to a small region and are temporary or short-lived and these impacts are easy and inexpensive to control (e.g: most of the construction activities). This may arise because the Turkish system bases screening on the project type, (e.g. mining, power plant of a certain capacity etc.), whereas the World Bank screening system examines a number of factors. For example, under the national system hydropower projects fall under Annex I only if their capacity exceeds 25 MW or they create a reservoir of more than 10 million $m^3$. Projects which do not meet these criteria but which are located in ecologically sensitive areas or require construction of large amounts of auxiliary infrastructure would be classified as Category A under the WB system.

Category B can include different projects with a broad range of potential environmental issues: from projects with quite limited potential environmental issues to projects with potentially important environmental issues that need special consideration to manage

properly. In effect, Category B covers any project which is not sufficiently complex and risky to require a full, comprehensive EIA (addressing a wide range of potential issues and including up-to-date environmental baseline data and a detailed analysis of alternatives), but does require some analysis of potential environmental impacts in order to be able to identify appropriate mitigation measures and monitoring indicators. Category C projects either do not include any activities which could negatively affect the environment or includes only activities whose potential impacts are easily avoided through application of standard regulations for good construction practices.

The criteria that are taken into consideration when assessing projects according to WB environmental safeguards are as follows:

1. **Type and scale of project**
2. **Project activities**, including:
    a. Activities to be financed by the project, (direct support), and
    b. Activities which will not be directly financed by the project but are functionally related or linked to it, (i.e. would not take place, or would be carried out differently, without the project ), or which are needed for the functioning of the project (indirect support) .Examples of indirect support include required access roads and other supporting infrastructure which are not financed by the project, as well as functionally associated investments (e.g. if a sub-project would finance a power plant and just one of several regulators and pipelines delivering water to it, WB Safeguard policies would apply to the other regulators/pipelines as well).
3. **Location of the project**, specifically its environmental sensitivities or significant environmental functions which might be affected by the project
4. **Nature and magnitude and reversibility of potential project impacts**
5. **"Sensitive issues"** i.e. whether the project falls within the scope of larger issues which are of recognized wider (e.g. international) significance, are highly visible, a recognized source of reputational risk, etc. If so, it needs to be assessed and handled within this "risky" context, recognizing that it is likely to face close scrutiny and perhaps strong opposition not solely related to the details of the particular project. Examples include tropical or high large scale deforestation, destruction of wetlands, contribution to climate change, toxic waste disposal, involuntary resettlement, etc. Sensitive issues can be universal or country-specific (e.g., in Turkey, infrastructure development in the Black Sea region)

The FI will review the subproject documentation submitted by the sponsor and Turkish screening decision and further classify projects as Category A, Category B or Category C in accordance with the World Bank EA policy (OP 4.01). The Table below summarizes the likely outcomes of the Turkish and World Bank screening systems:

| Turkish EA Screening Decision | World Bank Screening EA Decision | | |
|---|---|---|---|
| | Category A | Category B | Category C |
| Annex I – EIA | X | X | |
| Annex II- EIA Necessary Decision | X | X | |
| Annex II- EIA Not Necessary Decision | X | X | X |

| | | | |
|---|---|---|---|
| No Annex[1] | | X | X |

The decision on EA category will be made based on the information available to the FI at the time of screening. The nature and quality of this information available at that point depends on whether an EIA has already been prepared for the project under Turkish law or, if it has not, on the quality and detail of the Project Identification File (PIF) which has been prepared.

For projects which required EIA under Turkish law, (all Annex I and some Annex II), the EIA should already have been prepared and approved by Turkish authorities prior to the subproject being submitted to the FI for WB financing. This EIA will normally provide all of the necessary information under all five of the above parameters to enable the FI to determine whether the Project should be Category A or "high" B (very unlikely to be Category "low" B or C if it required an EIA under Turkish law). **"High B" requires** a limited EA to provide site-specific information (e.g. due to environmentally sensitive site, or need to better define and understand potential issues).**"Low B"** requires only basic EMP (mitigation and monitoring tables), or Checklist EMP, or can make a case for application of specific national regulations and standards if acceptable monitoring/enforcement system is in place

For projects which required only a PIF ("EIA not required" decision under Turkish law), the project proposal submitted to the FI staff will normally have specific information on type and scale of the project and on the activities to be directly financed by the project. It might also provide some information about activities which will be indirectly supported by the project. The project proposal will indicate the geographic location of the project, but will often not provide information regarding the environmental sensitivities of that location (if any). However, on a more general level, the information in the project proposal is likely to be sufficient to indicate whether it raises any of the known "sensitive issues."

Depending on the quality and detail of the PIF, the FI staff may or may not have extensive, concrete and up-to-date information regarding any environmental significance or sensitivities of the location or on the nature and magnitude of potential impacts. If the information is not sufficient, and in cases where the investment falls under No Annex, additional information about the project would be required from sponsors.

Thus, from a practical standpoint, most EA screening will be done on the basis of good information about project type, scale, activities and geographic location and an indication as to whether specific sensitive issues might be involved, and limited if any information on environmental sensitivities of the location and the nature and magnitude of potential impacts. This leads to three conclusions:

[1] All projects with civil works under the REEE are expected to be at least a Category B equivalent under the World Bank system and not category C as might be implied by Turkish screening of no PIF or EIA Report required.

a) EA categorization requires a multi-dimensional process, taking into account as many of the parameters as possible, given the amount and quality of information available
b) It may sometimes be necessary to assign risk levels based only on basic information on project type/scale; activities direct and indirect, including auxiliary structures such as access roads, material borrow sites, transmission lines, etc.) and geographic location,
c) A precautionary approach is needed in the absence of more complete information

## Category A projects

While categorization inevitably requires exercising professional judgment, the following table illustrates some common project types and activities and site conditions which would be expected to trigger Category A, unless a clear case is made for Category B. (It is not a comprehensive list of potential Category A projects).

**1 Type and scale of project**

***Project types which should be presumed to be Category A regardless of scale:***

New thermal power development using fossil fuel

Hazardous waste management and disposal

Extraction of sub-surface minerals

Other (please refer to Appendix V.1.4)

***Project types which are presumptive Category A above a certain scale threshold:***

| *Project type:* | *Threshold*:* |
|---|---|
| New permanent road construction | Over 10 km new construction |
| New Electrical transmission line | Over 15 km |
| Windmill installations | Covering over 1 $km^2$ |
| Others (please refer to Appendix V.1.4) | |

*: Please note that the figures for threshold levels are provided for guidance. Please refer to Appendix V.1.4 for future guidance.

**2 Project activities**

any project involving these activities would be presumed Category A unless demonstrated otherwise

land clearing or conversion on a significant scale

New hydropower development involving water diversion and/or storage

Displacement/resettlement and/or land acquisition on significant scale

Other (please refer to Appendix V.1.4)

**3 Location of the project (ecological, cultural or social sensitivity)**

- in or adjacent to areas with important archaeological, historical and/or cultural sites or other high social or economic value;

- in, adjacent to or with direct influence on sensitive and valuable ecosystem (includes wildlife transit areas such as fly-ways for birds or bats;
- in densely populated areas due to potential for significant resettlement requirements and/or large populations affected by pollution ;
- Others (please refer to Appendix V.1.4)

The more details on assessing the category of the project according to the Bank are described in Appendix V.1.4.

**Category B projects**

For some projects the potential environmental and social impacts are significant but are relatively few and easily predicted and can be defined and evaluated without requiring detailed investigations such as hydrological studies, soil analysis, surveys of flora and fauna, site surveys etc. They may include some potential off-site impacts, but it is clear that these would be minor and would not contribute significantly to any cumulative impacts. Furthermore, the proposed location of the project may be known not to have a high environmentally sensitivity (e.g., no endangered or threatened species, no important and vulnerable ecological systems; possibly already developed or environmentally degraded). In such cases the sub project can be categorized as "**high Category B,"** requiring only a limited EIA under World Bank procedures, rather than the full and comprehensive EIA. A limited EA typically addresses only a small number of potential impacts, may rely on existing (reasonably up-to-date) baseline data a detailed comparison of the proposed project with potential alternative activities, sites or technologies. The limited EA must also include an EMP .

For example, as indicated in the table, all hydropower projects which involve water diversion and/or storage regardless of scale should be assumed to be Category A unless otherwise demonstrated. While Category A should be the default, starting position it is expected that in many cases it will be possible to demonstrate based on the PIF that the environmental issues are low or moderate and readily manageable, and that the project should be classified as Category B. The environmental documentation prepared for the Turkish Government (EIA or PIF) should be evaluated to determine whether it is supported by adequate site-specific and up-to-date studies and information and addresses all the anticipated impacts of the project (including auxiliary elements such as access roads). If the documentation meets these criteria, and if it indicates that expected impacts do not justify a Category A rating based on the criteria provided on p. 20 above, then the FI can propose that the project should be classified as Category B. The FI should also determine what if any additional work is needed to supplement the existing EIA or PIF to make it acceptable as a Category B (limited) EA under World Bank requirements. For example, there should be a site-specific, monitorable Environmental Management Plan.

For other projects it may be evident that they are not expected to have any off-site impacts and that their local impacts are easily identifiable and can be fully and reliably eliminated using well-established measures (e.g. ensuring that hazardous wastes are handled by properly trained and equipped personnel and disposed of in a licensed facility). These are likely to be "No Annex" projects and therefore require no EIA or PIF under Turkish law. For purposes of the Bank's requirements, such projects may be

classified as "**low Category B"** and would not require an environmental assessment (full or limited) but only a free-standing simplified EMP based on the template provided in Appendix V.1.1. This simplified EMP could be filled with brief information on project type and location and the mitigation and monitoring tables could be filled out by taking the EMPs provided in Appendix V.1.6 and Appendix V.1.7 as guidance. Appendix V.1.6 provides generic information on the mitigation measures and monitoring requirements of the renewable energy projects and Appendix V.1.7 provides more specific information on the mitigation/monitoring tables regarding the type of the renewable energy project in a number of sub-sectors (e.g. hydro, wind, solar, biomass, geothermal). These generic EMPs provide a starting point but should be refined and made more specific based on the details of the subproject. For example, if the generic EMP includes for measures to control soil erosion during construction, the project-specific EMP should specify the type, location and extent of the erosion control measures required and provide an estimated cost. They should also include a brief description of the project and minutes of public consultation meetings should be attached.

For projects in which the only potential impacts are associated with small scale rehabilitation or construction of buildings in already developed and serviced locations, the borrower can use the "**Checklist EMP**" template which is provided as Appendix V.1.5. The template should be tailored to the specific project by removing any items which are not relevant, and by filling in the Monitoring Plan with appropriate indicators.

**Category C projects**

Category C covers projects which have no foreseeable environmental impact (local or off-site) and those for which civil works are limited to routine small scale rehabilitation and/or construction with no known risk issues, where compliance with Turkish construction regulations and implementation of standard good construction practices is all that is required to ensure protection of workers, the public and the environment. Many energy efficiency projects (e.g. replacement of equipment, installing insulation) are likely to fall under this category. As these projects are also most likely to be "No Annex" under Turkish law, they will require no environmental documentation either for national or Bank purposes.

*CUMULATIVE IMPACT ASSESSMENT*

In some cases subprojects may have impacts on important ecological or socio-economic-cultural assets which are also subject to impacts from other sources. For example, multiple hydropower projects located within the same river basin may each have only a small individual impact on the river, but collectively they may have very substantial impacts such as leaving long stretches with insufficient flow to maintain ecological systems or support other uses. Therefore, all Category A and B sub-projects will be screened by the FIs for potential cumulative impact issues and to determine whether detailed assessment of these issues is required. For hydropower projects this screening will initially be subject to prior review by the Bank, with the option of moving to post-review within regular project supervision when both the FIs and the Bank are confident that the screening criteria are clear and the process is satisfactory.

The initial **screening** will be based on the information in the EA or PIF and any other documents (e.g. Ecosystem Evaluation Report) prepared to meet Turkish requirements. For No Annex Projects classified as Category B, the screening will be done based on the project proposal and any other available information. The screening process will involve first identifying whether the subproject has any potential **off-site impacts** (e.g. change in water quality, quantity or speed downstream of the subproject; emissions into air, surface or groundwater; erosion and generation of sediment which could move into surface waters, noise levels sufficient to affect areas beyond the physical boundaries of the project, etc.), which cannot reliably be eliminated through realistic mitigation measures. For projects such as energy efficiency investments that involve rehabilitation or replacement of equipment, it is only necessary to note the fact that there are no potential off-site impacts and no further assessment of cumulative impacts will be required.

If such potential residual off-site impacts are identified, a limited or full EIA will be required which will include an **assessment of the project's contribution to cumulative impacts**. This assessment in the EIA will be based on identifying any "**Valued Ecosystem Components" (VECs)**[2] which are likely to be adversely impacted by the project, and which are also subject to adverse impacts from other existing or reasonably forseeable facilities or activities (e.g. developments for which plans have already been approved, significant natural or development trends). The facilities and activities which have impacts on a given VEC are usually referred to as its "**stressors**." For practical purposes, in most cases an EIA will focus on a limited number of VECs (rarely more than 5-10) which are considered high priority due to their importance and their potential vulnerability. They may be important of themselves, and/or they may serve as indicators for wider environmental processes or services. Consultation with experts and stakeholders is a very important part of identifying and prioritizing VECs. Based on the EIA, the FI will determine whether the project requires only a basic (simple) evaluation of cumulative impacts or an in-depth cumulative impact assessment (CIA).

[2] A VEC is any element of the natural environment which has an important ecological, economic, cultural, social or aesthetic value to local stakeholders and society at large. While the natural environment is the main focus of CIA, potential cumulative adverse impacts valued elements of the "built" environment (e.g. roads, monuments, etc.) should also be considered. VECs may be identified at a general level (e.g. river flow/volume) or more specifically (e.g., suitable habitat conditions for a particular aquatic species).

Cumulative impact assessment is ideally done in the context of a regional or sectoral planning process, such as preparation of a river basin management plan. However, in many cases this is not possible and the assessment must be done on a project-by-project level. Assessment of potential cumulative impacts of a given project is intended to:

1. Determine if the project will have an effect on one or more VECs which are also likely to be impacted from other sources (including sources which are currently existing, foreseeable to exist in the future, or existed in the past with remaining "legacy" impacts;
2. If such effects are anticipated, determine whether the impacts from the project could act cumulatively (additive, synergistic) with the impacts of these other stressors;
3. Determine if the impacts from the project, in combination with the other effects, may cause a significant undesirable change now or in the future in the characteristics of the VEC after the application of mitigation for that project.

The main criteria to be followed for determining the type of assessment required are:

- A simple evaluation of cumulative impacts is sufficient if the EIA determines that: (i) any impacts of the proposed project will represent only a minor contribution to the total impacts on any of the selected VECs; or (ii) there are only a few easily identified VECs for which cumulative impacts are a concern; and/or (iii) the interactions among impacts of the different stressors on the VECs are straightforward and easy to understand, describe and evaluate.

- A more in-depth CIA is required if the EIA indicates that: (i) the proposed project would represent a significant portion of the total impact on one or more of the identified VECs; and/or (ii) there are a number of different important VECS which likely to be subject to cumulative impacts from multiple stressors; and/or (iii) the interactions among impacts of the different stressors are complex (e.g. potentially synergistic or co-dependent) and not easily understood or predicted.

A 2-phase approach will be used to identify and implement the level of cumulative impact assessment required for a given project: Phase 1 is a simple assessment carried out as part of the (full or limited) EIA study. In many cases this will be sufficient. However, one outcome of Phase 1 may be a decision that Phase 2 (an in-depth CIA) is required. Methods for carrying out Phase 1 and Phase 2 are summarized below.

**Phase 1: simple assessment of potential cumulative impacts of** a **proposed project, as part of EIA**:

1. Describe the setting of the project and its components and activities that may give rise to cumulative impacts (description of setting should include identifying resources of concern (VECs, at a general level) and other stressors which need to be considered);
2. Identify specific ways in which the project may contribute to the cumulative impacts on these resources and, based on professional judgment, indicate whether

the interaction among impacts from different sources can be characterized easily (e.g. additive) or may be more complex (e.g. synergistic);

3. Assess the expected level or scale of the project's impact both separately and as a contribution to the cumulative impacts on these resources (e.g., for water abstraction, what percentage of the normal water volume will be taken off by this project? What proportion does this represent of the total off-take for different purposes?);
4. Using **professional judgment, available data and simple qualitative tools** such as an impact matrix, characterize the project's likely contribution to the cumulative impacts on the resources of concern, recommend mitigation measures to reduce the impact (mainly the project's contribution but also, where reasonable, possible mitigation measures outside the scope of the project), and indicate whether (after mitigation measures are implemented) there are likely to be significant residual impacts resulting in significant changes in the resources of concern; or
5. Based on professional judgement, indicate if an in-depth cumulative impact assessment is required to answer the questions and recommend measures as outlined in (4) above.

**Phase 2: in-depth Cumulative Impact Assessment**

***Specific TORs should be prepared for an in-depth CIA, including the following main elements:***

(i) Identifying specific VECs on which to focus the study, following a process combining technical expertise and public consultation;

(ii) establishing spatial and temporal boundaries for the study based on the requirements of the VECs;

(iii) establishing the "Limits of Acceptable Change" for each VEC;

(iv) data collection as required to assess the current status (baseline) of the VECs and the nature, source and magnitude of existing stresses on them, In many cases there will be gaps in the existing baseline data which will need to be filled through additional field studies. Where necessary and technically valid, information from existing related databases can be extrapolated[3] (e.g. if data are lacking from the river basin targeted by the project but are available for a nearby basin with very similar characteristics);

(v) evaluating the likely impact of the project on each VEC, again including collection of new data where needed to make a reliable assessment;

(vi) utilizing recognized quantitative and predictive methodologies (e.g. mathematical or computer modeling)to evaluate whether the anticipated project impacts together with other stressors are likely to cause changes in the VECs above the determined acceptable limits;

(vii) identifying realistic mitigation measures which could reduce the stresses on the VECs, either from the project or from other important stressors. Develop a proposed Mitigation and Monitoring Plan, including the institutions responsible for mitigation and what would be needed to ensure

[3] Proof of reference on why and how these data can be extrapolated must be provided.

implementation of mitigation and monitoring measures outside the direct control of the project. Where possible, estimated costs of mitigation and monitoring measures should be provided.

(viii) Indicate any expected residual (non-mitigatable) impacts on VECs and evaluate whether they will lead to exceeding the Limits of Acceptable Change.

In-depth CIAs will be reviewed by the FI and disclosed for public consultation either as part of the EIA or separately, and will initially be subject to prior review by the Bank. After several CIAs have been undertaken if the FIs and the Bank agree that the FIs have developed the experience and capacity, the Bank can move to post review of CIAs as part of regular project supervision.

***DOCUMENTATION***

The subproject sponsor will be responsible for preparing EA documents (e.g. EIA, limited EIA, EMP, PIF, CIA, etc.). The possible types of EA documentation required under various possible outcomes are detailed below. Depending on the assessment of sub project, the document for a Category A project will be a Full Environmental Impact Assessment while for category B projects it may be a limited Environmental Impact Assessment or a free-standing EMP (or Checklist EMP.). In-depth Cumulative Impact Assessments are most likely to be required for Category A projects, but may be required for some Category B projects based on the criteria discussed above.

<u>Category A</u>

- Annex I and Annex II- EIA Necessary Decision
  Preparation of an EIA in accordance with Turkish regulations is required for such projects. The subproject sponsor will be required to submit to the FI a copy of the official MoEU "Environmental Impact Assessment Positive Decision" (i.e. official approval that the project can move forward following the EA process) as well as the Turkish Version of the Final EIA Report.

  In addition, an **EIA Addendum** would be needed to meet World Bank policy requirements for Category A projects. Typically, this would include, but it is not limited to, as it will depend on gap analysis, English language versions of: (a) an Executive Summary, (b) Environmental Management Plan (EMP), (c) Project Description, and (d) a short English language summary of the Minutes of the Public Consultations[4].
  If during the project screening it has been determined that the project requires an in-depth CIA, this should also be provided either as a section or annex of the EIA or as a separate document.

[4] For sub-projects screened as Category A the World Bank requires EA reports be prepared by an independent consultant not affiliated with the sub-project. In the Turkish EIA Regulation, Section three, Article 11.1 it is explained that the Professional experts not affiliated with the sub-project are responsible for preparing the EIA and PIF reports.

- Annex II-EIA Not Necessary Decision
  Since no Turkish EIA is required, the Sponsor will be required to submit to the FI a PIF and a copy of the official MoEU "Environmental Impact Assessment Not Necessary Decision" (i.e. official decision that the project does not require a Turkish EIA) in Turkish and/or English. The FI will undertake the gap analysis and determine if the subproject involves potentially significant site specific environmental issues according to the criteria in the section on "Screening" above. The FI will advise the World Bank on its decision and will also provide the PIF to the Bank. If the FI and the Bank conclude that PIF does not provide sufficient information to make this decision, the FI will ask the Sponsor to provide whatever additional information is needed to determine if the project is category A. If the subproject is concluded to be Category A, the Sponsor is required to prepare an EIA in accordance with the World Bank requirements as specified in OP/BP/GP 4.01 and other relevant policies (examples: OP 4.04, OP 4.11)

  Again, based on the screening described above, it may be determined that the subproject also requires an in-depth CIA, either as part of the EIA or as a separate exercise.

<u>Category B</u>

- Annex I, Annex II EIA Necessary Decision, Annex II EIA Not Necessary Decision or No Annex

  *If under the Turkish EIA Regulation the subproject was Annex I, or Annex II- EIA Necessary Decision and a full EIA has been prepared, the FI will decide whether the existing EIA meets the World Bank's EA documentation requirements for the Category B project, based on the criteria set out in the previous section, or whether another EA document (limited EA or EMP or checklist EMP) is also required.*

  *If the subproject was Annex II-EIA Not Necessary Decision*, the PIF would have been prepared to meet the Turkish EIA requirement. The FI will decide whether the existing PIF meets the World Bank's EA documentation requirements for the Category B project, based on the criteria set out in the previous section, or whether another EA document (limited EA or EMP or checklist EMP) is also requiredTo the extent possible the limited EA and EMP should be based on information extracted from the PIF; however, depending on the coverage and quality of the PIF, the FI may determine that additional information and/or analysis is required.

  *If the subproject was not listed in any Annex*, again the FI could categorize the project as a Category 'B" and an EMP or limited EA would be required as described above. In this case, however, there will be no PIF to draw upon in preparing the document. It is unlikely that a No Annex project would be found to fall under WB Category A.

<u>Category C</u>.

- No Annex (mostly for the projects which include just purchasing of materials/equipment and/or installation works) subprojects have no EA requirements under the World Bank policies.

Note: For *all* Annex I and II *hydro* sub-projects, the subproject sponsor will submit the EIA report (and formal certificate of "EIA Positive Decision)" or the PIF (and formal certificate of "EIA Report is Not Necessary Decision)" to the FI who will review the environmental issues identified in the files and determine if the sub-project has been adequately assessed within the overall river basin (i.e. watershed) context accounting for downstream and upstream use of water. Unless otherwise agreed with the Bank, the FI will ensure that the project does not finance hydro sub-projects that are located on (A) Natural Habitats or Critical Natural Habitats as defined in the World Bank's Operational Policy 4.04, Annex A; and (B) other areas protected under the Borrowers' legislation for purposes of conservation[5].

All hydro projects have some potential off-site (downstream) impacts. Therefore, for hydro projects the FI will carry out the screening process described above to determine whether an in-depth Cumulative Impact Assessment is required and, if so, will inform and guide the Sponsor accordingly. If the FI determines that an in-depth CIA is not required, the Sponsor should be advised that the EA for the subproject should include a discussion regarding cumulative impact issues and why they are not expected to be significant.

1 year after Loan Effectiveness of the additional financing or otherwise agreed with the Bank, the Bank may review implementation of requirements concerning cumulative impact assessments as per the Operational Manuals. Once the Bank and FIs are satisfied that an adequate process and capacity (which will include trained external consultants that the FIs may choose to hire) for mitigation of the cumulative impact has been established, the Bank may agree to delegate CIA review/approve process to FIs and switch prior review to post review, to be conducted as part of the supervision process.

It is also important to emphasize another difference between the Turkish EIA regulation and the WB operational policies regarding the integration of project related components into the environmental assessment process. Turkish environmental regulation is not very clear for the auxiliary structures of a project and therefore the project related components such as the access roads that are opened or widened, material borrow sites, transmission lines planned for a renewable energy projects and their anticipated environmental impacts are not necessarily addressed in the same EA document. Currently the regulation allows that different environmental assessment documents can be submitted (if the sub-components are subjected to Annex I and Annex II of the Regulation) for getting clearance for different components of one project and the linkage is not questioned. Only the Article 25 of the EIA Regulation dated July 17, 2008 states that if preferred by the borrower an integrated EIA Report or a PIF can be prepared for covering all project components.

[5] This condition will also include sites, permits and licenses that are being contested in the court of law, which means if the conservation status of an area has been or is being changed by Government, proposed projects at those sites will NOT be eligible for financing.

On the other hand, OP 4.01 clearly defines the Project area of influence as: the area likely to be affected by the project, including all its ancillary aspects, such as power transmission corridors, pipelines, canals, tunnels, relocation and access roads, borrow and disposal areas, and construction camps, as well as unplanned developments induced by the project (e.g., spontaneous settlement, logging, or shifting agriculture along access roads).

Therefore, all project components would be taken into account while screening the project according to WB standards and the EA (EIA, limited EA, EMP) which is prepared for WB standards should address all environmental impacts and mitigation/monitoring measures of the project with all of its components.

***CONSULTATION***

Category A

*Annex I and Annex II-EIA Necessary Decision Projects*

The new Turkish EA regulation requires one public consultation meeting (at the scoping stage) conducted by the MoEU for Annex I projects and Annex II-EIA Necessary Decision and then there's another requirement that the Draft EIA is disclosed at the site for 30 days to receive any comments from public before the Final EIA decision is given. The regulations also require several public consultations at various stages of EIA preparation, including the public consultation on the draft document. The World Bank EA policy requires *two* public consultations for a Category A project: the first at an early stage (i.e., "scoping" or on Terms of Reference for EIA) and the second on the draft EIA at a point where comments made can still be taken into consideration for finalizing the document.

The Turkish regulation requires the MoEU to establish a commission consisting of representatives of "related agencies and institutions"[6]. The commission utilizes the outcome of the public consultation meeting to define the scope and format of the EIA (scoping) and reviews and evaluates the draft EIA. This procedure would satisfy the requirements of the first public consultation under the World Bank EA policy.

The draft EIA is also made available to the public for comment and the commission must take into account the public comments in their evaluation. The commission then finalizes the EIA including the public comments and submits the EIA to the MoEU for a final decision whether or not to approve the project. At this stage again, the EIA is made available for public comment.

Making the draft EIA available for public review and comment will in most cases satisfy the World Bank second consultation requirement for Category A projects. The FI will however assess the efficacy of the public consultations organized with regard to a

[6] Potential members of the commission include: Ministry of Agriculture, Ministry of Environment, Ministry of Energy and Natural Resources, DSI (General Directorate of State Hydraulic Works), General Directorate of Highways, General Directorate of Mineral Research, Local Environmental Authority, Related MoEF Department heads, Project Sponsor.

proposed subproject, will check of the draft EIA is opened for public review within the practical procedure of the EIA Regulation and if it considers necessary, may require the sponsor to carry out a second consultation meeting. The EIA Decisions are published on the MoEU's website. In addition, the EIA Reports required by Turkish EIA regulations are available for public view at the MoEU website (http://www2.cedgm.gov.tr/dosya/cedsonuckarar/cedsonuc.htm); for projects that are not disclosed based on Turkish legislative requirements, disclosure on sub-project sponsor website or other appropriate website is sufficient.

A short English language summary of the Minutes of the first and second Public Consultations should be included in the EIA Addendum provided to the World Bank.

It should be noted that a CIA could also be a part of the Category 'A' full EIA or could be prepared as a separate document. The CIA consultation requirements are detailed in 'General Remarks on Consultation' section.

*Annex II-EIA Not Necessary Decision Projects*

Category A

Turkish EIA Regulation does not request public consultation activities for Annex II Projects. Therefore, for the projects which are Annex II and categorized as 'A" according to WB standards then a World Bank EIA is to be prepared, the subject sponsor will be responsible for conducting at least *two* public consultations: the first, to discuss the Terms of Reference (TORs) for the World Bank EIA document, and the second to discuss the draft EIA document. If the public consultation meeting will result in the need for additional consultation, these will be organized.

Category B

*Annex I and Annex II-EIA Necessary and Annex II-EIA Not Necessary Decision Projects*

One public consultation is required for projects requiring simple EMP. For projects which would according to the WB criteria require limited EA, two public consultations would be required (similarly as for the category A projects). For Annex I projects, this requirement is satisfied under Turkish EA procedures. However, for all Annex II projects a public consultation meeting should be conducted by the sub-project sponsor. The public announcement of the date and time of the meeting should provide sufficient time for interested parties to attend the meeting. Moreover, details of the public notification (type of announcement, participant list, issues raised, etc.), should be documented in an Annex section of the EMP or limited EA to be prepared.

It should be noted that a CIA could also be a part of the Category 'A' full EIA, Category 'B' limited EA or could be prepared as a separate document. The CIA consultation requirements are detailed in 'General Remarks on Consultation' section.

*No Annex Projects*

One public consultation is required and this public consultation meeting should be conducted by the sub-project sponsor. The public announcement of the date and time of the meeting should provide sufficient time for interested parties to attend the meeting. Moreover, details of the public notification (type of announcement, participant list, issues raised, etc.), should be documented in a section of the EMP to be prepared.

Category C

*No Annex (mostly for the projects which include just purchasing of materials/equipment and/or installation works)*

These subprojects have no public consultation requirements under the World Bank policies

**General Remarks on Consultation**

It should be noted here that the public consultation meetings both serves for receiving any concerns on the proposed project's environmental impacts and possible concerns on the selected site (site could be an undesignated Natural Habitat or Critical Habitat according to WB policies). Therefore, FIs should guide the sub-borrowers for conducting a proper public consultation process both for Category A and Category B projects with a special emphasis on CIA consultation needs. The following criteria could be used as a guideline for handling a proper public consultation process:

- For Category A projects there should be a minimum of two public consultations. The first consultation should be conducted before/during the scoping phase of the EIA report to give stakeholders the opportunity to identify potential issues which they feel should be included in the Terms of Reference for the study. The second consultation should be conducted after a draft EIA is prepared so stakeholders

have the opportunity to comment on the quality of the analysis, the validity of conclusions and the appropriateness of proposed mitigation measures. In both cases participants should be informed of how their comments were incorporated in the TOR and/or final version of the report, or reasons why any of the comments have not been incorporated.

- For Category B projects, at minimum one public consultation should be conducted on the draft EIA or EMP. However, in some cases additional consultations at other stages could be necessary to ensure that public opinion is being adequately addressed.
- Where there are potential offsite impacts, early public consultation is particularly important to help identify and prioritize the Valuable Ecosystem Components (VECs) and to determine whether assessment of potential cumulative impacts should be integrated in the TOR for the EIA) or whether a separate in-depth CIA is required (see Section on Cumulative Impact Assessment, above). For Category A projects this aspect can be included in the required initial (scoping stage) consultation. While Category B projects would not normally require a public consultation at the scoping stage, it is nevertheless advisable to do so if the potential for cumulative impacts has been identified, in order to ensure that this aspect is adequately addressed. Where cumulative impacts are addressed as an integral part of the EIA, their significance and the proposed measures to avoid or reduce them should be covered in the public consultation on the draft EIA. In cases where an separate in-depth CIA is prepared public consultation should also be undertaken on the draft document, either in combination with the consultations on the EIA or separately
- For all public consultation meetings, the date and location of the meeting should be announced in an effective manner, with sufficient time being given to interested parties to be able to attend the meeting. This can include advertisements in national and/or local newspapers, brochures in bulletin boards of local offices (provincial directorates of MEF, etc.), notes on places which are mostly visited by local people (coffee houses of villages, etc), web sites of the sub-borrowers and/or FIs[7], additional audio announcements in the local area, etc.
- It will be good practice for the sub-borrower to reach out to local/national NGOs and invite them to public consultation meetings.
- A draft version of EIA or the limited EIA/EMP (and of the CIA where applicable) should be disclosed in national language in publicly accessible areas (coffee houses, local environmental offices, etc.)
- An attendance sheet is filled during the public consultation meeting including participant's names, occupations, signatures, etc.
- A non-technical presentation is given by the sub-borrower to the participants and both questions from participants and answers provided are clearly noted.
- Copies of newspaper advertisements, photographs of places where the draft reports made available, photographs taken during the meeting(s) would be beneficial for fulfilling the proper public consultation requirements.

[7] It is suggested that at least one of the other suggested methods of announcement is conducted in addition to web-publishing.

In addition, to the above mentioned, all screening results for individual sub projects according to this manual will be publically disclosed on the website of FI and public will be requested to comment on the same in writing. The comments of the public will be reflected in the ToRs or updates of the documents.

***DISCLOSURE***

Category A

The World Bank will deposit the EIA Addendum, English language version of the executive summary EIA, the national EIA and EMP, and minutes of the public consultations at the World Bank Infoshop. The subproject sponsor will disclose the Turkish language EIA Report and EIA Addendum locally in Turkey at a publicly accessible location near the project site. The FI will transmit it to the World Bank with a letter indicating the date and location at which the EA document was publicly disclosed. *The FI is not permitted to provide a sub-project loan using REEE funds until the Turkish language EIA report and EIA Addendum is disclosed in Turkey and the English language EIA report and addendum are disclosed at the World Bank Infoshop*. Disclosure is being made by the MoEU for the Annex I Projects. A copy of an EIA Report for each project is also available for public viewing at the MoEU. The EIAs prepared under Turkish legislation and addendum prepared to satisfy World Bank requirement will be submitted in English language for disclosure (to fulfill the requirements of a Category A project). For the projects that are Annex II or No annex but are classified as Category A and require EIA according to World Bank requirements, the EIA will be prepared and disclosed in English.

Category B

PIFs will serve as a starting point in assigning category of the project. However, if such a project is determined to be Category B as indicated above, a limited EA or simplified EMP would be prepared.

The sponsor will disclose the Turkish language version of any Category B EA document (PIF, limited EA, EMP) at a publicly accessible location near the project site as well as on the FI website. The FI will transmit it to the World Bank with a letter indicating the date and location at which the EA document was publicly disclosed. The World Bank will submit the EA document together with its in-country disclosure date to the Infoshop for disclosure.

CIA

As described above, a CIA may be prepared as either a stand-alone document or as an integral part of the Category 'A' or high Category 'B' document. In all cases, the specific content of the CIA to be disclosed in country and Infoshop, would be agreed between the World Bank and the FI. Once the content and format of the CIA to be disclosed is agreed upon, the document will be sent to the MoEU and MoFW as information by the FI. Three (3) weeks after submission, if written comments or response have not been received from these ministries; it would be assumed that there are no comments or objections. At that point in time, the CIA (or EA document that includes

CIA) will be disclosed based on requirements for EA document disclosure, outlined in the Operational Manual. The disclosure procedure will be discussed and reviewed as part of the CIA implementation review process, to be conducted 1 year after project effectiveness or otherwise agreed with the Bank.

***REVIEW AND APPROVAL***

Review and approval of assigning of the category according to OP 4.01

For each individual sub project the FI will send brief project information to the Bank and information regarding the Turkish legislation requirements and information on the prepared documents, translation of the documents (PIFs or summary of EIA) together with the proposed associated environmental category. The document will provide justification on category against following criteria: Type and scale of project, Project activities (including the main project and all relevant project activities such as access roads, material borrow sites, transmission lines, etc.), Location of the project, Nature and magnitude of potential project impacts, and sensitive issues. In addition to assigning the project category, due diligence document will be proposed. The Bank will review the information provided and provide comments and if assessment appropriate issue no objection to proposed category and request the type of the environmental assessment document which is necessary to meet WB standards. For energy efficiency projects, the project documentation/information may be provided as post review through project implementation reporting process. For other projects, the review may transition from prior to post review, after a review of the categorization to date indicates that it has been carried out in a manner satisfactory to the Bank.

Category A

The MoEU is responsible for providing approval of the EIA Report for Annex I projects according to Turkish EIA regulations. For Annex II Projects the review is conducted by the Provincial Directorates of MoEU and the decision of EIA Necessary or EIA Not Necessary is given. If EIA is found to be necessary then the final approval body is MoEU again but for the others the EIA Not Necessary Decision means that the project is nationally cleared. Any sub-project presented to the FI will have first obtained this approval (MoEU EIA Positive Decision). The English language Executive Summary of the EIA, the English translation of EIA, or addendum to EIA, English version EMP including the minutes of the public consultations will be transmitted to the World Bank who will provide an independent review and approval. *The FI is not permitted to provide a sub-project loan using REEE funds for a Category A subproject until a "No Objection" is received from the World Bank* .The World Bank will respond to the FI within [10 working days] after receipt of the documentation. All category A EIAs and CEIAs should be reviewed first by the FI, than WB environmental specialist and finally regional safeguards coordinator therefore all the documents should be submitted to WB in English. After mutual agreement between WB and FI, based on acceptable quality of the documents provided up to that point, the review of the Category A projects to be financed by each FI will be subject an ex-post basis thereafter as part of routine supervision.

Category B

The FI will review the EA document to verify that all environmental issues are properly considered. At least the first 2 (two) EA documents (of each FI) should be subject to prior review by WB. After mutual agreement between the WB and FI, based on acceptable quality of the documents provided, the review of projects to be financed by each FI will transition to ex-post review basis.

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Subsequently, the FI will be responsible for approving all Category B documents as part of the overall loan approval process. The FIs will inform the Bank on each individual approval of the EA due diligence document. The Bank may selectively review applications on an ex-post basis thereafter as part of routine supervision.

***CONDITIONALITY***

FI, will assure that the subproject loan agreements include a commitment of the subproject sponsor to follow the requirements set forth by the Turkish environmental regulations as well as the social and environmental safeguard measures set forth in the Environmental Policy Framework (and elaborated in the relevant EA document (PIF, EIA, CEIA, limited EA, EMP) for the particular subproject), Resettlement Policy Framework and the Operational Manual. Moreover, EA documents will be shared with the contractors/sub-contractors (construction, etc.) of the individual sub-projects.

***MONITORING AND REPORTING***

As part of normal supervision activities the FI will perform desk and field-based supervision functions to assure compliance by the subproject sponsor with environmental obligations specified in the loan agreement. The FI will interact with MoEU compliance and enforcement authorities as needed in this regard.

The FI will report semi-annually to the Bank on the environmental screening and environmental assessment status of new and on-going investments.

All semiannual FI sub-project progress reports will include an environment section on prepared documents and implementation of EA documents (EIA, CEIA, Limited EA, EMP). In this section the FI will verify whether or not environmental requirements as detailed in the subproject loan agreement have been met. If requirements are not being met, the FI will provide recommendations for further action to insure compliance. Depending on the severity of a compliance failure, the FI would make a special effort to assist a sub-project sponsor to take corrective action if the necessary corrective measures are not taken within a reasonable period of time set by FI (normally within two months of notification to the developer) the FI should suspend financing of the subproject until corrective action is taken.

***INSTITUTIONAL CAPACITY***

The FIs participating in this project have experience with the Turkish environmental legislation and are familiar with the WB safeguards procedures. In order to further strengthen the capacity of the FIs, each FI will either hire an environmental specialist

who will help with the environmental due diligence documents gap analysis, review of the documents, advise the investor, monitor from time to time the compliance of sub projects with EMPs, etc. or, designate an engineer in FI who will be in charge for environmental issues and will work closely with WB teams environmental specialist and gain knowledge and experience on the way. The FI environmental specialist should have a strong background of EIA processes. The responsibility of environmental specialist should include: screening the projects according to this manual, assessing environmental due diligence documents for individual sites in coordination with FI and the WB; b) during the project implementation phase s/he will supervise EMP implementation and report on it to FI; c) report to the Bank on progress and issues in terms of the environmental safeguards compliance; d) coordinate environmental training on EMPs for local contractors and supervising engineers; e) disseminate existing environmental management guidelines and develop guidelines related to issues which are not covered by existing regulations, on implementation, monitoring and evaluation of mitigation measures; f) help organize public consultations of EA documents with investors if needed; g) perform periodic site visits to inspect and approve plans and monitor compliance with EMPs;

In addition to the FI, the Ministry of Environment and Urbanization can / will participate with its inspection unit in supervision of individual subprojects implementation.

The Ministry of Environment and Urbanization is expected to visit the project site from time to time and check if performed activities are in accordance with environmental legislation. The Ministry is authorized to close down, to suspend, to terminate partially or totally the activity of natural and legal persons, who have caused environmental pollution or damage and defines relevant tasks on situation improvement.

Implementation of EMP provisions will be regularly reported to the Bank in the semiannual progress reports. Input for reports will be provided by the site supervising engineer, consultant supervising project implementation, and environmental specialist / engineer hired/designated by the FI.

The capacity of investor will also need to be strengthened. Each investor will designate a person or hire individual environmental specialist that will help with the screening process of the sub project, prepare the necessary environmental assessment documentation according to category to meet the WB standards and will follow up implementation of the EMP by contractor.

**APPENDIX V.1.1-** TEMPLATE FOR A SIMPLIFIED ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Project Description

Present a brief description of the subproject. Include the nature of the investment, the location, and any characteristics of the area that are of particular interest, e.g. near a protected area, area of cultural, historical, religious interest etc. Also, very briefly describe the general land use characteristics (farming, small industry etc.), and the location(s) of the nearest population centers. If available, a simple map should be included.

A. MITIGATING PLAN

| Phase | Issue | Mitigating Measure | Responsibility* |
|---|---|---|---|
| Construction | • <br>• <br>• <br>• <br>• | | |
| Operation<br>I. | • <br>• <br>• <br>• <br>• | | |

* Items indicated to be the responsibility of the contractor shall be specified in the bid documents

B. MONITORING PLAN

| **Phase** | **What** *parameter is to be monitored?* | **Where** *is the parameter to be monitored?* | **How** *is the parameter to be monitored/ type of monitoring equipment?* | **When** *is the parameter to be monitored- frequency of measurement or continuous?* | **Cost** | **Responsibility** |
|---|---|---|---|---|---|---|
| Construction | | | | | | |
| Operation<br>I. | | | | | | |

NOTE: Any item identified in the mitigation plan must have a corresponding entry in the monitoring plan. For example, if noise is an issue presented in then mitigating plan, than noise should be an item in the monitoring plan

C. SCHEDULE

Present (preferably in Chart Form) Start Dates and Finish Dates for:

- Mitigation Activities
- Monitoring Activities

D. INSTITUTIONAL ARRANGEMENTS

A narrative discussion supported by organizational charts detailing:

- Institutional responsibilities and procedures for mitigation and monitoring and how they are linked for environmental management
- Environmental information flow (reporting—from who and to who and how often)
- Decision making chain of command for environmental management (to take action, to authorize expenditures, to shut down, etc.)

In short, how is all the monitoring data going to be used to maintain sound environmental performance—who collects the data, who analyzes it, who prepares reports, who are the reports sent to and how often, and who does that person send it to, or what does he/she do with the information—who has the authority to spend, shutdown, change operations etc.

E. CONSULTATION WITH PROJECT-AFFECTED GROUPS AND LOCAL PEOPLE

- Date(s) of the consultations that was/were held
- Location(s) of the consultations
- Who was invited

  Name, Organization or Occupation, Telephone/Fax/e-mail number/address (home and/or office)

- Who attended

  Name, Organization or Occupation, Telephone/Fax/e-mail number/address (home and/or office)
- Meeting Program/Schedule

  What is to be presented and by whom

- Summary Meeting Minutes (Comments, Questions and Response by Presenters), including the name(s) of the member(s) who participated in the Consultation

- Any agreed actions or necessary follow-on work and agreed schedule

**APPENDIX V.1.2-** CONTENT OF THE LIMITED ENVIRONMENTAL IMPACT ASSESSMENT

**Description the proposed project.** Provide information on the following: location of all project-related development sites (main project, access roads, transmission lines, material borrow sites, and their right of way's (ROWs), including offsite investments; general layout of facilities at project-related development sites; flow diagrams/drawings of facilities/operations design basis, size, capacity; pre-construction activities; construction activities, facilities and services; commissioning, operation and maintenance activities, required off-site investments.

Provide maps at appropriate scales to illustrate the general setting of project-related development sites and ROW's, as well as surrounding areas likely to be impacted. These maps should include topographic contours, as available, as well as locations of major surface waters, roads, railways, town centers, parks and reserves, and political boundaries.

**Description of the Environment (baseline conditions).** Assemble brief baseline data on the physical, biological and socioeconomic characteristics of the development area and area of influence which are relevant to investment. For this section of a limited EIA, the baseline data should be detailed if it is directly linked with the estimated potential impacts and/or proposed mitigation measures of the project.

(a) *Physical environment*: geology (e.g., stratigraphy and seismic history of development areas, landsliding); topography (e.g., drainage patterns around construction areas); climate and meteorology (e.g., precipitation patterns); ambient air quality (e.g., ability to assimilate emissions and maintain air quality standards); surface water hydrology (e.g., downstream water resources from reservoirs, soil erosion and sedimentation potential, flood hazard potential); water resources (e.g., adequacy of water supplies); receiving water quality (e.g., ability to assimilate effluent discharges and maintain water quality standards for desired uses).

(b) Biological environment: flora and fauna (e.g., general characteristics); rare or endangered species within or in areas adjacent to project-related development sites or ROW's; sensitive habitats, including wetlands, parks or reserves, significant natural habitats within or in areas downstream/down gradient of project-related development areas.

(c) Socio-cultural environment: (both present and projected): e.g., population (i.e., full time and seasonal); land use (i.e., year-round and seasonal); planned development activities.

**Legislative and Regulatory Considerations**. Provide brief information on the national/international regulations (national regulation on excavation waste, noise management, etc.) which are related to the potential impacts of the proposed project. The sub-project's status according to national EIA regulation could be mentioned and impact/mitigation related regulations together with the integrated standards (e.g. permissible noise emission value during construction), etc. could be provided.

**Determination of the Potential Impacts of the Proposed Project.** Predict and assess all significant impacts that the project is likely to generate, in quantitative terms as far as possible. These may include, but not be limited to, changes in the following: biodiversity, changes in hydrology, wastewater effluents and atmospheric emissions and solid wastes; land use, noise, and traffic, socio-cultural behavior. Assess the impacts from changes brought about by the project on baseline environmental conditions. It should also be noted that for a project which requires a limited EIA, it is expected that only a small number of these potential impacts would apply. Because if most of these above listed impacts apply to the project and the impacts are significant and mostly irreversible then the project should most probably screened as 'A' which would require a full EIA.

In this analysis, distinguish between significant positive and negative impacts, direct, indirect and cumulative impacts, and immediate and long-term impacts. Include indirect impacts from the increased power supply (e.g., industrial expansion and increased urbanization). Identify impacts that may occur due to accidental events (e.g., potential rupture of dams, explosions of boilers). Identify impacts that are unavoidable or irreversible.

Impact analysis for energy projects should be divided between construction impacts and operation impacts. For example, for hydroprojects, channels during construction impacts of land clearing (e.g., loss of vegetative habitat for wildlife, displacement of people) and operation impacts of channel maintenance (e.g., use of herbicides, management of debris). For power plants, there are construction impacts of earthmoving, stream diversions, displacement of communities/individuals, housing construction workers and operation impacts of power plant operation. Opportunities for environmental enhancement should be explored.

**Development of an Environmental Management Plan (EMP).** For the proposed project, recommend feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels. Include measures to address emergency response requirements for accidental events.

Estimate the impacts and costs (where available) of those measures, and of the institutional and training requirements to implement them. Consider compensation to affected parties for impacts that cannot be mitigated. Prepare a management plan including proposed work programs, budget estimates, schedules, staffing and training requirements, and other necessary support services to implement the mitigating measures. Provide environmental protection clauses for application by contractors and consultants.

Prepare a detailed plan to monitor the implementation of mitigating measures and the impacts of the project of other inputs (such as training and institutional strengthening) needed to conduct it during construction and operation. Include in the plan an estimate of capital and operating costs and a description of other inputs (such as training and institutional strengthening) needed to implement the plan.

Review the authority and capability of institutions at local, provincial/regional, and national levels and recommend steps to strengthen or expand them so that the management and monitoring plans in the environmental assessment are likely to be implemented. The recommendations may extend to new laws and regulations, new agencies or agency functions, intersectoral arrangements, management procedures and training, staffing, operation and maintenance training, budgeting, and financial support.

**Communication with the Public**. The investor should coordinate the EA with relevant agencies and the government and consult with affected groups likely to be affected by the proposed project and with local NGOs on the environmental and social aspects of the proposed project. These groups will be consulted at least once when a draft limited EA is available. Relevant materials will be provided to affected groups in a timely manner prior to consultation and in a form and language that is understandable and accessible to the groups being consulted. The Investor should maintain a record of the public consultation and the records should indicate: means other than consultations) eg, surveys) used to seek the views of affected stakeholders; the date and location of the consultation meetings, a list of the attendees and their affiliation (if possible) and contact address (if possible); and, summary minutes

## APPENDIX V.1.3 - SELECTION AND ELIMINATION CRITERIA WHICH ARE THE BASIS FOR THE PROJECT INFORMATION FILE

Title Page:

Name, address, telephone and fax number of project owner:

Name of Project:

Name and Location of the Place of Project:

Definition and Objective of Project

Name, address, telephone and fax numbers of the working group / institution which prepared the report:

Preparation date of report:

**1. Project Characteristics**

In the project characteristics, following issues should be taken into account:

a) Flow process chart of the project, its capacity, area to be covered, technology, number of personnel to be employed,

b) Use of natural resources (land use, water use, type of energy to be used, etc.)

c) Amount of waste to be produced (solid, liquid, gas, etc) and chemical, physical, and biological characteristics of wastes,

d) Risk of accident which may arise due to technology and materials to be used in the project,

e) Measures to be taken against the likely environmental impacts of the project,

**2. Place of Project**

Following issues should be taken into account when assessing the sensitivity of an area likely to be affected by the project:

a) Existing land use and quality (agricultural area, forest area, planned zone, water surface, and similar),

b) By taking into account the list of sensitive areas in Annex V; the wetlands, coastal departments , mountain- and forest areas, agricultural areas, national parks, special protection areas, densely populated areas, historical, cultural, archeological, and similar important areas, erosion areas, landslide areas, forested areas, potential erosion and forestation areas and aquifers which must be protected pursuant to the Law No. 167 dd. 16 December 1960 on Ground-Waters.

**3. Alternatives of the project and project area (reasons for the selection of project technology and project area)**

Conclusion

This consists of a summary of all the explanations and a general evaluation in which the important environmental effects of the project are listed and the alternatives are compared.

**APPENDICES:**

As per the project area and alternatives, if available, landscaping, master plan, application zoning plan, general layout or amendment proposals on these plans,

In order to assess the existing land use of the project area and its close vicinity; the information showing the locations of settlement areas, transportation networks, energy transmission lines, existing facilities, and other areas specified in the List of Sensitive Areas in Annex V of this Bylaw (in case they are in the vicinity of the project area) shall be briefly explained by processing the data onto the existing 1/25.000 scale map (if available, the environment plan, otherwise the topographical map),

Scaled geological map of the project area, the locations of surface and ground waters on this map, and explanation of earthquake status of the area.

**Notes and Sources**

Introduction of those who prepared the Project Presentation File within the scope of Circular Letter on Certificate of Competency:

Name and surname, profession, curriculum vitae, references, and signature indicating that s/he is responsible for the report.

## APPENDIX V.1.4 - SPECIFIC GUIDANCE FOR DECISION-MAKING: CATEGORY A vs B

In some cases information on type and scale of project, project activities or geographic location alone can be decisive: e.g., construction of a new thermal power plant or hazardous waste disposal facility, transport of non-trivial amounts of hazardous materials, or construction of new buildings or roads in a Protected Area would be Category A regardless of any other features or factors. However, most cases are not so extreme, so information under these parameters more often serves mainly as a "flag, indicating that the project should probably be presumed to be Category A unless proven otherwise.

Some project types are presumed to be Category A only if they are above a certain scale threshold, which can be in terms of area affected, size of structures (e.g. dam height), volume of material involved, etc. These scale factors relate to specific issues which increase the likelihood or significance of negative impacts (e.g. large scale road works require obtaining and/or excavation/disposal of large amounts of "fill" material; tall dams retain large amounts of water and cause the inundation of large areas; large scale development of new water supply systems can deplete surface or ground water systems; large numbers of livestock generate manure in quantities greater than what can be safely used as fertilizer and/or result in land degradation through overgrazing ; etc.). Overall, these scale-related impacts present significant risks regardless of other features or factors of the project. The implicit assumption is that the scale of the investment/activity is directly related to the scale of the impact and this in turn is directly related to the significance of the impact. While this is often likely to be true, it is not always the case. A small scale project in a very sensitive or constrained environment may have impacts which are much more significant from an environmental perspective than a much larger project in a less sensitive area (e.g. a sewerage outfall ending in a small, confined bay vs. several miles offshore in the open ocean). However, for practical screening purposes quantitative threshold levels for triggering Category A may need to be set for each project type, based on overall experience typical circumstances. However, a precautionary approach should be followed (i.e. setting scale thresholds set at a relatively low level) to take into account the possibility that some of the projects to be evaluated are likely to include atypical circumstances.

While the laws of many countries (and the EU) divide projects into "EIA required" vs. "EIA not required" lists based on the type and scale of the project, it is equally important to consider the specific activities which the project will finance. For example, in many cases projects in sectors such as education, health care, etc. are identified as not requiring any environmental assessment, yet they could include environmentally significant activities such as constructing large buildings in environmentally sensitive areas, generation/disposal of bio-medical and/or radioactive waste, large scale water use, etc.

The following is an extensive though not 100 percent comprehensive list of such project types and activities.

### 1. Type and scale of project

#### *(1) Project types which are presumptive Category A regardless of scale:*

New construction of permanent road or upgrading to multi-lane high speed road
- New thermal power development using fossil fuel
- Extraction of sub-surface minerals
- Manufacture, transportation and use of hazardous and/or toxic materials
- OTHERS…

#### *(2) Project types which are presumptive Category A above a certain scale threshold:*

- **Road rehabilitation and construction**
- Wastewater treatment
- Irrigation and/or drainage

- Forestry or wood products production
- Hazardous waste management and disposal
- Industrial plants and industrial estates, including major expansion, rehabilitation, or modification
- Irrigation, drainage, and flood control (large-scale)
- **Land clearance and leveling**
- Mineral development (including oil and gas)
- Port and harbor development
- Reclamation and new land development
- River basin development
- Aquaculture and mariculture
- Livestock production
- New (expanded) crop cultivation
- Agro-industry (food processing)
- Water supply and wastewater collection, treatment, disposal
- **Electrical transmission**
- Protected areas and biodiversity conservation
- **Rehabilitation or maintenance of highways or rural roads**
- Rehabilitation or modification of existing industrial facilities (small-scale)
- **Renewable energy (other than hydroelectric dams)**
- Rural electrification
- Rural water supply and sanitation
- Tourism
- Watershed projects (management or rehabilitation)
- Windmills
- OTHERS…

Project types other than those listed above may generally consider to be "not-flagged," i.e. Category B is presumed unless there are other case-specific factors (mainly falling under Parameters 3 and 5) which would elevate them to Category A (e.g., location in a very sensitive environment, requiring land acquisition that affects 200 or more persons, etc.).

**2. Project activities (any project involving these activities would be presumed Category A unless proven otherwise):**

- land clearing or conversion on a significant scale
- New hydropower development involving water diversion and/or storage

- extraction, consumption, or conversion of substantial amounts of forest and other natural resources
- consumption/burning of fossil fuels on a
- handling/use/storage/disposal of hazardous materials in more than incidental quantities
- displacement/resettlement of 200 or more persons
- Others…

For example, creation of a science laboratory which includes storage/handling/disposal of small quantities of toxic chemicals, or installation of gas boilers to heat public buildings would typically be Category B. By contrast any industrial scale use of the same chemicals or establishment of a gas-powered electric power plant or industrial operation would be Category A.

**3. Environmental sensitivity of the location and surroundings (relates to significance of the impacts should they occur)**

- In or near sensitive and valuable ecosystems - wetlands, wildlands, coral reefs and habitat of endangered species;

- in or near areas with archaeological and/or historical sites or existing cultural and social institutions;
- in densely populated areas, where resettlement may be required or potential pollution impacts and other disturbances may significantly affect communities;
- in regions subject to heavy development activities or where there are conflicts in natural resource allocation; along watercourses, in aquifer recharge areas or in reservoir catchments used for potable water supply; and
- on lands or waters containing valuable resources (such as fisheries, minerals, medicinal plants, prime agricultural soils)

**4. Nature and magnitude of potential impacts**

Magnitude can be measured as: the *absolute amount* of a resource or ecosystem affected, the *amount affected relative to the existing stock* of the resource or ecosystem, the *intensity* of the impact and its *timing* and *duration*. In addition, the *probability of occurrence* for a specific impact and the *cumulative impact* of the proposed action and other planned or ongoing actions may need to be considered.

(i) If these types of impacts anticipated at any magnitude (beyond trivial),

(ii) Category A if the impacts are anticipated to be at high magnitude

- Some examples of direct pollutant discharges into air, water or soil at level sufficient to degrade their quality in the vicinity;
- large-scale physical disturbance of the site and/or surroundings;
- measurable modification of hydrologic cycle;
- involuntary displacement of 200 or more persons and other significant social disturbances
- Irreversible destruction or degradation of natural habitat and loss of biodiversity or environmental services provided by a natural system;
- risk to human health or safety (for example, from generation, storage or disposal of hazardous wastes,
- or violation of ambient air quality standards)

**5. Sensitive issues:** should probably be treated as Category A even if only as a "precautionary measure" to ensure that adequate data are collected, analyses done, consultation done to diffuse or manage anticipated challenges and criticism…

Examples include:
- disturbance of tropical forests;
- conversion of wetlands;
- potential adverse effects on protected areas or sites, encroachment on lands
- potential adverse effects on rights of indigenous peoples or other vulnerable minorities,
- involuntary resettlement of 200 or more persons,
- impacts on international waterways
- other transboundary issues
- toxic waste disposal

## APPENDIX V.1.5. SAMPLE EMP CHECKLIST DESIGNED FOR CONSTRUCTION AND REHABILITATION ACTIVITIES

**Environmental Management Plan**

**Mitigation and Monitoring Plan**

**Checklist for Construction and Rehabilitation Activities**

| **PART 1: INSTITUTIONAL & ADMINISTRATIVE** | | | | |
|---|---|---|---|---|
| Country | | | | |
| Project title | | | | |
| Scope of project and activity | | | | |
| Institutional arrangements (Name and contacts) | WB (Project Team Leader) | Project Management | Local Counterpart and/or Recipient | |
| Implementation arrangements (Name and contacts) | Safeguard Supervision | Local Counterpart Supervision | Local Inspectorate Supervision | Contractor |
| **SITE DESCRIPTION** | | | | |
| Name of site | | | | |
| Describe site location | | | Attachment 1: Site Map [ ]Y [ ] N | |
| Who owns the land? | | | | |
| Geographic description | | | | |
| **LEGISLATION** | | | | |
| Identify national & local legislation & permits that apply to project activity | | | | |
| **PUBLIC CONSULTATION** | | | | |
| Identify when / where the public consultation process took place | | | | |
| **INSTITUTIONAL CAPACITY BUILDING** | | | | |
| Will there be any capacity building? | [ ] N or [ ]Y if Yes, Attachment 2 includes the capacity building program | | | |

| PART 2: ENVIRONMENTAL /SOCIAL SCREENING | | | |
|---|---|---|---|
| Will the site activity include/involve any of the following potential issues and/or impacts: | **Activity and examples of potential issues and/or impacts** | **Status**<br>**If Yes for any** | **Additional references** |
| | 1. Building rehabilitation<br>• Site specific vehicular traffic<br>• Increase in dust and noise from demolition and/or construction<br>• Construction waste | [ ] Yes [ ] No | See Section **B** below |
| | 2. New construction<br>• Excavation impacts and soil erosion<br>• Increase sediment loads in receiving waters<br>• Site specific vehicular traffic<br>• Increase in dust and noise from demolition and/or construction<br>• Construction waste | [ ] Yes [ ] No | See Section **B** below |
| | 3. Individual wastewater treatment system<br>• Effluent and / or discharges into receiving waters | [ ] Yes [ ] No | See Section **C** below |
| | 4. Historic building(s) and districts<br>• Risk of damage to known/unknown historical or archaeological sites | [ ] Yes [ ] No | See Section **D** below |
| | 5. Acquisition of land[8]<br>• Encroachment on private property<br>• Relocation of project affected persons<br>• Involuntary resettlement<br>• Impacts on livelihood incomes | [ ] Yes [ ] No | See Section **E** below |
| | 6. Hazardous or toxic materials[9]<br>• Removal and disposal of toxic and/or hazardous demolition and / or construction waste<br>• Storage of machine oils and lubricants | [ ] Yes [ ] No | See Section **F** below |
| | 7. Impacts on forests and/or protected areas<br>• Encroachment on designated forests, buffer and /or protected areas<br>• Disturbance of locally protected animal habitat | [ ] Yes [ ] No | See Section **G** below |
| | 8. Handling / management of medical waste<br>• Clinical waste, sharps, pharmaceutical products (cytoxic and hazardous chemical waste), radioactive waste, organic domestic waste, non-organic domestic waste<br>• On site or off-site disposal of medical waste | [ ] Yes [ ] No | See Section **H** below |
| | 9. Traffic and Pedestrian Safety<br>• Site specific vehicular traffic<br>• Site is in a populated area | [ ] Yes [ ] No | See Section **I** below |

[8] Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.
[9] Toxic / hazardous material includes and is not limited to asbestos, toxic paints, removal of lead paint, etc.

| PART 3: MITIGATION PLAN | | |
|---|---|---|
| **ACTIVITY** | **PARAMETER** | **GOOD PRACTICES MITIGATION MEASURES CHECKLIST** |
| **A**. General Conditions | Notification and Worker Safety | (a) The local construction and environment inspectorates and communities have been notified of upcoming activities<br>(b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works)<br>(c) All legally required permits (to include not limited to land use, resource use, dumping, sanitary inspection permit) have been acquired for construction and/or rehabilitation<br>(d) All work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment.<br>(e) Workers' PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots)<br>(f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow. |
| **B.** General Rehabilitation and /or Construction Activities | Air Quality | (a) During interior demolition use debris-chutes above the first floor<br>(b) Keep demolition debris in controlled area and spray with water mist to reduce debris dust<br>(c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site<br>(d) Keep surrounding environment (side walks, roads) free of debris to minimize dust<br>(e) There will be no open burning of construction / waste material at the site<br>(f) There will be no excessive idling of construction vehicles at sites |
| | Noise | (a) Construction noise will be limited to restricted times agreed to in the permit<br>(b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible |
| | Water Quality | (a) The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. |
| | Waste management | (a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities.<br>(b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers.<br>(c) Construction waste will be collected and disposed properly by licensed collectors<br>(d) The records of waste disposal will be maintained as proof for proper management as designed.<br>(e) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos) |
| **C**. Individual wastewater treatment system | Water Quality | (a) The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities<br>(b) Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment<br>(c) Monitoring of new wastewater systems (before/after) will be carried out |
| **D**. Historic building(s) | Cultural Heritage | (a) If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notify and obtain approval/permits from local authorities and address all construction activities in line with local and national legislation<br>(b) Ensure that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted, officials contacted, and works activities delayed or modified to account for such finds. |
| **E**. Acquisition of land | Resettlement Action Plan/Framework | (a) If expropriation of land was not expected and is required, or if loss of access to income of legal or illegal users of land was not expected but may occur, that the bank task Team Leader is consulted.<br>(b) The approved Resettlement Action Plan/Framework (if required by the project) will be implemented |

| PART 3: MITIGATION PLAN | | |
|---|---|---|
| **ACTIVITY** | **PARAMETER** | **GOOD PRACTICES MITIGATION MEASURES CHECKLIST** |
| **F**. Toxic Materials | Asbestos management | (a) If asbestos is located on the project site, mark clearly as hazardous material<br>(b) When possible the asbestos will be appropriately contained and sealed to minimize exposure<br>(c) The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust<br>(d) Asbestos will be handled and disposed by skilled & experienced professionals<br>(e) If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately<br>(f) The removed asbestos will not be reused |
| | Toxic / hazardous waste management | (a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information<br>(b) The containers of hazardous substances should be placed in an leak-proof container to prevent spillage and leaching<br>(c) The wastes are transported by specially licensed carriers and disposed in a licensed facility.<br>(d) Paints with toxic ingredients or solvents or lead-based paints will not be used |
| **G**. Affects forests and/or protected areas | Protection | (a) All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities.<br>(b) For large trees in the vicinity of the activity, mark and cordon off with a fence large tress and protect root system and avoid any damage to the trees<br>(c) Adjacent wetlands and streams will be protected, from construction site run-off, with appropriate erosion and sediment control feature to include by not limited to hay bales, silt fences<br>(d) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas. |
| **H**. Disposal of medical waste | Infrastructure for medical waste management | (a) In compliance with national regulations the contractor will insure that newly constructed and/or rehabilitated health care facilities include sufficient infrastructure for medical waste handling and disposal; this includes and not limited to:<br>▪ Special facilities for segregated healthcare waste (including soiled instruments "sharps", and human tissue or fluids) from other waste disposal:<br>a. Clinical waste: yellow bags and containers<br>b. Sharps – Special puncture resistant containers/boxes<br>c. Domestic waste (non-organic): black bags and containers<br>▪ Appropriate storage facilities for medical waste are in place; and<br>▪ If the activity includes facility-based treatment, appropriate disposal options are in place and operational |
| **I** Traffic and Pedestrian Safety | Direct or indirect hazards to public traffic and pedestrians by construction activities | (b) In compliance with national regulations the contractor will insure that the consruction site is properly secured and construction related traffic regulated. This includes but is not limited to<br>▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards<br>▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes.<br>▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement<br>▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public.<br>▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public. |

| **PART 4: MONITORING PLAN** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Phase** | **What** (Is the parameter to be monitored?) | **Where** (Is the parameter to be monitored?) | **How** (Is the parameter to be monitored?) | **When** (Define the frequency / or continuous?) | **Why** (Is the parameter being monitored?) | **Cost** (if not included in project budget) | **Who** (Is responsible for monitoring?) |
| During activity **preparation** | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| During activity **implementation** | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| During activity **supervision** | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**APPENDIX V.1.6- GENERIC MITIGATION AND MONITORING PLANS FOR RENEWABLE ENERGY PROJECTS (TO BE USED AS A GUIDELINE FOR SITE SPECIFIC EMPs)**

**MITIGATION PLAN**

| Phase | Issue | Mitigating Measure | Responsibility of the implementation of the mitigation measure and monitoring of the same* |
|---|---|---|---|
| Design | | • Preparation of Site Management Plan | |
| Construction | Siting of construction camps and municipal services for worker camps | • Avoid forested areas<br><br>• Siting at least:<br>(a) 1 km from any protected areas<br>(b) 50 meters from any surface water bodies, and<br>(c) 1 km from any villages or sites of cultural significance<br><br>▪ Services<br>(a) If there is no available water source near the site the water for workers will be provided by villagers for a fee, otherwise purchased from cities.<br>(b) Sewage will be stored at a temporarily made pond (impermeable) or tank near the camps and then sediments will be disposed as agreed with the Ministry of Environment or local Municipality.<br>(c) Garbage from the camps will be collected on a daily basis and will weekly be taken to legal disposal site.<br>• Construction camp will be restored to fit the previous use or the needs of the community after work is completed. | |
| | Construction solid waste management (soil, rock, packaging materials etc.) | Excavation material will be disposed to an area licensed by the relevant local authority.<br>Burning is prohibited to prevent forest fires.<br><br>Packaging wastes will be returned to the manufacturers.<br><br>Topsoil will be stored and covered to prevent erosion. After construction completion, soil will be restored to original location and revegetated.<br><br>Domestic solid waste originated from workers should be collected separately and should be disposed by the relevant authority (generally the local municipality) | |

| | | | |
|---|---|---|---|
| | Domestic Wastewater | The waste water from the construction camp will be treated prior to release into environment. Sewage waters will be collected separately and disposed by licensed company. | |
| | Construction engine equipment exhausts | Verify construction equipment has valid operating permits<br><br>Minimize engine idling by turning off equipment not in use for more than 5 minutes | |
| | Construction equipment storage | Avoid tree cutting to create storage area<br><br>Place equipment on impervious surface to prevent oil leaks from contaminating soil<br><br>Locate storage area at least 50 meters away from any surface water bodies, avoid villages and any population centers | |
| | Noise | Construction would take place only during daytime (from 7.00AM to 7.00PM)<br><br>If noise level is exceeds 70 dBA in the daytime (except during blasting), measures such as installing protection walls will be taken<br><br>If construction during evening is required, the local affected people will first be consulted at least one week in advance and necessary permits from local authorities will be obtained. | |
| | Dust | Water spraying will be conducted in dry and windy conditions on local roads where trucks pass and at any construction sites | |
| | Worker safety | Contractor will be required to develop a health and safety plan two weeks before starting construction work, and then subproject sponsor, together with the FI engineer will review and approve it; workers will be subjected to health screening and health and safety training sessions will be provided; public health education will be part of the construction program<br><br>Necessary personal protective equipment such as helmets, working shoes, ear protection, dust filter and others will be provided and be required to be used by workers.<br><br>Workers will be trained (new workers will be trained before start and other workers will be trained frequently) regarding the workers health and safety issues. | |

| | | | |
|---|---|---|---|
| | Soil erosion and silt runoff | Any transmission towers or other structures will be located to avoid high slope (>30°) areas<br><br>In case selection of such slope areas cannot be avoided, structures will be designed to minimize excavation on slopes<br><br>Bunds, sedimentation ponds, or other silt trapping devices constructed to avoid siltation into surface waters | |
| | Existing roads | Minimize additional traffic movements on existing roads<br><br>Repair any roads as soon as damage becomes evident<br><br>Keep roads free from mud, debris and other obstacles | |
| | Access road siting and construction | Use existing access roads/ ROWs wherever possible<br><br>Avoid tree cutting or economically productive lands wherever possible<br>Apply all identified mitigation measures (during construction phase) in this EMP for construction of access roads as well | |
| | Transmission line routing and construction | Use existing ROWs wherever possible<br>Apply all identified mitigation measures (during construction phase) in this EMP for construction of network connection<br>Avoid migratory or local bird routes, particularly protected areas (e.g. Ramsar sites) | |
| | Chance find of cultural artifacts, and areas/structures of local cultural value | In case any historical, cultural or archeological asset in encountered during excavation, the work at the site shall be stopped and the Provincial/Municipal Directors of Culture and Information Services shall be immediately informed thereof. No persons are permitted to remove articles or disturb the area: such action are grounds for dismissal or contract cancellation. The construction work will be resumed after inspection and written approval by the authorities.<br><br>In case any transmission line or access road or structure passes through or is to be sited on village cemeteries, the alignment or site would normally be changed. If it is unavoidable, a special consultation with the affected communities would be held to determine culturally appropriate means of relocating the gravesites in accordance to local customs/beliefs/traditions. No tower pads are to be placed in cemeteries. | |
| | Raw material supply | All materials supplied to the subproject, e.g. stone, concrete, sand, etc. must be provided by contractors with valid operating permits | |

| | | | |
|---|---|---|---|
| | Management of hazardous materials (fuels, lubricants, explosives etc.) | All hazardous materials are to be stored on impervious surfaces, in well ventilated buildings that are locked and fenced when not in use and to which public access is denied and at least 50 meters from any surface waters.<br><br>Population centers and forested areas are to be avoided | |
| | Loss of forest | Avoid siting project and/or the auxiliary structures (access roads, transmission lines, etc.) in forested areas, to the extent possible. Any forest removed must be restored after construction or replaced at some other location, in terms of fee or planting itself<br>The cutting should be done according to the permit of forest directorate | |
| Operation | Noise (from power house) | Turbines and/or associated rotating equipment should be designed to meet international standards (~80 db @ 1 meter).<br><br>As necessary, equipment should be housed in sound insulated buildings, and/or trees shrubs planted around noisy equipment to further absorb sound. | |
| | Domestic sewage (operations staff) | If practical, connection to the existing public sewage system should be arranged, otherwise a properly designed and sited septic system should be prepared | |
| | Domestic solid waste (operations staff) | Arrangements for regular removal by municipal authorities should be made. If this is not possible, waste should be taken to an approved waste disposal site on a regular basis. Between removal periods, the temporary disposal site should be covered and protected from animals. | |

*Items indicated to be the responsibility of the contractor are to be specified in the bid documents

**MONITORING PLAN**

| **Phase/Issue** | **What** *parameter is to be monitored?* | **Where** *is the parameter to be monitored?* | **How** *is the parameter to be monitored/ type of monitoring equipment?* | **When** *is the parameter to be monitored-frequency of measurement or continuous?* | **Responsibility** | **Estimated cost** |
|---|---|---|---|---|---|---|
| **Construction** | | | | | | |
| Siting of construction camps and municipal services for worker camps | Camp location<br><br>Arrangements for water supply, sewage, and municipal solid waste | Camp site<br><br>Water supply site<br><br>Sewage and garbage disposal sites | Visual | Quarterly, greater frequency (e.g. weekly) if improper practices are noted<br><br>Completion of | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Campsite properly restored? | Campsite | | construction work | | |
| Construction solid waste management (soil, rock, packaging materials etc.) | Vegetation debris, disposal practices<br><br>Packaging waste recycling and disposal practices<br><br>Rock reuse or disposal practices<br><br>Adequacy of topsoil temporary storage site (covered and erosion protection measures in place), restored area properly revegetated | Vegetation disposal and/or storage site<br><br>Package waste storage and/or disposal site<br><br>Rock storage and or disposal site<br><br>Topsoil temporary storage site when completed, revegetation site | Visual | Quarterly, greater frequency (e.g. weekly) if improper practices are noted | | |
| Construction engine equipment exhausts | Turkish legislation<br><br>Unused equipment idling times | At project site entrance<br><br>At construction site | Visual | Once, when equipment enters construction site<br><br>Monthly, greater frequency (e.g. weekly) if improper practices are noted | | |
| Construction equipment storage | Tree cutting involved in preparing storage site?<br><br>Site avoids population centers and surface water bodies? | Proposed construction equipment storage site | Visual | Once, before site is prepared | | |

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| | Equipment situated on an impervious surface? | | | | | |
| Noise | Construction hours<br><br>Sound barriers needed and installed?<br><br>Local population informed of any "off-hour" construction at least one week in advance | Construction site | Site observation<br><br>Visual<br><br>Consult with local affected groups | Monthly<br><br>One week before "off-hour" construction starts | | |
| Dust | Water spraying performed properly? | Construction site and access roads | Visual | During hot, dry, or windy weather | | |
| Worker safety | Acceptable health and safety plan prepared and implemented?<br><br>Safety equipment provided to and being used by workers? | In areas where workers are performing their assignments | Visual<br>(with a copy of the health and safety plan for verification) | Before any physical worker activities are initiated<br><br>Weekly. More frequently (at random) if violations are observed | | |
| Soil erosion and silt runoff | Construction proceeding in dry season where possible?<br><br>Slope of structure site $<30^0$? | Structure site | Visual | Prior to start of construction | | |

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| | Appropriate silt trapping systems included? | Areas of major runoff | | During or immediately after rainstorm | | |
| Existing roads | Condition, cleanliness | On all used roads | Site visit/visual | Weekly during construction More frequently (at random) if violations are observed | | |
| Access road siting and construction | Route selection offers minimal intrusion with new construction, tree cutting, use of productive land etc.<br>General EMP mitigation measures implemented | Access road route | Visual review of plans, site visit | Before construction | | |
| Transmission line routing and construction | Route selection offers minimal intrusion with new construction, tree cutting, use of productive land etc.<br><br>Migratory bird paths, Ramsar sites etc. avoided?<br>General EMP mitigation measures implemented | Transmission line route | Visual review of plans, site visit | Before construction | | |
| Chance find of cultural artifacts, and areas/structures of local cultural value | Accidental find of articles of cultural value<br><br>Location of any cemeteries or structures (natural or man-made) of local | At any excavation site<br><br>Along planned alignment routes of any transmission towers, or newly planned access road | Determine of authorities notified and proper procedures followed?<br><br>Determine if proper consultations conducted by speaking with local affected groups | During construction | | |

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|---|---|---|---|---|---|---|
| | value | | | | | |
| Raw material supply | Validity of the suppliers operating license | At the entrance of the project site or at the suppliers office | Visual inspection of license | Before signing an agreement for material supply | | |
| Management of hazardous materials (fuels, lubricants, explosives etc.) | Storage facilities locked, fenced, well ventilated, on impervious ground?<br><br>Location far from population centers? | Hazardous materials storage site | Visual inspection of building and site | Before start of construction and quarterly thereafter.. Increase frequency if improper practices observed. | | |
| Loss of forest | Removal of trees, forest clearing done according to permit received from forest authority | Project site as well as off-sites (storage facilities, access roads, transmission line routes, etc.) | Visual | Prior to any land clearing activities | | |
| **Operation** | | | | | | |
| Noise (from power house) | Noise levels<br><br>Sound absorbing measures installed (housing, tree planting, sound barriers etc.) | At or near power house<br><br>Nearest population centers (particularly if there are complaints) | db meter<br><br>Visual | Quarterly, or immediately after any complaint is lodged by local population | | |
| Domestic sewage (operations staff) | Has an existing sewer connection been used?<br>or<br>Has a septic system of proper design been installed and is it operating and emptied properly? | At the sewage discharge location<br><br>Immediate area surrounding septic tank and groundwater underneath septic tank | Visual<br><br>Visual (system design and construction) | Before start of operations<br><br>Before start of operations<br><br>Quarterly, more frequently if measurements reveal poor operation | | |

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| Domestic solid waste (operations staff) | Waste removed on a regular (at least weekly) basis?<br><br>Temporary storage facilities properly protected? | General area where staff are housed and temporary waste disposal site | Visual | Every two weeks more frequently (weekly or daily) if observations reveal poor operation | | |

**APPENDIX V.1.7. PROJECT SPECIFIC ASPECTS FOR RENEWABLE ENERGY PROJECTS (THESE WILL BE ADDITIONAL LINES FOR THE MITIGATING AND MONITORING TABLES PROVIDED IN APPENDIX V.1.6)**

- **SMALL SCALE HYDROPOWER**

**MITIGATION PLAN**

| Phase | Issue | Mitigating Measure | Responsibility* |
|---|---|---|---|
| Design | Infringement on critical habitats and conservation areas | Verify any impoundment does not flood critical areas or render them unusable by species of concern identified for the specific site | |
| | Protected or endangered fish and fishery migration, breeding and feeding patterns | Project design to include provision for fish migration and avoids elimination or alteration of protected or endangered fish species.<br>The design should support the minimum amount of 10% of the natural flow but could be higher (*) according to the sensitivity of the river.<br>The minimum flow value should be set/approved by the Nature Conservation and National Parks Department of MoEU. All of their additional requirements (such as the recent ecosystem evaluation report) should be fulfilled. | |
| Construction | Disposal of vegetation from land clearing | Vegetation debris from ROW clearances is to be stacked inside the ROW and removed on a regular basis.<br><br>Wherever possible and where safety is assured, villagers will be permitted to remove for their personal use at no charge, vegetation such as bamboo and small trees, that have an economic or practical value | |
| | Vibrations (from blasting) | Use minimal blasting charges<br><br>Advance notice (at least one week to local residents)<br><br>Avoid time periods critical to local wildlife breeding periods | |
| | Infringement on critical habitats and conservation areas | Select project site, transmission line route, access road route, construction camp-sites to avoid sensitive areas (other than residential), by at least 100 meters. | |
| | Protected or endangered fish and fishery migration, breeding and feeding patterns | During both construction and operation the necessary amount of water has to be released downstream in order to sustain the aquatic life The minimum flow value should be set/approved by the Nature Conservation and National Parks Department of MoEU. All of their additional requirements (such as the recent ecosystem evaluation report) should be fulfilled. | |

| | | | |
|---|---|---|---|
| Operation | Sedimentation | Forest protection measures defined by the forest authority (re-vegetation, planting) implemented in the upstream watershed | |
| | Erosion of river banks | Construct river bank protection systems (vegetation, stone, riprap etc.) to fit specific site - should be elaborated in the site specific EMP | |
| | Upstream water quality changes (during filling) | Remove all potentially contaminating materials (including vegetation) prior to filling (if a reservoir is included) | |
| | Water use downstream | Dam operation to meet all downstream user needs - should be elaborated in the site specific EMP | |
| | Fish and fishery migration, breeding and feeding patterns | Dam operation to allow minimal change to fish/fishery migration, breeding and feeding patterns - should be elaborated in the site specific EMP<br>During both construction and operation the necessary amount of water has to be released downstream in order to sustain the aquatic life. The minimum amount should be 10% of the natural flow but could be higher (*) according to the sensitivity of the river. - should be elaborated in the site specific EMP<br><br>The minimum flow value should be set/approved by the Nature Conservation and National Parks Department of MoEU. All of their additional requirements (such as the recent ecosystem evaluation report) should be fulfilled | |

(*): The amount of minimum water to be released has to be assessed case by case basis and cumulative impacts (other usages existing and/or planned downstream) should be taken into consideration.

**MONITORING PLAN**

| **Phase/Issue** | **What** *parameter is to be monitored?* | **Where** *is the parameter to be monitored?* | **How** *is the parameter to be monitored/ type of monitoring equipment?* | **When** *is the parameter to be monitored-frequency of measurement or continuous?* | **Responsibility** |
|---|---|---|---|---|---|
| Construction | | | | | |
| Disposal of vegetation from land clearing | Vegetation debris, disposal practices | Vegetation disposal and/or storage site | Visual | Quarterly, greater frequency (e.g. weekly) if improper practices are | |

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|---|---|---|---|---|---|
| | | | | noted | |
| Vibrations (from blasting) | Blast charge amounts used minimal?<br><br>Local population provided adequate warning?<br><br>Blast periods selected to avoid local species breeding periods | Project site<br><br>Nearby population centers<br><br>Local species habitats | Visual<br><br>Survey<br><br>Ecological survey | Before blast operation commences<br><br>Before blast operation commences<br><br>After initial blast | |
| Infringement on critical habitats and conservation areas | Impoundment area influence critical habitats?<br><br>Project site and off-sites avoid sensitive areas by at least 100 meters? | Project site (including impounded areas)<br><br>Project site location, off-site locations | Visual/survey<br><br>Visual/survey | Prior to construction, after preliminary design<br><br>Prior to construction, after preliminary design | |
| Protected or endangered fish and fishery migration, breeding and feeding patterns | Does project design include adequate provision for fish migration and avoid elimination or alteration of habitat for protected or endangered fish species? | Project site | Visual/survey | Prior to construction, after preliminary design | |
| **Operation** | | | | | |
| Sedimentation | Forest protection measures adequate - | Upstream watershed | Visual survey | Quarterly | |

| | | | | | |
|---|---|---|---|---|---|
| | should be elaborated in the site specific EMP | | | | |
| Erosion of river banks | Installation of river bank protection system - should be elaborated in the site specific EMP<br><br>Erosion levels | River banks upstream and down stream of dam site | Visual survey | After completion of dam construction<br><br>Annually, before/after rainy season | |
| Upstream water quality changes (during filling) | $BOD_5$/COD, pH, DO, suspended solids | At least three points (near banks and midstream) and at least three depths | Biological or chemical (permanganate or chromate) oxidation testing, DO meter, turbidity | At least three times during filling process (near beginning, middle and near completion) | |
| Water use downstream | Downstream water availability - should be elaborated in the site specific EMP | Downstream consumers | Survey | After dam operation is stabilized, then annually for three years if there are no issues | |
| Fish and fishery migration, breeding and feeding patterns | Any significant or unpredicted changes to fish/fishery migration, breeding and feeding patterns? | Upstream and downstream of dam | Survey | After dam operation is stabilized, then annually for three years if there are no issues | |

* Items indicated to be the responsibility of the contractor shall be specified in the bid documents

- **BIOMASS POWER OR HEAT GENERATION**

**MITIGATION PLAN**

| Phase | Issue | Mitigating Measure | Responsibility* |
|---|---|---|---|
| Design | Infringement on critical habitats and conservation areas | Verify any impoundment does not flood critical areas or render them unusable by species of concern identified for the specific site | |

| | | | |
|---|---|---|---|
| | Sitting of transmission lines | Avoid migratory or local bird routes, particularly protected areas (e.g. Ramsar sites) | |
| | Cooling water discharge and ecological impacts | Design cooling water discharge system so that thermal plume avoids any critical (e.g. feeding/breeding) areas, consider multiport diffuser for more rapid dispersion or<br>cooling tower, if cooling water ecological impacts too risky, consider dry cooling | |
| | Cooling water supply/competitive uses | Small study to select cooling water source that provides minimal competition with existing water resource use | |
| | Noise<br>(from power house) | Turbines and/or associated rotating equipment should be designed to meet international standards (~80 db @ 1 meter). | |
| Construction | Siting of power plant (avoid sensitive receptors particularly human settlements) | Survey area carefully to assure no sensitive receptors are within 1 km<br><br>Check local land use plans | |
| | Biomass storage facility location and transmission line routing | <u>Storage Facility</u><br>• Locate at least 1 km from any population center<br><br><u>Transmission line</u><br>• Use existing rights-of-way wherever possible<br>• Avoid migratory or local bird routes, particularly protected areas (e.g. Ramsar sites)<br>• All general construction EMP mitigation measures should be implemented during the construction of lines | |
| | Infringement on critical habitats or conservation areas | Select, access road route, construction camp-sites to avoid critical areas, by at least 100 meters. - - should be elaborated in the site specific EMP<br><br>Schedule construction activities to avoid critical migratory or breeding periods | |
| | Dust emissions | Utilize high efficiency (>99+) dust removal systems: either baghouse or electro filter | |

| | | | |
|---|---|---|---|
| Operation | Noise<br>(from power house) | As necessary, equipment should be housed in sound insulated buildings, and/or trees shrubs planted around noisy equipment to further absorb sound. | |
| | Ash disposal/management | Survey local farmers as possible consumers of ash as fertilizer supplement<br><br>Place excess ash in approved site or construct disposal site lined with impervious material (e.g. clay) to prevent groundwater contamination by leachate. Provide cover for site to prevent runoff contamination (primarily to be used during rainy season) - should be elaborated in the site specific EMP | |
| | Fire/explosion risk at biomass storage facilities | Locate storage facilities downwind of any areas that can easily combust (forests, houses/buildings, fuel storage facilities etc.)<br>Surround with fireproof windbreak (e.g. concrete fence)<br>Provide ready access to firefighting personnel and equipment | |
| | Traffic movements/traffic safety | Limit biomass delivery truck truck speed to 25 km/hr (or legal limit if less) on rural roads, particularly when traveling through villages, market areas, school areas, playgrounds etc.<br><br>Require largest truck size possible consistent with delivery routes to minimize number of required daily trips<br><br>If possible, minimize truck transport at night<br><br>Limit drivers to an eight hour work shift. Consumption of alcoholic beverages during the work shift is strictly forbidden and grounds for dismissal and/or criminal action | |
| | Dust release during transport | Keep biomass delivery trucks covered or spray contents with water | |

**MONITORING PLAN**

| **Phase/Issue** | **What** *parameter is to be monitored?* | **Where** *is the parameter to be monitored?* | **How** *is the parameter to be monitored/* | **When** *is the parameter to be monitored-frequency of measurement or continuous?* | **Responsibility** |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| | | | *type of monitoring equipment?* | | |
| Construction | | | | | |
| Siting of power plant (avoid sensitive receptors particularly human settlements) | Proposed plant location avoids current and any planned population centers? | Plant site and surrounding area for 1 km | Visual | Before starting construction | |
| Biomass storage facility location and transmission line routing | Location of biomass storage facility | Storage facility and surrounding area for 1 km | Visual review of plans, and transmission line route, site visit to storage facility location and transmission line route | Before starting construction | |
| I. | Route selection offers minimal intrusion with new construction, tree cutting, use of productive land etc.<br><br>Migratory bird paths, Ramsar sites etc. avoided?<br><br>General construction EMP measures implemented? | Transmission line route | | | |
| Infringement on critical habitats or conservation areas | Plant site area influence critical habitats?<br><br>Project site and | Project site | Visual/survey | Prior to construction, after preliminary design<br><br>Prior to construction, after preliminary design | |

| | | | | | |
|---|---|---|---|---|---|
| | off-sites avoid critical areas by at least 100 meters?<br><br>Construction schedule avoids critical migration and/or breeding periods? | Project site location, off-site locations<br><br>Critical habitat locations | Visual/survey<br><br>Visual/survey | Prior to construction, after preliminary design | |
| **Operation** | | | | | |
| Dust emissions | Flue gas dust concentration | Flue duct near the top of the chimney | Opacity or gravimetric | After steady operation, then every three months or when there is a change in fuel composition | |
| Noise (from power house) | Noise levels<br><br>Sound absorbing measures installed (housing, tree planting, sound barriers etc.) | At or near power house<br><br>Nearest population centers (particularly if there are complaints) | dB[a] meter<br><br>Visual | Quarterly, or immediately after any complaint is lodged by local population | |
| Ash disposal/management | Degree of utilization among farmers<br><br>Disposal site design with liner and cover?<br><br>Groundwater | Local farms<br><br>Disposal site | Survey<br><br>Visual | Annually<br><br>Before ash disposal operation starts<br><br>Annually, more frequently if | |

| | | | | | |
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| | quality (phenol, trace metals) | Below disposal site | Spectrometry, atomic absorption | standards are exceeded and remedial measures are taken | |
| Cooling water supply/competitive uses | Changes in local water resource use characteristics | Local water users | Survey | End of first year of operation, annually if adverse competitive situation arises | |
| Cooling water discharge and ecological impacts | Discharge outlet temperature, area and shape of thermal plume agree with predictions?<br><br>Ecological impacts (alteration of fish feeding, breeding or migration patterns, destruction of benthic colonies, destruction of aquatic vegetation etc) | Receiving water body | Thermometry<br><br>Ecological survey | Annually for two years, once during dry season and once during wet season.<br>More frequently if predictions are not verified,<br><br>Ecological impacts determined and remedial measures are taken | |
| Fire/explosion risk at biomass storage facilities | Storage facilities located downwind of areas that can easily burn (forests, houses, buildings, fuel storage facilities etc.)?<br><br>Facility surrounded with | At biomass storage facility site and surrounding areas | Visual survey | Before storage facility is allowed to be used | |

| | | | | | |
|---|---|---|---|---|---|
| | fireproof windbreak (e.g. concrete fence)?<br><br>Ready access to firefighting personnel and equipment available? | | | | |
| Traffic movements/traffic safety | Truck speed<br><br>Truck capacity<br><br>Truck delivery schedules<br><br>Worker shift periods | Along delivery route, particularly at population centers or population (particularly children congregation sites)<br><br>At plant entry gate<br><br>At plant entry gate<br><br>At plant entry gate | Visual or arrangements with local law enforcement authorities<br><br>Visual<br><br>Visual<br><br>Visual | Daily, at random times<br><br>Monthly<br><br>Monthly<br><br>Monthly | |
| Dust release during transport | Truck contents covered or sprayed with water? | At plant entry gate | Visual | Weekly, reduced to monthly if nun violations are observed | |

- **WIND POWER GENERATION**

It should be noted that wind farm siting is the most important issue and should be well discussed in the project site section of the EMP to be prepared. The below mentioned tables are the potential mitigation measures and monitoring practices and could be only useful if the risk is minimized during site selection phase of the project. The site selection should be discussed in the EMP by giving specific importance to the following criteria (avoiding migratory and local bird flight paths and patterns, considering protected areas especially Ramsar sites, considering vistas and aesthetic values, avoiding adverse tourism effects, and avoiding forested areas).

**MITIGATION PLAN**

| Phase | Issue | Mitigating Measure | Responsibility* |
|---|---|---|---|
| Design and construction | Infringement on critical habitats or conservation areas (Footprint of turbine base normally insignificant, but service roads can be more significant.) | Comply with best construction practices: rights-of-way alignment, erosion control, replanting of disrupted vegetation, etc.<br><br>Select project site, transmission line route, access road route, construction camp-sites to avoid sensitive areas (other than residential), by at least 100 meters<br><br>Avoid construction during sensitive seasons (migratory, reproduction season, etc.)<br><br>Careful layout of turbines avoiding bird-protected areas, migratory paths, or other ornithologically valuable areas. If possible reduce turbine density.<br><br>Mark power lines or guard wires, install anti-roosting devices or nesting platforms to persuade birds to nest in safest possible locations, etc.<br><br>Design towers to be low enough to avoid flight paths | |
| Operation | Noise (from turbines) | Designing turbines and/or associated rotating equipment to meet international standards | |
| | Bird deaths | Define the location and spatial arrangement of turbines taking into account factors such as risk mitigation for resident or migratory bird species: (e.g. deciding on linear arrangements - line of turbines parallel to the main migration direction- , layout arrangements (placing turbine-free corridors between clusters of turbines)<br><br>Use anti-collision lighting and marking systems on the blades | |

**MONITORING PLAN**

| **Phase/Issue** | **What** *parameter is to be monitored?* | **Where** *is the parameter to be monitored?* | **How** *is the parameter to be monitored/ type of monitoring equipment?* | **When** *is the parameter to be monitored-frequency of measurement or continuous?* | **Responsibility** |
|---|---|---|---|---|---|
| Construction | | | | | |
| | | | | | |
| Infringement on critical habitats and conservation areas | Project site and off-sites avoid sensitive areas by at least 100 m? | Project site location, off-site locations | Visual/survey | Prior to construction, after preliminary design | |
| | Construction during sensitive seasons (migratory, reproduction season, etc.) avoided? | Project site location | Visual | If necessary during sensitive seasons | |
| | Power lines or guard wires are marked? Anti-roosting devices or nesting platforms to persuade birds to nest installed? | Project site location, off site locations | Visual | Prior to construction, after preliminary design | |
| | Towers are designed to | Project site location | | Prior to construction, | |

| | | | | | |
|---|---|---|---|---|---|
| | allow bird flights? | | Visual | during preliminary design | |
| **Operation** | | | | | |
| Noise (from wind turbines) | Noise at ground level | Within 10 meters of wind machine base or at local population centers | Db meter | Quarterly or if local groups complain | |
| Bird deaths | Type and species of dead birds found | At the site of each wind turbine | Visual | Quarterly, for at least two years (assuming no problem is identified) | |

- **SOLAR**

**MITIGATION PLAN**

| **Environmental Issue** | **Mitigating Measure** | **Implementation Responsibility** |
|---|---|---|
| **OPERATION** | | |
| Disposal of spent batteries, lead and acid wastes | Sell to scrap collector for recycling | Solar power consumer |

**MONITORING PLAN**

| **Monitoring Parameter** | **Measurement Technique** | **Monitoring Location** | **Monitoring Frequency** | **Monitoring Responsibility** |
|---|---|---|---|---|
| **OPERATION** | | | | |
| Disposal | Observation | At consumer site | Twice/year | |

- **GEOTHERMAL ENERGY**

**MITIGATION PLAN**

| Phase | Issue | Mitigating Measure | Responsibility* |
|---|---|---|---|
| **Construction** | Solid and liquid wastes generated from well drilling (drilling mud and cuttings) | Cuttings separated, washed, and drilling mud reused<br><br>Washings settled, sludge disposed in landfill site acceptable to municipal or Provincial authorities, water reused with mud makeup, excess water treated in accordance with composition and effluent standards and discharged<br><br>Cuttings disposed in landfill site acceptable to municipal or Provincial authorities<br><br>Use water-based drilling muds whenever possible, avoid oil-based muds | |
| | Groundwater contamination during drilling process | Utilize steel casings grouted/cemented in place in the drill hole | |
| | Geothermal water and dissolved gases intrusion to the surface during drilling | Place a layer of special mud into the well during drilling | |
| | Traffic interruption during surface pipeline (heat transmission/distribution) construction | Prepare a traffic management plan to be reviewed and approved by Municipal authorities (police, fire, road traffic and safety departments) | |
| | Damaging of soil, vegetation and road surfaces by movement of drilling equipment during exploration and development | Utilize existing roads to the greatest extent possible, or establish well defined access roads reinforced to accommodate the weight of the drilling equipment<br><br>Restore land to previous condition after drilling activity is completed<br><br>Perform road construction and exploratory drilling during non-growing period when agricultural activities are minimal (no harvesting, planting etc.) | |

| | | | |
|---|---|---|---|
| | Natural habitat destruction during surface pipeline construction | Perform ecological survey as part of pipeline routing. Avoid routes that infringe on natural habitats of significant interest or disturb or prevent natural migration patterns | |
| | Natural habitat destruction from extraction and or re-injection well siting | Place well locations in areas that to the greatest extent possible avoid natural habitats of significant interest or disturb/prevent natural migration patterns | |
| | Solid waste accumulation from construction crews | Trash (garbage, scrap construction material etc.) is to be disposed at sites approved by the municipality or arrangements for trash pick-up made with municipal authorities | |
| | Accidental discharge of geothermal waters to surface waters during production testing | Install a surge tank or properly lined water storage pond to collect geothermal waters during production testing period | |
| | Noise | Confine construction to specified daytime hours (e.g. 7 AM to 5 PM). If construction activities must be conducted at night, provide at least one week notification to local residents. If extensive night work is anticipated, sound barriers are to be placed around the construction activity<br><br>If natural habitats of significant interest may be disturbed or have their life cycles interrupted, place noise barriers around construction sites | |
| | Dust | Spray water on dusty construction areas and access roads, particularly during dry, windy conditions | |
| | Cultural properties | Avoid well sites and construction routes that infringe on known areas, sites, structures that are formally protected by municipal, provincial, national or international laws, regulations, or treaties<br><br>For accidental discoveries, discontinue all works, and contact responsible authorities. Organize all necessary measures to protect the location or structure. No works are allowed to proceed until official notification is received | |
| **Operation** | Accidental leaks of production waters | Design well-head for pressures with a safety factor of at least 2.<br><br>Design facilities to collect leaks and discharge into lined holding pond or tank<br><br>Continuous measurement of well head (production and reinjection) operating pressure | |

| | | | |
|---|---|---|---|
| | Noise | Specify production pump and reinjection pump noise levels at 1 meter | |
| | Release of dissolved hydrogen sulfide gas | If hydrogen sulfide levels are significant, use tall stacks, liquid phase scrubbers or gas absorbers to collect $H_2S$, or simply flare (insuring sulfur dioxide emission standards are not exceeded or FGD systems would have to be considered) | |
| | Water pollution from cooled geothermal fluid effluents | Wherever possible, reinject spent geothermal fluids. Install leak-proof well casings to avoid contamination of groundwater resources.<br><br>If reinjection is not possible, collect geothermal fluids in lined pond and treat prior to discharge. Since most contaminants are likely to be trace metals or inorganic cations/anions, physical-chemical treatment is most likely (precipitation, coagulation, ion exchange, reverse osmosis, electrodialysis etc.) | |
| | Worker health and safety-exposure to hydrogen sulfide ($H_2S$) | Install $H_2S$ detection systems at locations where release is possible (detectors should be at breathing level, since $H_2S$ is heavier than air)<br><br>Develop an approved emergency contingency plan-distribute to local health authorities and police, fire department etc.<br><br>Design enclosed facilities for adequate ventilation<br><br>Provide worker training on the hazards of $H_2S$ (it is only half as toxic as hydrogen cyanide-which makes it extremely lethal in the gas phase) | |

**MONITORING PLAN**

| **Phase** | **What** *parameter is to be monitored?* | **Where** *is the parameter to be monitored?* | **How** *is the parameter to be monitored/ type of monitoring equipment?* | **When** *is the parameter to be monitored-frequency of measurement or continuous?* | **Responsibility** |
|---|---|---|---|---|---|
| Construct | Cuttings separated, washed, and drilling mud reused?<br><br>Washings settled, sludge disposed in landfill site acceptable to municipal or Provincial authorities? | Well drilling site<br><br>Mud recirculation system | Visual<br><br>Visual | When drilling starts<br><br>When drilling starts | |

| | | | | | |
|---|---|---|---|---|---|
| | Water reused with mud makeup, excess water treated in accordance with composition and effluent standards before discharge?<br><br>Cuttings disposed in landfill site acceptable to municipal or Provincial authorities?<br><br>Use water-based drilling muds used? | Mud makeup and recirculation system<br><br>Landfill site<br><br>Well drilling site | Visual<br><br>Visual<br><br>Visual | Weekly, after drilling starts<br><br>Monthly, after drilling starts<br><br>Prior to start of drilling | |
| | Are steel casings used in the drill holes?<br><br>Are the holes grouted/cemented in place?<br><br>Groundwater trace metal content, levels of $Cl^-$, $SO_4$, etc | Well drilling site<br><br>Well drilling site<br><br>Several locations in the vicinity of the well drilling site | Visual<br><br>Visual<br><br>Atomic absorption (trace metals), spectroscopy or wet methods (anions) | Daily during drilling<br><br>Daily during drilling<br><br>Every two weeks or monthly | |
| | Has a layer of special mud been placed into the well during drilling<br><br>Geothermal water and dissolved gases intruded to the surface | Well drilling site<br><br>Well drilling site | Visual<br><br>Visual and $H_2S$ monitors | Weekly<br><br>Weekly and continuous | |
| | Has a traffic management plan been prepared and approved by Municipal authorities (police, fire, road traffic and safety departments)?<br><br>Have plan recommendations been implemented (e.g. road blocks, warning signs, alternate route signs etc.)? | Municipal offices<br><br>Roads near construction, and drilling activities | Visual<br><br>Visual | Before construction or drilling starts<br><br>Twice a month | |

| | | | | | |
|---|---|---|---|---|---|
| | Soil, and vegetation damage<br><br>Are existing roads being utilized to the greatest extent possible, or have well defined access roads reinforced to accommodate the weight of the drilling equipment been constructed<br><br>Has land been restored to condition prior to drilling activities?<br><br>Are construction and drilling activities being done at a time that minimizes loss in agricultural production among local residents? | At construction site and along access routes<br><br>Along access routes<br><br>At construction or drilling site and access routes<br><br>At local farms | Visual<br><br>Visual<br><br>Visual<br><br>Visual | Weekly<br><br>Prior to start of construction or drilling activities<br><br>After construction and drilling at the well site have completed<br><br>During periods of high agricultural activity | |
| | Has an ecological survey been performed as part of pipeline routing?<br><br>Have routes that infringe on natural habitats of significant interest or disturb or prevent natural migration patterns been avoided?<br><br>Has natural habitat destruction or disruption occurred during surface pipeline construction? | Along proposed pipeline route and along routes of any access roads<br><br>Along proposed pipeline route and along routes of any access roads | Visual<br><br>Visual | During pipeline design, prior to any construction<br><br>During pipeline design, prior to any construction | Field ecologist<br><br>Field ecologist |

| | | | | | |
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| | | Along proposed pipeline route and along routes of any access roads | Visual | During any pipeline construction | Field ecologist |
| | Have wells been located in areas that to the greatest extent possible avoid natural habitats of significant interest or disturb/prevent natural migration patterns?<br><br>Has natural habitat destruction from extraction and or re-injection occurred from improper well siting? | At and near site extraction and re-injection wells<br><br>At and near site extraction and re-injection wells | Visual<br><br>Visual | During well location selection, prior to any drilling<br><br>During well drilling | Field ecologist<br><br>Field ecologist |
| | Has trash (garbage, scrap construction material etc.) from construction and construction crews been disposed at municipality approved sites or have arrangements been made with municipalities for regular trash pick-up? | Municipality approved disposal site or construction crew and construction site temporary disposal site (awaiting municipality pick-up) | Visual | Weekly | |
| | Has a surge tank or properly lined water storage pond to collect geothermal waters accidentally released during production testing period been installed?<br><br>Is it functioning properly? | At or near production well<br><br>At or near production well, at the location of the surge tank or collection pond | Visual<br><br>Visual | Once, prior to production testing<br><br>Weekly during production testing or during accidental release | |
| | Is construction confined to specified daytime hours (e.g. 7 AM to 7 PM)? | At or near construction or | Audio, consultation with local residents | | |

| | | | | | |
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| | | drilling site | | | |
| | If construction activities were conducted at night, were the local residents provided with at least one week notification? | Local residential sites | Audio, consultation with local residents | | |
| | If extensive night work was required, were sound barriers placed around the construction activity | Construction and/or drilling site | Visual | | |
| | If natural habitats of significant interest could be disturbed or could have their life cycles interrupted, were noise barriers placed around the construction or drilling sites? | Construction and/or drilling site | Visual | | |
| | Is water being sprayed on dusty construction areas and access roads, particularly during dry, windy conditions? | Construction areas and access roads | Visual | Weekly, more frequently during dusty and windy conditions | |
| | Have well sites and construction routes been approved by authorities officially responsible for protecting site and structures of historical or cultural interest? | Construction headquarters (official approval) | Visual | | |
| | For accidental discoveries, have all works been discontinued, and responsible authorities contacted? | Construction and well areas | Visual | | |
| | Have all necessary measures to protect the location or structures been taken? | Construction and well areas | Visual | | |
| | Did works stop and only restart after official notification was received? | Construction and well areas | Visual | | |
| Operate | Have well-heads been designed for | Well head | Visual | Once, prior to well head | |

| | | | | | |
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| | pressures with a safety factor of at least 2?<br><br>Have facilities to collect leaks and has a lined holding pond or tank been installed?<br><br>Are systems for continuous measurements of well head (production and reinjection) operating pressure been installed | design report<br><br>Production and reinjection well sites<br><br>Well head | <br><br>Visual<br><br>Visual | construction and installation<br><br>Once, prior to start of production<br><br>Once, prior to start of production | |
| | Production pump and reinjection pump noise levels at 1 meter | At 1 meter from production and reinjection pumps | With dB[A] meter | Monthly, or when complaints are mode by local residents | |
| | If $H_2S$ levels in geothermal fluids are significant, how was ambient levels of $H_2S$ controlled?<br><br>Do emission and ambient levels of $H_2S$ meet Turkish standards | At production well site<br><br>Stack sample and downwind ambient | Visual<br><br>Infrared or wet methods | Once, prior to start of production<br><br>Continuous | |
| | Are spent geothermal fluids reinjected? Have leak-proof well casings been installed.<br><br>Groundwater analysis for trace metals.<br><br>Geothermal fluid discharged to lined | Reinjection wells<br><br>Around reinjection well sites<br><br>At treatment | Visual<br><br>Atomic absorption, infrared spectroscopy or wet methods<br><br>Visual | Once, prior to start of production<br><br>Monthly, if no problems after one year, semiannually, or if local residents complain about well water quality(drinking, irrigation etc.)<br><br>Once, prior to start of | |

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| | pond and treated prior to discharge?<br><br>Effluent analysis for trace metals, and inorganic cations/anions, | plant site<br><br>Effluent discharge from geothermal fluid treatment plant | <br><br>Atomic absorption, infrared spectroscopy or wet methods | production<br><br>Monthly, if no problems after one year, semiannually, or if local residents complain about surface water quality (drinking, irrigation etc.) | |
| | $H_2S$ detection systems installed at locations where release is possible (detectors should be at breathing level, since $H_2S$ is heavier than air)<br><br>Approved emergency contingency plan-distributed to local health authorities and police, fire department etc.?<br>Ventilation system installed and operating?<br><br>Provide worker training on the hazards of $H_2S$ (it is only half as toxic as hydrogen cyanide-which makes it extremely lethal in the gas phase) | Work area, particularly where $H_2S$ can accumulate<br><br>At local authority offices<br><br><br><br>Workplace where $H_2S$ can accumulate<br><br>At production site | Infrared spectroscopy or equivalent, check to insure proper operation<br><br>Visual<br><br><br><br>Visual<br><br><br><br>Interview workers | Weekly<br><br>Once, prior to start of production<br><br><br><br>Weekly<br><br><br><br>Biannually, or if large number of new workers are hired | |

## V.2. Resettlement Policy Framework

(Compliance with Operational Policy 4.12, Involuntary Resettlement)

**Background**

1. The Private Sector Renewable Energy and Energy Efficiency Project will fund private sector investments in renewable energy and energy efficiency through two banks, TSKB and TKB, both of which participated in the first Renewable Energy Project. Unlike the first project, the participating Banks will borrow directly from the World Bank with a Government guarantee. Also unlike the first project, the second will have an energy efficiency component, part of which will include technical assistance to stimulate public interest in energy efficiency and to build the capacity of both lenders and borrowers to develop, appraise and implement energy efficiency investments.

2. As in the original project, participating Banks are responsible for due diligence to ensure that investments are sound and that borrowers comply with legal and financial requirements, including World Bank safeguards, particularly Operational Policy 4.12 (OP), Involuntary Resettlement. The OP aims to mitigate the impact on third parties who are affected by resettlement, the acquisition of private land for public use, and the loss of private assets due to investments funded by the Bank.

3. This Resettlement Policy Framework has been prepared by the borrower, as required by the OP, because specific investments are not known at the time of project appraisal. Had the investments been known in advance, a Resettlement Action Plan (RAP) would have been required for each investment prior to appraisal of the project. This Policy Framework describes anticipated project impacts, the legal framework for expropriation, types of project-affected persons, entitlements and compensation, and the steps that the borrower (and sub-project borrowers) will take to ensure compliance with the Operational Policy. If land acquisition is necessary, a resettlement plan based on a census identifying and enumerating affected persons and an inventory of affected assets. Further, this framework also applies retroactively to land acquisition that might have occurred before the framework became effective, or may have subsequently occurred without the prior knowledge of the FI. In such circumstances, an ex-post social audit (see appendix v2.2) will be used to assess conformity with framework principles and requirements and to preclude social risk. The Policy Framework becomes part of the project agreement and informs the project Operations Manual, Section VI.2, which describes agreed procedures and reporting requirements that will be met during implementation of the project.

4. In this paper, the term “sponsor” refers to the investor in a sub-project who borrows funds from TSKB made available through the World Bank Loan.

**Anticipated Impacts and Affected Persons**

5. Hydropower investments are expected to involve land acquisition, as in the first project, but the amount of land needed will be limited, primarily for dam sites, generation facilities, and access roads to dams, tunnels and other conveyances, and generation and

transmission facilities. It is impossible to estimate the number of people that will be affected. As in the first project, the prospective hydropower sites are expected to be located between existing hydropower facilities on rivers with steep sides and considerable gradient. The new reservoirs thus remain within the existing river channels and the land on the sides is steep, suitable only for horticulture on the upper levels. In some river beds, people carve out temporary fields that are subject to seasonal flooding and change shape from year to year. Based on previous experience, it is expected that the hydropower sites are in areas of net out-migration, as people are drawn out for employment in other parts of Turkey and abroad, sometimes returning annually for hazelnut harvests or the like. Typical in rural Turkey, most plots have multiple owners, as members of each successive generation inherit a smaller portion of the landholding, and one relative manages the land on behalf of others. For sponsors, one of the most difficult challenges has been to locate all owners of needed plots to be able to negotiate the purchase and divide the payment. A second issue, often related, is for land users to provide adequate documentation of ownership. Given the characteristics of the terrain and the population, the amount of land required for the installations is small and the number of affected persons is also expected to be small.

6. The wind and geothermal energy installations will also require some land acquisition. The wind power installations are expected to be in remote areas, at higher altitudes, competing primarily with pastures for land use. Geothermal installations are yet to be determined.

7. **Entitlement Policy.** The following Project Affected Person(s) would be entitled to compensation and rehabilitation measures:

**Project Affected Persons Losing Land or Structures**

- Generally, all project affected persons with legal rights of land use.
- There will be land or structure compensation at the market value.

**Tenants displaced from road corridors/distribution centers**

- These include all the project affected persons whose kiosks, tables and shop-corridor intercepts the ROW of the highway/distribution centers. Project affected persons will be paid the replacement value for their assets to be removed.
- Project affected persons will be compensated for livelihood restoration due to loss of business days which will be determined by the expected number of days of placing the overhead cable lines to underground

**Project Affected Persons with loss of crops or economic trees**

- It is assumed that affected persons would be able to harvest any crops planted prior to the cut-off date. If land must be taken before crops are harvested, compensation will be paid for the estimated crop value.
- Full compensation will be paid for the estimated net present values of the economic tree, based on average annual output value over the past two seasonal harvests.

***Project Affected People who are unofficial Users***

- Those who have no recognizable legal rights or claim to the land they are occupying.

- There will be no land compensation, but the structures and other assets on land will be compensated as applicable to project affected persons with legal rights of land use.
- Those using land unofficially for agricultural or grazing purposes will be assisted to find alternative areas available for use.

**Eligibility Criteria for Affected Persons**

- Any person who will suffer loss or damage to an asset, business, trade or loss of access to productive resources, as a result of the project will be considered eligible for compensation and/ or resettlement assistance.
- The cut-off date for being eligible for compensation and/ or resettlement assistance is the last day during which the census/inventory of assets was completed. (Sufficient public awareness of the cut-off date is given to the community through the community elders and leaders).
- Individuals or groups who are not present at the time of registration but who have a legitimate claim to membership in the affected community can be accommodated.

**Proof of Eligibility.** The sponsor will consider various forms of evidence as proof of eligibility as stated in the RPF, to cover the following:

-Project affected persons with formal legal rights, documented in the form of land title registration certificates, leasehold indentures, tenancy agreements, rent receipts, building and planning permits, business operating licenses, and utility bills among others: unprocessed/unregistered formal legal documents will be established in the RAP.
-Project affected persons with no formal or recognized legal rights-criteria for establishing non-formal, undocumented or unrecognized claims to eligibility shall be established paying particular attention to each situation and its peculiarities.
-Alternative means of proof of eligibility will include: Affidavit signed by landlords and tenants; Witnessing or evidence by recognized traditional authority, customary heads, community elders, family heads and elders and the general community.

Generally, only project affected persons enumerated during the census/inventory of assets shall be eligible for either the compensation or supplemental assistance. Any new structures or additions to existing structures carried out after the cut-off date will not be considered affected, and their owners or occupants will not be eligible for compensation or supplemental assistance (unless they can demonstrate the census/inventory of assets failed to identify them as affected).

See Entitlement Matrix, Appendix 1.

**Legal Background**

8. The Expropriation Law (No. 2942) as amended in 2001 regulates:

- The proceedings to be carried out for the expropriation of immovable objects under the ownership of real persons and legal entities subject to private law, by the State and public legal entities;
- Calculation of the cost of expropriation;
- Registration of the immovable property and the rights of easement, in the name of the administration;
- Return of the unused portion of the immovable property;
- Transfer of the immovable properties between administrations;
- Matters regarding reciprocal rights and liabilities and the settlement procedures and methods of related disputes, in cases so required in the public interest.

9. **The Expropriation process.** The expropriation law was revised several years ago to streamline the process, imposing time limits on agencies involved in providing data and making decisions. For example, the courts are expected to render a final decision on an expropriation request within a month. The court decision enables the sponsor to transfer ownership upon payment of compensation. The former owners have three years in which to challenge the compensation level, however. Various other agencies are expected to provide documentation to the expropriation agency within relatively short periods of time. In practice, the limited capacity of local administrations may delay the process. Nonetheless, both investors (sponsors) and owners can obtain relatively quick decisions and the onus rests with the investor to demonstrate the need for expropriation and reasonable compensation.

10. Before obtaining a location permit and approval from planning authorities, the law requires the sponsor to *"develop or have others develop a scaled plan demonstrating the borders, surface area and type of the immovable properties or resources to be expropriated or on which right of easement be established through expropriation, and shall define and document the owners of the immovable property being expropriated, possessors of such properties in case there exist no registered title deed and their addresses with the help of records kept at the title deed offices, tax offices and the registries or by means of an external investigation to be conducted. "*

11. If the property has not been registered or no owner is recorded in cadastral records at the title deed and land legislation office, the sponsor applies to the highest local government administration to request the appointment of a panel of experts to determine ownership.

12. **Timing of compensation.** Land and standing crops, economic trees, structures, and other objects for which compensation is warranted must be paid to the owner before the investor can enter the land. If an owner cannot be found or owners dispute the amount or the division of the payment, the sponsor can request the court to set the compensation amount, which the investor deposits in an escrow account at a commercial rate of interest in the name of the owner(s), who is (are) given access to the proceeds once the disputes are resolved.

13. **Institutional arrangement.** It is the responsibility of the FIs to review the documentation provided by the sponsor to ascertain if OP4.12 applies to the sub-projects and, if the sponsors has complied with relevant laws, procedures and the provisions of the Expropriation Law and OP4.12 in preparing RAPs. Most transactions are between willing buyer and willing seller. However, during implementation of the ongoing project, subproject sponsors (sub-borrowers of the IFIs) have requested EMRA (Regulating Agency) to carry out some part of the expropriation process. Sponsors who initiate the land acquisition process themselves follow standard expropriation procedures, which start by informing owners and negotiating compensation directly, EMRA is empowered to use Urgent Expropriation procedures in accordance with the Expropriation Law, which are initiated by obtaining an Expropriation Decision by the court before starting negotiations. In addition to having a screening process to determine the applicability of the Urgent Expropriation procedures, EMRA has recently modified the procedure by carrying out public consultations with affected people before initiating the formal process to ensure advance consultation with affected people.

14. **Legal framework for land valuation.** The related tax office shall present the tax statement and values of the immovable properties and the resources or the value appraised in lieu of statement in cases where there does not exist any tax statement utmost within one month upon the request of the administration. The sponsor uses professional assessors to valuate the land and property in question, which establishes the minimum starting point for negotiation. If the owners disagree with the evaluation, they can request an independent evaluation or the investor can request the court to adjudicate. The court hires an independent assessor and establishes a sale price as part of the expropriation decree, which is issued no later than a month after the assessment. The court costs related to disputes are paid by the sponsor, not the landowner.

15. The latest revision of the expropriation law recognizes the right of informal land users to be compensated for land and structures built by informal land users, whether or not they were issued leases or construction permits. In practice, this is most relevant in urban and peri-urban areas that experienced building booms. Rural construction has not been as tightly regulated but land ownership (both formal and traditional) is well established and private rights are both respected in communities and protected by concerned families. Informal/illegal use of private land is exceedingly rare. Informal encroachments on public land are more common, however, although the sites of hydropower investments under the project are steep and forbidding, and thus do not attract encroachers. Nonetheless, there are instances in which people lose use rights due to investments, such as the loss of temporary fields in riverbeds. In such cases, it is standard practice for the sponsors to compensate affected persons as though they were owners, fulfilling OP 4.12 requirements.

17. Implementation of the last two projects (Renewable Energy Project and Private Sector Renewable Energy and Energy Efficiency Project) has indicated that the Turkish expropriation legislation used market value in paying for land acquired in the process, which is required in the World Bank policies on providing compensation. It is envisaged that the project will not involve physical displacement or resettlement of affected persons; and the

relevant recommendations or inputs of the World Bank Safeguard Implementation Review will be incorporated and used as a guide during project implementation.

**Land Acquisition and Expropriation Requirements and Principles**

18. As part of its due diligence, the FI is responsible to ensure that any land expropriation or involuntary resettlement associated with a sub-project complies with the World Bank's Operational Policy 4.12 (OP 4.12), *Involuntary Resettlement*. The purpose of the policy is to avoid or mitigate harm caused to third parties by development investments. The compliance requirement applies to every project to be financed by an FI with project funds for which either EMRA issued or will issue a Public Benefit Document for renewable energy facilities, which enables the investor to exercise eminent domain for land acquisition for the sub-project, and/or for which an investor requests an Expropriation Decision. These decisions enable the investor to exercise eminent domain for land acquisition for the sub-project, if needed. The requirement also applies when third parties are affected when Government land is transferred to the sponsor or when third parties are affected by negotiated acquisition of private land

19. If land used for the sub-project is obtained from private persons by free and open negotiation between private owners and the sponsor, and no third parties are affected, OP 4.12 does not apply. If land is acquired following the issue of a Public Benefit Document or Expropriation Decision, however, the policy applies and the sponsor will document compliance with OP 4.12

20. Prior to implementation of the resettlement/land acquisition activities, the sponsor will apply the following approaches and methodology of social assessment as required by OP4.12 requirements:

- Minimize resettlement and the acquisition of private land
- Assess the potential economic and social impacts of expropriation/resettlement on affected people
- Identify categories of affected persons and their respective entitlements
- Promote the process of consultation/participation of PAPs in the land acquisition preparation and planning, as well as information dissemination to the PAPs
- Compensate for lost assets at full replacement cost as negotiated or determined by the court, based on expert assessment.
- Compensate informal land users for lost assets and provide assistance in relocating, if needed
- Compensate and obtain legal access to expropriated land before starting construction
- Provide for vulnerable groups, grievance redress and monitoring

21. The FIs will monitor progress and impacts of expropriation and resettlement and report regularly on issues related to the acquisition and transfer of properties and outcomes of expropriation (see paragraph 25 below).

**Documentation Required for the Acquisition of Private Land**

22. If OP 4.12 applies to a sub-project, the project sponsor will provide documentation regarding land acquisition needs (as presented for a Public Benefit Document or Expropriation Decision) and current status as part of its application for a loan funded by the Second Renewable Energy and Energy Efficiency Project. The FI will review the documentation and determine if there are any circumstances which would jeopardize compliance with OP 4.12. If so the FI will request additional information from the applicant and request the Bank to review the application to determine an appropriate course of action.

23. The FIs should provide the documentation of the Public Benefit Document which justifies the acquisition as well as detailed information regarding landholdings and the anticipated costs of acquisition." In addition to the standard documentation indicated above, if a Public Benefit Document and/or Expropriation Decision are used to obtain land for the sub-project, the FI will request the sponsor to use the enclosed Resettlement Action Plan--reporting formats (i.e., Abbreviated Resettlement Action Plan in Appendix v.2.1 or the full Resettlement Action Plan in Appendix v.2.3) to cover the following issues:

- Assessment of the temporary and permanent impact of land acquisition/expropriation and the categories of persons affected—number of plots affected; percentage of plot affected, land use before and after acquisition, prior land use and number of owners.
- Compensation standards applied for temporary and permanent—loss of land, loss of crops, loss of productive trees, loss of residences and businesses (documenting the equivalent of full replacement cost
- The results of court decisions, if any.
- Provisions for replacement lands, if relevant
- Provide for vulnerable groups, grievance redress and monitoring

**Documentation Required for the Acquisition of Public Land**

25. In addition to acquiring private land, sub-project sponsors may benefit from the transfer of lands with title/rights to this land and/or any intangibles related to the land, from the government to the sub-project sponsor (or EMRA), under applicable law relating to the transfer of public land for projects.

26. OP 4.12 applies in all cases in which Government land that is transferred to a sponsor is being leased to a third party or used informally by a third party prior to the transfer.

27. If a sub-project will use Government land transferred to the sponsor, the sponsor will provide the Initial Resettlement Action / Social Impact Screening Form (see Reporting Format) to the FIs for submission to the World Bank. The form will be used to document the

summary of the transactions, and screen for projects which may be identified to require more information on land acquisition. The documentation must include the following:

- Amount of land previously in use/not in use
- Number, name and status of previous land users (tenants, informal users)

**Consultations, Communications, & Management of Grievances**

28. OP4.12 requires that the borrower must conduct prior consultations with project affected persons in Bank funded project (s). Therefore, the sponsor or the investor will conduct and document consultation with communities in the area of influence of the project in advance of civil works. This consultation will describe the project's configuration and key features, including any associated infrastructure, (such as roads or transmission lines, temporary worker camps, etc). Inform stakeholders of the approximate project start date and duration; inform people of salient impacts (such as possible employment of local people and skills needed, land acquisition and compensation or income restoration arrangements, and other project benefits). It will be essential to *inform local stakeholders of the name, contact information, and times of availability of the designated project official(s) to contact in the event of questions or problems related to land acquisition or other construction-related impacts*.

29. "Open Door Policy" In order to ensure community co-operation and help preclude potentially problematic social issues, the investor will ensure that the project sponsor establishes of a contact point and designates a contact person who is easily accessible and can help with the resolution of project-related questions or issues, including those related to land acquisition or impacts on land and property during construction.

30. The public contact official will keep records of salient issues or questions raised in discussions and steps taken to facilitate their resolution. He/she will pro-actively advise affected communities of up-coming project developments of significance to the community.

**Assessment of Compliance with OP 4.12**

31. The FI will forward the RAP along with all supporting documentation in appropriate format for sub-projects that trigger OP 4.12 to the World Bank for prior review and no objection. According to the OP 4.12, all RAPs will be disclosed in country, and submitted to the Bank for disclosure in the Bank's Infoshop. Further, the FI will report semi-annually to the Bank on the land acquisition status of new and on-going investments (see paragraph 32-35 for further details). For sub-projects where land acquisition may have already been initiated without the prior knowledge of the FI, the FI will forward the document (Appendix V.2.2) for the first two sub-projects that trigger OP 4.12 to the Bank for prior review and no objection. If the Bank agrees, for subsequent sub-projects the documents will be submitted for post review.

**Monitoring and Evaluation**

32. Prior experience suggests that the sub-projects are unlikely to have significant negative impacts on affected persons that are not mitigated by compensation mechanisms. Nonetheless, there may be instances in which negative social impacts are foreseen. At the time of appraisal of a sub-project that involves land acquisition or resettlement, the FI will submit to the Bank a sub-project-specific monitoring plan to track impacts and, if warranted, help the sponsor develop a mitigation plan to deal with the impacts. The FIs will develop a Land Acquisition Monitoring Plan and during implementation, will submit [six-monthly] a separate monitoring reports to the Bank, showing the status of land acquisition, status of compensation paid, issues faced, and mitigation measures implemented, public meetings held, livelihood restoration started if any, etc.

**Reporting Format**

33. A model reporting format and specifics use of the Abbreviated Resettlement Action Plan/ Social Impact Screening Form to be prepared by sponsors has been provided (see *Appendix V.2.1*) for cases with less than 200 persons that will be affected. The investor will ensure that this Abbreviated Resettlement Action Plan/ Social Impact Screening Form is submitted to the World Bank as soon as the final project design footprints have been determined for review and use as supporting documentation in project supervision.

34. Upon completion of payment of land compensation to affected parties for whom compensation is sufficient to redress the impact of land acquisition, the investor will prepare a land acquisition monitoring report as part of the supervision cycle, which will include the affected parties, land areas taken, the amounts and dates of compensation and completion date of land acquisition. Any unresolved compensation issues or expropriation cases taken to the courts will be noted in this report, which will be submitted to the World Bank in advance of commencement of civil works.

35. For past projects for which the documentation of compliance with OP 4.12 will be filed, the FIs will use format attached as *Appendix V.2.2*.

36. In cases where land acquisition will result in a significant negative impact on income streams, would necessitate physical resettlement of project-affected people, or in aggregate would affect 200 or more persons, these impacts will be mitigated using sub-project-specific resettlement action plans (RAPs) which follow the guidance and criteria given in the project's Resettlement Policy Framework RPF. (see *Appendix V.2.3*)

## Appendix V.2.1

# Abbreviated Resettlement Action Plan

(For application to all new sub-project investments)

Name & Location of Sub-project:
Project Sponsor:
Project cost:
Installed generation capacity (No. units X MW/unit):

***Project Components & land requirements***

- Access road, including improvements to existing roads, (km & ha):
- Transmission line corridor (ha):
- Penstock(s), (number, ha, length and diameter):
- Powerhouse, switchyard, associated facilities at powerhouse site (ha):
- Weir/ regulator/or impoundment structure; indicate which & size of structure:
- Reservoir / storage impoundment area (ha):
- Other physical features requiring land (ha):
- Temporary sites needed for equipment parks, lay-down areas, etc:
- Completion date of Census/Inventory of Assets:
- Completion date of the Land Acquisition:

- Attach site-plan, including associated facilities

## *Inventory of Land & Assets Acquired from Private Owners*

***(* If impacts significantly affect income or necessitate physical relocation, mitigation measures are to be described and delivered in a Resettlement Action Plan using the Resettlement Policy Framework.)***

| Name of Owner and/or Land User | Project Component: Area(s) / plot (s) acquired (ha) | Owner's / user's total land (ha) & % taken | Land use: pasture, agriculture, residence, etc. Indicate & detail any structures or other fixed or productive assets (wells, fences, trees, standing crops, etc) to be taken. Indicate if land is rented or informally used by another party. * Indicate if land-based activity is primary source of income for owner or land user or if household is economically vulnerable. | Compensation to be paid. Compensation / other measures for renters or land users. | Impact on income of owner. Impact on income of lease holder or informal land user renders them vulnerable. |
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## *Inventory of Public, Community, or State Land Acquired*

| Project Component: land parcel(s) required. Area acquired / parcel. | Land type / land use: Forest, commons for grazing, other. | Ownership: State, community, other. Structures or other fixed assets. | Compensation, land transfer, or other measures to mitigate impacts on land users. Specify measures and dates of delivery. |
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***Consultations, Communications, & Management of Grievances and Implementation Issues.***

- Provide date(s), location(s), and a résumé of key issues discussed in the meeting.
- The public contact official will keep records of salient issues or questions raised in discussions and steps taken to facilitate their resolution. He/she will pro-actively advise affected communities of up-coming project developments of significance to the community.

## Appendix V.2.2

### Reporting Form for Resettlement Action / Social Impacts of Portfolio Projects

(***for application to all past sub-project investments***)

Name & Location of Sub-project:
Project Sponsor:
Project cost:
Installed generation capacity (No. units X MW/unit):

Key Dates of implementation
For example—application, approval, public consultation, court dates, work start dates etc

***Inventory of Land & Assets Acquired from Private Owners***

| Name of Owners/land user | Project Component: Area(s) / plots(s) acquired (ha) | Owner's/user's total land holding (ha); % taken for project. | Land use: pasture, agriculture, residence, etc. Inventory of any structures or other fixed or productive assets (wells, fences, trees, field crops, etc) affected. Indicate if land was rented or informally used by another party. Indicate if non-owner users had assets, trees, crops, etc affected Indicate if land-based activity is primary source of income for owner or land user. | Compensation paid. Other actions taken for renters or users. Dates delivered. | Impact on income of owner. Impact on renters or informal land users. |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| . . . | | | | | |
| | | | | | |

***Inventory of Public, Community, or State Land Acquired***

| Land parcels / plots acquired (ha). | Land type / land use: Forest, commons for grazing, other. | Ownership: State, community, other. Structures or other fixed assets. | Compensation, land transfer, or other measures to mitigate impacts on land users. Specify measures and dates of delivery. |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Public Awareness, Consultations, and Communication**

| Dates of consultations | Concerns raised at public consultation | Concerns raised outside public consultation | How these concerns were resolved? |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

## *Status of Land Acquisition*

| Completed | Pending Court decision | On-going | Follow-up |
|---|---|---|---|
| | | | |

## *Other Measures or Assistance provided (beyond cash compensation)*

| Beneficiary(s) | Relocation assistance | Alternative Land | Livelihood restoration measures | Summary of impact addressed |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

## *Identification of Vulnerable People*

(E.g.: Elderly, disabled, widows, poor households, etc.)

| Beneficiary | Method of identification | Assistance or other measures provided. |
|---|---|---|
| | | |

## *Grievance Redress*

| Mechanism(s) made available for project-affected persons to register grievances or complaints. | Were affected people made aware of grievance redress mechanism? If so, when and where? | Was the grievance redress mechanism easy to access and free of cost to affected parties? | Was an independent third party engaged in facilitating grievance redress. E.g.: community leaders, NGOs, or other mutually-respected independent parties. |
|---|---|---|---|
| | | | |
| | | | |

## *Use of the Audit Form*

- The investor will ensure that this form is completed for each sub-project already completed.
- The audit forms will be submitted to the World Bank for review and supervision / follow-up.

**Appendix V.2.3**

**Reporting Format for Full Resettlement Action Plan**
***( To be used in all cases where land acquisition impacts significantly affect income, necessitate physical resettlement, or in aggregate affect 200 or more persons. )***

**Introduction ( use information already acquired in the screening form ).**

Briefly describe the project.
List project components including associated facilities (if any).
Describe project components requiring land acquisition and resettlement; give overall estimates of land acquisition and resettlement.
Attach project site plan or map from screening form, showing land acquisition impacts.

**Minimizing Resettlement**

Indicate any design changes made to minimize physical or economic displacement of people.

**Census and Socioeconomic Surveys**

Provide additional socio-economic data, needed to develop appropriate remedies for impacts on income streams for affected persons / families or businesses identified in the screening form.
Inventory any fixed assets to be acquired for the project.
Identify any cases of vulnerable people, or people in need of special assistance.

**Legal Framework (copy from RPF)**

Describe relevant local laws and customs that apply to land acquisition
Identify gaps between local laws and WB's policies, and describe project specific mechanisms to address conflicts

**Resettlement Sites**

If land-for-land is given, provide details of location, size, and any salient features of replacement land.

**Entitlements and Income Restoration**

Using socio-economic data on affected party, describe income restoration remedies provided.
Describe any additional economic rehabilitation measures; such as shifting allowances, temporary housing, or other measures.
Describe any special assistance given to vulnerable people or households.

Describe method of valuation used for affected structures, land, trees or other assets, (recall that OP 4.12 provides for replacement cost of lost assets and market value for land).
Summarize all types of impacts and entitlements provided in a matrix form; (as shown in RPF, AppendixV.2.3.1).

**Institutional Arrangements**

Describe the institution(s) responsible and project level organizational arrangements to ensure preparation and implementation of the RAP.

**Implementation Schedule**

List the chronological steps in implementation of the RAP; ensure that entitlements are given before civil works.

**Participation and Consultation**

Describe the stakeholders and the process of consultation and stakeholder participation in preparation and implementation of the RAP.
Keep records and summarize consultations with affected parties: key issues, how addressed etc.
Describe arrangements (personnel, site offices, etc) to ensure open communications with local stakeholders.

**Grievance Redress**

Describe the process of registering and addressing grievances related to land acquisition or other project impacts on the local community.
Ensure that this process is cost-free with a reasonable response time.
Involve an independent mutually-respected third party in resolving grievances.
Keep records of all grievances or issues raised and how resolved or managed to minimize affected parties resorting to the law courts

**Monitoring and Evaluation**

Describe the monitoring and closure arrangements for the RAP.
Describe the frequency of reporting and key elements of the monitoring plan.

**Cost and budget**

Provide the budget for the RAP, showing financial responsibility and authority.

## Appendix V.2.3.1

## Entitlement Matrix: Second Renewable Energy and Energy Efficiency Project

| Ownership Status | Use Status | Final Status | Transfer Mechanism | Compensation | Principles |
|---|---|---|---|---|---|
| Private | Vacant/non-Residential | Private or if expropriation, Treasury ownership with private concession | Purchase and Transfer or expropriate, purchase and transfer | Land, and economic assets (crops, trees, etc) Subject to Negotiation or Expropriation, if Negotiations Fail | Full Replacement Cost (Market Value) |
| | Residential | Private or if expropriation, Treasury ownership with private concession | Relocate, Purchase and Transfer or expropriate, purchase and transfer | Land, and Above Ground Assets, Relocation Costs, Subject to Negotiation or Expropriation if Negotiations Fail | Full Replacement Cost (Market Value), Relocation Allowance or Assistance |
| | Commercial | Private or if expropriation, Treasury ownership with private concession | Relocate, Purchase and Transfer or expropriate, purchase, relocate and transfer | Land and Above Ground Assets, Relocation Costs, Temporary Income Loss, Subject to Negotiations or Expropriation, if Negotiations Fail | Full Replacement Cost (Market Value), Relocation Allowance or Assistance |
| | Informal/Illegal Use by Squartter | Private or if expropriation, Treasury ownership with private concession | Relocate, purchase and transfer or expropriate, purchase, relocate and transfer | Land (to owner) and Above Ground Assets (owner of assets—owner or squatter), Relocation Costs of squatter, Temporary income loss of squatter. Subject to negotiations or expropriation, if Negotiations fail | Full Replacement Cost (Market Value), Relocation Allowance or Assistance. |
| Treasury, Forestry, other Government Entity | Vacant | Transfer to EMRA | Transfer or Purchase | Land, Subject to Negotiation between Parties | |
| | Leased to Private User | Vacate, Transfer to EMRA | Terminate Lease, Transfer | Land, Subject to Negotiation; Lost Assets, Relocation Cost, Temporary Income Loss, Depending on Lease Provisions | Assets at Full Replacement Cost |
| | Informal/Illegal Use | Vacate, Transfer to EMRA | Relocate, Transfer | Land, Subject to Negotiation; Lost Assets, Relocation Cost to User | Assets at Full Replacement Cost |
| Municipality | Vacant | Transfer to EMRA | Simple Transfer | None | |
| | Leased to Private User | Vacate, Transfer to EMRA | Terminate Lease, Transfer | Lost Assets, Relocation Cost, Temporary Income Loss, Depending on Lease Provisions | Assets at Full Replacement Cost |
| | Informal/Illegal Use | Vacate, Transfer to EMRA | Relocate, Transfer | Lost Assets, Relocation Cost | Assets at Full Replacement Cost |

## V.3 Dam Safety Policy Framework

1. All Sub-loans/Financing Leases to be financed under the project will be subject to the provisions of the World Bank Operational Policy 4.37 Safety of Dams (Appendix VI. F). The FIs will screen all sub-projects to be financed under the loan, to determine whether any contain large dams in accordance with the definitions of OP 4.37: (a) dams greater than 15 m in height; (b) dams greater than 10 m but less than 15 m in height and having a crest length greater than 500m, or a spillway design discharge of more than 2000 m3/s, or having a reservoir volume of greater than 1.0 million m3; or (c) if they present special design complexities for example, location in a zone of high seismicity, foundations that are complex and difficult to prepare, or retention of toxic materials

2. For sub-projects involving large dams the FI will require the sub-borrower to:

a) appoint an independent panel of experts (the Panel) to review the investigation, design, and construction of the dam and the start of operations;
b) prepare and implement detailed plans: a plan for construction supervision and quality assurance, an instrumentation plan, an operation and maintenance plan, and an emergency preparedness plan;
c) prequalify bidders for civil works involving dams and associated structures;
d) carry out periodic safety inspections of the dam after completion.

3. For sub-projects that will rely on the performance of an existing dam or a dam under construction (DUC) as defined in OP 4.37, the FI will require the sub-borrower to appoint an independent expert or experts to carry out the due diligence work on the existing dam as defined in Paragraphs 8 and 9 of OP 4.37. A Model Terms of Reference (TOR) for a Dam Safety Review Panel for Sub-Project involving large dams has been prepared (attached as Appendix V.3.1).

4. The Panel shall consist of three or more experts, appointed by the sub-borrower and acceptable to the FI and the World Bank, with expertise in the various technical fields relevant to the safety aspects of the particular dam. For convenience of project sponsors, the FI will compile a list of specialists who are acceptable to the FI and the World Bank. However, individual sub-borrowers will be responsible for constitution of their own panel and are not confined to the list of specialists compiled by the FI. All such panel members will, however, be required to receive the no-objection of the FI and the World Bank.

5. **Requirements at subproject due-diligence phase:** The developer/owner of the subproject shall submit to the Panel the following documents for review: (a) design reports for dam and appurtenant structures (feasibility study, and/or detailed design); (b) plan for construction supervision and quality assurance; (c) any other documentation that is available, such as operation and maintenance plan and emergency preparedness plan. The Panel will review the design of the dam and appurtenant structures. Verification of design documents and procedures will not be limited to the checking of numerical computations and structural details. Special attention should be paid to a critical review

of design criteria, the concept of arrangement, hydraulic and structural features, as well as operational reliability of the dam and appurtenant structures.

6. **Dam safety report**: Upon completion of the review at the subproject processing stage, the Panel or independent dam specialist should provide a Dam Safety Report for the subproject. The report should include (i) findings and recommendations for safety-related matters, (ii) actions necessary to be taken to maintain dam safety, (iii) the Panel's conclusion on dam safety assessment, and (iv) draft operation and maintenance and emergency preparedness plans. The Dam Safety Report should be presented to the FI for consideration.

7. **Requirements during subproject implementation:** The subproject sponsor will implement the dam safety measures concerning construction supervision, quality assurance, instrumentation, operation and maintenance, and emergency preparedness, taking into account the Panel's comments; including the Panel's findings and recommendations for any action needed to be taken. The draft operation and maintenance plan and the emergency preparedness plan should be refined and completed during implementation. The final plan is due not less than six months prior to the initial filling of the reservoir.

8. FIs should invite the Panel to make field inspection as necessary during critical phases of construction, and review major field design changes that occur because of changed field conditions. The Panel should also review the operational plan for initial reservoir filling, including the time of closure, maximum allowable filling rate, measurement, and emergency release plan. The dam owners should provide all information required for review.

9. As part of normal supervision activities, the subproject sponsor will review compliance with all dam safety requirements specified in the operational manual and the Panel's report. The developer will include a section on dam safety management in their progress report to the FI. From time to time, the FI may wish to visit selected subproject sites to confirm the information presented in the progress report. In addition, the World Bank, as part of their normal supervision activities, may wish to visit selected project sites to assess compliance with dam safety obligations. The FI will provide an opportunity for the Bank to review project information related to dam safety management, including documents and reports related to construction supervision, quality assurance, problem areas, and remedial actions.

10. After filling up of the reservoir and the start-up of the dam, the subproject sponsor is responsible to organize dam safety inspection by independent qualified professionals. Regular inspections of dams before and after annual flood season shall be carried out.

**Appendix V.3.1.**

## Turkey – Second Renewable Energy and Energy Efficiency Project

## [Model] Terms of Reference (TOR) for the Dam Safety Review Panel (DSRP)

### General

As part of the Renewable Energy Project a Special Purpose Debt Facility (SPDF) will be established in two financial intermediaries (FIs), specifically TSKB and TKB, who will make sub loans to private developers [Sub-project Owner]

Sub-projects involving large dams are subject to the provisions of the World Bank Operational Policy OP 4.37 (attached). For such projects the World Bank requires the appointment of an independent panel of experts to review the investigation, design, and construction of the dam and the start of operations.

These Terms of Reference outline the responsibilities of the Dam Safety Review Panel (DSRP).

### Organization and Membership

The DSRP is appointed by the sub-borrowers and shall initially contain at least three permanent members with wide and specialized experience which collectively covers the following fields [may vary depending on individual Sub-projects]:

- Engineering Geology
- Concrete Dam Design.
- Embankment Dam Design
- Hydraulic Structures Design Layout and Operation.
- Rock Mechanics and Design of Underground Works.
- Concrete Technology
- Construction of Dams and Hydropower Facilities.

If necessary, the DSRP can be enlarged on a temporary basis by the addition of specialists with expertise in areas such as: flood hydrology, sedimentology, seismology, Seismic-related analysis and design etc.

A Chairman will be appointed by the sub-borrower to co-ordinate communications of the DSRP, to call and chair its meetings, to ensure the membership's activity and to provide balance to its reviews and recommendations.

Composition of the DSRP, and the areas of expertise which it covers may vary during the course of the Project as considered appropriate by the Sub-project Owner in consultation with the Chairman and concurrence of the FI and the World Bank.

### Meetings and Schedules

The DSRP will convene at regular intervals to review the status of work in progress. Frequency of meetings, their location and timing will be adjusted to conform to the schedule of design and construction, but the time between meetings shall not normally exceed nine months. At each meeting the scheduled dates for the next meeting and tentative timing for the subsequent meeting will be approximately fixed, to enable DSRP members to arrange their individual schedules. Extraordinary meetings of the DSRP may be called in

critical situations, and services of individual members may be solicited between meetings as considered necessary or desirable by the Owner, with copies of their input being sent to other DSRP members.

Prior to adjournment of DSRP meetings, the DSRP will prepare and submit written findings, conclusions, and recommendations (regular or extraordinary), signed by all members in attendance. All reports will be submitted to the Sub- project Owner and through the Sub- project Owner to the FI and thence to the World Bank.

**Scope of Reviews**

The primary purpose of the Panel is to review and advise the sub-project Owner on matters relative to dam safety and other critical aspects of the dam, its appurtenant structures, the catchment area, the area surrounding the reservoir, and downstream areas. Specific subjects on which the DSRP are expected to comment, as relevant to the specific Sub- project, are listed below. The DSRP should also comment on any other matter which it perceives to be important to the successful design, construction and operation of the projects and to the long-term safety of the dams and appurtenances.

- Engineering Geology: Quality and sufficiency of geological investigations and interpretation thereof; correctness of geological and hydro-geological models of the regions, reservoir areas and dam sites; engineering implications with respect to foundation design, stability of natural and excavated slopes; and support of surface and underground excavations.
- Rock Mechanics/Underground Excavations: Design of surface and underground excavations, including selection of stable slopes; appropriate shapes and orientations for underground excavations; design of temporary and permanent support systems and linings; and drainage of excavated areas.
- Concrete and Embankment Dam Design: Choice of materials, analysis and design procedures, factors of safety, provisions for earthquakes, specified construction procedures.
- Hydraulic Structures Design: Hydraulic and structural design and specifications for the spillways and diversion facilities.
- Flood Hydrology: Appropriateness of selection of design flood, and provisions for extreme events.
- Concrete Technology: Application of appropriate technology for the design & manufacture of concrete mixes
- Construction of Dams and Hydropower Facilities: With particular reference to quality control procedures.

The DSRP will also review the various detailed plans required to be prepared in accordance with OP4.37: the plan for construction supervision and quality assurance, the instrumentation plan, the operation and maintenance plan, and an emergency preparedness plan.

**Report on Project Completion**

Following the filling of the reservoir and start-up of the dam, the DSRP will prepare a final report summarizing its findings on project design, construction and preparation for operations. Based on this report, and if no significant difficulties are encountered in the filling and start-up of the dam, the work of the DSRP with regard to the specific Sub-project would be deemed to have been successfully completed.