

## **Environmental and Social Review Summary**

### **Hydropower Project**

*This Environmental and Social Review Summary (ESRS) is prepared by MIGA staff and disclosed in advance of the MIGA Board consideration of the proposed issuance of a Contract of Guarantee. Its purpose is to enhance the transparency of MIGA's activities. This document should not be construed as presuming the outcome of the decision by the MIGA Board of Directors. Board dates are estimates only.*

*Any documentation which is attached to this ESRS has been prepared by the project sponsor, and authorization has been given for public release. MIGA has reviewed the attached documentation as provided by the applicant, and considers it of adequate quality to be released to the public, but does not endorse the content.*

Country:	Turkey
Sector:	Infrastructure
Project Enterprise:	ETI ELEKTRİK ÜRETİM AŞ.
Environmental Category:	B
Date ESRS Disclosed:	June 26, 2008
Status:	Due Diligence

#### **A. Project Description**

The Akıncı hydropower project involves construction of a 102.2 MW run-of-river hydropower plant pursuant to a 49-year license to operate the project. The license was awarded to by the Energy Market Regulatory Authority (“EMRA”) of Turkey. A water use agreement was signed between the Government of Turkey (“GOT”) and Eti Elektrik Uretim AS (the project enterprise). The project will be located near Resadiye district of Tokat province in the Black Sea region of Anatolia. It is one of at least seven new hydropower plants on the lower Kelkit river basin. Construction will start in July 2008 and will be completed in 2011.

The major structures to be built for the Akıncı hydroelectric project are the Sogukpinar Regulator (a concrete diversion barrage 108 meters long and about 9 meters high) in the Kelkit River; the 23.6-kilometer diversion canal (of which 4.8 kilometers is tunneled); a small forebay; three short penstocks; the powerhouse; 154 kV transmission line (the length and the route are yet to be determined) and a short tailrace channel back to the Kelkit. Three turbines with nominal capacity to generate 34.1 MW will be installed in the powerhouse, and total annual energy production will be 411 GWh.

#### **B. Environmental and Social Categorization**

The project has been classified as a Category B under MIGA's Environmental and Social Review procedures. The most important impacts will stem from construction of the 23.6-kilometer diversion canal. There are eight villages at 0.5- to 3-kilometer distances from the project footprint. Potential adverse impacts of the project include land acquisition, decreased availability of water, and disturbance mainly during the construction period.

The land take is about 33 hectares, 30 ha of which is forest land owned by the General Directorate of Forestry and about 3 ha agricultural land owned by individuals. Based on the land acquisition data gathered, construction of the power plant and the diversion canal do not require physical displacement (resettlement), but around 200 agricultural plots will be affected at varying levels and some 20 temporary/seasonal houses (*bag evleri*) will also be affected. In the majority of cases agriculture is not the only or major livelihood resource for the affected households; as such no economic displacement is expected. Construction of the project, the diversion canal in particular, will require considerable blasting. Seven construction materials sources are proposed for use in the project, none closer than 1 kilometer from the nearest residential area. No protected areas and no endangered or protected species (flora or fauna, aquatic or terrestrial) or critical habitats are expected to be disturbed by the project. The Kelkit valley is coincident with the North Anatolia Fault, the most active tectonic feature in Turkey and among the most active in the world. Seismic design and slope stability are probably the most significant environmental and commercial risks to the project. The project enterprise and lenders have engaged an independent Lender's Engineer (LE), and MIGA will require the LE to review significant upstream structures (including Kilickaya and Camligoze Dams), in addition to all aspects of the Akinci Project design, for seismic and slope safety risks.

### **C. Applicable Standards**

Our current information indicates that the investment will have impacts which must be managed in a manner consistent with the following Performance Standards:

- PS 1: Social & Environmental Assessment and Management Systems
- PS 2: Labor & Working Conditions
- PS 3: Pollution Prevention & Abatement
- PS 4: Community Health, Safety & Security
- PS 5: Land Acquisition & Involuntary Resettlement
- PS 6: Biodiversity Conservation & Sustainable Natural Resource Management
- PS 8: Cultural Heritage

PS 7 (Indigenous People) is not relevant because there are no indigenous peoples inhabiting the Project area.

### **D. Key Documents and Scope of MIGA Review**

The documents reviewed by MIGA included the Environmental Impact Assessment (2008) prepared by Derya Muhendislik Ltd; and additional information that includes lists of affected plots and level of impact, as well as the Seismic Risk Assessment (April 17, 2008) prepared by Sial Ltd..

MIGA's social and environmental due diligence also involved a site visit (June 7–10), meetings with project affected villages, muhtars (village headmen), and mayors of Resadiye and Soguk Pinar districts, as well as the project enterprise personnel in charge of land acquisition and compensation. The MIGA team also met with the Energy Market

Regulating Agency in Ankara which authorizes land acquisition and compensation schemes for energy projects that it regulates.

## **E. Key Issues and Mitigation**

### PS1: Social and Environmental Assessment and Management Systems

The sponsor has prepared an Environmental Impact Assessment (EIA) for the hydropower component of the project in accordance with the substance and format required by the Ministry of Environment and Forestry. A separate, brief assessment will be completed for the 154 kV transmission line once its route and length are identified.

The sponsors will also develop an Environmental & Social Management Program (ESMP) which will incorporate mitigation measures for impacts included in the EIA, and additional issues with regard to the provisions of the applicable Performance Standards and the Lender's Engineer assessment. The ESMP will also indicate which resources will be made available for implementing these measures within reasonable time frames. Permanent staff members of the civil works contractor and/or the project enterprise will oversee the implementation of environmental, health & safety, and social mitigation measures, including land acquisition and compensation, and including such actions carried out by contractors. The project sponsors will also be responsible for ensuring that monitoring and reporting activities committed to in the ESMP are conducted in a satisfactory manner.

An information disclosure and public consultation meeting was held in November 2007 (further details of public consultation is discussed in section F of this document). The project sponsors has committed to ongoing community engagement activities and ensured that a practical grievance and complaint mechanism will be in place as part of the ESMP

Inputs/requests have been received from muhtars (heads) of the project affected villages relating to community development needs and aspirations. Support to communities will be carried out in a systematic and transparent manner and a community development plan will be drafted in coordination with the affected villages.

### PS2: Labor and Working Conditions

This is currently a green field project with a very small staff complement. The civil works contractor (Tas Yapi AS), which will be hiring most of the employees (approximately 150 in total) during the construction phase, has a Human Resources policy in compliance with the Turkish labor regulations. As part of the ESMP referred to above, Tas Yapi and other contractors as well as subcontractors will be required to commit to implementing fair labor practices including adherence to Turkish labor laws and MIGA Performance Standard 2 (Labor and Working Conditions). The project will employ around 20 staff during operation.

### PS3: Pollution Prevention and Abatement

Project construction will largely consist of extensive earthworks and erection of poured concrete structures. Total project excavation is estimated at 3.8 million cubic meters, 3.5 million of which will be for the diversion channel and tunnels. Considerable blasting will be required, and most fill will be sourced from excavation spoil. Some 550 thousand cubic meters of construction materials will be needed, 94% of which will be concrete aggregate and the remainder mostly clay, sand, and gravel. Two sand pits and five rock quarries are proposed for use in the project, each at least 1 kilometer from the nearest residential area. Impact predictions indicate that blasting, quarrying for construction materials, earthworks, and material transport will not produce significant vibrations, noise, dust, or gaseous emissions that affect residential areas of villages or Resadiye town.

### PS4: Community Health, Safety & Security

During the construction phase increased road traffic, dust, influx of workers, and blasting, and during the operation phase limited access to water and other dangers (e.g. drowning) associated with the diversion canal, are among the potential risks the project may pose to communities. A Community Health, Safety and Security Plan will be drafted as part of the Social and Environmental Management Program in compliance with Performance Standard 4 (Community Health, Safety and Security). The plan will include commitments to design and implement action plans on road safety, hazardous materials management, emergency responses, blasting times and notification to communities, and security personnel operations, and will ensure that project facilities are operated in accordance with relevant occupational health and safety guidelines. Communication of risks, safety measures and impacts to the broader community and understanding of stakeholder (including communities and local governments) perceptions of risks and impacts are essential parts of this plan on community health, safety and security.

Regarding security personnel risks, the project enterprise has hired a private security company. During the construction phase the project facilities and equipment will be protected by a team of armed security personnel. Private security personnel operations are regulated by the Governorate of Tokat (under the Ministry of Local Affairs). Also the project sponsors and the civil works contractor are committed to have “rules of engagement” to ensure that day to day operations of the security team will be consistent with PS4. There are also police and gendarme stations at 5 km distance from the project site.

Community access to water is guaranteed by the water use contract between the State Hydraulic Works (SHW) (*Devlet Su Isleri Genel Mudurlugu – DSI*) and the project enterprise. The contract specifies the minimum amount of water (100 liter/second) to be left in the river for community use (including irrigation) and maintenance of wild life. Among the eight villages/mahalles affected by the project, only one village uses irrigation water from the river. All the eight villages use other sources (mostly reticulation network water) for their potable supply.

Regarding risks of drowning, the project enterprise will build walls and guard rails along the sections that pass near human settlements, to ensure the safety of people and animals.

#### PS5: Land Acquisition & Involuntary Resettlement

Land will be acquired for the diversion canal, access roads, headrace and tailrace rights of way, power house, office/workshop complex. Around 200 plots of land and 20 temporary (seasonal) houses will be affected at varying levels, and no physical relocation is expected as a result of the project. Land acquisition and compensation process is expected to start by early July 2008. As the route and length of the transmission line and the access roads are not known yet, the above number of plots affected does not include land acquisition and/or use rights needed for the transmission line and access roads.

According to the Turkish energy sector regulations, Energy Market Regulator Agency (EMRA), established in 2001 to support and monitor development of the energy sector, has the authority to acquire/expropriate land for power projects. However, EMRA in practice requires private sector investors to carry out land acquisition and provide the necessary resources for compensation. Once the plots to be acquired are identified, investor hires surveyors to prepare a document for that property/plot, including plot sizes and all the impact on crops, trees, and improvements (houses, etc.) that might need to be acquired. Then a plan of land acquisition is prepared and submitted to EMRA for approval. EMRA (along with the expropriation law) requires the willing-buyer/willing seller option to be tried first. If an agreement can not be reached then land acquisition through the eminent domain (expropriation) process is initiated. The Expropriation Law, which was revised in 2001 to speed up the process and mitigate negative impacts of expropriation on property owners, encourages fair and timely compensation with reference to market values by establishing a valuation committee and requires evaluation to be made by applying several different sources. Once the expropriation process is initiated each property owner is informed in writing. An evaluation commission comprised of three to five experts is formed by EMRA to define compensation values. If an agreement is reached, the compensation amount deposited in a bank account for the owner and the title is transferred to the investor. Land can not be acquired physically before the compensation amount agreed is deposited. If an agreement can not be reached, land owners have the right to bring their cases to a different court (Asliye Hukuk Mahkemesi - AHM). But still the amount decided by the commission is deposited before the court case starts. The court AHM also establishes a commission to re-evaluate the compensation value offered. Members of this commission generally consist of agricultural experts, civil engineers and other professionals from the locality who have licenses to work as evaluation commission members.

Crops and trees are compensated with reference to values provided by the provincial directorates of the Ministry of Agriculture. The Ministry updates these values on annual basis. In cases where values remain below market values, inflation rates are used to update values of crops. Also, a through a capitalization formula, farmers are compensated for a transition period until they acquired new land and started receiving yields.

Compensation calculated through application of capitalization formula most often exceeds the minimum amount of time needed for a particular product to grow. Project affected people who do not have free-hold titles, but have been using the land on an informal basis are also compensated for the structures and crops/trees based on values set up by provincial directorate of Ministry of Agriculture and the Ministry of Public Works.

Information provided by the project enterprise staff in charge of land acquisition, and the MIGA team's discussion with the project affected villages and other public offices in the region and in Ankara, indicated that people are compensated in a fair and transparent manner through the land acquisition/expropriation process summarized above. There are five other run-off-river type of hydropower projects along the same river at close distances from the Akinci project. In some of these projects land acquisition has started or been completed. Experiences with those projects also indicated that affected land owners were compensated fairly. Although the willing buyer/willing seller method is to be tried first and only in cases where it fails expropriation is chosen, because of the particular characteristics of the project area where land ownership is fragmented to a great extent and there are a lot of absentee owners<sup>1</sup>, willing buyer/willing seller method does not work in practice and it becomes even a time consuming process. Therefore, the majority of land will be acquired through expropriation, principles of which appear to be consistent with PS5 (Land Acquisition and Involuntary Resettlement). The project sponsors also committed to comply with PS5, and any gaps that may happen through the process of land acquisition will be filled by the project sponsors. There will also be structured MIGA oversight for land acquisition and compensation to ensure the project's compliance with PS5.

#### PS6: Biodiversity Conservation & Sustainable Natural Resource Management

No endangered or protected species, and no habitats of conservation importance, are on or near the project site. The Kelkit River channel supports fish populations of grey mullet, carp, catfish, and black goby, targets of a minor recreational fishery. The diversion weir (regulator), its bypass channel, cofferdams, and the beginning of the diversion channel are in the Kelkit channel and valley bottom, with a scrub and grass vegetation cover. Some borrow pits planned for use by the project are within the stream-margin "wetlands buffer" and permits for their use will be required from the Tokat Environment and Forestry Office.

Most of the diversion channel as well as the loading pool, penstocks, and powerhouse, are on the south-facing mountain slope within General Directorate of Forestry land, and Forestry permits will be required for construction. The vegetation cover is a dry and somewhat sparse and scrubby forest. Red pine is the most common tree, with scattered Kermes oak, prickly juniper, and black thorn.

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<sup>1</sup> The region's population has been decreasing as most people go to major cities or abroad (mostly Germany) to work.

## PS8: Cultural Heritage

Although no archeological and cultural sites have been identified during the EIA process, as the history of the region started with the first bronze period, and the area was one of the important settlements of Hitites, Phrygs, Romans, Byzantines, Seljuks and Ottomans, a 'chance finds' procedure in compliance with PS8 will be developed by the project sponsors to ensure that any archeological and cultural sites that may be discovered during the construction will not be affected negatively by the project and necessary mitigation measures will be implemented in compliance with the PS8.

### **F. Environmental Permitting Process and Community Engagement**

The General Directorate of Environmental Impact Assessment and Planning under the authority of the Ministry of Environment and Forestry reviewed the Environmental Impact Assessment for the Akinci Hydropower Project and approved it on March 2008. The EIA was disclosed for 20 days at the Tokat province governorate. A public consultation meeting with affected villages was held on November 2007. A summary of the potential project impacts and planned mitigation measures were presented. Community leaders (muhtars), villagers, members of the local and district government and project enterprise attended the meeting. As land acquisition plan has not been finalized, directly affected people have not been contacted; but they will be informed individually once the land acquisition plan is approved by EMRA.

Public consultation meeting notes and MIGA team meetings with affected villages indicated that there is support for this project. In consistent with PS1 information disclosure and community consultations will continue throughout the construction and operation phases. A community consultation and information disclosure plan and a grievance mechanism will be developed as part of the ESMP.

### **G. Availability of Documentation**

The EIA and the Seismic Risk Assessment are available electronically as PDF attachments to this ESRS at [www.MIGA.org](http://www.MIGA.org).