

Keskinoglu Tavukculuk ve Damizlik Isletmeleri Sanayi ve Ticaret Anonim Sirketi Poultry Production and Processing Project

Supplementary Information

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Contents

Abbreviations

BAT	Best Available Techniques
BOD	Biochemical Oxygen Demand
BREF	Best Available Techniques reference documents
COD	Chemical Oxygen Demand
EBRD	European Bank of Reconstruction and Development
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
ESMMP	Environmental and Social Monitoring and Management Plan
EU	European Union
IFC	International Finance Corporation
ILO	International Labour Organisation
KPS	Construction Contractor
MPC	Maximum Permissible Concentration
PPE	Personal Protective Equipment
UNECE	United Nations Economic Commission for Europe
WB	World Bank

1 Introduction

This document provides information on environmental and social impacts of the Keskinoglu Tavukculuk ve Damizlik Isletmeleri Sanayi ve Ticaret Anonim Sirketi (Keskinoglu or "the Company") Livestock and Meat Processing Project, located in Akishar, Turkey and the surrounding areas.

It is ENVIRON's understanding that Keskinoglu has an investment programme for 2011-2012. The Company has made the following plans/is carrying out the following activities in relation to expansion and modernization of the existing facilities:

- New cogeneration plant at the Organised Industrial Zone (OIZ) Akhisar and upgrade to the existing cogeneration plant at the current processing site at Akhisar.
- Auto warehouse for cold storage adjacent to the current processing site at Akhisar.
- Increased egg production and egg packing plant at Rahmiye with layer rearing at Kapakli.
- New hatchery (3rd phase) at Kayislar.
- New egg breaking and pasteurisation unit adjacent to the current processing site at Akhisar.
- New logistics centre and the purchase of 15 refrigerated lorries at the OIZ, Akhisar.
- Installation of manure drying system (all sites).
- Live bird handling modernization (all sites).

At this stage, EBRD is considering financing of the expansion programme.

This report concerns the Project , as follows:

- New co-generation plant at the Organised Industrial Zone (OIZ) Akhisar and upgrade to the existing co-generation plant at the current processing site at Akhisar;
- Auto warehouse for cold storage adjacent to the current processing site at Akhisar and logistics centre at the OIZ;
- Increased egg production and egg packing plant at Rahmiye;
- Conversion of existing broiler breeding facility at Kapakli to layer rearing;
- New hatchery (3rd phase) at Kayislar;
- New egg breaking and pasteurisation unit adjacent to the current processing site at Akhisar;
- Manure drying system. An overall environmental improvement (aimed at odour reduction) across all cage houses; and
- Live bird handling modernization. An overall environmental improvement for the transfer of broilers from the rearing farms to the slaughterhouse.

Keskinoglu have assessed the project elements with respect to the requirements of Turkish Environmental Impact Assessment (EIA) Regulations and have prepared an EIA for the increased egg production project at Rahmiye and for the conversion of existing broiler

breeding facilities at Kapakli to layer rearing. The remaining elements of the expansion programme do not require the preparation of EIA materials.

Additional information is provided in the form of this document entitled 'supplementary documentation' for the proposed facilities, an accompanying Non-Technical Summary (NTS) and an Environmental and Social Action Plan (ESAP) that provides an overview of the entire expansion project. Collectively these materials have been prepared in accordance with Turkish requirements and industry best practice as outlined in:

- World Bank/IFC guidelines for environmental and social management; and
- European Union reference documentation for Best Available Techniques (BAT).

It is understood that the European Bank for Reconstruction and Development (EBRD) is considering the financing of the Keskinoglu investment programme outlined above. This Supplementary Information (SI) document is a requirement of the bank as specified under its Environmental Policy, 2008.

This report forms one element of the overall Project disclosure package and should be read in conjunction with the EIA materials, the Non-Technical Summary and the Environmental and Social Action Plan.

2 Applicable Standards and Requirements

2.1 National Legislation

Turkish environmental regulations were developed in line with national and international initiatives and standards, and some of them have been revised recently to be harmonized with the EU Directives in the scope of pre-accession efforts of Turkey.

The Ministry of Environment and Urban Planning (former Ministry of Environment and Forestry) is the responsible organization for the implementation of policies adopted for protection and conservation of the environment, and for sustainable development and management of natural resources. The Ministry of Environment and Forestry was first established as an Under-secretariat of the Prime Minister's office in 1987 and was promoted to the rank of Ministry of Environment in August 1991 by the Establishment Law No. 443. Subsequently, the Ministry of Environment and Forestry was established in 2003 through a merger of the previously separate Ministry of Environment and Ministry of Forestry. Recently, the environment part of the Ministry of Environment and Forestry was separated and merged with the Ministry of Public Works and Settlement to form the Ministry of Environment and Urban Planning.

The Turkish Environment Law No. 2872, which came into force in 1983, handles environmental issues on a very broad scope. According to the basic principles that govern the application of the Environment Law, and as stated in the Constitution, citizens as well as the state bear responsibility for the protection of environment. Complementary to the Environment Law and its regulations, other laws also govern the protection and conservation of the environment, the prevention and control of pollution, the implementation of measures for the prevention of pollution, health and safety and labour issues. Some of these laws are:

- Environmental Law, Law No: 2872, Official Gazette date: August 11, 1983, No: 18132.
- Labour Law No: 4857, Official Gazette date: June 10, 2003, No: 25134
- Social Insurances and General Health Insurance Law No: 5510, Official Gazette date: June 16, 2006, No: 26200
- Public Health Law, Law No: 1593, Official Gazette date: May 6, 1930, No: 1489.

The Company has to comply with various Turkish environmental regulations in line with the activities being or planned to be conducted at different sites. The comprehensive list of relevant regulations is provided in Annex B.

Environmental Impact Assessment Procedure in Turkey

In the Environment Law, the general scope of the Environmental Impact Assessment (EIA) procedure is set out in Article 10. Within this legal framework the EIA Regulation was put into force by its publication in the Official Gazette No. 21489 on February 7, 1993. Until present, the regulation was revised several times. Consequently, the last revision of Regulation on EIA was published in the Official Gazette No. 26939 on July 17, 2008.

When an activity (project) is planned, the project developer is responsible for preparing an Environmental Impact Assessment (EIA) Report along with many other permits required to realize the project. However, facilities are subject to preparation of an EIA Report depending

on the type of the facility, its capacity, or the location of the activity. The activities that are subject to the provisions of the Regulation on Environmental Impact Assessment are listed in Annex I and Annex II of the Regulation. For Annex I activities a full EIA report is required and those projects go through the full EIA process. For Annex II activities, a Project Description File is prepared in accordance with the format given in the Regulation and the relevant process has to be conducted. As a result of the submission of Project Description File, if "EIA necessary decision" is given, a full EIA is prepared.

If the activity is listed in Annex I of the Regulation, a comprehensive EIA Report is required. The process starts with submitting a brief report (EIA Application File), summarizing the characteristics of the project and the impact area, and the potential environmental impacts and mitigation measures, prepared according to the format provided in Annex III of the EIA Regulation to the Ministry of Environment and Urban Planning. Then the Ministry of Environment and Urban Planning, General Directorate of EIA, Permit and Inspection (former General Directorate of EIA and Planning) forms a committee from related governmental and non-governmental agencies, which also includes the project owner and the consultant that would prepare the EIA report. With the formation of this committee the scoping phase starts. This committee aims to define the scope of the EIA report to be prepared for the project. The EIA scope is defined based on findings of the committee and the comments and suggestions received from a public consultation meeting to be held at the project site. The purpose of the meeting is to give information regarding the project and take the opinion of the public and answer their questions regarding the project. In addition, the Ministry shall announce that the EIA process regarding the project has been initiated and information regarding the EIA process may be obtained also via the internet. The scoping phase is completed with a meeting of this committee during which the EIA scope is agreed on. Based on the agreed scope, the EIA studies are conducted and the report is prepared. After the submission of the EIA Report to the General Directorate of EIA, Permit and Inspection, it is checked with regard to the contents to decide whether the report is suitable for starting the review process. If the content of the report is found to be appropriate, the review period starts and ends with either a positive or negative decision.

Ministry of Environment and Urban Planning and the Governorship are responsible for informing the public that the review period of the EIA Report is started via announcements, advertisements, internet etc. Therefore, the public will be able to access the EIA Report from the web site of Ministry of Environment and Urban Planning or the relevant Provincial Department and comment on the Report. Those comments are reviewed in the Commission meeting and the results are reflected in the EIA Report.

Turkish EIA procedure can be followed stepwise in Table 1.

Table 1. Steps of Turkish EIA Procedure

Procedural Steps	Official duration
• Project owner contracts an EIA Consultant qualified by the Ministry of Environment and Urban Planning (the Ministry) • EIA Consultant prepares the EIA application file and submits it to the Ministry	
• Evaluation of the EIA application file by the Ministry • Establishing the Committee, for scoping and evaluation of the EIA report, from relevant competent authorities	3 working days
• Determination of the date and place of the Public Participation Meeting and Scoping Meeting by the Ministry • Announcements in the national and local newspapers for the Public Participation Meeting at least 10 days before this meeting • Public Participation Meeting • Scoping Meeting (with the Committee) • Issuing of the project specific (special) EIA format by the Ministry	12 working days
• Preparation of the EIA report • Submission of the EIA report to the Ministry in compliance with the special format	1 year following the format issue date
• Format evaluation of the Ministry	3 working days
• Review and assessment meeting(s) (with the Committee)	10 working days
• Submission of the final EIA report (finalized based on any comments and requests of the Committee) to the Ministry together with the commitment letter of the project owner	5 working days
• Final EIA report is opened to public opinion through relevant means (e.g. internet and local governorate offices)	10 working days
• Reproduction of the final EIA report for all committee members and submission to the Ministry	8 working days
• Decision by the Ministry o Positive decision for EIA, or o Negative decision for EIA	5 working days

2.2 Other Standards and Requirements

The existing Keskinoglu EIA documentation of the Project has been reviewed (Rahmiye EIA and Kapakli EIA) and assessed against EBRD's environmental assessment requirements for Category A Projects as outlined in their 2008 Environmental Policy. Of particular note, EBRD requires:

- Preparation of an EIA
- Compliance with its Public Information Policy
- Adherence to the spirit of the UNECE Convention on Access to Information, public participation in Decision-Making and access to justice (Aarhus Convention)
- Adherence to the spirit of the UNECE Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO Convention)
- That the project meets good international environmental practice, such that:
  - it meets national environmental law;

- EU standards (where applicable); and
- World Bank Group Guidelines (where EU standards do not suffice).

The project should also meet IFC safeguard Policy on:

- Indigenous Peoples (Operational Directive OD4.20, 1991);
- Involuntary resettlement (Operational Directive OD4.30 1990); and
- Cultural property (World Bank Operational Policy Note No. 11.03. Management of Cultural Property in Bank-Financed Projects)

and ILO core labour standards on:

- Forced labour (C105);
- Child Labour (C182); and
- Discrimination (C111).

The key EU standards/reference documents include:

- EU Environmental Impact Assessment Directive (85/337/EEC) as amended (97/11/EC);
- Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques for Intensive Rearing of Poultry and Pigs. July 2003 (BREF code ILF); and
- Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques in the Slaughterhouses and Animal By-Products Industries. May 2005 (BREF code SA).

It should also meet World Bank Group Environmental Health and Safety (EHS) Guidelines including:

- EHS Guidelines for Poultry Processing, April 2007; and
- EHS Guideline for Poultry Production, April 2007.

3 Project Overview – Facilities

3.1 Overview

Keskinoglu is the largest Turkish egg producer and exporter as well as a leading poultry meat producer in Turkey with estimated sales of ca. EUR 268m in 2010. Company activities are conducted at 16 different locations, all within a 10km radius of Akhisar, Turkey.

Keskinoglu has plans to expand its current production capacity including poultry breeding, egg production and slaughtering within the Akhisar area of Turkey. The expansion programme will also include the increased egg production capacity from 2 to 5 million eggs per day. The expansion is being undertaken through a series of acquisitions, expansions and the construction of new facilities.

Keskinoglu's current operational facilities include:

- Processing Site – approximately 8.3km to the south-west of Akhisar town centre, comprising the slaughterhouse, processing, rendering plant, wastewater treatment plant, further processing (cooked products), co-generation plant, packing and distribution of meat products;
- Main Campus – located approximately 5km to the south-west of Akhisar town centre, comprising a hatchery, egg laying houses, egg box production, egg packing, manure processing plant, feed production, wind turbine and general storage;
- Organised Industrial Zone (OIZ) – located to the west of the Processing Site on the north-eastern area of the OIZ, approximately 7.8km to the south-west of Akhisar town centre. Comprising feed production plant, new egg box production (due to open end 2012) and project construction areas (see below);
- A second manure processing plant and broiler breeding house located near Kapakli (to be changed to layer rearing house), 12km south of the Processing Plant;
- Breeder farms (both layer and broiler) at Kuyucak, Kemiklidere, Mecidiye, Pember, Bordo and Segirdim;
- A hatchery at Kayislar;
- Laying hen houses at Rahmiye and Kayalioglu; and
- Akhisar Gida broiler rearing farm.

The Company has commenced, and intends to continue to invest in, new build facilities and the upgrade of existing facilities. Those sites are as follows:

- land has been purchased adjacent to the current **Processing Site** with construction works commenced for the new egg breaking and pasteurisation and auto warehouse for cold storage. From discussions with site personnel and site observations it is understood that this was previously vacant land. Upgrade works are also planned to the cogeneration plant at the Processing Site.
- at the **OIZ**, Akhisar, land has been purchased and construction work commenced on the new cogeneration plant and logistics centre. From discussions with site personnel and satellite imagery viewed, the site was previously vacant land located at the designated industrial zone.
- at the existing **Rahmiye** farm, it is planned to increase egg production with the construction of a further 18 laying houses (3 are currently in operation at this site) and

an egg packing plant. This is a farm site which crop cultivation (maize), owned and operated by Keskinoglu.

- Conversion of existing broiler breeding facilities to layer rearing at **Kapakli** is planned, providing a total of 900,000 birds (rearing) in 10 houses. at the existing **Kayislar** facility it is planned to install a new hatchery (3rd phase). There are currently 4 units constructed at Kayislar, with 2 units operational. The project involves the installation within unit 3, whilst unit 4 remains unoccupied for future capacity increase.
- Manure drying system will be an overall environmental improvement (aimed at odour reduction) across **all cage houses**.
- Live bird handling modernization will be an overall environmental improvement for the transfer of broilers from the **rearing farms to the slaughterhouse**.

The new buildings follow a standard, relatively simple, concrete slab design and can be erected over short durations.

The location of these facilities is shown in Figure 1 presented in Annex C.

The entire expansion project is described here as background. However, this document is concerned only with the provision of supplementary information for those elements of the Project funded directly by EBRD where necessary, additional information is required to supplement the EIA documentation provided by the Company. Therefore the remainder of this document is primarily concerned with egg production (laying and packing) at Rahmiye and conversion of existing broiler breeding facilities to layer rearing at Kapakli. Where projects have been deemed as exempt from EIA with confirmation from the Provincial Directorate of the former Ministry of the Environment and Forestry (Manisa), this documentation has been reviewed and comment made where appropriate.

4 Environmental and Social Setting

4.1 Environmental Setting

Akhisar is located in the Manisa province in the Aegean region of western Turkey at 38°55′05″N 027°50′15″E. It has an elevation of approximately 93m (305ft). The surrounding area is largely rural with some scattered villages. The district is located on the Akhisar plain. The fertile alluvial soils of the Akhisar plain produces about 10% of total Turkish tobacco production, whilst olives are also an important crop grown in the area. The Demirci and Golcuk mountains are located in the north of the area and the Yunt mountains on the west.

In the Aegean region, rainfall averages 645 mm (25 inches) per year and temperatures range from -8C (18F) to 43C (109F), with average humidity of 69%. Turkey is in a seismically active region and Akhisar experiences periodic small earthquake activity. On 4 August 2011 a 3.5 magnitude earthquake was recorded at Akhisar by Bogazici University Kandilli Observatory and Earthquake Research Institute.

Gorduk Creek flows from north to south in the area and joins the Gediz River approximately 40km to the south-west of Akhisar at Yenimahmudiye. From maps viewed and discussions with site personnel it was learned that Gordük Creek is the main watercourse in the area of Akhisar and passes directly to the east of the Keskinoglu Processing Site. According to site personnel, industrial sites in Akhisar (including the Keskinoglu Processing Site) and waste water treatment plant of Akhisar Municipality discharge into Gordük Creek. It is occasionally used for abstraction by local farmers for irrigation purposes.

The Hydrogeology Map of Turkey developed by the General Directorate of Mineral Research and Exploration classifies the region as having rich aquifer (groundwater resources). Groundwater is the main source of water supply in the area. The Keskinoglu facilities get their water supply from groundwater wells, which are all permitted by the State Hydraulic Works.

The new egg laying and packing facility at Rahmiye is located in a rural area where mainly agricultural activities prevail.

The site at Kapakli is an existing operational Keskinoglu site in a rural setting, surrounded by agricultural activities and dispersed settlements.

4.2 Social Setting for Akhisar District

Akhisar is a district of Manisa Province and located in the Aegean Region of Turkey. It is the biggest district in Aegean Region with a land of 1.750 km^2 and population of 158,614 (2010) people. The population of district centre consists of 109,100 people. The local community's biggest means of earning is raising and selling olives, which Akhisar is famous for. Akhisar has a structure that mostly relies on agriculture. The vast and fertile Akhisar Plain yields 10% of Turkey's total tobacco production. "Oriental" high quality tobacco of Akhisar is one of the most important export commodities of Turkey in agricultural industry that is recognized and wanted around the world. Moreover, 5% of Turkey's total olive production is provided by the millions of olive trees located in the Akhisar plain.

Akhisar continues to be a vibrant regional centre with 9 towns and 86 villages. There are 14 main neighbourhood units in the centre and 20 in towns. In villages there is generally a

formation of compact settlements. But there are 71 small districts in 36 villages the most of which are located in highlands. Among these, 55 are permanent settlements while 16 are populated only in the summer months. The population of 11 of these areas is above 100. Total number of villages and units in rural areas is 157.

In Akhisar district, all district directorates of central agencies/ministries is administered under the Special District Administration and additionally there are units such as Forestry Operation Directorate, Directorate of Land Registry and Cadastre, Directorate of Meteorology, Directorate of Military Recruitment, which are organized at a regional or operational level offering their services to the surrounding settlements.

The majority of Akhisar's population consists of immigrants from the Balkans. Furthermore, Akhisar's district centre is highly populated with Roma. In the past 10 years, there has been an extensive labour force migration to the district from Eastern Anatolia and South-eastern Anatolia. These migrations took place due to the job opportunities in the area both in the industrial sector, such as Keskinoglu, and the agriculture sector. There have been no considerable problems between different ethnic groups.

Distances from expansion sites to the nearest settlements are given in Table 2.

Table 2. Distance to Settlements

Site	Distance	Description
Processing Site	0.8km	The site is adjacent to the current operational site, located on a main highway. Nearest settlement is Kayalioglu.
OIZ, Akhisar	1.7km	The site is in a designated industrial area, surrounded by agricultural land. Nearest settlement is Kayalioglu.
Rahmiye facility	2.8km	Nearest settlement is a small rural village. Whilst traffic from the facility will utilise the roadways passing through the settlement, the production facility is located in an area surrounded by farmland.
Kayislar	1.4km	The site is located at the current operational facility and is surrounded by agricultural land. Nearest settlement is Kayislar, a predominantly rural village.
Kapakli	2.0km	The site is located at Kaynak in Kapakli village. The closest settlements to the site are Kayislar and Kapakli villages, which are located at 2 km north-west and 2.6 km north-east of the Project site respectively

5 Project Description

5.1 Introduction

Keskinoglu have assessed the project elements with respect to the requirements of Turkish Environmental Impact Assessment (EIA) Regulations and have prepared an EIA for the increased egg production project at Rahmiye and the layer rearing facility in Kapakli. The remaining elements do not require the preparation of EIA materials. However, all elements of the Project are described below for completeness.

5.2 Egg Production (Packing and Laying at Rahmiye)

Keskinoglu plan to construct an egg packing plant and a further 18 egg laying houses at Rahmiye where 3 million layer hens will be placed. This is in addition to the 3 houses currently present here. This is a currently owned and operational site, with plans to construct the new facilities on land currently in use for agriculture (maize cultivation). Operations will utilise existing groundwater supplies (boreholes), back-up diesel generator and wastewater collection.

Due to the intended capacity (3 million hens), the construction work and installation of the cages falls into Annex 1 of the Turkish EIA Regulations and hence a full EIA is required, including relevant studies and public consultation. Whilst the packing plant is technically exempt from the EIA Regulations, it is an integral part of the egg production process at Rahmiye and hence the Local Authority (Provincial Directorate of former Ministry of Environment and Forestry, Manisa) requested that this be included with the layer houses EIA. The EIA report was submitted to the Ministry at the end of September 2011 and is undergoing review by the Ministry and other interested parties. During review a request could be made to Keskinoglu for any further studies deemed required. A final EIA report will then be submitted and announced to the public. A decision will then be made by the authority following any public objections. This review and decision making period will take 2-3 months after the submission of the EIA Report.

The scoping document (EIA Application File), minutes of meeting regarding the scoping meeting, specific (special) EIA format issued by the former Ministry of Environment and Forestry, and submitted EIA report were reviewed by ENVIRON.

The EIA format issued by the Ministry covers; the description of the project (including cost benefit analysis, available plans, transport conditions, etc.), environmental baseline conditions of the project area and project-affected area (area of influence), environmental impacts of the project and mitigation measures to be taken (during construction and operation and after closure), emergency action plan, monitoring plan, and project alternatives. Issues such as socio-economic properties of the region, impact of the project to the nearby villages, interaction of the project with the other nearby facilities, traffic load, health boundary zone were also required by the Ministry to be included in the EIA Report.

From a review of the EIA report, it is considered average for Turkish standards (Turkish EIA Regulation and the process) with some satisfactory and some weak parts, and a few minor errors. However, the format is in compliance with the project specific format issued by the Ministry.

With regard to EBRD standards/requirements the report is weak, with the following points noted:

- The sections on flora and fauna are based on literature as stated in the report, rather than actual data collected on-site;
- Whilst the company conducted the legislatively required public participation meeting, this is not described in the report;
- There is little detail on occupational health and safety or animal welfare;
- Assessment of impacts is rather limited e.g. no construction phase noise impacts, exhaust gas emissions, etc.;
- There is no environmental/impact management and monitoring plan. Some mitigation measures are given in various sections of the report regarding some impacts, but they are not formulated systematically. For monitoring there is a heading on emergency action plan and monitoring, however few monitoring in that section;
- No relevant details are included in the emergency action plan; and
- The alternatives section just summarizes the selected site and commits that “state of the art” techniques would be used. No alternative sites are discussed.

5.3 Layer Rearing (at Kapakli)

The Project will involve the conversion of the existing Broiler Breeding Facility (having a capacity of 40,000 birds per production cycle in 10 breeding houses) to a Layer Rearing Facility with the improvements to be made on existing houses to install appropriate cage systems. The Project will not entail construction of any additional closed buildings (i.e. houses) so that the number and size (i.e. height and footprint) of the existing houses will be maintained. The Project may be described as a change in the existing operations and construction activities will be limited to the conversion of the existing houses and facilities and upgrade and improvements to operational systems (e.g. heating, ventilation).

The capacity of the new Layer Rearing Facility will be 900,000 birds per production cycle. A specific type of layer bird (i.e. Hy-Line W-36), which has excellent livability and high efficiency for production of top quality eggs on minimum feed intake, will be reared for 14-16 weeks at the Layer Rearing Facility.

The Project will require the transportation of the input materials (i.e. livestock, feed, fuel etc.) to be used in the rearing process and some of the output materials (i.e. manure, coal ash etc.) to be generated as a result of the process. Livestock (i.e. chicks) to be reared at the Layer Rearing Facility and the feed required for the process will be supplied from the nearby hatcheries and feed production plants owned and operated by Keskinoglu. Manure will be produced at the Layer Rearing Facility and will be transferred to the Organic Fertilizer Production Plant owned and operated by Keskinoglu, which is located on an adjacent parcel of land.

Keskinoglu has assessed the Project and its components with respect to the requirements of the Turkish national EIA Regulations and prepared a full EIA Report in line with the scope defined by the Ministry of Environment and Urban Planning (or “the Ministry”). The EIA Report was approved by the Ministry in April 2012.

The EIA format issued by the Ministry covers; the description of the project (including cost benefit analysis, available plans, transport conditions, etc.), environmental baseline conditions of the project area and project-affected area (area of influence), environmental impacts of the project and mitigation measures to be taken (during construction and operation and after closure), emergency action plan, monitoring plan, and project alternatives. Issues such as socio-economic properties of the region, impact of the project to the nearby villages, interaction of the project with the other nearby facilities, traffic load, health boundary zone were also required by the Ministry to be included in the EIA Report.

From a review of the EIA report, it is considered average for Turkish standards (Turkish EIA Regulation and the process) with some satisfactory and some weak parts, and a few minor errors. However, the format is in compliance with the project specific format issued by the Ministry.

With regard to EBRD standards/requirements the report is weak, with the following points noted:

- No information is provided as to whether the new coal fired boilers are to replace existing coal fired boilers or others, their location (i.e. in existing or new boiler houses), rating and ash storage and disposal arrangements;
- It is not clear if the boiler stacks are existing and if so will there be a change in height required as part of the upgrade of the boilers;
- A commitment is made to ensuring boiler emissions meet national standards, however the EIA Report provides no confirmation that this is achievable, e.g.boiler manufacturer specifications, site specific modelling;
- The EIA Report notes that feed to be provided to the birds during the operation phase will be stored in closed silos; no confirmation is provided that these are existing;
- The EIA Report notes that site roads will be paved with asphalt or concrete to minimize dust formation due to traffic movements in the Project area, however it is not clear if this is an ‘improvement’ as part of the project or reflects existing conditions;
- No assessment is made of construction phase impacts, for instance no consideration is given to waste generated during the refit of the buildings, removal and refurbishment of plant items etc;
- The EIA Report states that the site could be reused for “agricultural activities” on decommissioning, however the information available in the EIA Report is not sufficient to understand if intensive agricultural production or return to primary production is meant by “agricultural activities”;
- The EIA Report implies that there may be a need to construct new drainage infrastructure (drainage of surface run-off and/or storm water will be ensured by means of proper infrastructure system, which will be designed and constructed taking the site-specific precipitation rates recorded at Akhisar) but it is not clear if this is the case and no assessment of potential impacts is provided;
- The EIA Report notes that disinfection will be done by using disinfecting agents and that they will be used as dilutions but does not identify it as an activity that will require considerable water use. No information is given on the disinfection agents to be used or how they will be stored;

- The EIA Report notes that septic tanks and process wastewater pits will be used for domestic and process-related wastewater storage respectively, however it is not clear if these are existing or to be installed/constructed.
- The process wastewater pits are described as 'non-leaking', but no information is given to support how this will be guaranteed e.g. Alarms, routine inspection;
- No consideration given to odour associated with open air handling of manure (loading);
- No consideration is given to noise from externally mounted fans; the EIA states that all project units will be in closed buildings however there are indications that there will also be externally mounted fans.

5.4 Co-generation Plant Upgrades

The new 6MW cogeneration plant, comprising two 3MW gas fired engines to be housed in a concrete building in the Organised Industrial Zone (OIZ).

The co-generation plant upgrades are designated exempt from the Turkish EIA Regulations. A letter has been received from the Provincial Directorate of the Ministry of Environment and Forestry (Manisa) to confirm this.

5.5 Auto Warehouse and Logistics Centre

The Auto Warehouse will be located on a parcel of land adjacent to the current Processing Site. It is designed to have a carton freezer unit with ammonia gas systems and capacity for 10,000 pallets.

A letter has been received from the Provincial Directorate of the Ministry of Environment and Forestry (Manisa) to confirm that the Auto Warehouse project is exempt from EIA.

The Logistics Centre will be located at the OIZ, where building construction has been completed. The installation of equipment is due to commence by end 2011. This will provide a 1,500m^2 warehousing unit plus the purchase of 15 refrigerated lorries.

The logistics site comprises a warehouse on designated industrial land and hence no EIA or regulatory confirmation is required.

5.6 Hatchery (Kayislar)

There are currently 2 units in operation in Kayislar; this project relates to the commencement of operations at the 3rd unit. There is also a 4th unit, which is currently vacant for future production. The overall capacity of the units in Kayislar would be 168,192,000, where at present all the units in operation have a total capacity of 80 million (70 million broiler chicks and 10 million layer chicks).

The 3rd Phase of the Hatchery is designated exempt from the Turkish EIA Regulations. A letter has been received from the Provincial Directorate of the Ministry of Environment and Forestry (Manisa) to confirm this.

5.7 Egg Breaking and Pasteurisation (Akhisar)

Located on parcel of land adjacent to the current Processing Site and on completion is due to process 864,000 eggs per day. Once constructed, this unit will use the existing wastewater treatment plant, rendering plant and co-generation unit located on the current

Processing Site. Water will be supplied by boreholes located at Rahmiye via a 3.5km transmission line.

The egg breaking and pasteurisation unit is designated exempt from the Turkish EIA Regulations. A letter has been received from the Provincial Directorate of the Ministry of Environment and Forestry (Manisa) to confirm this.

5.8 Manure Drying System

This project represents an overall environmental improvement (aimed at odour reduction) across all cage houses. A pilot plant is currently in operation at two layer houses at the Main Campus whereby manure is collected on a conveyor system and dried for 12 hours on a system of 4 “floors”; a total of 2 days drying. It is intended to decrease the humidity from 70% to 20%, with the resulting manure taken to the existing fertiliser factory. Keskinoglu is currently working with Royal Haskoning on the operation of the pilot plant under a grant from the Dutch Government.

The manure drying system is considered exempt from the Turkish EIA Regulations. Due to the nature of the project, no regulatory confirmation is considered required.

5.9 Live Bird Handling Modernization

This project represents an overall environmental improvement for the transfer of broilers from the rearing farms to the slaughterhouse. Keskinoglu plan to implement the use of forklifts to enable the packing of birds within the barns to crates and then the transfer of crates to the lorry via the forklift.

The live bird handling modernization project is considered exempt from the Turkish EIA Regulations. Due to the nature of the project, no regulatory confirmation is considered required.

6 Potential Impacts and Mitigation Measures

This section discusses the potential impacts associated with the Project. Where significant impacts are identified, mitigation measures necessary to reduce impacts to acceptable levels are outlined.

The discussion below is mainly based on information provided in the Rahmiye Egg-Laying Poultry Facility and Kapakli Rearing Facility EIA reports. In addition, it notes items to also be considered at other Project) sites where appropriate.

6.1 Cogeneration Plant

No significant impacts are expected during construction or operation. Construction would be small scale for this facility which can cause noise, dust, waste generation and socio-economic impacts (which would be mainly beneficial). For mitigating construction phase impacts for all facilities construction environmental management plans (including health and safety and monitoring) should be prepared and implemented in all construction activities. The major impacts during operation would be air emissions, water use, and waste generated. Since natural gas is used the air emissions would be of limited significance. The water would be supplied from groundwater from artesian wells with permits. The wastes would be collected such that waste minimization and recycling would be given attention and otherwise wastes would be disposed by the municipality. Wastewater would be sent to the sewage system of OIZ.

6.2 Auto Warehouse for Cold Storage

No significant impacts are expected during construction or operation. Construction would be small scale for this facility which can cause noise, dust, waste generation and socio-economic impacts (which would be mainly beneficial). For mitigating construction phase impacts for all facilities construction environmental management plans (including monitoring) should be prepared and implemented in all construction activities. During operation the adjacent infrastructure of the Processing Site would be used for managing the wastes and wastewaters from this facility.

6.3 Egg Production (Packing and Laying at Rahmiye)

Impacts and Mitigation Measures During Construction

The construction phase primarily causes impacts from site preparation activities such as clearing, excavation, earthmoving, dewatering, temporary workshop areas, and developing borrow and fill areas (if required). During the construction, environmental and social impacts to be caused will be the typical impacts for any small/medium-scale construction project. The sections below provide an overall summary of the potential impacts from the planned Egg-Laying Poultry Facility without the implementation of the mitigation measures/controls during the construction phase and then the possible mitigation measures.

Air Quality

Dust may be emitted from general site works such as removal of topsoil, excavation, loading, transportation, unloading, etc. Dust emission that will be generated during the construction

activities of the Project were calculated within the scope of the EIA studies. Accordingly, the amount of dust to be generated during the removal of topsoil for land works was calculated to be 0.83 kg/hr, and the amount to be generated during loading the excavation trucks was calculated to be 0.33 kg/hr. Both of these figures meet the value set by the Turkish Regulation on the Control of Industrial Air Pollution (Official Gazette; Date: July 3, 2009,No.27277), which is 1.0 kg/hr.

The same is true for the amount of dust to be generated during the egg-laying houses construction works. The amount of dust was calculated to be 0.6 kg/hr for the removal of topsoil for egg-laying house construction, and 0.25 kg/hr for loading of the excavation trucks. These figures are also below the limit value set by the above-mentioned Regulation.

There are no EU limit values for dust emitted from construction projects. However, the EU Directive 1999/30/EC relates to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter (PM_{10} and PM_{25}) and lead in ambient air, intended to avoid, prevent or reduce harmful effects on human health and the environment as a whole. The 24-hour limit value for the protection of human health is 50 µg/m3 PM10, not to be exceeded more than 35 times a calendar year. Due to the parameter units, this value cannot be compared to the calculated values.

The operation of diesel powered construction machinery and vehicles could also impact the air quality. However, exhaust gas emissions were not evaluated within the scope of the EIA studies. Workers, inhabitants in residential areas (depending on distance to site) as well as local flora and fauna (if sensitive) could be affected by exhaust emissions.

There are a number measures, which are committed to be taken by the Company (as outlined in the EIA) in order to minimize the dust formation as follows:

- Placing wind breakers in the form of boards, trees or walls;
- Covering the conveyors and other trucks, and their connecting parts;
- Loading and unloading without scattering;
- Covering excavated material with thick plastic layers; and
- Keeping upper layers of excavated material at a humidity level of 10% to minimize dust formation.

Noise

Construction phase noise impacts of the Rahmiye Project were not evaluated within the scope of the EIA studies. However, the nearest residential settlement to the site is Rahmiye village located approximately 2.8km distant. Due to the distance to the settlement, noise from construction activities is not considered to present an issue of concern.

Also, other project sites are of a distance to residential settlements and, with the exception of Kayislar hatchery, are located in currently operational industrial areas as to not be considered to present a noise issue.

Water Use

During the construction phase of the Project, water will be used for drinking and domestic purposes, as well as for ground watering and plastering processes. The facility has acquired a permit to use the groundwater in the area.

Projected amounts of daily water consumption were calculated within the scope of the EIA Report. Accordingly, water required for 50 workers during the construction phase of the project was assessed to be 6.6 m^3/day. Water required for plastering was calculated to be 1.3 m^3/day. Water will also be utilized in order to suppress the dust that will be generated during construction activities. The total amount of water that will be used was calculated to be 12.5 m^3/day during the construction phase of the Project. Therefore the EIA considered short term impacts on the groundwater table may occur in the vicinity of the site due to use of groundwater for construction activities.

A Construction Environmental Monitoring Plan (CEMP) will be implemented during the construction phase of the project by the construction contractors. This will include details of water management practices in order to minimise water use and impact on the groundwater table.

Water Pollution

As described in the EIA, wastewaters produced due to construction activities at Rahmiye will be collected in septic tanks and sent to the Keskinoglu wastewater treatment plant (WWTP) at the Main Processing Site. The water then will be discharged to the Gorduk Creek after assuring that the water quality meets the standards set by the Turkish Regulation on the Control of Water Pollution (Official Gazette; Date: December 31, 2004, No. 25687) for given parameters of chemical oxygen demand, suspended solids, ammonium nitrogen, phosphorus, pH, etc. However, the EIA Report does not provide any information on the receiving environment of this treated water.

Mitigation measures and practices to reduce wastewater will be included in the CEMP. In addition, the ESAP includes a requirement to improve the WWTP, thus aiming to reduce the environmental impact of wastewater discharges. This would apply to all construction sites where it is intended to discharge wastewaters to the main WWTP.

Excavation Waste

The EIA considers the amounts of excavation wastes to be generated during the construction works. A total of 342,250 m^2 of land within the scope of the Project was allocated as construction area; with a building base area of 34,148 m^2. The amount of excavation waste that will result from the removal of topsoil was calculated to be 20,000 m^3. The excavation works are planned to be carried out for approximately 4 months. The excavation waste will be transported to a licensed excavation waste area that will be appointed by Akhisar Municipality.

No specific mitigation measures are proposed. Methods of correct disposal of site wastes will be included within the CEMP.

Domestic Solid Waste

Domestic solid waste will be generated as a result of personnel activities during the construction phase of the Project. It is estimated that 50 people will be employed during construction. Within the scope of the EIA studies it was calculated that the amount of domestic solid waste to be generated will be 57.5 kg/day.

The EIA notes that domestic solid waste will be stored in appropriate containers separately and transferred to the licensed solid waste storage area of the Kayalioglu Municipality. Methods of correct disposal of site wastes will be included within the CEMP.

Soil Pollution

As described above, wastewater and solid wastes will be properly managed during the construction phase of the Rahmiye Project to minimise potential leakage into the soil. Therefore, soil pollution is not expected during the construction phase of the Rahmiye project.

The company is recommended to implement this as standard practice at all Project construction sites.

Hazardous Wastes

The Rahmiye EIA notes that during the construction phase of the Project, flammable substances such as paint and thinner (solvent) will be used. These substances will be stored in designated containers, in bunded areas, where there is no risk of spills and leakage.

As noted in the ESAP, a hazardous waste management plan for handling, storage, use and disposal of flammable substances to be used will be developed and implemented in the construction phase of all project sites.

Medical Wastes

There will be 50 people working during the construction phase of the Project according to the EIA. However, since employees will be working for the contractor, it is not planned to establish a medical centre within the facility.

Waste Oil

The EIA describes that the maintenance of construction machinery to be used within the scope of the Project will be carried out at the nearest vehicle maintenance garage and not on-site. Food for employees will not be cooked within the facility. Therefore, it is not expected to have any industrial or vegetable waste oil to be generated within the project area.

The company is recommended to implement this as standard practice at all Project construction sites.

Biological Environment

According to the EIA Report, there are no potential impacts of the project on flora and fauna species inhabiting the project area and its surroundings. However, since the Report does not

provide current information on the biological characteristics of the area, it is hard to assess the potential impacts of the project without knowing the vulnerability of the existing species composition.

It is proposed in the ESAP to conduct an initial habitats survey at Rahmiye which should confirm the preliminary observations that the project areas are agricultural and industrial lands with no sensitivities. If any sensitive receptors are identified during the initial survey then a more detailed survey with proposed mitigation measures will need to be undertaken.

Socio-economy

Generation of local employment is one of the social benefits associated with the construction activities and should be treated as a positive impact if these construction works are contracted to local companies. Socio-economical impacts of the Project were not well described in the EIA Report, with no discussion of local employment opportunities and impacts on communities of influx of workers. There is also no information regarding the Public Participation Meeting held to inform the stakeholders about the facility to be built in Rahmiye.

According to data gathered from the local authorities by ENVIRON, it has been concluded that there is *no deficit* in labour force supply in the region and that a pool of workers with suitable qualifications is potentially available in the region. However, the considerable expansion that is planned for the Keskinoglu operations will require a significant increase in the Project's demand for skilled and sufficiently qualified workforce and there are concerns about the availability of such numbers and levels of manpower within the area. An extent of regional in-migration of the workforce can therefore be envisaged which may potentially result in some degree of social tension between the local communities and economic in-migrants.

In order to mitigate potential issues of labour, the personnel to be employed in construction and operation stages of the projects, especially those who will work in man-handling based jobs will be employed from project affected regions. Considering the high level of education in the region, employing the personnel to work at positions not based on man-handling from the region seems possible.

Other Issues

The planned site for egg packaging plant and laying houses (18 houses in addition to present 3 houses) at Rahmiye is on agricultural land. According to the information given, permit for the use of this land for poultry production purpose has already been given by the competent authority on the condition that the Company will take necessary precautions/measures in order to prevent any impact to the neighbouring agricultural lands.

In the light of the above given information it can be concluded that the terrestrial habitat has already been impacted/changed due to already built facilities and/or implementation of agricultural activities. An initial habitats survey for the area and the vicinity would be needed to verify the situation (especially regarding existence of any endemic and threatened species in the surrounding sites, particularly within the impact area and on the new construction area, based on the requirements of EIA legislation) as described above.

Also, it is considered that there is no cultural or archaeological assets at the site. In any case, a chance find procedure should be developed and implemented by the Company and/or construction contractors.

During construction, traffic levels will increase due to the delivery of construction materials and personnel, potentially resulting in some deterioration in the quality of roads surfaces, increased risk to pedestrians, and increases in dust and noise, particularly in the rural areas. The construction vehicles will need to pass through and/or nearby villages. Therefore, community safety/traffic management and emission/dust control issues should be covered in the CEMPs to reduce the risks/impacts by considering mitigations such as speed restrictions and covering of trucks during haulage.

Impacts and Mitigation Measures During Operation

During the operational phase, impacts will be typical of those specific to the poultry production industry, including the production of solid waste, wastewater management, emissions to air, ammonia and odours, energy and water resource consumption, hazardous materials and animal diseases.

The sections below provide an overall summary of the potential impacts from the planned Egg-Laying Poultry Facility without the implementation of the mitigation measures/controls during the operation phase and then the possible mitigation measures.

Air Quality

Air emissions from egg production include primarily ammonia (e.g. management of animal waste), odour (e.g. animal housing and waste management) and dust (e.g. feed storage, loading and unloading, and waste management activities). Air emissions also results from transportation of eggs, feed and animals, and from combustion sources (e.g. diesel generators).

Ammonia gas and other sources of odour are generated primarily during the denitrification of manure and can be released at any stage of manure handling process, including through ventilation of buildings and manure storage areas. Ammonia gas levels would be affected by the ambient temperature, ventilation rate, humidity, stocking rate, litter quality, and feed composition.

The amount of ammonia gas to be produced was calculated as 136 kg/hr within the scope of the EIA studies. This amount constitutes the amount of gas which is released as a result of microbiological decay. However, since the manure to be produced will be pelletized before any microbiological decay takes place, the amount of ammonia gas that will be generated will be much less in practice.

The limit values for ammonia gas set by the Regulation on the Control of Industrial Air Emissions will be enforced starting from January 1, 2012. Ammonia measurements will be carried out upon commencement of the operation phase of the Project, and necessary measures will be taken to lower the concentrations if they exceed the limit values.

The siting of the farm is an important factor to reduce the odour impact to the neighbouring settlements. According to the Turkish environmental regulations, the distance of farms to the

settlement areas have to be calculated according to a minimum distance curve based on the mass of the livestock. The distances between the facility units and the settlements in accordance with the Minimum Distance Curve is presented in the EIA Report.

By applying good management practices such as control of temperature and humidity in the houses and daily collection of manure from the houses (where applicable) could reduce the air emissions as well. Moreover, use of odour control systems in the ventilation systems of the houses could also be applied to reduce the odour.

The Company operates two manure processing plants. Therefore, manure generated at the farms is transported daily to the manure processing plants. By this way, there is no need for manure storage within the farms and manure does not kept for long periods in the farms. This reduces the odour problems in the farms.

Use of natural gas reduces air emissions resulting from combustion and natural gas should be preferred where applicable. Fugitive dust control measures such as wetting of frequently travelled dirt roads, as necessary should also be implemented to reduce dust emissions.

The staff who run and manage the farm should be encouraged to wear the necessary personal protection equipment including face masks to reduce the breathing of the dust. There are airbourne pathogens that can affect employees causing breathing issues including asthma. Regular monitoring should take place of the health of the employees that work on the farm (at least twice per year).

Whilst it is not expected by the Company to have any odour impacts on the nearby settlements (the closest of which is Rahmiye Village approximately 2.8km distant), the following mitigation measures will be taken to reduce the concentrations of odour emissions:

- Keeping the distances between the facility units and the settlements in accordance with the Minimum Distance Curve presented in the EIA Report;
- Ensuring the cleanliness and dryness of the facility, especially the cage system;
- Maintaining a ventilation system for the manure drying facility;
- Establishing an impermeable storage platform for the dry manure, and sending the manure to the sanitation centre after it is dried; and
- Placing processing units within closed areas, collecting the waste gases and the air inside these areas to be transferred to a waste gas treatment facility.

Noise

Noise during the operational phase of the Project will result from the operation of motors including fan, manure belt egg belt, egg elevator, conveyor, horizontal manure pellet and vertical manure pallet.

In the event that all noise-generating machinery works at the same time, the sound level was calculated to be 90.33 dB, which decreases down to 2.66 dB in Rahmiye Village, the nearest settlement to the Project area. Therefore, the noise level meets the limit value set by the Turkish Regulation on the Evaluation and Management of Environmental Noise.

Although, it is anticipated that the impact of noise might not be significant in the planned egg production facility, regular maintenance of equipment and vehicles should be undertaken to minimize noise levels and personnel protective equipment should be used within the facility where required.

Water Use

Egg production and packing activities require water for processes, cleaning and cooling. This could cause problems particularly in areas with low water accessibility. If surface water is used, the possible changes in the water flow and quality can have impacts on biological environment as well.

Water during the operation phase of the Project will be used as drinking water for the hens and for egg-laying houses' cleaning activities. Water will also be acquired from wells during the operational phase. Water to be consumed each year during the operational phase was calculated to be 8,960 m^3. This water includes domestic water to be utilized by workers and the amount to be used to clean the egg-laying houses.

For the Rahmiye facility, groundwater would be used for water supply. In this regard boreholes have been and would be opened. Necessary permits for the use of groundwater has already been taken at Rahmiye for the existing boreholes and would be obtained before any exploration from the competent authority for future boreholes. In issuing the permit the groundwater recharge rates and suitability of this water source is checked by the competent authority and the permit is granted accordingly. In any case, measures to reduce water consumption and reduce wastewater generation should be implemented. Consideration should be given to the recycling of uncontaminated water, for example, in truck washing. It is committed by Keskinoglu that any impact on surface and groundwater resources due to project activities will be eliminated and any damage will be compensated, under the Company's responsibility.

Water Pollution

Poultry operations may generate effluents from various sources including runoff from poultry housing, feeding, and watering; from waste storage and management facilities. Waste management activities such as land application of manure, may generate non-point source effluents due to run-off. All types of effluents have the potential to contaminate surface water and groundwater with nutrients, ammonia, sediment, pesticides, pathogens, and feed additives, such as heavy metals, hormones, and antibiotics. Effluents from poultry operations typically have a high content of organic material and consequently a high biochemical oxygen demand (BOD) and chemical oxygen demand (COD), as well as nutrients and suspended solids (TSS). In addition, non-contaminated wastewater from the utility operations, non-contaminated stormwater, and sanitary sewage are other streams that should also be considered.

It is estimated that there will only be domestic wastewater resulting from personnel use since water that will be consumed by hens will be retained in the manure without producing any process-related wastewater. Domestic wastewater will be collected in septic tanks and will be sent to Keskinoglu wastewater treatment plant at the Main Processing Site. The water then will be discharged after assuring that the water quality meets the standards set by the

Turkish Regulation on the Control of Water Pollution (Official Gazette; Date: December 31, 2004, No. 25687) for given parameters like BOD, COD, TSS, ammonium nitrogen, phosphorus, pH, etc. This discharge should also meet EU Council Directive 91/271/EEC concerning urban waste-water treatment, for the quality of the receiving waters (Gorduk Creek).

The following management techniques should be used to reduce the impacts of water run-off from the planned operations: reduce water use and spills from animal watering by preventing overflow of watering devices and using calibrated, well-maintained self-watering devices; install vegetative filters to trap sediment; install surface water diversions to direct clean runoff around areas containing waste; implement buffer zones to surface water bodies, as appropriate to local conditions and requirements, and avoid land spreading of manure within these areas.

Domestic Solid Waste

Domestic solid waste generated during the operation phase of the Project will result both from personnel activities and also due to manure generation at the egg-laying houses. Domestic solid waste will be stored in appropriate containers separately and transferred to the licensed solid waste storage area of the Kayalioglu Municipality.

It is estimated that there will be 60 people working for the Project during its operation phase. The amount of domestic solid waste to be generated was calculated to be 69 kg/day.

At the egg-laying houses, production of 3,530,131 eggs will generate 350 tons of wet manure. As mentioned earlier, the manure will be dried through the manure drying system to about 80%, which will then result in 70 tons of dry manure. Dry manure will be transferred the disposal site with closed conveyors where there is no risk of spill, spread or wind exposure.

Poultry carcasses should be properly and quickly managed as they are a significant source of disease and odours. Therefore, efforts should be given to reduce mortality through proper animal care and disease prevention.

The disposal method of carcasses in the existing facilities of the Company is generally on-site burial. There are pits for this purpose where carcasses are buried with lime. Where applicable, the Company uses its existing rendering facility for the disposal of carcasses after the examination of the carcasses by the vet for biosecurity.

Waste management plan to include storage, segregation and disposal via licensed routes for packaging wastes and other general wastes should be prepared and implemented. Wastes materials that cannot be recycled due to biosecurity issues must be disposed of properly.

Socio-economy

It is anticipated that the proposed facility will positively affect the living conditions of the local population by decreasing unemployment, causing a growth of overall income of the population, improving living standards and by providing additional opportunities for prospective development of rural settlements, implementation of social programs. The intended activity will also have an added value for the regional economy and the area’s

investment attractiveness. However, there is no detailed information on the expected socio-economic impacts of the project, neither there is information on the outcomes of the Public Participation Meeting. However, no significant impacts are expected.

Animal Welfare

The company is recommended to adopt an EU standard for Animal Welfare, which it could be audited against. A suitable system would be GLOBALG.A.P for poultry or DEFRA code of recommendations for laying hens and the DEFRA code of recommendations for meat chickens and breeding chickens.

It should be noted that the Company has already good emergency plans and very good bio-security procedures for its existing poultry production facilities. However although their approach to animal welfare is in line with local standards it will not meet the new EU standards implemented in January 2012.

One of the biggest risks is an outbreak of infectious disease which can ultimately result in some or all of the birds being destroyed. Intensively farmed poultry has little resistance to these diseases. Consequently strict measures are in place and are recommended to be strictly maintained and adhered to to avoid cross contamination between farms and facilities, including controls over the movement of poultry and people, disinfection procedures for people entering and exiting the facilities, for people handling sick or dead birds and for trucks leaving the site (tyre wash and disinfection). Emergency plans are required in the event of an outbreak of disease, in addition to those emergency plans currently in place.

The following recommendations are made in line with EU requirements:

- All individual houses should operate an “all in-all out” system for chickens so that birds are in the same age group. The bird accommodation must be cleaned and disinfected in accordance with written procedures whenever it is emptied;
- Transferring the chickens from the rearing to the laying houses must be done by trained and competent staff to minimise the stress to the birds;
- Stocking densities should be reviewed and enriched cages should be introduced as detailed by new European standards; and
- Some consideration should be given to the feeding of chicken PAP to chickens. This practise has been banned in the EU albeit it is practised elsewhere in the world.

The reputational risk for not implementing the above recommendations can be high, particularly in the event of a high profile disease outbreak or public demonstration (e.g. with regard to cage sizes or feeding of PAP).

The planned facility at Rahmiye would have its own back-up power supply to protect against a loss of power and would also be equipped with an automatic fire detection system and fire hose system. It is recommended that energy monitoring and saving programs to improve energy-efficiency and reduce energy consumption also be built.

The following are proposed activities to be conducted in order to keep the hygiene standards at the facility at a certain level for the welfare of the employees and the animals:

- The entrances to the egg-laying houses will be cleaned and disinfected on a regular basis;
- Employees will only work in their work clothes. They will be required to change their clothes at the entrance to the facility, and shower at designated areas;
- It will be forbidden to accept any guests to the facility. Those who have to enter will also be required to be dressed appropriately. It will also be required that those entering the facility will have their porter check-ups carried out prior to their visit;
- Vehicles entering the facility will be disinfected;
- Windows of the egg-laying houses will be fenced to prevent wild birds entering;
- Vaccination will be carried out in accordance with the programme to combat animal diseases. The efficacy of the vaccines will be tested at licensed laboratories; and
- Dead animals will be collected by competent personnel after taking necessary precautions and sent to Keskinoglu rendering facility on a daily basis.

Provision of a Sanitary Protection Zone (Health Boundary Zone) is a requirement for these kind of poultry production facilities in Turkey. When the planned project is subject to EIA process, during the scoping phase, determination of the width of this zone is required to be included in the EIA report, as a proposed width. This zone is determined by considering the impacts of the project and it is proposed in the EIA report. After the EIA procedure is completed for the planned project, then width of this zone is defined by the competent authorities considering the proposed width in the EIA report.

The Health Boundary Zone for the Egg-Laying Poultry Facility Project was decided to be 40 m from each of the egg-laying houses, within which no structure will be located. This health boundary zone was also marked on the development plan of this region.

Monitoring

An environmental monitoring plan has to be developed to verify the results of the impact assessment and to detect the unforeseen impacts at an early stage to allow corrective measures to be implemented, if needed. Furthermore, primary pollutants emitted from the new facility needs to be monitored.

The monitoring programme should be designed to provide information useful for determining the status of environmental resources affected by the project, to provide information to predict future effects, and to provide information for management decisions on further mitigation activities if observed or predicted impacts are considered unacceptable.

Monitoring Parameters

Generic parameters that need to be monitored are:

- Combustion sourced emissions
- Odour in the vicinity of farm
- Waste management
- Effluent discharge (if to a receiving water body)
- Water quality

- Noise level in the vicinity of the farm
- Resource (water) and energy consumption
- Ammonia, humidity and CO_2 emissions
- Lighting times and accommodation temperatures are monitored and recorded and are included in the documentation that travels with the flock.

6.4 Hatchery

This would be the third unit at this site and no additional impacts that would need a different management than the present units are of concern.

6.5 Egg Breaking and Pasteurization

The wastewaters and wastes that would be generated would go to the present wastewater treatment plant and rendering plant at the adjacent Processing Site. The rendering plant is modern and would therefore be capable of handling the increased material; the Company plans to improve the performance of the wastewater treatment plant in order to meet the increased demand. The electricity would be supplied from the existing co-generation unit so related impacts would not be of concern either.

6.6 Logistics Centre

Increases in the traffic load would be managed through a traffic management plan. However, extra traffic load would not be significant when the Manisa Akhisar state highway is considered connecting the OIZ to the Processing Site and the Main Campus.

6.7 Manure Drying System

Once the pilot plant is proved to be successful, this project would be implemented to cage houses. With the decreased humidity, both the odour problem would decreased and handling/management of manure would be more effective and efficient. This would also contribute to decrease the odour impacts of the fertiliser factory.

6.8 Live Bird Handling Modernization

The company will be able to stack the transport cages on the pallet truck which will reduce the amount of distance the chicken catcher has to walk holding the birds upside down. It also means that the birds can be caught and caged in the barn in a semi dark environment which causes less stress to the birds.

6.9 Layer Rearing (at Kapakli)

6.9.1 Impacts during construction

The EIA Report repeatedly states that there will be no new construction required as part of the conversion of existing broiler breeding facilities to layer rearing facilities, however it is not clear if the following facilities are currently present or will be installed: boiler houses; boiler emission stacks; septic and waste water tanks; external areas surfacing; feed silos; drainage infrastructure. If such facilities are installed, limited impacts typical to any small/medium-scale construction may be expected during their installation.

Air quality

The Project will not involve any excavation or fill activities during the construction phase as the construction activities will be limited to the conversion and improvements to be made to the existing houses and facilities. Additionally, all the improvement works will be conducted indoors (i.e. within the houses). Therefore, air emissions (e.g. dust or gaseous emissions) will not be a concern during the construction phase of the Project.

Noise

Noise generation during the refurbishment of the existing buildings and installation of new plant is not expected to be significant, with the majority of activities taking place indoors or over short time periods.

Water Use

No significant water use is anticipated.

Water Pollution

No significant additional runoff or wastewater discharges are anticipated.

Excavation Waste

Although no excavations are proposed, the refurbishment of existing buildings and installation of new plant items will result in generation of construction type wastes. Such waste will be controlled through the implementation of relevant CEMPs. The CEMPs will include waste management within their coverage and identify the wastes to be generated and the measures to be put in place to manage wastes onsite, in addition to identifying the disposal routes for waste with an emphasis on reuse or recycling of wastes as far as is practicable.

Domestic Solid Waste

Domestic type solid waste generation during the construction stage will be controlled by the CEMP.

Soil Pollution

No significant potential for soil pollution is expected to be associated with the construction period.

Hazardous Wastes

No potential for hazardous wastes to be generated have been identified, however the CWMP will include measures to ensure appropriate identification, control and disposal of any hazardous wastes arising.

Medical Wastes

There will be 10-15 people working during the construction phase of the Project according to the EIA Report. However, since employees will be working for the contractor, it is not planned to establish a medical centre within the facility.

Waste Oil

No potential for waste oils to be generated have been identified, and it is assumed that all vehicle maintenance associated with the proposed development will take place offsite. Similarly the relatively small number of construction workers to be employed indicates that here will not be a requirement to install canteen facilities which may generate waste cooking oil. However the CWMP will include measures to ensure appropriate identification, control and disposal of any waste oils arising.

Biological Environment

The Project will not involve the construction of new or additional facilities or buildings. Therefore, the construction phase of the Project will not result in any adverse impact on the flora and fauna species identified in the baseline flora and fauna surveys.

Socio-economy

There will be 10-15 people working during the construction phase of the Project according to the EIA Report. It is anticipated that these people will be employed by the contractor and are likely to be recruited from the local area, provided the required skills are available.

Other Issues

No evidence for cultural or archaeological assets at the site has been identified in the EIA report. In any case, a chance find procedure will be developed and implemented by the Company and/or construction contractors.

During construction, traffic levels will increase marginally due to the delivery of materials and personnel, potentially resulting in some minor deterioration in the quality of roads surfaces, increased risk to pedestrians, and minor increases in dust and noise, particularly in the rural areas. The construction vehicles will need to pass through and/or nearby villages. Therefore, community safety/traffic management and emission/dust control issues should be covered in the CEMPs to reduce the risks/impacts by considering mitigations such as speed restrictions and covering of trucks during haulage. However it should be noted that these traffic movements are not likely to be significantly more than what the site has generated for a number of years while in use as a broiler breeding facility.

6.9.2 Impacts and mitigation measures during operation

During the operational phase, impacts will be typical of those specific to the poultry production industry, including the production of solid waste, wastewater management, emissions to air, ammonia and odours, energy and water resource consumption, hazardous materials and animal diseases.

The sections below provide an overall summary of the potential impacts from the planned Layer Rearing Facility without the implementation of the mitigation measures/controls during the operation phase and then the possible mitigation measures.

Air quality

In the operation phase, coal fired boilers may cause impacts on air quality due to the emission of air pollutants (i.e. dust, carbon monoxide, carbon dioxide, sulphur and nitrogen oxides) from the stacks of the boilers. 1,000 tonnes of coal is estimated to be used annually. As the facility will be operated for three production cycles and two of these cycles will correspond to summer months, boiler houses will be in use only in one of the production cycles. To minimize the impacts on air quality due to the emissions from the boiler houses, the height of the stacks will be adjusted in line with the requirements of applicable national regulations. In this respect, the height of the stacks will be adjusted to minimum 1.5 m from the highest points of the roof. Mass flow of the pollutants to be emitted from the stacks will meet the regulatory limit values.

The operational activities will not result in dust emissions as the Project does not involve any activity related to the production or handling of materials that may cause dust formation or storage of fine materials (i.e. stockpiles, coal ash) at open areas. Feed to be provided to the birds during the operation phase will be stored in closed silos and the automated feeding system to be located within the closed buildings will not allow the formation of dust emissions. The site roads will also be paved with asphalt or concrete to minimize dust formation due to traffic movements in the Project area.

Odour

Odours at rearing facilities are caused by the birds, their feed and decomposition of manure. If not mitigated, odour emissions may affect the health of both the operation personnel and the birds adversely, especially at hot weather conditions.

If relevant mitigation measures (i.e. proper manure management, ventilation) are not taken, odour emissions may also be an environmental concern as the air inside the houses will be driven out by the fans to ensure air circulation. These fans will start to operate automatically through the sensors that will detect the temperature and humidity levels inside the houses.

In order to minimize the potential for impacts due to odour emissions further, fans will be equipped with hoods to collect the air before it is released to the atmosphere and with water filters to absorb odour causing pollutants in water media. Once the water becomes concentrated with the pollutants causing odour, it will be replaced with fresh water and the wastewater will be collected in dedicated pits for further management.

Additionally, to avoid odour formation, good housekeeping practices will be applied, regular cleaning and disinfection activities will be conducted and manure will not be allowed to accumulate inside the houses. As the dead birds will be transferred to the Rendering Facility on a daily basis, odour emissions due to dead birds will not be a concern in the scope of the Project.

Besides these technical and administrative measures, considering the distances specified in the relevant national regulation regarding the dispersion of odours, odours from the facility

are not anticipated to cause a nuisance 500 m away from the odour source. As the Kayislar village, which is the closest settlement to the Project site, is located at a distance of 2,000 m, the Project is not likely to cause any significant adverse impact from odours. Direction of dominant winds (in the direction of north-east) in the area is favourable to avoid Kayislar village (located on the north-west of the Project site) from the effects of odour formation. Similarly, the rugged terrain between the Project site and the Kayislar village will also act as a physical barrier against the dispersion of odours.

Existing breeding houses were sited with consideration given to the dominant wind direction. Fans to be installed at the converted and improved facility will also consider the effect of winds. Additionally, fans will be positioned at the farthest possible location from the neighbouring Manisa-Akhisar Motorway to avoid the potential for odour impacts along the motorway route.

Noise

Operational units that may cause noise emissions will include the automated manure conveyor belts, components of the feeding system, automated water supply system (in houses), house ventilation fans, and the pressurized water machines. Cumulative noise to be generated by the operation of these units was calculated in the scope of EIA studies. Based on the results of these calculations, the environmental noise level (55 dBA) would be below the day-time regulatory limit value (65 dBA) within the boundaries of the facility even in a case when all the units operates at the same time at same location. The closest settlement to the Project area is Kayislar village, which is located at a distance of 2,000 m. Noise to be generated at the Layer Rearing Facility will attenuate with distance and is estimated to drop below 10 dBA in Kayislar village. Therefore, Project activities are not anticipated to cause any adverse impact on the background environmental noise level of the closest settlement. Additionally, it should be noted that all the Project units will be located in closed buildings so that noise impact of the Project activities will further be minimized. The Project will also comply with the provisions of regulations concerning the assessment and management of environmental noise.

Wastewater & Water pollution

Water to be used by the personnel during the construction and operational phases of the Project will result in the generation of domestic wastewater. Based on the average number of personnel to be employed during the construction and operation phase, amount of domestic wastewater to be produced daily was calculated as part of the EIA studies. In accordance with the applicable national regulations, domestic wastewater to be generated during the construction and operation phases of the Project will be temporarily stored in two non-leaking septic tanks of sufficient capacity. These septic tanks will be emptied once in 2 weeks.

During the operational phase, wastewater generated (process wastewater) as a result of odour mitigation activities will be insignificant as these systems will recirculate water. Fresh water will be introduced to the odour mitigation system every 15 days. Process wastewater to be produced in this system will be collected in non-leaking storage pits to be allocated to each house. These pits will be emptied on a monthly basis.

Water to be supplied to the layer houses and used in garden irrigation works will not result in wastewater generation. Sanitary works and water heating processes at the boiler houses will generate insignificant amounts of wastewater.

Water to be used at boiler houses will also be recirculated. Fresh water will be introduced to the boiler houses as the quality of water becomes unsuitable for the process (i.e. conductivity of water increases), and is anticipated to be required once a year. Wastewater out of the boiler houses will be collected in a designated non-leaking storage pit, which will be emptied on an as required basis. Domestic wastewater accumulated in the septic tanks and process wastewater accumulated in non-leaking storage pits will be emptied by vacuum trucks every 2 weeks for septic systems and as the tanks become full for process wastewater. The wastewaters will be transferred to the wastewater treatment plant located at the premises of another Keskinoglu facility (i.e. Broiler Cutting Plant) in Kayalioglu town of Akhisar district. This wastewater treatment plant operates with the discharge permit obtained from Manisa Provincial Directorate of Environment and Urban Planning (former Directorate of Environment and Forestry) and provides service to other Keskinoglu enterprises. The capacity of the wastewater treatment plant is sufficient to handle the additional wastewater volume to be introduced by the new Layer Rearing Facility, which will form less than 1% of the existing total treatment volume of the plant.

As the manure to be produced at layer houses will not be stored at the facility and transferred to Organic Fertilizer Production Plant of Keskinoglu, leachate formation will not be a concern that may occur at the Project area and affect the groundwater resources adversely.

The Project will manage its wastewaters in line with applicable regulations concerning water pollution control and management. As the septic tanks and the storage pits will be non-leaking, any adverse impact on surface or groundwater resources is not anticipated due to wastewater generation at the Project site.

Solid Waste

Different types of wastes to be generated during the construction and operational phases of the Project are described in the following paragraphs. All types of wastes generated will be managed in compliance with the provisions of applicable regulations in force.

Excavated Materials

As the Project will not involve construction of any additional houses or buildings, generation of excavated materials will not occur.

Domestic Solid Wastes

Personnel to be employed during the construction and operational phases of the Project will generate of domestic solid wastes. Average number of personnel to be employed during the construction and operational phases is estimated to be 10 and 19, respectively. The amount of domestic solid wastes to be produced by these personnel was calculated as part of the EIA studies. These domestic solid wastes will be disposed of at a proper disposal site to be specified by the Muhtar's Office of Kapakli village.

Manure

In the operational phase, the rearing process will result in the formation of manure. Given the large production volume, considerable amounts of manure will be produced at the facility (about 18% of the total manure produced jointly by different Keskinoglu enterprises).

Manure to be produced by birds will not be allowed to accumulate at the layer houses and be removed by conveyor belts. This measure will minimize odour formation. Manure to be collected by the conveyor system will be transferred directly to manure transport vehicles for being sent to the Organic Fertilizer Production Plant of Keskinoglu located on the adjacent plot of Keskinoglu.

In the event that the manure has to be transported to another fertilizer production plant of Keskinoglu, vehicles with sealed containers will be used and the containers will be covered with canvas. These measures will prevent pollution of roads. Processed manure will ultimately be sold as fertiliser.

Dead Birds

The handling of dead birds and the culling process are known to cause significant environmental concerns. The Project will take implement measures (i.e. ensuring favourable conditions in the houses, proper animal care, optimum feeding, vaccination, etc.) to minimize the loss of birds throughout the rearing process. The measures to be taken will aim to keep the mortality rate below 3% (per production cycle), which is the average mortality rate identified for Hy-Line W-36 birds. Dead birds will be collected on daily basis. Dead birds will be transferred daily to Keskinoglu's existing Rendering Plant, located off-site, for processing.

The Rendering Plant provides services to other Keskinoglu enterprises and the additional amount of material to be sent to the Rendering Plant from the Layer Rearing Facility will be negligible.

Coal Ash

The boiler houses to be used to produce heated water will be fired with coal. The combustion process will result in the generation of coal ash. The coal ash will be analyzed for its content in line with the provisions of relevant national regulations and disposed of at landfills suitable for its storage.

Hazardous Wastes

Contaminated packages from chemicals used in disinfection processes will be the only type of hazardous waste at the facility. The amount of chemicals, which will be used once in every production cycle, will be minimized to an optimal level so that insignificant amounts of hazardous wastes will be produced during the operation phase of the Project. These hazardous wastes will be temporarily stored at the facility in designated containers to be located on impermeable surfaces and appropriately labelled. This waste will be collected by companies having relevant licenses from the Ministry of Environment and Urbanization.

Other Wastes

Activities of the Project personnel will also result in the generation of recyclable wastes such as glass, plastic bottles, packaging wastes, etc. in minor amounts, which will be managed in line with the applicable regulations. Other types of wastes (i.e. waste oils, vegetable oils, batteries, medical wastes) are not anticipated to be produced in the scope of the Project.

Socio-economy

The Project will create employment opportunities especially for local unskilled persons. The number of personnel to be employed in the operation phases is estimated to be 19, of which 12 will be unskilled workers. Based on the experience with other Keskinoglu enterprises operating in the region, it is expected that the majority of the personnel to be employed, especially the unskilled workers, will be hired from the local area including the villages of Akhisar district.

Accommodation and food services will also be provided from the resources available in Akhisar district, where the Company is based. The investment in the Project is anticipated to bring significant economic benefits to the region.

The Project is not anticipated to affect the nearby settlements adversely as relevant measures will be taken against the potential impacts (i.e. waste wand wastewater generation, noise, odour, air emissions, etc.) associated with the Project. These measures are summarized under the relevant sections of this section.

Animal Welfare, Health & Hygiene

The following activities and actions will be undertaken to maintain the hygiene standards at the facility at a certain level for the welfare of the employees and the animals:

- The facility will be fenced to avoid the intrusion of wild animals and unauthorised persons.
- The chicks to be reared at the facility will be subject to an initial health check upon their arrival. Chicks will then be vaccinated and only healthy chicks will be taken into cages for further process.
- During the rearing period, veterinary surgeons will control the birds regularly to identify any disease and keep the sick ones in quarantine to avoid the spread of disease among healthy birds.
- Good housekeeping practices and disinfection will be applied against certain diseases.
- All new equipment will be disinfected prior to installation.
- Number of birds to be put in each cage will not exceed the maximum allowable capacity.
- Relevant measures will be taken to effectively control pests (including rats) inside the houses.
- Fly breeding is not anticipated to be a problem in the nearby settlements. Nevertheless, in case such a problem arises due to the Project, the Company will assist by provision of disinfectant spraying.

The EIA has identified bird flu as a potential health concern that may emerge if relevant measures are not taken in the scope of the Project. Measures to be taken to avoid bird flu and its adverse consequences will include the following:

- Chicks to be reared at the facility will be obtained from reliable breeding facilities, which conduct regular and documented health controls and possess legitimate work permits and relevant certificates.
- Wild birds and rodents will not be allowed to enter in the layer houses.
- Feed, water and equipment hygiene will be ensured.
- Layer houses will be subject to periodic cleaning, disinfection, ventilation, and temperature adjustment. It will be ensured that the personnel who will be responsible for taking care of the birds will wear clean and disinfected work clothes, boots, masks, and gloves.
- Entrance to and exit from the facility will be strictly controlled. Guests will not be allowed in houses and around feeding units. Personnel movement within the facility will also be restricted in consideration of hygiene and health aspects.
- Disinfection will be provided by using proper agents. Disinfection applications will cover the vehicles and the personnel to be employed. Disinfection of the personnel will be ensured at the entrance of houses by means of proper adjustments.
- Each house at the facility will be managed by designated personnel and personnel responsible from one of the houses will not be allowed in other houses. All the personnel including the Project management will be required to change their clothes and boots they are wearing as they leave the houses. Similarly, they will not be allowed to enter the houses with daily clothes. Additional work clothes, masks, goggles and gloves will be kept available at the facility.
- Diagnosis of the birds which have died from confirmed or suspected bird flu will be done immediately.
- Dead or sick birds will be culled in a way to avoid spread of disease.

Additional measures are described in the Hygiene and Disinfection Plan of the Company. Measures and procedures specified in this plan will be strictly applied during the operation of the facility.

In accordance with the provisions of applicable legislation, competent authority (i.e. Manisa Special Provincial Directorate) will designate a health boundary zone around the facility in consideration of the potential adverse impacts of the Project on human health and environment, pollution sources, potential for spread of diseases and presence of adjacent lands or existing/planned activities.

6.9.3 Monitoring

An environmental monitoring plan has to be developed to verify the results of the impact assessment and to detect the unforeseen impacts at an early stage to allow corrective measures to be implemented, if needed. Furthermore, primary pollutants emitted from the new facility needs to be monitored.

The monitoring programme should be designed to provide information useful for determining the status of environmental resources affected by the project, to provide information to predict future effects, and to provide information for management decisions on further mitigation activities if observed or predicted impacts are considered unacceptable.

Monitoring Parameters

Generic parameters that need to be monitored are:

- Combustion sourced emissions
- Odour in the vicinity of farm
- Waste management
- Effluent discharge (if to a receiving water body)
- Water quality
- Noise level in the vicinity of the farm
- Resource (water) and energy consumption
- Ammonia, humidity and CO_2 emissions

7 Analysis of Alternatives

An analysis of alternatives is an essential component of an EIA. It provides a justification for a project, considering the need for the project, alternative technologies/project locations and consideration of the 'no project' option.

7.1 Rahmiye

An analysis of alternatives was requested in the project specific EIA format for the planned egg laying and packing facility at Rahmiye, with the appropriateness of these alternatives to be addressed in relation to environmental, social and economic factors. From a review of the Rahmiye EIA report, it is noted that no alternative sites are discussed; the alternatives section summarizes the selected site and commits that state of the art techniques would be used.

Keskinoglu considered a site at Moralilar Village, however this was discounted as was in close proximity to the broiler poultry houses presenting a biosecurity risk. Additionally, it was considered that the noise from the nearby Gölmarmara-Akhisar highway would be disruptive to the laying hens.

Whilst environmental and social concerns have not been explicitly evaluated, they have been taken into consideration with regard to regulatory obligations, protection status and planning status. Specifically, the Rahmiye site was considered a suitable location by Keskinoglu due to it being already in use as a modern egg production facility with suitable conditions for egg production (e.g. meteorological and biosecurity); it is in reasonable proximity to the existing rendering plant, slaughterhouse, feed factory, viol factory and wastewater treatment plant; sufficient space is available for expansion with land already being disturbed for agricultural use; good transport links; local water resources are available at the site (groundwater); it is distant from nearby residential settlements; the realisation of the Project will not cause any involuntary resettlement, or economic displacement or expropriation in construction and operation stages; and there are no known historically important artefacts in the area. The availability of land was also a consideration, in particular the Rahmiye site is already owned by Keskinoglu, therefore negating the requirement for capital outlay or land negotiations.

For the planned egg production expansion and packing facility, the project is utilising western European technologies and good industry practice for intensive livestock/egg production. This approach will result in improved environmental performance and more sustainable production.

In the EIAs the no-action alternatives are also evaluated and reported. In general, when/if the environmental and social impacts can be effectively mitigated, then the benefits of the projects would be considered in evaluation of no-action/no-project alternative. In case the project site has no problems with regard to regulatory limits (e.g. protection areas, etc.) and the potential impacts would be mitigated in a cost effective and environmentally acceptable, and efficient way, the no-action alternative would not be the preferred alternative. However, this was not included in the Rahmiye Egg-Laying Poultry Facility Project EIA Report.

7.2 Kapakli

As the Project is characterised by a change in the existing operation system, consideration of site alternatives was not considered as part of the planning works. Alternatives for the technology to be used at the Layer Rearing Facility were assessed in the scope of the Project.

The alternatives appraisal process focused on the evaluation of the facilities existing at the former Broiler Breeding Facility for their suitability for being used at the new Layer Rearing Facility. Where this evaluation has resulted in a decision that requires the replacement of the existing with new facilities or equipment, alternative technologies were appraised. Technological and environmental advantages have been identified which result in the proposed improvements (i.e. interior spaces in the houses, heating, lighting, manure and process water collection systems, etc.). These improvements aim to establish a facility using cutting-edge rearing technologies that employs modern operational equipment.

8 Emergency Planning

The Company currently has emergency procedures (action plan) on ammonium leakage, wastewater treatment system problems, earthquake and fire. Potential accidents, power failure and machinery breakdown are also considered in the plans. The emergency situations regarding animal welfare and hygiene are considered separately from the general emergency situations.

In the scope of emergency procedures, the emergency situations are defined, the communication under these conditions were described including relevant parties to be informed, trainings for emergency response were planned and the communication with the public is formulated. Mainly fire extinguishers and fire fighting equipments were observed at relevant locations during the site visit.

8.1 Rahmiye

Specific emergency response plans should be prepared for the planned facility. Provision of an emergency action plan (covering construction, operation and closure phases) for the planned facility is generally one of the requirements of the project specific EIA format issued during the scoping phase of the Turkish EIA procedure. This was requested in the project specific EIA format for the planned egg laying and packing facility at Rahmiye.

From a review of the Rahmiye EIA report, it is noted that no relevant details are included in the emergency action plan. The implementation of an emergency response plan has therefore been included as an item in the ESAP. This aims to identify major potential hazards, including spread of diseases, and limit any potential negative impacts.

The emergency action plan should include, but not be limited to, the following issues:

- Purpose
- Mission and Responsibility
- Possible Emergency Situations and Procedures (accidents, fire, earthquake, flood risk, leakage-spill, disease outbreak etc.)
- Emergency Action Flow-Charts
- Contact List for Emergency Situations (Emergency Contacts)
- End of Emergency Situation and Further Actions as well as Recovery

8.2 Kapakli

A framework Emergency Action Plan has been developed as part of the EIA Report for the Kapakli project. Following the start of operations, an on-site Emergency Action Plan will be prepared to minimize the damage that may occur in the event of an emergency situation. This plan will be in force during the operational phase and improved as required.

As part of the Emergency Action Plan an organisational structure will be developed for emergencies to ensure swift and effective response. An on-site risk assessment will be conducted to identify the management procedures that will facilitate emergency response. Emergency warning and communication systems will be installed and response equipment (e.g. fire fighting equipment) will be kept ready at the facility. Additionally, relevant personal

protection measures (e.g. protective clothes and helmets) will be provided in accordance with the Turkish Labour Law.

Regular trainings and emergency drills and exercises will be organised to ensure personnel are familiar with the emergency procedures. Relevant measures will be undertaken to ensure effective coordination between the site personnel and external organisations (i.e. police, gendarmerie, fire station, etc.) at the time of an emergency. Emergency preparedness and response teams will be formed by the facility manager. A first-aid cabinet will also be available at the facility to allow initial response to simple emergency cases.

In case of mass bird deaths, the Project site will be put in quarantine under the supervision of the responsible veterinary surgeons and the relevant authorities will be informed immediately. All entrances and exits to the houses will be blocked. Applicable provisions of the relevant national regulations will be complied with in managing the situation.

9 Cumulative Impacts

An assessment of cumulative impacts requires that *'Risks and impacts will be analyzed in the context of the project's area of influence. This area of influence encompasses, as appropriate…….areas potentially impacted by cumulative impacts from further planned development of the project, any existing project or condition, and other project-related developments that are realistically defined at the time the Social and Environmental Assessment is undertaken; and (iv) areas potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location*.[1]

The cumulative impacts are generally not considered in the EIA studies for poultry production and processing facilities. This is because the EIA studies are much more focused on the site of the specific project and where the impact areas are not coinciding, the impacts are not considered together. In fact, the existing facilities are considered in the EIA for a new project as a part of the baseline environment, which also includes the impacts of these existing facilities. However, future planned facilities are considered in the context that they are included in the investment programs of the state agencies through obtaining the opinions of related governmental institutions regarding the proposed project. In addition, depending on the characteristics of the project and request of the project owner some project components might be evaluated as an integrated project. An example is a production project that would include the new access roads to be built as well as new transmission lines for electricity.

From a review of the Rahmiye and Kapakli EIA Reports, there is no consideration of cumulative impacts. However, based on the location of the facilities and the current use of the sites, it is not expected that there would be any significant cumulative impact apart from the project specific impacts.

If looking at the Project as a whole, the proposed facilities/upgrades are located at scattered locations and implementation of each project has an effect on the other projects since they all serve for increasing output production and it is a chain process starting from breeding to end product. Thus, even these projects can be assessed together in the form of cumulative assessment. Particular issues worthy of consideration include:

- Increased traffic movements
- Management of manure (and in particular the availability of agricultural land to accommodate manure)
- The risks of cross contamination between sites and facilities to prevent the spread of infectious disease between animals (including disposal of diseased animals)
- Pressure on infrastructure (roads, rail, waste reception facilities, healthcare providers)
- Socio-economic impacts including employment and inflationary pressures

[1] IFC Performance Standard 1, Social and Environmental Assessment and Management Systems

- Water use
- Air emissions including odours.

The cumulative impacts in general have to be addressed based/focused on the sensitive environment to be impacted. Thus, an impact/influence area has to be defined such that it is under pressure from various activities. In this regard, neither of the impact areas of the proposed activities discussed above seem to have such a pressure from more than the proposed project. In the EIAs of further Project proposals the above mentioned potential issues might be considered in terms of cumulative impacts as well.

When it is assessed from more of a macro scale, there might be impacts on the traffic load. This would mainly be of concern for the main roads in terms of cumulative impacts. The proposed processing facilities are on main highways so the increase in traffic load is not expected to create significant impact on the capacity of these highways.

With regard to manure management, the Company already operates two manure plants and produces fertilizers and their estimation is that they have sufficient means to manage the manure to be produced.

In all its facilities the Company conducts serious biosecurity measures to minimize any risk of cross contamination and the regulatory distances to residential areas and other such facilities are considered for establishing such facilities. Thus, it can be anticipated that this risk in terms of cumulative impacts would be minimized.

The pressure on existing infrastructure might be the main concern in terms of cumulative effects. However, during the site visit the Company representatives stated that especially for waste and wastewater management there is already sufficient capacity in the available facilities. In this regard there would some pressure on traffic, but the main highways are expected to carry these loads without significant risks.

The socio-economic impacts mentioned in the previous sections already considers the whole district so it can be counted to consider these impacts to a degree. The impacts on water use is one of the important issues for the whole region, but all boreholes used for water extraction from groundwater is permitted by the State Hydraulic Works as the competent authority for use of water resources. In issuing these permits they have to take the water availability and overall use in the area. Thus, this issue is thought to be considered in this permitting process.

10 Labour Requirements

All the procedures regarding the personnel and working conditions in Keskinoglu are determined in compliance with Labour Law numbered 4857 and regulations established in line with this law. These legislations meet the standards of ILO Contract and PR2. However, what the Company lacks within the framework of these standards has been determined to be the absence of a formal complaint mechanism intended for its personnel.

10.1 National and International Requirements

National legislation has been given in section 2.1 and comments on the Company's existing human resources practice is given in Table 3.

Table 3. Coverage of the Existing Human Resources Practices

Evaluation Criteria	Convenience of the PR2	Comments
Non-discrimination and equal opportunity	applicable	Good
Gender equality	applicable	Good
Bullying and harassment	applicable	Good
Family-friendly work practices	applicable	Good
Employment of young persons under age 18	applicable	Good
Wages (wage level, normal and overtime)	applicable	Normal
Equal pay for work of equal value	applicable	Good
Overtime	applicable	Normal
Working hours	applicable	Normal
Benefits	applicable	Normal
Grievance mechanism for workers	not applicable	Grievance mechanism should be developed
Trade union recognition	applicable	Bad (not organize any trade union in Keskinoglu working place)
Collective bargaining	applicable	Bad (not organize any trade union in Keskinoglu working place)
Health and safety	applicable	Normal (better monitoring is needed)

It has been observed that working hour rules prescribed by the working laws of the Republic of Turkey are obeyed. While blue-collar employees earn their income by working a total working time of 45 hours a week, the white-collar employees work 40 hours per week to earn their income. These working times differences between blue and white collars are in compliance with the Turkish laws.

Overtime work is subject to payment. Both white-collars and blue-collars are paid for each extra working hour that goes beyond the number of legal weekly working hours. Overtime is

not an obligation; it is optional. During short talks with Keskinoglu employees, it has been stated that they work overtime at their own will and in accordance with their workload and that they are paid for these overtime sessions.

It was stated by the Keskinoglu representatives that the wages of the employees in the Keskinoglu Group are determined in accordance with expertise of the employee and the character of the job and seniority. The wages of blue and white collar employees working for the Keskinoglu vary in this sense. The wages of the employees are determined in accordance with the general wage policy adopted in Turkey in the public and relevant private sectors.

It is obvious that labour wages applied in whole Turkey are lower in comparison to the examples in Europe. However, although Keskinoglu cannot match European standards in terms of purchasing power parity, it applies a wage policy higher than the standards of Turkey.

Any gender-based differentiation between men and women working for Keskinoglu Group in terms of payment has not been observed. Salaries for blue-collar jobs in the Keskinoglu Group range from 700 TL to 2000 TL according to employees' jobs and seniority levels. Salaries for white-collars and white collar jobs in the Keskinoglu Group range from 1,500 TL to 14,000 TL according to employees' jobs and seniority levels.

It has been observed that both blue-collar and white collar employees serve in accordance with ILO agreements and the legislations of the Republic of Turkey.

10.2 Occupational Health and Safety

The documentation held by the company fully complies with the requirements of EBRD regulations. The company developed occupational risk assessment for all the workplaces and conducts periodic monitoring of occupational exposure levels. Training provided to the employees appears to be effective, as no major accidents have been reported since 2008.

Regardless of the fact that it might lead to the loss in labour force, all industrial accidents are recorded. All the statistics of accidents occurred since 2008 has been reviewed. The most common type of industrial accidents is falls due to slippery floors. Keskinoglu has taken various precautions to reduce the risk of this kind of accidents. One of these precautions is floor clasping boots which is thought to reduce the slips originated from slippery floors. These boots are being used since 2011 in Keskinoglu's workplaces. Considering the accident statistics, it has been concluded that Keskinoglu have taken all the necessary precautions to prevent industrial accidents. However, the major problem is that almost no subcontractors that Keskinoglu made contracts for its on-going construction activities comply with the standards of work safety. Keskinoglu has to include a binding liability regarding work safety in the contracts made with subcontractors performing their construction activities and has to annul the contracts made with firms that don't fulfil these obligations.

However, from site inspections undertaken at a selection of currently operational Keskinoglu facilities, various poor H&S practices were observed including:

- Maintenance workers not using appropriate equipment to work at height;

- Lack of traffic controls or segregation of traffic and pedestrians on operational sites (including truck movements at the feed mill);
- Various trip hazards;
- Lack of PPE for contractors (no hats, protective boots or gloves were being used in areas observed); and
- Lack of PPE for farm workers (no masks or glasses were worn)

These poor H&S practices expose workers and visitors to an increased risk of accidents, including risk serious of injury. These therefore need to addressed immediately. The ESAP describes the following actions:

- Provide safe working conditions on-site including enforcement of the requirements to use personal protective equipment (head, hand and foot protection) by all workers involved in construction, operation and / or maintenance teams;
- Development and implementation of traffic management plan; and
- Undertake periodic safety inspections in accordance with national requirements.

11 Summary

The Project is largely concerned with the expansion and upgrade of existing sites and activities. It is considered that the Project has the potential to generate a number of adverse social and environmental impacts although these will be either short-term and/or relatively minor if managed properly.

The key negative impacts are presented in the table below along with a general summary of mitigation measures and actions required to address the impacts.

Table 4. Summary of Impacts and Mitigation Measures

Potential Impact	Actions/Mitigation Measures
Demolition and construction activities	Preparation and implementation of CEMPs and monitoring
Animal welfare	Animal welfare policies need to be addressed and the new EU polices need to be incorporated to meet the higher standards being introduced in Jan 2012.
Groundwater and soil contamination	Obtaining permits and regular monitoring.
Emergency response measures	Establishment of emergency response plans (including assignment of teams) for each facility.
Air emissions, including odours	Installation of relevant systems for management of especially odours and regular monitoring.
Water use and waste water treatment	Establishment of a program for decreasing/efficient water use and monitoring of influent quality; recycling of non-contaminated water; proper treatment and disposal of wastewaters and monitoring of effluent quality
Social Impacts	Implementation of the Stakeholder Engagement Plan, and establishment and implementation of a formal grievance mechanism

The environmental assessment work identified a number of potential impacts that require careful management through the preparation of new programmes or specific actions. These are captured in the ESAP (Annex A).

As an overall measure the Company should establish an environmental and social management system and obtaining a certification would be beneficial in terms of sustainability of such a system.

References

Ref 1. Turkish Environmental and Health and Safety Regulation, especially Turkish EIA Regulation (Official Gazette No. 26939 on July 17, 2008)

Ref 2. EBRD Environmental and Social Policy, 2008.

Ref 3. IFC EHS Guidelines for Poultry Processing, April 2007

Ref 4. IFC EHS Guideline for Poultry Production, April 2007

Ref 5. EBRD Sub-Sectoral Environmental and Social Guidelines: Poultry Production

Ref 6. Documents obtained from Keskinoglu during the Site Visit

Ref 7. Egg-Laying Poultry Facility EIA Report, September 2011

Annex A: Environmental and Social Action Plan



Environmental & Social Action Plan
Keskinoglu Project,

Prepared for:
EBRD
London

Prepared by:
ENVIRON
Bath, UK

Date:
August 2012

Project or Issue Number:
UK14-17009

ENVIRON

Contract/Proposal No:	UK14-17009/ EBRD Project ID C22349
Issue:	05
Author (signature)	Maeve Fryday 
Project Manager/Director (signature):	Niall Smiddy 
Date:	August 2012

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VERSION CONTROL RECORD				
Issue	**Description of Status**	**Date**	**Reviewer Initials**	**Authors Initials**
A	First draft	01.09.11	-	SG

01	First issue to Client	02.09.11	NPS	SG
B	Second draft – Phase A, Tranche 1	11/10/11	NPS	SG
02	Second issue to Client – Phase A, Tranche 1	17/10/11	NPS	SG
03	Third issue following client comments, Phase A, Tranche 1	28/10/11	NPS	SG
04	Fourth issue, Phase A, Tranche 1	01/12/11	NPS	SG
4A	Third draft to incorporate information from Kapakli EIA Report	07/08/12	NPS/NS	MF
05	Final issue to Client	07/08/12	NPS/NS	MF
05	Final issue for translation	23/08/12	NPS/NS	MF

Environmental and Social Action Plan (ESAP)

Introduction

This Environmental and Social Action Plan (ESAP) presents actions to be undertaken by Keskinoglu to manage potential environmental, occupational health and safety, and social impacts during construction and operation of the Project activities. The actions are divided into environmental, social, health and safety actions and are applicable to all relevant Keskinoglu facilities and operations, unless specified otherwise. Keskinoglu will take responsibility for the implementation of the actions and report the status of each to the EBRD on a regular basis (as agreed with EBRD).

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
1	**EHS Management and Training**						
1.1	Develop and implement a corporate Environmental Management System (EMS).	Optimisation of environmental management through a formalised system.	EBRD PR1 Best international practice.	Own resources, external consultants. The Company is responsible.	By mid-2013	Develop an EMS. Attain ISO 14001 or equivalent. Annual EHS Report to the Bank	As part of overall company improvement.
1.2	Appoint a responsible environmental and occupational health and safety manager(s)/team.	Provide resources for training and monitoring of emissions.	EBRD PR 1 Best international practice.	Internal management. The Company is responsible.	By end 2012	Appointment of manager/team.	As part of overall company improvement.
1.3	Provide training for designated staff (e.g. shift managers) on environmental topics (e.g. waste management and spill prevention)	Improved environmental awareness and environmental management across all staff.	EBRD PR 1 Best international practice.	Internal management; possible external training consultants. The Company is responsible.	By mid 2013 with training repeated every 6 months.	Production of training records.	Can be included within the EMS.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
1.4	Implement a programme of Construction Environmental Management Plans (CEMPs) for all construction activities. To include the implementation of environmental controls for construction works to reduce/control impacts to ground and groundwater of spills, control waste generated and promote re-use of materials.	Improved environmental awareness and environmental management for contractors. Reduction of risk of impact to environment. Resource conservation and energy efficiency.	EBRD PR 1, PR3. Best international practice.	Internal management, possible external consultants. Company and contractors responsible.	Prior to and during all construction projects.	Production of CEMPs for all construction projects.	
1.5	Implement a regular programme of audits and monitoring for building contractors.	Assessment of contractor performance. Improved environmental awareness and environmental management for contractors.	EBRD PR 1 Best international practice.	Internal management. The Company is responsible.	During all construction projects.	Production of audit programme and reports.	Can be included within the EMS.
1.6	Complete all required EIA works and studies for the Kapakli project.	To ensure compliance with national regulations and EBRD requirements.	National environmental regulation (Turkish Regulation on Environmental Impact Assessment) EBRD PR 1	Internal management and external consultants. The Company is responsible.	Prior to construction.	EIA Positive Decision obtained from the Ministry of Environment and Urban Planning and acceptance from EBRD for financing the Project.	The Final EIA Report for Kapakli has been approved by the Ministry. Under normal conditions, this guarantees the issuance of EIA Positive Decision by the Ministry.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
1.7	Establish procedures to monitor the implementation performance of identified actions and record progress.	To ensure compliance with national regulations and EBRD requirements. To correct and improve performance.	EBRD PR 1 Best international practice	Internal management and the Company is responsible.	During construction and operation.	Production of records and monitoring reports.	Third parties consisting of specialists might be involved to perform monitoring activities.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
2	**Environmental**						
2.1	Obtain environmental permits for the Rahmiye and Kapakli Facilities. Comply with permit requirements.	To ensure compliance with permitting regulations.	National environmental permitting regulations; EBRD PR 3	Internal management. The Company is responsible.	Prior to operation as applicable.	Receipt of permits from authority.	
2.2	Develop and implement a water reduction programme to lower water consumption and reduce waste water generation.	Reduces exposure to water restrictions, particularly at the slaughterhouse and processing facility where there are limits imposed on the abstraction of water from the site boreholes. Resource conservation.	EBRD PR 3 Best international practice.	Internal management with resources from external consultants; within construction costs. The Company is responsible.	During the design phase, then continuous annual improvement.	Production of assessment report, implementation of reduction programme.	Can be included within the EMS as an ongoing improvement.
2.3	Develop and implement a waste management plan to include storage, segregation and disposal of all solid waste via licensed routes.	To ensure compliance with waste regulations and prevent releases of company generated wastes to the receiving environment. Resource conservation.	National environmental regulations. EBRD PR 1 and PR 3. Best international practice.	Internal management. The Company is responsible.	On commencement of operation.	Production of an assessment report, implementation of a reduction programme.	Can be included within the EMS.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
2.4	Develop and implement a hazardous waste management plan for handling, storage, use and disposal of flammable substances to be used.	To ensure compliance with national regulations and EBRD standards. Reduces the risk of accidental release of hazardous materials in to the environment.	EBRD PR 3 Best international practice	Internal management. The Company is responsible.	During construction.	Production of an assessment report.	
2.5	Provide all oil/diesel tanks with secondary containment to comply with international standards.	Reduces liability of accidental release of materials into the environment.	EBRD PR 3 Best international practice.	Within construction costs. The Company is responsible.	As part of the construction works.	Include in bank report once completed.	
2.6	Develop and implement an energy monitoring and saving programme to improve energy-efficiency at all sites.	Improved energy efficiency and cost savings.	EBRD PR 3 Best international practice.	Internal management with external consultants; within construction costs. The Company is responsible.	During the design phase, then continuous annual improvement.	Production of assessment report, implementation of reduction programme.	Can be included within the EMS as an ongoing improvement.
2.7	Implement an emergency response action plan to identify major potential environmental hazards.	To be prepared for potential uncontrolled environmental releases. To ensure compliance with the EBRD requirements.	EBRD PR 4 Best international practice.	Internal management with external consultants. The Company is responsible	During construction and operation	Production of an emergency action plan, regular testing of this plan and implementation of the plan when required.	

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
2.8	Develop and implement an environmental monitoring programme. Include odour monitoring in line with 2012 Odour Regulations.	An environmental monitoring programme will serve to ensure that all appropriate parameters are properly monitored.	EBRD PR3 Best International Practice	Internal Management . The company is responsible	During construction and operation	Production of a comprehensive monitoring programme that is adhered to.	This programme should form part of the EMS. It is suggested that the following parameters are monitored; - Annual monitoring of air emissions from point sources - Fortnightly monitoring of WWTP effluent. - Sampling of septic tank effluent prior to collection. - Six monthly sampling of poultry dust levels. - Annual monitoring of noise levels within the production areas.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
2.9	Improve the WWTP performance	To reduce environmental impacts and to ensure compliance with EBRD requirements, e.g. pollution prevention.	EBRD PR3	Internal Management - The company is responsible	Within six months after signing of the Loan Agreement	Success to be based on reduced specific effluent volume, e.g. m^3 effluent/tonne of production and improved effluent quality.	This action should be undertaken in conjunction with action 2.2, water management programme. Actions to be taken include; - Reinstate chemical treatment to improve effluent quality
2.10	Implementation of drainage management measures	To manage surface run-off and/or storm water.	Best international practice.	The Company is responsible.	During the design phase; As part of construction works for new developments.	Check of design and coordination of construction works.	

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
3	**Biological**						
3.1	Identify the habitats of flora and fauna elements to be affected by Rahmiye project activities.	To determine potential impacts of the project on natural habitats and species inhabiting these habitats.	National and international agreements. EBRD PR 6	Internal management with external consultants. The Company is responsible	Prior to the onset of construction	Preparation of reports on characteristics of habitats and records on existing species composition.	Conduct an initial habitats survey which should confirm the preliminary observations that the project areas are agricultural and industrial lands with no sensitivities. If any sensitive receptors are identified during the initial survey then a more detailed survey with proposed mitigation measures will need to be undertaken. Flora and fauna surveys were conducted at the Project area in the scope of Kapakli EIA studies.

3.2	If the initial survey in 3.1 identifies sensitive receptors then a wildlife management plan to reduce impact on flora and fauna species should be implemented.	To ensure protection of the biological environment throughout the project cycle	National and international agreements. EBRD PR 6	Internal management with external consultants. The Company is responsible	Prior to the onset of construction	Coordination with the contractor during construction works.	The Kapakli EIA Report does not identify any species of higher sensitivity.
3.3	If the initial survey in 3.1 identifies sensitive receptors then a monitoring plan for species of higher sensitivity should be implemented.	To assure sustenance of vulnerable flora and fauna populations	National and international agreements. EBRD PR 6	Internal management with external consultants. The Company is responsible	Through construction and operation	Preparation of monitoring reports	The Kapakli EIA Report does not identify any species of higher sensitivity.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
4	**Social**						
4.1	Implementation of the SEP.	Improved relations with the community and stakeholders and decreased complaints.	EBRD PR 10 Best international practice.	Keskinoglu will take overall responsibility for consultation with all stakeholders in relation to the Project and will use available resources to ensure that all consultation activities are conducted to the appropriate standard. Keskinoglu will form an SEP Team in charge for stakeholder engagement	By the end of 2012 and on an ongoing basis as required.	A suitable set of key performance indicators (KPI) will be used by Keskinoglu to monitor stakeholder engagement. Disclosure of a Non-Technical Summary and the ESAP.	Can be included within the EMS.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
4.2	Establish an effective grievance mechanism.	Ensure proper response to stakeholders' concerns.	EBRD PR 10 Best international practice	The Company is responsible to establish a procedure in order to receive and respond to comments, concerns, questions, etc coming from various stakeholders.	Throughout the project cycle	Records of concerns and relevant responses.	
4.3	Review the HR policy and update as required in line with EBRD requirements.	Ensure EBRD and EU best practice requirements are complied with.	National regulations EBRD PR2 Best international practice.	The Company is responsible.	By the end of 2012 and on an ongoing basis as required.	Production of updated HR policy and dissemination to all staff.	
4.4	Cultural Heritage - develop a chance find procedure and require implementation by all contractors.	Protect potential local cultural assets from adverse impacts of project activities and avoid penalties due to relevant legislation	National regulations EBRD PR8 Best international practice.	The Company is responsible.	Develop prior to construction. Implement during construction.	Monitoring reports during construction.	As part of the development plans.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
5	**Health and Safety**						
5.1	Provide safe working conditions on-site including enforcement of the requirements to use personal protective equipment (head, hand and foot protection) by all workers involved in construction, operation and / or maintenance teams.	Decreased work accidents and increased productivity. Decreased liability with regard to national legislation.	National regulations EBRD PR2	The Company is responsible.	During construction and operation	Regular monitoring and monitoring reports	Can be included within the EMS.
5.2	Development and implementation of traffic management plan.	Decreased accidents and improved efficiency.	EBRD PR 2 Best international practice.	The Company is responsible.	During construction and operation in the facilities and connecting to the main roads	Traffic management plan and regular monitoring reports.	Can be included within the EMS
5.3	Undertake periodic safety inspections in accordance with national requirements.	Decrease accident and emergency risks and improve readiness to emergency situations.	National regulations EBRD PR 2 Best international practice.	The Company is responsible.	During construction and operation	Regular monitoring and monitoring reports	Can be included within the EMS.

5.4	Implement a hygiene plan for workers and the working environments.	Decrease the risk of any poultry-related infectious disease.	EBRD PR 2 Best international practice.	The Company is responsible	Ongoing during operation	Regular monitoring and check-ups.	Can be included within the EMS.
5.5	Implement monitoring and best practice measures for the reduction of risk from poultry dust explosion.	Reduction of risk from poultry dust explosion.	Best international practice.	The Company is responsible	Ongoing during operation	Regular monitoring and check-ups.	Can be included within the EMS.

No	Action	Environmental Risks Liability/ Benefits	Legislative requirement/ EBRD and IFC performance requirement/ Best practice	Investment Needs /Resources/ Responsibility	Timetable Action to be Completed by End of Year	Target and Evaluation Criteria For Successful Implementation	Comment
6	**Animal Health**						
6.1	Develop and implement a hygiene plan to avoid spread of diseases amongst animals.	Avoids any form of cross contamination with other facilities.	Regulation (EC) No 854/2004	Internal management. Company is responsible.	Ongoing during operation	Regular monitoring and preparation of monitoring reports, animal records.	
6.2	Develop and implement an emergency plan in case of a disease outbreak.	To prevent further spread of the disease.	Regulation (EC) No 854/2004	Internal management. Company, especially veterinarians are responsible.	Ongoing during operation	Production of an emergency action plan, testing of this plan and implementation of the plan when required.	

Annex B: Applicable Environmental Regulations and Standards

- Regulation on the Control of Packaging Wastes, Official Gazette date: August 24, 2011, No: 28035.
- Regulation on the Control of Waste Batteries and Accumulators, Official Gazette date: August 31, 2004, No: 25569.
- Regulation on the Control of Waste Oils, Official Gazette date: July 30, 2008, No: 26952.
- Regulation Concerning the General Principles of Waste Management, Official Gazette date: July 5, 2008, No: 26927.
- Regulation Concerning the Landfill of Wastes, Official Gazette date: March 26, 2010, No: 27533.
- Regulation Concerning the Incineration of Wastes, Official Gazette date: October 6, 2010, No: 27721.
- Regulation on the Control of Waste Vegetable Oils, Official Gazette date: April 19, 2005, No: 25791.
- Environmental Impact Assessment Regulation, Official Gazette date: July 17, 2008 and No: 26939.
- Environmental Auditing Regulation, Official Gazette date: November 21, 2008 and No: 27061.
- Regulation Concerning Environmental Landuse Plans, Official Gazette date: November 11, 2008 and No: 27051.
- Regulation on Permits and Licenses that are to be obtained in accordance with the Environmental Law, Official Gazette date: April 29, 2009, No: 27214.
- Regulation on the Assessment and Management of Environmental Noise, Official Gazette date: June 4, 2010, No: 27601.
- Regulation on the Control of Exhaust Emissions, Official Gazette date: April 4, 2009, No: 27190.
- Regulation Concerning the Increase of Efficiency in the Usage of Energy and Energy Resources, Official Gazette date: October 25, 2008, No: 27035.
- Regulation on the Control of Excavation Materials, Construction and Demolition Wastes, Official Gazette date: March 18, 2004, No: 25406.
- The Regulation on Assessment and Management of Air Quality, Official Gazette date: June 6, 2008, No: 26898.
- Regulation on Air Pollution Control Sourced from Heating, Official Gazette date: January 13, 2005, No: 25699.
- Solid Wastes Control Regulation, Official Gazette date: March 14, 1991, No: 20814.
- Regulation on the Control of Waste Tires, Official Gazette date: November 25, 2006, No: 26357.
- Regulation Concerning the Decrease of Ozone Depleting Substances, Official Gazette date: November 12, 2008, No: 27052.
- Regulation on the Control of Polychlorinated Biphenyl and Polychlorinated Terphenyls, Official Gazette date: December 27, 2007, No: 26739.
- Regulation on Air Pollution Control Sourced from Industry, Official Gazette date: July 3, 2009, No: 27277.

- Water Pollution Control Regulation, Official Gazette date: December 31, 2004, No: 25687.
- Regulation on the Protection of Wetlands, Official Gazette date: May 17, 2005, No: 25818.
- Hazardous Waste Control Regulation, Official Gazette date: March 14, 2005, No: 25755.
- Regulation on the Control of Pollution Caused by Dangerous Substances, Official Gazette date: November 26, 2005, No: 26005.
- Regulation Concerning the Classification, Packaging, and Labeling of Dangerous Substances and Preparations, Official Gazette date: December 26, 2008, No: 27092, repeated.
- Regulation on the Control of Medical Wastes, Official Gazette date: July 22, 2005, No: 25883.
- Regulation on the Control of Soil Pollution and Polluted Areas by Point Sources, Official Gazette date: June 8, 2010, No: 27605.
- Regulation Concerning Water for Human Consumption, Official Gazette date: February 17, 2005, No: 25730.
- Regulation on Pit Opening Where Sewer System Construction is not Applicable, Official Gazette date: March 19, 1971, No: 13783.
- Regulation Concerning the Facilities to be Constructed and Opened on State Highways, Official Gazette date: May 15, 1997, No: 22990.
- Regulation on the Environmental Noise Emission caused by Equipments used Outdoors, Official Gazette date: December 30, 2006, No: 26392 (4th repeated).
- Regulation for Starting up and operating a Work Place, Official Gazette date: August 8, 2005, No: 25902.
- Regulation on Occupational Health and Safety, Official Gazette date: December 9, 2003, No: 25311.
- Noise Regulation, Official Gazette date: December 23, 2003, No: 25325.
- Heavy and Hazardous Works Regulation, Official Gazette date: June 16, 2004, No: 25494.
- Regulations on Methods and Essentials of Work Health and Safety Training for Workers, Official Gazette date: April 7, 2004, No: 25426.
- Manual Load Handling Regulation, Official Gazette date: February 11, 2004, No: 25370.
- Health and Safety Signs Regulation, Official Gazette date: December 23, 2003, No: 25325.
- Regulation Concerning the Use of Personal Protection Equipments at Workplaces, Official Gazette date: February 11, 2004, No: 25370.
- Regulation on Health and Safety Measures in the Use of Work Equipments, Official Gazette date: February 11, 2004, No: 25370.
- Communiqué on Hazard Classes List related to Occupational Health and Safety, Official Gazette date: November 25, 2009, No: 27417.
- Cabinet Decision (Decision Date: December 4, 1973, Decision No: 7/7583), Ordinance on Occupational Health and Safety, Official Gazette date: January 11, 1974, No: 14765.
- Regulation Concerning Operation Certificate, Official Gazette date: December 4, 2009, No: 27422.
- Regulation on the Protection of Buildings from Fire, Official Gazette date: December 19, 2007, No: 26735.
- Ordinance on Precautions Required in Workplaces Working with Flammable, Explosive, Dangerous, and Harmful Substances, Official Gazette date: December 24, 1973, No: 14752.

- Regulation on Protecting Workers from Hazards of Explosive Environments, Official Gazette date: December 26, 2003, No: 25328.
- First Aid Regulation, Official Gazette date: May 22, 2002, No: 24762.
- Vibration Regulation, Official Gazette date: December 23, 2003, No: 25325.

Annex C: Map showing the Locations of Facilities

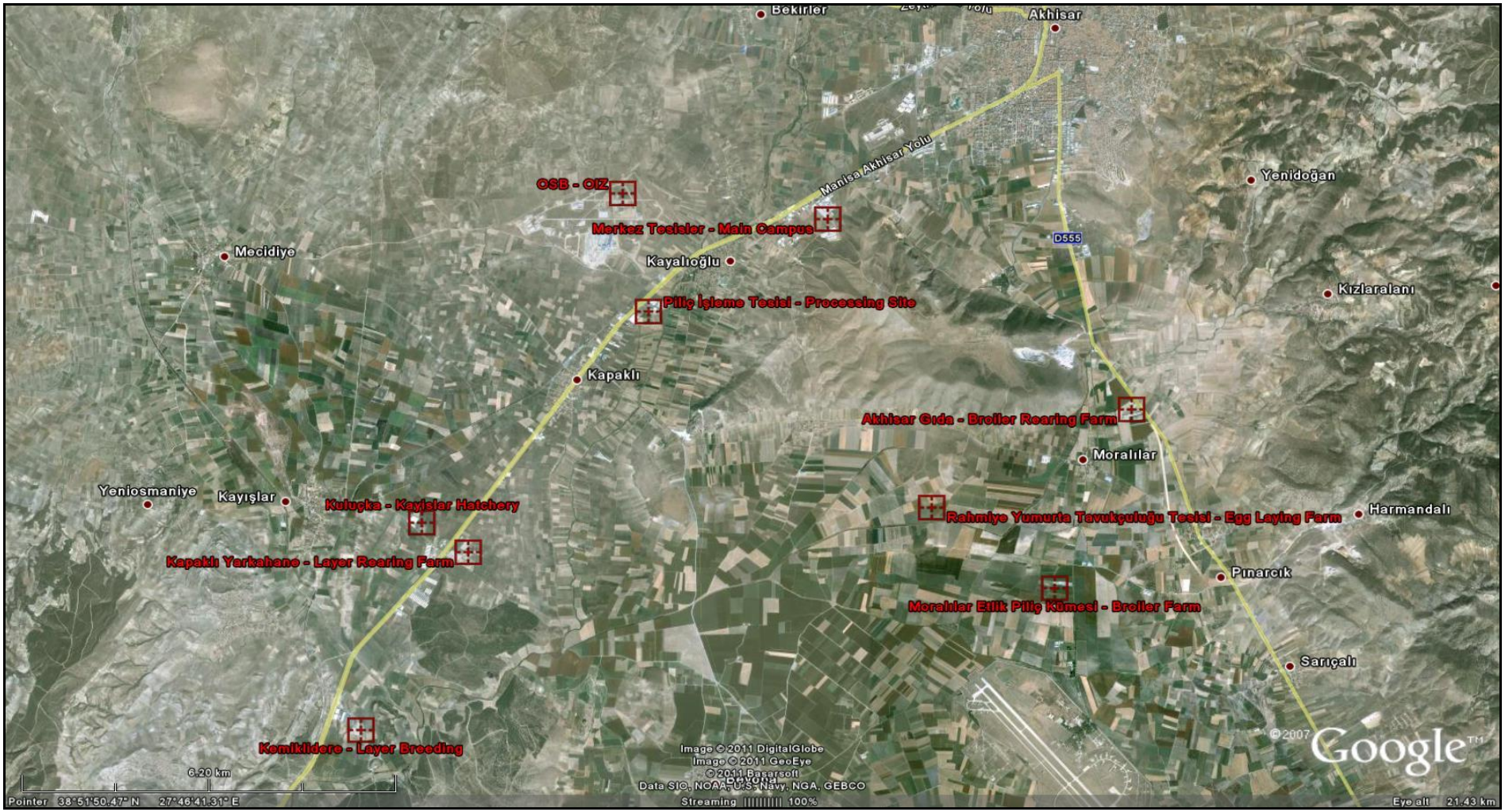

Figure 1. Locations of Keskinoglu Sites