MIDSEFF

European Bank
for Reconstruction and Development

Final Report

Mid Size Sustainable Energy Financing Facility (MidSEFF)

Geres Wind Power Plant:
Non Technical Summary (NTS)

May 2013

MWH
BUILDING A BETTER WORLD

D'APPOLONIA

RINA
GROUP

GFA
ENVEST

Frankfurt School of
Finance & Management
Bankakademie | HfB

Final Report

European Bank for Reconstruction and Development

Geres Wind Power Plant: Non Technical Summary (NTS)

May 2013

The European Bank for Reconstruction and Development (EBRD) launched in January 2011 a financing facility aimed at scaling up Renewable Energy and Energy Efficiency investments in Turkey, to increase the country's energy savings and decrease its carbon emissions. The Turkish Mid Size Sustainable Energy Financing Facility (MidSEFF) launched by the EBRD with support from the European Investment Bank (EIB) and European Commission (source of the Technical Cooperation funds) will provide a total of EUR 975 million in loans through 7 Turkish banks for on-lending to private sector borrowers.

This publication has been produced under the Mid Size Sustainable Energy Financing Facility which received a financial assistance from the European Union. The content of this publication is the sole responsibility of the Consortium and can in no way be taken to reflect the views of the EU or the EBRD.

Project Name: Geres WPP - Non Technical Summary (NTS)				Controlled Copy	
Rev. N.	**Date**	**Description Amendment**	**Edited by**	**Revised by**	**Approved by**
00	3rd May 2013	Final Report	S. Demir	M. Solari	M. Mancini

Table of Contents

1. General Plant Description

This investment project consists of construction of a wind power plant in the Northern Aegean Region of Turkey. The project is located in Manisa Province, Kırkağaç District, Güvendik village, Dazlankıranı location (see wide scale location in the maps below).

Geres WPP project is intended for energy generation purpose and includes the following main project items:

- 11 production units;
- power house
- energy transmission line.

The project for the realization of the 27.5 MW Geres wind farm is located in the western Turkey, at the northern border of Manisa Region, about 6.0 km North East from the town of Gelenbe disrict. The final configuration of the plant consists of no.11 production units, model Nordex N90/2500 HS, located in a single array which follows the natural development of the site's ridge at altitudes ranging about from 530 m to 690 m above sea level.

In the table 1- 1 is summarised the key aspects of the project.

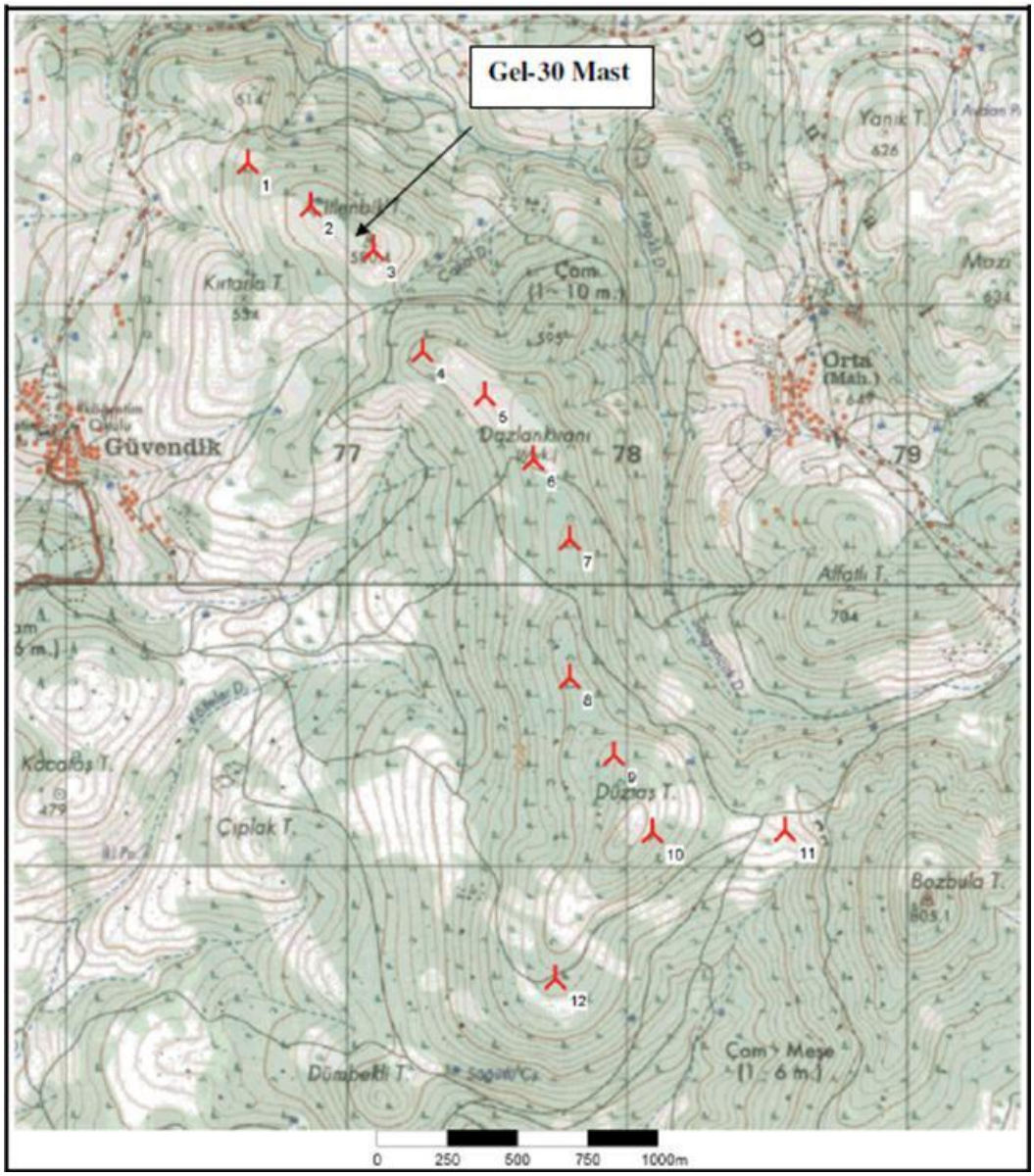

Figure 1-1: View of the planned turbine locations

Table 1-1: Key project summary data

Project Name	Geres Wind Power Plant Project
Project Borrower	Dost Enerji
Project Sponsors	M.V. Holding
EBRD Transaction	The total project cost is USD 40,586,087 including capitalized financing costs. The proposed financial scheme includes debt financing in the amount of USD 7,500,000 from MidSEFF, USD 23,942,870 (originally EUR 18,650,000) from Hermes as an ECA Loan and the borrower's own contribution in the amount of USD 9,143,217. The debt to equity ratio is approximately 77:23. The investment will be completed in the first quarter of year 2014.
Project Description / Business Purpose:	The project concerns a 27.5 MW Wind Power Plant. The facility will produce 94.584 GWh electricity per year. The generation of electricity from renewable sources will replace electricity from the national grid and enable reduction of 56,774 tCO_2/year carbon savings (base case scenario).
Installed Power	27.5 MW
Annual Electricity Production	94.584 GWh

2. Environmental and Social Baseline

2.1 Environmental Description of the Project Area

The plant is located on hill's ridge, although defined as forest area, the project site is mainly covered by sparse coniferous trees and maquis and doesn't seem a valuable area neither from the recreational point of view.The generators will be located in a stony or scarcely vegetated area mainly consisting of sparse coniferous trees and maquis.

No information is available on flora and fauna neither information about birds species. The project will be over a secondary bird migratory route.

According to the PIR no protected or designated areas were found around the project location.

Table 2-1: Environmental characteristic

ENVIRONMENTAL ASPECTS	PRESENCE/DISTRIBUTION	COMMENTS
Land use	Forestry Area: 1,040,000 m^2	Permits are obtained
Water Surface	N.A.	-
Designated Area	N.A.	-
Fauna and flora	Presence of a secondary migratory route No information is available about presence of fauna and flora	These are gap to be filled

2.2 Social Condition of the Project Area

No residential areas in the project area nor in the proximities are present: the nearest settlement – Güvendik Village - is located 1.5 km away from the nearest wind turbines just on the border of the project area, most populated settlement - Gelenbe Municipality - is located 5 km away from the project site. Other settlements in the surroundings are: Sayalar village, Çobanlar Village and Dere Village, they were both visited during the site visit. Main economic activity of these villagers is animal breeding (sheep and coat). Generally speaking the plant location area is in a natural status with no particular evidence of human structures and infrastructures.

3. Social and Environmental Impacts

3.1 Fauna and flora

A basic study on the flora and fauna species that can be found in the project area and the potential impacts of the project on those components is missing.

Since the project is located over a secondary bird migratory route, the WPP could affect the bird habitat. In the PIR there is no specific study on bird life. The sponsor should prepare an ornithology study. Monitoring campaign on the bird life, during operation is suggested and compensation measures should be implemented in case.

3.2 Land use

As described in Table 2-1, whole the area to be used for Geres is classified as forested area and the Forest Area Usage Permit has been obtained and the final approval is expected.

3.3 Water

There should be household water waste both during construction and operation phases. This is generally employees' daily waste. Based on the assumption that the daily domestic water requirement is 150 litres per capita, considering 80 employees during the construction phase and 10 employees during the operation phase, the domestic water requirements are estimated to be 12 m^3/day and 1.5 m^3/day for construction and operational phases respectively.

3.4 Waste

The solid waste that are expected to be generated at Geres WPP during construction phase, are excavation waste (from preparation of tower foundations) and domestic solid waste (paper, plastics, glass etc.). Daily domestic solid waste production is 1.34 kg per capita, for a total of 107.2 kg/day and 13.4 kg/day taking into account respectively 80 project workers during construction phase and 10 project workers during operation phase. The recyclable waste will be displaced in separate waste containers.

100 L/year of waste oil is expected to be generated for maintenance per turbine during the operation phase, resulting in a total of 1,200 L/year waste oil, which will be disposed according to the Regulation on Waste Oil, dated 30.07.2008.

3.5 Emissions: Particulate and Noise

Dust generated from earth-moving and material storage, and air emission from the operation of construction machinery and equipment. A study on PIR shows that air-emissions are within the acceptable levels and the sponsor is obliged to work under the related Turkish regulation (Evaluation and Management of Air Quality). The emissions from the vehicles are also investigated qualitatively in the PIR, and the values are found to be under the limit provided by the related regulations.

During operation minimal emissions can appear, not directly associated with plant operation but with traffic, maintenance etc. So it can be easily said that no relevant aspects both construction and operation phases for emissions.

Noise emissions will be generated during construction due to equipment/machinery operation. A study in the PIR shows that noise emissions are acceptable levels and the sponsor is obliged and willing to work according to related regulations and all precautions will be taken by the sponsor before and during construction.

Noise emissions are expected to stem just from the operational turbines. The noise emission is not expected to exceed legal limits. A noise measuring and monitoring campaign could be put in place during operation in case.

3.6 Landscape

Landscape is usually a sensitive aspect for this kind of project. Considering the proximity of the Sayalar I-II WPP a photomontage to assess the impact on landscape is suggested from the points of view of Sayalar, Orta and Dere Villages that are the closest receptors. This photomontage will be used during the stakeholder involvement to show the appearance of the area after project implementation.

COMPONENT	IMPACT	QUANTIFICATION
Flora Fauna	Bird life	Presence of migration route in the wide area
Land use	Different use of the land	Forestry Area: 1,040,000 m^2
Water	Utilization and Discharge	12 m^3/day (construction), 1.5 m^3/day (operation)
Waste	Production of solid waste	107.2 kg/day (construction), 13.4 kg/day (operation)
	Excavation waste	33, 600 ton
Emissions	Noise	Construction phase< 70dBA (law limit) Operational phase: No disturbance for the nearest receptors
	Particulate	< 1.5 kg/h (law limit)
Landscape	Visual Impact	Turbines are visible from neighbouring settlements.

MidSEFF Office
Asmadalı Sokak No. 27
Kosuyolu
34718 Kadikoy, Istanbul
TURKEY
www.midseff.com