



Mersinli Wind Power Plant Project

Noise Management Plan

March 2018

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
Rev1	13.03.18	Final	13.03.18	Dr. Hande Yukseler	Environment EM Director Turkey

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Table of Contents

1.	Purpose and Scope	5
2.	Legislative Requirements and Standards	5
3.	Roles and Responsibilities	6
4.	Noise Management	7
4.1	Land Preparation and Construction Phase	7
4.2	Operation Phase.....	8
5.	Monitoring and Reporting	8
6.	Training.....	10
7.	Review and Update	10

Figures

Figure 5-1.	Noise Measurement Locations	9
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Tables

Table 2-1.	Noise Standards for Residential Receptors	6
Table 3-1.	Roles and Responsibilities	6

1. Purpose and Scope

“Alcazar Energy Partners (“Alcazar Energy”) through the Project Company, as defined below, is planning to construct and operate the Mersinli Wind Power Plant Project (“Mersinli WPP Project”, the “Project”), in İzmir province, within the administrative borders of Kemalpaşa, Torbalı and Bayındır districts, Çardaklı Tepe, Kartal Tepe, Mersinli, Karlık Tepe and Akçam Tepe localities. At the national tender stage conducted for the wind power projects in 2007, the previous Project owner established a project company, namely Yander Elektrik Muh. Mus. Ins. Tur. ve Tic. A.S. (“Yander Elektrik” or the “Project Company”), for the development of the Project. In May 2017, Alcazar Energy, through a wholly owned subsidiary, acquired 100% of the shares of Yander Elektrik and is now the sole owner of the Project.”

The main purpose of this Management Plan is to describe in detail the mitigation measures and control practices aimed at minimisation and management of noise to be sourced from Mersinli WPP Project construction and operation phase activities.

The Plan is in compliance with national legislation, requirements of international financing institutions (e.g. IFC Performance Standards, EBRD Performance Requirements) and other applicable Good International Industry Practices (GIIPs). The plan will be applied systematically during the lifetime of the Project, in conjunction with the following related management plans and programs:

- Environmental and Social Management and Monitoring Plan (ESMMP)
- Contractor Management Plan;
- Traffic and Transport Management Plan;
- Biodiversity Action Plan (BAP);
- Occupational Health and Safety Plan; and
- Stakeholder Engagement Plan (incl. grievance mechanism).

This Plan is a living document and the responsibilities, procedures and compliance actions should be updated as appropriate.

2. Legislative Requirements and Standards

The noise limits applicable to the Project, set by national legislation and international standards, are given in Table 2-1. It should be noted that amongst the available legislation, standards and GIIP documents, only the Turkish Regulation on the Assessment and Management of Environmental Noise (RAMEN) includes specific noise limits for construction phase; whereas, others have limits applicable for operation phase.

Table 2-1. Noise Standards for Residential Receptors

Time of the Day*	Noise Limits for Residential			Project Standards at Residential Areas	
	IFC EHS Guidelines*	Turkish RAMEN		Construction Period	Operation Period
		Construction	Operation		
Daytime	55 dBA	70 dBA	65 dBA	70 dBA	45 dBA (for LA _{eq})
Evening	-	-	60 dBA	-	43 dBA (for LA ₉₀)
Night-time	45 dBA	-	55 dBA	45 dBA	

*IFC EHS Guidelines define the daytime as 07:00-22:00 and night time as 22:00-07:00. Turkish RAMEN defines the daytime as 07:00-19:00, evening as 19:00-23:00 and night time as 23:00-07:00. It should be also noted that the night time absolute lower limit of 45 dBA is also based on World Health Organisation guidelines for the protection of sleep indoors with windows open.

**Noise impacts should not exceed the levels presented in or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.

3. Roles and Responsibilities

Roles and responsibilities for E&S management for the Project are described in detail in the Project ESMS. Within this scope, roles and responsibilities regarding noise management are provided in Table 3-1.

Table 3-1. Roles and Responsibilities

Roles	Responsibilities
Project Execution Manager	<ul style="list-style-type: none"> Ensure adequate resources are provided for implementation of this Plan. Ensure the Plan is distributed to all Contractors.
Project Company / QHSE Manager and Team	<ul style="list-style-type: none"> As required, review and update the Plan (in coordination with the Project Company Environmental Specialist and Contractor QHSE Managers/ teams). Ensure technical support is provided to Contractors for implementation of the Plan. Ensure related trainings are provided by the contractors, through review of training records and related training documents. Oversee contractors' HSE compliance with Project requirements through contractor monitoring and reports.
Project Company / Environmental Specialist	<ul style="list-style-type: none"> Main responsibility for ensuring the implementation of the Plan (including by the Contractors) and reporting of non-compliances and implementation performance of the Plan to the upper management. As required, review and update the Plan (in coordination with the Project Company Environmental Specialist and Contractor QHSE Managers/ teams). Collect data from the Contractors on noise management practices, developed and implemented actions and performance of actions. Conduct periodic internal audits.
Project Community Liaison Officer (CLO)	<ul style="list-style-type: none"> Ensure noise related grievances are responded to appropriately and in a timely manner.

Roles	Responsibilities
Contractor QHSE Managers	<ul style="list-style-type: none"> • Ensure this plan is implemented in line with Project standards. • Ensure related non-compliances are recorded and responded to immediately. • Provide related trainings. • Regularly inspect areas for potential noise sources (e.g. physical conditions of access roads) and ensure that measures are effectively implemented. • Conduct internal audits and record identified incompliances. • As required (e.g. identification of an incompliance, a change in applicable legislation, grievance etc.), participate in development of corrective and/or enhancement actions. • Ensure noise management issues are included in the monthly HSE review and incident reports to be prepared by the contractors for the Project Company Environmental Specialist and the Project Company QHSE Manager.
All personnel	<ul style="list-style-type: none"> • Participate in related trainings. • Ensure self-competency in terms of implementation of this plan.

4. Noise Management

4.1 Land Preparation and Construction Phase

Transportation of materials, turbine components and other construction phase transportation requirements; construction machinery and equipment to be used for the construction of access roads and crane pads, preparation of turbine foundations and other civil works will result in noise generation during the land preparation and construction phase of the Project, which may impact the noise sensitive receptors. A list of some of main noise generating equipment and vehicles to be used during construction phase is provided below :

- Bulldozers
- Excavators
- Road Graders
- Road roller
- JCB
- Trucks
- Trailer
- Pickup trucks
- Vans for staff

The following measures will be in place for control of construction phase noise:

- Noise sensitive receptors will be informed about the construction schedule and activities to be conducted via the methods provided by the Stakeholder Engagement Plan. Information on Grievance Mechanism will also be provided through appropriate mediums.
- Construction activities at construction sites close to noise sensitive receptors will only be conducted during day time. In addition, high noise emitting activities will also be limited to daytime.

- Some activities such as delivery of large turbine components or erecting turbine components may require to be conducted outside of scheduled hours (e.g. due to traffic conditions, unfavourable meteorological conditions, etc.), in case halting such an activity is considered to be risky in terms of OHS or community health and safety. In such cases, closest receptors to the area these activities are conducted at will be informed of the schedule change.
- Speed limits will be implemented, covering both abnormal load transportation (i.e. turbine component transport) and other transportation requirements (i.e. construction materials and worker transport).
- Access to site will be provided by only the designated access roads that enters the site from north, which is located relatively far to vicinity settlements, compared to other access alternatives. Use of other access roads will not be allowed.
- The access roads will be assessed in terms of stability, improved where required, checked routinely for deterioration of physical conditions and immediately be repaired in cases where damage is identified, in order to minimise related noise generation.
- All construction vehicles and materials will be periodically checked and maintained by competent experts.
- A noise monitoring program will be conducted to verify compliance with national regulatory requirements and Project Standards; in case any incompliance is identified, the source activity will be halted until further actions are taken.
- All related grievances will be recorded and responded to in a timely manner, as set by the SEP. In case any incompliance is identified, the source activity will be halted until further actions are taken.

4.2 Operation Phase

During the operation phase, noise will mainly be generated by operation of the wind turbines. The following measures will be implemented to achieve compliance with Project Standards:

- Turbine operation will be optimised based on wind speeds, noise generation and monitoring results.
- Periodic maintenance of turbines will be conducted.
- Clearance of vegetation will be limited to ensure maximum screening of noise.
- In case of any grievances regarding noise, the noise source will be investigated and complaints will be resolved. This will include additional monitoring at locations subject to grievances, if required.

5. Monitoring and Reporting

Identified monitoring locations are provided in Figure 5-1 for both land preparation and construction and operation phases.

The land preparation and construction phase monitoring requirements to be implemented are listed below:

- Quarterly during construction of the closest turbines (i.e. not for the entire land preparation and construction period but for the construction timeframe of closest turbines) to each corresponding measurement location:
 - 48 hrs measurement at NSR-1 during construction of WTG 12.
 - 48 hrs measurement at NSR-2 during construction of WTG-17.
- In addition to these scheduled measurements, additional measurements will also be conducted upon complaints.

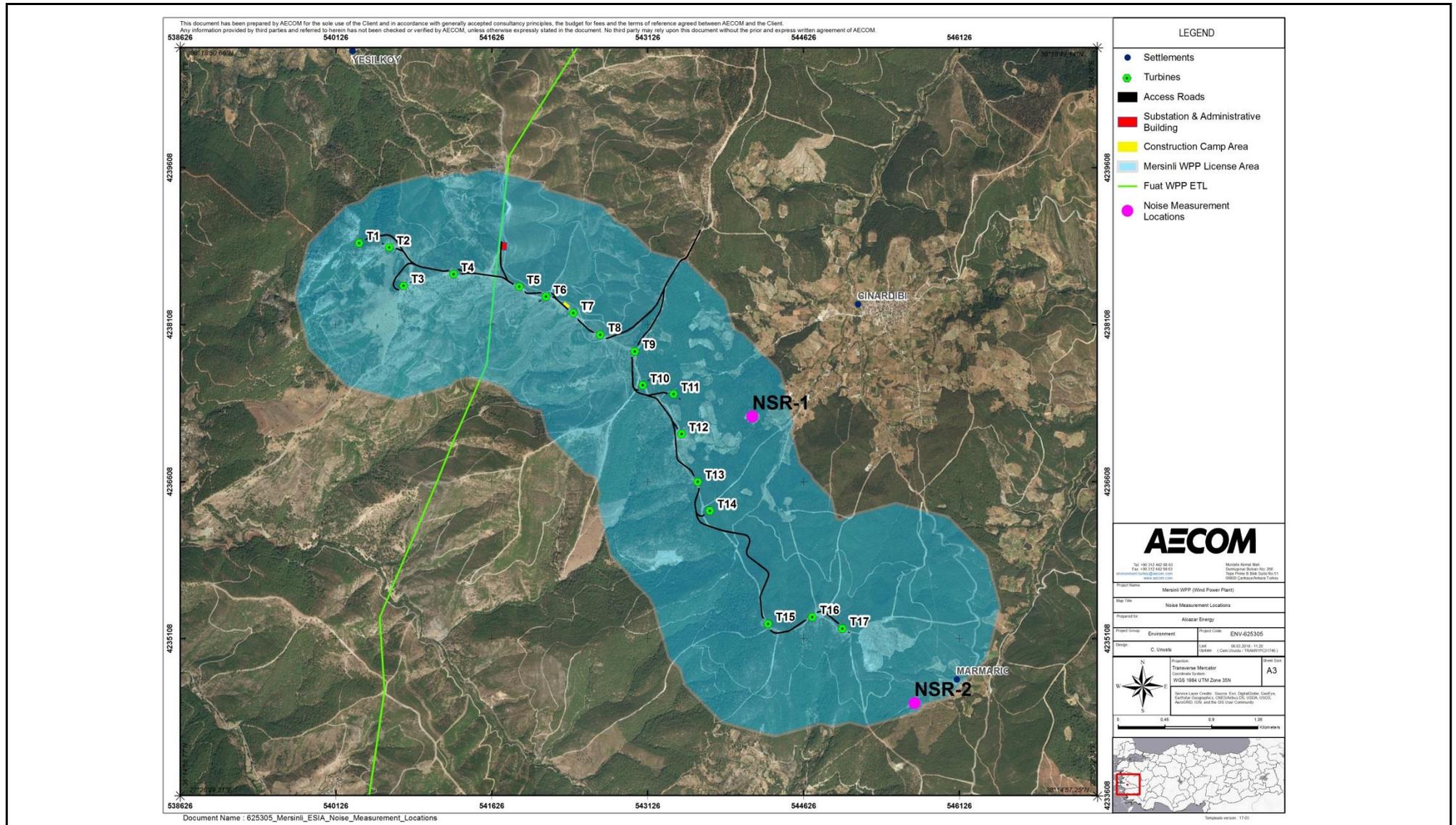


Figure 5-1. Noise Measurement Locations

The operation phase monitoring requirements to be implemented are listed below :

- 48 hrs measurements will be conducted quarterly for the first year of operations at each of the locations.
- If required, based on results of the monitoring for the first year of operations and to ensure effectiveness of any implemented corrective actions, additional measurements will be planned and conducted at NSR-1, NSR-2 or at any location subject to a noise grievance.
- In addition to these scheduled measurements, additional measurements will also be conducted upon complaints.

In addition to direct measurements for noise, daily inspections and internal audits (quarterly during land preparation and construction phase, annually during operation phase and quarterly during closure phase) will also be conducted to identify potential non-compliances with Project standards and any problematic areas with regards to noise. Results of these inspections, audits and the noise measurements will be provided to the upper management, as well as to EBRD within the scope of annual reporting.

Based on monitoring and audit results, corrective and/or enhancing actions will be designed and implemented. Performance of these actions will also be monitored and reported.

6. Training

The Company will provide sufficient training to all Project personnel and ensure that Contractors' are also providing the same level of training to their own personnel. Periodically and as required, refresher trainings will also be provided. The training subject will cover relevant aspects of this Plan, compliance with legislative requirements and international standards, identification of potentially problematic areas and general awareness raising subjects for noise mitigation

7. Review and Update

This Plan is a living document and the responsibilities, procedures and compliance actions shall be updated as required (e.g. after a change in related legislation). It is the responsibility of the Project Company's QHSE Manager and Environmental Specialist to be fully aware of its contents, to provide relevant training to staff and to ensure that procedures are being implemented to achieve compliance with this Plan. Contractors' HSE Managers will also be responsible of day to day implementation of the Plan and to ensure compliance with Project standards.

