Mersinli Wind Power Plant Project

Air Quality Management Plan

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Quality information

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Revision History

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Prepared for:

Mersinli Wind Power Plant Project

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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 air emissions to be sourced from Mersinli WPP Project.

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 all phases of the Project, in conjunction with the following related management plans and programs:

- Environmental and Social Management and Monitoring Plan (ESMMP);
- Contractor Management Plan;
- Erosion Control, Soil and Spoil Management Plan;
- Traffic and Transport Management Plan;
- Occupational Health and Safety Plan;
- Biodiversity Action Plan (BAP);
- 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

2.1 National Legislation

Ambient air quality is regulated in Turkey by the Regulation on Assessment and Management of Air Quality. Appendices I and I-A of this regulation provide limit values for the 2009-2014 period and for the period after 1 January 2014. Both are based on a tiered system to reduce limit values to target values over time.

Air quality standards are defined in the Regulation on Assessment and Management of Air Quality published on 06.06.2008 in Official Gazette No 26898 and Industrial Air Pollution Control Regulation published on 03.07.2009 in Official Gazette No 27277. Ambient air quality limit values for various pollutants defined in Turkish regulations are presented in Table 2-1. The standards in Table 2-1 are for 2024 and further years.

Table 2-1. Turkish Ambient Air Quality Values

Parameter	Duration	Limit Value* (µg/m^3)
SO_2	Hourly (cannot be exceeded more than 24 times a year)	350
	24 hour	125
	Long term limit	60
	Annual and winter season (October 1 - March 31)	20
NO_2	Hourly (cannot be exceeded more than 18 times a year)	200
	Annual	40
Particulate Matter (PM 10)	24 hour (cannot be exceeded more than 35 times a year)	50
	Annual	40
CO	8 hour daily maximum	10.000
O_3	8 hour daily maximum	120
VOC**	Hourly	280
	24-hour	70

** Regulation on Assessment and Management of Air Quality*
*** Industrial Air Pollution Control Regulation*

2.2 International Standards

IFC EHS Guideline for Air Emissions and Air Quality refers to the limit values recommended by the World Health Organization (WHO) Ambient Air Quality Guidelines, which are presented in Table 2-2.

Table 2-2. WHO Ambient Air Quality Guidelines

Parameter	Duration	(µg/m^3)*
SO_2	10 minute	500
	24 hour	20
NO_2	Hourly	200
	Annual	40
Particulate Matter (PM_{10})	24 hour	50
	Annual	20
Particulate Matter ($PM_{2.5}$)	24 hour	25
	Annual	10
O_3	8 hour daily maximum	100

**IFC, Environmental, Health and Safety Guidelines, General EHS Guidelines: Environmental, Air Emissions and Ambient Air Quality*

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 air quality management are provided in Table 3-1.

Table 3-1. Roles and Responsibilities

Roles	Responsibilities
Project Execution Manager	• Ensure adequate resources are provided for implementation of this Plan. • Ensure the Plan is distributed to all Contractors.
Project Company / QHSE Manager and Team	• 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 and the Project Company, 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	• 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 air quality management practices, developed and implemented actions and performance of actions. • Conduct periodic internal audits.
Contractor QHSE Managers	• 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 emissions sources (e.g. physical conditions of access roads, unmaintained vehicles) 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 air quality 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	• Participate in related trainings. • Ensure self-competency in terms of implementation of this plan.

4. Air Quality Management

The main dust emission sources will be;

- Earthworks for the construction of site access roads and internal roads,
- Wind erosion of stockpile surfaces,
- Construction of turbine foundations,
- Construction of underground cable network,
- Construction of ETL,
- Construction of other ancillary facilities such as the substation, and
- Emissions due to transport of materials and personnel

In addition, emissions from moving vehicles, construction machinery and equipment including exhaust emissions such as PM_{10}, NO_x, CO, SO_2 and TOC will be of concern.

To avoid potential impacts of dust and exhaust emissions on settlements in the vicinity of the license area, settlements near the site access road, beekeeping and agricultural activities near the turbines, the following preventive and mitigative measures will be implemented:

- Loading and unloading of material will be carried out without scattering.
- Excavated materials will be covered with nylon canvas during transportation.
- Dust suppression methods such as watering with water trucks will be applied to access roads and internal roads (as required during dry season).
- Access roads and internal roads will be covered with plant mix.
- Speed limitations will be applied for vehicles.
- Upper layers of the stored excavated material will be kept at a humidity level of about 10%.
- Construction vehicles will not be permitted to keep engines running while waiting to enter to the site or waiting on-site.
- Construction vehicles leaving the site will be washed to prevent the transmission of soil from the site to the public roads.
- Drop height of materials that have potential to generate dust will be kept as minimum as possible.
- Well and adequate maintained vehicles will be used and regular maintenance of these vehicles will be ensured.
- In order to minimise air emissions sourced from construction machinery, trucks and personnel transport vehicles; relevant provisions of the Industrial Air Pollution Control Regulation and the Regulation on Assessment and Management of Air Quality will be complied with.
- Monitoring of project related emissions will be carried out and additional actions will be developed and implemented as required, during the construction phase.
- Stakeholder Engagement Plan will be implemented to collect complaints and suggestions through the grievance mechanism to be established. Following investigation of any related complaint, additional actions will be developed and implemented as required.

5. Monitoring and Reporting

The Project land preparation and construction phase air quality monitoring will cover PM_{10} emissions. Monitoring requirements to be implemented are provided in Table 5-1.

Table 5-1. Construction Phase Air Quality Monitoring

Location	Related Settlement	Frequency
Closest point of the settlement to WTG 17	Marmaric	Quarterly
Closest point of the settlement to the access road	Derekoy	Quarterly
Closest point of the settlement to the access road	Gokyaka	Quarterly
Closest point of the settlement to the access road	Cumali	Quarterly

In addition to these scheduled measurements, additional measurements will also be conducted as required, upon complaints from local communities.

In addition to direct measurements of PM_{10}, daily inspections and quarterly internal audits will also be conducted to identify potential non-compliances with Project standards and any problematic areas with regards to air emissions. Results of these inspections, audits and the summary of 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.

As the Project operation phase activities will have minimum-to no impact on air quality, periodic monitoring will not be conducted during this phase. However, in case of any related grievances, the source of the grievance will be investigated and additional monitoring will be planned if assessed to be necessary.

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 emissions 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, Environmental Specialist and the Contractors QHSE personnel 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.