



VERGO ENERJİ SİSTEMLERİ SAN. VE TİC. A.Ş.
AIR QUALITY MANAGEMENT PLAN
OCTOBER 2023
CNR-PLN-VRG-AQMP-001
(Rev.01)



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LIST OF ABBREVIATIONS/DEFINITIONS

AQMP	Air Quality Management Plan
Avg	Average
CEMS	Continuous Emission Monitoring Systems
ÇINAR	Çinar Engineering and Consultancy Incorporation
E&S	Environmental and Social
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
ESAP	Environmental and Social Action Plan
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management Systems
ESS	Environmental and Social Standards
Facility Owner	VERGO Enerji Sistemleri San. Ve Tic. A.Ş. (VERGO)
IFC	International Finance Corporation
KPI	Key Performance Indicator
MoEUCC	Ministry of Environment, Urbanization and Climate Change
OHS	Occupational Health and Safety
OIZ	Organized Industrial Zone
PS	Performance Standards
TKYB	Development and Investment Bank of Türkiye
WB	World Bank
WBG	World Bank Group



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1. INTRODUCTION

VERGO Enerji Sistemleri San. ve Tic. A.Ş. ("VERGO"), which is one of the companies that produces and exports solar energy systems in Turkey, focuses on the production/manufacturing of solar panel carrier construction systems (steel) and offers design, projecting, production and on-site assembly services in line with the demands of the customers.

VERGO began its operations in 2015 in Organized Industrial Zone (OIZ) of Halilbeyli at Kemalpaşa district, İzmir province with total facility area of 16 decares. After signing the contract (23.12.2020 with no: 2020/0064/0) with Türkiye Kalkınma ve Yatırım Bankası (Development and Investment Bank of Türkiye – "TKYB") and getting the loan for the construction of new facility to be paid back until 22.06.2028, VERGO has purchased the new industrial area (which has total allocated area of 62,494.59 m² with 17,817 m² closed area) in Salihli Organized Industrial Zone (OIZ)/ Manisa. In January 2021, another consultant firm prepared Management Plans to cover the construction and operation phases of the project.

VERGO fully completed to moving process in August, 2021 from Kemalpaşa, İzmir to Salihli, Manisa. It continues to work in Salihli OIZ with NACE code of 28.99.90. In the facility, the steel rolls are subjected to slitting/cutting, punching (Press Line), bending (by means of press brake and roll form machines) and quality control processes in order to produce pipe&box, profile (C-U) and Wbeam.

Safeguard Corrective Action Plan (SCAP) has been prepared by VERGO upon the request of the World Bank after the successive occupational accidents that occurred within VERGO. In line with the improvements made within the scope of this document, TKYB has requested revision of Environmental and Social Management Plan (ESMP), Occupational Health and Safety (OHS) Management Plan and Emergency Preparedness and Response Plan documents. This situation revealed that other management plans also needed to be updated.

This Air Quality Management Plan (AQMP) has been prepared to reflect the current situation of the company as a result of the developments in the company by ensuring sustainable management of air quality issues and to prevent and mitigate/minimize/manage potential environmental and community health and safety related impacts associated with the facility's operations. This includes an evaluation in accordance with IFC Performance Standards (PSs), World Bank Group (WBG) General and Sector-specific Environmental Health and Safety (EHS) Guidelines, Good International Industry Practices (GIIP) together with national legislation and TKYB's Environmental and Social Policy. In order to carry out the revisions requested by TKYB, Çınar Engineering Consultancy Inc. (ÇINAR or Consultant) has been appointed as the consultant.

1.1 General Overview

1.1.1 Project Area

The facility is located in the Salihli OIZ, which is within the borders of Manisa Province, Salihli District, Torunlu Neighborhood.

On the other hand, 21,251.75 m² of land in the parcel adjacent to the existing facility in Salihli OIZ is allocated to VERGO, and it is planned to establish a Galvanizing Facility in this area that will enable galvanization of steel profile products with a hot-dip coating system. It has been declared that the financing and feasibility of the project has not been clarified yet. In addition, VERGO is in the process of establishing a new facility that will operate in the



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production of solar energy panels carrier construction systems in Aliğa district of İzmir province. It was learned that some of the equipment and personnel have been moved to Aliğa. On the other hand, new machines located in S&D Line and Press Line has gotten into act recently in the facility at Salihli OIZ.

Location map of existing and planned facilities is given in Figure 1.

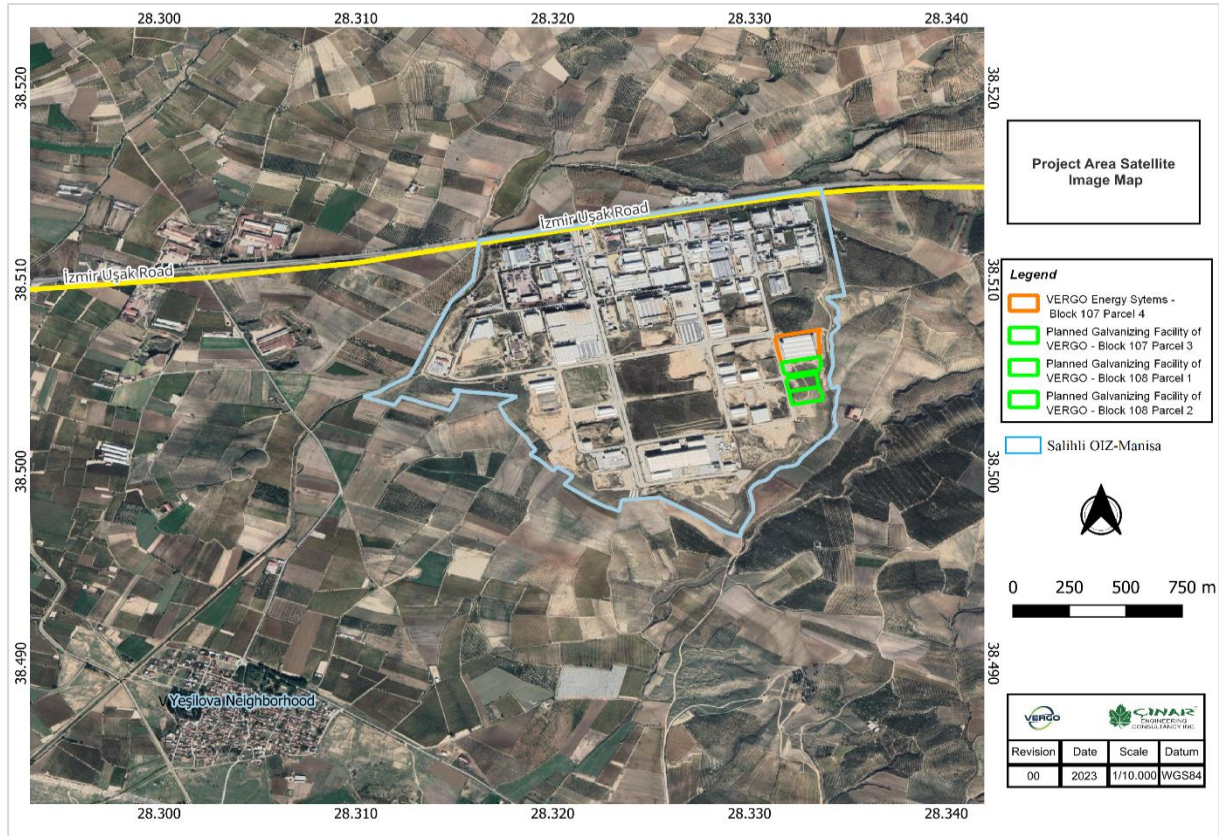


Figure 1. Location of the Existing Facility and Planned Facility in Salihli OIZ

1.1.2 Process Description

According to the Capacity Report prepared on 27.12.2022 and valid until 28.12.2024, VERGO has annual production capacities of:

- 114,716 tons for solar panel connection profile production,
- 86,301.350 tons for solar panel connection profile drilling production,
- 18,909.333 tons for solar panel connection pipe profile spinning and drilling production,
- 2,348.865 tons for PV panel integration and solar structural mechanics manufacturing support structure set (tracking support structure set-2,055 sets/year),
- 17,109.470 tons for PV panel integration and solar structural mechanics manufacturing support structure set (no tracking support structure set-10,627 sets/year),
- 3,616.452 tons for solar power system set (3,164 pcs/year).

Vergo produces solar panel rack systems of Solar Power Plants. The production activities continue along with has 14 Press counters, 5 Roll form counters, 2 Press Brake machines, 1 W-beam (H profile) production line, 1 Pipe plastering and drilling line, 2 saws (one small and

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one big) and 1 Clamp production line. The raw materials used in the operation phase of the project are as follows:

- Steel Coil Sheet,
- Steel Coil Sheet,
- Aluminum profile,
- Steel Galvanized Pipe,
- Steel Rolled Profile,
- Highcool 1020 BF (Fully Synthetic Coolant),
- ISOLUBE V 73/5 (Solvent-Based Essential Oil),
- PETROGREASE SANUS 150 EP 0 (Grease Oil),
- PETROGREASE FORTIS 254 EP 2 (Grease Oil),
- 16-3601Q Methyl Ethyl Ketone,
- Composite Circle Buckle,
- Composite Circle.

The Production Flow of Press and Roll Form Counters and Press Brake Machine

The steel roll is brought as a raw material into the press counters which is consisted of an opener, a driver and a press. The steel roll is connected to the opener with the help of the operator. Then the steel roll is transferred from the opener by the carrier. The steel roll is taken to the press.

Then the programming of the product is made from the control panel of the machine and the first piece is produced to get the production approval. The control of process is checked by the quality control team. If the semi-finished product receives the approval, the production activity continues. If not, it is intervened and measured again. After intervention and re-measurement, the production activity carries on. After the approved product is completed, it is taken to the storage area for semi-finished products. For the bending process, the roll form or press brake machines are made necessary adjustments. Then the product is brought from the storage area for semi-finished products to the roll form or press brake counter. The product bending process is finished. The bending operation is completed over CANIAS ERP system and the product is sent to the storage area for the shipment.

W-beam Production Line and Pipe Coating Drilling Production Line Process Flow

The raw material, which is brought to the W-beam Line, is loaded into the entrance of the line. All parameters of the relevant commands (slot holes, the measurements of galvanization and grounding holes) are entered in the control panel of the counter. As a result of the commands given from the control panel of the machine, loading magnets support the products into the production line. The raw material is transmitted to the molds with the help of a carrier magnet to punch slot holes. After the slot holes drilled in 2 steps, the output carrier magnet takes the raw material. It transmits to *Punch* for the drilling process of galvanized and / or grounded holes. The ready product is taken from the production line with the help of the exiting magnets. The product completed get the production completion approval via the CANIAS ERP system and sent to the storage area.

Pipe Coating, Drilling Production Line Process Flow

The raw material is brought to the relevant counter. The raw material, is given to the pipe coating and drilling line, is loaded at the entrance of the line. All parameters of the relevant commands are entered in the control panel of the counter. As a result of the commands given from the control panel of the machine; the pipes, which are to be coated, are supplied into the production line. The pipe whose coating process is completed, is transmitted to the drilling line with the help of the automation-controlled chains. The holes to be drilled in



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accordance with the technical drawing, is drilled through the punch line then the product is branded. The process controls for the first product are carried out by the line operator and then by the quality control personnel. If approval is given, production starts. If not, it is intervened and re-measured again. After intervention and re-measurement, the production activity carries on. The product completed, gets the production completion approval via the CANIAS ERP system and sent to the storage area.

Following figures summarize the workflow in the facility.



Figure 2. General View of the Workflow



Figure 3. Steel Rolls/Coils as Raw Materials



Figure 4. Slitting Line and Sliced Roll Sheet

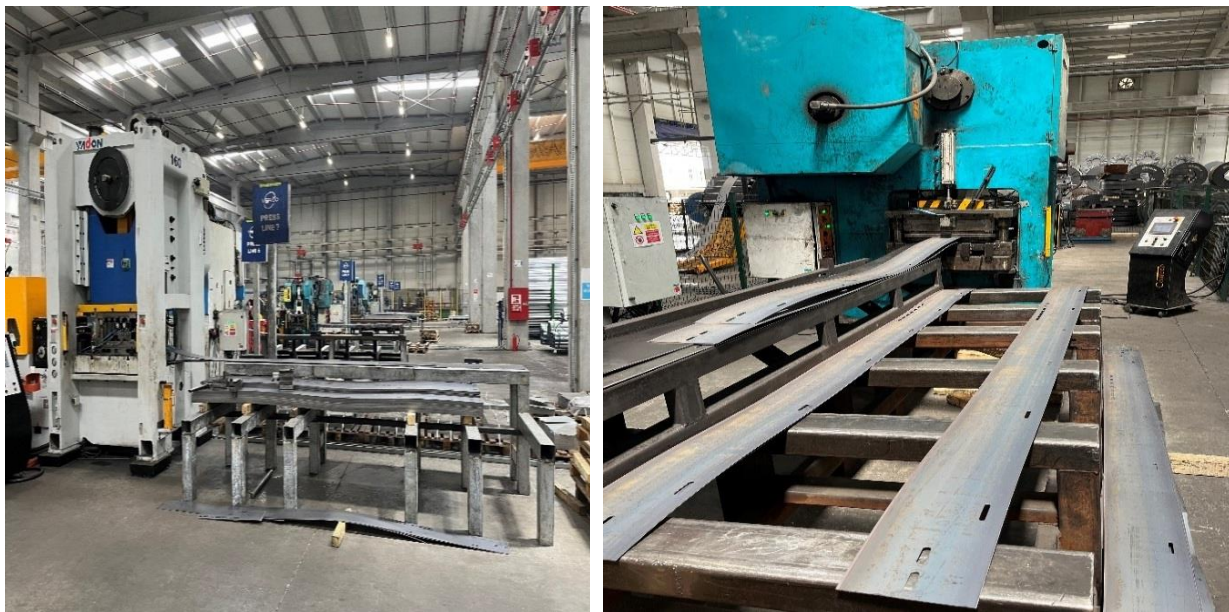


Figure 5. Press Line for Drilling of Sliced Steel Plate



Figure 6. Press Brake and Rollform for Steel Plate Bending

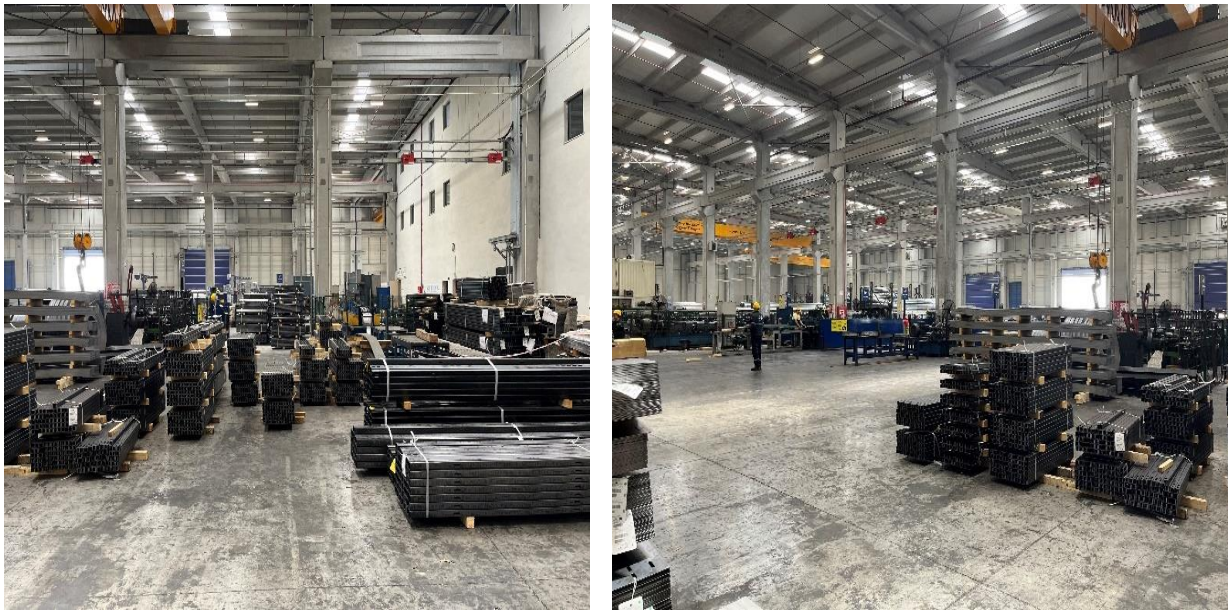


Figure 7. Intermediate Product Storage

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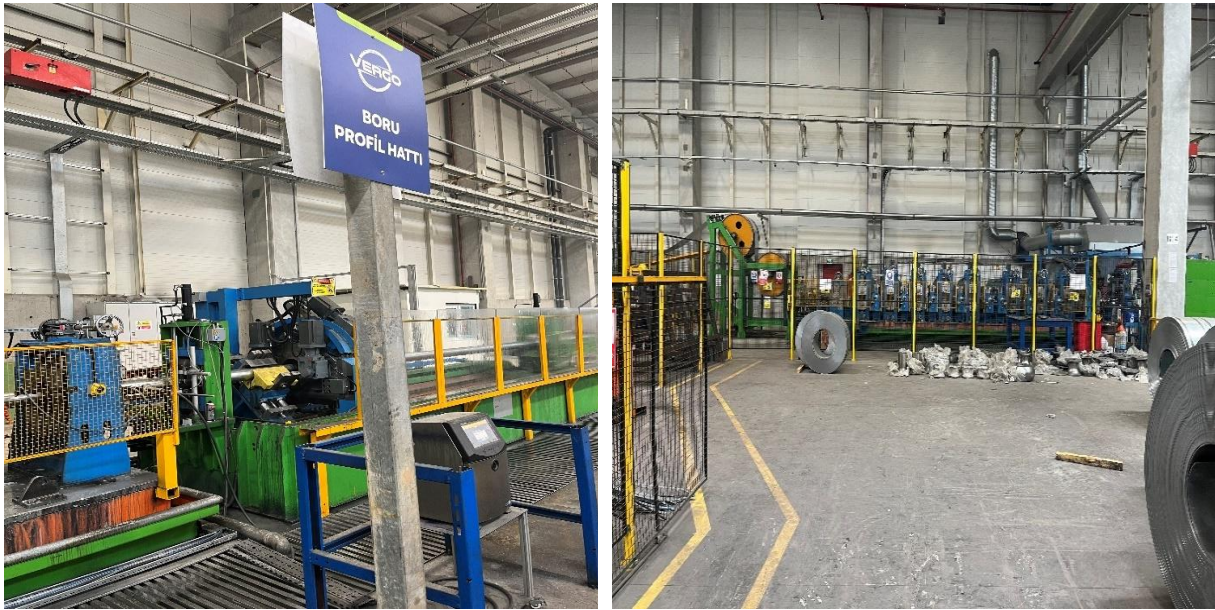


Figure 8. Pipe Profile Production Line

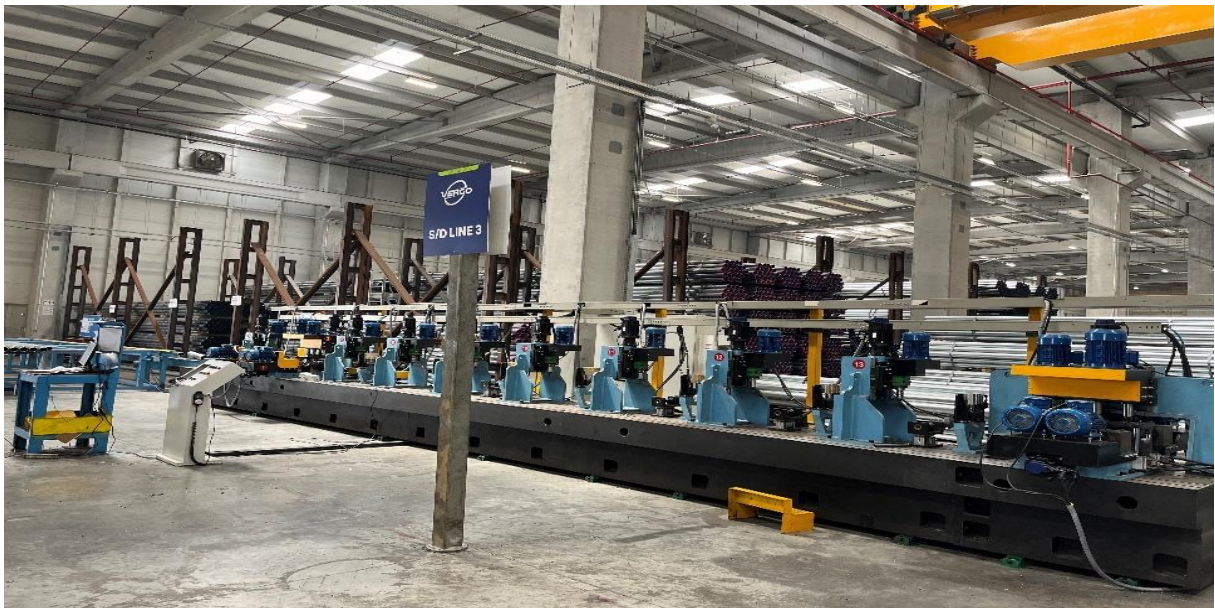


Figure 9. S&D Line for Spinning and Drilling of Pipes

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Figure 10. Chamfering Line for Pipes



Figure 11. Final Products Ready for Shipment

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1.2 Objectives and Scope

The main purpose of the Air Quality Management Plan (AQMP) is to identify emissions and relevant emission sources of the Facility that likely have potential effects on environmental air quality and determine the actions and managerial practices that shall prevent the impacts or, if not possible, shall minimize the impacts.

Specifically, the purpose of the Plan is to:

- Define the management principles of emissions generated by project activities and the instructions to be applied,
- Prevent or, if not possible, to minimize, possible impacts on air quality through the implementation of the above,
- Define monitoring and reporting procedures,
- Define training requirements,
- Define applicable legislative requirements and standards (Project Standards) relevant to the plan, and
- Define roles and responsibilities relevant to the plan.

The measures, practices, managerial actions, and implementations provided in this plan are applicable to all Facility personnel, subcontractors and service providers' personnel, and visitors accordingly.

The AQMP is comprised of a combination of "Project Standards," which includes the IFC Performance Standards, national legislation/regulatory frameworks, WBG General and Sectoral EHS Guidelines, good international industry practices currently in use, and TKYB's Environment and Social Policies. It defines roles and responsibilities for plan implementation, impact-reducing measures, and managerial actions related to air quality managements, as well as monitoring, reporting, and training requirements. This AQMP has been prepared for the facility during the operation period.

The AQMP should be evaluated in an integrated manner with other relevant management plans/procedures prepared within the scope of the Project.



1.3 Applicable Environmental and Social Standards

1.3.1 National Legislation

The regulations that come into prominence in the project management, especially contained within the Environment Law No. 2872, the Labor Law No. 4857, the OHS Law No. 6331, the OIZ Law No. 4562, the Law on Right to Information (No. 4982) and the Public Health Law No. 1593 are summarized below.

Table 1. Prominent Regulations Covered by National Legislation

Regulation	Official Gazette Date	Official Gazette Number
Regulation on Environmental Impact Assessment	29.07.2022	31907
Regulation on Environmental Permit and License	10.09.2014	29115
Regulation on Organized Industrial Zones Implementation	02.02.2019	30674
WASTES		
Regulation on Waste Management	02.04.2015	29314
Regulation on Waste Oil Management	21.12.2019	30985
Regulation on Packaging Waste Control	26.06.2021	31523
Regulation on Landfilling of Wastes	26.03.2010	27533
Regulation on Control of Waste Vegetable Oils	06.06.2015	29378
Regulation on Control of Waste Batteries and Accumulators	31.08.2004	25569
Regulation on Control of End-of-Life Tires	25.11.2006	26357
Regulation on Zero Waste	12.07.2019	30829
Regulation on Control of Medical Wastes	25.01.2017	29959
AIR		
Regulation on Industrial Air Pollution Control	03.07.2009	27277
Regulation on Air Quality Assessment and Management	06.06.2008	26898
Regulation on the Monitoring of Greenhouse Gas Emissions	17.05.2014	29003
Regulation on Exhaust Gas Emission Control	11.03.2017	30004
SOIL		
Regulation on Control of Soil Pollution and Point Source Contaminated Sites	08.06.2010	27605
NOISE		
Regulation on Environmental Noise Control	30.11.2022	32029
WATER		
Regulation on Water Pollution Control	31.12.2004	25687
Regulation on Surface Water Quality	30.11.2012	28483
Regulation on the Quality and Treatment of Drinking Water Supply	06.07.2019	30823
Regulation on Water Intended for Human Consumption	17.02.2005	25730
Regulation on the Protection of Groundwater against Pollution and Deterioration	07.04.2012	28257
Regulation on the Procedures and Principles to be Followed in Determining the Tariffs of Wastewater Infrastructure and Domestic Solid Waste Disposal Facilities	27.10.2010	27742
OHS		
Regulation on Occupational Health and Safety Risk Assessment	29.12.2012	28512

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Regulation	Official Gazette Date	Official Gazette Number
Regulation on Emergencies at Workplaces	18.06.2013	28681
Regulation on Occupational Health and Safety Services	29.12.2012	28512
Regulation on Health and Safety Conditions in the Use of Work Equipment	25.04.2013	28628
Regulation on Health and Safety Signs	11.09.2013	28762
Regulation on Occupational Hygiene Measurement, Test and Analysis	27.01.2023	32086
Regulation on the Vocational Training of Persons to be Employed in the Hazardous and Very Hazardous Classes	13.07.2013	28706
Regulation on Duties, Authorities, Responsibilities and Trainings of Occupational Physicians and Other Health Personnel	20.07.2013	28713
Regulation on the Procedures and Principles of Employing Child and Young Workers	06.04.2004	25425
Regulation on Preventing Major Industrial Accidents and Reducing Their Effects	02.03.2019	30702
Regulation on Contractors and Sub-contractors	27.09.2008	27010

1.3.2 International Standards

Since the TKYB is the lender, the activities of the facility must be in compliance with good international industrial practices including IFC PSs, WBG EHS Guidelines, TKYB's E&S Policy and best practices documents alongside the National EHS Legislation.

IFC has established Environmental and Social Performance Standards to define its customers' responsibilities for managing their environmental and social risks. During the investment and operation periods, the borrower must comply with these standards. IFC Performance Standards (2012) ("IFC PSs") are listed below:

- PS1: Assessment and Management of Environmental and Social Risks and Impacts
- PS2: Labor and Working Conditions
- PS3: Resource Efficiency and Pollution prevention
- PS4: Community Health, Safety, and Security
- PS5: Land Acquisition and Involuntary Resettlement
- PS6: Biodiversity Conservation and Sustainable Management of Living and Natural Resources
- PS7: Indigenous Peoples
- PS8: Cultural Heritage

Moreover, in August 2016, the new environmental and social policies called the Environmental and Social Framework (ESF) has been adopted by the World Bank. The ESF enhances the World Bank's commitment to sustainable development through ten (10) Environmental and Social Standards (ESSs) that are designed to support Borrowers' E&S risk management. The ESF enables Borrowers to better manage project risks as well as improve environmental and social performance, consistent with good international practices¹. The ESSs, which are similar with the IFC's PSs, are listed below:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts
- ESS2: Labor and Working Conditions
- ESS3: Resource Efficiency and Pollution Prevention and Management

¹ Environmental and Social Framework, retrieved 07.06.2023 from the official web site of the World Bank <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework>

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- ESS4: Community Health and Safety
- ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities
- ESS8: Cultural Heritage
- ESS9: Financial Intermediaries
- ESS10: Stakeholder Engagement and Information Disclosure

Other guidelines and principles are as follows:

- WBG General EHS Guidelines (2007)
- WBG EHS Guidelines: Metal Plastic and Rubber Products Manufacturing (2007)
- Equator Principles IV (2020).

Moreover, TKYB announced its perspective on the continuation of environmental and social sustainability and reducing and managing the negative effects and risks arising from its activities, with the TKYB Environment and Social Policy dated January 2020. The policy is based on this policy in all services and activities financed by the Bank. In addition, the "Environmental and Social Risk Assessment Procedure in the Lending Process", which was prepared to evaluate the environmental and social risks of the requested loans and to ensure that the issue is managed effectively in line with the Bank's strategy, is applied for each project.

2. ROLES AND RESPONSIBILITIES

The general organizational structure for Implementation of the Plan is shown as follows.

Table 2. General Organization Structure for Implementation of the Plan

Roles	Responsibilities
General Manager	<ul style="list-style-type: none"> •Ensuring that the necessary resources are provided for the successful implementation of this plan, •Taking primary responsibility for ensuring that every action required for implementation of the plan in accordance with project activities, and •Following up the implementation of this plan at the administrative level.
Facility Manager	<ul style="list-style-type: none"> •In collaboration with the General Manager, provides adequate resources for implementation of this plan, •Ensures implementation of this Plan in accordance with Project Standards, •Ensures provision of relevant trainings within the scope of this plan, •Ensures review and update of this plan as required, and •Ensures compliance of subcontractors and service providers to this Plan's requirements.
Human Resources Department	<ul style="list-style-type: none"> •Ensure that all workers, participate in training sessions. Maintain a record of training and conduct of awareness sessions for staff to ensure compliance with environmental and safety commitments stated in the Plan, •Recording and addressing internal and external complaints
Quality Engineer for Environmental, Health, and Safety Environmental Officer	<ul style="list-style-type: none"> •Implements this Plan and updates it whenever necessary, •Ensures Facility operations are carried out in accordance with this Plan's requirements, •Ensures realization of air quality management related audits/ controls, identification of possible shortcomings/non-compliances, and implementation of relevant corrective actions, •Controls and audits the compliance of subcontractors and service providers to this Plan's requirements, •Keeps all kinds of records relevant to this Plan, •Follows legislative requirements applicable to this Plan, •Ensures realization of monitoring requirements of this Plan, •Provides and/or arrange provision of trainings within the scope of this Plan, and •Reports to Facility Manager on the issue of air quality management performance and performance of implementation of this Plan.
Project Workers	<ul style="list-style-type: none"> •Participate relevant trainings designated for them in this Plan, •Follow the air quality management related precautions and rules, and •Report shortcomings / non-compliances / risky situations related with air quality management to their supervisors.

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3. AIR QUALITY MANAGEMENT

3.1 Air Emission Inventory and Characterization of the Emissions

There are two (2) emission sources (welding stack and zinc coating stack), specifically consisting of one (1) exhaust hood and one (1) connected stack to remove the steam generated during the cooling process after welding in the round profile machine; one (1) stack followed by an exhaust system with coarse and fine filters to capture zinc dust during the zinc galvanizing process at the facility as shown in Table 3.

Table 3. Emission Sources and Parameters to be Measured in These Sources

No	Emission Source	Parameter			
		Velocity	Water Vapor (Moisture)	Dust	Heavy Metal
1	Welding Stack	x	x	x	-
2	Zinc Coating Stack	x	x	x	x

The facility does not have any combustion system and/or boiler. It utilizes electrical energy for heating purposes.

For the total of two (2) emission sources in the facility, emission analysis measurements were conducted in September 2023 in accordance with the Regulation on Industrial Air Pollution Control, which was published in the Official Gazette dated 03.07.2009 and numbered 27277. The emission measurement report has been prepared and is shared in Appendix-1. The analysis results are evaluated as follows:

The stack gas velocities and stack heights of the measured emission sources at the facility comply with the regulatory limit values (see Table 4).

Table 4. Assessment of Stack Heights and Velocities of the Emission Source in the Facility

Emission Source	Thermal Power (MW)	The exit velocity of the gas from the stack (m/s)	The limit value for the exit velocity of the gas from the stack*	Stack Type (Slanted/Flat)	Stack Height above Ground (m)		Stack Height from Roof (m)	
					Above Ground	Limit Value**	From Roof	Limit Value**
Welding Stack	-	8.73	≥4	Slanted	14.80	≥10	2.50	≥1.5
Zinc Coating Stack	-	8.67	≥4	Slanted	14.80	≥10	2.50	≥1.5

* Regulation on Industrial Air Pollution Control, Annex-4.a.2

** Regulation on Industrial Air Pollution Control, Annex-4.b.4

The measurement results are compared (see Table 5 and Table 6) with limit values in Annex-1 of the Regulation on Industrial Air Pollution Control.



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Table 5. The Emission Measurement Results Conducted at the Facility and Limit Values in Annex-1 of the Regulation on Industrial Air Pollution Control

Emission Source	Dust		Organic Vapor and Gases (Annex-1.h. Table 1.2.2.)											
			Class I				Class II				Class III			
	Avg	Limit Value	Avg		Limit Value	Avg		Limit Value	Avg		Limit Value			
			*	**		*	**		*	**				
Welding Stack	0.668	175.010 ⁽¹⁾	-	-	0.1	20	-	-	2	100	-	-	3	150
Zinc Coating Stack	0.866	175.118 ⁽¹⁾	-	-			-	-			-	-		

*Mass flow rate measured for each stack and calculated based on the average results of three measurements (kg/hour)

**Average result of three measurements for each stack (mg/Nm³)

(1) Annex-1.b.1. Limit value determined by Diagram-1

Table 6. The Emission Measurement Results Conducted at the Facility and Limit Values in Annex-1 of the Regulation on Industrial Air Pollution Control

Emission Source	Special Dusts (Heavy Metals- Annex-1.g. Table 1.1.1.)										Carcinogenic Substances (Annex-1.i. Table 1.3.1.)													
	Class I				Class II				Class III				Class I				Class II				Class III			
	Avg		Limit Value		Avg		Limit Value		Avg		Limit Value		Avg		Limit Value		Avg		Limit Value		Avg		Limit Value	
	*	**			*	**			*	**			*	**			*	**			*	**		
Zinc Coating Stack	0.000597	0.183601	0.001	0.2 (a)	0.000014	0.004186	0.005	.	0.000279	0.085764	0.025	.	<0.000001	<0.000386	0.0005	.	<0.000013	<0.003862	0.005	.			0.025	5

*Mass flow rate measured for each chimney and calculated based on the average results of three measurements. (kg/hour)

**Average result of three measurements for each chimney (mg/Nm³)

(a) In the emission source of zinc coating stack, where measurements were conducted at the facility, the total emission value of the parameters Ag, As, Cd, Tl, Hg, and P, which are classified under Class I, exceeds the threshold value of "0.001 kg/hour" for the special dust emission mass flow rate specified for Class I. Due to the first measurement of the three parallel measurements in the emission source exceeding the mass flow rate threshold value, the concentration limit value (0.2 mg/Nm³) is not met for the first measurement out of the three parallel measurements. Therefore, Class I limit values specified in Annex-1.g. Table 1.1. are not met for the emission source of zinc coating stack.



Table 7. The Mass Flow Rates of Emissions Occurring at the Facility and Limit Values of the Regulation on Industrial Air Pollution Control

Emission Source	Parameter (kg/hour)																		Continuously Measured Parameters
	Dust	Silver (Ag)	Arsenic (As)	Phosphorus (P)	Kobalt (Co)	Selenium (Se)	Barium (Ba)	Chromium (Cr)	Copper (Cu)	Manganese (Mn)	Zinc (Zn)	Antimony (Sb)	Beryllium (Be)	Nickel (Ni)	Mercury (Hg)	Lead (Pb)	Cadmium (Cd)	Thallium (Tl)	
Welding Stack	0.002218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc Coating Stack	0.002823	<0.000013*	<0.000013*	0.000597	<0.000013*	0.000014	0.000055	0.000071	<0.000013*	0.000058	0.000095	<0.000013*	<0.000001**	<0.000013*	<0.000002***	<0.000013*	<0.000001**	<0.000013*	-
Total Value	0.005041	<0.000013^	<0.000013^	0.000597	<0.000013^	0.000014	0.000055	0.000071	<0.000013^	0.000058	0.000095	<0.000013^	<0.000001^	<0.000013^	<0.000002^	<0.000013^	<0.000001^	<0.000013^	-
Limit Values																			
Annex-3.d	10	2	2	2	5	5	-	-	-	-	-	-	-	-	2	5	2	2	-
Annex-2 Stack	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.01	0.01	-

*Since the analysis result was below the detection limit (0.003 mg) in 3 (three) parallel measurements, the mass flow rate (kg/hour) was calculated using the detection limit value. It is indicated by the "<" symbol that the measurement result is below the value calculated using the detection limit.

**Since the analysis result was below the detection limit (0.0003 mg) in 3 (three) parallel measurements, the mass flow rate (kg/hour) was calculated using the detection limit value. It is indicated by the "<" symbol that the measurement result is below the value calculated using the detection limit.

***Since the analysis result was below the detection limit (0.0004 mg) in 3 (three) parallel measurements, the mass flow rate (kg/hour) was calculated using the detection limit value. It is indicated by the "<" symbol that the measurement result is below the value calculated using the detection limit.

^This is the value calculated based on the detection limit.

The total mass flow rate of dust emissions from the emission sources measured in the facility is below the limit value specified in the Annex-2 Table 2.1 of the Regulation. Additionally, the mass flow rates of Pb, Cd, and Tl emissions from the zinc coating stack comply with the limit values as shown in Table 7.

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3.2 Environmental Permitting Status

Within the scope of Regulation on Environmental Permit and License, the facility activity taken part in Annex-2 (3.15 Facilities that produce warehouses, tanks, tankers, containers, doors, machinery and similar from metal sheet with a raw material capacity of 3 tons/day or more) was exempt from all environmental permits (environmental noise, wastewater discharge and air emission) by the decision dated 03.03.2022 of Manisa Provincial Directorate of EUCC. However, later on, due to changes in process and capacity, it has been found appropriate to give a Temporary Activity Certificate on Air Emission issues with the letter of Manisa Provincial Directorate of EUCC dated 30.03.2023 since facility falls under the scope of Article 3.16, which pertains to facilities producing seamless and/or welded steel pipes and/or profiles using cold and/or hot forming methods (see Appendix-2).

VERGO applied for the emission measurement on July 5, 2023 through the MELBES system with reference number B121460. Afterwards, the necessary measurements were carried out on August 3, 2023 and emission measurement report was prepared in September, 2023.

In current situation, the facility has an Environmental Permit Certificate for air emissions, which was issued on 10.10.2023 and is valid until 10.10.2028 (see Figure 12).

		<p>T.C. MANİSA VALİLİĞİ Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü</p>
<p>ÇEVRE İZİN BELGESİ</p>		
Belge No	:	231439888.0.1
Başlangıç Tarihi	:	10.10.2023
Bitiş Tarihi	:	10.10.2028
Tesis Adı	:	VERGO ENERJİ SİSTEMLERİ SANAYİ VE TİCARET ANONİM ŞİRKETİ
Tesis Adresi	:	Salihli OSB Mahallesi 307. Sokak No: 13 - SALİHLİ / MANİSA
İşletme Vergi No	:	9240505040
Çevre İzin ve Lisans Konusu	:	Hava Emisyon
<p>Yukarıda adı ve açık adresi belirtilen tesise Çevre İzin ve Lisans Yönetmeliği kapsamında ÇEVRE İZİN BELGESİ verilmiş olup 10.10.2023 tarihli ve 92375198-150/E.433 sayılı yazı ile birlikte geçerlidir. Ayrı kullanılmaz.</p>		
<p> e-imzalıdır Melih Melik KARA İl Müdürü</p>		
<p>5070 sayılı Elektronik İmza Kanunu gereği bu belge elektronik imza ile imzalanmıştır.</p>		

Figure 12. Environmental Permit Certificate for air emissions

According to the regulation, environmental permits are valid for a period of five years, and permit holders must apply for renewal at least 180 days before the expiration date. In addition to the periodic renewal requirement, the environmental permit process should be restarted in the following changes:

- Change of the operational location,

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- Change in the operational scope of activities,
- Changes in the use of flammable and/or combustion systems, or
- A 1/3 or greater increase in the total production or total nominal heat capacity of the facility.

Continuous Emission Monitoring Systems (CEMS)

Due to the absence of fuel usage in emission sources subject to measurement at the facility and the fact that dust emissions are below the limit of 10 kg/hour, there is no need for continuous measurement of volumetric flow. Furthermore, for the emission source in the zinc coating chimney at the facility, the mass flow rates of parameters included in Class I, such as Ag, As, Cd, Tl, Hg, and P, are below the limit value of "2 kg/hour," and the mass flow rates of parameters included in Class II, such as Co, Pb, and Se, are below the limit value of "5 kg/hour." Therefore, continuous measurements with a printout measurement device are not necessary.



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3.3 Managerial Actions and Mitigation Measures

The measures to be taken against potential air emissions during the operational phase of the project are provided below:

- Emission measurements will be conducted in all combustion and process-related emission sources in accordance with national legislation and international standards.
- The Environmental Permit for air emissions will be renewed before its validity period expires throughout the operation of the facility, and emission measurement reports will be prepared periodically.
- Exhaust emissions of all vehicles will be regularly measured by authorized organizations, and their compliance with the specified emission limit values will be documented.
- Periodic inspections of all equipment and tools will be carried out.
- Compliance with relevant national legislation and international standards will be adhered to.
- In the transportation of materials that produce dust during combustion and production residues, closed transportation systems will be used when the transported material is not adequately moist to prevent dusting.
- If internal roads within the facility have a negative impact on air quality, it is necessary to cover the roads with materials such as asphalt, concrete, or similar substances, regularly clean them, or treat them with dust-binding agents.
- In the emission source of zinc coating stack at the facility, there is an air induction system, coarse filter, and fine filter system in order to capture zinc dust particles. It is essential to ensure that the treatment efficiency meets the limit values specified in the national legislation, and necessary preventive and corrective actions should be taken if required. On the other hand, when emptying filters that capture emissions in the form of dust, it is necessary to prevent dust emissions by either emptying the dust in a closed system or by moisturizing it during the emptying process.
- Bulk materials, scrap materials, dust-prone products, or raw materials can be stored in the open, provided that air quality standards are met, and the following precautions will be taken into consideration.
 - Windbreak panels are installed, walls are built, or windbreak trees are planted in the area to reduce wind exposure.
 - Conveyors and other carriers, as well as the connections where they discharge materials onto each other, are covered.
 - Discharging and filling are done without causing dust dispersion.
 - The material is covered with nylon tarpaulin or materials larger than 10 mm in size.
 - The upper layers are maintained at 10% humidity, and the necessary equipment is installed to ensure this condition.

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4. TRAINING

Regarding air quality management, producer responsibility takes precedence, and it is important for employees to directly or indirectly participate in air quality management related to the air emissions that will occur during the project's operational phase.

The training provided to administrative personnel and other employees under the Air Quality Management Plan includes the following:

- Training for parties responsible for roles and responsibilities related to plan implementation.
- Training for all personnel at a level that explains the potential impact and risks that emissions generated during the project may have on the environment and community health and safety.



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5. MONITORING ACTIVITIES

In order to ensure the effectiveness of the implementation of this plan, regular monitoring and inspection activities will be conducted. Table 8 presents monitoring activities and associated performance indicators related to the facility's air emission management topics.

Table 8. Monitoring Activities

No	Necessity	Period	Monitoring Responsibility	Responsibility to Perform
AQMP-01	Closure of non-compliances related to the requirements mentioned in this plan	Monthly	Quality Engineer for Environmental, Health, and Safety	Project Owner
AQMP -02	Achieving monitoring results in compliance with legal standards	Monthly	Quality Engineer for Environmental, Health, and Safety	Project Owner
AQMP -03	Closing non-compliances within the timeframe established by the employer	Monthly	Quality Engineer for Environmental, Health, and Safety	Project Owner
AQMP -04	Ensuring necessary participation in trainings related to the plan	Quarterly	Quality Engineer for Environmental, Health, and Safety	Project Owner
AQMP -05	Addressing internal and external complaints related to air quality	Continuously	Quality Engineer for Environmental, Health, and Safety	Project Owner

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5.1 Key Performance Indicators

Key Performance Indicators (KPIs) related to findings from the monitoring activities for prevention and minimization of environmental and community health and safety related impacts of air emissions are provided in Table 9.

Table 9. Key Performance Indicators

No	Topic/KPI	Target	Monitoring Method
AQMP-KPI-01	Number of non-compliances related to the requirements mentioned in this plan	Periodic monthly decrease in the number of non-compliances	Monitoring records
AQMP-KPI -02	The percentage of monitoring results in compliance with legal standards (as defined in project standards and requirements) (%)	100%	Measurement results
AQMP-KPI -03	The percentage of non-compliances closed within the timeframe established by the employer (%)	100%	Corrective/Preventive action records
AQMP-KPI -04	The participation rate in trainings related to the plan	100% of new employees within one week of employment	Training records
AQMP-KPI -05	Number of complaints related to air quality, both internal and external	Periodic monthly decrease in the number of complaints	Grievance records

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6. REPORTING

Following the internal monitoring activities, the reports/documents prepared by the Project Owner will be reviewed and evaluated within the scope of Environmental and Social Monitoring Studies by the Environmental Consulting Firm approved by TKYB. Subsequently, reporting to TKYB will be carried out at the intervals specified in ESAP based on the topics mentioned in Section 5. Reporting related to AQMP will include, at least, the following:

- Daily, weekly, and monthly inspection records.
- Results of emission measurements.
- Comparison tables for measurement results.
- Records of dust suppression activities.
- Records of periodic maintenance and repair of vehicles and equipment.
- Exhaust emission reports of vehicles.
- Daily activity records.
- Records of identified non-compliances and related corrective/preventive activities.
- Training records.
- Drill report and related records.
- Meeting minutes of review and improvement meetings.



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7. REVIEW AND UPDATE

This Air Quality Management Plan is a living document and will be updated as needed in accordance with changes in national legislation and international standards, changes in the project's processes/capacity, and any potential changes in emissions. Updates will be carried out in compliance with Project Standards.

Furthermore, it is the responsibility of the Environmental Manager/Officer of the facility to ensure awareness of the content of this plan and its implementation through training provided to company personnel and all subcontractors.

