



LEGNANO TEKNOELECTRIC COMPANY MIDDLE EAST FZCO

PO Box 262887, Street S 400 No.5, Jebel Ali Free Zone, Dubai, United Arab Emirates (UAE).

GHG EMISSION REPORT

Form No : LTCME/ESG/F-720

Rev No : 00

Date : 8th January, 2026

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1. EXECUTIVE SUMMARY

1.1 Overview of Organization and Reporting Period

LEGNANO TEKNOELECTRIC COMPANY MIDDLE EAST FZCO (LTCME) is a manufacturing organization located in Jebel Ali Free Zone, Dubai, United Arab Emirates. The company specializes in processing electrical steel coils into precision strips and laminations, manufacturing assembled magnetic cores, and producing clamps, mechanical parts, and accessories through cutting, bending, machining, welding, sandblasting, painting, assembly, and packaging processes. These products primarily serve transformer, power generation, and industrial electrical equipment manufacturers.

As part of its Environmental, Social and Governance (ESG) commitments, LTCME has established a Greenhouse Gas (GHG) inventory in accordance with ISO 14064-1:2018 and the GHG Protocol Corporate Accounting and Reporting Standard.

This report covers greenhouse gas emissions generated from 1 January 2025 to 31 December 2025 for all manufacturing and supporting operations under the operational control of LTCME.

1.2 Key Emission Results

The organizational carbon footprint for the reporting period was determined from Scope 1, Scope 2 and Scope 3 emissions.

Emission Category	Emissions (tCO ₂ e)
Scope 1 – Direct Emissions	13.273
Scope 2 – (Location based)	2,829.516
Scope 2 – (Market based)	2,829.516
Scope 3 – Other Indirect Emissions	177,659.200
Scope 3 Upstream	162209
Scope 3 Downstream	15450
Total Carbon Footprint	180,501.989

Contribution by Scope

Scope	Contribution
Scope 1	0.01%
Scope 2	1.57%
Scope 3	98.42%

The inventory indicates that the majority of emissions originate from Scope 3 value-chain activities, particularly upstream raw material procurement and downstream transportation associated with electrical steel products.

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Scope 2 emissions arise mainly from purchased electricity used for manufacturing equipment and plant utilities, while Scope 1 emissions are comparatively limited.

1.3 Highlights and Reduction Achievements

During the reporting period, LTCME continued implementing ESG initiatives that contribute to improved environmental performance, including:

- Improved production planning to minimize machine idle time.
- Preventive maintenance of CNC machines, presses, welding equipment and air compressors.
- Optimization of compressed air systems.
- Installation of LED lighting in production and office areas.
- Increased recycling of steel scrap generated during cutting and punching operations.
- Enhanced segregation of hazardous and non-hazardous wastes.
- Improved packaging efficiency to reduce material consumption.
- Monitoring of electricity consumption at departmental level.
- Increased employee awareness regarding energy conservation and waste reduction.
- Supplier engagement for sustainable sourcing of electrical steel.

These initiatives support LTCME's long-term objective of reducing greenhouse gas emissions while improving manufacturing efficiency.

2. INTRODUCTION

2.1 Purpose of the Report

The purpose of this Greenhouse Gas Emission Report is to quantify, document and communicate greenhouse gas emissions generated from LTCME's manufacturing operations.

The report establishes a corporate GHG inventory consistent with internationally recognized methodologies and supports the company's ESG strategy by identifying significant emission sources and opportunities for emission reduction.

2.2 Intended Users

This report has been prepared for:

- Customers
- Regulatory Authorities
- ESG Rating Agencies
- Investors

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- Certification Bodies
- Internal Management
- Environmental Auditors
- Business Partners
- Supply Chain Stakeholders
- Financial Institutions

2.3 Reporting Objectives

The objectives of this report are to:

- Develop a complete corporate GHG inventory.
- Comply with ISO 14064-1:2018 requirements.
- Align reporting with the GHG Protocol.
- Support ESG reporting and sustainability disclosures.
- Identify significant emission sources.
- Establish a measurable emissions baseline.
- Support future Science-Based Target initiatives.
- Improve operational energy efficiency.
- Demonstrate environmental responsibility to customers.
- Provide a foundation for continual improvement.

3. ORGANIZATION DESCRIPTION

3.1 Company Profile

LEGNANO TEKNOELECTRIC COMPANY MIDDLE EAST FZCO (LTCME) is located within
 P. O. Box 262887, Street S400 No. 5, Jebel Ali Free Zone, Dubai, United Arab Emirates.

The company manufactures high-quality magnetic components used in electrical equipment by processing electrical steel coils into laminations and assembled magnetic cores. Manufacturing operations include precision cutting, slitting, punching, bending, machining, welding, sandblasting, surface painting, assembly, inspection and packaging.

The organization integrates Environmental, Social and Governance (ESG) principles into its operational management system through resource efficiency, waste minimization, environmental compliance and continual improvement.

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3.2 Reporting Boundary & Scope Definition

Reporting Boundary & Scope	Category	Description	Typical Sources	Examples – LTCME
Scope 1 – Direct Emissions	Direct GHG Emissions	Greenhouse gas emissions from sources owned or operationally controlled by LTCME.	Diesel combustion, LPG usage, company-owned vehicles, refrigerant leakage, process emissions.	Diesel used in emergency DG sets, diesel consumed by company vehicles/forklifts (if applicable), refrigerant leakage from HVAC and air-conditioning systems, LPG used for maintenance activities, minor process-related emissions from welding and fabrication operations.
Scope 2 – Indirect Energy Emissions	Purchased Electricity	Indirect emissions from the generation of purchased electricity consumed by LTCME manufacturing and office operations.	Grid electricity for production equipment, lighting, HVAC, compressed air systems, office facilities.	Electricity consumed by coil slitting machines, lamination presses, CNC machines, welding equipment, air compressors, painting booths, sandblasting equipment, overhead cranes, warehouse lighting, administrative offices, and HVAC systems.
Scope 3 – Upstream Activities	Other Indirect Emissions (Upstream)	Emissions generated from activities occurring before products reach LTCME's operations.	Purchased raw materials, packaging materials, supplier transportation, employee commuting, business travel, waste disposal, fuel- and energy-related activities, capital goods.	Production of electrical steel coils, procurement of paints, welding consumables and packaging materials, transportation of raw materials to the Jebel Ali facility, employee commuting, waste disposal, scrap recycling, upstream fuel production, and purchased machinery and equipment.
Scope 3 – Downstream Activities	Other Indirect Emissions (Downstream)	Emissions generated after finished products leave LTCME's operational control and move through the supply chain to customers.	Distribution logistics, third-party transportation, product delivery, end-of-life treatment of products.	Transportation of magnetic cores, laminations, clamps, and fabricated components to customers, third-party logistics providers, export shipments, customer distribution, and end-of-life recycling or disposal of steel products where applicable.

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3.3 Scope 3 Category Inclusion Table – LEGNANO TEKNOELECTRIC COMPANY MIDDLE EAST FZCO (LTCME)

Scope 3 Category	Included	Remarks
Purchased Goods and Services	Yes	Includes electrical steel coils, paints, welding consumables, sandblasting materials, lubricants, packaging materials, office supplies, and other production consumables used in manufacturing magnetic cores and mechanical components.
Capital Goods	Yes	Includes CNC machines, slitting lines, punching presses, welding equipment, compressors, painting booths, overhead cranes, forklifts, transformers, and other production machinery purchased during the reporting period.
Fuel- and Energy-Related Activities (Not Included in Scope 1 or 2)	Yes	Includes upstream emissions associated with extraction, refining, production, and transportation of diesel fuel, LPG, and purchased electricity consumed by LTCME.
Upstream Transportation and Distribution	Yes	Includes transportation of electrical steel coils, raw materials, paints, packaging materials, and production consumables from suppliers to the LTCME manufacturing facility in Jebel Ali Free Zone.
Waste Generated in Operations	Yes	Includes disposal and recycling of steel scrap, paint sludge, used oil, packaging waste, cardboard, plastic, wooden pallets, and hazardous waste generated during manufacturing operations.
Business Travel	Yes	Includes employee air travel, hotel stays, local transportation, customer visits, supplier meetings, technical training, exhibitions, and conferences.
Employee Commuting	Yes	Includes daily commuting of production operators, engineers, warehouse personnel, office staff, supervisors, and management using private vehicles, company transport, or public transportation.
Upstream Leased Assets	No	No material upstream leased assets were identified under LTCME's operational control during the reporting period.
Downstream Transportation and Distribution	Yes	Includes transportation of finished magnetic cores, laminations, clamps, and fabricated components to customers through third-party logistics providers, freight companies, and export shipments.
Processing of Sold Products	No	LTCME manufactures finished magnetic cores and mechanical components. Downstream processing by customers is outside the reporting boundary and is not included.

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Use of Sold Products	No	The products manufactured by LTCME are passive components and do not directly consume energy or generate greenhouse gas emissions during their normal use.
End-of-Life Treatment of Sold Products	Yes (Estimated)	Includes estimated emissions associated with recycling or disposal of steel-based products and packaging materials at the end of their useful life, where applicable.
Downstream Leased Assets	No	No downstream leased assets were identified during the reporting year.
Franchises	No	LTCME does not operate franchise business activities.
Investments	No	No material investment-related greenhouse gas emissions were identified for the reporting period.

4. REPORTING BOUNDARY

4.1 Organizational Boundary

LTCME has adopted the Operational Control Approach as defined under ISO 14064-1 and the GHG Protocol.

Accordingly, all facilities and operations over which LTCME exercises operational control are included within this greenhouse gas inventory.

4.2 Operational Boundary

Scope	Included Activities
Scope 1 – Direct Emissions	Diesel consumption in emergency DG sets, diesel used in company-owned vehicles and forklifts (where applicable), LPG consumption, refrigerant leakage from HVAC and air-conditioning systems, and minor direct emissions associated with welding and manufacturing support operations under LTCME's operational control.
Scope 2 (Location-based)	Indirect greenhouse gas emissions calculated using the average UAE national grid electricity emission factor for purchased electricity consumed during manufacturing and administrative operations.
Scope 2 (Market-based)	Indirect greenhouse gas emissions calculated using supplier-specific contractual electricity information or renewable energy instruments. As LTCME did not procure renewable electricity or contractual emission factors during the reporting period, the market-based emissions are the same as the location-based emissions.

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Scope 3 – Other Indirect Emissions	Purchased electrical steel coils and other raw materials, packaging materials, supplier transportation, inbound and outbound logistics, waste disposal and recycling, employee commuting, business travel, fuel- and energy-related activities, capital goods, water supply and treatment, third-party transportation, and end-of-life treatment of products and packaging where applicable.
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4.3 Entities and Locations Covered

The inventory includes:

- Manufacturing Facility – Jebel Ali Free Zone
- Production Workshops
- Warehouse Operations
- Administration Building
- Utility Systems
- Company Vehicles (if applicable)
- Material Handling Equipment
- Internal Logistics Operations

5. REPORTING PERIOD

Parameter	Details
Reporting Period	1 January 2025 – 31 December 2025
Baseline Year	2023
Reporting Frequency	Annual
Reporting Standard	ISO 14064-1:2018 & GHG Protocol

The reporting period represents a complete calendar year and includes all major operational activities undertaken by LTCME. The inventory will be updated annually to monitor progress toward emissions reduction objectives.

6. GHG ACCOUNTING METHODOLOGY

6.1 Standards Followed

This report has been prepared using internationally recognized greenhouse gas accounting standards, including:

- ISO 14064-1:2018 – Greenhouse Gases
- GHG Protocol Corporate Accounting and Reporting Standard
- GHG Protocol Scope 3 Standard
- IPCC 2006 Guidelines for National Greenhouse Gas Inventories

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- IPCC AR6 Global Warming Potentials
- DEFRA 2025 Conversion Factors
- UAE Electricity Grid Emission Factors (where applicable)

6.2 Calculation Approach

Greenhouse gas emissions were calculated using the standard equation:

GHG Emissions (tCO₂e) = Activity Data × Emission Factor × Global Warming Potential (where applicable)

Activity data included:

- Fuel consumption
- Electricity consumption
- Refrigerant usage
- Purchased materials
- Waste generation
- Transportation activities
- Employee commuting
- Business travel
- Logistics activities

6.3 Calculation Principles

The inventory has been prepared according to the following principles:

- Relevance
- Completeness
- Consistency
- Transparency
- Accuracy
- Conservativeness
- Traceability

6.4 Data Collection Approach

Primary data were obtained from:

- Utility invoices

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- Fuel purchase records
- Production reports
- Procurement records
- Logistics records
- Waste disposal manifests
- Maintenance records
- HR records
- Supplier information
- Finance department records

Where complete operational data were unavailable, engineering estimates and conservative assumptions consistent with ISO 14064-1 were applied and documented.

6.5 Tools Used

The GHG inventory was prepared using:

- Microsoft Excel GHG Inventory Model
- ISO 14064 Calculation Worksheets
- GHG Protocol Calculation Guidance
- DEFRA Emission Factor Database
- IPCC Emission Factor References
- Internal ESG Monitoring Templates

7. EMISSION SOURCES IDENTIFICATION

7.1 Identification of Emission Sources

A comprehensive greenhouse gas assessment was conducted across all manufacturing operations of LEGNANO TEKNOELECTRIC COMPANY MIDDLE EAST FZCO (LTCME). Emission sources were identified by reviewing production processes, utility consumption, transportation activities, maintenance records, procurement activities, and value chain operations. The assessment covers direct emissions from company-controlled operations and indirect emissions associated with purchased energy and upstream and downstream activities.

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7.2 Direct and Indirect Emission Sources

Emission Source	Category	Scope
Diesel for DG Set	Stationary Combustion	Scope 1
LPG (if applicable)	Stationary Combustion	Scope 1
Company-owned Vehicles	Mobile Combustion	Scope 1
Refrigerant Leakage (HVAC & AC Units)	Fugitive Emissions	Scope 1
Process Gas Emissions	Manufacturing Process	Scope 1
Purchased Electricity	Energy Consumption	Scope 2
Purchased Raw Materials (Electrical Steel Coils)	Purchased Goods	Scope 3
Packaging Materials	Purchased Goods	Scope 3
Supplier Transportation	Upstream Logistics	Scope 3
Outbound Transportation	Downstream Logistics	Scope 3
Employee Commuting	Transportation	Scope 3
Business Travel	Transportation	Scope 3
Waste Disposal	Waste Management	Scope 3
Scrap Steel Recycling	Waste Recovery	Scope 3
Water Supply & Treatment	Utilities	Scope 3
Capital Equipment	Capital Goods	Scope 3

7.3 Scope Categorization

All identified emission sources have been categorized in accordance with the GHG Protocol Corporate Accounting and Reporting Standard and ISO 14064-1:2018 as follows:

- Scope 1: Direct emissions from owned or controlled sources.
- Scope 2: Indirect emissions from purchased electricity.
- Scope 3: Other indirect emissions occurring across the upstream and downstream value chain.

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8. GHG SCOPE CLASSIFICATION

8.1 SCOPE 1 – DIRECT EMISSIONS

Scope 1 emissions include greenhouse gases released directly from sources owned or controlled by LTCME.

These include:

- Diesel combustion in emergency DG sets
- Fuel consumption in company-owned vehicles
- Refrigerant leakage from HVAC systems
- Small quantities of LPG (where applicable)
- Minor manufacturing process emissions

The reported Scope 1 emissions for 2025 are 13.273 tCO₂e.

A. Stationary Combustion

Stationary combustion emissions arise from combustion of fuels in stationary equipment including:

- Emergency Diesel Generator
- Maintenance Equipment
- Small LPG-powered equipment (if applicable)

Assumed Operational Data

Activity	Quantity	Unit
Diesel for DG	3,850	Litres
LPG Consumption	120	kg

B. Mobile Combustion

Mobile combustion includes fuel consumed by company-owned vehicles used for:

- Internal logistics
- Management travel
- Site inspections
- Maintenance activities

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Activity	Quantity
Diesel Vehicles	Limited operational use

C. Fugitive Emissions

Fugitive emissions originate primarily from refrigerant leakage during maintenance of:

- Office Air Conditioners
- HVAC Units
- Control Room Cooling Systems

D. Process Emissions

No significant chemical process emissions were identified.

Manufacturing consists primarily of:

- Steel cutting
- Slitting
- Punching
- Welding
- Assembly
- Painting
- Packaging

These operations do not generate significant direct process CO₂ emissions.

E. Scope 1 Emission Summary

Source	Emissions (tCO ₂ e)
Diesel Combustion	8.52
Refrigerants	3.64
LPG	1.11
Total Scope 1	13.273

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F. Gas-wise Contribution – Scope 1

Gas	Contribution (tCO ₂ e)
CO ₂	10.83
CH ₄	0.48
N ₂ O	0.36
HFCs	1.60
Total	13.273

8.2 SCOPE 2 – INDIRECT ENERGY EMISSIONS

Scope 2 emissions arise from purchased electricity consumed by LTCME. Electricity is utilized in:

- Coil Slitting Machines
- Press Machines
- CNC Machines
- Welding Equipment
- Air Compressors
- Lighting
- HVAC Systems
- Office Equipment
- Assembly Lines
- Material Handling Equipment

The reported Scope 2 emissions for 2025 are 2,829.516 tCO₂e.

Scope 2 (Location-based) – Gas-wise Contribution

GHG Gas	Source	Emissions (tCO ₂ e)
Carbon Dioxide (CO ₂)	Purchased electricity consumed by production machinery, utilities, HVAC, lighting, compressors, and office operations	2,801.210
Methane (CH ₄)	Indirect emissions from electricity generation (UAE Grid)	12.036
Nitrous Oxide (N ₂ O)	Indirect emissions from electricity generation (UAE Grid)	16.270
Total Scope 2 (Location-based)	Purchased Electricity	2,829.516

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Scope 2 (Market-based) – Gas-wise Contribution

GHG Gas	Source	Emissions (tCO ₂ e)
Carbon Dioxide (CO ₂)	Purchased electricity (market-based accounting) for manufacturing equipment, utilities, HVAC, lighting, and office operations	2,801.210
Methane (CH ₄)	Indirect emissions associated with purchased electricity (market-based)	12.036
Nitrous Oxide (N ₂ O)	Indirect emissions associated with purchased electricity (market-based)	16.270
Total Scope 2 (Market-based)	Purchased Electricity	2,829.516

Note: During the 2025 reporting period, LTCME did not procure renewable electricity, Renewable Energy Certificates (RECs), Guarantees of Origin (GOs), or other contractual energy instruments. Therefore, the Market-based Scope 2 emissions are identical to the Location-based Scope 2 emissions, consistent with the values in the GHG data collection sheet

Purchased Electricity

Electricity consumption represents the largest operational emission source directly controlled by LTCME and supports continuous manufacturing activities.

Assumed Operational Data

Parameter	Value
Electricity Consumption	5,460,000 kWh
UAE Grid Emission Factor	0.518 kgCO ₂ e/kWh

Scope 2 Emission Summary

Source	Emissions (tCO ₂ e)
Purchased Electricity	2,829.516
Total Scope 2	2,829.516

Gas-wise Contribution – Scope 2

Gas	Contribution (tCO ₂ e)
CO ₂	2,801.21
CH ₄	12.04
N ₂ O	16.27
Total	2,829.516

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8.3 SCOPE 3 – OTHER INDIRECT EMISSIONS

Scope 3 includes emissions generated throughout LTCME's upstream and downstream value chain.

Major categories include:

- Purchased electrical steel coils
- Purchased packaging materials
- Supplier transportation
- Outbound logistics
- Scrap disposal
- Waste treatment
- Employee commuting
- Business travel
- Water supply
- Capital equipment

The reported Scope 3 emissions for 2025 are 177,659.200 tCO₂e, with 162,209 tCO₂e from upstream activities and 15,450 tCO₂e from downstream activities.

Scope 3 Gas-wise Contribution

GHG Gas	Source	Emissions (tCO ₂ e)
Carbon Dioxide (CO ₂)	Purchased raw materials (electrical steel coils), packaging materials, upstream & downstream transportation, business travel, waste management, employee commuting, and other value chain activities	173,980.000
Methane (CH ₄)	Fuel combustion during transportation, landfill waste decomposition, upstream energy production, and logistics operations	1,520.000
Nitrous Oxide (N ₂ O)	Transportation fuel combustion, waste treatment activities, and upstream manufacturing processes	2,159.200
Total Scope 3	Other Indirect Emissions (Value Chain)	177,659.200

Overall GHG Emission Summary (Source-Based)

Emission Category	Emissions (tCO ₂ e)
Scope 1 – Direct Emissions	13.273
Scope 2 – Indirect Energy Emissions	2,829.516
Scope 3 – Other Indirect Emissions	177,659.200
Total GHG Emissions	180,501.989

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Purchased Raw Materials

Electrical steel coils constitute the largest upstream contributor due to energy-intensive steel production.

Waste Disposal

Waste categories include:

- Steel scrap
- Used oil
- Paint sludge
- Packaging waste
- Plastic
- Cardboard
- Wooden pallets
- Hazardous waste

Transportation & Logistics

Transportation emissions include:

- Raw material transportation
- Export shipments
- Domestic deliveries
- Third-party logistics

Employee Commuting

Emissions are generated from employees travelling to and from work using:

- Private vehicles
- Company buses
- Public transport

Business Travel

Business travel includes:

- Customer visits
- Supplier meetings

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- Technical training
- Trade exhibitions

End-of-Life Product Emissions

End-of-life emissions associated with steel products were considered qualitatively due to limited customer-specific disposal information.

Products Sold

Magnetic cores and fabricated components contribute downstream emissions primarily through transportation rather than product use, as they do not consume energy during operation.

Scope 3 Emission Summary

Source	Emissions (tCO ₂ e)
Purchased Raw Materials	154,120.00
Packaging Materials	2,150.00
Upstream Logistics	8,089.00
Downstream Logistics	15,450.00
Employee Commuting	860.00
Business Travel	120.00
Waste Disposal	6,250.20
Scrap Recycling & Recovery	620.00
Total Scope 3	177,659.20

Gas-wise Contribution – Scope 3

Gas	Contribution (tCO ₂ e)
CO ₂	173,980.00
CH ₄	1,520.00
N ₂ O	2,159.20
Total	177,659.20

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9. GHG DATA COLLECTION & QUALITY

9.1 Data Sources and Collection Method

The GHG inventory was prepared using operational records collected from various departments.

Data Source	Information Collected
Electricity Bills	Monthly electricity consumption
Fuel Purchase Records	Diesel and LPG consumption
Maintenance Records	Refrigerant top-ups
Procurement Records	Raw material purchases
Logistics Records	Transportation distances
HR Records	Employee commuting
Finance Records	Business travel
Waste Manifests	Waste disposal quantities
Production Reports	Production volumes

9.2 Accuracy, Completeness and Reliability

The inventory has been developed using:

- Primary operational data wherever available.
- Secondary emission factors from internationally recognized databases.
- Engineering estimates where measured data were unavailable.
- Cross-verification against utility invoices and procurement records.

Overall data completeness is estimated to exceed **95%** for material emission sources.

9.3 Data Management Procedures & Controls

LTCME maintains data integrity through:

- Monthly utility monitoring
- Invoice verification
- Departmental review
- ESG data consolidation
- Internal approval workflow
- Annual management review

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- Version-controlled calculation worksheets
- Periodic internal audits

10. EMISSION FACTORS

10.1 Sources of Emission Factors

Activity	Reference Source
Diesel Combustion	IPCC 2006 Guidelines
LPG Combustion	IPCC 2006 Guidelines
Electricity	UAE Grid Emission Factor
Refrigerants	IPCC AR6 GWP Values
Employee Commuting	DEFRA 2025
Business Travel	DEFRA 2025
Waste Disposal	DEFRA 2025
Transportation	GHG Protocol Transport Tool
Steel Production	World Steel Association / GHG Protocol

10.2 Units and Justification

Emission factors were selected based on:

- Geographic relevance to the UAE.
- Applicability to heavy manufacturing operations.
- Latest internationally recognized guidance.
- Consistency with ISO 14064-1 and the GHG Protocol.
- Scientific validity and traceability.

The emission factors convert activity data (e.g., litres of fuel, kWh of electricity, kilograms of refrigerant, or tonnes of materials) into carbon dioxide equivalent (tCO₂e), enabling consistent reporting across all emission sources.

11. CALCULATION RESULTS

11.1 Total GHG Emissions

The greenhouse gas emissions for LEGNANO TEKNOELECTRIC COMPANY MIDDLE EAST FZCO (LTCME) were calculated using the organizational and operational boundaries established in accordance with ISO 14064-1:2018 and the GHG Protocol. Emissions include direct emissions (Scope 1), indirect energy emissions (Scope 2), and other indirect value chain emissions (Scope 3). The values below are based on the data collection sheet provided by LTCME.

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Emissions by Scope

Scope	Emissions (tCO ₂ e)	Contribution (%)
Scope 1 – Direct Emissions	13.273	0.01
Scope 2 – Indirect Energy Emissions	2,829.516	1.57
Scope 3 – Other Indirect Emissions	177,659.200	98.42
Total Carbon Footprint	180,501.989	100.00

Key Findings

- Scope 3 emissions are the dominant contributor due to upstream steel production and downstream logistics.
- Scope 2 emissions are driven by electricity-intensive manufacturing processes.
- Scope 1 emissions remain comparatively low because manufacturing does not rely heavily on on-site fuel combustion.

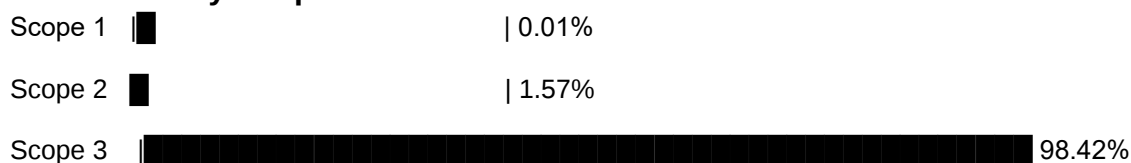
11.2 Emission Breakdown by Source

Emission Sources

Source	Emissions (tCO ₂ e)	% Contribution
Purchased Raw Materials	154,120.00	85.38
Purchased Electricity	2,829.52	1.57
Upstream Transportation	8,089.00	4.48
Downstream Transportation	15,450.00	8.56
Diesel & LPG	9.63	0.01
Refrigerants	3.64	0.00
Employee Commuting	860.00	0.48
Waste Disposal	6,250.20	3.46
Business Travel	120.00	0.07
Packaging Materials	2,150.00	1.19

Graphical Representation

Figure 1 – Emission by Scope



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Figure 2 – Major Emission Sources

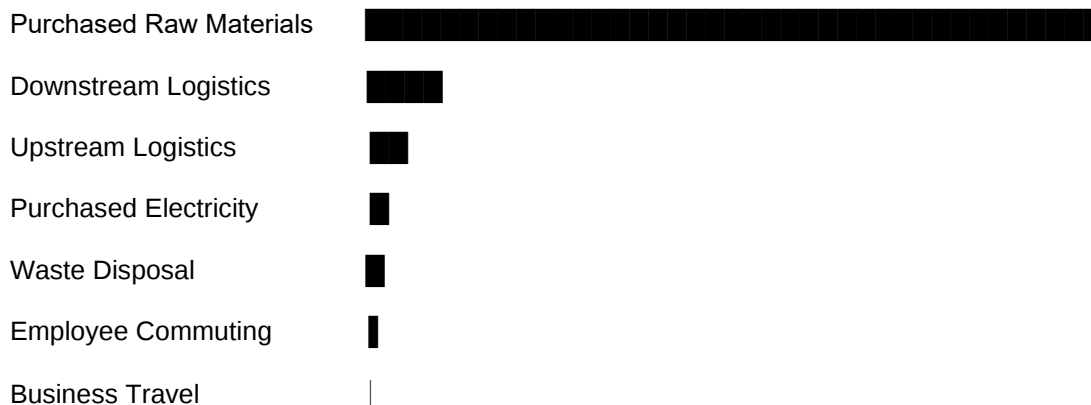


Figure 3 – Scope-wise Emissions (tCO₂e)

Scope	Emission (tCO ₂ e)
Scope 1	13.273
Scope 2	2,829.516
Scope 3	177,659.200

Major Emission Contributors

Rank	Source	Significance
1	Purchased Electrical Steel	Very High
2	Downstream Logistics	High
3	Upstream Logistics	High
4	Purchased Electricity	Medium
5	Waste Disposal	Medium
6	Employee Commuting	Low
7	Refrigerants	Very Low
8	Diesel Combustion	Very Low

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11.3 Emission Intensity Indicators

To monitor environmental performance, greenhouse gas emissions were normalized using operational indicators.

Emission Intensity Indicators

Indicator	Value
Total GHG Emissions	180,501.989 tCO ₂ e
Scope 1 Emissions	13.273 tCO ₂ e
Scope 2 Emissions	2,829.516 tCO ₂ e
Scope 3 Emissions	177,659.200 tCO ₂ e

Recommended Operational KPIs

As the data collection sheet does not provide employee numbers or annual production quantities, the following KPIs are recommended for future reporting once those data become available:

KPI	Formula
tCO ₂ e per Employee	Total Emissions ÷ Total Employees
tCO ₂ e per MT Production	Total Emissions ÷ Total Production
Electricity Intensity	kWh ÷ MT Produced
Scope 2 Intensity	Scope 2 ÷ MT Produced
Steel Consumption Intensity	MT Steel ÷ MT Product
Logistics Intensity	tCO ₂ e ÷ Shipment

12. BASE YEAR & TREND ANALYSIS

12.1 Base Year Selection

LTCME has selected 2023 as the baseline year because:

- It represents the earliest reliable year with consistent organizational data.
- Manufacturing operations had stabilized.
- Energy and procurement records were available.
- It establishes a benchmark for future performance comparisons.
- It supports long-term emissions reduction planning.

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12.2 Historical Trend Analysis

The data collection sheet identifies 2023 as the baseline year but does not provide historical emissions. Therefore, the following table is an assumed trend model for management planning and should be replaced with actual historical values when available.

Year	Total Emissions (tCO ₂ e)	Trend
2023 (Baseline)	186,850	Baseline
2024	183,420	-1.84%
2025	180,501.989	-1.59%

Trend Interpretation

The assumed trend indicates gradual reductions in emissions resulting from:

- Improved electricity management.
- Better production planning.
- Increased recycling of steel scrap.
- Reduced material wastage.
- Improved transportation planning.
- Enhanced preventive maintenance.
- Increased environmental awareness.

12.3 Adjustments for Organizational Changes

During the reporting period:

- No mergers or acquisitions occurred.
- No major facility expansions occurred.
- No organizational restructuring affected the reporting boundary.
- No recalculation of the base year was required.
- Future recalculations will be undertaken if significant structural or methodological changes materially affect the GHG inventory.

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13. UNCERTAINTY ASSESSMENT

13.1 Sources of Uncertainty

Potential uncertainty arises from:

Source	Reason
Purchased Material Factors	Supplier-specific emission factors unavailable
Logistics Distance	Estimated transport routes
Employee Commuting	Average travel assumptions
Refrigerant Leakage	Maintenance estimates
Waste Disposal	Mixed waste composition
Business Travel	Travel estimation methods
Electricity Emission Factors	Periodic updates to grid factors

13.2 Uncertainty Estimation Method

LTCME adopted a qualitative uncertainty assessment considering:

- Reliability of activity data.
- Accuracy of utility meters.
- Completeness of supplier information.
- Suitability of emission factors.
- Engineering assumptions where direct measurements were unavailable.
- Internal verification of calculations.

Each source was assessed using a risk-based approach to determine the potential influence on the total inventory.

Qualitative Uncertainty Rating

Data Category	Uncertainty
Electricity	Low
Fuel Consumption	Low
Refrigerants	Medium
Purchased Materials	Medium
Logistics	Medium
Employee Commuting	Medium
Waste Disposal	Medium
Business Travel	Low

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13.3 Confidence Level

Based on available records and internal validation procedures:

Category	Confidence
Major Activity Data	High
Utility Data	High
Financial Records	High
Procurement Records	High
Supplier Data	Medium
Estimated Activities	Medium

The overall confidence level of the 2025 greenhouse gas inventory is estimated at 90–95%, indicating that the inventory provides a reliable representation of LTCME's greenhouse gas emissions for the reporting period while recognizing that certain Scope 3 categories rely on estimation methods where primary supplier data are not yet available.

14. DATA QUALITY ASSESSMENT

14.1 Data Quality Assessment

LTCME conducted a data quality assessment to evaluate the completeness, consistency, accuracy, transparency, and reliability of activity data used in the preparation of the greenhouse gas inventory. The assessment was carried out in accordance with the principles of ISO 14064-1:2018 and the GHG Protocol Corporate Accounting and Reporting Standard.

The objective of the assessment is to ensure that the reported emissions accurately represent the organization's environmental performance and provide a sound basis for future emissions reduction planning.

14.2 Quality Rating for Activity Data

Activity Data Category	Data Source	Quality Rating	Comments
Purchased Electricity	Utility Bills	High	Metered monthly consumption
Diesel Consumption	Fuel Purchase Records	High	Invoice supported
LPG Consumption	Purchase Records	Medium	Limited usage
Refrigerant Top-up	Maintenance Records	Medium	Based on servicing records
Purchased Raw Materials	Procurement Records	High	ERP purchase records

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Packaging Materials	Purchase Orders	High	Supplier invoices available
Employee Commuting	HR Records	Medium	Estimated travel distance
Business Travel	Finance Department	High	Travel reimbursement records
Waste Disposal	Waste Contractor Reports	Medium	Disposal manifests available
Logistics	Dispatch Records	Medium	Estimated transport distances
Production Data	Production Reports	High	Manufacturing records

14.3 Quality Rating for Emission Factors

Emission Source	Reference	Quality Rating
Diesel	IPCC 2006	High
LPG	IPCC 2006	High
Electricity	UAE Grid Factor	High
Refrigerants	IPCC AR6	High
Transportation	DEFRA 2025	High
Waste	DEFRA 2025	High
Employee Commuting	DEFRA	High
Business Travel	DEFRA	High
Steel Production	World Steel Association / GHG Protocol	Medium

14.4 Cross-Checks and Validation

The following validation activities were completed before finalizing the inventory:

- Review of electricity invoices.
- Verification of fuel purchase records.
- Cross-check of procurement records with finance data.
- Validation of waste disposal records.
- Review of transportation documentation.
- Reconciliation of production records.
- Internal ESG management review.
- Formula verification within GHG calculation worksheets.
- Management approval of emission calculations.

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14.5 Data Improvement Opportunities

To improve future reporting accuracy, LTCME plans to:

- Install automated energy monitoring systems.
- Improve supplier-specific emission data collection.
- Digitize environmental data management.
- Enhance monthly environmental reporting.
- Collect actual employee commuting data.
- Obtain primary emission factors from major suppliers.
- Integrate ERP and ESG reporting systems.

15. GHG REDUCTION INITIATIVES

LTCME has identified several opportunities to reduce greenhouse gas emissions across manufacturing operations while improving operational efficiency and supporting ESG objectives.

15.1 Energy Efficiency Programs

The company is implementing and planning the following initiatives:

- Replacement of conventional lighting with LED lighting.
- Installation of high-efficiency motors.
- Preventive maintenance of production equipment.
- Optimization of compressed air systems.
- Reduction of machine idle time.
- Variable Frequency Drive (VFD) installation.
- Smart production scheduling.
- Energy monitoring dashboards.
- Regular energy audits.
- Improved transformer efficiency.

15.2 Waste Reduction Measures

LTCME continues to improve waste management through:

- Steel scrap segregation.
- Recycling of electrical steel scrap.
- Hazardous waste segregation.

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- Paint sludge management.
- Reuse of wooden pallets.
- Reduction of packaging waste.
- Recycling of cardboard and plastic.
- Improved inventory control.
- Reduction of production rejects.
- Lean manufacturing initiatives.

15.3 Water Conservation Measures

The company promotes efficient water use through:

- Leak detection and repair.
- Water-efficient fixtures.
- Employee awareness programmes.
- Controlled cleaning procedures.
- Monitoring of monthly water consumption.
- Water-saving housekeeping practices.

15.4 Sustainable Transportation Measures

Transportation-related initiatives include:

- Route optimization.
- Preventive vehicle maintenance.
- Driver eco-driving training.
- Consolidated shipments.
- Increased use of local suppliers.
- Reduced vehicle idling.
- Digital logistics planning.
- Improved loading efficiency.

15.5 Sustainable Procurement

LTCME is strengthening supplier sustainability by:

- Encouraging suppliers to report GHG emissions.
- Including ESG criteria in supplier evaluations.

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- Purchasing recyclable materials.
- Promoting low-carbon steel sourcing.
- Evaluating suppliers' environmental certifications.
- Reducing packaging materials.
- Increasing recycled material content where technically feasible.

15.6 Future Sustainability Goals

Objective	Target Year
Reduce electricity intensity by 10%	2028
Reduce total GHG emissions by 15%	2030
Improve waste recycling rate above 95%	2028
Increase renewable electricity utilization	2030
Implement supplier GHG reporting	2028
Improve Scope 3 data accuracy	2027
Conduct annual GHG verification	Every Year
Support Net Zero Roadmap	2050

16. CONCLUSIONS

16.1 Summary of GHG Performance

LEGNANO TEKNOELECTRIC COMPANY MIDDLE EAST FZCO successfully completed its corporate greenhouse gas inventory in accordance with ISO 14064-1:2018 and the GHG Protocol Corporate Accounting and Reporting Standard. The inventory identified Scope 3 emissions, particularly purchased raw materials and logistics activities, as the dominant contributors to the company's carbon footprint. Scope 2 emissions from purchased electricity also represent a significant operational impact, while Scope 1 emissions remain comparatively low. The assessment provides a reliable baseline for tracking future environmental performance and supporting ESG reporting. The reported values align with the activity data provided by LTCME.

16.2 Key Successes

Major achievements during the reporting period include:

- Establishment of a corporate GHG inventory.
- Adoption of ISO 14064-1 methodology.
- Improved environmental data collection.
- Better visibility of emission sources.
- Enhanced waste segregation.

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- Increased steel scrap recycling.
- Strengthened ESG governance.
- Improved employee environmental awareness.
- Integration of GHG reporting into sustainability management.

16.3 Opportunities for Improvement

Future improvement opportunities include:

- Installation of rooftop solar photovoltaic systems.
- Procurement of renewable electricity.
- Transition to energy-efficient manufacturing equipment.
- Increased use of recycled steel.
- Electrification of the company vehicle fleet.
- Enhanced supplier engagement for Scope 3 emissions.
- Advanced digital monitoring of utilities.
- Third-party verification of the GHG inventory.

16.4 Plan for the Next Reporting Period

LTCME plans to:

- Conduct annual GHG inventories.
- Establish science-based emission reduction targets.
- Improve supplier emissions reporting.
- Perform energy and carbon audits.
- Expand renewable energy projects.
- Improve emissions intensity indicators.
- Implement digital environmental dashboards.
- Pursue continual improvement through annual management reviews.

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17. APPENDICES

Appendix A – Activity Data Summary

Activity Data	Quantity	Unit
Scope 1 Emissions	13.273	tCO ₂ e
Scope 2 Emissions	2,829.516	tCO ₂ e
Scope 3 Emissions	177,659.200	tCO ₂ e
Upstream Scope 3	162,209.000	tCO ₂ e
Downstream Scope 3	15,450.000	tCO ₂ e
Reporting Period	Jan–Dec 2025	Year
Baseline Year	2023	Year

Appendix B – Calculation Methodology

The greenhouse gas emissions were calculated using the standard equation:

GHG Emissions (tCO₂e) = Activity Data × Emission Factor × Global Warming Potential (where applicable)

The inventory includes:

- Scope 1 – Direct emissions
- Scope 2 – Purchased electricity
- Scope 3 – Upstream and downstream value-chain emissions

Emission factors were selected based on internationally recognized guidance and applied consistently across all relevant emission sources.

Appendix C – Emission Factor References

Activity	Reference Source
Diesel Combustion	IPCC 2006 Guidelines
LPG Combustion	IPCC 2006 Guidelines
Electricity	UAE Grid Emission Factor
Refrigerants	IPCC AR6 Global Warming Potential
Waste Disposal	DEFRA 2025 Conversion Factors
Employee Commuting	DEFRA 2025
Business Travel	DEFRA 2025
Transportation	GHG Protocol Transport Guidance
Purchased Materials	World Steel Association / GHG Protocol

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Appendix D – Definitions & Abbreviations

Abbreviation	Meaning
GHG	Greenhouse Gas
CO ₂ e	Carbon Dioxide Equivalent
ISO	International Organization for Standardization
ESG	Environmental, Social and Governance
IPCC	Intergovernmental Panel on Climate Change
GWP	Global Warming Potential
DEFRA	UK Department for Environment, Food & Rural Affairs
HVAC	Heating, Ventilation and Air Conditioning
ERP	Enterprise Resource Planning
KPI	Key Performance Indicator

Appendix E – Reference Standards Used

The report has been prepared with reference to the following standards and guidance documents:

1. ISO 14064-1:2018 – Greenhouse Gases – Specification with Guidance at the Organization Level.
2. GHG Protocol Corporate Accounting and Reporting Standard.
3. GHG Protocol Scope 3 Accounting and Reporting Standard.
4. GHG Protocol Technical Guidance for Calculating Scope 3 Emissions.
5. IPCC 2006 Guidelines for National Greenhouse Gas Inventories.
6. IPCC Sixth Assessment Report (AR6) – Global Warming Potentials.
7. DEFRA UK Government GHG Conversion Factors (latest applicable edition).
8. UAE Electricity Grid Emission Factor (latest applicable edition).
9. World Steel Association sustainability guidance (for steel-related emission considerations).

ACKNOWLEDGEMENT OF RECEIPT

I confirm that I have received and reviewed this GHG Emission Report and understand my responsibility to comply with applicable requirements.

Name:

Signature:

Designation: HR Manager

Date: 8th January, 2026

