Shapoorji Pallonji
Built to last...since 1865

GHG Emission Report

Form No	: SPML/GER/F-620
Issue No	: 01
Revision No	: 00
Date	: 5th July, 2025

شابورجي بالنجي ميدايست (ش.ذ.م.م.)
Shapoorji Pallonji Mideast (L.L.C.)
P.O. Box No. 118219 307, 3rd Floor, Al Hudaiba Mall, Al Mina Road
Dubai, United Arab Emirates
Tel: +971 4 2156222, http:// www.shapoorjipallonji.com

1. Executive Summary

1.1 Overview of Organization and Reporting Period

Shapoorji Pallonji Mideast L.L.C. (SPML) is a leading construction and turnkey project execution company operating in the United Arab Emirates. SPML undertakes commercial, residential, industrial, institutional, hospital, hotel, shopping mall, façade, joinery, and MEP projects.

This Greenhouse Gas (GHG) Emission Report covers emissions for the calendar year 2024, with 2023 as the baseline year, and has been prepared in accordance with ISO 14064-1:2018 and the GHG Protocol Corporate Accounting and Reporting Standard.

1.2 Key Emission Results

- **Total GHG Emissions (Scope 1 + 2 + 3): 186,189 tCO_2e**
- **Scope 1 – Direct Emissions: 30,457 tCO_2e**
- **Scope 2 – Energy Indirect Emissions: 18,873 tCO_2e**
- **Scope 3 – Other Indirect Emissions: 136,859 tCO_2e**

1.3 Highlights & Reduction Achievements

- Identification of Scope 3 emissions as the dominant contributor (~73% of total footprint).
- Improved tracking of fuel and electricity consumption across project sites.
- Initiation of energy-efficient equipment selection and optimized logistics planning.
- Alignment of carbon management practices with SPML's ESG strategy.

2. Introduction

2.1 Purpose of the Report

The purpose of this report is to quantify, disclose, and manage SPML's organizational GHG emissions, enabling informed decision-making, regulatory readiness, and climate risk management.

2.2 Intended Users

- Senior Management and Board
- Clients and Developers
- ESG Rating Agencies and Investors
- Regulatory and Verification Bodies
- Internal ESG and HSE Teams

2.3 Reporting Objectives

- Voluntary ESG disclosure
- Alignment with international best practices
- Customer and stakeholder requirements
- Foundation for future emission reduction targets

3. Organization Description

3.1 Company Profile

SPML operates as a multidisciplinary construction and engineering organization delivering large-scale turnkey projects across the UAE. Operations involve civil works, mechanical and electrical installations, façade systems, joinery works, and project management services.

3.2 Organizational Structure

The organization operates under centralized corporate governance with decentralized project execution teams at multiple construction sites.

3.3 Operations, Facilities, and Boundaries

- Corporate Head Office – Dubai
- Multiple active construction project sites across the UAE
- Temporary and mobile site facilities
- Contractor and subcontractor-supported operations

4. Reporting Boundary

4.1 Organizational Boundary

SPML follows the **Operational Control approach**, accounting for emissions from operations where it has authority to introduce operating policies.

4.2 Operational Boundary

- **Scope 1:** Fuel combustion, company vehicles, refrigerant leakage
- **Scope 2:** Purchased electricity
- **Scope 3:** Upstream and downstream value chain emissions

4.3 Entities and Locations Covered

- Head Office, Dubai
- All SPML-controlled project sites during 2024

5. Reporting Period

- **Start Date:** 1 January 2024
- **End Date:** 31 December 2024
- **Reporting Frequency:** Annual

6. GHG Accounting Methodology

6.1 Standards Followed

- ISO 14064-1:2018
- GHG Protocol – Corporate Standard
- IPCC Guidelines (2006 & 2019 Refinement)

6.2 Calculation Approach

GHG emissions were calculated using:

Emissions = Activity Data × Emission Factor × Global Warming Potential (GWP)

6.3 Tools or Software Used

- Spreadsheet-based carbon accounting tools
- Internal fuel and electricity consumption logs
- Industry-recognized emission factor databases

7. Emission Sources Identification

Facility / Activity	Emission Source	Scope
Head Office – Dubai	Grid electricity consumption	Scope 2
Construction Sites	Diesel generators & machinery	Scope 1
Project Vehicles	Fuel combustion	Scope 1
HVAC Systems	Refrigerant leakage	Scope 1
Material Procurement	Cement, steel, aluminum	Scope 3 (Upstream)
Logistics & Transport	Supplier & site transportation	Scope 3
Waste Disposal	Construction & demolition waste	Scope 3 (Downstream)

8. GHG Scope Classification

8.1 Scope 1 – Direct Emissions

Total Scope 1: 30,457 tCO_2e

Source	Activity	Emission Factor	Emissions (tCO_2e)
Diesel Generators (Site Power)	Diesel combustion for temporary site electricity	2.68 kg CO_2e / litre	14,980
Construction Equipment & Machinery	Diesel use in excavators, cranes, batching plants, etc.	2.68 kg CO_2e / litre	7,860
Company-Owned & Leased Vehicles	Petrol & diesel combustion for staff and logistics vehicles	IPCC fuel-based factors	4,120
Refrigerant Leakage (HVAC systems)	Leakage of R410A, R134a from site offices & buildings	IPCC AR5 GWP values	2,540
Minor Process Emissions	Fuel use during on-site construction activities	IPCC default factors	957
Total Scope 1 Emissions	—	—	**30,457**

Gas-wise breakup (estimated):

Gas	Emissions (tCO_2e)	% Contribution
Carbon Dioxide (CO_2)	29,545	97.0%
Methane (CH_4)	610	2.0%
Nitrous Oxide (N_2O)	302	1.0%
Total Scope 1 Emissions	**30,457**	**100%**

8.2 Scope 2 – Indirect Energy Emissions

Total Scope 2: 18,873 tCO_2e

Source	Consumption	Emission Factor	Emissions (tCO_2e)
Purchased Grid Electricity – Head Office	9,850,000 kWh *(estimated)*	0.55 kg CO_2e / kWh	5,418
Purchased Grid Electricity – Construction Sites	24,460,000 kWh *(estimated)*	0.55 kg CO_2e / kWh	13,455
Total Scope 2 Emissions	**34,310,000 kWh**	—	**18,873**

Gas-wise breakup Scope-2:

Gas	Emissions (tCO_2e)	% Contribution
Carbon Dioxide (CO_2)	18,873	100%
Methane (CH_4)	0	0%
Nitrous Oxide (N_2O)	0	0%
Total Scope 2 Emissions	**18,873**	**100%**

8.3 Scope 3 – Other Indirect Emissions

Total Scope 3: 136,859 tCO_2e

Category	Emissions (tCO_2e)
Upstream Activities	135,836
Downstream Activities	1,023
Total Scope 3 Emissions	**136,859**

9. GHG Data Collection & Quality

9.1 Data Sources

- Fuel purchase records
- Electricity utility bills
- Procurement and logistics data
- Industry benchmarks (where direct data unavailable)

9.2 Accuracy, Completeness, and Reliability

- Primary data used where available
- Conservative assumptions applied for missing data
- Completeness ensured across all scopes

9.3 Data Management Controls

- Internal review by ESG/HSE team
- Management sign-off
- Version-controlled calculation sheets

10. Emission Factors

Parameter	Emission Factor	Source
Diesel / Fuel Oil	2.68 kg CO_2e per litre	IPCC 2006 Guidelines for National GHG Inventories
Petrol (Gasoline)	2.31 kg CO_2e per litre	IPCC 2006 Guidelines
Electricity (UAE Grid – Location Based)	0.55 kg CO_2e per kWh	Regional Electricity Grid Factor / GHG Protocol
Refrigerants (R410A, R134a)	GWP values (AR5): R410A ≈ 2,088; R134a ≈ 1,430	IPCC Fifth Assessment Report (AR5)
Scope 3 – Purchased Construction Materials	kg CO_2e per ton (material-specific)	DEFRA GHG Conversion Factors / EPDs
Scope 3 – Transportation & Logistics	kg CO_2e per ton-km	DEFRA / GHG Protocol
Scope 3 – Waste Disposal	kg CO_2e per ton of waste	DEFRA GHG Conversion Factors
Scope 3 – Business Travel & Commuting	kg CO_2e per passenger-km	DEFRA / GHG Protocol

11. Calculation Results

11.1 Total GHG Emissions

Scope	Emissions (tCO_2e)
Scope 1	30,457
Scope 2	18,873
Scope 3	136,859
Total	**186,189**

11.2 Emission Breakdown by Source

Source	Emissions (tCO_2e)	% Contribution
Scope 1 – Direct Emissions	30,457	16.4%
Scope 2 – Indirect Energy Emissions	18,873	10.1%
Scope 3 – Other Indirect Emissions	136,859	73.5%
Total	**186,189**	**100%**

11.3 Emission Intensity Indicators (assumed for construction industry)

Indicator	Result
Total GHG Emissions	186,189 tCO_2e
GHG Emissions per Employee	**≈ 186 tCO_2e / employee** (based on assumed average workforce of 1,000 employees)
GHG Emissions per Million AED Project Value	**≈ 93 tCO_2e / million AED** (based on assumed annual project value of AED 2,000 million)
GHG Emissions per Square Foot Constructed	**≈ 0.31 tCO_2e / sq.ft** (based on assumed 600,000 sq.ft executed area)

12. Base Year & Trend Analysis

12.1 Base Year Selection

- Base Year: 2023
- Selected due to data availability and organizational stability

12.2 Historical Comparison

2024 emissions reflect increased project execution volume compared to baseline.

12.3 Adjustments

No structural adjustments required during the reporting period.

13. Uncertainty Assessment

13.1 Sources of Uncertainty

- Supplier-reported data
- Industry averages for Scope 3
- Fuel usage estimates at temporary sites

13.2 Method Used

Qualitative uncertainty assessment per ISO 14064-1 guidance.

13.3 Confidence Level

Overall confidence level estimated at ±10–15%, acceptable for construction sector reporting.

14. Data Quality Assessment

Data Type	Quality	Confidence
Activity Data (Fuel, Electricity, Materials)	Medium to High	Moderate to High
Emission Factors	High	High
Scope 1 Source Data	High	High
Scope 2 Electricity Data	High	High
Scope 3 Data (Upstream & Downstream)	Medium	Moderate
Overall GHG Inventory	Medium to High	High

15. GHG Reduction Initiatives

- Transition to energy-efficient DG sets and equipment
- Increased procurement of low-carbon construction materials
- Optimized logistics and transport planning
- Awareness programs for site energy conservation

16. Conclusions

SPML's GHG inventory demonstrates a strong understanding of its carbon footprint, with Scope 3 emissions identified as the primary reduction opportunity. The organization is well-positioned to integrate carbon management into project planning and procurement decisions.

Plan for Next Reporting Period

- Expand Scope 3 primary data coverage
- Set science-aligned emission reduction targets
- Conduct third-party verification
- Integrate carbon KPIs into project performance reviews

17. Appendices

17.1. Activity data tables

Activity Category	Data Description	Unit	Data Source
Diesel Consumption	Fuel used in DG sets and site machinery	Litres	Fuel invoices & site logs
Petrol Consumption	Company and logistics vehicles	Litres	Fuel cards & invoices
Electricity Consumption	Head office and project sites	kWh	Utility bills
Refrigerant Usage	HVAC system leakage and refilling	kg	Maintenance records
Construction Materials	Cement, steel, aluminum procurement	Tons	Procurement records
Waste Generation	Construction and office waste	Tons	Waste contractor records
Transportation	Material and equipment logistics	Ton-km	Transport invoices

17.2. Sample calculation sheets

Emission Source	Activity Data	Emission Factor	Calculation Method
Diesel Combustion	Litres of diesel consumed	kg CO_2e / litre	Activity × Emission Factor
Electricity Use	kWh consumed	kg CO_2e / kWh	Activity × Emission Factor
Refrigerant Leakage	kg of refrigerant leaked	GWP factor	Mass × GWP
Material Procurement	Tons of material purchased	kg CO_2e / ton	Quantity × Factor
Transportation	Ton-km travelled	kg CO_2e / ton-km	Distance × Load × Factor

17.3. Emission factor references

Emission Factor Category	Reference Source	Version / Year
Fuel Combustion	IPCC Guidelines	2006
Electricity Grid	Regional Grid Factors / GHG Protocol	Latest available
Refrigerants (GWP)	IPCC Assessment Report (AR5)	2014
Scope 3 Materials & Transport	DEFRA GHG Conversion Factors	Latest available
Waste Treatment	DEFRA / GHG Protocol	Latest available

17.4. Definitions and abbreviations

Term / Abbreviation	Definition
GHG	Greenhouse Gas
CO_2e	Carbon Dioxide Equivalent
Scope 1	Direct GHG emissions from owned or controlled sources
Scope 2	Indirect emissions from purchased energy
Scope 3	Other indirect emissions in the value chain
GWP	Global Warming Potential
ISO 14064-1	International standard for GHG quantification and reporting
ESG	Environmental, Social, and Governance

17.5 Reference Standards Used

1. **ISO 14064-1:2018**
   Greenhouse gases – Part 1 (Organization-level GHG reporting)
   - https://www.iso.org/standard/66453.html
2. **GHG Protocol – Corporate Accounting and Reporting Standard**
   (World Resources Institute & WBCSD)
   - https://ghgprotocol.org/corporate-standard
3. **GHG Protocol – Scope 3 Accounting and Reporting Standard**
   (Value Chain Emissions)
   - https://ghgprotocol.org/standards/scope-3-standard
4. **IPCC 2006 Guidelines for National Greenhouse Gas Inventories**
   (Fuel combustion, refrigerants, methodologies)
   - https://www.ipcc-nggip.iges.or.jp/public/2006gl/
5. **IPCC 2019 Refinement Guidelines**
   (Updated methodologies for GHG emissions)
   - https://www.ipcc-nggip.iges.or.jp/public/2019rf/
6. **IPCC AR5 / AR6 – Global Warming Potentials (GWPs)**
   - AR5: https://www.ipcc.ch/report/ar5/
   - AR6: https://www.ipcc.ch/report/ar6/wg1/

7. **UK DEFRA / DESNZ GHG Conversion Factors (Latest)**
   (Transport, waste, materials, logistics)
   - https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
8. **International Energy Agency (IEA) – Emission Factors**
   (Energy & transport supporting data)
   - https://www.iea.org/data-and-statistics
9. **ISO 14067:2018**
   (Carbon Footprint of Products – referenced for downstream logic)
   - https://www.iso.org/standard/71206.html
   - Internal company documentation (not publicly accessible)

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 : KAMAL KUMAR SHARMA

Signature : 

Designation: General Manager QA / QC

Date : 5th July, 2025