



MAGNUM CONSTRUCTION SERVICES INC.

ENERGY USE & CARBON EMISSION LOGS

Document Code: MCS-EN-P07 | **Revision:** 1.0 | **Effective Date:** November 1 2025

1 PURPOSE

To record, calculate, and monitor energy consumption and carbon emissions from Magnum Construction Services Inc. operations, supporting sustainability reporting, client environmental requirements, and continuous improvement toward net-zero goals.

2 SCOPE

Applies to all corporate offices, job sites, and equipment yards involving:

- Diesel, gasoline, and propane consumption
 - Electricity and generator use
 - Fleet vehicles and heavy equipment
 - Temporary facilities and cranes
 - Subcontractor energy use (where measurable)
-

3 REFERENCES

- **ISO 14064-1:2018** Greenhouse-Gas Inventories
 - **LEED v4 EA Credits – Optimize Energy Performance**
 - **Envision RA1.1 – Reduce Energy Consumption**
 - **EPA GHG Emission Factors (2024)**
 - **DEFRA Conversion Factors (UK Guidance)**
 - **Magnum Sustainability Action Plan (MCS-EN-P07)**
-

Role	Responsibility
Sustainability Manager	Maintain logs, update emission factors annually, consolidate data for ESG reports.
Project Managers	Submit weekly energy data for site operations.
Site Superintendents	Record daily fuel and electricity consumption.
Equipment Managers	Verify meter and fuel log accuracy.
HSE Manager	Ensure integration with air-quality and noise-control measures.

5 EMISSION CATEGORIES

Scope	Description	Examples
Scope 1 – Direct	Combustion on-site	Diesel generators, loaders, pumps
Scope 2 – Indirect	Purchased electricity	Temporary power, offices
Scope 3 – Value-Chain (Optional)	Subcontractor & transport	Material delivery, staff travel

6 CALCULATION METHOD

6.1 Formula

$$tCO_2e = (Fuel\ Quantity \times Emission\ Factor) \div 1000$$

$$tCO_2e = (Fuel\ Quantity \times Emission\ Factor) \div 1000$$

- **Diesel:** 2.68 kg CO₂/L
- **Gasoline:** 2.31 kg CO₂/L



- **Propane:** 1.51 kg CO₂/L
- **Electricity:** 0.45 kg CO₂/kWh (Florida grid avg)

6.2 Data Frequency

- **Daily:** Fuel logs and meter readings
- **Weekly:** Electric meter data from temporary service panels
- **Monthly:** Corporate and yard utility bills

7 ENERGY LOG FORMAT

Date	Site / Project	Source Type (Diesel/Electricity)	Quantity (L / kWh)	Emission Factor (kg CO ₂ /unit)	CO ₂ Emissions (t)	Equipment / Use	Operator / Verifier	Comments
2025-11-01	Harper Townhomes	Diesel	950	2.68	=C×D/1000	Concrete pumps + generator	J. Torres	Baseline record
2025-11-01	Harper Townhomes	Electricity	1600	0.45	=C×D/1000	Lighting + office trailer	L. Diaz	—

8 KPI REPORTING

Indicator	Formula	Target (2025-2026)
tCO ₂ e per m ² constructed	Total tCO ₂ e ÷ Built Area (m ²)	≤ 0.045 t/m ²
tCO ₂ e per \$ revenue	Total tCO ₂ e ÷ Revenue (\$ million)	≤ 25 t/\$M

Indicator	Formula	Target (2025-2026)
% renewable or low-carbon energy	$\text{Renewable kWh} \div \text{Total kWh} \times 100 \geq 10 \%$	
Energy intensity reduction	$(\text{Baseline} - \text{Current}) \div \text{Baseline} \times 100$	$\geq 15 \%$

9 MONITORING & REVIEW

- Weekly energy summary generated by Environmental Coordinator.
- Monthly trend review with Project Manager & Sustainability Manager.
- Annual corporate GHG inventory validated by ESG Director / 3rd party.
- Corrective actions recorded in **CAPA Log (MCS-QM-F09)**.

10 RECORD RETENTION

- Site fuel and electric logs — 5 years.
- Corporate GHG summaries — 10 years.
- All data stored in QMS SharePoint > “Energy & Carbon Archive”.

11 APPROVALS

Reviewer	Department	Signature / Date	Comments
Sustainability Manager	ESG		
HSE Manager	Safety & Environment		
Project Manager	Operations		
Executive Director	Corporate		



Reviewer	Department	Signature / Date	Comments
Client / Consultant	External		