

Scope 1 and 2 GHG Inventory

How-to guide: what the workbook does, how to use it and what every number means.

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Scope 1 and 2 GHG Inventory

Log fuel, refrigerant and electricity by month and site and get Scope 1, both Scope 2 inventories and progress to your target.

For: EHS and sustainability managers, energy managers, plant controllers and owners of manufacturing sites who report Scope 1 and 2 emissions.

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Quick start

1. On Setup, type your company name and output unit, your base year and target, and replace the example sites and sources with your own emission factors and where each factor comes from.
2. On Fuel and Refrigerants, add one row per month, site and source: fuel burned, refrigerant topped up or CO2 gas used, in the unit the Sources list shows.
3. On Electricity, add one row per month and site: kWh purchased, and the kWh covered by certificates, a PPA or a green tariff with that contract's factor.
4. Read the Check columns: anything other than OK names the problem in words.
5. Open the Dashboard and type the reporting year at the top.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Company, output unit, base year and target, sites with their grid factors, and the emission sources with their factors.
Fuel and Refrigerants	Scope 1: one row per month, site and source; the factor comes from the Sources list on Setup.
Electricity	Scope 2: one row per month and site, reported location-based and market-based.
Dashboard	Scope 1 and both Scope 2 inventories for the reporting year, against your base year and intensity target.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
Scope 1 row emissions	Quantity x factor of the source (Sources list) / 1000. Refrigerants: kg topped up x GWP.	t CO2e
Location-based Scope 2	Purchased kWh x the site's grid (location) factor / 1000.	t CO2e

Quantity	How it is calculated	Units
Market-based Scope 2	(Contractual kWh x contract factor + (purchased - contractual kWh) x residual mix factor) / 1000.	t CO2e
Scope 1 + 2 (market-based)	Scope 1 + market-based Scope 2 for the reporting year: the total the reduction target uses.	t CO2e
Reduction vs base year	(Base-year emissions - Scope 1 + 2 market-based) / base-year emissions. Status against the target on Setup.	%
Intensity	Scope 1 + 2 market-based x 1000 / output of the reporting year (Output by year list).	kg CO2e/unit
Electricity under contracts	Contractual kWh / purchased kWh for the year (or month, site).	%
Roll-ups	SUMIFS of the row results over months inside the reporting year, by month, site, Scope 1 category and source. The Pareto ranks sources with COUNTIF (helper columns AN:AP, hidden).	t CO2e

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Calder Valley Components, a fictional business.

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Engineering estimates for planning and improvement work. Verify the results against your own process, data and standards before you rely on them.

Scope 1 and 2 GHG Inventory

Scope 1 and both Scope 2 inventories for the reporting year, against your base year and intensity target.

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Reporting year

2025

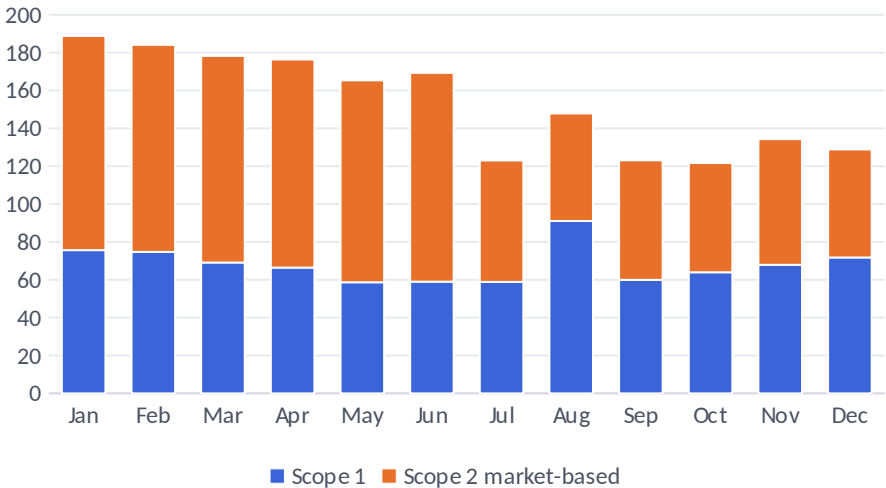
Output in this year (Setup)

4,900

Showing 78 fuel and refrigerant rows and 24 electricity rows for 2025. All figures in tonnes of CO2 equivalent (t CO2e).

SCOPE 1 (T CO2E)	SCOPE 2 LOCATION-BASED (T CO2E)	SCOPE 2 MARKET-BASED (T CO2E)	SCOPE 1 + 2 MARKET-BASED (T CO2E)
817.1	1,088.3	1,024.0	1,841.1
Fuel, refrigerant and process gas	Purchased kWh x grid factor	Contracts, then residual mix	The total the target uses

Scope 1 and 2 by month (t CO2e, market-based)



Scope 2: location-based vs market-based (t CO2e)

