

Self-directed practical assignment for the final presentation

Use as input data either your organization's data or the data cleaned during Module 2 (file: filename.xlsx) and compile a summary report.

Here's overview of what reports and KPIs you can create from the fields in your dataset. Feel free to choose from the list below.

Key Reports You Can Build

1. Energy Consumption Overview

A high-level report summarizing:

- Total energy consumption (by month/year)
- Consumption by facility
- Consumption by country
- Consumption by energy source (electricity, gas, heat, renewables...)

Useful visuals:

- Time-series line charts
- Facility comparison bar charts
- Country heatmaps

2. Facility-Level Energy Profiles

For each Facility_Name:

- Monthly/annual consumption
- Renewable vs non-renewable split
- Supplier overview
- Cost analysis (if invoices imply cost)

Great for:

- Benchmarking facilities
- Identifying high-consumption sites
- Detecting inefficiencies

3. Renewable Energy Report

Using the **Renewable_Flag** column:

- % renewable energy consumption per facility
- Trend of renewable share over time
- Supplier contribution to renewables

KPIs:

- Renewable Share % = Renewable Consumption / Total Consumption
- Year-over-year renewable growth

4. Supplier Performance Report

Using **Supplier** and **Invoice_Reference**:

- Consumption supplied per vendor
- Renewable vs non-renewable by supplier
- Invoice count & completeness
- Supplier concentration risk

5. Country-Level Energy Reporting

Useful for organizations with multi-country operations:

- Energy split by region/country
- Country-level renewable penetration
- National consumption trends

6. Carbon Footprint / Emissions Report

If you apply emission factors per Energy_Source later:

- CO₂ emissions by year
- Emissions per facility
- Emissions per energy source

KPIs:

- Emissions intensity (kg CO₂ / kWh)
- Emissions reduction YTD/YOY
- Share of low-carbon sources

Key KPIs You Can Calculate

Energy KPIs

- **Total Consumption (kWh)** — per facility / per month / per year
- **Consumption per m²** (*if area is available later*)
- **Peak Monthly Consumption**
- **Energy Source Breakdown %**

Sustainability KPIs

- **Renewable Energy %**

- **Year-over-Year Renewable Growth**
- **CO₂ Emissions** (scopes 1–2 depending on energy types)
- **Emissions per Facility**

Operational KPIs

- **Supplier Coverage** = # of suppliers per facility
- **Invoice Completeness** = Invoice records / Expected invoices
- **Data Quality KPIs** (missing flags, unknown suppliers, etc.)

Financial KPIs (*If you have cost per invoice later*)

- **Cost per kWh**
- **Energy spend per facility**
- **Spend by supplier**