**Integration Documentation**

**Importing Data into Excel**

**Step 1: Open the Excel File**

1. Download the Excel file: [Energy\_Consumption\_Analysis.xlsx].
2. Open the file in Microsoft Excel.

**Step 2: Review the Data Sheets**

The file contains the following sheets:

* **Consumers** – List of energy consumers.
* **EnergyUsage** – Records of daily energy consumption.
* **EnergySources** – Various energy types and their carbon emissions.
* **SustainabilityMetrics** – Energy savings, CO2 reduction, and cost savings.

**Step 3: Creating Pivot Tables for Analysis**

1. Go to the **Insert** tab in Excel.
2. Click on **PivotTable** and select the data range from the relevant sheet.
3. Choose **New Worksheet** and click **OK**.
4. Drag and drop fields to create meaningful insights:
   * **Total Energy Consumption per Sector**
   * **Monthly Energy Consumption Trends**
   * **Energy Savings & CO2 Reduction**
   * **Top Energy Consumers**

**Step 4: Data Visualization**

1. Select the Pivot Table.
2. Go to the **Insert** tab and choose a visualization:
   * **Line Chart** – For trend analysis.
   * **Bar Chart** – For sector-wise energy usage.
   * **Pie Chart** – For energy source contributions.
   * **Combo Chart** – To compare multiple metrics.

**Step 5: Creating an Interactive Dashboard**

1. Insert multiple charts and arrange them in a new sheet.
2. Use **Slicers** (from the Insert tab) to filter data dynamically.
3. Format the dashboard for a professional look.
4. Add summary insights using text boxes.

**Step 6: Testing and Validation**

1. Verify that the data updates correctly when changes are made.
2. Check filters and slicers for proper functionality.
3. Ensure calculations in Pivot Tables are accurate.

**Final Deliverable:**

A fully functional Excel workbook with: ✅ Pivot Tables for analysis ✅ Charts for visualization ✅ Interactive Dashboard for decision-making

This integration ensures efficient data-driven insights into energy consumption and sustainability practices.