Business Requirements Document (BRD)

Date: January 10, 2025
Project Title: Environmental Impact PowerBI Dashboard

1. Project Overview

The objective of this project is to develop a PowerBI dashboard to visualize and analyze the environmental impact of various operations across industries and regions. The dashboard will provide actionable insights into carbon emissions, water consumption, energy usage, waste generation, recycling rates, air quality, and compliance levels.

2. Objectives and Goals

- Visualize Environmental Metrics: Provide an interactive view of key environmental metrics such as carbon emissions, water consumption, energy usage, and waste generated.
- Compare Across Dimensions: Enable comparisons across regions, industries, product types, and compliance levels.
- Monitor Trends: Display trends over time to identify patterns and opportunities for improvement.
- Enhance Decision-Making: Support strategic decisions to improve environmental compliance and reduce negative impact.

3. Assumptions and Constraints

- The dataset provided is accurate and up-to-date.
- PowerBI is the chosen platform for visualization.
- No additional external data sources will be integrated initially.

4. Functional Requirements

- Filters:
  - Region
  - Industry
  - Product Type
  - Compliance Level
- Charts and Visuals:
  - Bar chart: Carbon emissions by region.
  - Line chart: Trends of energy usage over time.
  - Map: Recycling rates by industry and region.
  - Pie chart: Distribution of compliance levels.
  - KPI indicators: Highlight key metrics for each region.

5. Non-Functional Requirements

- **Performance**: Dashboards must load within 5 seconds for up to 100,000 records.
- **Accessibility**: Ensure compatibility with major browsers and devices.
- **Scalability**: Prepare for potential integration of additional datasets.

Component	Details	Columns Used
1. Key Numeric Indicators (KNIs)		
Total Carbon Emissions	Display the total carbon emissions across all data.	Carbon Emissions (kg)
Average Recycling Rate	Display the average recycling rate across all data.	Recycling Rate (%)
Total Energy Usage	Display the total energy usage across all data.	Energy Usage (kWh)
Total Water Consumption	Display the total water consumption across all data.	Water Consumption (liters)
2. Filters		
Region	Filter the data based on geographical regions.	Region
Industry	Filter the data based on specific industries.	Industry
Compliance Level	Filter the data based on compliance levels (e.g., High, Medium, Low).	Compliance Level

Product Type	Filter the data based on product categories.	Product Type
Time Period	Filter data based on a time dimension (if available) or aggregate by year/ quarter/month for trends.	Time Dimension (if applicable)
3. Chart Views		
Bar Chart	Display total carbon emissions by region.	Carbon Emissions (kg), Region
Line Chart	Display trends of energy usage over time.	Energy Usage (kWh), Time Dimension
Map	Show recycling rates by region and industry.	Recycling Rate (%), Region, Industry
Pie Chart	Display the distribution of compliance levels.	Compliance Level
Scatter Plot	Show the relationship between carbon emissions and recycling rates, identifying areas for improvement.	Carbon Emissions (kg), Recycling Rate (%)