**Subject:** Data Requirements and Approach to Investigate Customer Churn at PowerCo

Dear Associate Director's ,

Estelle and I have outlined a structured approach to frame PowerCo’s churn issue and the data requirements necessary for this investigation. Below is our proposed plan.

**1. Business Understanding & Problem Framing**

**Problem Statement:** PowerCo is experiencing significant customer churn, and we need to determine the factors influencing this churn, with a primary hypothesis focused on price sensitivity.

**Key Reasons for Churn:**  
Based on initial discussions, we believe the following factors could influence a customer’s decision to stay or leave:

* **Price Sensitivity:** Competitor pricing and the customer’s perception of value.
* **Customer Service Quality:** Response times, resolution rates, and overall satisfaction.
* **Energy Preferences:** Interest in clean or renewable energy options.
* **Contract Flexibility:** Length of contracts, termination fees, or renewal options.
* **Business Location:** Regional market trends and availability of competitors.

**2. Data Requirements**

To investigate these potential factors, we will require the following data:

**Customer Data**

* Customer demographics (e.g., business size, industry, location).
* Historical churn data (who left, when, and why, if available).

**Pricing and Usage Data**

* Historical pricing trends for PowerCo and competitors.
* Individual customer billing and usage data over the past 5 years.
* Breakdown of tariffs or plans customers are subscribed to.

**Service and Engagement Data**

* Customer service interactions (e.g., number of complaints, resolution time).
* Customer satisfaction scores or NPS ratings.
* Marketing engagement data (e.g., email campaigns, website visits).

**Market Data**

* Regional competitor presence and pricing.
* Trends in renewable energy adoption.

**3. Exploratory Data Analysis & Data Cleaning**

Once the data is obtained, we will:

* Identify and handle missing or inconsistent data points.
* Explore patterns in pricing, usage, and churn rates.
* Perform segmentation based on customer profiles to identify high-risk groups.

**4. Feature Engineering**

We will enrich the dataset with derived metrics such as:

* Price elasticity: How changes in pricing impact churn.
* Service interaction scores: Combining customer service metrics into a single index.
* Competitor attractiveness: A score based on regional competitor pricing and services.

**5. Modeling and Evaluation**

We will use the following techniques to test our hypothesis:

* **Descriptive Analytics:** Visualize churn rates by customer segment (e.g., price tier, region).
* **Correlation Analysis:** Identify relationships between churn and factors like price changes or customer satisfaction.
* **Predictive Modeling:** Build models (e.g., logistic regression, random forest) to predict churn likelihood and quantify the impact of pricing on churn.

**Next Steps**

To proceed, we will need confirmation on data availability from PowerCo and prioritize obtaining the following datasets:

1. Customer demographic and churn data.
2. Historical billing and pricing data.
3. Competitor and market data.

Please let us know if you would like us to adjust our approach or need further details.

Best regards,  
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