Dear [Associate Director’s Name],

Estelle and I have outlined our approach to understand and address PowerCo’s churn issue. Below are the key points as part of the business understanding and problem framing step of the data science methodology.

**Problem Formulation**

PowerCo’s key business challenge is customer churn, which could significantly impact revenue and market position. We hypothesize that price sensitivity is a critical factor driving churn, but other elements such as service quality, energy source preferences, and regional market dynamics could also play a role. The goal is to identify actionable insights that help PowerCo reduce churn and improve customer retention.

**Key Factors Influencing Customer Retention**

Based on initial brainstorming, we propose investigating the following factors:

1. **Price Sensitivity**: Changes in rates or competitors offering lower prices.
2. **Energy Source Preferences**: Preference for renewable or clean energy sources.
3. **Customer Service Quality**: Experience with billing, support, and resolution times.
4. **Contract Terms**: Fixed vs. variable pricing and early termination fees.
5. **Business Location**: Regional market competitiveness and energy usage needs.
6. **Usage Patterns**: Seasonal or industry-specific consumption trends.

**Data Requirements**

To explore these factors, we recommend requesting the following datasets:

1. **Customer Demographics**: Business size, industry, and location.
2. **Billing Data**: Historical pricing, billing frequency, and payment timeliness.
3. **Contract Details**: Start/end dates, type of pricing plan (fixed/variable), and contract renewals.
4. **Churn Data**: Customers who switched providers, including dates and reasons (if available).
5. **Competitor Analysis**: Market pricing trends and offers from competitors.
6. **Customer Feedback**: Survey results, Net Promoter Scores (NPS), and support ticket logs.
7. **Energy Consumption Patterns**: Historical usage trends, peak periods, and energy source preferences.

**Analytical and Visualization Techniques**

Once we obtain the data, we propose the following techniques to diagnose churn:

1. **Exploratory Data Analysis (EDA)**:
   * Descriptive statistics and distribution plots to understand pricing trends, usage patterns, and churn rates.
   * Correlation analysis to identify relationships between price changes, customer demographics, and churn.
2. **Churn Prediction Modeling**:
   * Logistic regression or decision trees to identify key predictors of churn.
   * Sensitivity analysis to evaluate the impact of pricing changes.
3. **Customer Segmentation**:
   * Clustering algorithms to segment customers by price sensitivity, energy preferences, and usage patterns.
   * Identifying high-risk segments based on historical churn data.
4. **Data Visualization**:
   * Trend analysis using line and bar charts to track churn over time.
   * Heatmaps to visualize regional churn and price competitiveness.
   * Dashboard creation for real-time tracking of key metrics.

**Next Steps**

We recommend initiating discussions with PowerCo to finalize data access agreements and prioritize data collection. Once the data is available, we will proceed with EDA and hypothesis testing to validate the impact of each factor on churn.

Please let us know if you have any feedback or additional points to consider.

Best regards,  
[Your Name]  
[Your Role]