

EXECUTIVE SUMMARY: PREDICTING CUSTOMER CHURN FOR POWERCO

Project Goal

To identify drivers of customer churn and develop a predictive model that enables PowerCo to proactively reduce churn and increase customer retention.

Key Insights

- **Churn Rate:** ~9% of customers in the dataset have churned.
- **Top Predictive Features:**
 - Forecasted energy consumption
 - Variance in mid-peak pricing
 - Contract renewal and modification dates
- **Price Sensitivity:** High variability in price (especially peak and mid-peak) correlates with increased churn risk.

Model Performance

- **Model Used:** Random Forest Classifier
- **Accuracy:** 89.9%
- **Precision:** 70.8%
- **Recall:** 5.6%
- **F1 Score:** 10.3%

Business Impact

- Implementing the model enables early identification of high-risk customers.
- Targeted retention strategies (e.g., price incentives, personalized outreach) can reduce churn.
- Even a **10% reduction in churn** could significantly improve annual revenue margins.

Recommended Next Steps

- Deploy the churn prediction model on recent customer data.
- Focus retention efforts on segments with high churn probability.
- Explore pricing optimization strategies based on feature importance.