Executive Summary

- **Situation:**

  PowerCo, a major utility provider, is experiencing increasing customer churn due to competitive offers in the energy market.

- **Complication:**

  Churn is becoming a significant issue, and PowerCo has engaged us to diagnose the underlying causes.

- **Question:**

  Is customer churn primarily influenced by price sensitivity?

Answer:

Random Forest Classifier model performed well (precision: 90%, f1-score: 95%, and accuracy: 90%).

- Net margin and 12-month energy consumption emerged as the most significant factors contributing to churn.
- The profit margin on power subscriptions also plays an important role.
- Time-related variables - such as customer tenure, months of activity, and contract renewal history - were identified as highly influential.
- While a recommended feature showed moderate influence, derived features consistently outperformed it.
- Although price sensitivity features were present, they were scattered and did not emerge as the primary contributors to churn.

Conclusion:

- The hypothesis that price sensitivity is the leading driver of churn is not fully supported by our findings.
- However, price sensitivity does appear to have a minor impact. Additional experiments and deeper analysis are recommended to arrive at a definitive conclusion.