Your first task today is to understand what is going on with the client and to think about how you would approach this problem and test the specific hypothesis.

You must formulate the hypothesis as a data science problem and lay out the major steps needed to test this hypothesis. Communicate your thoughts and findings in an email to your AD, focusing on the data that you would need from the client and the analytical models you would use to test such a hypothesis.

We would suggest spending no more than one hour on this task.

Please note, there are multiple ways to approach the task and that the model answer is just one way to do it.

***If you are stuck:***

1. Remember what the key factors are for a customer deciding to stay with or switch providers
2. Think of data sources and fields that could be used to explore the contribution of various factors to a customer’s possible action
3. Ideally, what would a data frame of your choice look like – what should each column and row represent?
4. What kind of exploratory analyses on the relevant fields can give more insights about the customer's churn behavior?

The problem of PowerCo is the churn of customers, especially the SME segment. PowerCo made a hypothesis that churn occurs because of customer price sensitivity. Also, PowerCo would like to try the discounting strategy. They would like a predictive model to predict customers that are potential to churn. To conduct the data science project, we will consider the following factors that might lead customers to switch provider:

1. Gas and electricity prices
2. Discounts to customers
3. Gas and electricity usages of customers
4. Contract types between PowerCo and customers
5. Customers’ periods of time staying with PowerCo

We need the following fields to explore the contributions of these factor:

1. Customer ID
2. Customer Type
3. Customer Contract Type
4. Contract Discount
5. Customer Contract Start Date
6. Customer Contract End Date
7. Contact End Reason (e.g., contract expiry, quitting contract, contract renew, contract update, etc.)
8. Gas Price
9. Electricity Price

As the above, we need to know each piece of data of each customer during most five years. We will find if the price is the crucial factor making customers switch energy providers. We will also explore how discounts, contracts, periods of staying with PowerCo will influence customers’ decisions.