Dear Associate Director (AD),

I’m writing to outline the proposed steps for addressing the problem at hand in a professional manner. Please find below the suggested approach:

Step 1: Hypothesis Testing
To validate the hypothesis that an increase in prices affects customer churn, we will conduct a thorough analysis of historical data pertaining to customers' contracts. The following steps will be undertaken:

1. Collecting historical data on all customers' contracts.
2. Extracting data specifically related to customers who have transferred to other providers.
3. Identifying instances where customer churn coincided with an increase in price.

By examining the data, we aim to determine whether there is a correlation between customer churn and price increments. If a pattern emerges, we can conclude that price changes do indeed impact customer churn. Conversely, if customers switch to other providers despite no price change or even a decrease, it suggests that prices do not affect customer churn.

Step 2: Building a Customer Churn Prediction Model
This step involves developing a model capable of predicting customer churn, treating it as a binary classification problem. To create an effective model, the following tasks will be carried out:

Task 1: Data Collection
Gather comprehensive data on all customers, including contract details (start/end dates, prices, discounts, promotions, etc.), customer information (name, country, city, profit, revenue, company size, industry, etc.), and energy usage (consumption amounts).

Task 2: Data Cleaning and Preparation
Thoroughly clean and preprocess the collected data to ensure its quality and suitability for modelling.

Task 3: Exploratory Data Analysis
Perform exploratory data analysis techniques, including data visualisation, to uncover patterns and insights within the dataset.

Task 4: Machine Learning Model Development and Evaluation
Build a machine learning model using the preprocessed data from Task 2. Evaluate the model's performance using appropriate techniques such as cross-validation.

Task 5: Assessing the Impact of Discounts on Customer Churn
Apply a 20% discount on the prices and reevaluate the predicted customer labels obtained from Task 4. If the predicted labels change from 1 to 0, it indicates that the discount can

potentially prevent customer churn. Conversely, if the predicted labels remain as 1, it suggests that the discount alone may not be effective in curbing customer churn.

By following these steps, we aim to gain deeper insights into the relationship between price changes and customer churn while also developing a robust model to predict churn. Additionally, we will assess the impact of discounts on preventing customer churn.

Should you require any further clarification or have any additional questions, please feel free to reach out.

Best regards,
AlJawharh.