

# BCG-FORAGE VIRTUAL INTERSHIP PROGRAM PROJECT-CHURN BUSTER-PREDICTIVE MODELLING FOR CHURN

## POWERCO OIL AND GAS INDUSTRIES



### PROBLEM:

- POWERCO IS A MAJOR GAS AND ELECTRICITY UTILITY THAT SUPPLIES TO CORPORATE, SME(Small and Medium Enterprise) AND RESIDENTIAL CUSTOMERS.
- THE POWER-LIBERALIZATION OF THE ENERGY MARKET IN EUROPE HAS LED TO SIGNIFICANT CUSTOMER CHURN, ESPECIALLY IN THE SME SEGMENT.
- THEY HAVE PARTNERED WITH BCG TO HELP DIAGONSE THE SOURCE OF CHURNING SME CUSTOMERS.
- A FAIR HYPOTHESIS : "PRICE CHANGES AFFECT CUSTOMER CHURN".
- ACCORDING TO THE PROBLEM STATEMENT, I ACTUALLY DID A PREDICTIVE MODELLING FOR THIS CHURN PROBLEM WITH SEVERAL ML MODELS AMONG THAT I HAVE CHOOSE BEST 5 BASED ON THE HIGHNESS OF F1 SCORE METRIC.
- ARTIFICIAL NEURAL NETWORK( LOGISTIC REGRESSION MODEL) IS MY PREFEREABLE ONE. SO, I HAVE PREDICTED THE CHURN PROBABLILTIES OF EACH CUSTOMER 'S ID BASED ON THEIR CONSUMPTIONS OF OIL AND GAS. BASED ON THE PROBABILITY RATE I HAVE CREATED A SEPARATE FEATURE WHICH WILL CATEGORIZE THE CUSTOMERS AS FOLLOWS:

@ 0 TO 20 ----> NON RISK  
@ 20 TO 40 ----> LOW RISK  
@ 40 TO 60 ----> RISK  
@ 60 TO 80 ----> HIGH RISK  
@ 80 TO 100 ----> VERY HIGH RISK

CUSTOMERS BASED ON THEIR PREVIOUS YEARS OF CONSUMPTION OF OIL AND GAS.

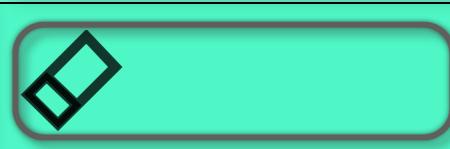
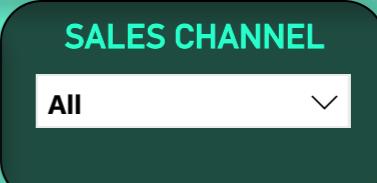
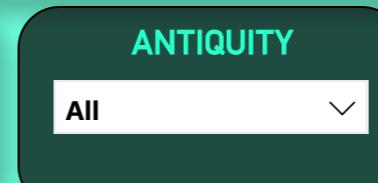
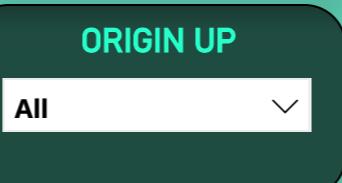
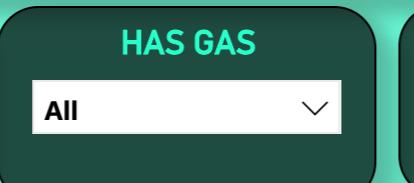
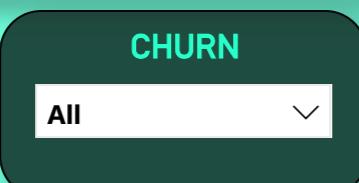
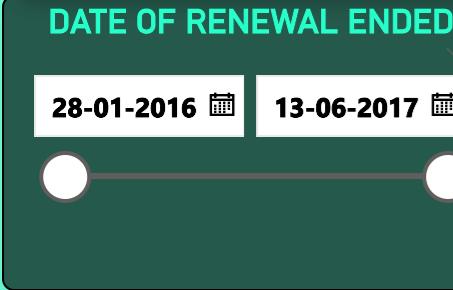
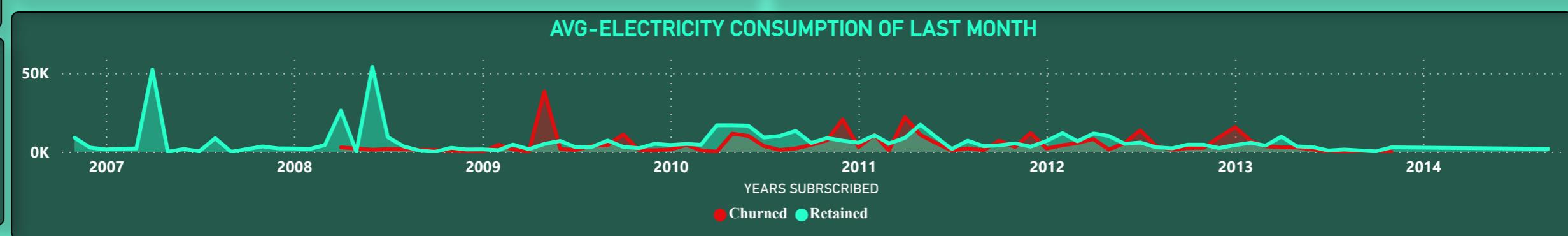
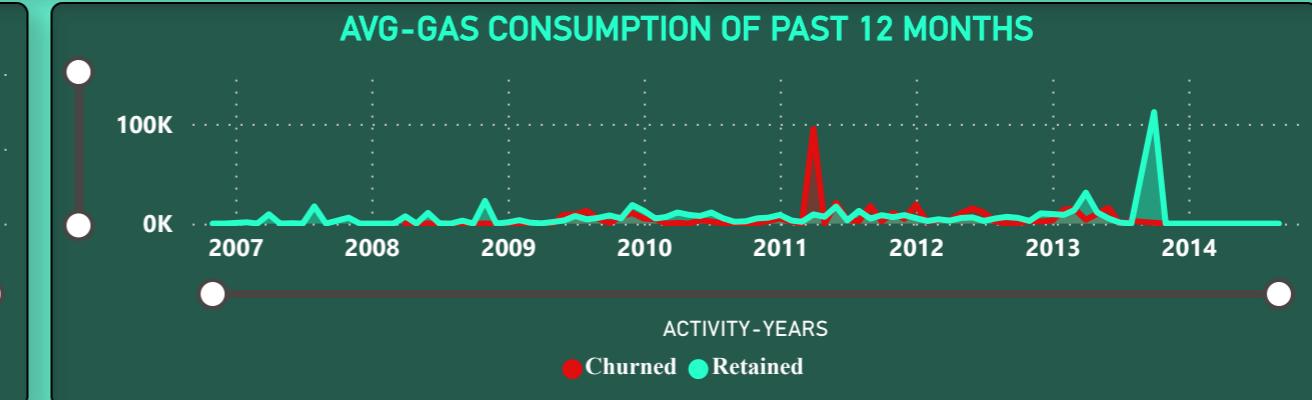
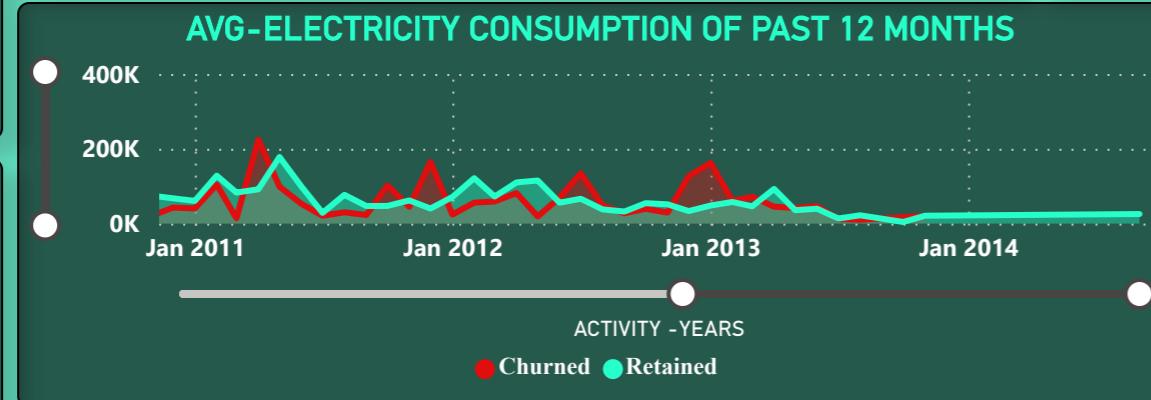
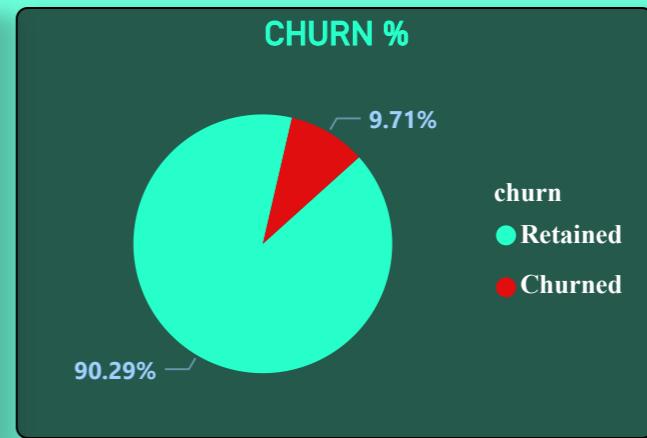
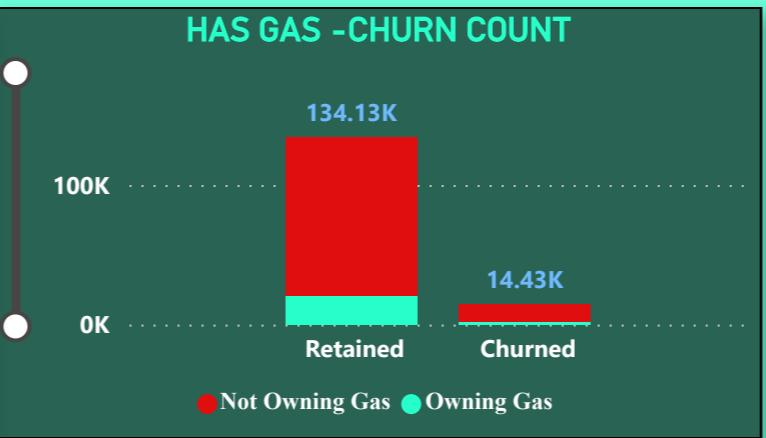
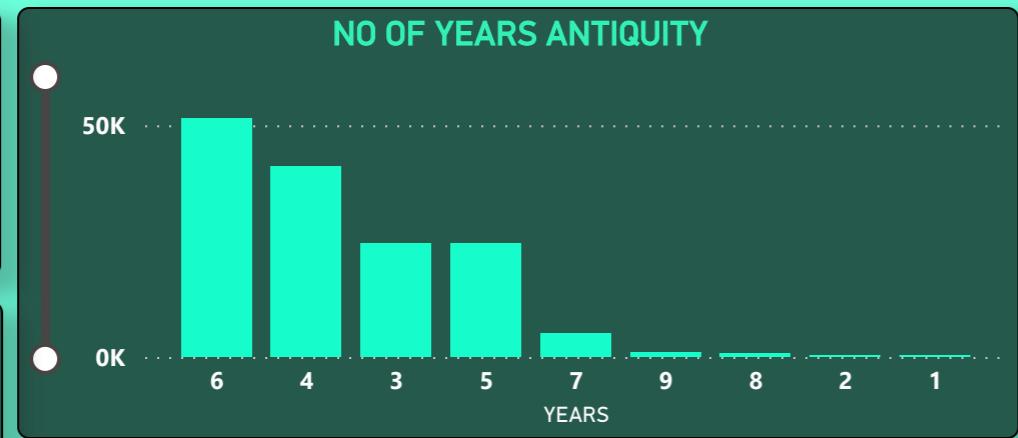
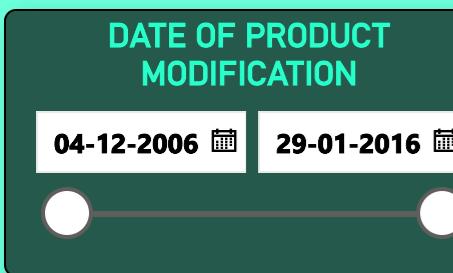
INTRO

PAST CONS

FORCAST CONS

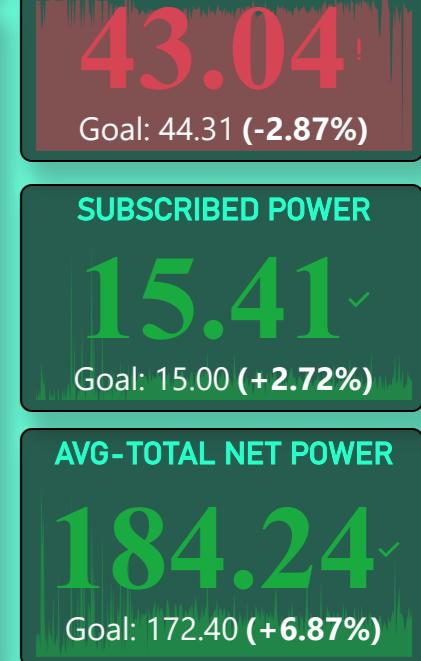
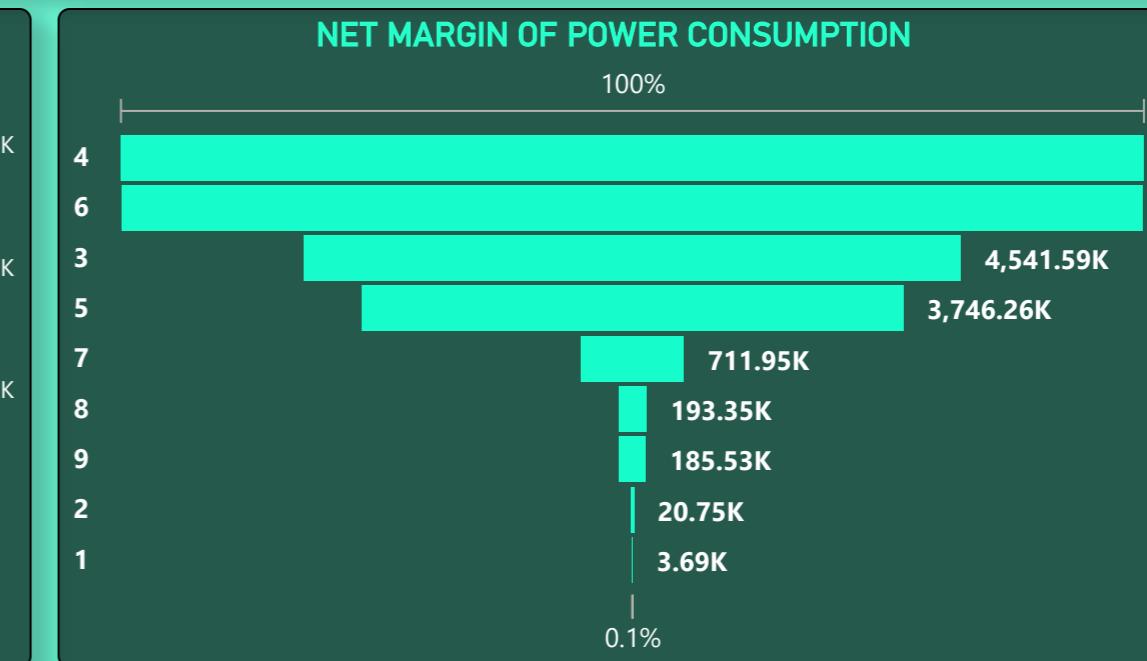
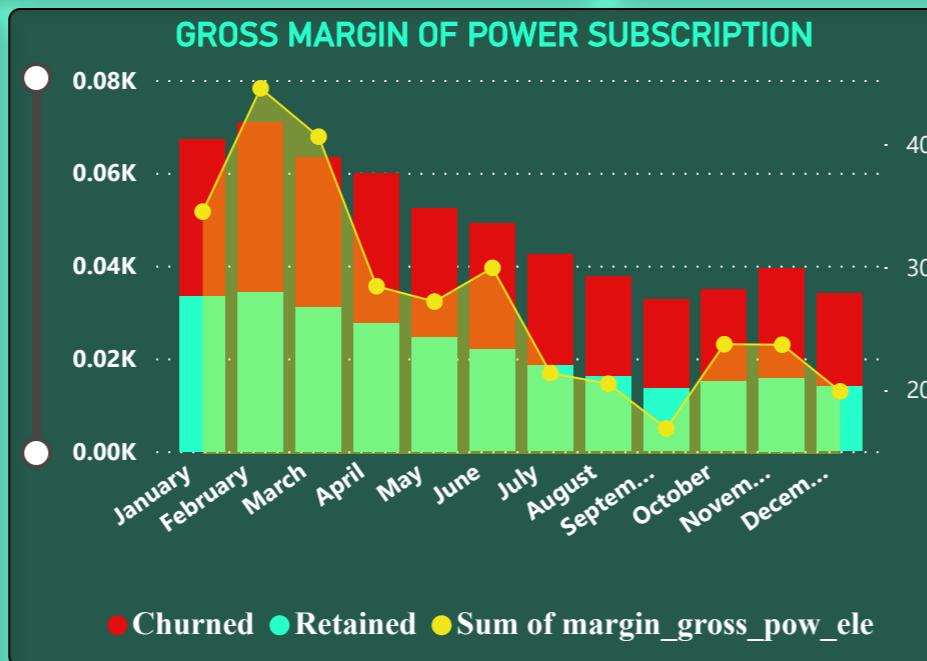
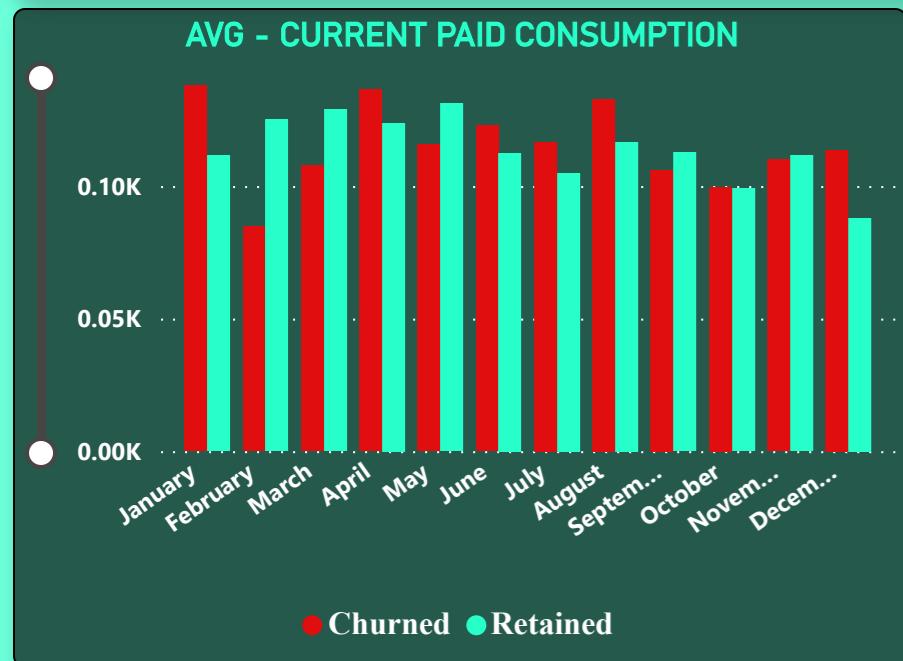
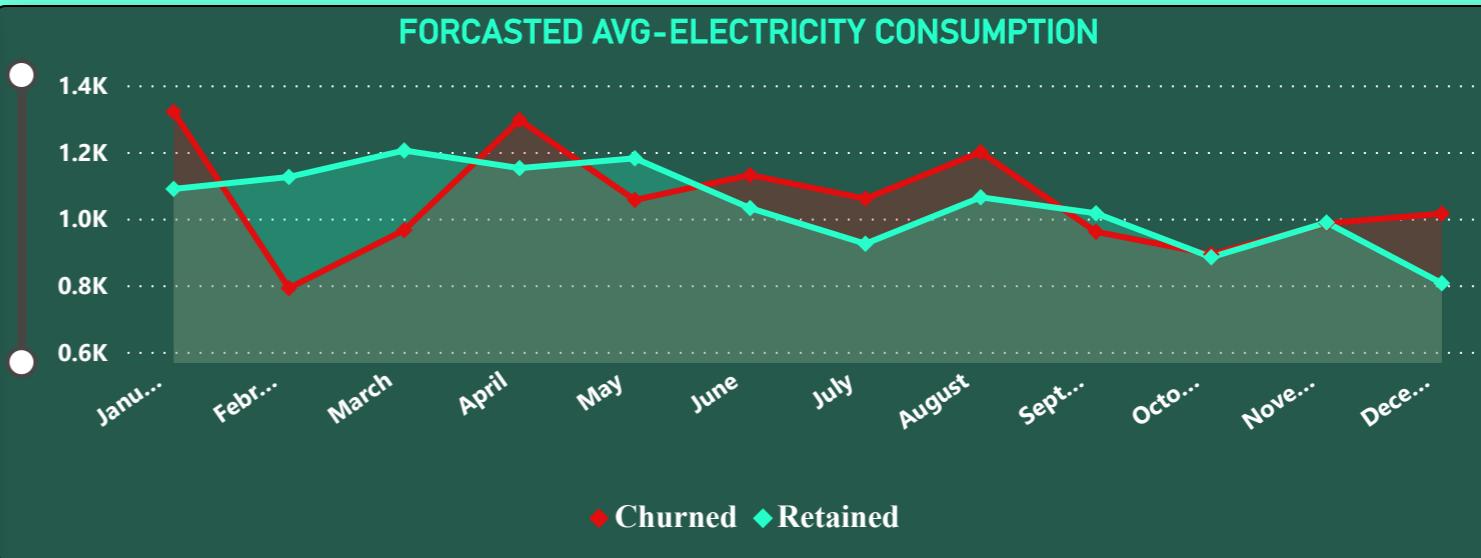
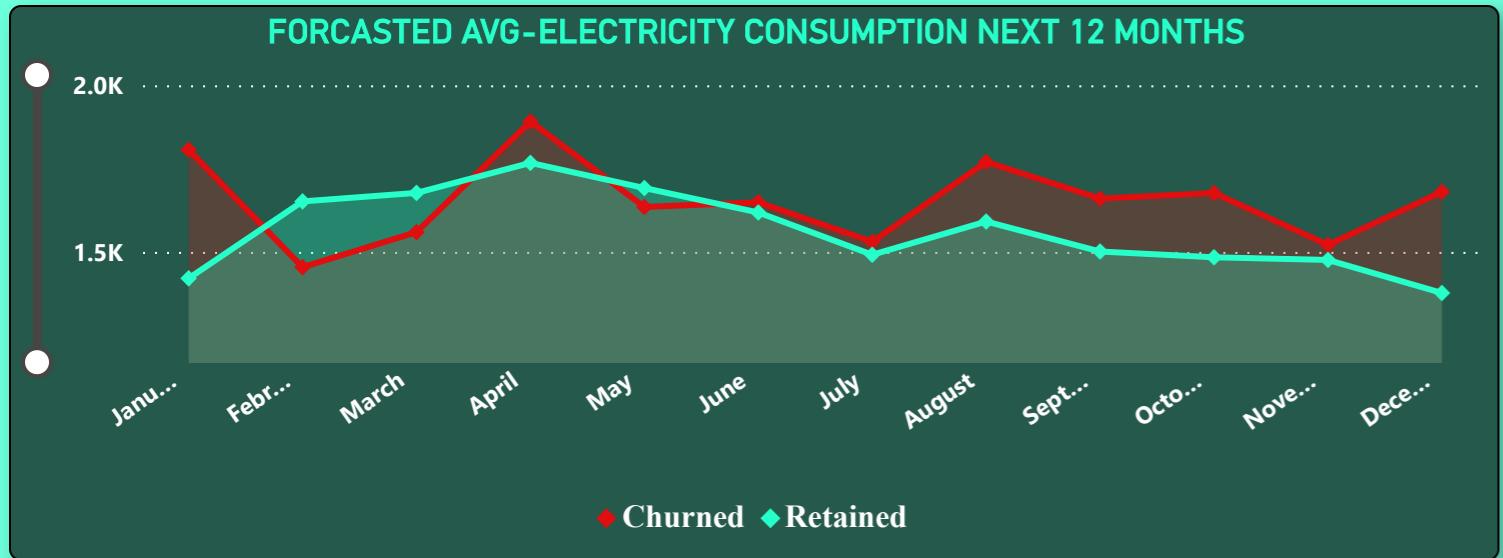
CHURN ANALYSIS

# BCG VIRTUAL INTERNSHIP - CHURN BUSTER DASHBOARD





# ELECTRICITY AND GAS FORCASTED PRICE CONSUMPTION 2016-2017



INTRO   PAST CONS   FORC AST CONS   CHUR N ANA...

CHURN INFO   SALES CHANNEL   NO OF PRODUCT   HAS GAS INFO   ORIGIN UP INFO   ANTIQUITY

All   All   All   All   All   All





## CHURN-PROBABILITY RATE BY CUSTOMER ID



Avg- of net-margin

**168.53**

Avg of pow-max

**13.20**

Cons Measures

Avg of imp-cons

**211.00**

Avg of margin-gross-pow\_ele

**19.28**

Avg of margin-net-pow\_le

**19.28**

PEAK ENERGY

**0.00**

OFF PEAK ENERGY

**0.14**

CUSTOMER ID

0002203ffbb8125...	0013f326a839a2f...	001dc71143f45c...	002dc7935f7b6f8...	003cb4fdda941fb...
0004351ebdd665...	00184e957277ee...	0024bc8ffe90ec2...	0030bd55614c2c...	003fb333060c25...
00114d74e963e4...	001cb880d847a0...	002d70a2bdf9cf6...	003742573bb977...	00420fc2b6ede4...

ANN-PREDICTED-CUSTOMER CHURN %

**0.00**

INTRO

PRICING DETAILS

**0.00**

**0.00**

price\_mid\_pea...

price\_mid\_peak\_fix

**44.36**

**0.15**

price\_off\_peak...

price\_off\_peak\_var

**0.00**

**0.00**

price\_peak\_fix

price\_peak\_var

Q&A's

Ask a question about your data



Try one of these to get started

what is the net mar by  
channel sale

what is the maxpowper  
by id

top num years antigs by  
fgas

Show all suggestions

**Non Risky**

PRICE-OFF PEAK

**44.31**

SUBSCRIBED POWER

**13.20**

AVG-TOTAL NET POWER

**168.53**

