BCG Management Summary

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Management Meeting : Head of the SME division (as well as other various stakeholders)

Areas of Concentration

- What is the most important number or metric to share with the client?
- What are the next steps the client should take following your analysis?
- What business impact? How would the model affect the client’s bottom line?

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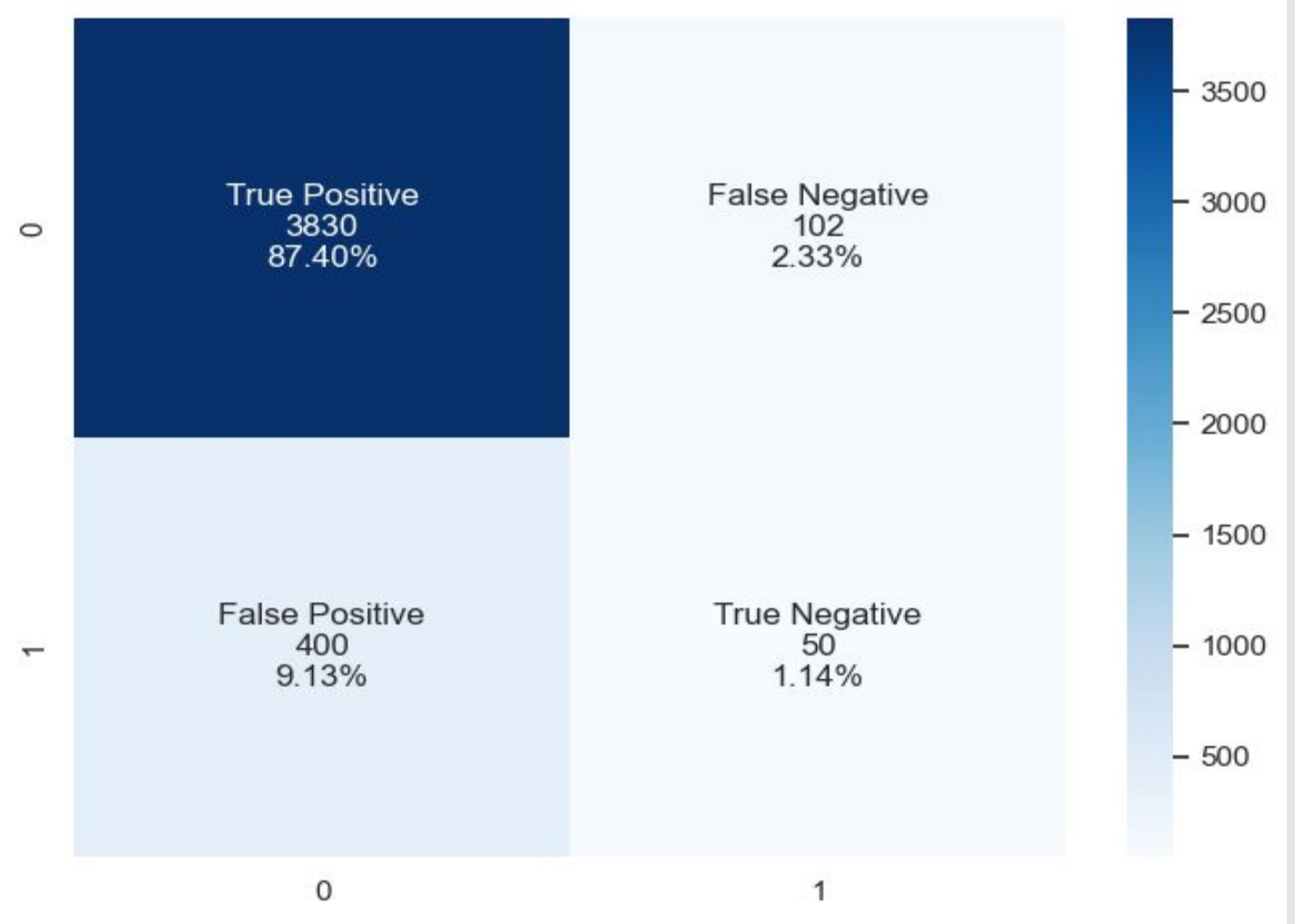

The model's confusion matrix indicates strong performance in identifying retained clients (87.40% True Positives) but less so for churners (1.14% True Negatives), with client churn primarily driven by low antiquity/tenure and sensitivity to energy price differences (off-peak vs. peak) and overall high prices.

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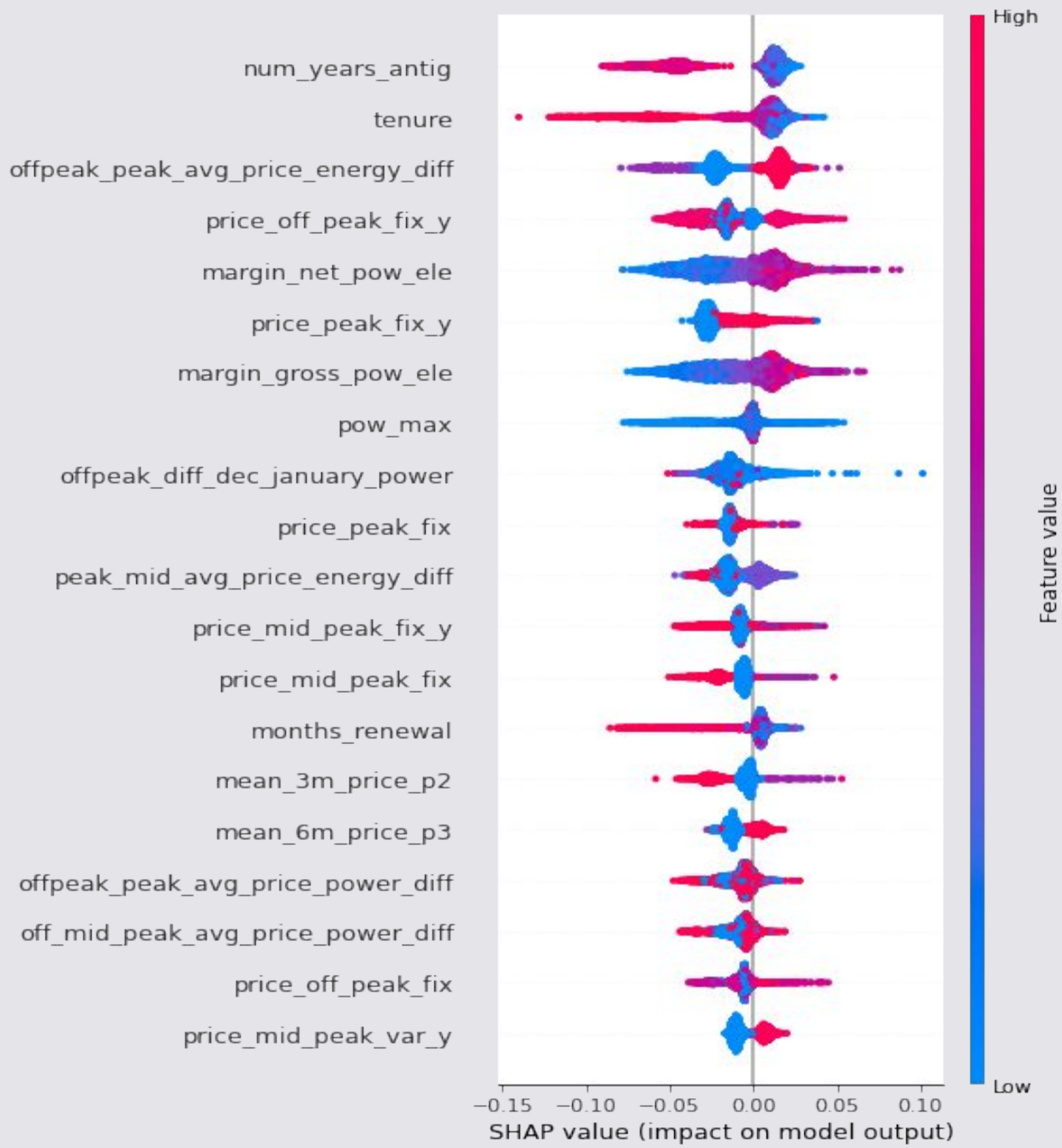
num_years_antig
tenure
offpeak_peak_avg_price_energy_diff
price_off_peak_fix_y
margin_net_pow_ele
price_peak_fix_y
margin_gross_pow_ele
pow_max
offpeak_diff_dec_january_power
price_peak_fix
peak_mid_avg_price_energy_diff
price_mid_peak_fix_y
price_mid_peak_fix
months_renewal
mean_3m_price_p2
mean_6m_price_p3
offpeak_peak_avg_price_power_diff
off_mid_peak_avg_price_power_diff
price_off_peak_fix
price_mid_peak_var_y
−0.15
−0.10
−0.05
0.00
0.05
0.10
SHAP value (impact on model output)
High
Low
Feature value

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Top drivers of client churn are antiquity of the client, tenure, and difference off peak - peak in energy price
If the client have low years of antiquity, probability of client will be churn is high
New clients have higher probability to churn rather than old clients, because old client seems to be more loyal with the company
The larger difference between off peak - peak prices in energy, it means when off-peak way too expensive than peak, probability of clients will be churn is also high
also price off peak power and price peak power have high contribution as predictor, generally, higher prices drive clients to churn
For price sensitivity features, generally seeing there are some features that contribute as important features. We can say that prices sensitivity also became main driver of clients churn

TRAINING RESULT:
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F2 Score: 0.987
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Classification Report ----------

	precision	recall	f1-score	support
0	0.96	0.99	0.98	9254
1	0.91	0.64	0.75	969
accuracy			0.96	10223
macro avg	0.94	0.82	0.87	10223
weighted avg	0.96	0.96	0.96	10223

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Confussion Matrix ----------
[[9191 63]
[347 622]]

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TESTING RESULT:
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F2 Score: 0.96
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Classification Report ----------

	precision	recall	f1-score	support
0	0.91	0.97	0.94	3932
1	0.33	0.11	0.17	450
accuracy			0.89	4382
macro avg	0.62	0.54	0.55	4382
weighted avg	0.85	0.89	0.86	4382

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Confussion Matrix ----------
[[3830 102]
[400 50]]

The model exhibits strong performance on the training data, with high F2 score (0.987) and excellent metrics for both classes. However, its generalization to the test set shows a significant degradation in identifying the minority class (churners), with a very low recall of 0.11 and precision of 0.33, indicating it largely misses actual churners despite maintaining high overall accuracy (0.89) due to strong performance on the majority class.