FB Prophet Model on my Electrical Power Usage

The goal of this exercise what to examine previous electrical usage and try and forecast the next few days of my usage.

The EDA (remove nulls, date index etc) is shown in the notebook.

As you can see from the forecast vs actual plot

* I have been belowthe forecast values for most of days predicted

A graph showing the growth of electricity

Description automatically generated

* Did the exogenous variables improve the forecast? Accuracy?
  + A black background with white text

    Description automatically generatedNot quite as the MAE indicates about 70% accuracy.

Further work:

* Understanding of base data (EDA in Tableau):
  + For context, blip in early Feb 24 was when I was hosting company for 3 weeks and the energy usage barely changed.
  + Understand rate increase in power usage in Mid-Jan 24 from Supplier
* EDA in BI software to determine :
  + ‘power hungry’ days; trends by day of the week (ie are Monday’s more energy intensive now vs a different period)
  + consumption rates
* There are various parameters/features that could be used to optimize this model but were not considered due to time constraints. These include but are not limited to:
  + Seasonality: The Prophet model setup allows for use of daily/weekly/yearly seasonality
  + Hyper parameter tuning (additive vs multiplicative model)
  + Cross validation (rolling window) to improve historical accuracy of forecast
  + Use of more exogenous data (flags) such as weather, lagging indicators, holidays etc. in the main dataset