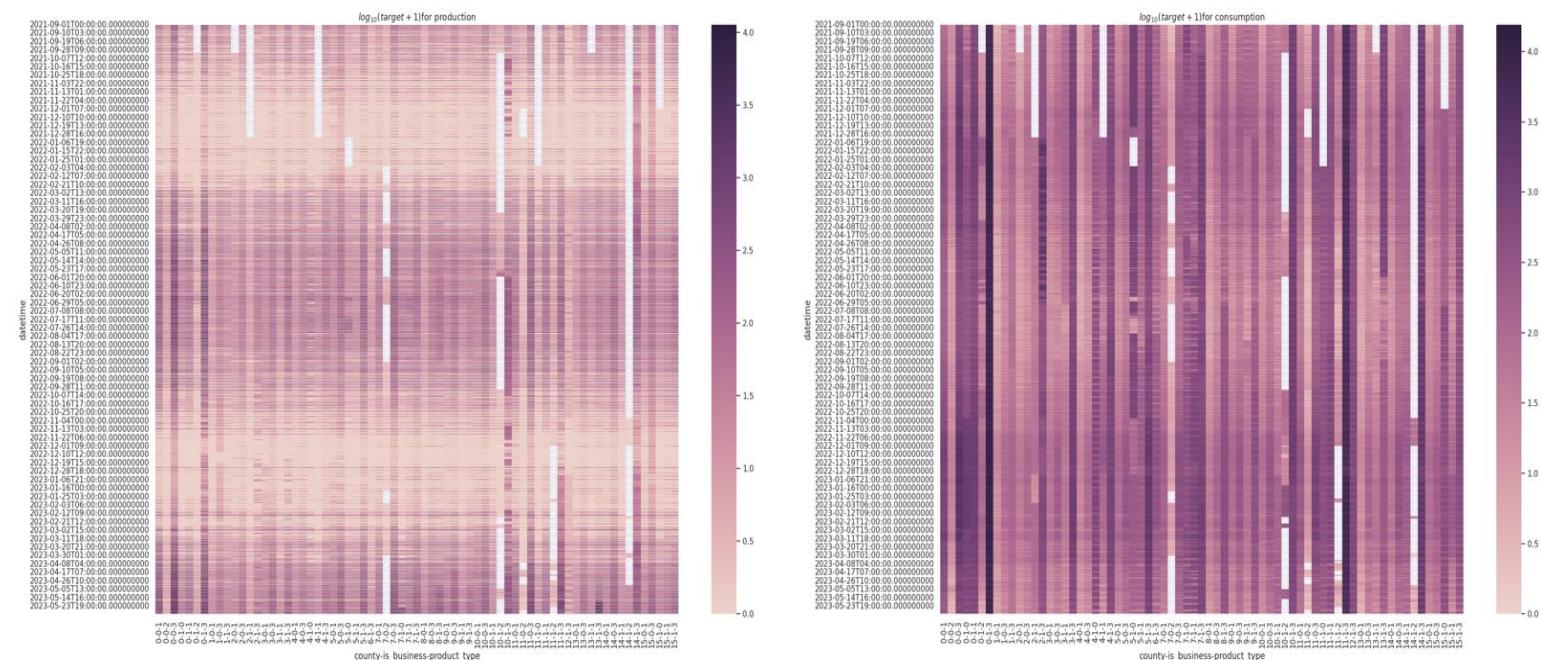
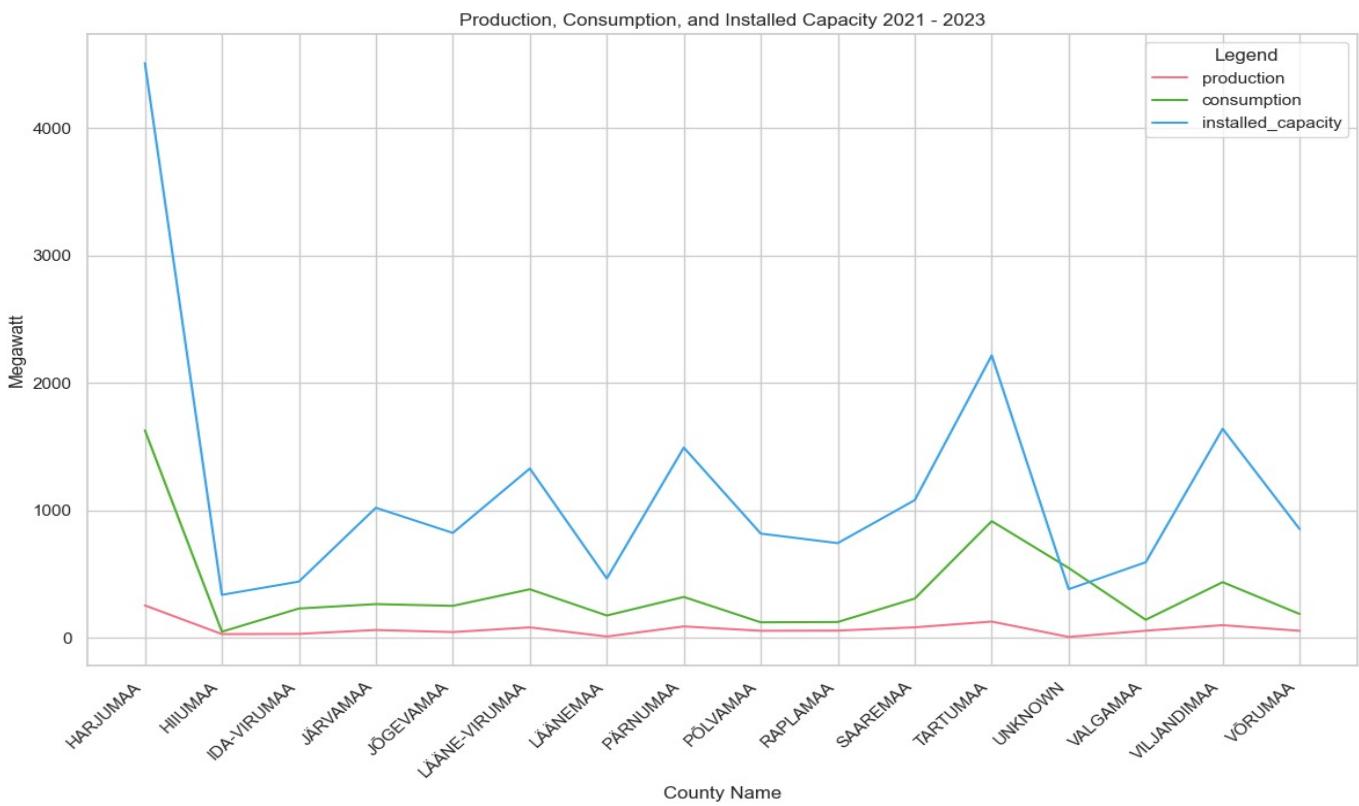


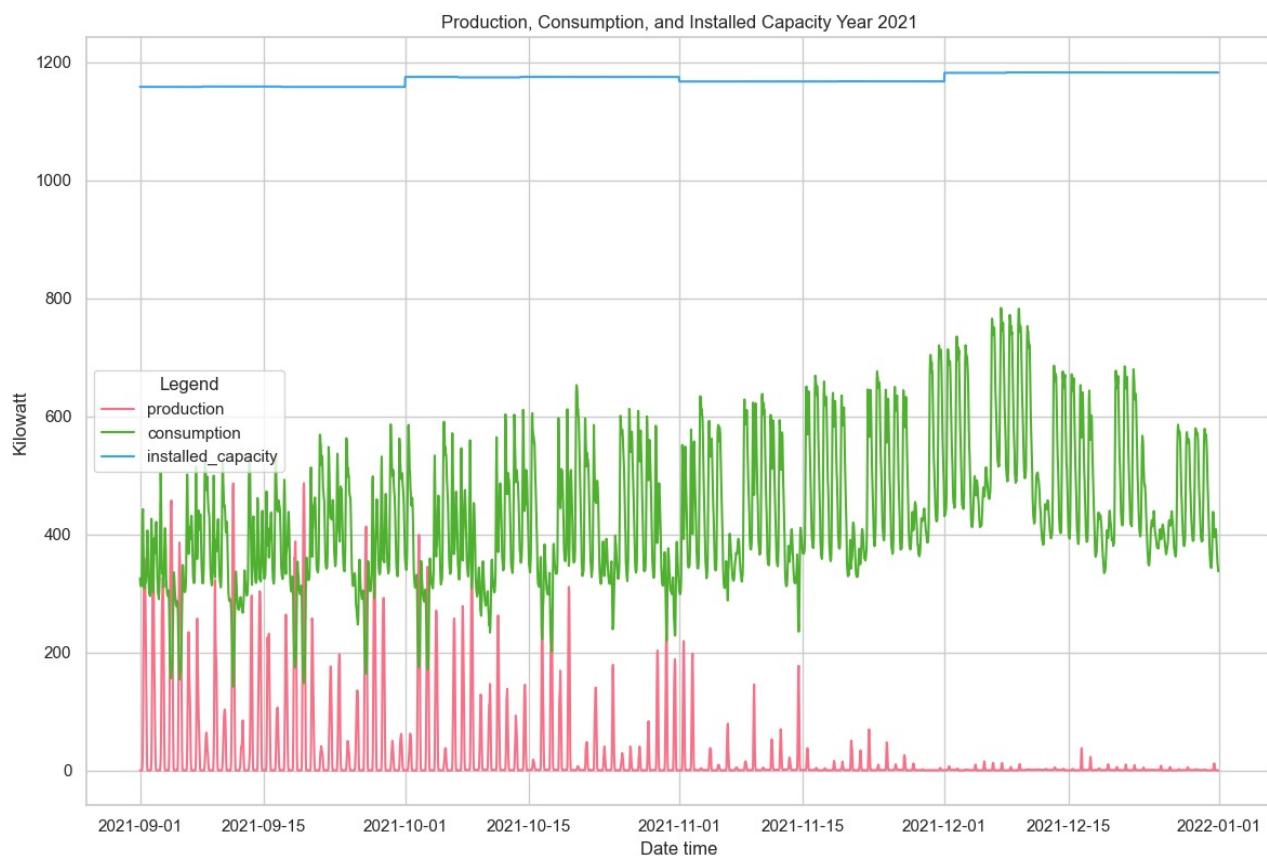
# Heatmaps: Total Production and consumption pattern over the years



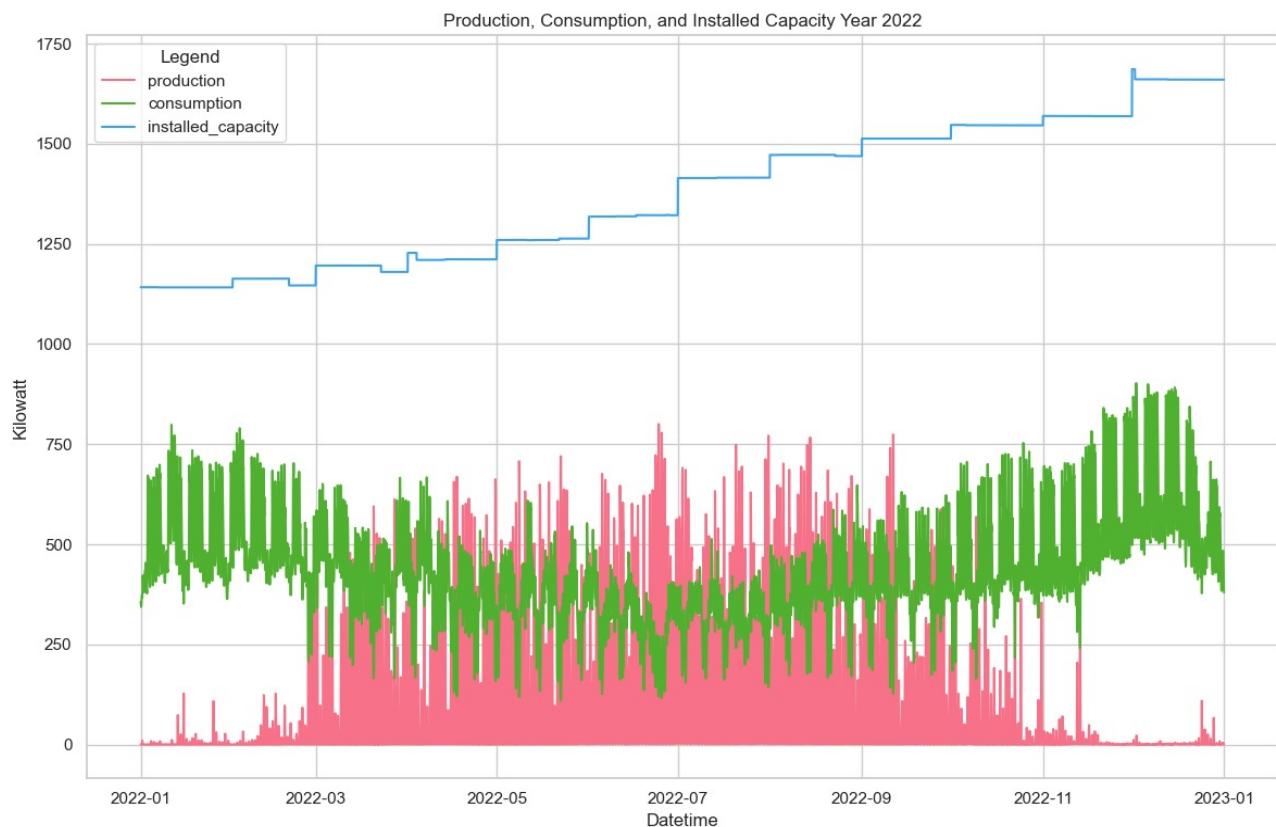
## Production, Consumption, and Installed Capacity in all counties over 2021-2023



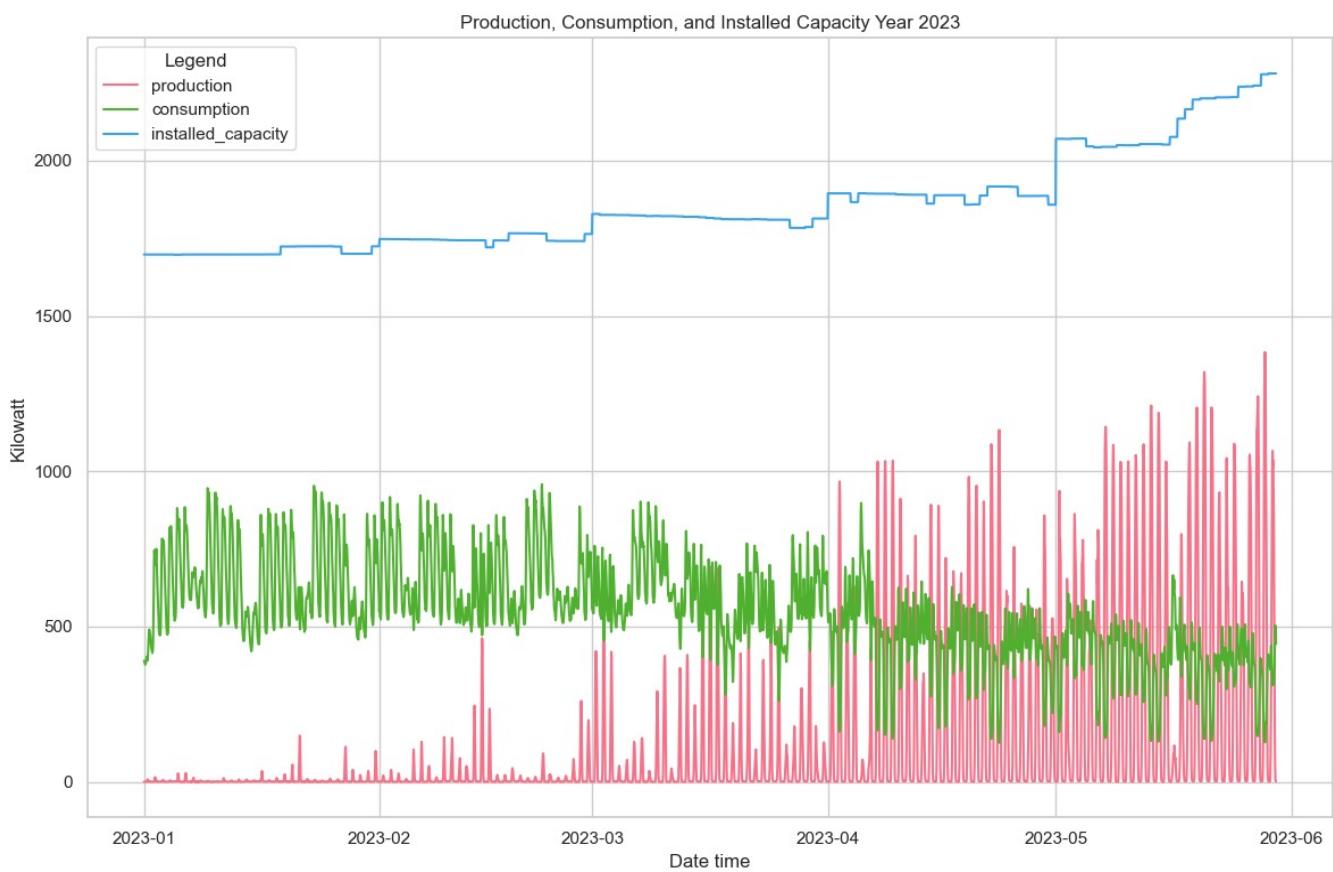
# Production, consumption, and installed capacity in 2021



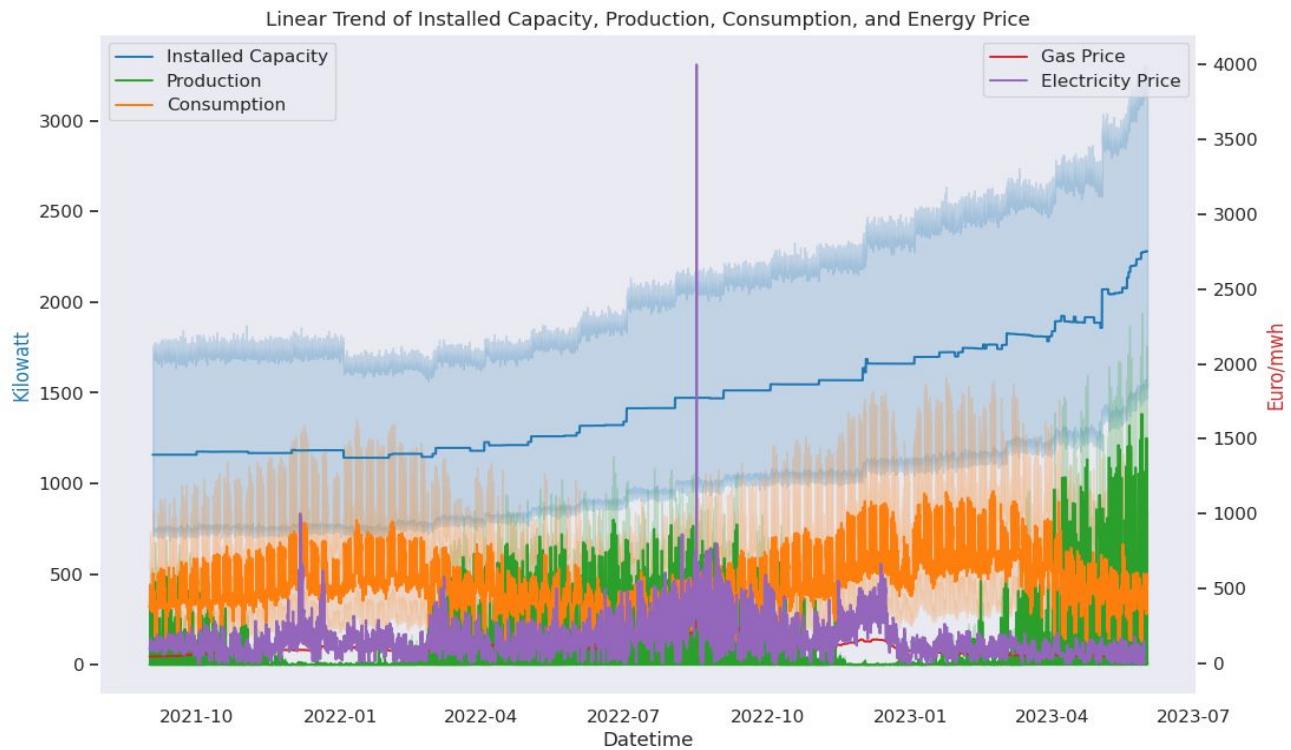
# Production, consumption, and installed capapcity in 2022



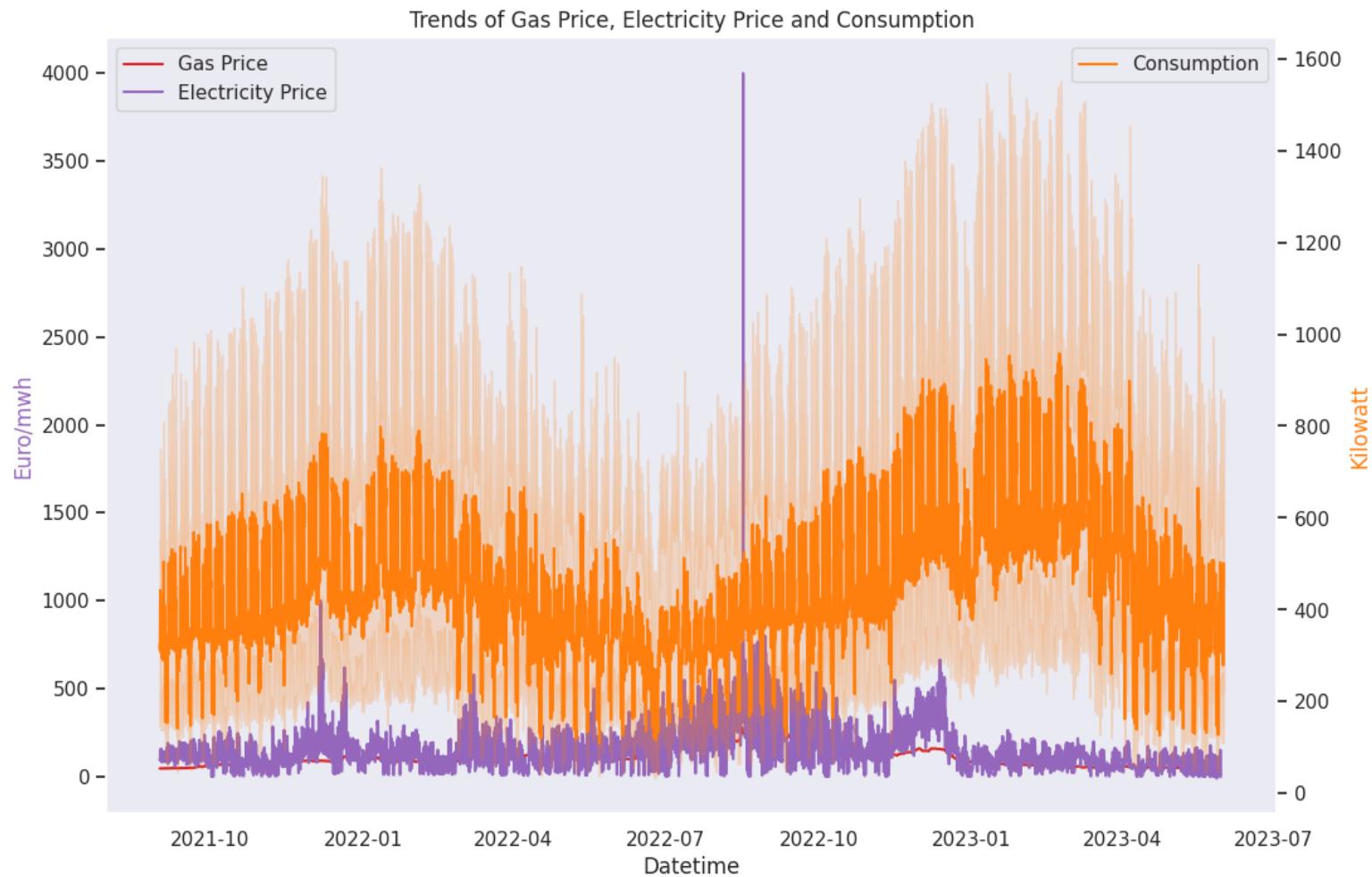
# Production, consumption, and installed capacity in 2023



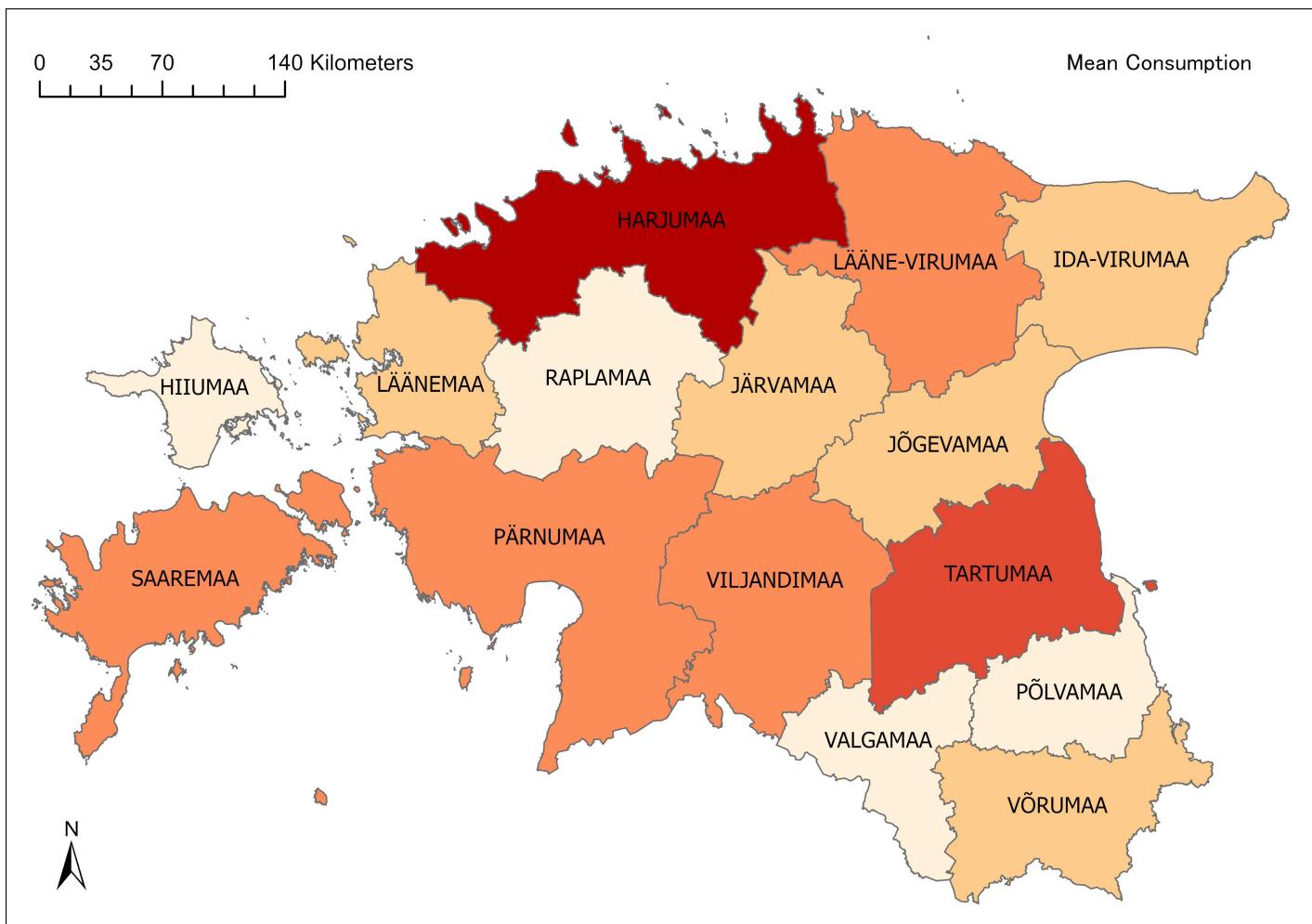
# Trend of installed capacity, production, consumption, and energy prices over time



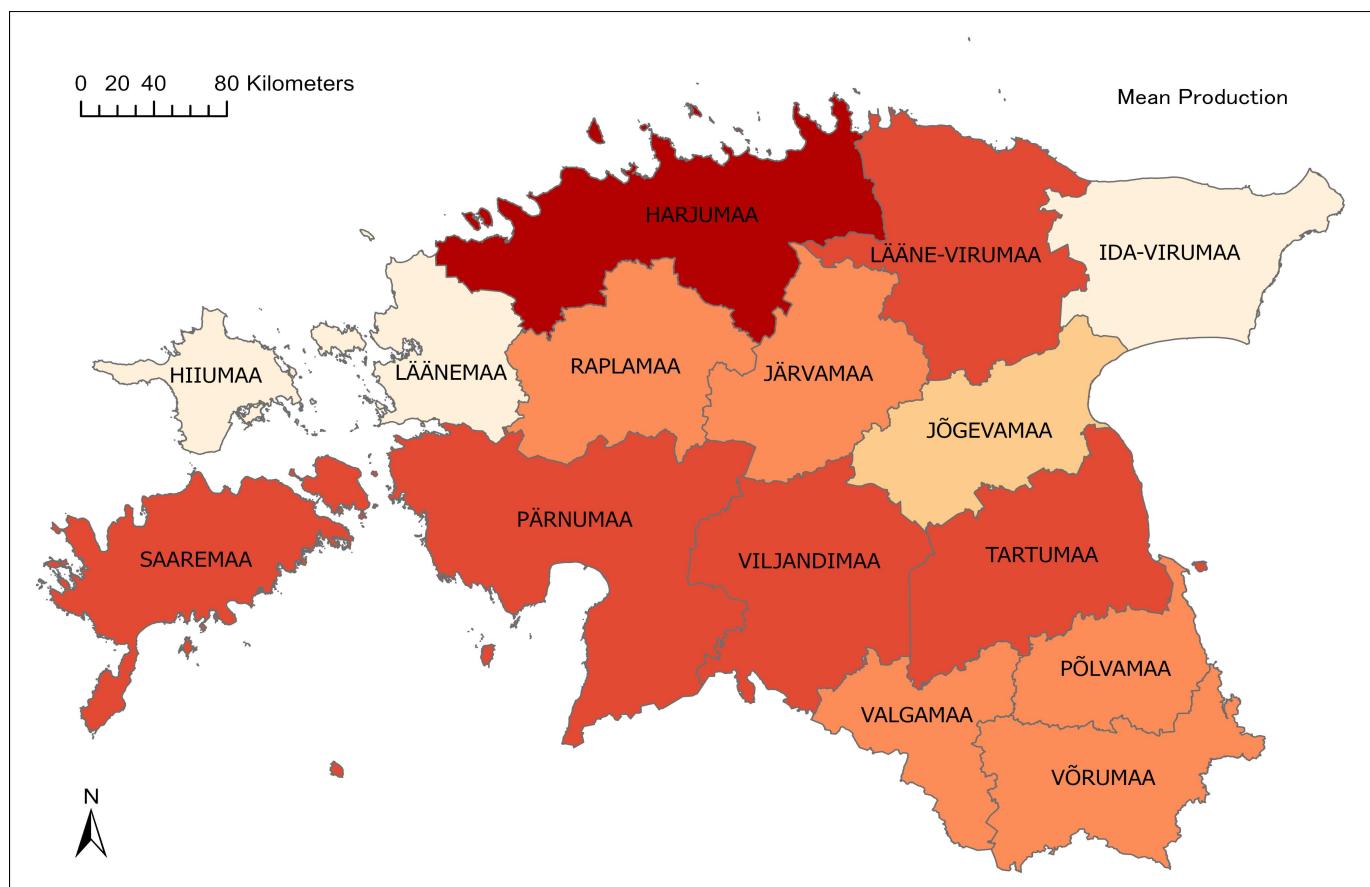
## Trends of gas price, electricity price and consumption over time



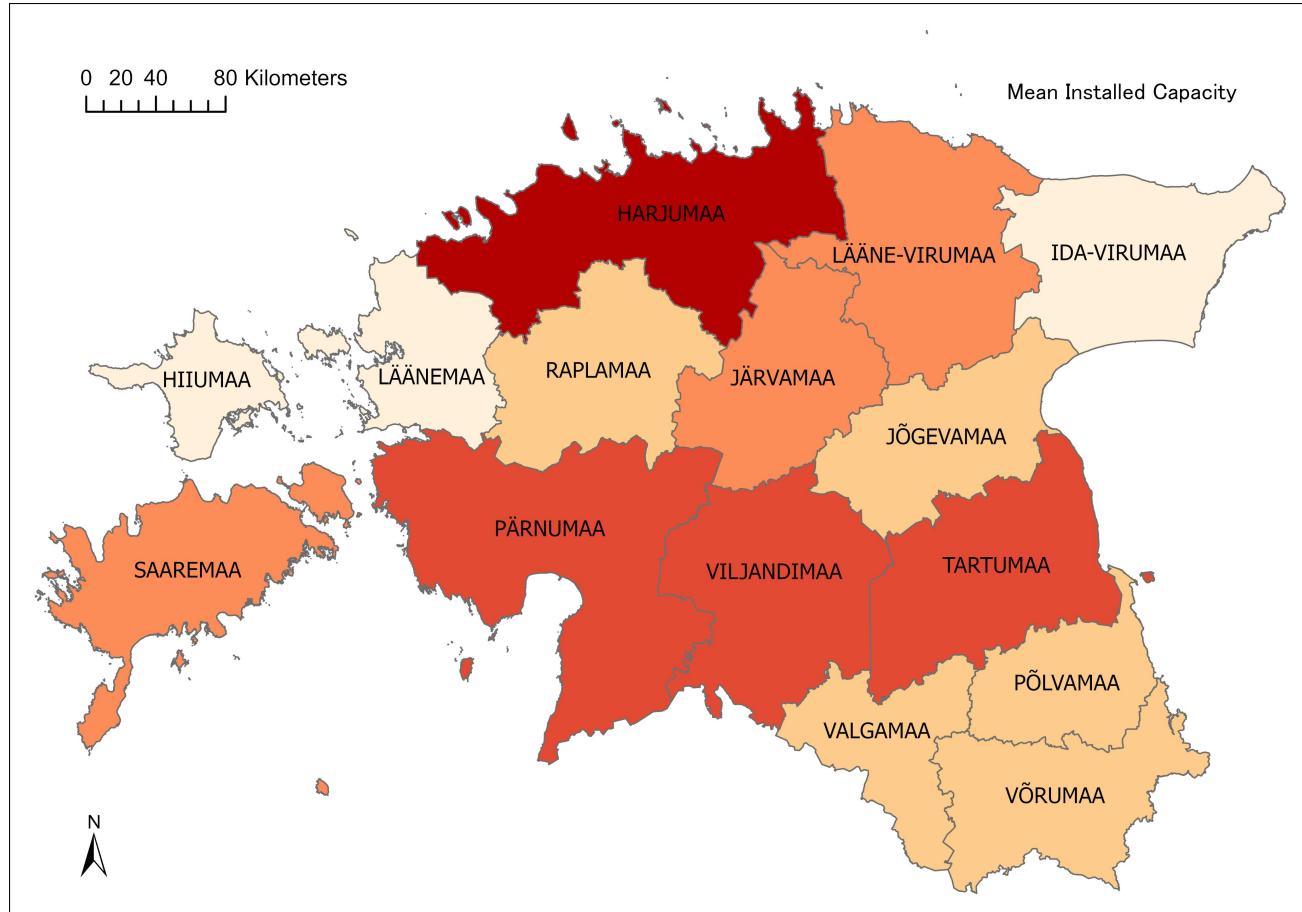
# Mean consumption per county map



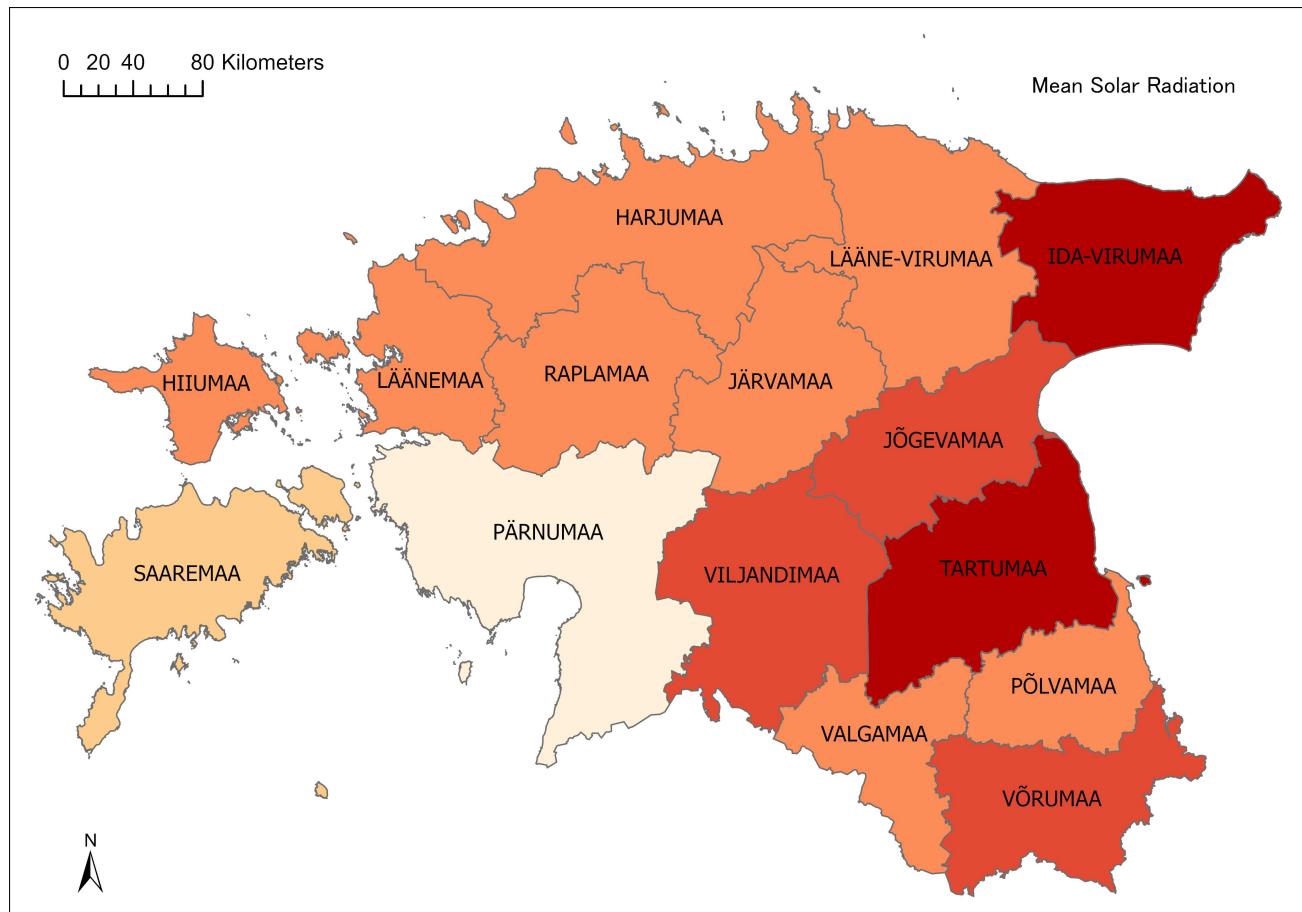
# Mean production per county map



# Mean installed capacity per county map



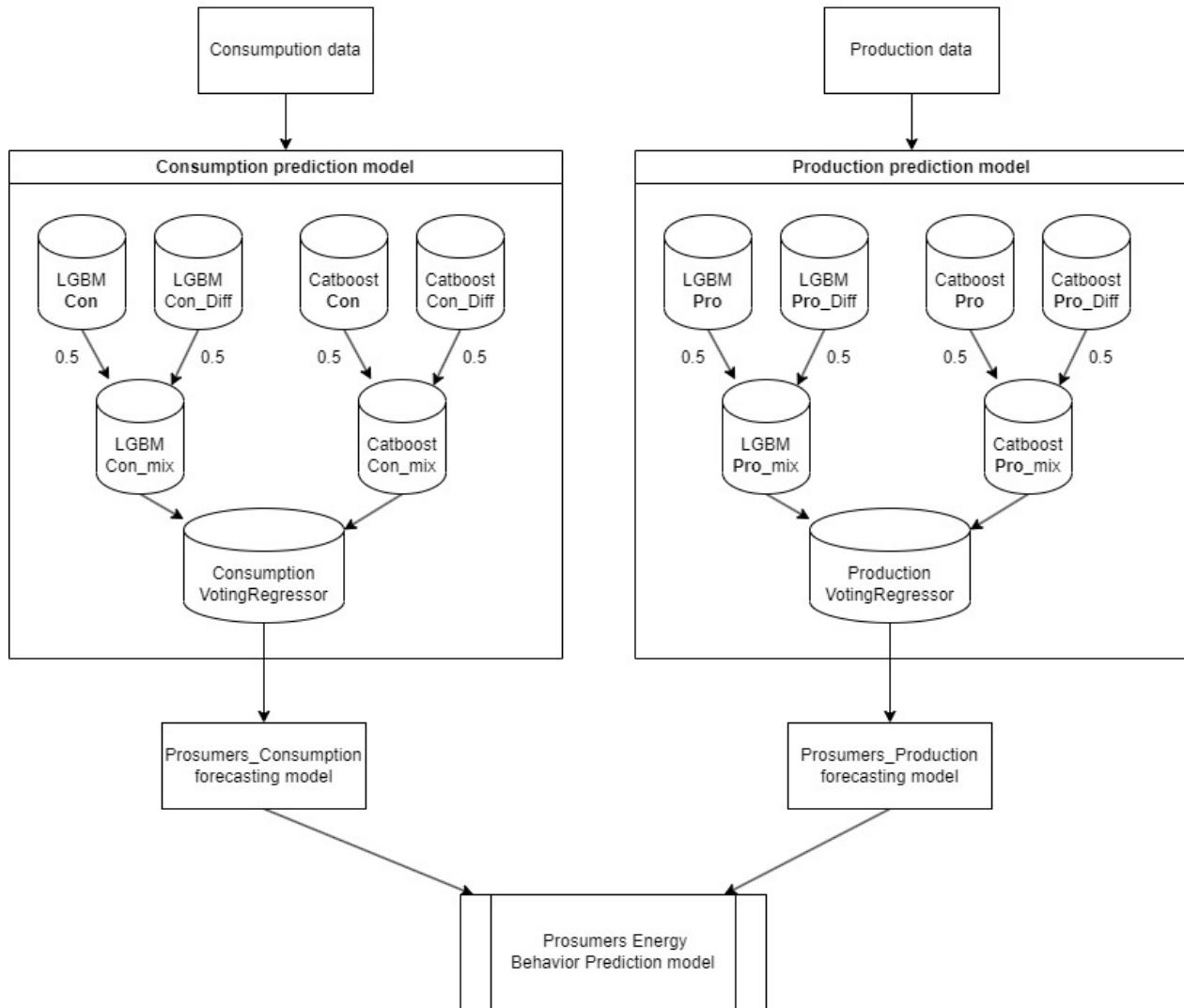
# Mean solar radiation per county map



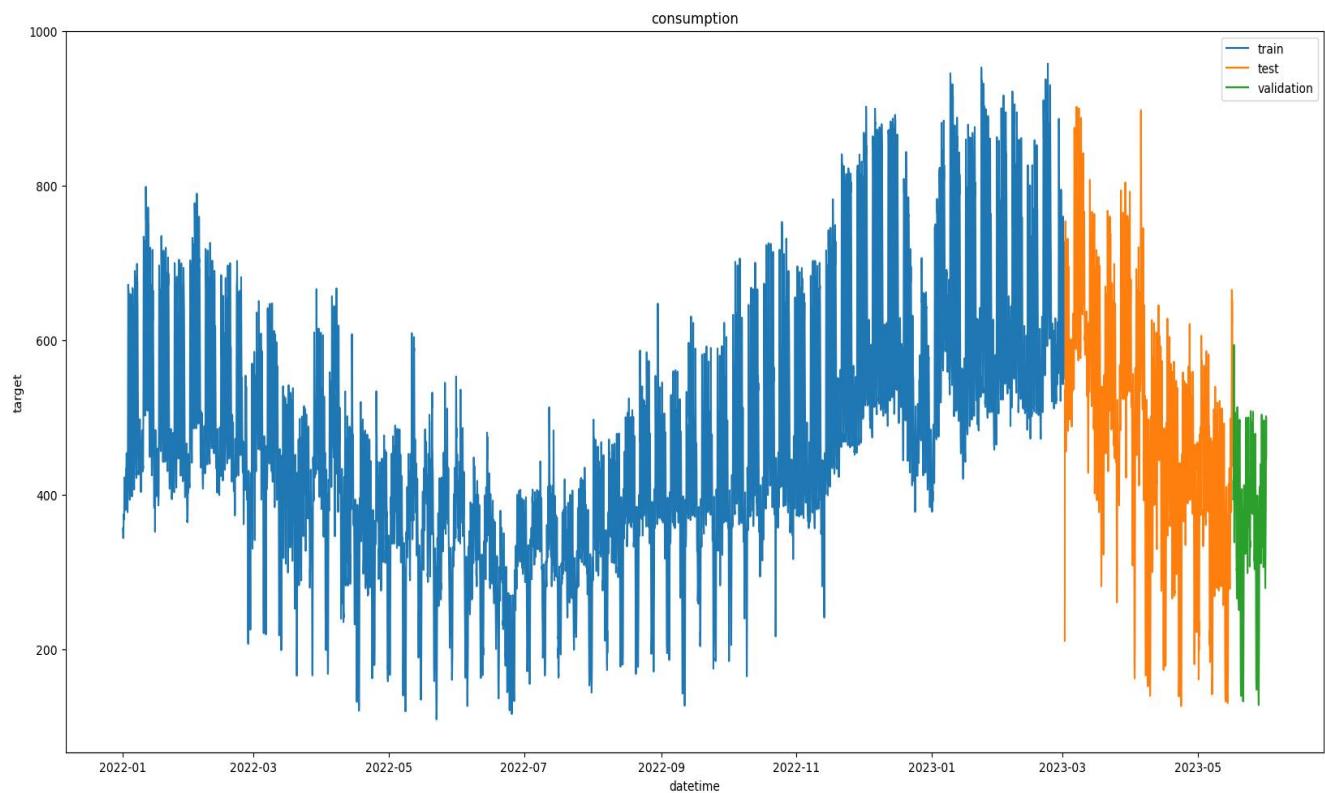
# Model training structure

## Model Structure

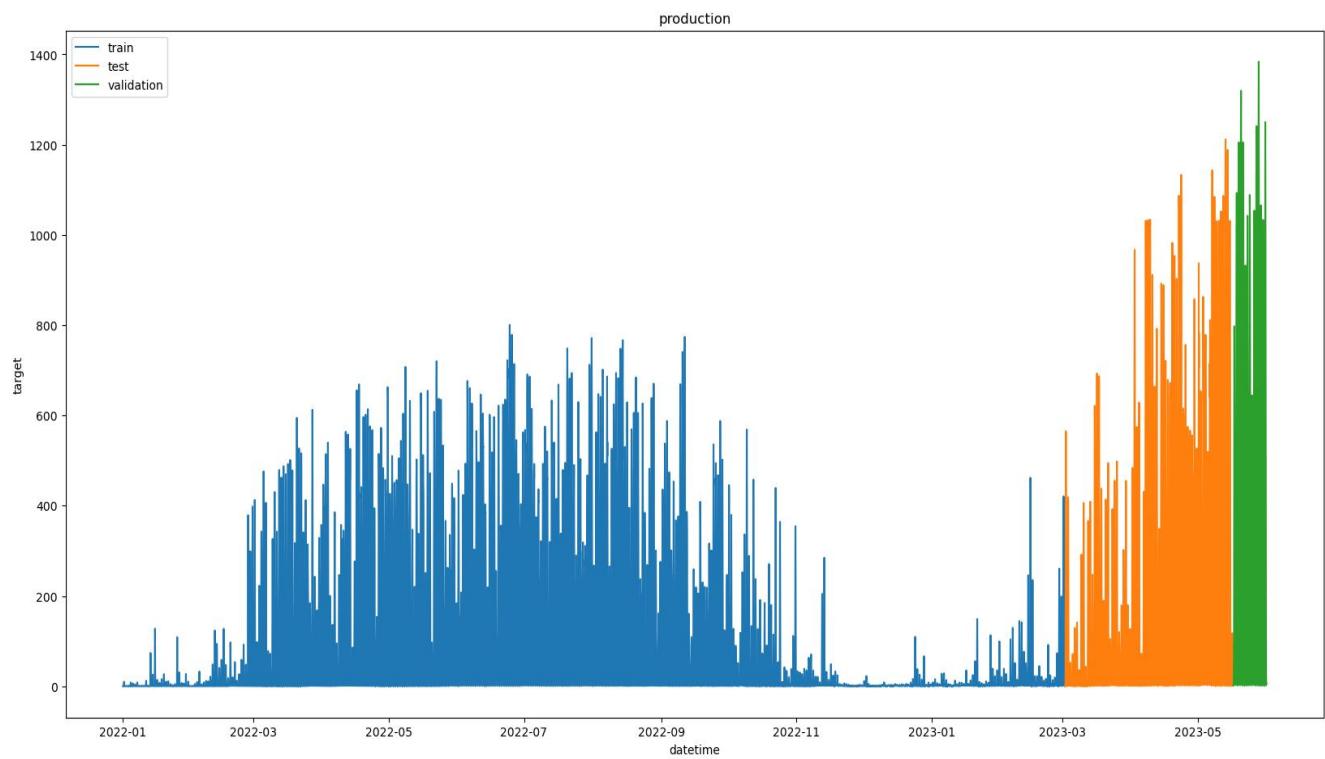
Our model is divided into two, one for the prediction of consumption and one for the prediction of production.



## Separation of consumption data

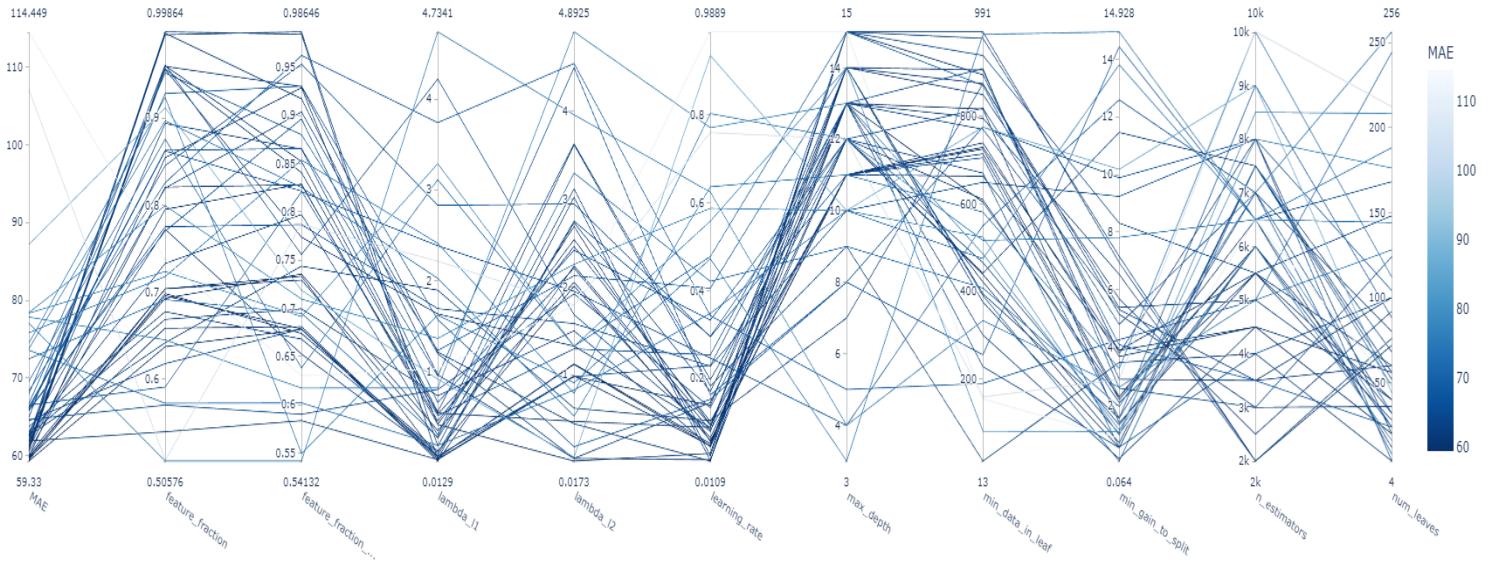


## Separation of production data



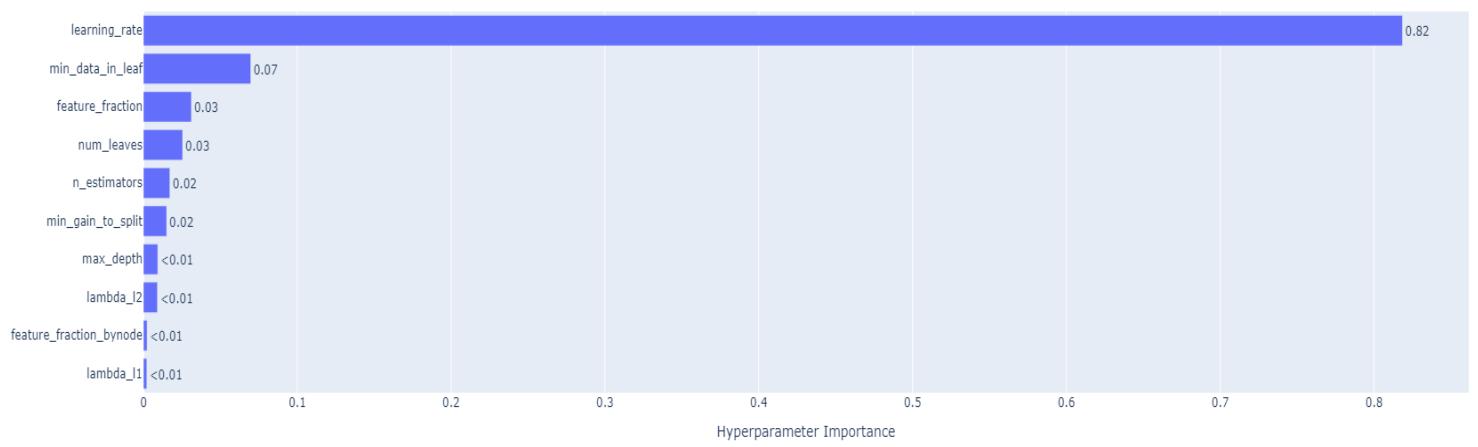
# Consumption parallel coordinate plot (LightGBM)

Parallel Coordinate Plot

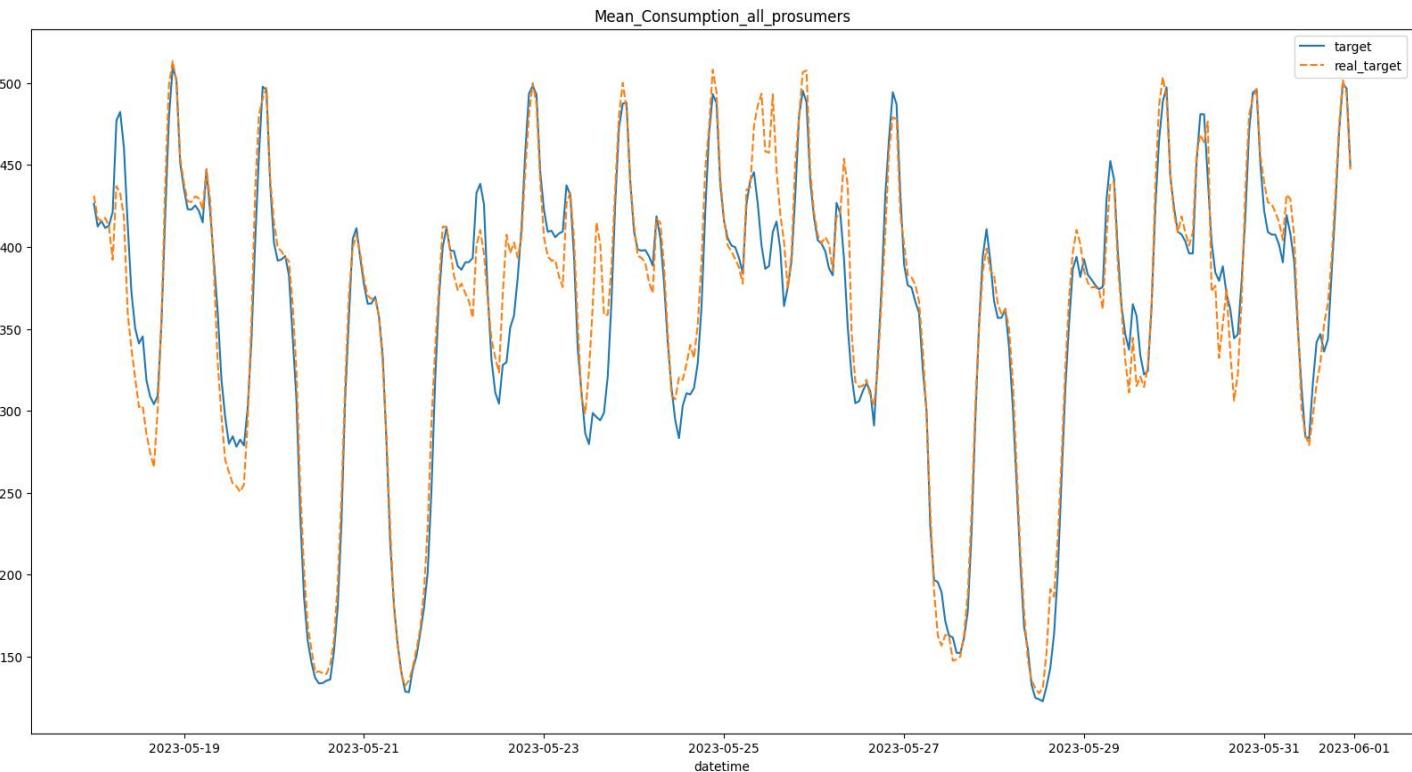


## Hyperparameter importance for consumption (LightGBM)

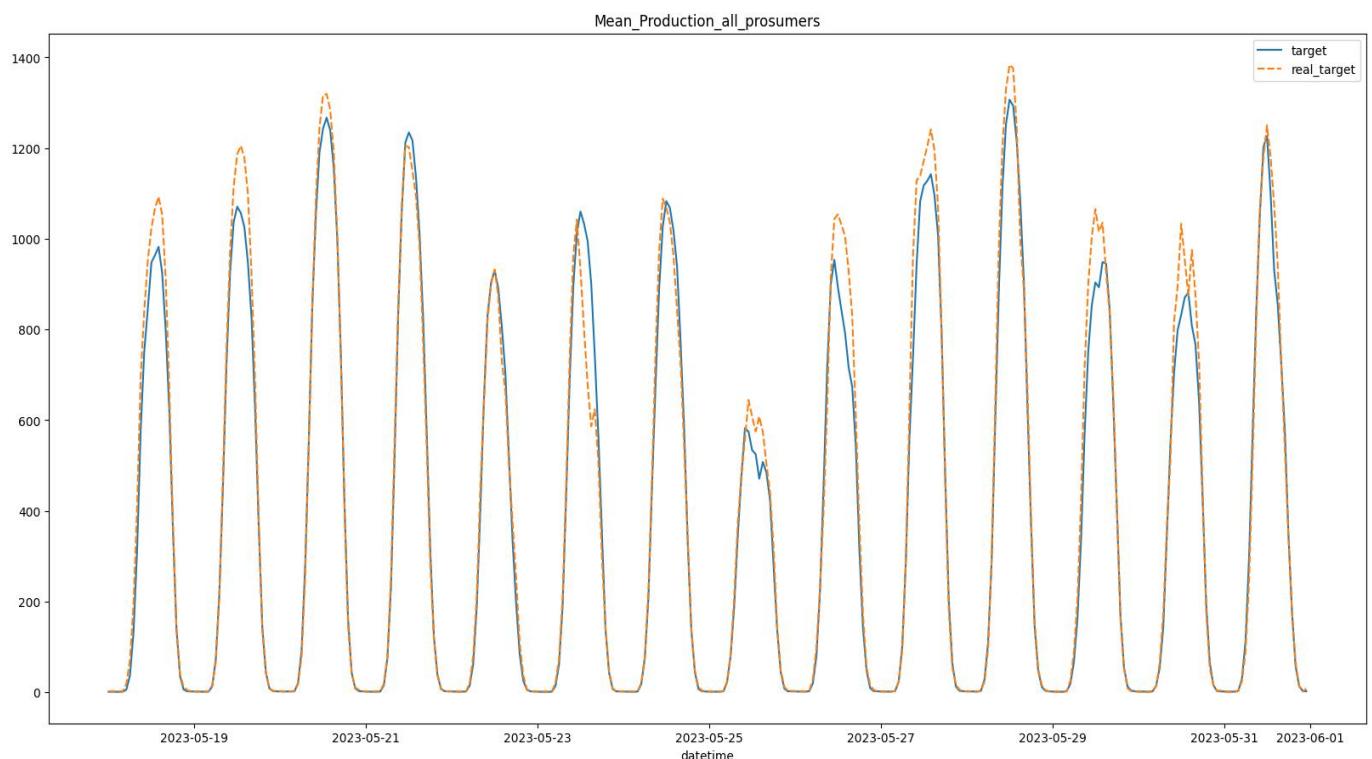
Hyperparameter Importances



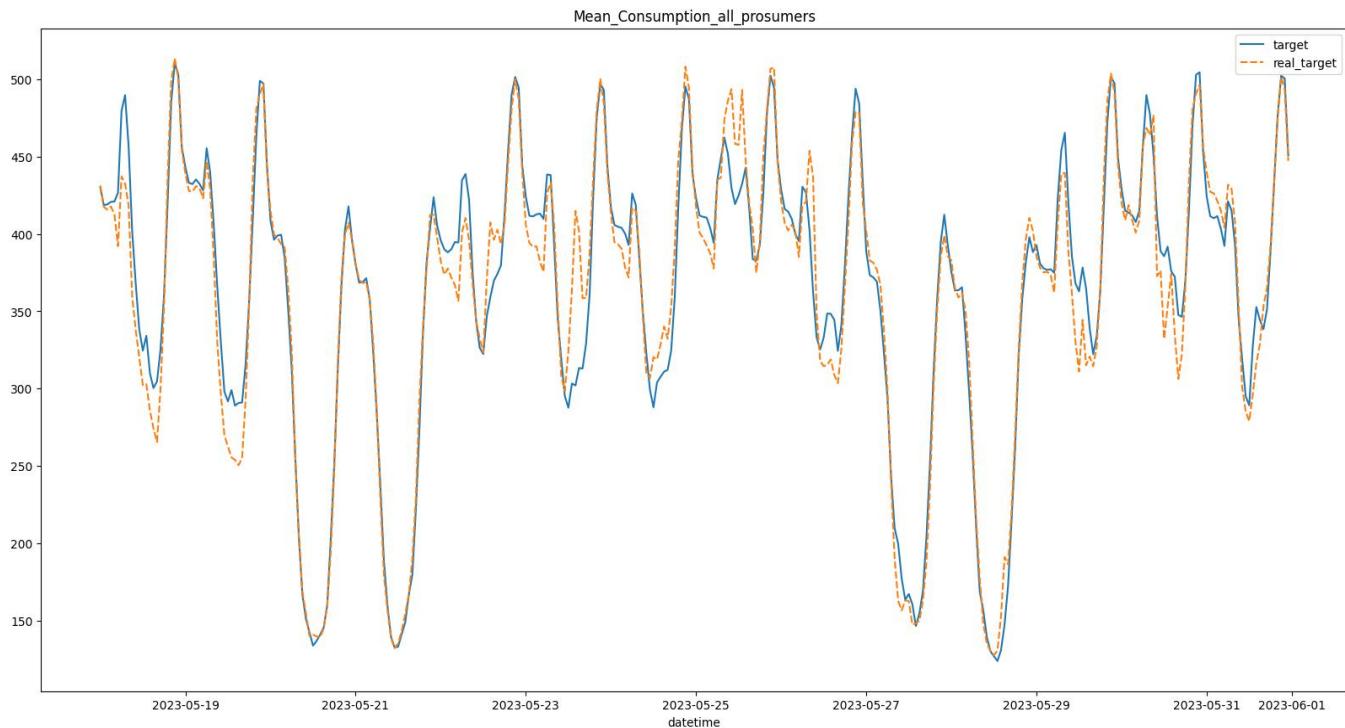
# Predicted mean consumption of all prosumer vs. Real data (LightGBM)



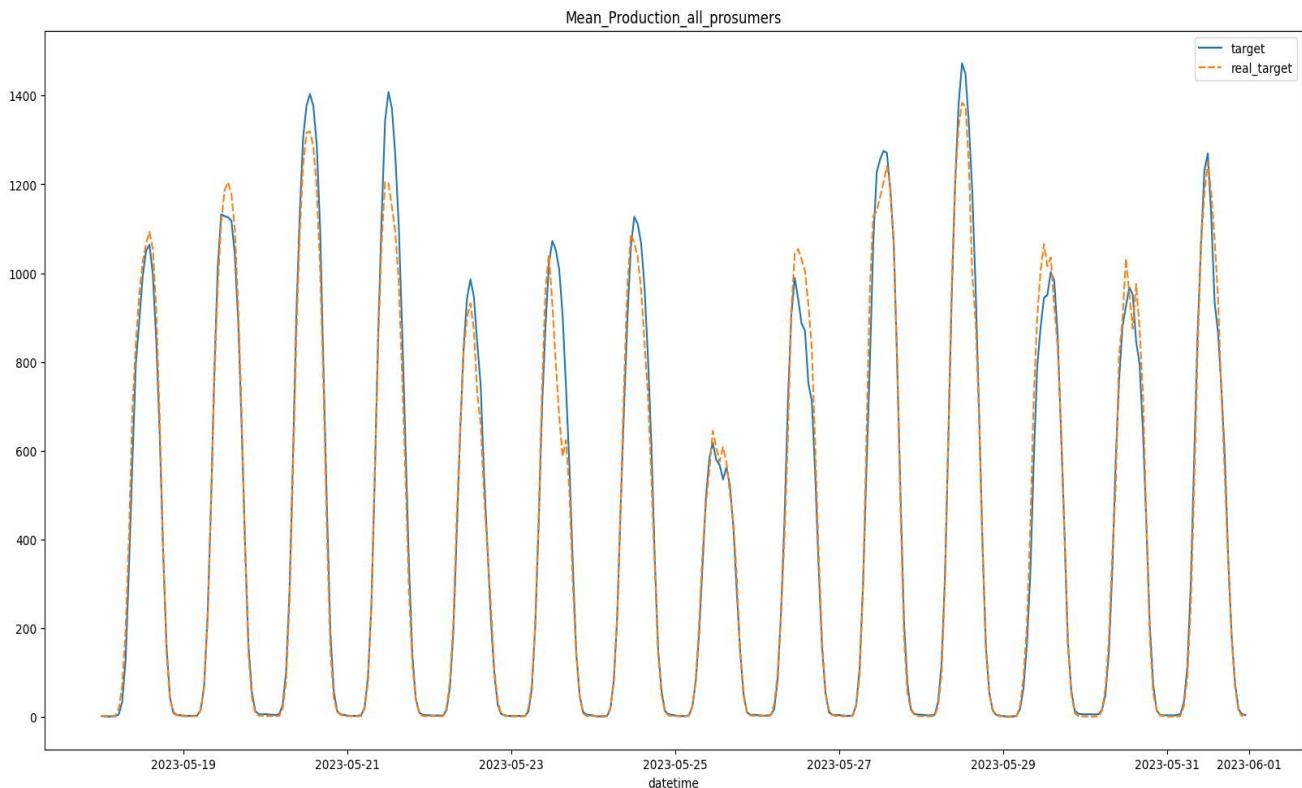
# Predicted mean production of all prosumer vs. Real data (LightGBM)



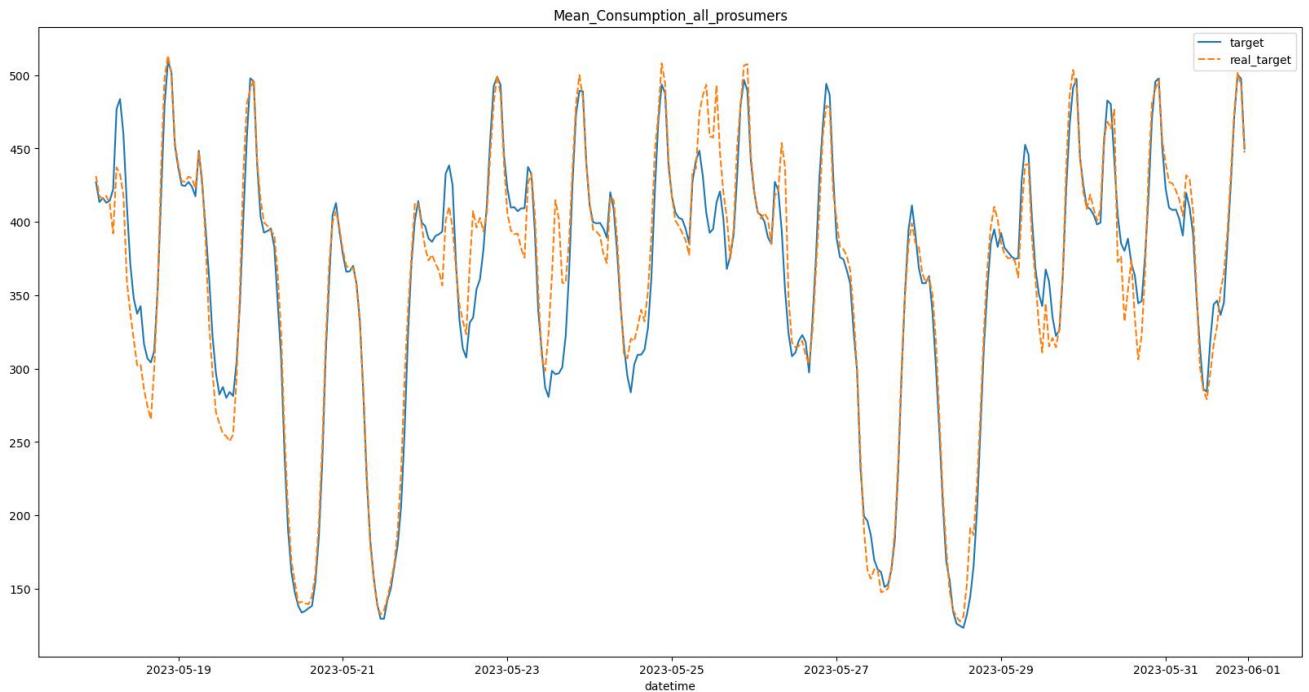
# Predicted mean consumption of all prosumer vs. Real data (Catboost)



# Predicted mean production of all prosumer vs. Real data (Catboost)



## Predicted mean consumption of all prosumer vs. Real data (Ensemble)



## Predicted mean production of all prosumer vs. Real data (Ensemble)

