

# Dynamically Ensembling Forecasting Models

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Demand forecasting is a necessary process in the supply-chain of natural gas. One of the largest challenges in demand forecasting is adapting to systematic changes in demand. While there are many types of mathematical models for forecasting, there is no perfect formula. It has been found that ensembling several models often results in a better forecast. A common method for ensembling component models is taking a weighted average of the model forecasts. Due to the challenge of adapting to changes in demand, it is important to track the weights associated with each component model in an ensemble. We have developed an ensembling method, called the Dynamic Post Processor (DPP). The DPP ensembles several forecasting models, while tuning the weights based on recent performance of the models. It also removes biases from the component models in order to track changing patterns in natural gas demand. The ensemble results in better forecasts than any of the individual component models. It also reduces the mean forecasting error caused by systematic changes.