

**COMPARISON OF THE HOLT-WINTERS EXPONENTIAL SMOOTHING,  
LONG SHORT TERM MEMORY, AND ARIMA METHOD IN  
FORECASTING OF FUEL OIL PRICES IN INDONESIAN**

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**ABSTRACT**

*Need for fuel is proportional to the increase in the population in Indonesia. One way to anticipate the increase in fuel prices is to make predictions (forecasting). Prediction is done using Holt Winters Exponential Smoothing and Long Short Term Memory, and ARIMA methods. The programming language used in prediction is python and the date used is between January 2019 to January 2022 which is taken from the migas.esdm.go.id information system and carried out in Indonesian. In the Holt Winters Exponential Smoothing method which produce the smallest MAPE value of 4.84%. Meanwhile, in the Long Short Term Memory method with MAPE is 12.27%. While the ARIMA method produces a MAPE value of 5.06%. Comparison Holt Winters Exponential Smoothing, Long Short Term Memory and ARIMA methods result in Holt-Winters Exponential Smoothing producing the smallest MAPE value of 4.84%% and considered better and more accurate than the Long Short Term Memory and ARIMA method.*

**Keywords:** *Forecasting, Need For Fuel Oil, Holt-Winters Exponential Smoothing, ARIMA, Python*