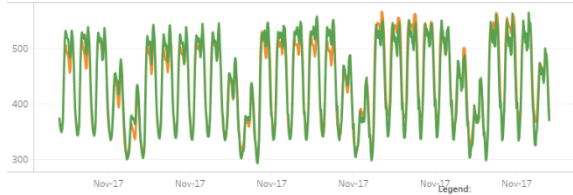


Hourly Energy Consumption Forecast

Year: 2017 Month: November 2017

Avg. Energy Forecast Error: 0.62%
 Median Energy Forecast Error: 0.55%

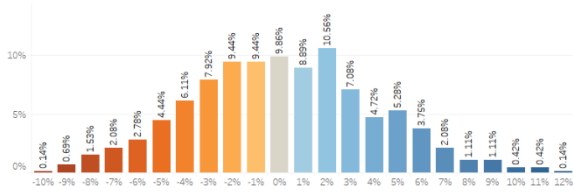
Hourly Energy Forecast



The difference is 0.55%

Hour of Date	Energy	Energy Forecast	Energy Forecast Error
01/Nov/2017 12 AM	371.5	374.4	-0.79%
01/Nov/2017 01 AM	360.1	360.6	-0.11%
01/Nov/2017 02 AM	355.7	353.2	0.69%
01/Nov/2017 03 AM	352.8	348.5	1.23%
01/Nov/2017 04 AM	358.8	355.1	1.01%
01/Nov/2017 05 AM	372.1	367.5	1.24%
01/Nov/2017 06 AM	422.6	420.5	0.50%
01/Nov/2017 07 AM	477.1	475.2	0.40%
01/Nov/2017 08 AM	503.6	517.1	-2.67%
01/Nov/2017 09 AM	507.0	533.1	-5.16%
01/Nov/2017 10 AM	496.1	527.1	-6.25%
01/Nov/2017 11 AM	494.0	520.1	-5.27%
01/Nov/2017 12 PM	488.9	517.8	-5.90%
01/Nov/2017 01 PM	485.5	517.7	-6.40%
01/Nov/2017 02 PM	471.3	500.7	-6.24%
01/Nov/2017 03 PM	455.1	484.2	-6.19%
01/Nov/2017 04 PM	460.0	483.7	-5.16%
01/Nov/2017 05 PM	493.3	501.8	-1.71%
01/Nov/2017 06 PM	515.8	533.1	-3.35%
01/Nov/2017 07 PM	513.2	533.7	-2.04%
01/Nov/2017 08 PM	506.0	507.3	-0.25%
01/Nov/2017 09 PM	474.2	473.4	0.18%
01/Nov/2017 10 PM	429.0	425.2	0.89%
01/Nov/2017 11 PM	388.4	392.5	-1.04%
02/Nov/2017 12 AM	372.2	374.2	-0.52%
02/Nov/2017 01 AM	361.7	357.3	1.22%
02/Nov/2017 02 AM	352.0	344.1	2.24%

Error Distribution



Energy FORECASTING

ELECTRICITY. PREDICT. FUTURE.

MACHINE LEARNING. PREDICT DATA.

Electrical Energy Consumption Forecast

by btProvider®

If you have detailed information regarding energy consumption for more than 2-3 years, then you can use forecasting algorithms to produce an estimation of the next couple of periods. By using the power of Vertica's data engine combined with algorithms from R, you can then visualize the result in Tableau Software, to create an overview Dashboard containing past forecast results and future forecast for verification.

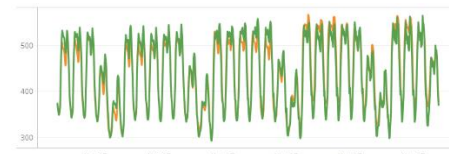
All information that the system needs:

- Energy Consumption details
- Daily or Hourly data.
- Next N periods defined.
- External regressors data.

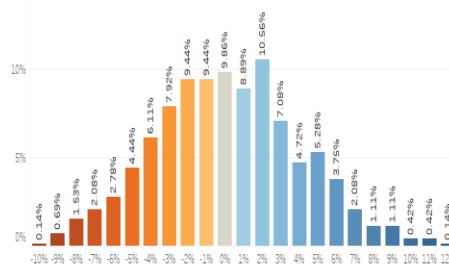
This solution has been created based on Tableau Software, Vertica and R.



First, we see the actual versus forecast values in a time series, to check if the algorithm has identified the seasonality of the data for past periods.



Secondly, we have a distribution of the error of the past forecasts versus the actuals. We look to see if the highest percent errors have small representations and that the errors are forming a gaussian curve around 0%.



Third, we have at our disposal three KPIs to further assess the forecast. An average and median representation of the errors as well as an overall monthly estimation.

Avg. Energy Forecast Error: 0.62%

Median Energy Forecast Error: 0.55%

Fourth, we have a text table containing the values and forecasts, as well as the error, this table is exportable if needed.

Hour of Date	Energy	Energy Forecast	Energy Forecast Error
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Fifth, what's under the hood?

The algorithm used combined time series decomposition, facebook's prophet and autoregressive neural networks for providing a more accurate depiction of the behavior.