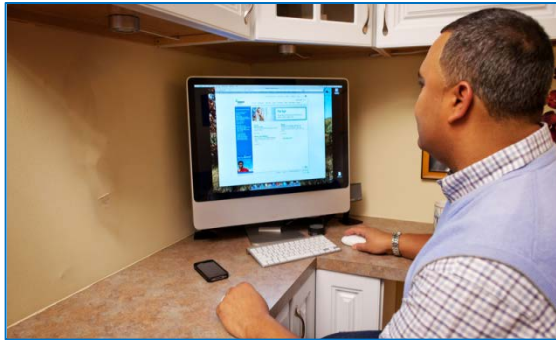


PSC Request

Budget Billing Response



4.04.16

PSC Response Order Summary

This document contains key findings and detail support relating to the PSC Order Directing Response
(File No. EW-2013-0519)

- **Provide data showing average per customer increase or decrease in energy usage since 2010**
 - Ameren Key Finding: Overall Average Customer Usage is trending down and at a similar rate for Budget Billing and Non-Budget Billing Customers
- **Breakdown that data to show only those customers that utilize budget billing**
 - Ameren Key Finding: When looking at the average usage for Budget Billing customers, the trend line for average usage reduction reflects a slightly deeper average usage reduction rate.
- **Prepare a coefficient correlation and any other relevant statistical measures to show if there is a significant deviation in average energy consumption between customers who use budget billing and customers who do not use budget billing**
 - Ameren Key Finding: Ameren ran a statistical reference point analysis to see if there were any significant deviations (mixed modeling). In this test, budget billing customers did reflect a statistically significant difference with lower average usage. That said, the amount of that difference is a small percent of the overall usage. (details provided).

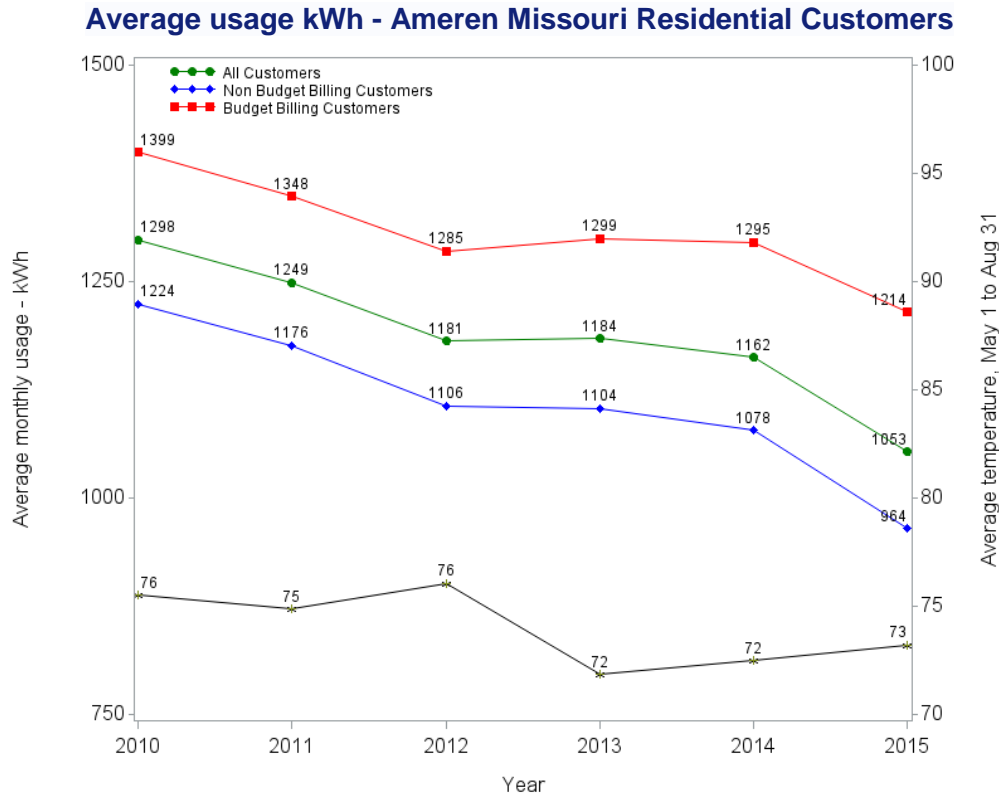


Residential Budget Billing Trends - Summary

- It appears as though the Budget Billing product is working for those who have higher average usage rates
- Over the last 5 years, the trends indicate that both Budget Billing and non-Budget Billing customers are conserving energy
- Reported Customer Satisfaction from Customers who engage the Budget Billing product indicate equal satisfaction to those on non-Budget Billing Customers
- Ameren Missouri ran a statistical test on the trend lines and although there is a relevant difference in the rate of change between Budget Billing and Non-Budget Billing customers, the impact is minor.
 - It appears Budget Billing customers are conserving slightly more than non-Budget Billing customers from a trend perspective but the difference is on average 4.4kWh annually or **just 0.4% difference**.
- When looking at Energy Efficiency participation, 13.4% of BB customers participated in at least 1 EE program compared to 10.0% of non BB customers



Residential Budget Billing Trends – Average Usage

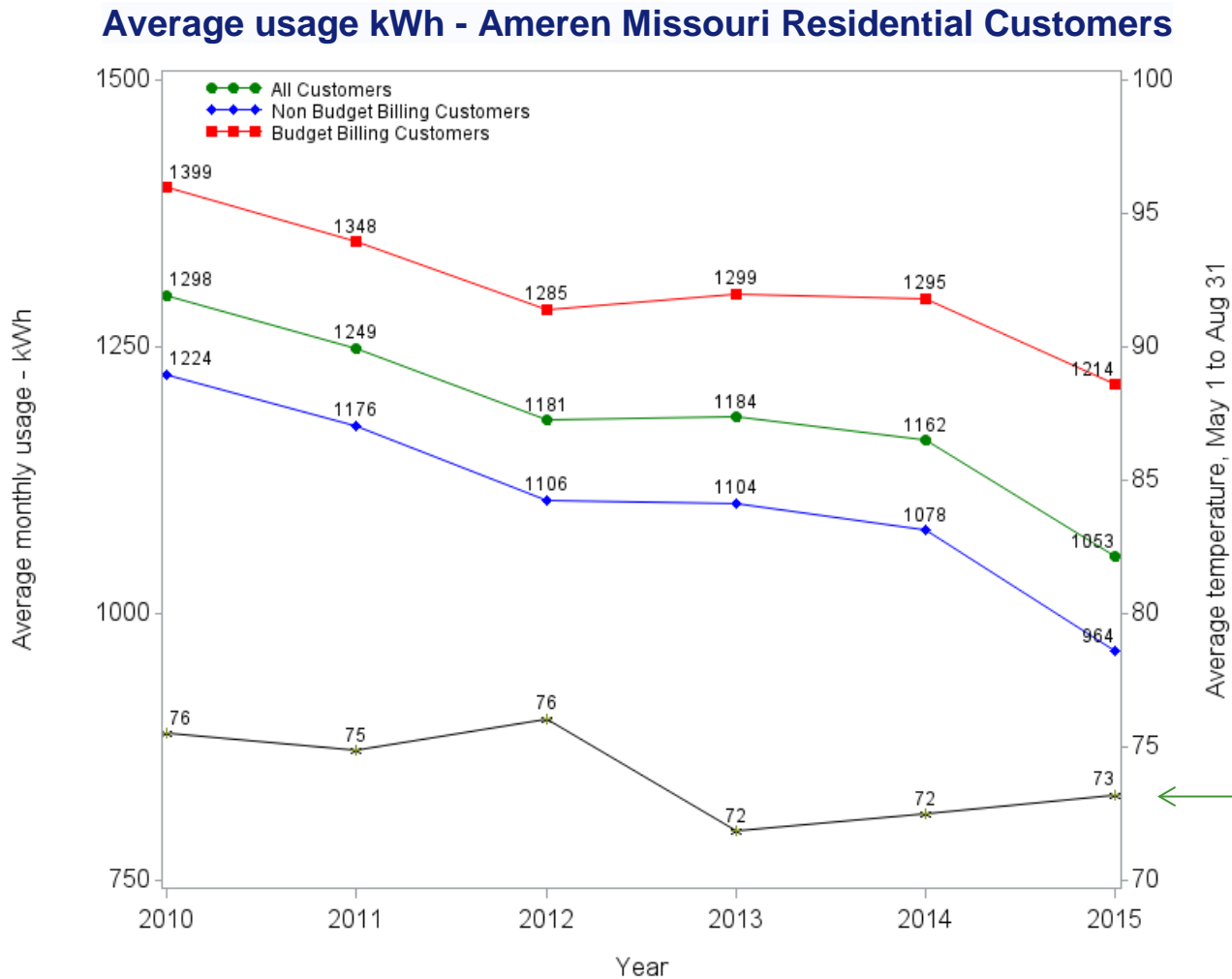


NOTE: The customers included in this study reflect the universe of Budget Billing / non-budget billing customers in 2015 who have been active over the 5 year measuring period.

Group	2010	2011	2012	2013	2014	2015	Overall
No BB	334,670	357,690	388,917	434,370	506,336	636,900	639,227
BB	243,857	259,732	279,522	301,326	323,265	350,539	350,681
Overall	578,527	617,422	668,439	735,696	829,601	987,439	989,908



Residential Budget Billing Trends – Average Usage

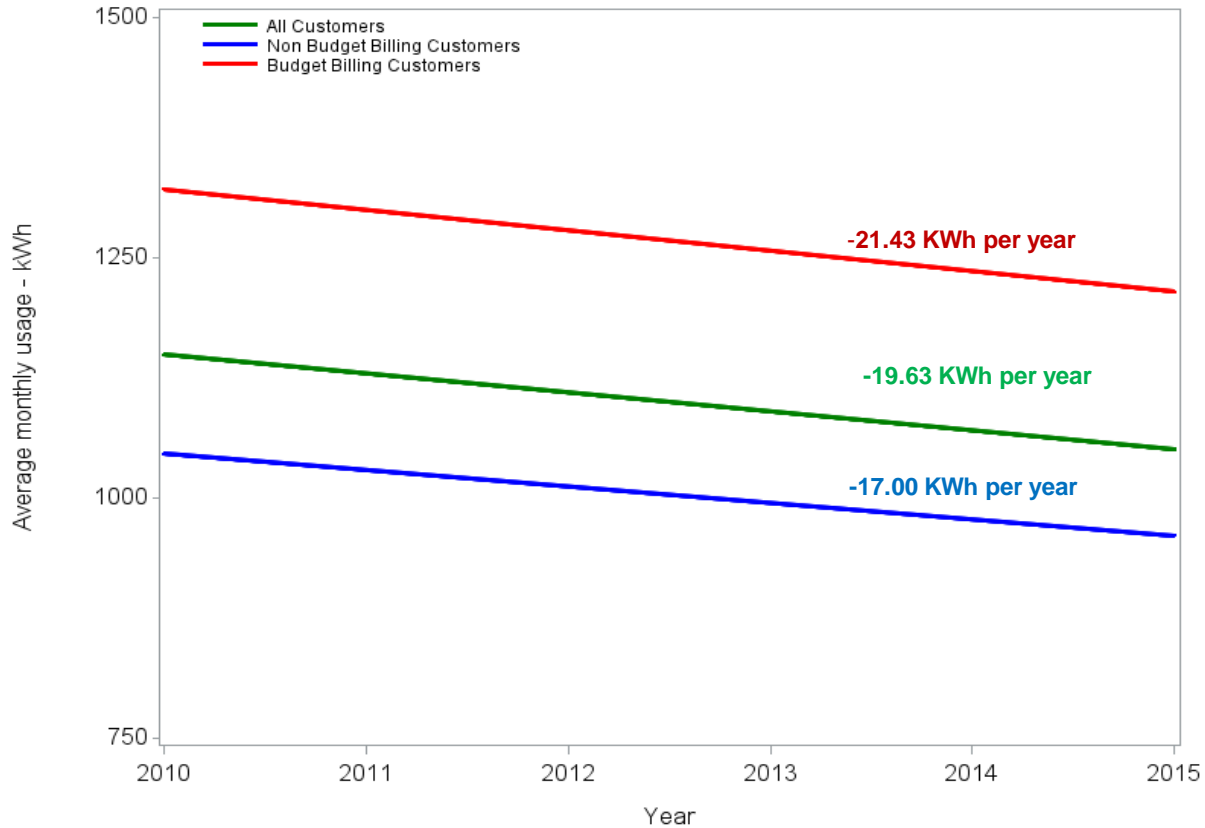


NOTE: average temperature does not appear to play an important role in this analysis



Residential Budget Billing Trends - Linear

Linear Trend - Average Estimated Usage kWh - Ameren Missouri Residential Customers



NOTE: The slope of the Budget Billing average monthly usage line reflects a slightly steeper decline than non-Budget Billing



Residential Budget Billing Trends - Backup

Data Details Summary

Using a marginal multilevel linear mixed regression model:

All MO-Residential customers had an average yearly decrease of -19.63 kWh (95% CI: -19.90, -19.37) ($p < .0001$) from 2010 to 2015.

Budget Billing customers had an average yearly decrease of -21.43 kWh (95% CI: -21.85, -21.00) ($p < .0001$) from 2010 to 2015.

Non-budget billing customers had an average yearly decrease of -17.00 kWh (95% CI: -17.33, -16.66) from 2010 to 2015.

Budget billing customers had a steeper average yearly decrease than **Non-budget billing customers** from 2010 to 2015 (-21.43 kWh vs -17.00 kWh, $p < .0001$). While this difference is statistically significant, the difference of 4.43 kWh represents 0.40% of the weighted average annual usage for **Budget billing customers** from 2010 to 2015 (1,099 kWh).

Using a means-as-outcomes marginal multilevel linear mixed model, results showed that on average **Budget billing customers** have 267.63 kWh (95% CI: 264.57, 270.69) more usage than **non-budget billing customers** ($P < .0001$).

