

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

JOINT APPLICATION OF LOUISVILLE GAS)	
AND ELECTRIC COMPANY AND KENTUCKY)	
UTILITIES COMPANY FOR REVIEW,)	CASE NO.
MODIFICATION, AND CONTINUATION OF)	2014-00003
EXISTING, AND ADDITION OF NEW,)	
DEMAND-SIDE MANAGEMENT AND)	
ENERGY-EFFICIENCY PROGRAMS)	

Advanced Metering Systems 2015 Annual Report

On November 14, 2014, the Commission issued an Order in Case No. 2014-00003¹ approving an Advanced Metering System Opt-In service offering (“AMS Opt-In”) for up to 5,000 Louisville Gas and Electric Company (“LG&E”) and up to 5,000 Kentucky Utilities Company (“KU”) (collectively “the Companies”) residential and small commercial customers. The goal is to provide customers who desire to have consumption data more frequently than once a month an opportunity to request and receive an advanced meter, which will present individual daily consumption through a website. Advanced meters are installed for customers who elect to participate. A participating customer’s consumption is captured, communicated and stored. Customers are able to monitor their hourly usage through the web within two business days. The program does not include in-home devices.

The Commission ordered the Companies to prepare annual reports beginning on December 31, 2015, and due by January 31, 2016, and again annually through December 31, 2018, due by January 31, 2019. The Commission stated the reports should provide the number of participants by Company, measurable energy savings, the information learned, any problems and the resolution, and whether the information was accessible to the participants in a 24- to 48-hour period.²

¹ Case No. 2014-00003, Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Review, Modification, and Continuation of New Demand-Side Management and Energy Efficiency Programs (Ky. PSC, Nov. 14, 2014).

² Id. at 32.

Customer Experience – Enrollment

In June 2015, the Companies launched the AMS Opt-In enrollment website to formally gain customer approval to have an advanced meter installed at their premise. Customers that wish to enroll in the AMS Opt-In service offering log in to their online account and complete the enrollment process. The enrollment process establishes customer access to the web portal where they may view interval data of electricity usage, and includes a customer survey that the Companies will use as a tool to assess customer behavior impacts of the AMS Opt-In service. The enrollment process also includes updates to the Companies' metering and field services departments to facilitate the logistics and installation of advanced meters at customers' premises across the LG&E and KU service territories.

As part of the enrollment process, customers are asked to complete an online survey. Details of the Customer Enrollment Survey and a summary of customer responses are found in Appendix 1. The survey asked customers questions regarding their property and appliances, energy usage habits or patterns, and how they may use the information provided by the advanced meter. For Residential customers only, the survey gathers general information about the occupants such as number of occupants and whether under the age of 18.

In 2015 there were 1,268 surveys completed³. The survey results suggest the AMS Opt-In participants are already energy conscious as evidenced by the high proportion of enrollees reporting having made energy efficiency improvements in the last 5 years. Only 12.4% of responders indicated they had made no energy efficiency improvement in the last 5 years. Additionally, many enrollees indicate they are currently using programmable thermostats and adjust the temperature settings by time of day. Most enrollees indicate more than one person will review the usage data and responded that they were "likely" to "very likely" to take various actions based on their load data. The MyMeter portal will provide a measurement of participant engagement through tracking of participant logins and profile completion.

The combination of customer's MyMeter login data, enrollment survey data, and 15-minute meter data will provide further insight into customer-level energy and demand profiles. The data, along with future survey data, should lead to an improved understanding of our customers' energy use.

³ Of the 1,268 surveys completed, 46 customer enrollments were cancelled (*i.e.*, no advanced meter was installed) either at the customer's request or because the customer moved. There were six surveys that are not included in the Appendix 1 summary because of data loss due to a technical error during the enrollment process (the technical error has been corrected).

As of December 31, 2015 there have been 1,222 customer enrollments and 918 meter installations in the AMS Opt-In service (see Figure 1)⁴. The remaining customer enrollments were not installed because the request was received later in 2015, and will be addressed in early 2016.

The Companies use customer-provided address information to plot customer locations in Google Earth to aid in network deployment planning.

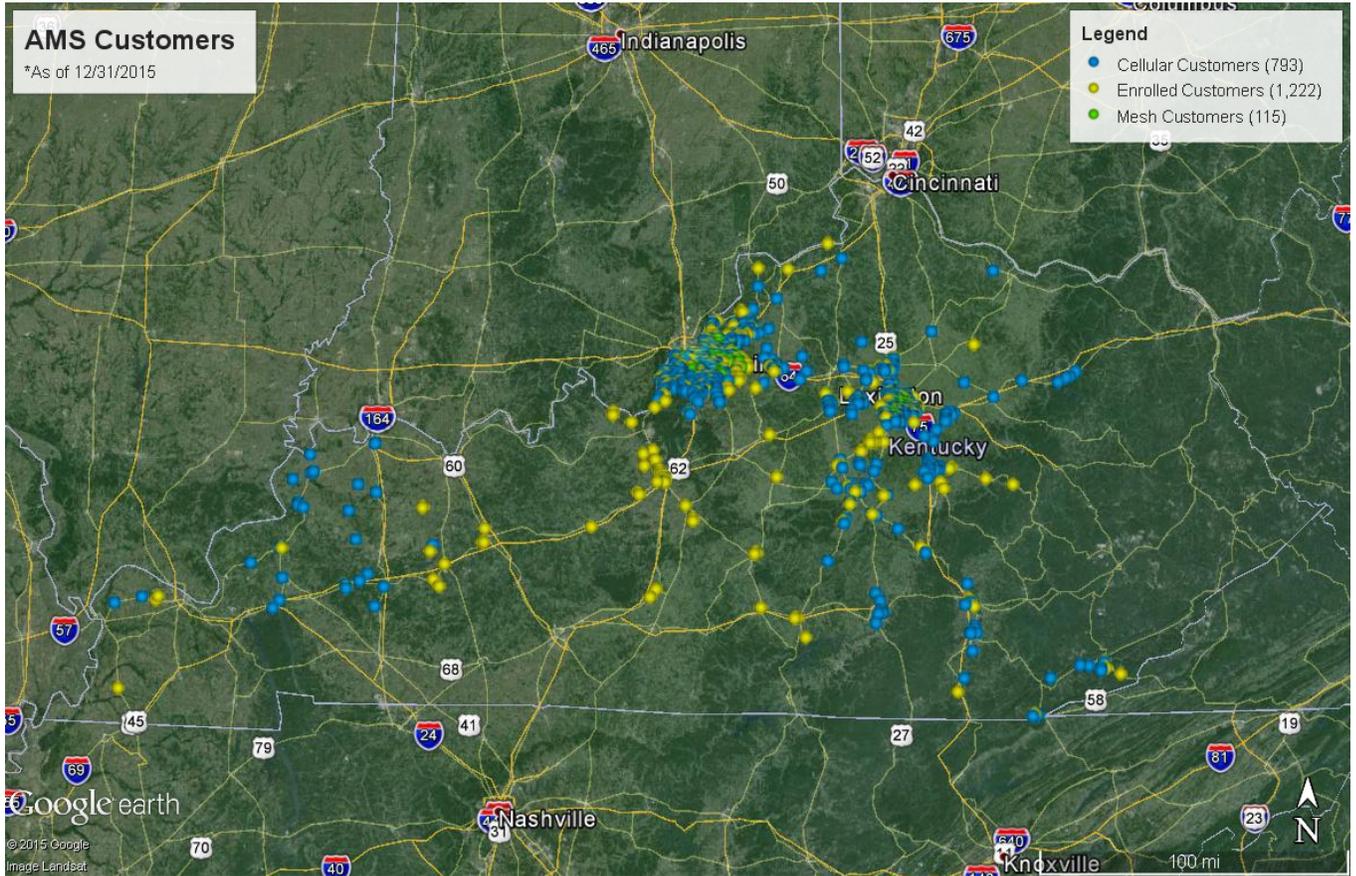


FIGURE 1 – CUSTOMER ENROLLMENTS IN AMS OPT-IN

⁴ The difference between the sum of “Cellular Customers” plus “Mesh Customers” and “Meters Installations” is that some accounts have multiple meters.

Customer enrollment volumes is distributed by month as seen in Figure 2 below⁵.

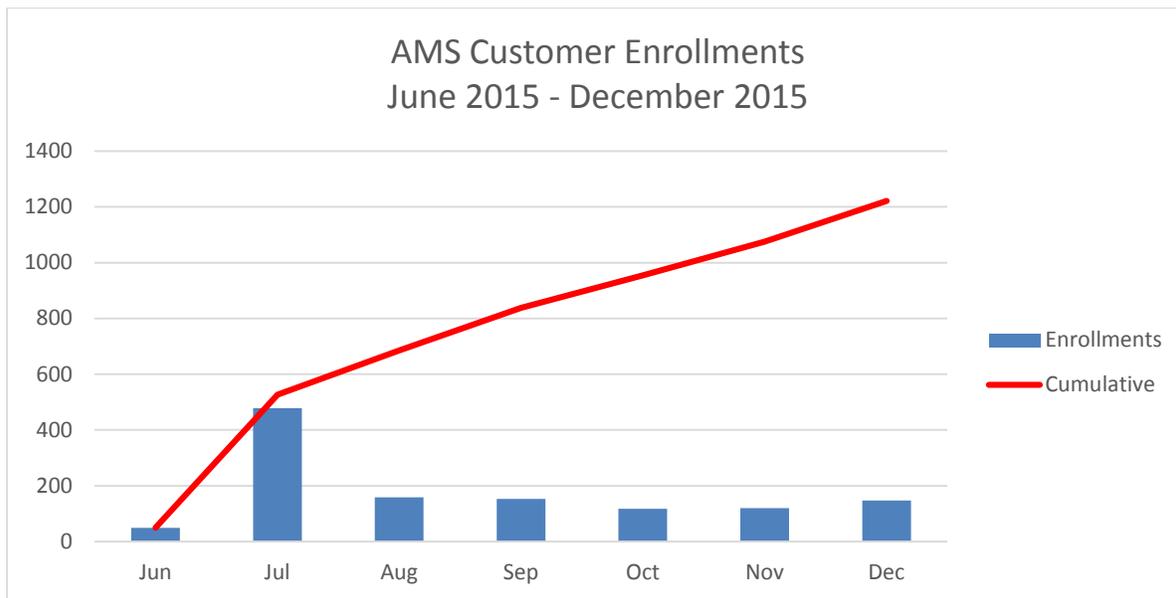


FIGURE 2 - CUSTOMER ENROLLMENTS IN AMS OPT-IN BY MONTH

⁵ Prior to the enrollment website launch in June 2015, over 200 customers expressed interest in the AMS Opt-In offering via the Companies' corporate website. The "I Want More Information" website was taken down at the same time the enrollment website was launched. All of the customers that indicated interest in AMS Opt-In and requested periodic updates were sent an e-mail requesting that they formally request the installation of an advanced meter via MyAccount to which over 150 customers then enrolled.

Enrollments in AMS Opt-In is distributed by company as seen in Figure 3 below.

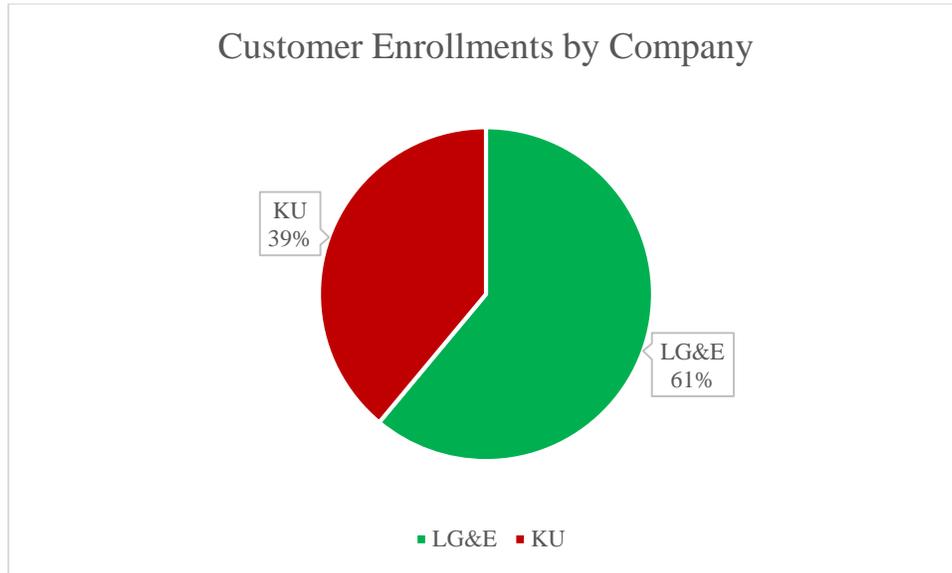


FIGURE 3 - AMS ENROLLMENT BY COMPANY

AMS Opt-In is available to customers in rate classes RS (Residential) and GS (Small Commercial), and the distribution by rate class is depicted in the Figure 4 below.

Rate	LG&E	KU	Grand Total
Residential Electric Service	735	442	1,177 ⁶
Residential Time-of-Day Energy	4	1	5
General Service Three Phase	3	21	24 ⁷
General Service Single Phase	4	12	16
Grand Total	746	476	1,222

FIGURE 4 - ENROLLMENTS BY RATE

As stated previously, 918 AMS meters were installed through December 31, 2015. While 87% of the current meter deployment utilizes cellular communications, the Companies expect that the total population upon full subscription is planned to be 25% cellular meters and 75% mesh meters. The reason for this current distribution, as well as the long term expectation, is that current mesh coverage is approximately 30% of what it will be once full mesh infrastructure deployment in the Louisville and Lexington areas has been achieved by mid-2016. To improve customer experience with the process, cellular meters are being installed in parallel with mesh network equipment.

⁶ Of the total Residential enrollments, seven are Residential Electric Net Metering customers.

⁷ Of the total General Service Three Phase enrollments, two are General Three Phase Net Meter customers.

Customer Experience – Meter Installation

Customers are notified in advance of the installation of their meter via e-mail. The purpose of the e-mail is to describe what they may expect at the time of meter installation, and instructions on how they may access the online web portal to view their interval load data. The text of the Customer Notification E-mail is in Appendix 2.

At the completion of the meter installation, the meter technician leaves behind a Customer Door Hanger to notify the customer that their meter has been replaced and an example is in Appendix 3.

Customer Experience – Welcome Kit and Educational Tools

Educational information is available to customers to welcome them to the AMS Opt-In service, and provide information on how they may use the MyMeter dashboard to view their interval load data and is in Appendix 4.

Customers' Engagement with MyMeter Web Portal

The following table (Figure 5) reflects the volume of customer interest in the websites the Companies have established to provide information on the Advanced Meter Service as well as educational materials on the MyMeter portal. Please note, Google Analytics defines “Pageviews” as the total number of pages viewed. Repeated views of a single page are counted. “Unique Pageviews” is the number of sessions during which the specified page was viewed at least once. A unique pageview is counted for each page URL + page Title combination.

Page	Description	Pageviews	Unique Pageviews	Avg. Time on Page
All page URLs begin: https://lge-ku.com/saving-energy-money/*		5,645	4,555	00:00:58
/advanced-meter-service/	General awareness page that explains the service and how to sign up for it.	4,466	3,791	00:00:56
/advanced-meter-service/i-want-more-information	Page for customers to provide their contact information if they were interest in learning more or enrolling in the service. *Note: Page was taken down on 10/23/2015 once the enrollment page was active.	744	418	00:00:58
/advanced-meter-service/ams	Welcome site for AMS customers featuring helpful tips and video tutorials about how to use the MyMeter dashboard.	351	268	00:01:04
/advanced-meter-service/ams/chart-view	Welcome site for AMS customers featuring helpful tips and video tutorials about how to use the MyMeter “Charts View”.	29	28	00:00:15
/advanced-meter-service/ams/profile	Welcome site for AMS customers featuring helpful tips and video tutorials about how to use the MyMeter “Profile”.	21	19	00:00:49
/advanced-meter-service/ams/data-view	Welcome site for AMS customers featuring helpful tips and video tutorials about how to use the MyMeter “Data View”.	15	13	00:00:31
/advanced-meter-service/ams/notifications	Welcome site for AMS customers featuring helpful tips and video tutorials about how to use the MyMeter “Notifications”.	14	13	00:00:19
/advanced-meter-service/ams/how-to-use-notifications	Welcome site for AMS customers featuring helpful tips and video tutorials about how to use the MyMeter “Notifications”.	5	5	00:02:55

FIGURE 5 – GOOGLE ANALYTICS SNAPSHOT OF COMPANIES' AMS WEB TRAFFIC

The following table (Figure 6) depicts data on customer activity utilizing the MyMeter web portal as part of the AMS Opt-In service. For a brief definition of each metric please see Appendix 5.

MyMeter Analytics	2015*
Accounts registered (enrollments)	908 ⁸
User Registrations (first time a user clicks into MyMeter)	514
Customer Energy Markers™	71
Customer Notification: Mobile phone notification set-up	34
Customer Notification: E-mail address notification set-up	492
Customer Notification: Threshold alert set-up	54
Threshold notifications sent by system	653
Total Sessions within MyMeter Site	2,035
Sessions by new users	614
Sessions by returning users	1,421
Average session duration (minutes: seconds)	4:05
Page visits/session	2.96
Average Number of times MyMeter visited per month	508.75
Unique pageviews to MyMeter site	3,523
Total MyMeter site pageviews	6,027

FIGURE 6 – MYMETER WEB PORTAL ACTIVITY AND ANALYTICS

*Note: 2015 reflects activity from September 1, 2015 to December 31, 2015.

The chart below (Figure 7) illustrates the type of devices customers are using to access the MyMeter web portal.

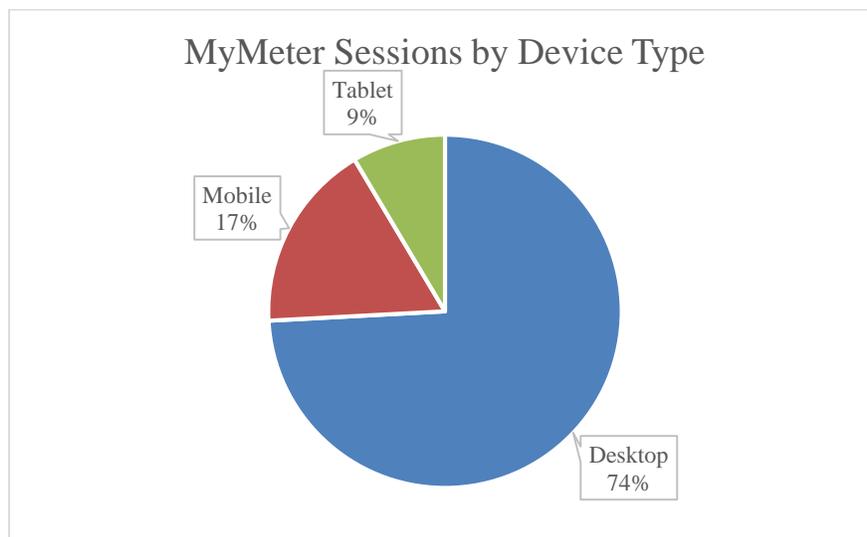


FIGURE 7 – MYMETER WEB PORTAL SESSIONS BY DEVICE TYPE. SOURCE: GOOGLE ANALYTICS

⁸ The difference between “Accounts registered” and “Meters installed” is that some accounts have multiple meters.

System Design & Project Planning

The design process for the RF Mesh network infrastructure includes site surveys and field surveys of proposed substation, communication towers and distribution infrastructure locations. When suitable locations are finalized and approved, construction begins for the installation of communications equipment. There are 31 substation and communication tower locations, and over 230 distribution infrastructure locations included in the Companies' RF Mesh design. Following are photographs of RF mesh communications infrastructure installed in the Louisville area:



FIGURE 8 - RF MESH COLLECTOR INSTALLATION ON COMMUNICATIONS TOWER



FIGURE 9 - RF MESH COLLECTOR

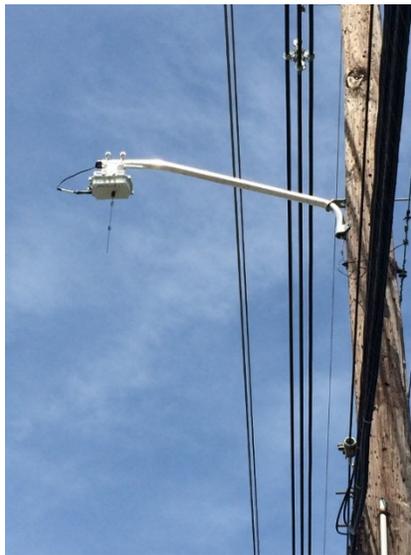


FIGURE 10 - RF MESH ROUTER INSTALLATION ON MAST ARM



FIGURE 11 - RF MESH ROUTER INSTALLATION ON STREET LIGHT

In September 2015 the Companies conducted a demonstration of the network system, meters, and customer web portal (“Phase 0”). As part of Phase 0, three Collectors, 21 Routers and 18 meters were deployed. The results of the Phase 0 launch confirmed successful operation of the RF mesh network, meters, and interval load data presentment on the customer portal. Upon completion of Phase 0, the Companies began customer meter deployments in early November and continue today.

The Companies engaged IOActive, Inc. to evaluate cybersecurity risks associated with the advanced metering infrastructure platform (advanced meters, routers and collectors). IOActive simulated real-world attacks that could conceivably be conducted by a determined attacker with physical access to the meters. IOActive found a few low to medium risk potential vulnerabilities. No high or critical risk vulnerabilities were found in their analysis. Although the Companies are confident that the small number of findings and their low criticality do not present an immediate risk to customers nor day-to-day operations of the AMS Opt-In service, the Companies have shared the results with Landis+Gyr and Itron security professionals, and are working with them to ensure the highest levels of security.

Lessons Learned to Date

Since customer enrollments began in June 2015, the Companies have seen residential and small commercial customers located throughout the LG&E and KU service territories electing to participate. To date, a majority of enrollments are in the Louisville and Lexington areas.

The build-out of the necessary systems to provide the service is coordinated and planned in collaboration with the vendors to provide the service in the most efficient manner. For the build out of the RF mesh communications network, utility infrastructure (*e.g.*, substations,

communication towers, utility poles, etc.) have been identified where RF mesh equipment (Collectors and Routers) will be installed. Deploying the network requires considerable coordination across Company departments and has proven to take time in building out the RF mesh infrastructure efficiently and cost-effectively. To install meters in a timely manner, the Companies have augmented with the use of cellular meters while the RF mesh network infrastructure is built. The Companies expect the RF mesh network infrastructure in the Louisville and Lexington areas to be completed by mid-2016.

Observing and monitoring areas where there are dense customer participation levels is a key input into the design. The use of geographical tools and information is very valuable in the development of RF mesh network design. Understanding customer interest and their locations will continue to be useful as network deployment continues.

As Figure 1 displayed, customers across the Companies' service territories have indicated their interest in the AMS Opt-In offering. To support these customers the Companies have provided a number of communication options including email, call center, and feedback links directly in the presentment portal. Customers have been actively providing feedback since approval was received in November 2014. Questions have ranged from how to use the features available within the presentment portal to requests for additional functionality such as support for ZigBee enabled devices like the Rainforest Automation's Eagle Energy Gateway. Many of these questions have been added to the Companies' welcome website in the form of FAQs and tutorial videos.

Problems & Resolutions

To ensure a smooth rollout to customers, the Companies have endeavored to deploy the AMS Opt-In strategically. This has included seeking feedback via a survey from the Phase 0 pilot participants. Feedback received in that survey directly contributed to the product delivered to all customers. The Phase 0 group shaped the customer experience as well, allowing the Companies to identify process changes needed so as to not adversely impact customers.

AMS Meter installation has been delayed for some customers (eighty-one) with electric service characteristics such as Advanced Meter Reading (AMR), in which the meter can be probed remotely from short proximities away, as well as customers with any rate that requires multiple meter usage channels like net metering customers and Time-of-Day customers. AMR meters are typically used when access to a meter is an issue (*e.g.*, meter access by field personnel is hindered by a locked door or gate, bad dogs, etc.). Replacing these AMR meters with AMS meters will result in reverting to manually reading the meter. Manual meter reading is required because processes to provide monthly meter reads from AMS for billing were not initially created. Reverting to manual meter reads results in inefficiencies for the Companies and an adjusted experience for the customer. To prevent this from occurring, the Companies have begun developing interfaces from the advanced meter systems to allow for automated billing reads and

further integration of the technology into Companies' operations. The interfaces being developed can be used for all AMS meters in the pilot. The Companies expect to complete the processes for billing meter reads, enabling these meter installations in the first quarter of 2016.

Customers with multiple meter channels (TOD and net metering; twelve customers) have been delayed temporarily while the web presentment portal is readied to facilitate presentation of such information. Customers with net metering will be able to see both the energy delivered as well as received in the portal. Customers with time-of-day rates will be able to view their usage as well with an additional benefit of shading during peak times to differentiate from off-peak times. This feature is aimed to facilitate a better understanding of when usage is occurring. The Companies expect the updates to the web presentment portal to be completed in the first quarter of 2016.

The Companies have experienced inventory delays with cellular meters from its vendor. These delays have delayed deployment of all meter types in areas of 4G/LTE cellular network coverage. To prevent customer impact, the Companies secured 3G meter inventory for RS customers; however, poly-phase or other less used meter forms have been delayed temporarily while the meter manufacturer resolves issues with the 4G products. The Companies expect the 4G product to be available by the second quarter of 2016. To date this has delayed forty-five customer installations.

The Companies have experienced isolated issues that prevented successful presentment of customer data within the two business day commitment. Affected customers were notified that the problem was identified and ultimately resolved. These incidents are described below in detail:

- On November 21 an issue occurred which prevented the export of customer interval data to the presentment portal. The issue was corrected on November 23 and the missing intervals were loaded for customer presentment by November 25.
- On December 8, an issue was discovered that prevented meters from properly registering on the cellular network which resulted in over 200 customer meters failing to deliver the interval usage to the presentment portal. A fix was deployed on December 10 by the meter manufacturer which resolved the issue. The meters were interrogated on December 12 to load the missing data and exported to the presentment portal on December 21.

Subsequent Updates

Customer meter installations began in October 2015, and in the last three months of the year there was not adequate customer usage data available to quantify energy saving impacts. In subsequent reports the Companies will report quantifiable behavioral impacts on energy usage based upon customer participation in the AMS Opt-In service. Future reports will reflect data for customers that have completed the full process of requesting and accepting an advanced meter.

During the first half of 2016, the Companies will begin pushing information to residential and small commercial customers about the AMS Opt-In service offering. Information will be sent via e-mail and direct mail in adherence with Company policies.

The next report covering the period January 1 through December 31, 2016 is due to the Commission by January 31, 2017.

Appendix 1 – Customer Enrollment Survey

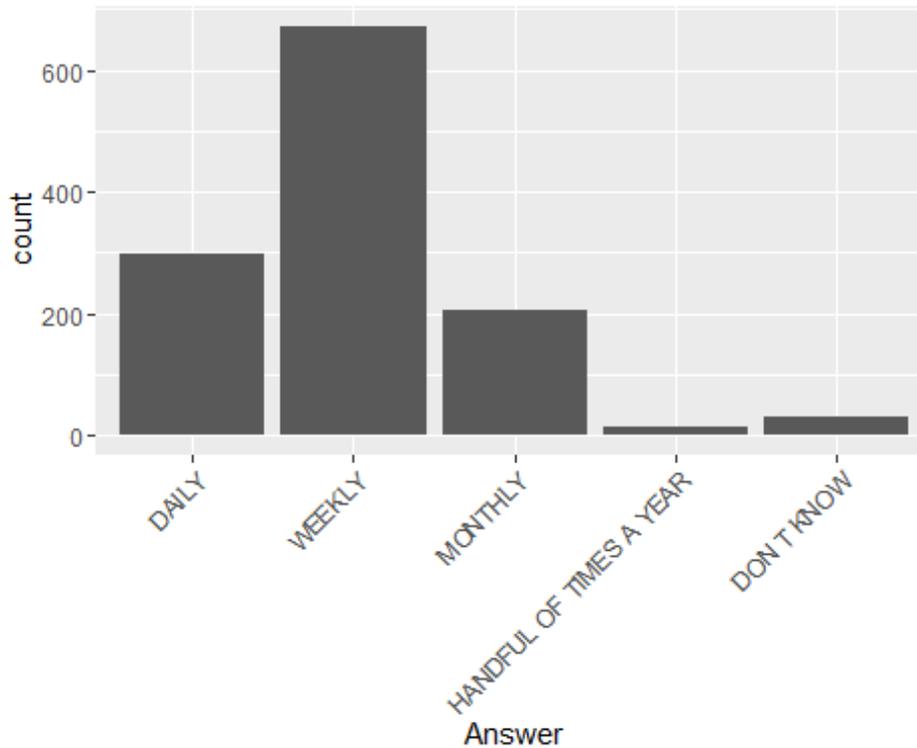
The following is a summary of the AMS enrollment survey results for all 1,216⁹ responders. Percentages represent a proportion of all responders unless otherwise noted.

Please tell us more about how you plan to use your advanced meter.

1. How often do you plan to review your meter usage data?

Check one:

Answer	Responders	Percentage
DAILY	299	24.6%
WEEKLY	672	55.3%
MONTHLY	204	16.8%
HANDFUL OF TIMES A YEAR	12	1%
DON T KNOW	29	2.4%

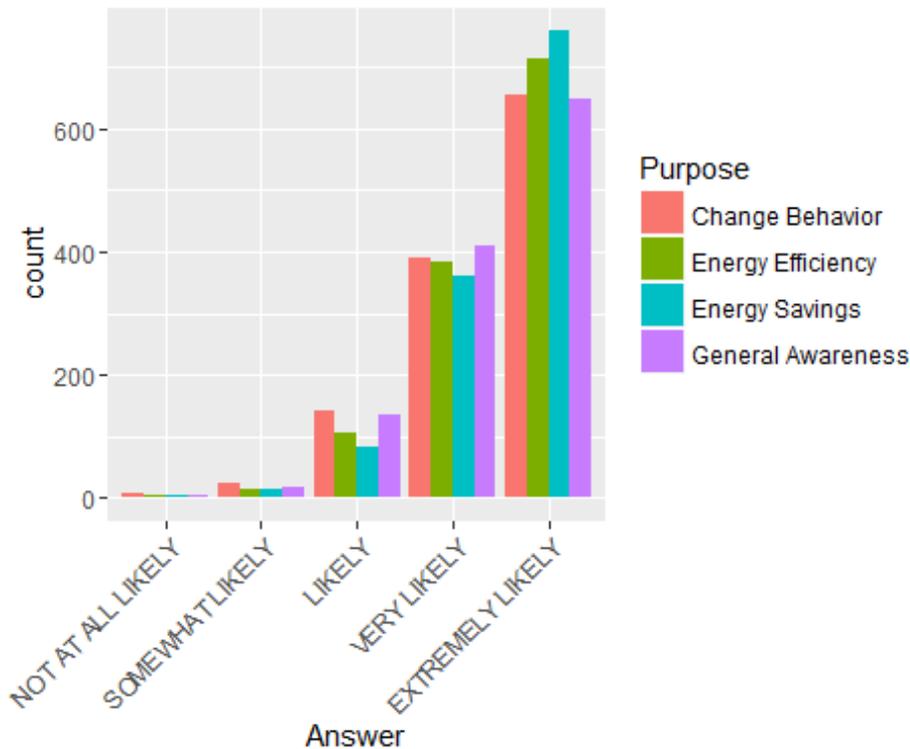


⁹ In 2015 there were 1,268 surveys completed. Of that total, 46 customer enrollments were cancelled (*i.e.*, no advanced meter was installed) either at the customer's request or because the customer moved. There were six surveys not included in the Appendix 1 summary because of data loss due to a technical error during the enrollment process (the technical error has been corrected).

2. For each of the following, how likely you are to use your meter usage data for this purpose?

Check one per row:

Purpose	NOT AT ALL LIKELY	SOMEWHAT LIKELY	LIKELY	VERY LIKELY	EXTREMELY LIKELY
CHANGE BEHAVIOUR RELATED TO ENERGY USE	0.5%	1.9%	11.8%	32.1%	53.8%
IDENTIFY OPPORTUNITIES FOR ENERGY SAVINGS ON MY BILL	0.2%	1.1%	6.8%	29.5%	62.3%
IMPROVE ENERGY EFFICIENCY	0.3%	1.1%	8.6%	31.4%	58.6%
REVIEW PERIODICALLY FOR GENERAL AWARENESS	0.4%	1.4%	11.1%	33.8%	53.3%



3. How many people at your property will likely review the usage data?

Answer	Responders	Percentage
1	523	43%
2	609	50.1%
3 OR MORE	84	6.9%

Please tell us more about your property and your appliances.

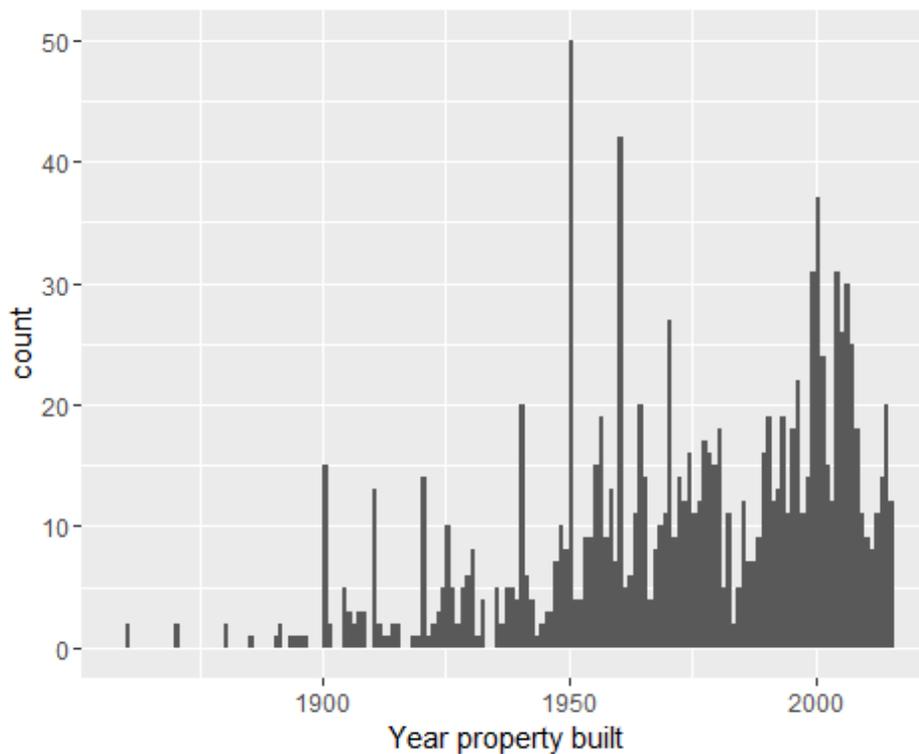
4. Do you own or rent your property?

Answer	Responders	Percentage
RENT	179	14.7%
OWN	1,037	85.3%

5. In what year was your property built?

mean	median	min	max	range
1973.3	1977	1860	2015	155

* note - 11 responses suppressed due to bad data



6. What is your property's exterior material?

Check all that apply

Answer	Responders	Percentage
SIDING	597	49.1%
BRICK	805	66.2%
STUCCO	25	2.1%
OTHER	62	5.1%

7. How many floors do you have at your property (excluding basements)?

Answer	Responders	Percentage
1	504	41.4%
2	618	50.8%
3 OR MORE	94	7.7%

8. Does your property have a basement?

Answer	Responders	Percentage
YES	706	58.1%
NO	510	41.9%

9. Have you made any of the following energy efficient improvements at your property within the last 5 years?

Check all that apply (indicate number if applicable):

Answer	Responders	Percentage
ADDED INSULATION	372	30.6%
INSTALLED ENERGY EFFICIENT WINDOWS	353	29%
INSTALLED ENERGY EFFICIENT DOORS	200	16.4%
UPDATED APPLIANCES WITH ENERGY EFFICIENT MODELS	622	51.2%
INSTALLED PROGRAMMABLE THERMOSTAT	577	47.5%
INSTALLED CFL LIGHT BULBS	657	54%
INSTALLED LED LIGHT BULBS	538	44.2%
NONE	143	11.8%

10. What type of air conditioning unit(s) do you have?

Check all that apply and indicate approximate year installed (if applicable):

Type	Responders	Percentage
CENTRAL AIR	992	81.6%
HEAT PUMP	232	19.1%
WINDOW OR WALL MOUNTED AIR CONDITIONER	119	9.8%
OTHER	24	2%
DONT KNOW	33	2.7%
NONE	27	2.2%

Note - Percentages in the table below represent the breakout of customers by air conditioning vintage for each type of air conditioning. Rows total to 100% except in cases of rounding discrepancies. Not all types of cooling are displayed.

Type	Pre 2006	2006 to 2014	2015 or After
CENTRAL AIR	42.9%	50.8%	6.3%
OTHER	37.5%	45.8%	16.7%
HEAT PUMP	26.7%	62.5%	10.8%
WINDOW OR WALL MOUNTED AIR CONDITIONER	16.8%	68.9%	14.3%

11. What type of heating system(s) do you have?

Check all that apply and indicate approximate year installed (if applicable):

Type	Responders	Percentage
NATURAL GAS FURNACE	731	60.1%
HEAT PUMP	334	27.5%
GEOHERMAL	15	1.2%
ELECTRIC FURNACE ONLY	149	12.3%
BASEBOARD	24	2%
PROPANE/LP/BOTTLED GAS	22	1.8%
WOOD	31	2.5%
ELECTRIC SPACE HEATERS	98	8.1%
NONE	16	1.3%
OTHER	32	2.6%

Note - Percentages in the table below represent the breakout of customers by heating vintage for each type of heating. Rows total to 100% except in cases of rounding discrepancies. Not all types of heating are displayed.

Type	Pre 2006	2006 to 2014	2015 or After
NATURAL GAS FURNACE	48.2%	46.6%	5.2%
HEAT PUMP	29.6%	62.3%	8.1%
GEOHERMAL	33.3%	46.7%	20%
PROPANE/LP/BOTTLED GAS	36.4%	40.9%	22.7%
OTHER	37.5%	43.8%	18.8%

12. What type of water heater(s) do you have?

Check all that apply:

Answer	Responders	Percentage
ELECTRIC	543	44.7%
GAS	634	52.1%
HEAT PUMP	31	2.5%
ELECTRIC TANKLESS	3	0.2%
GAS TANKLESS	16	1.3%
SOLAR	3	0.2%
OTHER	12	1%

13. How many refrigerators do you have?

Answer	Responders	Percentage
NONE	8	0.7%
1	840	69.1%
2	328	27%
3 OR MORE	40	3.3%

14. How many standalone freezers do you have?

Answer	Responders	Percentage
NONE	874	71.9%
1	319	26.2%
2	17	1.4%
3 OR MORE	6	0.5%

15. What type of windows do you have?

Check One:

Answer	Responders	Percentage
SINGLE PANE WITHOUT STORM WINDOWS	217	17.8%
SINGLE PANE WITH STORM WINDOWS	244	20.1%
MULTI-PANE WINDOWS	723	59.5%
OTHER	32	2.6%

Please tell us more about how you use energy.

16. Do you have a programmable thermostat?

Answer	Responders	Percentage
YES	853	70.1%
NO	363	29.9%

If yes, do you program the thermostat or set it manually?

Answer	Responders	Percentage
PROGRAM	589	48.4%
SET MANUAL	264	21.7%

17. Do you routinely adjust the temperature setting?

Answer	Responders	Percentage
YES	614	50.5%
NO	602	49.5%

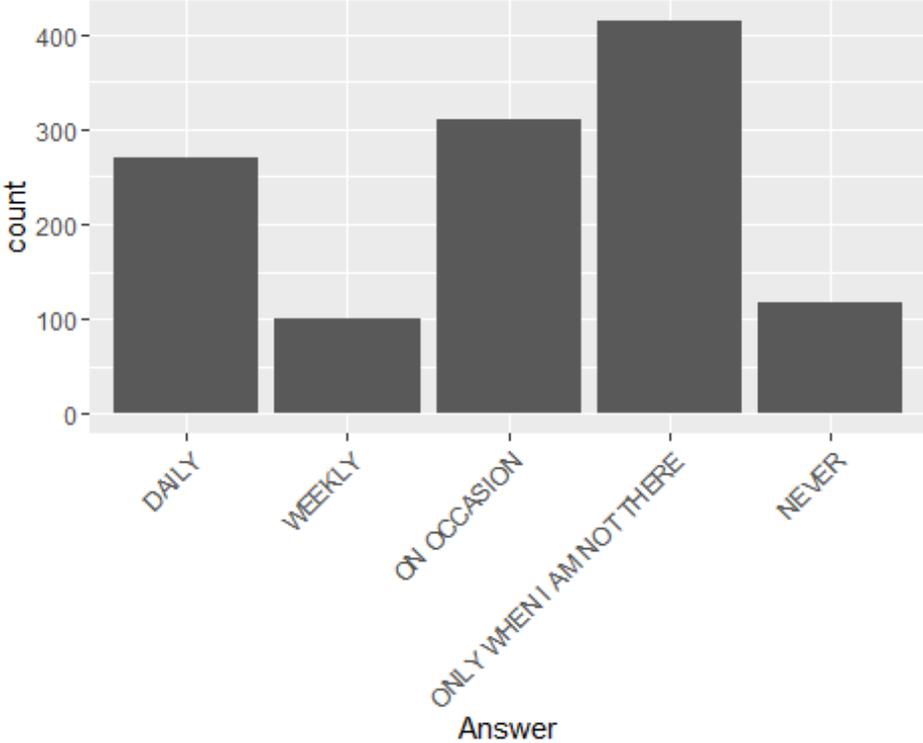
If Yes above, check all times that routinely apply:

Season	NIGHT	MORNING	AFTERNOON	EVENING
SUMMER	32.6	32.4	19.2	26.2
WINTER	34.5	34.3	15.8	24.4

18. To limit energy usage, how often is the thermostat set to a temperature which you consider uncomfortable?

Check One:

Answer	Responders	Percentage
DAILY	271	22.3%
WEEKLY	101	8.3%
ON OCCASION	311	25.6%
ONLY WHEN I AM NOT THERE	415	34.1%
NEVER	118	9.7%



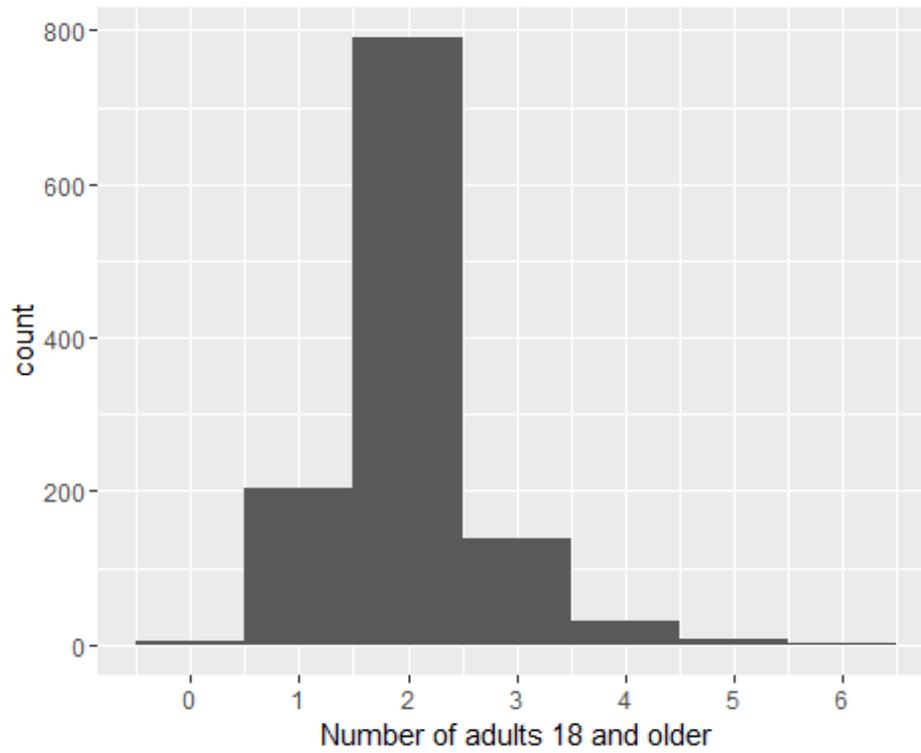
***Residential Only**

19. How many people live in your home?

19A: Adults 18 and older

mean	median	min	max	range
2.0	2	0	6	6

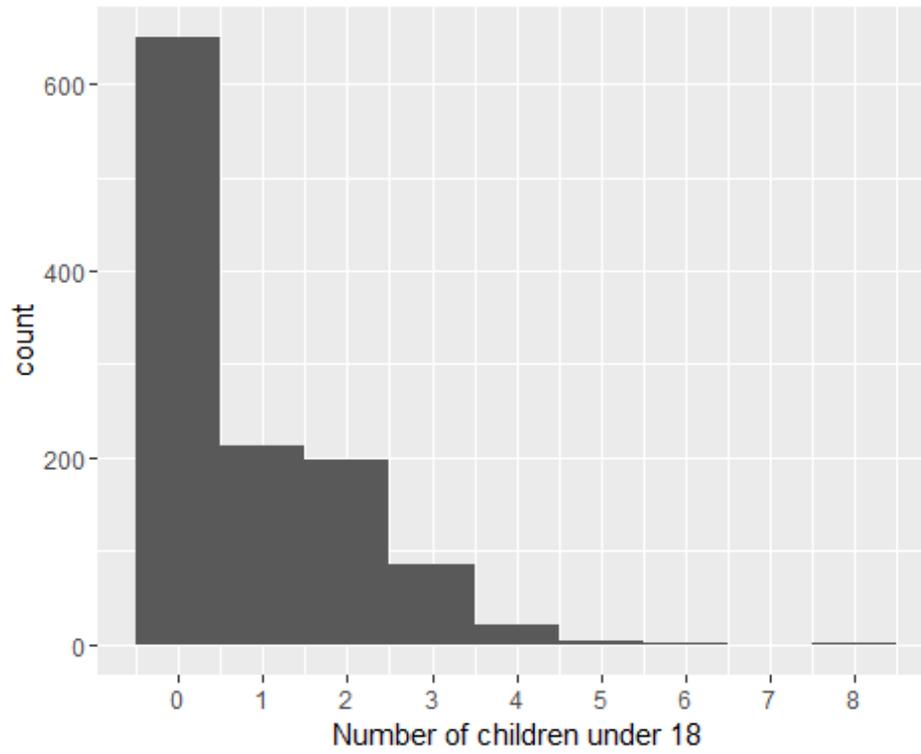
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19B: Children under 18

mean	median	min	max	range
0.8	0	0	8	8

* note - 1 response suppressed due to bad data

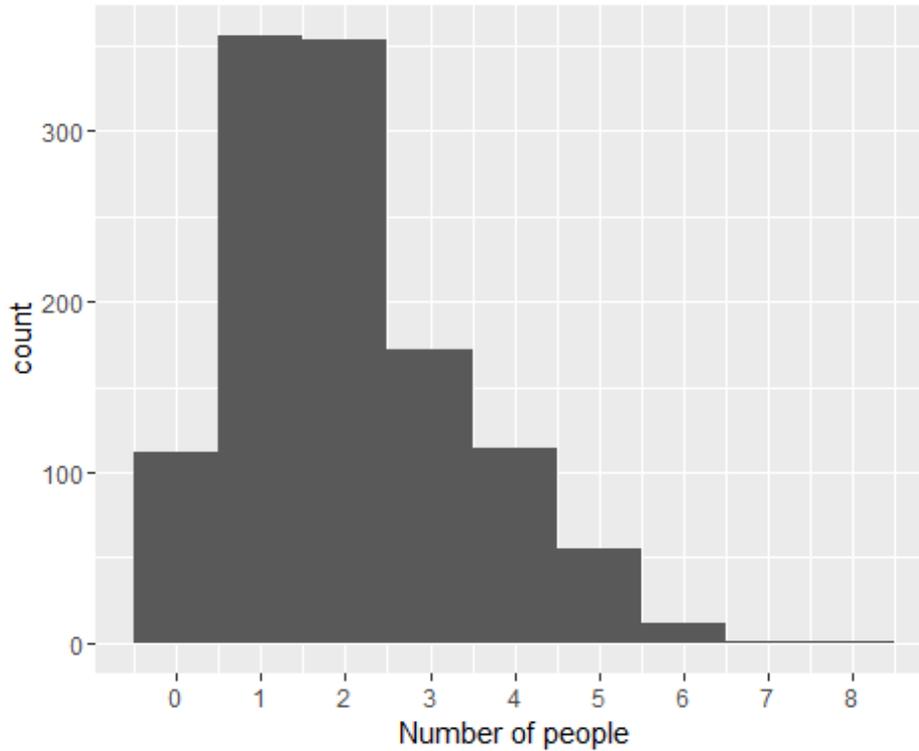


***Residential Only**

20. How many people living in your household leave your home for more than 8 hours at least 5 days per week (may include school, work, etc.)?

mean	median	min	max	range
2.0	2	0	8	8

** note - 1 response suppressed due to bad data*



Appendix 2 – Customer Notification E-mail

From: Energy Technology

Subject: Your new meter – LG&E and KU Advanced Meter Service

Great news! We're ready to install your new advanced meter!

You are receiving this email because you enrolled in the LG&E and KU Advanced Meter Service through your [online account](#). You may log in to your account at any time to review your enrollment confirmation.

Thank you for being an early adopter of this exciting new offering.

Installing your advanced meter

One of our service technicians will visit your property within the next week to install your new advanced meter.

No appointment will be necessary, and you will not need to be present when the technician installs your meter. We will contact you by phone to schedule an appointment only if our technician has trouble accessing your meter.

Please ensure the area around your meter is clear and unobstructed for easy access by the technician who will install your new meter. If your meter is in a fenced yard, please unlock gates and keep all pets inside to ensure the safety of the technician.

Once your advanced meter has been installed, look for your Advanced Meter Service welcome kit door hanger, or visit lge-ku.com/mymeter to get helpful tips and information about how to use your new MyMeter dashboard.

Accessing your new MyMeter dashboard

First, log in to your [online account](#). Once your advanced meter has been installed, you will be able to click "View MyMeter" to access your dashboard. Please allow up to 48 hours after your advanced meter has been installed for the link to display.

Review the attached document to learn more about the MyMeter dashboard and the unique tools and features that will be available to you.

This is a brand new service, and the MyMeter dashboard will continue to evolve over time as new features and tools become available. We want to offer you the best experience possible, and we'll continue to provide updates and notify Advanced Meter Service participants when these new options become available.

We encourage you to check your MyMeter dashboard often, take advantage of the available MyMeter tools and features, ask questions and send us your feedback.

Questions or comments?

Please contact us at any time. Email us at MyAccount.LGE@lge-ku.com or MyAccount.KU@lge-ku.com. If you prefer to contact us by phone, our representatives are available Monday through Friday from 7 a.m. until 7 p.m. LG&E customers, call **502-589-1444** (outside Louisville **800-331-7370**), and KU customers, call **800-981-0600**. If you are a residential customer, dial **1-4-2**, or if you are a commercial customer, dial **2-4-2**, to speak with a representative.

Sincerely,
Jonathan Whitehouse
Advanced Metering Systems Engineer
LG&E and KU

Appendix 3 – Customer Door Hanger



**ALL SYSTEMS
GO.**

Advanced Meter Service

Your advanced meter is installed.

Great news! We've installed the advanced meter you requested. In about two business days, you can start using your MyMeter dashboard to:

- Track and manage your energy use on a daily, weekly, monthly or yearly basis.
- Schedule customized updates about your energy usage by text or email.
- Set Energy Markers™ that identify events like replacing appliances, making energy efficiency renovations, and more – and use this data to monitor their impact on your energy usage.

Just visit lge-ku.com/mymeter to learn more and get started.



Appendix 4 – Customer Online Welcome Kit and Educational Tools



Welcome to the Advanced Meter Service!

Once your new advanced meter has been installed, please allow two business days for our system to load your energy usage information into your new MyMeter dashboard.

Review the following information to learn more about the MyMeter dashboard and the unique tools and features that will be available to you.

Log in to My Account to Access your MyMeter Dashboard

- Log in to your LG&E and KU online account to access your MyMeter dashboard.
- Go to the Energy Efficiency tab and click Advanced Meter Service.
- Once your meter has been installed, you will click “View MyMeter” to access your dashboard.

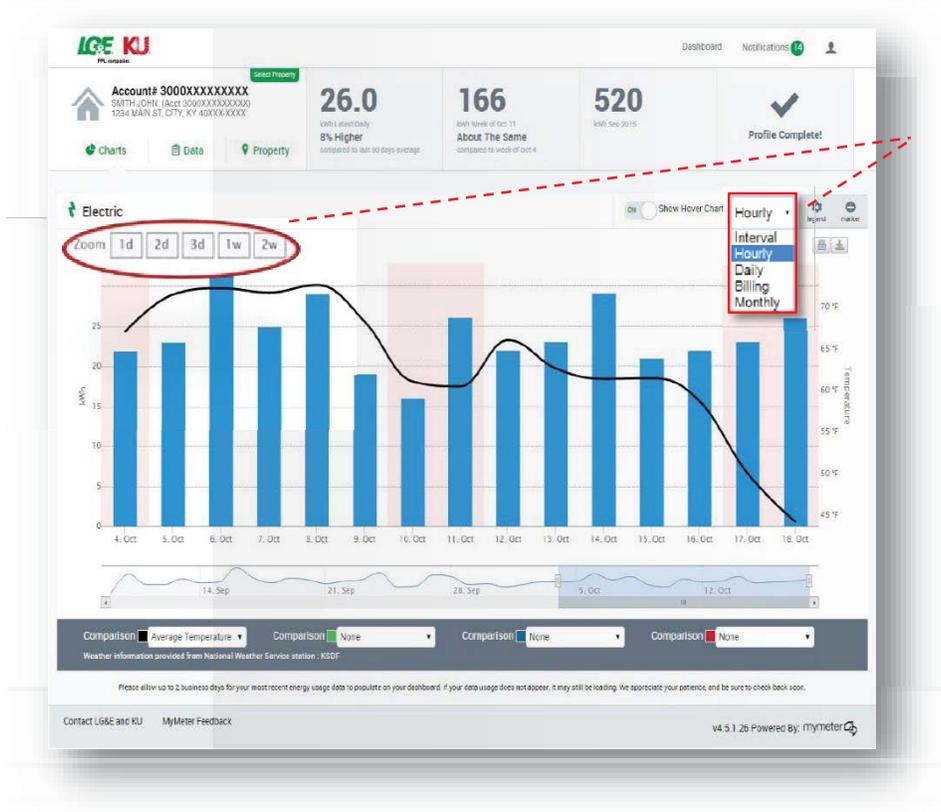
The screenshot shows the "Advanced Meter Service" dashboard. At the top, there are logos for LG&E, KU, and ODP, along with "PPL companies" and buttons for "My Profile" and "Sign Out". The main content area has a green header "Advanced Meter Service" and a blue bar with account information: "JOHN SMITH", "Acct No: 3000XXXXXXXX", and "1234 MAIN ST CITY, KY 40XXX-XXXX". Below this is a link "What is the Advanced Meter Service?". A table displays enrollment details:

Enrollment ID	Status	Status Date	Actions
888888	COMPLETE	09/10/2015	View MyMeter Opt-Out

The "View MyMeter" link is circled in red. A sidebar on the left contains navigation options like "My Bill", "Account Overview", "Payment Programs", "Energy Efficiency", and "Advanced Meter Service".

MyMeter Dashboard

- Track and compare your energy usage by day, week, month or year.
- See how your energy use compares to your local weather conditions.
- Over time as your energy usage information accumulates in your MyMeter dashboard, you'll have the ability to compare changes in your energy usage from the previous week, month or 90-day average.



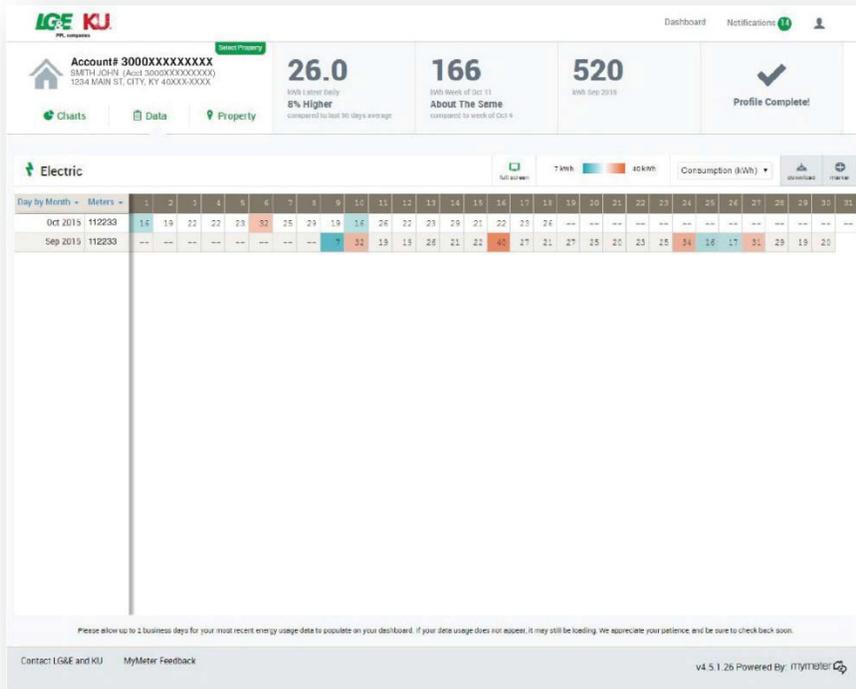
Use the "Zoom" feature to take a closer look at a specific date range or single day, or adjust your energy usage view setting using the drop-down menu in the top right corner.

- For your convenience, your energy usage comparisons can be found in the top leader bar above your energy usage and next to your account information.



Energy Usage in Data View

- Compare how your energy usage fluctuates over a period of time using this calendar-style format.
- The Data View's unique heat map feature will compare your energy usage over time. Blue- shaded squares indicate when your energy usage is lower than average, and red-shaded squares indicate when your energy usage is higher than average.



- Adjust your energy usage view setting using the drop-down menu labeled "Day by Month" in the top left corner.



Property Profile

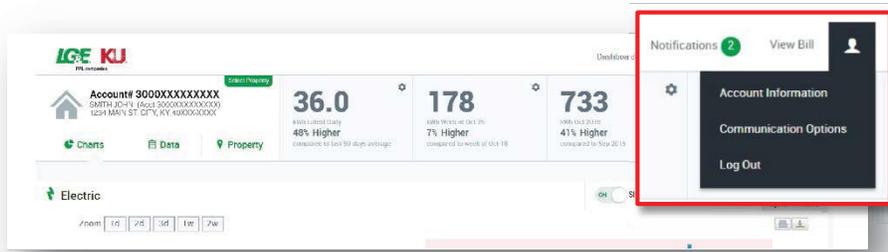
- By providing basic information about your property, such as size, age of construction and types of appliances, you can gain more insight into your energy use.
- You may update this information at any time if you make changes or improvements that could impact your energy use. Plus, your improvements may qualify for monetary rebates and incentives through LG&E and KU's Energy Efficiency Programs.

The screenshot displays the MyMeter Property Profile dashboard. At the top, there's a navigation bar with 'Dashboard' and 'Notifications'. The main header shows account details: Account # 3000XXXXXXX, 1234 MAIN ST, CITY, KY 40000-XXXX. Key energy metrics are highlighted: 26.0 kWh (8% Higher than average), 166 kWh (About The Same), and 520 kWh. A 'Profile Complete!' badge is visible. Below this, the 'Location #' is 555555. The 'Details' section includes fields for Name, Primary Use (Single Family), Total Sq Ft (2350), and Year Built (1988). The 'Profile' status is '100% Complete'. The 'Property Profile' section is divided into tabs: Overview, Structure, HVAC, Water Heating, Appliances, Lighting, Electronics, Pools & Hot Tubs, and Generation. The 'Structure' tab is active, showing three columns of form fields: 'Roof (100%)', 'Exterior (100%)', and 'Foundation'. The 'Roof' section includes fields for Roof Type, Color, Insulation Type, Thickness, Attic Type, R-value, and Insulation Type. The 'Exterior' section includes fields for Window Glass Type, Layers, Number of Windows, High Efficiency/Low-e Windows, Exterior Wall Type, Insulation Level, R-value, and Insulation Type. The 'Foundation' section includes fields for Name, Type, and a 'Make a selection' dropdown.

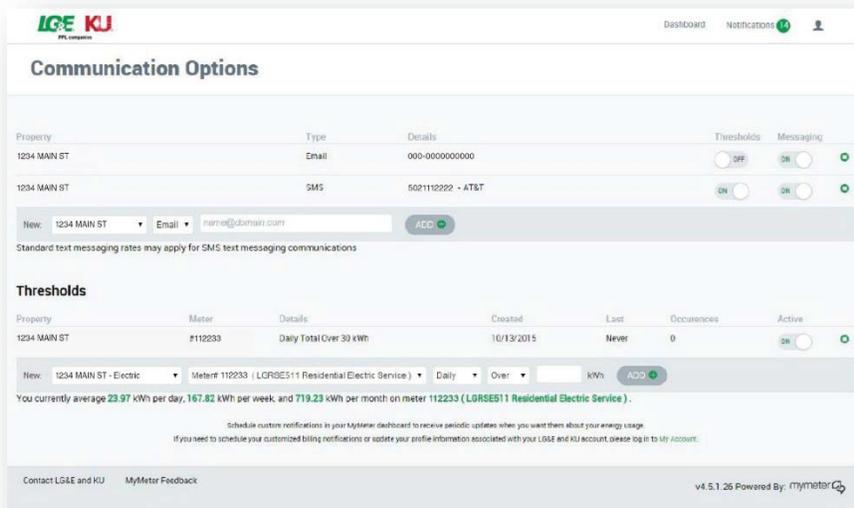
REMINDER: Your profile information is specific to your MyMeter dashboard only. If you need to update your profile information associated with your LG&E and KU account, please make these updates when you log in to My Account.

MyMeter Notifications

- You can schedule MyMeter notifications under “Communication Options” to receive customized updates about your energy usage by text or email.
- By setting threshold limits, you can request and receive a MyMeter notification when you’ve reached your desired limit.
- Please remember your usage information is loaded in your MyMeter dashboard within 2 business days, so be sure to set your thresholds with this in mind and allow yourself time to make any adjustments before reaching your maximum limit.



To access the “Communication Options” tab, click on the silhouette in the top right corner where a drop-down menu will appear.



REMINDER: MyMeter notifications are associated with your dashboard only. If you need to schedule your customized billing notifications associated with your LG&E and KU account, please make these updates when you log in to My Account.

Energy Markers™

- Whether viewing your energy usage in the Chart or Data View, be sure to use the Energy Markers™ feature to create a customized date reminder when you make any changes that could impact how you use energy.
- Track activities that can impact your energy usage, such as changing out light bulbs, replacing your HVAC system or even accidentally leaving a door or window open for an extended period of time.
- Once you've added a new marker, you will see it appear within your energy usage data charts.



- You may choose "View All" at any time to review your full list of Energy Markers date reminders. From this screen, you may select and delete from the list any date reminders you previously set.
- You also may choose "View All" within the marker menu for quick comparisons of your energy usage before, during and after each Energy Markers date reminder.

Energy Markers™							marker
	Details	Type	Date(s)	Avg Before	Avg During	Avg After	
Home	Oven self-clean	Event	10/12/2015	40.45 kWh		26.5 kWh	🟢
Home	LED Lights	Energy Upgrade	9/22/2015	49.3 kWh		29.3 kWh	🟢

Please allow up to 2 business days for your most recent energy usage data to populate on your dashboard. If your data usage does not appear, it may still be loading. We appreciate your patience, and be sure to check back soon.

Customer Online Video Tutorials (www.lge-ku.com/mymeter)

*Note: Figures 12-16 that follow are screen shots from online video tutorials available to customers on the Company's corporate website.

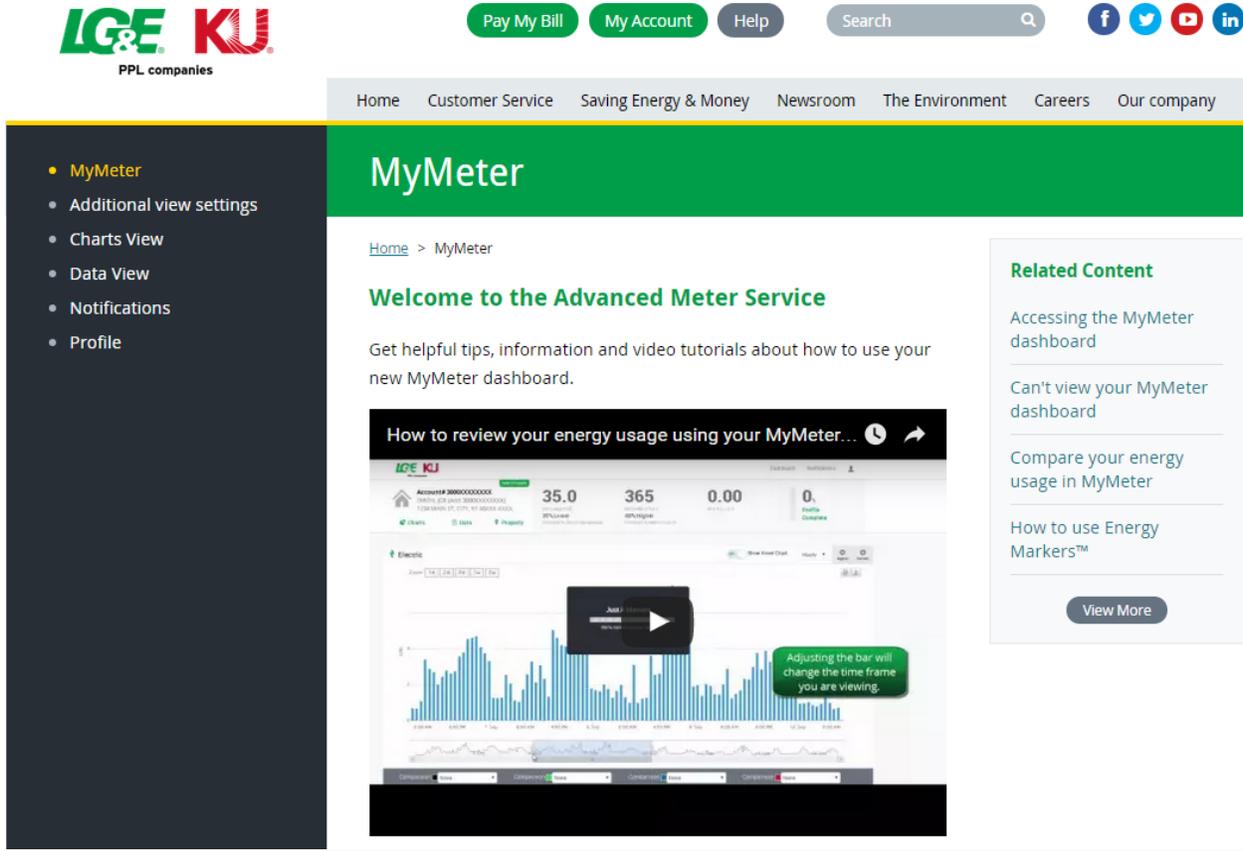


FIGURE 5 - WELCOME TO THE ADVANCED METER SERVICE

- MyMeter
- Additional view settings
- **Charts View**
- Data View
- Notifications
- Profile

MyMeter Charts View

Home > MyMeter > Charts View

In "Charts View," you'll now be able to track and compare your energy usage in several views – by day, week, month or year.



Related Content

Accessing the MyMeter dashboard

Can't view your MyMeter dashboard

Compare your energy usage in MyMeter

How to use Energy Markers™

[View More](#)

- Check out how your energy use compares to your local weather conditions.
- Use the "Zoom" feature, take a closer look at a specific date range or single day.
- Over time as the information from your meter accumulates in your MyMeter dashboard, you'll have the ability to compare changes in your energy usage from the previous week, month or 90-day average.



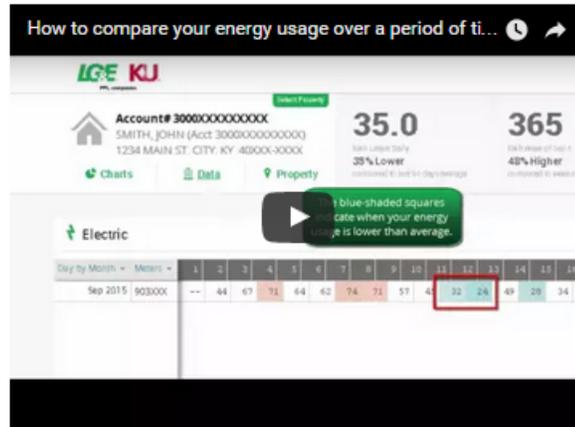
For your convenience, your energy usage comparisons can be found in the top leader bar above your energy usage and next to your account information.

FIGURE 6 - MYMETER CHARTS VIEW TUTORIAL

- MyMeter
- Additional view settings
- Charts View
- Data View
- Notifications
- Profile

MyMeter Data View

[Home](#) > [MyMeter](#) > Data View



Related Content

[Accessing the MyMeter dashboard](#)

[Can't view your MyMeter dashboard](#)

[Compare your energy usage in MyMeter](#)

[How to use Energy Markers™](#)

[View More](#)

By clicking on "Data View," you can compare how your energy usage fluctuates over a period of time using this calendar-style format.

Data View's unique heat map feature will compare your energy usage over time. Blue-shaded squares indicate when your energy usage is lower than average, and red-shaded squares indicate when your energy usage is higher than average.

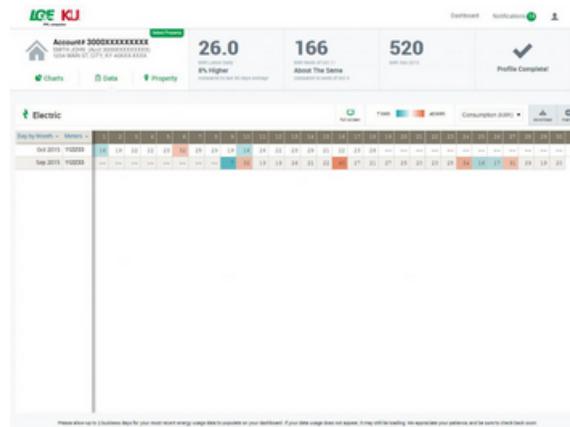
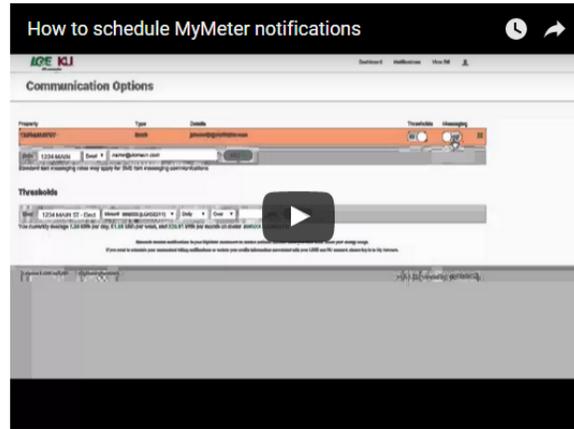


FIGURE 7 - MYMETER DATA VIEW TUTORIAL

- MyMeter
- Additional view settings
- Charts View
- Data View
- **Notifications**
- Profile

MyMeter notifications

[Home](#) > [MyMeter](#) > Notifications



You can schedule MyMeter notifications under "Communication Options" to receive customized updates about your energy usage by text or email.

Related Content

[Accessing the MyMeter dashboard](#)

[Can't view your MyMeter dashboard](#)

[Compare your energy usage in MyMeter](#)

[How to use Energy Markers™](#)

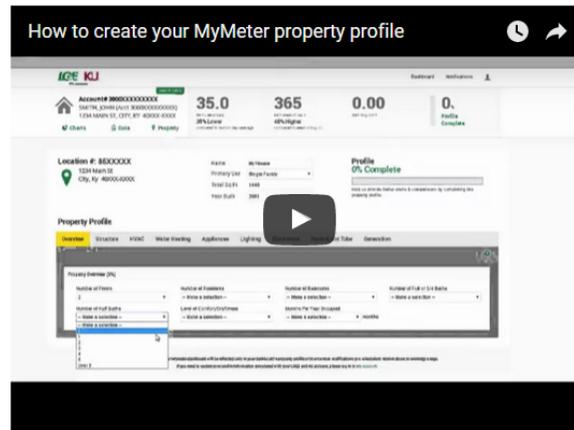
[View More](#)

FIGURE 8 - MYMETER NOTIFICATIONS TUTORIAL

- MyMeter
- Additional view settings
- Charts View
- Data View
- Notifications
- **Profile**

MyMeter profile

[Home](#) > [MyMeter](#) > Profile



By providing basic information about your property - such as size, age of construction and types of appliances - you can create a more customized

Related Content

[Accessing the MyMeter dashboard](#)

[Can't view your MyMeter dashboard](#)

[Compare your energy usage in MyMeter](#)

[How to use Energy Markers™](#)

[View More](#)

FIGURE 9 - MYMETER PROFILE TUTORIAL

Appendix 5 – MyMeter Metric Definitions

Accounts registered (Completed enrollments)

Number of unique customer accounts with AMS meters installed. Note, some accounts have more than one meter.

User Registrations (first time a user clicks into MyMeter)

The number of accounts registered. As noted, a user is considered registered after they first click into the MyMeter dashboard.

Customer Energy Markers™

The number of Energy Markers™ created in a given timeframe. Energy Markers™ are a feature within the MyMeter dashboard where a customer can add activities that they would like to track the correlating impact said activity has on their energy consumption. For example, if a customer were to replace an appliance with a new Energy Star appliance, they can add an Energy Marker™ on the date the new appliance was installed.

Customer Notification: Mobile phone notification set-up

The number of unique accounts registered (definition above) in a given timeframe that have added mobile phone numbers to their MyMeter accounts via the Communication Options page. Some accounts have elected to receive notifications on multiple mobile numbers but these are only counted once here.

Customer Notification: E-mail address notification set-up

The number of unique accounts registered (definition above) in a given timeframe that have added email addresses to their MyMeter accounts via the Communication Options page. Some accounts have elected to receive notifications on multiple addresses but these are only counted once here.

Customer Notification: Threshold alert set-up

The number of threshold notifications set up in a given timeframe.

Threshold notifications sent by system

The number of notifications actually sent in a given timeframe.

Total Sessions within MyMeter Site

Total number of Sessions within the date range. A session is the period time a user is actively engaged with the MyMeter portal. Total is equal to the sum of sessions by first-time visitors and repeat visitors. Source: Google Analytics

Sessions by new users

The number of first-time users during the selected date range. Source: Google Analytics

Sessions by returning users

The number of repeat users during the selected date range. Source: Google Analytics

Average session duration (minutes: seconds)

The average length of time a user spends on the MyMeter site. Source: Google Analytics

Page visits/session

The average number of pages viewed during a session. Repeated views of a single page are counted. Source: Google Analytics

Average Number of times MyMeter visited per month

The average number of sessions per month. A session is the period time a user is actively engaged with the MyMeter portal. Source: Google Analytics

Unique pageviews to MyMeter site

Unique Pageviews is the number of sessions during which the specified page was viewed at least once. A unique pageview is counted for each page URL + page Title combination. Source: Google Analytics

Total MyMeter site pageviews

Pageviews is the total number of pages viewed. Repeated views of a single page are counted. Source: Google Analytics