

Smart Grid Advanced Metering Annual Implementation Progress Report

ATTACHMENT 1

Metrics and Milestones

Metric: 1B

Metric Description: Residential Customers-Number of customers served by retail electric suppliers for which the supplier has requested monthly Electronic Data Interchange delivery of interval data. Expressed also as a percentage of customers taking supply from a retail electric supplier in each delivery class.

Number of Accounts with AMI Meters by Delivery Class			
Delivery Class	# of Accounts	# of Accounts with supplier-requested EDI delivery of internal data	% of accounts with supplier-requested EDI delivery of internal data
Single Family W/O Elec. Space Heat	2,256,099	335	0.01%
Multi Family W/O Elec. Space Heat	1,098,626	42	0.00%
Single Family With Elec. Space Heat	35,076	3	0.01%
Multi Family With Elec. Space Heat	162,844	3	0.00%
Watt-Hour	87,667		
Small Load	260,200		
Medium Load	16,922		
Large Load	4,102		
Very Large Load	1,855		
Extra Large Load	50		
High Voltage	79		
Railroad	14		
Fixture-Included Lighting	1,962		
Dusk to Dawn Lighting	5,023		
General Lighting	1,663		
Total	3,932,182	383	0.01%

Metric: 1D

Metric Description: Small Commercial Customers. Number of customers served by retail electric suppliers for which the supplier has requested monthly Electronic Data interchange delivery of interval data. Expressed also as a percentage of customers taking supply from a retail electric supplier in the delivery class.

Smart Meter as of 12/31/2015

Revised Category	Total Of Premise Nbr	No	Yes*	Customers taking supply from a RES	%
COM KWH ONLY	51	38	13	5,352	0.24
SMALL (0 - 100)	24,051	17,108	6,943	119,280	5.82
Total	24,102	17,146	6,956	124,632	6.06

Metric: 6C Continued

Metric Description: Number of customers who have accessed the web-based portal as of the last day of the calendar year as a percentage of customers with AMI Meters and as a percentage of ComEd customers in that delivery class.

Number of Accounts with AMI Meters by Delivery Class			
Delivery Class	# of Accounts with AMI Meters Viewed Web	# of Accounts With AMI Meters	Viewed Web Portal as % of # of Accounts With AMI
Single Family W/O Elec. Space Heat	62,014	872,367	7.11%
Multi Family W/O Elec. Space Heat	68,740	690,018	9.96%
Single Family With Elec. Space Heat	671	6,631	10.12%
Multi Family With Elec. Space Heat	8,598	70,330	12.23%

Number of Accounts by Delivery Class			
Delivery Class	# of Accounts Viewed Web	# of Accounts in Class	Viewed Web Portal as % of # of Accounts in Class
Single Family W/O Elec. Space Heat	143,748	2,256,099	6.37%
Multi Family W/O Elec. Space Heat	107,317	1,098,626	9.77%
Single Family With Elec. Space Heat	2,738	35,076	7.81%
Multi Family With Elec. Space Heat	18,222	162,844	11.19%

Metric: 6D Continued

Metric Description: Number of customers who can directly access their usage data as of the last day of the calendar year as a percentage of customers with AMI Meters and as a percentage of ComEd customers in that delivery class.

Number of Accounts with AMI Meters by Delivery Class			
Delivery Class	# of Accounts with AMI Meters and Can Directly Access Usage Data(1)	# of Accounts with AMI Meters	Accounts Can Directly Access Usage Data as % of # Accounts with AMI Meters(2)
Single Family W/O Elec. Space Heat	80,011	872,367	9.17%
Multi Family W/O Elec. Space Heat	100,484	690,018	14.56%
Single Family With Elec. Space Heat	704	6,631	10.62%
Multi Family With Elec. Space Heat	10,543	70,330	14.99%
Watt-Hour	1,790	28,301	6.32%
Small Load	5,848	68,308	8.56%
Medium Load	339	4,762	7.12%
Large Load	49	1,216	4.03%
Very Large Load	22	656	3.35%
Extra Large Load		22	0.00%
High Voltage		8	0.00%
Railroad		2	0.00%
Fixture-Included Lighting	1	11	9.09%
Dusk to Dawn Lighting	5	558	0.90%
General Lighting		113	0.00%

Number of Accounts by Delivery Class			
Delivery Class	# of Accounts Can Directly Access Usage Data(1)	# of Accounts in Class	Accounts Can Directly Access Usage Data as %
Single Family W/O Elec. Space Heat	198,600	2,256,099	8.80%
Multi Family W/O Elec. Space Heat	162,188	1,098,626	14.76%
Single Family With Elec. Space Heat	3,252	35,076	9.27%
Multi Family With Elec. Space Heat	23,980	162,844	14.73%
Watt-Hour	3,665	87,667	4.18%
Small Load	21,014	260,200	8.08%
Medium Load	1,093	16,922	6.46%

Large Load	163	4,102	3.97%
Very Large Load	56	1,855	3.02%
Extra Large Load	2	50	4.00%
High Voltage		79	0.00%
Railroad		14	0.00%
Fixture-Included Lighting	26	1,962	1.33%
Dusk to Dawn Lighting	55	5,023	1.09%
General Lighting	9	1,663	0.54%

Notes:

(1) These are numbers of accounts that created an account in ComEd.com in 2015.

(2) Although only these percentages of accounts created an account in ComEd.Com and have direct access to usage data, all accounts can directly access usage data by creating an account in ComEd.com.

Metric: 9

Pursuant to the Stipulation to Dismiss Proceeding as to Commonwealth Edison Company (“Stipulation”) filed on March 14, 2016 in ICC Docket No. 14-0555, ComEd, the Citizen’s Utility Board (“CUB”) and the Environmental Defense Fund (“EDF”) agreed to work with each other to identify and define an updated GHG emission metric to measure reductions in GHG emissions that ComEd would present in the 2016 AIPR using the methodologies as described in the Stipulation.

While ComEd has worked diligently to gather data and present the updated GHG emission metric, some of the data has only recently become available. There has not been sufficient time since the filing of the Stipulation to complete the metric and evaluate the draft results with CUB and EDF. ComEd expects to be able to complete this work in April 2016. ComEd will submit a supplemental compliance filing with the applicable data and results for Metric 9 for 2015 by April 20, 2016. CUB has indicated to ComEd that it is in agreement with this timeline for completion of the analyses.

Metric: 13

2016 Update: Survey of Smart Grid-Enabled Marketplace

Overview of Developments in Smart Grid-Enabled Products and Services

As utility service territories with AMI expand around the country, the market for customer applications enabled by the smart grid and smart meters continues to expand. This document reviews the progress in AMI-enabled customer application industry, and highlights examples of how products are being introduced into the marketplace.

Web Presentment of Interval Usage

One of the most promising areas of growth in this industry is work utilities have done to enable customers to view their hourly (or sub-hourly) electricity consumption through web portals (in addition to paper and mailed energy reports). A leading vendor in this space, OPOWER, has enabled interval presentment for AMI customers at utilities across the U.S., including CenterPoint Energy, Consumers Energy, Pepco, San Diego Gas & Electric, National Grid, Xcel Energy, Exelon Utilities Commonwealth Edison and Baltimore Gas & Electric, and many others. BGE, for instance, has the largest behavioral demand response program in the country, using Opower for the than 1 million customers for its Smart Energy Rewards program. Bidgely, an energy disaggregator that breaks down usage information down to the appliance level, is working with several utilities to provide customers energy consumption data, historical and real time understanding of their usage and bill rate information, and customized, personalized energy savings tips. In 2015, ComEd launched a pilot utilizing Bidgely's cloud-based platform, mobile and online energy management tools, and HomeBeat energy monitor. In Texas, TXU is offering Bidgely's platform for 1.5 million residential customers. As AMI system upgrades continue throughout the US, it is likely that utilities will continue to enable web presentment of interval usage shortly after the AMI hardware is deployed.

Electric Vehicle Public Charging Infrastructure

Many utilities have pursued various business models to invest and install charging stations in their service territories. For example, New Jersey utility Public Service Electric & Gas has explored a new utility partnership model for expanding charging stations by pursuing a pilot program to donate charging stations to companies, colleges, and hospitals, with the recipient facility installing the systems.

Among companies in the EV charging station technology space, ChargePoint launched a Wi-Fi-connected home EV charging station. The ChargePoint Smart Home EV Charging Station features a compact design and home networking with Nest compatibility. The ChargePoint Multifamily Home Service consists of a fully installed Level 2 charging station with comprehensive 24/7 support and the ability to allow drivers to manage their charging through a mobile app for \$39.99 per month, plus a one-time activation fee. Residents then pay their landlord directly for the electricity they use. ChargePoint covers all of the upfront costs of the charger itself, while the landlord is responsible for wiring the EV parking spot.

Energy Storage: Home Batteries

While utility-scale storage projects have been pursued by utilities across the country in recent years, 2015 also saw pivotal developments in residential energy storage, as a number of developers

have recently introduced a range of products and offerings, both as battery-plus-storage offerings and stand-alone systems.

The automaker Tesla unveiled its new battery offerings to great fanfare and industry buzz. The cost for Tesla's 7kWh Powerwall is \$3,000, while the 10kWh one is \$3500. SolarCity partnered with Tesla to offer the Powerwall as part of a solar-plus-battery service, including permitting and installation. Vermont utility Green Mountain Power became one of the first utilities to provide the Powerwall to its customers via on-bill financing and incentives, serving as a prime example of a utility actively investing in behind-the-meter assets to produce grid-level benefits. Green Mountain Power is using the Tesla batteries for resilience, sustainability, local power generation, peak demand reduction, and to generate overall cost savings for its entire system.

Tesla, however, is not the only company seeking to prove itself as an emerging and disruptive maker of home batteries. With customer-friendly, aesthetically-pleasing, well-designed solutions such as Tesla's home batteries that undercut the cost of all current lithium-ion energy storage providers, competitors are feeling the pressure to revamp their own offerings. The automaker Daimler announced that it is selling Mercedes-Benz-branded lithium-ion residential and commercial batteries with deliveries in October. Daimler is now establishing sales and distribution networks. The battery modules are available in two versions – a 2.5-kWh model for homes, and a 5.9-kWh model for industrial use. Up to eight 2.5 kWh modules can be linked together to form a 20 kWh energy storage unit for use by businesses.

Ease of installation may become a key factor in consumer interest in residential storage offerings. Plug-and-play storage requires little installation and offered as a consumer offering may become increasingly attractive to consumers. Orison offers a line of home battery products that require no installation and have a lower price point than Tesla's recently-announced residential products. Panasonic also announced a new deal to test its home battery systems with three utilities in Australia. The systems include demand response technology and remote charge and discharge programs Panasonic already sells a battery system for homes in its own domestic market, Japan. The company also recently announced it plans to sell its residential batteries in Europe.

Distributed Energy Resource Management Systems and Battery Storage

Juicebox Energy introduced an 8.6kWh lithium-ion storage system for residential and small scale commercial buildings. With a system controller, the JuiceBox is integrated with a full-featured commercially available inverter/charger and can be deployed in parallel for higher power and energy needs. Enphase launched an integrated PV and storage management system with a smart inverter. The modular, plug-and-play system would be fully integrated with the just-introduced Enphase Energy Management System: the evolved smart inverter allows for connection with all relevant devices, solar, storage, smart thermostat and looks to add disaggregation in future, providing maximum control to the customer (or utility). Japanese inverter maker Tabuchi Electric and storage software provider Geli also partnered to offer a residential solar-plus-storage solution. The system includes a 5.5-kilowatt solar inverter with a bidirectional DC-to-DC battery power converter and a 10-kilowatt-hour Panasonic lithium-ion battery pack. The system can be used for backup power, peak shaving, or to sell power back to the grid. Geli's software manages the system's grid connection and allows for interconnection with other devices in the home, such as smart thermostats and pool pumps.

In the thermal energy storage arena, Ice Energy, a turnkey provider of the Ice Bear Thermal Energy Storage Units, freezes 5-ton water supply into ice during evening off peak times. Ice Bears store energy at night by chilling water using cheap electricity, and using ice to run AC units during the day without utilizing AC compressors. Ice Energy recently introduced Ice Bear 20, which manages residential cooling load for utilities, reducing peak demand by up to 95% for up to four hours. The new system combines Ice Energy's patented thermal storage and smart-grid technology with integrated cooling.

Smart Thermostat and Home Area Network Technologies

Another major area of development in customer applications enabled by the smart grid includes "smart home" technologies also referred to as HAN technologies. Collectively, this suite of technologies promises to help customers gain insight into and control over appliances throughout their house in order to operate them more efficiently and cost effectively. For example, along with its energy disaggregation platform, Bidgely's HomeBeat energy monitor acts as a gateway between the smart meter and the internet. One of the most popular pieces of technology is the Nest Learning Thermostat. Nest unveiled its third-generation Learning Thermostat, with a higher-resolution and bigger screen, as well as Wi-Fi and Bluetooth upgrades. Minor software updates include "Farsight", which will wake up the screen when a user is up to 25 feet away from the thermostat.

Other new entrants to the HAN technologies and smart thermostat market include the Cosy smart thermostat, which includes a mobile app to allow the users to control the connected hardware and access the Cosy cloud (where their heating and other home-related data is stored). The hardware kit consists of a wireless hub device to co-ordinate all the various pieces of the Cosy connected home system; a smart thermostat display to replace the traditional thermostat in the home. Alarm.com also launched its own smart thermostat, priced to be cheaper than Nest and Ecobee products: the Alarm.com thermostat sells to dealers for \$149. The thermostat has access to every sensor in a home's security system. Like Nest, Alarm.com's thermostat can also connect to a smoke detector. The device uses cellular communication instead of Wi-Fi and will also offer additional temperature sensors that can be placed anywhere in the home.

Metric: 16 A Continued

Metric Description: ComEd's response time to a distributed resource project application, and time from receipt of application until energy flows from project to grid (distribution.)

Site ID	Date Initial Application Received	Prime Mover	Date Complete Application Received (1)	Date Commissioned (2)	Duration (3)
1323	12/3/2015	Wind Turbine and Photovoltaic	12/16/2015	12/21/2015	5
1298	11/9/2015	Photovoltaic	11/10/2015	11/9/2015	-1
1282	10/27/2015	Photovoltaic	10/28/2015	11/11/2015	14
1273	10/19/2015	Photovoltaic	10/19/2015	10/8/2015	-11
1272	10/16/2015	Photovoltaic	10/19/2015	11/1/2015	13
1271	10/13/2015	Photovoltaic	10/14/2015	10/29/2015	15
1268	10/14/2015	Photovoltaic	10/14/2015	9/22/2015	-22
1266	10/26/2015	Photovoltaic	10/8/2015	7/31/2015	-69
1264	9/28/2015	Photovoltaic	10/6/2015	10/12/2015	6
1258	9/24/2015	Photovoltaic	9/30/2015	10/15/2015	15
1256	9/23/2015	Photovoltaic	9/30/2015	11/11/2015	42
1251	9/24/2015	Photovoltaic	9/25/2015	9/30/2015	5
1246	9/14/2015	Photovoltaic	9/22/2015	10/2/2015	10
1245	8/31/2015	Photovoltaic	9/21/2015	9/25/2015	4
1243	9/16/2015	Photovoltaic	9/16/2015	8/26/2015	-21
1240	9/14/2015	Photovoltaic	9/14/2015	10/16/2015	32
1238	8/31/2015	Photovoltaic	9/11/2015	9/25/2015	14
1236	9/9/2015	Photovoltaic	9/9/2015	8/24/2015	-16
1228	5/26/2015	Photovoltaic	8/31/2015	6/17/2015	-75
1227	5/26/2015	Photovoltaic	8/31/2015	6/16/2015	-76
1223	8/21/2015	Photovoltaic	8/25/2015	9/11/2015	17
1215	8/10/2015	Photovoltaic	8/12/2015	8/5/2015	-7
1214	8/10/2015	Photovoltaic	8/11/2015	9/7/2015	27
1212	8/10/2015	Photovoltaic	8/11/2015	11/14/2012	-1000
1210	7/22/2015	Photovoltaic	8/4/2015	8/12/2015	8
1209	7/29/2015	Photovoltaic	8/4/2015	1/27/2015	-189
1208	7/28/2015	Photovoltaic	7/31/2015	8/18/2015	18
1203	4/20/2015	Photovoltaic	7/28/2015	5/15/2015	-74
1202	7/22/2015	Photovoltaic	7/28/2015	8/14/2015	17
1199	6/25/2015	Photovoltaic	7/22/2015	1/6/2015	-197
1198	7/15/2015	Photovoltaic	7/20/2015	3/26/2014	-481
1197	7/9/2015	Photovoltaic	7/16/2015	1/5/2015	-192
1196	7/15/2015	Photovoltaic	7/15/2015	7/31/2015	16
1194	7/10/2015	Photovoltaic	7/10/2015	8/15/2015	36
1193	7/8/2015	Photovoltaic	7/10/2015	7/29/2015	19
1190	7/2/2015	Photovoltaic	7/7/2015	8/4/2015	28
1189	7/2/2015	Photovoltaic	7/6/2015	8/4/2015	29

1188	7/1/2015	Photovoltaic	7/6/2015	8/3/2015	28
1187	7/1/2015	Photovoltaic	7/6/2015	10/13/2014	-266
1186	7/2/2015	Photovoltaic	7/2/2015	7/1/2015	-1
1185	6/29/2015	Photovoltaic	7/1/2015	6/27/2015	-4
1184	6/23/2015	Photovoltaic	6/30/2015	1/18/2015	-163
1183	6/23/2015	Photovoltaic	6/30/2015	1/18/2015	-163
1182	6/16/2015	Photovoltaic	6/30/2015	1/15/2015	-166
1181	6/23/2015	Photovoltaic	6/26/2015	1/18/2015	-159
1180	6/25/2015	Photovoltaic	6/25/2015	1/6/2015	-170
1178	4/22/2015	Photovoltaic	6/23/2015	4/22/2015	-62
1176	6/16/2015	Photovoltaic	6/22/2015	1/27/2015	-146
1173	6/15/2015	Photovoltaic	6/17/2015	8/30/2015	74
1172	6/15/2015	Photovoltaic	6/16/2015	8/30/2015	75
1167	5/29/2015	Photovoltaic	6/1/2015	6/10/2015	9
1166	5/29/2015	Photovoltaic	6/1/2015	6/19/2015	18
1164	5/26/2015	Photovoltaic	5/29/2015	5/26/2015	-3
1163	5/28/2015	Reciprocating Engine	5/29/2015	5/28/2015	-1
1162	5/26/2015	Photovoltaic	5/28/2015	6/16/2015	19
1159	5/21/2015	Photovoltaic	5/26/2015	6/11/2015	16
1157	5/15/2015	Photovoltaic	5/21/2015	6/11/2015	21
1155	4/20/2015	Photovoltaic	5/19/2015	1/18/2015	-121
1154	5/12/2015	Photovoltaic	5/19/2015	6/2/2015	14
1153	5/14/2015	Photovoltaic	5/19/2015	6/4/2015	16
1152	5/14/2015	Photovoltaic	5/14/2015	7/31/2015	78
1150	5/12/2015	Photovoltaic	5/13/2015	6/2/2015	20
1149	3/1/2015	Photovoltaic	5/12/2015	3/22/2015	-51
1147	4/3/2015	Photovoltaic	5/8/2015	5/22/2015	14
1146	4/29/2015	Photovoltaic	5/8/2015	5/20/2015	12
1145	5/5/2015	Photovoltaic	5/8/2015	3/30/2015	-39
1142	4/30/2015	Photovoltaic	5/6/2015	6/30/2015	55
1140	4/30/2015	Photovoltaic	5/5/2015	5/21/2015	16
1139	4/30/2015	Photovoltaic	5/5/2015	5/21/2015	16
1137	4/30/2015	Photovoltaic	5/5/2015	5/21/2015	16
1136	5/1/2015	Photovoltaic	5/5/2015	5/19/2015	14
1133	4/28/2015	Photovoltaic	4/28/2015	5/22/2015	24
1132	4/27/2015	Photovoltaic	4/28/2015	5/15/2015	17
1131	4/27/2015	Photovoltaic	4/28/2015	5/1/2015	3
1130	4/21/2015	Photovoltaic	4/27/2015	1/18/2015	-99
1129	4/20/2015	Photovoltaic	4/27/2015	1/5/2015	-112
1128	4/20/2015	Photovoltaic	4/24/2015	5/11/2015	17
1127	4/22/2015	Photovoltaic	4/22/2015	1/2/2015	-110
1126	4/16/2015	Photovoltaic	4/21/2015	6/1/2015	41
1125	3/17/2015	Photovoltaic	4/21/2015	4/17/2015	-4
1124	4/12/2015	Photovoltaic	4/16/2015	4/22/2015	6

1123	4/10/2015	Photovoltaic	4/16/2015	1/2/2015	-104
1122	4/6/2015	Photovoltaic	4/15/2015	4/27/2015	12
1120	4/10/2015	Photovoltaic	4/14/2015	5/15/2015	31
1119	3/11/2015	Photovoltaic	4/13/2015	4/1/2015	-12
1118	4/1/2015	Photovoltaic	4/10/2015	4/22/2015	12
1117	4/3/2015	Photovoltaic	4/9/2015	3/31/2015	-9
1116	4/3/2015	Photovoltaic	4/9/2015	2/13/2015	-55
1115	4/9/2015	Photovoltaic	4/9/2015	1/9/2015	-90
1114	4/6/2015	Photovoltaic	4/8/2015	3/22/2015	-17
1113	4/6/2015	Photovoltaic	4/7/2015	7/3/2015	87
1112	3/30/2015	Photovoltaic	4/7/2015	4/20/2015	13
1110	3/30/2015	Photovoltaic	4/7/2015	4/20/2015	13
1109	4/2/2015	Photovoltaic	4/7/2015	4/30/2015	23
1108	4/2/2015	Photovoltaic	4/7/2015	4/23/2015	16
1107	3/17/2015	Photovoltaic	4/7/2015	4/2/2015	-5
1106	3/23/2015	Photovoltaic	4/3/2015	4/13/2015	10
1105	3/23/2015	Photovoltaic	4/3/2015	4/13/2015	10
1103	3/18/2015	Photovoltaic	3/24/2015	4/8/2015	15
1101	3/10/2015	Photovoltaic	3/17/2015	4/4/2015	18
1100	3/10/2015	Photovoltaic	3/17/2015	4/3/2015	17
1099	3/10/2015	Photovoltaic	3/17/2015	4/1/2015	15
1096	3/9/2015	Photovoltaic	3/17/2015	3/30/2015	13
1095	3/9/2015	Photovoltaic	3/13/2015	3/30/2015	17
1094	3/10/2015	Photovoltaic	3/13/2015	4/6/2015	24
1093	3/10/2015	Photovoltaic	3/13/2015	3/31/2015	18
1092	3/11/2015	Photovoltaic	3/13/2015	1/18/2015	-54
1091	3/11/2015	Photovoltaic	3/13/2015	1/6/2015	-66
1089	3/5/2015	Photovoltaic	3/11/2015	3/26/2015	15
1087	3/3/2015	Photovoltaic	3/6/2015	4/21/2015	46
1085	2/27/2015	Photovoltaic	3/3/2015	3/27/2015	24
1084	2/19/2015	Photovoltaic	2/27/2015	3/12/2015	13
1083	2/19/2015	Photovoltaic	2/27/2015	3/16/2015	17
1081	1/26/2015	Photovoltaic	2/26/2015	3/31/2015	33
1080	1/27/2015	Photovoltaic	2/26/2015	2/17/2015	-9
1079	2/18/2015	Photovoltaic	2/24/2015	4/20/2015	55
1078	2/17/2015	Photovoltaic	2/20/2015	3/27/2015	35
1076	1/7/2015	Photovoltaic	2/19/2015	1/29/2015	-21
1073	2/6/2015	Photovoltaic	2/18/2015	1/16/2015	-33
1072	2/12/2015	Photovoltaic	2/18/2015	3/5/2015	15
1071	2/12/2015	Photovoltaic	2/18/2015	3/5/2015	15
1070	2/12/2015	Photovoltaic	2/16/2015	3/16/2015	28
1067	2/6/2015	Photovoltaic	2/11/2015	1/18/2015	-24
1066	2/6/2015	Photovoltaic	2/11/2015	1/6/2015	-36
1065	2/6/2015	Photovoltaic	2/10/2015	3/31/2015	49
1064	2/2/2015	Photovoltaic	2/10/2015	2/23/2015	13

1063	2/3/2015	Photovoltaic	2/10/2015	4/6/2015	55
1062	2/4/2015	Photovoltaic	2/10/2015	2/25/2015	15
1061	1/19/2015	Photovoltaic	2/9/2015	2/9/2015	0
1059	1/29/2015	Photovoltaic	2/9/2015	2/19/2015	10
1058	1/28/2015	Photovoltaic	2/9/2015	2/18/2015	9
1055	1/26/2015	Photovoltaic	2/9/2015	2/19/2015	10
1054	1/29/2015	Photovoltaic	2/9/2015	2/19/2015	10
1053	1/26/2015	Photovoltaic	2/9/2015	2/18/2015	9
1052	1/30/2015	Photovoltaic	2/9/2015	2/20/2015	11
1051	1/26/2015	Photovoltaic	2/9/2015	2/16/2015	7
1050	1/26/2015	Photovoltaic	2/9/2015	2/17/2015	8
1049	1/13/2015	Photovoltaic	2/6/2015	3/31/2015	53
1048	1/30/2015	Photovoltaic	2/6/2015	3/31/2015	53
1047	1/26/2015	Photovoltaic	2/5/2015	2/16/2015	11
1045	1/7/2015	Photovoltaic	2/5/2015	2/27/2015	22
1044	1/20/2015	Photovoltaic	1/29/2015	5/21/2015	112
1042	1/26/2015	Photovoltaic	1/28/2015	2/18/2015	21
1041	1/26/2015	Photovoltaic	1/28/2015	2/18/2015	21
1040	1/26/2015	Photovoltaic	1/28/2015	2/18/2015	21
1039	1/20/2015	Photovoltaic	1/28/2015	2/10/2015	13
1037	1/21/2015	Photovoltaic	1/28/2015	2/11/2015	14
1036	1/21/2015	Photovoltaic	1/28/2015	2/11/2015	14
1035	1/21/2015	Photovoltaic	1/28/2015	2/12/2015	15
1034	1/16/2015	Photovoltaic	1/28/2015	2/6/2015	9
1030	1/13/2015	Photovoltaic	1/23/2015	3/31/2015	67
1029	1/20/2015	Photovoltaic	1/23/2015	1/16/2015	-7
1028	1/16/2015	Photovoltaic	1/22/2015	2/6/2015	15
1027	1/16/2015	Photovoltaic	1/22/2015	2/11/2015	20
1026	1/16/2015	Photovoltaic	1/22/2015	2/10/2015	19
1024	1/16/2015	Photovoltaic	1/22/2015	2/9/2015	18
1023	1/16/2015	Photovoltaic	1/22/2015	2/6/2015	15
1022	1/12/2015	Photovoltaic	1/22/2015	2/2/2015	11
1021	1/12/2015	Photovoltaic	1/21/2015	2/2/2015	12
1020	1/7/2015	Photovoltaic	1/20/2015	1/28/2015	8
1019	1/7/2015	Photovoltaic	1/20/2015	1/30/2015	10
1018	1/9/2015	Photovoltaic	1/20/2015	1/29/2015	9
1017	1/9/2015	Photovoltaic	1/20/2015	2/6/2015	17
1016	1/6/2015	Photovoltaic	1/15/2015	1/27/2015	12
1015	1/8/2015	Photovoltaic	1/14/2015	2/9/2015	26
			Average Days w/ Negative #s		(13.17)
			Average Days w/out Negative #s		22.23

Note 1 - Date complete application sent to engineering.

Note 2 - Date on Appendix B returned to ComEd (site commissioned).

Note 3 - Duration, in days, from complete application to generation of energy.

Negative #s - Application submitted after start of construction and/or Appendix B submitted long after project done.

Metric: 22

Metric Description: Bill impacts associated with the costs for implementation of ComEd’s AMI Plan for low, average, and higher usage level customers pursuant to approved rates and surcharges.⁵⁶ The usage level calculations will be values for a “typical” customer at the 25th, 50th, and 75th percentile of total usage for each applicable delivery service class.

Change from January 2015 to January 2016 for Typical Customer			
Customer Class or Type	Monthly	Annual	Percent
Single Family Residential Without Electric Space Heat	\$(5.88)	\$(70.59)	-5.72%
Multi-Family Residential Without Electric Space Heat	\$(4.10)	\$(49.23)	-7.56%
Single Family Residential With Electric Space Heat	\$(6.39)	\$(76.71)	-3.41%
Multi-Family Residential With Electric Space Heat	\$(2.52)	\$(30.18)	-2.68%
Non-Residential Watt hour	\$(4.87)	\$(58.47)	-8.22%
Non-Residential Small Load (0-100 kW)	\$(30.10)	\$(361.19)	-6.92%

Change from January 2015 to January 2016 at Percentile (Low/Median/High Usage)				
Customer Class or Type	Percentile	Monthly	Annual	Percent
Single Family Residential Without Electric Space Heat (low usage)	25%	\$(3.99)	\$(47.89)	-5.83%
Single Family Residential Without Electric Space Heat (median usage)	50%	\$(5.28)	\$(63.39)	-5.75%
Single Family Residential Without Electric Space Heat (high usage)	75%	\$(6.97)	\$(83.58)	-5.69%
Multi-Family Residential Without Electric Space Heat (low usage)	25%	\$(2.79)	\$(33.53)	-7.85%
Multi-Family Residential Without Electric Space Heat (median usage)	50%	\$(3.66)	\$(43.88)	-7.64%
Multi-Family Residential Without Electric Space Heat (high usage)	75%	\$(4.85)	\$(58.21)	-7.48%
Single Family Residential With Electric Space Heat (low usage)	25%	\$(4.32)	\$(51.79)	-3.53%
Single Family Residential With Electric Space Heat (median usage)	50%	\$(5.87)	\$(70.49)	-3.39%
Single Family Residential With Electric Space Heat (high usage)	75%	\$(7.65)	\$(91.84)	-3.35%

⁵⁶ The customer rate impacts reflect a comparison of ComEd’s total bill year-to-year for the rates in effect for January 2015 to January 2016 (including energy supply and delivery, of which, AMI is a component). This is the same manner in which ComEd has been responding to this metric in previous submissions, as agreed upon by stakeholders.

Multi-Family Residential With Electric Space Heat (low usage)	25%	\$(1.98)	\$(23.75)	-3.25%
Multi-Family Residential With Electric Space Heat (median usage)	50%	\$(2.38)	\$(28.60)	-2.80%
Multi-Family Residential With Electric Space Heat (high usage)	75%	\$(2.87)	\$(34.45)	-2.51%
Nonresidential Watt hour (low usage)	25%	\$(2.62)	\$(31.44)	-7.70%
Nonresidential Watt hour (median usage)	50%	\$(4.21)	\$(50.57)	-8.12%
Nonresidential Watt hour (high usage)	75%	\$(6.27)	\$(75.19)	-8.36%
Nonresidential Small Load (0-100 kW) (low usage)	25%	\$(6.83)	\$(81.94)	-5.88%
Nonresidential Small Load (0-100 kW) (median usage)	50%	\$(14.45)	\$(173.36)	-6.43%
Nonresidential Small Load (0-100 kW) (high usage)	75%	\$(34.28)	\$(411.40)	-6.88%

Metric: 23

Metric Description: Number of customers that have created and viewed an account on ComEd.com – by usage levels, customer class, and low income customers. An account on ComEd.com is necessary for viewing the web portal.

Number of Accounts by Delivery Class	
Delivery Class	Total Number of Accounts
Single Family W/O Elec. Space Heat	198,600
Multi Family W/O Elec. Space Heat	162,188
Single Family With Elec. Space Heat	3,252
Multi Family With Elec. Space Heat	23,980
Watt-Hour	3,665
Small Load	21,014
Medium Load	1,093
Large Load	163
Very Large Load	56
Extra Large Load	2
High Voltage	-
Railroad	-
Fixture-Included Lighting	26
Dusk to Dawn Lighting	55
General Lighting	9

Number of Accounts by Usage Level for Residential, Watt-hour, and Small Load Delivery Classes						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
SingleFamily w/o Elec. Space Heat	198,600	26,558	31,352	34,907	38,341	67,442
Multi Family w/o Elec. Space Heat	162,188	11,729	12,687	13,816	15,494	108,462
SingleFamily With Elec. Space Heat	3,252	446	492	566	546	1,202
Multi Family With Elec. Space Heat	23,980	1,714	2,078	2,348	2,417	15,423
Watt-Hour	3,665	656	622	629	719	1,039
Small Load	21,014	3,676	3,639	3,605	4,273	5,821

Number of Low Income Accounts by Usage Level for Residential Delivery Classes(2)						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family Without Space Heat	4,113	785	852	834	703	939
Multi Family Without Space Heat	3,152	346	434	579	747	1,046
Single Family With Space Heat	86	18	13	20	11	24
Multi Family With Space Heat	630	95	95	101	139	200

Accounts on Life Support and Medical Condition by Usage Level for Residential Delivery Classes(3)						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family Without Space Heat	554	49	75	113	183	134
Multi Family Without Space Heat	311	13	31	48	133	86
Single Family With Space Heat	20	2	3	4	7	4
Multi Family With Space Heat	66	1	6	15	18	26

Notes:

- (1) These accounts did not have bills for all 12 months of 2015 to determine their usage quartile.
- (2) Low income accounts are those accounts that participated in the Low Income Home Energy Assistance Program (LIHEAP), Percentage of Income Payment Program (PIPP), All Clear or Residential Special Hardship Program during 2015 and were billed in December 2015.
- (3) Customers on Medical Condition or Medical Certificate are based on data for 2015 and customers on Life Support are determined based on accounts on Life Support in January 2016. Some accounts in the Life Support and Medical Condition or Medical Certificate group may also be in the low income group.

Metric: 24

Metric Description: Number of customers with ComEd.com accounts that have viewed the web portal - by usage levels, customer class, and low income customers.

Number of Accounts by Usage Level for Residential Delivery Classes						
Number of Accounts by Usage Level						
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	143,748	21,036	27,272	31,005	34,217	30,218
Multi Family W/O Elec. Space Heat	107,317	9,029	12,006	14,542	17,690	54,050
Single Family With Elec. Space Heat	2,738	386	536	616	576	624
Multi Family With Elec. Space Heat	18,222	1,772	2,401	2,669	2,734	8,646

Number of Low Income Accounts by Usage Level for Residential Delivery Classes(2)						
Number of Accounts by Usage Level						
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	2,853	525	625	647	677	379
Multi Family W/O Elec. Space Heat	1,871	184	292	418	593	384
Single Family With Elec. Space Heat	82	16	20	19	19	8
Multi Family With Elec. Space Heat	452	64	78	101	123	86

Accounts on Life Support and Medical Condition by Usage Level for Residential Delivery Classes(3)						
Delivery Class	Total	Number of Accounts by Usage Level				NA(1)
		Quartile 1	Quartile 2	Quartile 3	Quartile 4	
Single Family W/O Elec. Space Heat	389	28	49	97	159	56
Multi Family W/O Elec. Space Heat	194	5	22	40	89	38
Single Family With Elec. Space Heat	18	1	3	3	6	5
Multi Family With Elec. Space Heat	45	0	3	8	19	15

Notes:

(1) These accounts did not have bills for all 12 months of 2015 to determine their usage quartile.

(2) Low income accounts are those accounts that participated in the Low Income Home Energy Assistance Program (LIHEAP), Percentage of Income Payment Program (PIPP), All Clear or Residential Special Hardship Program during 2015 and were billed in December 2015.

(3) Customers on Medical Condition or Medical Certificate are based on data for 2015 and customers on Life Support are determined based on accounts on Life Support in January 2016. Some accounts in the Life Support and Medical Condition or Medical Certificate group may also be in the low income group.

Metric: 25

Metric Description: Change in customers' energy consumption for customers that have viewed the web portal. ComEd will work with the web presentment vendor to define the business processes necessary to track an energy usage impact of accessing the web portal.

ComEd has continued to work with its web presentment vendor to develop and vet a methodology for measuring energy savings by customers that have viewed the web portal. The 2015 methodology has changed from the prior year. The new methodology is explained below and provides a higher confidence level in calculating the metric.

Methodology description:

I. PROPENSITY SCORE MATCHING

Logging in to the web is a self-selected, opt-in action and therefore not easily subject to random assignment as in an experimental evaluation approach (i.e., randomized controlled trial). Therefore, this analysis employs a quasi-experimental evaluation method which seeks to match customers who log in to the web (“treatment customers”) to very similar customers who did not log in to the web (“matched control customers”). Matched controls are drawn from a larger set of candidate control customers. Because customers log in to the web on a rolling basis, the matching procedure repeats for each “cohort” of treatment customers defined by month of login.

The matching algorithm follows Imbens and Rubin (2015) and begins by selecting customer characteristics for estimation of a propensity score. The propensity score is the predicted probability of receiving the treatment - logging in to the web. Matching customers based on nearly identical propensity scores serves to balance the distribution of the included customer characteristics among the treatment and matched control populations. This approach effectively attempts to mimic the balancing that occurs via a randomized controlled trial.

An important limitation of this method is that treatment customers may still differ from matched control customers along unobserved dimensions (e.g. attitudes toward energy efficiency). Such unobserved differences can bias results if they remain imbalanced. Despite this limitation, propensity score matching is an accepted method in the DOE SEE Action guidelines and widely used in other disciplines.

The algorithm considered inclusion of each of the previous 12 months of energy usage data prior to the login month, customer tenure, and recipient status in each particular Home Energy Report (HER) wave. All first and second order terms are considered for inclusion by the algorithm.⁵⁷ Customers who were missing data for these characteristics were excluded from the analysis.

Once the propensity score is estimated across customers, each treatment customer is matched to the control customer with the closest propensity score (their “nearest neighbor”) on a 1:1 basis. Not all customers who log in are successfully matched largely due to not having 12 months of pre-login

⁵⁷ Please see Imbens and Rubin (2015) for a detailed description of the algorithm.

usage data. These customers are not matched due to the concern that they cannot be matched well. As a result, the analysis measures the average treatment effect on the treated for those customers who visited the web and who could be matched well; it is not a measurement of the effect of web on all customers who visited the web.⁵⁸ The final result of this process is a treatment and a control group that are statistically equivalent across characteristics strongly related to both the outcome variable, energy usage, and the likelihood of web login.

II. ESTIMATION OF THE TREATMENT EFFECT

Following matching, savings estimation is conducted using the same model that ComEd's web presentment vendor uses for the savings measurement of its Energy Efficiency Behavior-based programs (Home Energy Report). Robustness checks are conducted using a customer fixed effect model. These models incorporate pre-treatment energy usage data and serve as another opportunity to correct for differences between treatment and matched control customers.

III. 2015 RESULTS

The information below displays calendar year 2015 energy efficiency savings from web among ComEd customers who logged-in for the first time in calendar year 2015 and had sufficient data to be included in the analysis.

Electric Savings Results

- Percent savings (%): 0.8% +/- 0.3%
- Savings per customer per day (kWh): 0.20 +/- 0.08
- Total customers: 34,623
- Total savings (MWh): 1,166 +/- 484

Note: Savings estimates are statistically significant at the > 95% level. Margin of error represents 95% confidence interval.

IV. REFERENCES

Crump, Richard, et al. "Moving the goalposts: Addressing limited overlap in the estimation of average treatment effects by changing the estimand." (2006).

Imbens, Guido W., and Donald B. Rubin. *Causal Inference in Statistics, Social, and Biomedical Sciences*. Cambridge University Press, 2015.

State and Local Energy Efficiency Action Network. 2012. *Evaluation, Measurement, and Verification (EM&V) of Residential Behavior-Based Energy Efficiency Programs: Issues and Recommendations*. Prepared by A. Todd, E. Stuart, S. Schiller, and C. Goldman, Lawrence Berkeley National Laboratory. <http://behavioranalytics.lbl.gov>.

⁵⁸ Crump et. al. (2006) argue that restricting the set of customers included in the analysis to those who can be matched well is an important step in reducing bias.

Metric: 26

Metric Description: Number of customers enrolled in the RRTP program (ComEd’s hourly pricing program) by usage levels, customer class, and low income customers.

Number of Accounts by Usage Level for Residential Delivery Classes						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	9,261	931	1,831	2,543	3,686	270
Multi Family W/O Elec. Space Heat	772	46	79	189	365	93
Single Family With Elec. Space Heat	244	37	54	57	88	8
Multi Family With Elec. Space Heat	256	23	58	63	93	19

Number of Low Income Accounts by Usage Level for Residential Delivery Classes(2)						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	83	17	23	18	23	2
Multi Family W/O Elec. Space Heat	19	1	3	7	7	1
Single Family With Elec. Space Heat	5	2	3	0	0	0
Multi Family With Elec. Space Heat	7	1	1	2	3	0

Accounts on Life Support and Medical Condition by Usage Level for Residential Delivery Classes(3)						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(2)
Single Family W/O Elec. Space Heat	6	0	0	3	3	0
Multi Family W/O Elec. Space Heat	1	0	0	0	1	0
Single Family With Elec. Space Heat	0	0	0	0	0	0
Multi Family With Elec. Space Heat	0	0	0	0	0	0

Metric: 28

Metric Description: Number of customers enrolled in ComEd’s PTR program by usage levels, customer class, and low income customers.

Total Number of Accounts for Residential Delivery Classes	
Delivery Class	Total
Single Family W/O Elec. Space Heat	39,682
Multi Family W/O Elec. Space Heat	16,637
Single Family With Elec. Space Heat	307
Multi Family With Elec. Space Heat	2,068
Total	58,694

Number of Accounts by Usage Level for Residential Delivery Classes						
Delivery Class	Total	Number of Accounts by Usage Level				
		Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA
Single Family W/O Elec. Space Heat	39,68	12,954	10,859	8,809	6,625	435
Multi Family W/O Elec. Space Heat	16,63	4,211	4,308	4,037	3,507	574
Single Family With Elec. Space Heat	307	85	110	73	39	0
Multi Family With Elec. Space Heat	2,068	474	550	507	471	66

Number of Low Income Accounts by Usage Level for Residential Delivery Classes						
Delivery Class	Total	Number of Accounts by Usage Level				
		Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA
Single Family W/O Elec. Space Heat	1,917	853	492	318	241	13
Multi Family W/O Elec. Space Heat	1,428	416	364	334	296	18
Single Family With Elec. Space Heat	28	3	7	10	8	0
Multi Family With Elec. Space Heat	203	65	57	39	40	2

Accounts on Life Support and Medical Condition by Usage Level for Residential Delivery Classes						
Delivery Class	Total	Number of Accounts by Usage Level				
		Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA
Single Family W/O Elec. Space Heat	92	12	22	24	32	2
Multi Family W/O Elec. Space Heat	67	7	10	19	29	2
Single Family With Elec. Space Heat	1	0	0	1	0	0
Multi Family With Elec. Space Heat	9	0	0	1	8	0

Metric: 29

Metric Description: Number of deposits required, disconnection notices, and disconnections for nonpayment for all customers and, if applicable, by low income customers. Other “key indicia associated with credit and collection activities targeted to low income customers” may be incorporated in the project plan’s business process redesigns for future implementation.

Part 1: Number of Deposits Required in 2015 - by usage levels, customer class, and low income customers.	
Number of Accounts by Delivery Class	
Delivery Class	Total Number of Accounts
Single Family W/O Elec. Space Heat	24,203
Multi Family W/O Elec. Space Heat	47,261
Single Family With Elec. Space Heat	503
Multi Family With Elec. Space Heat	7,077
Watt-Hour	1,660
Small Load	9,480
Medium Load	209
Large Load	42
Very Large Load	21
Extra Large Load	-
High Voltage	1
Railroad	-
Fixture-Included Lighting	6
Dusk to Dawn Lighting	8
General Lighting	-

Number of Accounts by Usage Level for Residential, Watt-hour, and Small Load Delivery Classes						
Delivery Class	Total	Number of Accounts by Usage Level				
		Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	24,203	86	41	26	28	24,022
Multi Family W/O Elec. Space Heat	47,261	176	110	59	50	46,866
Single Family With Elec. Space Heat	503	1	2	-	-	500
Multi Family With Elec. Space Heat	7,077	14	15	7	8	7,033
Watt-Hour	1,660	15	8	11	8	1,618
Small Load	9,480	111	96	95	54	9,124
Number of Accounts by Usage Level for Residential, Watt-hour, and Small Load Delivery Classes						
Number of Accounts by Usage Level						

Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	24,203	86	41	26	28	24,02
Multi Family W/O Elec. Space Heat	47,261	176	110	59	50	46,86
Single Family With Elec. Space Heat	503	1	2	-	-	500
Multi Family With Elec. Space Heat	7,077	14	15	7	8	7,033
Watt-Hour	1,660	15	8	11	8	1,618
Small Load	9,480	111	96	95	54	9,124

Number of Low Income Accounts by Usage Level for Residential Delivery Classes (2)						
Delivery Class	Total	Number of Accounts by Usage Level				
		Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	680	3	5	-	1	671
Multi Family W/O Elec. Space Heat	1,026	3	4	3	2	1,014
Single Family With Elec. Space Heat	19	-	-	-	-	19
Multi Family With Elec. Space Heat	162	2	-	-	-	160

Accounts on Life Support and Medical Condition by Usage Level for Residential Delivery Classes (3)						
Delivery Class	Total	Number of Accounts by Usage Level				NA(1)
		Quartile 1	Quartile 2	Quartile 3	Quartile 4	
Single Family W/O Elec. Space Heat	152	-	1	-	4	147
Multi Family W/O Elec. Space Heat	85	-	1	-	-	84
Single Family With Elec. Space Heat	3	-	-	-	-	3
Multi Family With Elec. Space Heat	12	-	-	-	-	12

Part 2: Number of Disconnection Notices in 2015 - by usage levels, customer class, and low income customers.	
Number of Accounts by Delivery Class	
Delivery Class	Total Number of Accounts
Single Family W/O Elec. Space Heat	253,457
Multi Family W/O Elec. Space Heat	127,860
Single Family With Elec. Space Heat	4,499
Multi Family With Elec. Space Heat	19,739
Watt-Hour	2,581
Small Load	24,964
Medium Load	1,255
Large Load	265
Very Large Load	108
Extra Large Load	1
High Voltage	14
Railroad	-
Fixture-Included Lighting	109
Dusk to Dawn Lighting	296
General Lighting	44

Number of Accounts by Usage Level for Residential, Watt-hour, and Small Load Delivery Classes						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	253,457	38,869	51,238	64,416	76,058	22,876
Multi Family W/O Elec. Space Heat	127,860	15,329	22,379	29,655	39,958	20,539
Single Family With Elec. Space Heat	4,499	742	1,024	1,163	1,094	476
Multi Family With Elec. Space Heat	19,739	1,860	3,643	5,420	5,897	2,919
Watt-Hour	2,581	267	460	545	912	397
Small Load	24,964	3,331	5,134	6,795	6,399	3,305

Number of Low Income Accounts by Usage Level for Residential Delivery Classes(2)						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	12,047	2,216	2,604	2,803	2,738	1,686
Multi Family W/O Elec. Space Heat	9,267	957	1,482	2,136	3,019	1,673
Single Family With Elec. Space Heat	177	29	36	36	38	38
Multi Family With Elec. Space Heat	1,223	120	244	313	325	221

Accounts on Life Support and Medical Condition by Usage Level for Residential Delivery Classes(3)						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	3,698	369	613	865	1,320	531
Multi Family W/O Elec. Space Heat	2,350	139	292	487	993	439
Single Family With Elec. Space Heat	103	10	16	28	29	20
Multi Family With Elec. Space Heat	417	17	63	96	163	78

Part 3: Number of Disconnections in 2015 - by usage levels, customer class, and low income customers						
Number of Accounts by Usage Level for Residential, Watt-hour, and Small Load Delivery Classes						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	30,496	4,963	6,303	7,667	8,831	2,732
Multi Family W/O Elec. Space Heat	20,628	2,220	3,775	5,188	6,846	2,599
Single Family With Elec. Space Heat	542	98	134	131	103	76
Multi Family With Elec. Space Heat	3,304	287	617	872	974	554
Watt-Hour	603	60	106	152	219	66
Small Load	2,962	584	850	803	291	434

Number of Low Income Accounts by Usage Level for Residential Delivery Classes(2)						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	2,072	377	423	496	482	294
Multi Family W/O Elec. Space Heat	1,802	184	297	446	601	274
Single Family With Elec. Space Heat	26	6	3	5	8	4
Multi Family With Elec. Space Heat	260	19	47	69	70	55

Accounts on Life Support and Medical Condition by Usage Level for Residential Delivery Classes(3)						
		Number of Accounts by Usage Level				
Delivery Class	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	NA(1)
Single Family W/O Elec. Space Heat	1,115	152	187	259	351	166
Multi Family W/O Elec. Space Heat	937	69	130	216	377	145
Single Family With Elec. Space Heat	29	2	7	9	7	4
Multi Family With Elec. Space Heat	141	9	27	24	52	29