

Energy Impact and Customer Satisfaction Evaluation of the Personalized Energy Report Program in Ohio

Final Report

**Prepared by
Duke Energy**

139 East Fourth Street
Cincinnati, OH 45201

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Reviewed by:

**Johna Roth and Nick Hall
TecMarket Works**

165 West Netherwood Road
Oregon, Wisconsin 53575
(608) 835-8855



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The customer satisfaction and impact evaluation surveys were developed and administered by Duke Energy. Duke Energy also collected and analyzed the customer satisfaction survey data. TecMarket Works reviewed and approved the final analysis and the evaluation written by Duke Energy. The billing analysis of the impact evaluation survey results was conducted by TecMarket Works.

Summary

OH PER Program

The Ohio Personalized Energy Report program offers customers an energy report to help them understand and better manage their energy use. Customers are mailed a letter describing the Personalized Energy Report program and offering a customized energy report for their home if they return a short survey. This survey asks questions about the customer's home (such as types of appliances and fuel used for the water heater), as well as questions about the customer's energy usage habits.

After returning the survey, the customer receives the personalized energy report in the mail, along with an energy efficiency starter kit. The personalized energy report contains several sections: a month-to-month usage and bill amount comparison, a month-to-month bill amount trends bar graph, a household usage pie chart, and a description of the customer's annual usage compared to similar homes. The report also contains customized energy savings tips for the customer's home.

The energy efficiency starter kit includes the following items:

- Low flow showerhead
- Kitchen Faucet Aerator
- Bathroom Faucet Aerator
- 15W CFL bulb
- 20W CFL bulb
- 17' roll of weather stripping
- 1 package of switch/outlet insulators
- 1 shrink-fit window kit

The personalized energy report also offers energy efficiency starter kit tips.

OH PER Campaign

The campaign for the Ohio Personalized Energy Report (PER) and kit began in September 2007 and ran through January 2008. 199,867 customers were solicited (excluding return-to-sender, etc.) with 34,559 customers responding (17.29%). This response rate met 66.5% of the response rate goal of 51,966 responses.

Customers were asked to respond to surveys for one of three different campaigns:

- Campaign A (8.5x11" cover letter; full page survey): 17.40% response rate.
- Campaign C (8.5x11" cover letter; full page survey (20 questions)): 14.79% response rate.
- Campaign D (8.5x14" letter and survey): 11.16% response rate.

In addition, a logit based response model was developed to determine which customer segments would be most likely to respond to the PER. Customers in Ohio most likely to respond included those who:

- Lived in their home for over 11 years
- Age > 57
- Carry Health insurance
- June Electric Bill > \$39.00
- Middle Income Wealth rating
- High credit card balances
- Most likely uses internet
- Has at least 2 adults in household
- Has at least one child
- On budget billing
- Higher annual kWh usage

The most probable customer segments to respond were targeted in the first wave.

Table 1. Customer Targets for PER Mailing.

	Sample Size	Response	Percent
WAVE 1 (Top Tier Target)	98,049	19,844	20.2%
WAVE 2 (Second Tier Target)	101,952	14,892	14.6%
TOTAL CAMPAIGN	200,001	34,736	17.4%

A model to assess the logit results and targeting confirms that the customers assigned with apriori high probability are more likely to respond than medium and low probability customers.

Table 2. Classification Table of Customer Mailing Responses.

Classification Table			
Frequency			
Row Pct	No Resp	Respond	Total
High Probability	43812	13035	56847
	77.07	22.93	
Med. Probability	76495	14833	91328
	83.76	16.24	
Low Probability	44825	6868	51693
	86.71	13.29	

Total	165132	34736	199868
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Evaluation Summary

The following sections present the results of the customer satisfaction survey as well as the results of an impact billing analysis. Customers were satisfied with the Ohio Personalized Energy Report program, with 44.5% of customers stating they were overall “very satisfied” with the information contained in their personalized energy report. In addition, the results of the billing analysis show a per participant savings of 636 kWh and 35 Therm.

OH PER Online Customer Satisfaction Survey

Customer Satisfaction Survey

An on-line satisfaction and process survey was conducted in March 2008 to assess customer use of kits, the PER, and customer satisfaction with the program. The OH PER Online Customer Satisfaction Survey was made available to approximately 14,500 participants in the PER program. These customers provided Duke Energy with their email address during their participation in the PER program. As previously stated, 2,301 customers responded to the survey for a response rate of 15.9%.

Customer Satisfaction Questions

The customer responded to questions asking them how useful and clear various aspects of the Ohio PER were. Available responses were from one to five, with one being the lowest score (“not at all useful” or “very confusing”) and five being the highest score (“very useful” or “very clear”). Overall, the highest percentage of customers found the energy efficiency starter kit tips to be very useful (40.5%), and the highest percentage of customers found the energy savings tips for their home to be the most clear (62.5%).

The least-read section of the OH PER was the Annual Usage Compared to Similar Homes section, with 7.7% of respondents stating they did not read that section of the PER. 44.5% of customers reported being overall “very satisfied” with the information received in their PER.

A summary table of the PER usefulness and clarity statistics is presented below.

Table 3. Summary of PER Usefulness and Clarity Statistics.

Section	Report Measure	Most frequent response	OH Kits (n)	Percent responding with most frequent response
Month to month usage and bill amt	Usefulness	Very Useful (5)	866	37.8%
	Clarity	Very Clear (5)	1281	55.9%
Month to month bill amt trends bar graph	Usefulness	Very Useful (5)	914	39.9%
	Clarity	Very Clear (5)	1317	57.4%
Household usage pie chart	Usefulness	Very Useful (5)	748	32.6%
	Clarity	Very Clear (5)	1237	53.9%
Annual usage compared to similar homes	Usefulness	Very Useful (5)	835	36.4%
	Clarity	Very Clear (5)	1186	51.7%
Energy efficiency starter kit tips	Usefulness	Very Useful (5)	928	40.5%
	Clarity	Very Clear (5)	1420	61.9%
Energy savings tips for your home	Usefulness	Very Useful (5)	911	39.7%
	Clarity	Very Clear (5)	1434	62.5%

Almost all customers (89.2%) found the month to month usage and bill amount section of the PER to be somewhat useful to very useful (scoring this at 3 or above). Over half of customers found the month to month usage and bill amount section to be very clear (55.9%).

Table 4. Month to Month Usage and Bill Amount.

Action		OH Kits (n)	OH Kits (%)
Usefulness of Report - Month to month usage and bill amt	1 (Not at all Useful)	64	2.8%
	2	99	4.3%
	3 (Somewhat Useful)	716	31.2%
	4	464	20.2%
	5 (Very Useful)	866	37.8%
	Did not read that section	84	3.7%
	Total	2293	100.0%
Clarity of Report - Month to month usage and bill amt	1 (Very Confusing)	18	.8%
	2	26	1.1%
	3 (Somewhat Confusing)	157	6.8%
	4	727	31.7%
	5 (Very Clear)	1281	55.9%
	Did not read that section	84	3.7%
	Total	2293	100.0%

Over one third of customers found the month to month bill amount trends bar graph to be very useful (39.9%), while over half of customers found the bar graph to be very clear (57.4%).

Table 5. Month to Month Bill Amount Trends.

Action		OH Kits (n)	OH Kits (%)
Usefulness of Report - Month to month bill amt trends bar graph	1 (Not at all Useful)	58	2.5%
	2	107	4.7%
	3 (Somewhat Useful)	618	27.0%
	4	487	21.2%
	5 (Very Useful)	914	39.9%
	Did not read that section	109	4.8%
	Total	2293	100.0%
Clarity of Report - Month to month bill amt trends bar graph	1 (Very Confusing)	16	.7%
	2	22	1.0%
	3 (Somewhat Confusing)	137	6.0%
	4	692	30.2%
	5 (Very Clear)	1317	57.4%
	Did not read that section	109	4.8%
	Total	2293	100.0%

Just one third of customers found the household usage pie chart to be very useful (32.6%), and a similar number of customers found the pie chart to be somewhat useful (30.0%). Over one half of customers, however, found the pie chart to be very clear (53.9%).

Table 6. Household Usage Pie Chart.

Action		OH Kits (n)	OH Kits (%)
Usefulness of Report - Household usage pie chart	1 (Not at all Useful)	81	3.5%
	2	134	5.8%
	3 (Somewhat Useful)	687	30.0%
	4	509	22.2%
	5 (Very Useful)	748	32.6%
	Did not read that section	134	5.8%
	Total	2293	100.0%
Clarity of Report - Household usage pie chart	1 (Very Confusing)	15	.7%
	2	30	1.3%
	3 (Somewhat Confusing)	152	6.6%
	4	725	31.6%
	5 (Very Clear)	1237	53.9%
	Did not read that section	134	5.8%
	Total	2293	100.0%

Over one third of customers found the annual usage compared to similar homes section of the PER to be very useful (36.4%). Almost exactly half of customers found the usage comparison to be very clear (51.7%).

Table 7. Annual Usage Compared to Similar Homes.

Action		OH Kits (n)	OH Kits (%)
Usefulness of Report - Annual usage compared to similar homes	1 (Not at all Useful)	75	3.3%
	2	138	6.0%
	3 (Somewhat Useful)	567	24.7%
	4	502	21.9%
	5 (Very Useful)	835	36.4%
	Did not read that section	176	7.7%
	Total	2293	100.0%
Clarity of Report - Annual usage compared to similar homes	1 (Very Confusing)	23	1.0%
	2	28	1.2%
	3 (Somewhat Confusing)	152	6.6%
	4	728	31.7%
	5 (Very Clear)	1186	51.7%
	Did not read that section	176	7.7%
	Total	2293	100.0%

Just over 40 percent of customers found the energy efficiency starter kit tips to be very useful (40.5%), while almost two thirds of customers (61.9%) found the energy efficiency starter kit tips to be very clear.

Table 8. Energy Efficiency Starter Kit Tips.

Action		OH Kits (n)	OH Kits (%)
Usefulness of Report - Energy efficiency starter kit tips	1 (Not at all Useful)	51	2.2%
	2	113	4.9%
	3 (Somewhat Useful)	567	24.7%
	4	570	24.9%

Clarity of Report - Energy efficiency starter kit tips	5 (Very Useful)	928	40.5%
	Did not read that section	64	2.8%
	Total	2293	100.0%
	1 (Very Confusing)	6	.3%
	2	31	1.4%
	3 (Somewhat Confusing)	90	3.9%
	4	682	29.7%
	5 (Very Clear)	1420	61.9%
	Did not read that section	64	2.8%
	Total	2293	100.0%

Over one third of customers found the energy saving tips for your home to be very useful (39.7%), while nearly two thirds of customers (62.5%) found the energy saving tips to be very clear.

Table 9. Energy Savings Tips for Your Home.

Action		OH Kits (n)	OH Kits (%)
Usefulness of Report - Energy savings tips for your home	1 (Not at all Useful)	51	2.2%
	2	112	4.9%
	3 (Somewhat Useful)	554	24.2%
	4	604	26.3%
	5 (Very Useful)	911	39.7%
	Did not read that section	61	2.7%
	Total	2293	100.0%
Clarity of Report - Energy savings tips for your home	1 (Very Confusing)	6	.3%
	2	28	1.2%
	3 (Somewhat Confusing)	80	3.5%
	4	684	29.8%
	5 (Very Clear)	1434	62.5%
	Did not read that section	61	2.7%
	Total	2293	100.0%

Overall, customers were very satisfied with the report. Over two-thirds of customers (82.7%) were satisfied or better with the information they received in their personalized energy report.

Table 10. Overall Satisfaction with PER.

Action		OH Kits (n)	OH Kits (%)
Overall, how satisfied were you with the information you received in your Personalized Energy Report?	1 (Very Dissatisfied)	47	2.0%
	2	55	2.4%
	3 (Neither Satisfied nor Dissatisfied)	295	12.9%
	4	876	38.2%
	5 (Very Satisfied)	1020	44.5%
	Total	2293	100.0%

OLS Regression

Based on the survey results, an OLS regression was performed to determine the relative importance and usefulness or understandability of each section of the PER described above. Overall, the energy efficiency starter kit tips, as well as the energy savings tips for homes are the most useful, and these are two key drivers of satisfaction. In addition, the energy efficiency starter kit tips and the month to month bill amount trends bar chart are two key drivers of explaining and contributing to satisfaction.

Table 11. Usefulness and Importance of PER Sections.

Section	Useful Mean¹	Useful Beta²	Understand. Mean³	Understand. Beta⁴
Month to month usage and bill amt	3.89	0.124	4.46	0.067
Month to month bill amt trends bar graph	3.96	0.002	4.50	0.084
Household usage pie chart	3.79	0.067	4.45	0.043
Annual usage compared to similar homes	3.89	0.119	4.43	0.051
Energy efficiency starter kit tips	3.99	0.155	4.56	0.155
Energy savings tips for your home	3.99	0.209	4.57	0.058

¹ Useful Mean describes the average response to the question “How useful is this measure?”

² Useful Beta describes how important the usefulness of this measure is to overall satisfaction.

³ Understanding Mean describes the average response to the question “How clear or understandable is this measure?”

⁴ Understanding Beta describes how important the clarity or understandability of this measure is to overall satisfaction.

Customer Interest in Other Duke Energy Services

Customers were asked whether they had signed up for any of the additional products or services listed below. One or more products or services may have been described in a customer's PER. At least 90% of customers stated they did not sign up for any of the programs listed below since receiving their PER, and over 80% of customers state that they have not made any changes in the products or services they participate in since receiving their PER, suggesting that the PER had only a small influence in motivating customers to sign up for these programs. The most frequent program that customers did sign up for since receiving their report was PowerManager.

Have you signed up for any products or services since receiving the report?

Product or Service		OH Kits (n)	OH Kits (%)
Budget Billing	No	2155	94.0%
	Yes	138	6.0%
	Total	2293	100.0%
e-Bill	No	2152	93.9%
	Yes	141	6.1%
	Total	2293	100.0%
SmartSaver	No	2272	99.1%
	Yes	21	.9%
	Total	2293	100.0%
Power Manager	No	2070	90.3%
	Yes	223	9.7%
	Total	2293	100.0%
No have not made any changes	No	447	19.5%
	Yes	1846	80.5%
	Total	2293	100.0%

In the PER, customers were encouraged to visit the Duke Energy web site to learn about additional energy saving tips and programs. Overall, 76.3% of customers stated that they had not visited the Duke Energy website, but 35.7% stated that they were planning on visiting the website sometime in the future. If all customers planning on visiting the website in the future do, then about 57% of customers receiving the OH PER will have visited the Duke Energy website.

Action		OH Kit (n)	OH Kit (%)
Have you visited the Duke Energy Web Site that is referenced in your Personalized Energy Report to identify additional ways to save energy in your home?	Yes	501	21.8%
	No	931	40.6%
	No, but plan to do this	818	35.7%
	Don't know	43	1.9%
	Total	2293	100.0%

Customer Appliance Saturation

Customers were asked to select the appliances they have from a list, and to list the number of each appliance they have. A summary of the items that more customers have is presented below in Table

Table 12. Most Frequently Owned Items (≥ 75%).

Appliance	Number that own appliance (Total=2293)	% that own appliance
Traditional Tube Television	1850	80.7%
Desktop Computer	2042	89.1%
DVD Player	1963	85.6%
Ceiling Fan	2002	87.3%
Dishwasher	2052	89.5%
Frost Free Refrigerator	2154	93.9%
Cell Phone Charger	2099	91.5%

Plasma Television

Plasma Television		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	2066	90.1%
	Yes	227	9.9%
	Total	2293	100.0%
How Many? (If more than 1)	0	8	9.6%
	1	55	66.3%
	2	16	19.3%
	3	4	4.8%
	Total	83	100.0%

LCD Television

LCD Television		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	1510	65.9%
	Yes	783	34.1%
	Total	2293	100.0%
How Many? (If more than 1)	0	9	2.1%
	1	206	48.6%
	2	132	31.1%
	3	60	14.2%
	4	11	2.6%
	5	4	.9%
	6	1	.2%
	8	1	.2%
	Total	424	100.0%

Projection Television

Projection Television		OH Kits	OH Kits (%)
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PER Evaluation

		(n)	
Do you have this appliance?	No	1853	80.8%
	Yes	440	19.2%
	Total	2293	100.0%
How Many? (If more than 1)	0	6	2.5%
	1	191	80.9%
	2	31	13.1%
	3	7	3.0%
	4	1	.4%
	Total	236	100.0%

Traditional Tube Television

Traditional Tube Television		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	443	19.3%
	Yes	1850	80.7%
	Total	2293	100.0%
How Many? (If more than 1)	1	146	10.3%
	2	507	35.8%
	3	446	31.5%
	4	220	15.5%
	5	60	4.2%
	6	26	1.8%
	7	5	.4%
	8	5	.4%
	9	2	.1%
	Total	1417	100.0%

Laptop Computer

Laptop Computer		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	1028	44.8%
	Yes	1265	55.2%
	Total	2293	100.0%
How Many? (If more than 1)	0	4	.5%
	1	416	56.2%
	2	227	30.7%
	3	73	9.9%
	4	17	2.3%
	5	2	.3%
	8	1	.1%
	Total	740	100.0%

Desktop Computer

Desktop Computer		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	251	10.9%
	Yes	2042	89.1%
	Total	2293	100.0%
How Many? (If more than 1)	1	677	58.8%
	2	346	30.1%
	3	89	7.7%

PER Evaluation

	4	24	2.1%
	5	9	.8%
	6	2	.2%
	7	2	.2%
	10	2	.2%
	Total	1151	100.0%

DVD Player

DVD Player		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	330	14.4%
	Yes	1963	85.6%
	Total	2293	100.0%
How Many? (If more than 1)	1	408	34.0%
	2	477	39.7%
	3	239	19.9%
	4	59	4.9%
	5	12	1.0%
	6	4	.3%
	8	2	.2%
	Total	1201	100.0%

DVR/TiVO/Cable/Dish

DVR/TiVO/Cable/Dish		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	1183	51.6%
	Yes	1110	48.4%
	Total	2293	100.0%
How Many? (If more than 1)	0	2	.3%
	1	413	69.2%
	2	147	24.6%
	3	22	3.7%
	4	10	1.7%
	5	1	.2%
	6	2	.3%
	Total	597	100.0%

Fireplace

Fireplace		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	683	29.8%
	Yes	1610	70.2%
	Total	2293	100.0%
How Many? (If more than 1)	0	3	.4%
	1	626	77.7%
	2	145	18.0%
	3	20	2.5%
	4	4	.5%
	5	4	.5%
	6	2	.2%
	10	2	.2%
	Total	806	100.0%

PER Evaluation

Wood Stove

Wood Stove		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	2158	94.1%
	Yes	135	5.9%
	Total	2293	100.0%
How Many? (If more than 1)	0	5	8.6%
	1	50	86.2%
	2	3	5.2%
	Total	58	100.0%

Portable Space Heater

Portable Space Heater		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	1418	61.8%
	Yes	875	38.2%
	Total	2293	100.0%
How Many? (If more than 1)	0	4	.8%
	1	252	49.4%
	2	169	33.1%
	3	63	12.4%
	4	15	2.9%
	5	6	1.2%
	6	1	.2%
	Total	510	100.0%

Halogen Pole Lamp

Halogen Pole Lamp		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	1915	83.5%
	Yes	378	16.5%
	Total	2293	100.0%
How Many? (If more than 1)	0	5	2.3%
	1	117	54.7%
	2	65	30.4%
	3	19	8.9%
	4	6	2.8%
	5	1	.5%
	10	1	.5%
	Total	214	100.0%

Ceiling Fan

Ceiling Fan		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	291	12.7%
	Yes	2002	87.3%
	Total	2293	100.0%
How Many? (If more than 1)	0	1	.1%
	1	146	9.7%

PER Evaluation

	2	287	19.1%
	3	311	20.7%
	4	315	20.9%
	5	280	18.6%
	6	103	6.8%
	7	33	2.2%
	8	17	1.1%
	9	7	.5%
	10	6	.4%
	Total	1506	100.0%

Dishwasher

Dishwasher		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	241	10.5%
	Yes	2052	89.5%
	Total	2293	100.0%
How Many? (If more than 1)	1	891	96.8%
	2	26	2.8%
	3	1	.1%
	5	1	.1%
	6	1	.1%
	Total	920	100.0%

Frost Free Refrigerator

Frost Free Refrigerator		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	139	6.1%
	Yes	2154	93.9%
	Total	2293	100.0%
How Many? (If more than 1)	1	687	59.1%
	2	457	39.3%
	3	16	1.4%
	7	1	.1%
	10	1	.1%
	Total	1162	100.0%

Stand Alone Freezer

Stand Alone Freezer		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	1349	58.8%
	Yes	944	41.2%
	Total	2293	100.0%
How Many? (If more than 1)	0	3	.7%
	1	418	94.6%
	2	19	4.3%
	3	1	.2%
	5	1	.2%
	Total	442	100.0%

PER Evaluation

Refrigerator (no freezer)

Refrigerator (no freezer)		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	2152	93.9%
	Yes	141	6.1%
	Total	2293	100.0%
How Many? (If more than 1)	0	5	6.2%
	1	59	72.8%
	2	17	21.0%
	Total	81	100.0%

Heated waterbed

Heated waterbed		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	2232	97.3%
	Yes	61	2.7%
	Total	2293	100.0%
How Many? (If more than 1)	0	6	15.0%
	1	28	70.0%
	2	5	12.5%
	3	1	2.5%
	Total	40	100.0%

Humidifier

Humidifier		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	1330	58.0%
	Yes	963	42.0%
	Total	2293	100.0%
How Many? (If more than 1)	0	4	.9%
	1	387	86.2%
	2	50	11.1%
	3	8	1.8%
	Total	449	100.0%

Dehumidifier

Dehumidifier		OH Kits (n)	OH Kits (%)
Do you have this appliance?	No	1442	62.9%
	Yes	851	37.1%
	Total	2293	100.0%
How Many? (If more than 1)	0	5	1.3%
	1	327	87.4%
	2	40	10.7%
	3	2	.5%
	Total	374	100.0%

Other Appliances

Do you have any other appliances in your home?		OH Kits (n)	OH Kits (%)
Air Purifier	No	1955	85.3%
	Yes	338	14.7%
	Total	2293	100.0%
Sump Pump	No	1369	59.7%
	Yes	924	40.3%
	Total	2293	100.0%
Bottled Water Dispenser	No	2254	98.3%
	Yes	39	1.7%
	Total	2293	100.0%
Copier	No	1408	61.4%
	Yes	885	38.6%
	Total	2293	100.0%
Fax Machine	No	1596	69.6%
	Yes	697	30.4%
	Total	2293	100.0%
Cell Phone Charger	No	194	8.5%
	Yes	2099	91.5%
	Total	2293	100.0%
Heated Towel Bar	No	2267	98.9%
	Yes	26	1.1%
	Total	2293	100.0%
Aquarium	No	2061	89.9%
	Yes	232	10.1%
	Total	2293	100.0%
Disposal	No	617	26.9%
	Yes	1676	73.1%
	Total	2293	100.0%
Inside garden with grow lamps	No	2234	97.4%
	Yes	59	2.6%
	Total	2293	100.0%
Sauna	No	2279	99.4%
	Yes	14	.6%
	Total	2293	100.0%
Video Game Console (Playstation, Xbox, etc.)	No	1550	67.6%
	Yes	743	32.4%
	Total	2293	100.0%
Pool Pump	No	2092	91.2%
	Yes	201	8.8%
	Total	2293	100.0%
Heated Pool	No	2249	98.1%
	Yes	44	1.9%
	Total	2293	100.0%
Hot Tub/Spa	No	2045	89.2%
	Yes	248	10.8%
	Total	2293	100.0%
Stand Alone Air Compressor	No	1822	79.5%
	Yes	471	20.5%
	Total	2293	100.0%
Attic Fan	No	1843	80.4%
	Yes	450	19.6%
	Total	2293	100.0%

Customer Recommendations for the PER Program

Customers were asked what additional information they would like to have seen on their Personalized Energy Report. Responses were wide and varied, and included not only suggestions for the report itself, but also suggestions for the entire PER program. Below is a summary of customer comments and suggestions:

- Customers are interested in knowing where to purchase additional kit items, energy efficient appliances, and want to know who can do energy efficient renovations or additions to their home.
 - Recommendation: Partner with installers/vendors/retailers in home improvement products for kit items. Provide a phone number where customers can call to get listings of dealers or contractors. Consider the creation of an Approved Retailer List.
- Consider providing coupons (that link back to the customer) in the report on showerheads, aerators, CFLs and other products. Offer additional incentives for purchase of suggested appliances in the PER.
- Consider providing more environmental and alternative energy related tips; both big-ticket tips (such as solar panels) and small tips (such as how to calculate your home's carbon footprint).
- Continue to use PER to advertise other energy efficiency products and services offered by Duke Energy (specifically Home Energy House Call).
- Consider providing customers with a follow up report (or reports), so customers can see how much energy they have saved from implementing PER tips in three months, six months, a year. Include weather related data in original and follow up report, with explanation of how to use or interpret.
- Customers are interested in more specific tips, related to specific use of appliances, CFLs, etc. Offer an explanation of how much energy everyday appliances in households use, for example televisions, computers, refrigerators, microwaves and what energy might be saved by adapting more efficient equipment or behaviors.
- Consider additional cost effective marketing tools to better promote the program to eligible customers, such as newspaper articles and home and garden shows.

Usage of Energy Efficiency Kit

Customers were asked about the installation and use of the various items received in the Energy Efficiency Kit.

Energy Efficient Showerhead

Customers were asked if they had installed the energy efficient showerhead included in the kit. Over half the customers (53.1%) stated that they installed the showerhead that came with the kit. 18.6% of customers stated that they have not yet installed the showerhead, but plan to install at a later time. The showerhead appears to be a useful energy efficiency kit item; not only did almost three-quarters of participants plan to install the showerhead, but nearly 68% of customers were not planning on installing an energy efficiency showerhead before receiving the energy efficiency kit. Customers also stated that the length of their showers in general was “about the same” (86.9%). Additionally, 8.1% of customers estimated they take shorter showers than previously after installing the energy efficient showerhead.

Action		OH (n)	OH (%)
Installed Energy Efficient Showerhead	Yes	1218	53.1%
	No	606	26.4%
	No, but plan to do this	427	18.6%
	Don't know	42	1.8%
	Total	2293	100.0%
Number of showers taken	0	6	.5%
	1-7	478	39.5%
	8-14	532	44.0%
	15-21	133	11.0%
	22-28	36	3.0%
	29-35	18	1.5%
	36-42	6	.5%
	43-49	0	.0%
	50-56	1	.1%
	Total	1210	100.0%
Length of showers	Longer	61	5.0%
	Shorter	99	8.1%
	About the Same	1058	86.9%
	Total	1218	100.0%

Action		OH (n)	OH (%)
Were you already planning on installing an energy-efficient showerhead before you received your Energy Efficiency Kit?	Yes	393	32.3%
	No	825	67.7%
	Total	1218	100.0%

Kitchen Faucet Aerator

About half of customers (50.3%) stated that they installed the kitchen faucet aerator that came in the Kit. Interestingly, almost two thirds of these customers already had a faucet aerator that was removed in order to install this new aerator, and many of these customers

(77.1%) stated that the old aerator was working well when they removed it. Since many customers already had a kitchen faucet aerator before receiving the Kit, and the aerator worked well, this may have been a factor for some of the 86.1% of customers that stated they were not planning on installing a new aerator before they received the Kit.

Action		OH (n)	OH (%)
Installed Kitchen Faucet Aerator	Yes	1153	50.3%
	No	795	34.7%
	No, but plan to do this	286	12.5%
	Don't know	59	2.6%
	Total	2293	100.0%
Was there an aerator on the faucet that you had to remove?	Yes	733	63.6%
	No	420	36.4%
	Total	1153	100.0%
Was the old aerator working well when you removed it?	Yes	565	77.1%
	No	168	22.9%
	Total	733	100.0%

Action		OH (n)	OH (%)
Were you already planning on installing a new kitchen faucet aerator before you received your Energy Efficiency Kit?	Yes	160	13.9%
	No	993	86.1%
	Total	1153	100.0%

Bathroom Faucet Aerator

Similarly to the kitchen faucet aerator, almost half of customers stated that they installed the bathroom faucet aerator (47.8%), and almost two thirds of customers (62.8%) stated that they had to remove an aerator from the faucet to install a new one. Again, almost all customers who had to remove an aerator stated the old aerator was working well when it was removed (77.9%). Since many customers already had a bathroom faucet aerator that was working well installed on their faucet, 85.7% of customers stated that they were not planning on installing a new bathroom faucet aerator before receiving the energy efficiency kit.

Action		OH (n)	OH (%)
Installation - Bathroom Faucet Aerator	Yes	1096	47.8%
	No	756	33.0%
	No, but plan to do this	375	16.4%
	Don't know	66	2.9%
	Total	2293	100.0%
Was there an aerator on the faucet that you had to remove?	Yes	688	62.8%
	No	408	37.2%
	Total	1096	100.0%
Was the old aerator working well when you removed it?	Yes	536	77.9%
	No	152	22.1%
	Total	688	100.0%

Actions		OH (n)	OH (%)
Were you already planning on installing a new bathroom faucet aerator before you received your Energy Efficiency Kit?	Yes	157	14.3%
	No	939	85.7%
	Total	1096	100.0%

15-Watt and 20-Watt mini compact fluorescent light bulbs

Almost all customers installed the 15 Watt mini compact fluorescent light that was included in the Kit (79.2%). The majority of customers replaced a 45-70 Watt bulb (70.1%). While a similar number of customers used the bulb anywhere from 2 to 12 hours a day, more customers used the bulb 4 hours (19.9%). Nearly all customers still have the 15 Watt CFL bulb in place (91.7%). Many customers had been planning on purchasing a CFL bulb before receiving the Kit, which may contribute to the high installation and retention rates of the bulb.

Similar results are shown below for the 20-Watt mini compact fluorescent bulb.

15-Watt mini compact fluorescent light bulb

Action		OH (n)	OH (%)
Installed 15 Watt mini compact fluorescent light	Yes	1816	79.2%
	No	266	11.6%
	No, but plan to do this	166	7.2%
	Don't know	45	2.0%
	Total	2293	100.0%
How many watts was the old bulb you took out?	<= 44	99	5.5%
	45 - 70	1273	70.1%
	71 - 99	290	16.0%
	>= 100	154	8.5%
	Total	1816	100.0%
On average, how many hours per day do you use this bulb?	0	6	.3%
	1	116	6.4%
	2	235	12.9%
	3	259	14.3%
	4	361	19.9%
	5	269	14.8%
	6	222	12.2%
	7-12	295	16.2%
	13-24	53	2.9%
	Total	1816	100.0%
Is the CFL still in place or have you removed it?	Still in place	1666	91.7%
	Removed it	150	8.3%
	Total	1816	100.0%

Action		OH (n)	OH (%)
Were you already planning on purchasing a new CFL before you received your Energy Efficiency Kit?	Yes	1095	60.3%
	No	721	39.7%
	Total	1816	100.0%

Actions		OH (n)	OH (%)
How many were you planning on purchasing?	0	9	.8%
	1	27	2.5%
	2	117	10.7%
	3	112	10.2%
	4	144	13.2%
	5	102	9.3%
	6	194	17.7%
	7-11	195	17.8%
	12+	195	17.8%
	Total	1095	100.0%

20-Watt mini compact fluorescent light bulb

Action		OH Kits (n)	OH Kits (%)
Installed 20 Watt mini compact fluorescent light	Yes	1852	80.8%
	No	224	9.8%
	No, but plan to do this	175	7.6%
	Don't know	42	1.8%
	Total	2293	100.0%
How many watts was the old bulb you took out?	<= 44	57	3.1%
	45 - 70	1004	54.2%
	71 - 99	473	25.5%
	>= 100	318	17.2%
	Total	1852	100.0%
On average, how many hours per day do you use this bulb?	0	6	.3%
	1	138	7.5%
	2	270	14.6%
	3	250	13.5%
	4	340	18.4%
	5	270	14.6%
	6	248	13.4%
	7-12	285	15.4%
	13-24	45	2.4%
	Total	1852	100.0%
Is the CFL still in place or have you removed it?	Still in place	1691	91.3%
	Removed it	161	8.7%
	Total	1852	100.0%

Actions		OH (n)	OH (%)
Were you already planning on purchasing a new CFL before you received your Energy Efficiency Kit?	Yes	1074	58.0%
	No	778	42.0%
	Total	1852	100.0%

Actions		OH (n)	OH (%)
How many were you planning on purchasing?	0	11	1.0%
	1	49	4.6%
	2	189	17.6%
	3	124	11.5%
	4	188	17.5%
	5	125	11.6%

	6	160	14.9%
	7-11	128	11.9%
	12+	100	9.3%
	Total	1074	100.0%

Weather Stripping

Over half of customers stated that they either installed the weather stripping or plan to do so, with 43.9% stating they had installed. Of those who installed, the majority of customers used 11-17 feet.

Action		OH (n)	OH (%)
Installed Weather stripping	Yes	1006	43.9%
	No	807	35.2%
	No, but plan to do this	412	18.0%
	Don't know	68	3.0%
	Total	2293	100.0%
How many of the 17 feet did you use?	0	171	17.0%
	1-5	90	8.9%
	6-10	173	17.2%
	11-17	572	56.9%
	Total	1006	100.0%

Action		OH (n)	OH (%)
Were you already planning to install weather-stripping before you received your Energy Efficiency Kit?	Yes	430	42.7%
	No	576	57.3%
	Total	1006	100.0%

Window Shrink Fit

Most customers did not install the window shrink fit (72.8%), but nearly half of customers stated that they were planning on installing window shrink fit before receiving the kit.

Action		OH (n)	OH (%)
Installed window shrink fit	Yes	273	11.9%
	No	1670	72.8%
	No, but plan to do this	218	9.5%
	Don't know	132	5.8%
	Total	2293	100.0%
Would you consider the window on which you used the kit to be a small window, an average sized window or a large window?	Small window	47	17.2%
	Average sized window	170	62.3%
	Large window	56	20.5%
	Total	273	100.0%
Was the window a single pane window, a single pane window with a storm window, or a double pane window?	Single pane window	93	34.1%
	Single pane window with a storm window	54	19.8%
	Double pane window	126	46.2%
	Total	273	100.0%

Action		OH (n)	OH (%)
Were you already going to install a window shrink fit kit before you received your Energy Efficiency Kit?	Yes	131	48.0%
	No	142	52.0%
	Total	273	100.0%

Gaskets on Outlet Boxes/Wall Switches

Half of customers installed the outlet gaskets (50.6%). Two thirds of customers were not planning on installing gaskets before receiving their kit (67.9%).

Action		OH (n)	OH (%)
Gaskets on outlet boxes or wall switches	Yes	1160	50.6%
	No	647	28.2%
	No, but plan to do this	413	18.0%
	Don't know	73	3.2%
	Total	2293	100.0%
How many gaskets have you installed?	0	73	6.3%
	1-2	734	63.3%
	3-5	353	30.4%
	6-8	0	.0%
	Total	1160	100.0%

Action		OH (n)	OH (%)
Were you already going to install gaskets before you received your Energy Efficiency Kit?	Yes	372	32.1%
	No	788	67.9%
	Total	1160	100.0%

Other PER Recommendations

Customers were asked if they had taken actions or installed other measures that their PER recommended to them. These suggestions included simple changes (such as managing drapes), low cost changes (such as installing storm window shrink fit), and higher cost changes (such as adding insulation or investing in a new appliance).

Natural Gas or Propane Furnace

Most customers who installed a new furnace (3.9%) installed it so that the exhaust exits out a plastic pipe coming through the side of the home (79.8%).

Action		OH (n)	OH (%)
Installed new natural gas or propane furnace	Yes	89	3.9%
	No	2103	91.7%
	No, but plan to do this	85	3.7%
	Don't know	16	.7%
	Total	2293	100.0%

Is the furnace a high efficiency unit in which...	The exhausts exit out a plastic pipe coming through the side of the home	71	79.8%
	The exhausts go up a chimney, similar to a standard efficiency unit	13	14.6%
	Don't know	5	5.6%
	Total	89	100.0%

Heat Pump

Most customers who installed a new heat pump (2.8%) installed a high efficiency unit (76.9%).

Action		OH (n)	OH (%)
Installed new heat pump	Yes	65	2.8%
	No	2138	93.2%
	No, but plan to do this	74	3.2%
	Don't know	16	.7%
	Total	2293	100.0%
Is the heat pump a high efficiency unit (>13 *SEER) or a standard efficiency unit(<13 *SEER)?	High Efficiency Unit	50	76.9%
	Standard Efficiency Unit	6	9.2%
	Don't know	9	13.8%
	Total	65	100.0%
What is the *SEER number for you unit?	< = 11	0	.0%
	12	2	3.1%
	13	13	20.0%
	>= 14	29	44.6%
	Don't Know	21	32.3%
	Total	65	100.0%

Central Air Conditioning

Must customers who installed a new central air conditioning unit (4.6%) installed a high efficiency unit (85.7%). The majority of customers stated their unit was either >14 SEER, or they did not know the SEER number for their unit.

Action		OH (n)	OH (%)
Installed new central air conditioning	Yes	105	4.6%
	No	2058	89.8%
	No, but plan to do this	117	5.1%
	Don't know	13	.6%
	Total	2293	100.0%
Is the air conditioner a high efficiency unit (>13 SEER) or a standard efficiency unit (< 13 SEER)?	High Efficiency Unit	90	85.7%
	Standard Efficiency Unit	8	7.6%
	Don't know	7	6.7%

	Total	105	100.0%
What is the *SEER number for you unit?	< = 11	2	1.9%
	12	8	7.6%
	13	23	21.9%
	>= 14	37	35.2%
	Don't Know	35	33.3%
	Total	105	100.0%

Window Covering Shrink Fit Storm Windows

On average, those who installed window covering shrink fit storm windows (5.6%) covered 1-3, double-pane, average sized units.

Action		OH (n)	OH (%)
Installed window covering shrink-fit storm windows	Yes	128	5.6%
	No	2061	89.9%
	No, but plan to do this	80	3.5%
	Don't know	24	1.0%
	Total	2293	100.0%
How many windows have you covered with these kits?	0	6	4.7%
	1-3	75	58.6%
	4-7	33	25.8%
	8-10	8	6.3%
	11+	6	4.7%
	Total	128	100.0%
On average, would you consider the windows on which you installed the kit to be small windows, average sized windows or large windows?	Small window	12	9.4%
	Average sized window	93	72.7%
	Large window	23	18.0%
	Total	128	100.0%
What type of window is it?	Single pane	33	25.8%
	Single with storm	32	25.0%
	Double pane	63	49.2%
	Total	128	100.0%

Wall Insulation

Those who insulated the side walls of their home (3.0%) insulated at least 4 walls on average. Most customers added fiberglass insulation of 4-6 inch thickness.

Action		OH (n)	OH (%)
Insulated side walls of home	Yes	68	3.0%
	No	2106	91.8%
	No, but plan to do this	99	4.3%
	Don't know	20	.9%
	Total	2293	100.0%
How many walls did you have insulated?	0	4	5.9%
	1	9	13.2%
	2	9	13.2%
	3	10	14.7%
	4	19	27.9%
	5+	17	25.0%

	Total	68	100.0%
What type of insulation did you add?	Fiberglass	44	64.7%
	Cellulose	7	10.3%
	Foam	13	19.1%
	Other	4	5.9%
	Total	68	100.0%
How many inches of thickness did you add?	1-3	29	42.6%
	4-6	31	45.6%
	7-12	2	2.9%
	>=13	6	8.8%
	Total	68	100.0%

Attic Insulation

Customers who installed attic insulation (7.5%) tended to install their entire attic, adding 5-6 inches of depth. Most customers used fiberglass insulation. For most customers, the insulation was 1-3 inches thick before adding more.

Action		OH (n)	OH (%)
Insulated the attic	Yes	171	7.5%
	No	1857	81.0%
	No, but plan to do this	245	10.7%
	Don't know	20	.9%
	Total	2293	100.0%
Did you insulate part of the attic or the entire attic?	Insulated part of the attic	67	39.2%
	Insulated the entire attic	104	60.8%
	Total	171	100.0%
How many inches of insulation depth did you add to the attic?	0	3	1.8%
	1-2	12	7.0%
	3-4	33	19.3%
	5-6	45	26.3%
	7-8	21	12.3%
	9-10	18	10.5%
	11+	39	22.8%
	Total	171	100.0%
What type of insulation did you add?	Fiberglass	109	63.7%
	Cellulose	51	29.8%
	Foam	6	3.5%
	Other	5	2.9%
	Total	171	100.0%
How thick was the insulation before you added more?	1-3	72	42.1%
	4-6	68	39.8%
	7-12	25	14.6%
	>=13	6	3.5%
	Total	171	100.0%

Duct Insulation

Most customers did not insulate heating or air conditioning ducts. Those that did (4.8%) most frequently installed insulation to heated areas, but a similar number installed insulation in unheated areas.

Action		OH (n)	OH (%)
Insulated heating or air conditioning ducts	Yes	109	4.8%
	No	2005	87.4%
	No, but plan to do this	147	6.4%
	Don't know	32	1.4%
	Total	2293	100.0%
Are these ducts located in a heated or unheated part of the home?	Unheated area	53	48.6%
	Heated area	56	51.4%
	Don't know	0	.0%
	Total	109	100.0%

Repaired Ducts

13.6% of customers repaired or fixed their heating or cooling ducts.

Actions		OH (n)	OH (%)
Repaired or fixed holes in heating or cooling ducts	Yes	313	13.7%
	No	1837	80.1%
	No, but plan to do this	105	4.6%
	Don't know	38	1.7%
	Total	2293	100.0%

Replace Furnace Filters

Over three quarters of customers replaced the furnace filters in their home (79.5%). Some customers have increased the frequency with which they change their furnace filter, with 77.7% of customers changing their filter more than twice a year after receiving the report, but 69.8% of customers changing their filter more than twice a year before receiving the report.

Action		OH (n)	OH (%)
Replaced furnace filters	Yes	1824	79.5%
	No	401	17.5%
	No, but plan to do this	65	2.8%
	Don't know	3	.1%
	Total	2293	100.0%
How often do you now change the filter?	Less than once a year	17	.9%
	Once a year	102	5.6%
	Twice a year	278	15.2%
	More than twice a year	1417	77.7%
	Don't know	10	.5%
	Total	1824	100.0%
How often did you change your filter prior to reading your report?	Less than once a year	61	3.3%
	Once a year	174	9.5%
	Twice a year	297	16.3%
	More than twice a year	1274	69.8%
	Don't know	18	1.0%
	Total	1824	100.0%

New Refrigerator

Those customers who installed a new refrigerator (5.5%), overall purchased an Energy Star appliance. Only one quarter (25.4%) of customers are keeping their old refrigerator plugged in as a backup.

Action		OH (n)	OH (%)
Installed new refrigerator	Yes	126	5.5%
	No	2063	90.0%
	No, but plan to do this	91	4.0%
	Don't know	13	.6%
	Total	2293	100.0%
Is the refrigerator Energy Star compliant?	Yes	115	91.3%
	No	4	3.2%
	Don't know	7	5.6%
	Total	126	100.0%
Are you keeping your old refrigerator plugged in as a backup?	Yes	32	25.4%
	No	94	74.6%
	Don't know	0	.0%
	Total	126	100.0%

Manage Heat in Unused Rooms

Nearly half of customers stated they manage the heat in their home, and nearly half state they do not manage the heat in their homes. Most of those who do manage their heat turn off heat in 2 rooms in the winter (28.9%).

Action		OH (n)	OH (%)
Have you turned off heat in unused rooms since receiving your report?	Yes	1118	48.8%
	No	1114	48.6%
	No, but plan to	43	1.9%
	Don't know	18	.8%
	Total	2293	100.0%
How many rooms do you not heat in the winter?	0	34	3.0%
	1	287	25.7%
	2	323	28.9%
	3	158	14.1%
	4	60	5.4%
	5	61	5.5%
	6+	195	17.4%
	Total	1118	100.0%

Clean Baseboards

Most customers have not cleaned the baseboards/registers of dust since receiving their report. Those that have on average cleaned 4 to 7 baseboards (33%).

Action		OH (n)	OH (%)
Have you cleaned baseboards/registers of dust since receiving your report?	Yes	288	12.6%
	No	1399	61.0%
	No, but plan to	37	1.6%
	Don't know	569	24.8%
	Total	2293	100.0%
How many electric baseboard heating registers have you cleaned?	0	62	21.5%
	1-3	82	28.5%
	4-7	95	33.0%
	8-12	45	15.6%
	13+	4	1.4%
	Total	288	100.0%

Manage Drapes

Over three quarters of customers stated that they have managed their drapes since receiving their report (78.4%). Most customers manage the drapes on 4 to 7 windows.

Action		OH (n)	OH (%)
Have you managed your drapes since receiving your report?	Yes	1798	78.4%
	No	451	19.7%
	No, but plan to	27	1.2%
	Don't know	17	.7%
	Total	2293	100.0%
How many windows do you manage the coverings to save energy?	0	155	8.6%
	1-3	407	22.6%
	4-7	760	42.3%
	8-12	341	19.0%
	13+	135	7.5%
	Total	1798	100.0%

Insulate Hot Water Heater

10.8% of customers stated that they have insulated their hot water heater. On average their tank holds between 41 and 60 gallons, and most customers' heat their water tank using gas.

Action		OH (n)	OH (%)
Have you insulated your hot water heater since receiving your report?	Yes	247	10.8%
	No	1698	74.1%
	No, but plan to	314	13.7%
	Don't know	34	1.5%
	Total	2293	100.0%
How many gallons of water does your tank hold?	0	4	1.6%
	<=20	10	4.0%
	<=40	89	36.0%
	<=60	95	38.5%
	<=80	37	15.0%
	<=100	8	3.2%
	>100	4	1.6%

	Total	247	100.0%
How is your water tank heated?	Electricity	99	40.1%
	Gas	148	59.9%
	Total	247	100.0%

Additional CFL Bulbs

Nearly three-quarters of customers have purchased additional CFL bulbs for use in their home since receiving their report/kit (74.8%). Most customers purchased 7-11 bulbs, replaced 45-70 Watt bulbs, and use the bulbs for 7 to 12 hours per day.

Action		OH (n)	OH (%)
Have you purchased and used additional compact fluorescent light bulbs in your home?	Yes	1715	74.8%
	No	256	11.2%
	No, but plan to do this	317	13.8%
	Don't know	5	.2%
	Total	2293	100.0%
How many CFLs have you purchased and installed since reading the report?	0	91	5.3%
	1	42	2.4%
	2	206	12.0%
	3	168	9.8%
	4	267	15.6%
	5	94	5.5%
	6	257	15.0%
	7-11	299	17.4%
	12+	291	17.0%
	Total	1715	100.0%
On average, what wattage bulb did you remove from the fixture before you installed the CFL?	<= 44	51	3.0%
	45 - 70	1015	59.2%
	71 - 99	426	24.8%
	>= 100	223	13.0%
	Total	1715	100.0%
Considering all CFL locations and uses, on average, how many hours are these CFL bulbs on each day?	0	10	.6%
	1	51	3.0%
	2	117	6.8%
	3	175	10.2%
	4	300	17.5%
	5	235	13.7%
	6	276	16.1%
	7-12	436	25.4%
	13-24	115	6.7%
	Total	1715	100.0%

Wash Laundry in Cold Water

Those customers who state they have begun to wash their laundry in cold water (64.2%) state that they wash at least 7 loads of laundry per week on average.

Action		OH (n)	OH (%)
Have you begun to wash laundry in cold water since receiving your report?	Yes	1473	64.2%
	No	739	32.2%
	No, but plan to do this	36	1.6%
	Don't know	45	2.0%

	Total	2293	100.0%
How many loads of laundry do you wash per week?	0	0	.0%
	1	27	1.8%
	2	94	6.4%
	3	161	10.9%
	4	250	17.0%
	5	220	14.9%
	6	248	16.8%
	7+	473	32.1%
	Total	1473	100.0%

Manage Thermostat

Over three quarters of customers state that they have begun to lower their thermostat in winter (76.3%). Most customers lowered the temperature between 1 and 3 degrees at night (40.7%); a larger number of customers lowered the temperature between 1 and 3 degrees during the day (52.2%).

Action		OH (n)	OH (%)
Have you begun to lower your thermostat in winter since receiving your report?	Yes	1750	76.3%
	No	513	22.4%
	No, but plan to do this	17	.7%
	Don't know	13	.6%
	Total	2293	100.0%
How many degrees have you lowered the temperature at night?	0	86	4.9%
	1-3	713	40.7%
	4-6	656	37.5%
	7-10	243	13.9%
	>=11	52	3.0%
	Total	1750	100.0%
How many degrees have you lowered the temperature during the day?	0	186	10.6%
	1-3	913	52.2%
	4-6	451	25.8%
	7-10	159	9.1%
	>=11	41	2.3%
	Total	1750	100.0%

Stop Using Fireplace

48.9% of customers stated that they have not stopped using their fireplace, and 58% of customers state that they have not closed off or sealed off their fireplace. Due to the wording of the question, this may be either due to choosing to continue use of the fireplace, or because the customer did not have a fireplace.

Action		OH (n)	OH (%)
Have you stopped using your fireplace since receiving your report?	Yes	966	42.1%
	No	1122	48.9%
	No, but plan to do this	20	.9%

PER Evaluation

	Don't know	185	8.1%
	Total	2293	100.0%
Have you closed-off or sealed-off your fireplace since receiving your report?	Yes	699	30.5%
	No	1330	58.0%
	No, but plan to do this	93	4.1%
	Don't know	171	7.5%
	Total	2293	100.0%

Demographic Information

Less than one percent of survey respondents (0.4%) reported moving since receiving their PER. Just over one quarter of customers (26.8%) live in a home between 1,500 and 1,999 square feet. Nearly 30 percent of customers (29.9%) have a household income over \$100,000.

		OH (n)	OH (%)
Have you moved since requesting your Personalized Energy Report from Duke Energy?	Yes	9	.4%
	No	2293	99.6%
	Total	2302	100.0%

Action		OH (n)	OH (%)
What is the approximate square footage (heated area) of your home?	Less than 500	2	.1%
	501 - 999	75	3.3%
	1,000 - 1,499	363	15.8%
	1,500 - 1,999	615	26.8%
	2,000 - 2,499	515	22.5%
	2,500 - 2,999	274	11.9%
	3,000 or more	316	13.8%
	Don't Know	133	5.8%
	Total	2293	100.0%

Action		OH (n)	OH (%)
Annual household income before taxes?	Up to \$15,000	31	1.5%
	\$15,000 up to \$30,000	120	5.9%
	\$30,000 up to \$50,000	361	17.7%
	\$50,000 up to \$75,000	487	23.9%
	\$75,000 up to \$100,000	432	21.2%
	Over \$100,000	610	29.9%
	Total	2041	100.0%

Ohio PER Billing Analysis

This analysis presents the results of the billing analysis of the Personalized Energy Report (PER) program for customers within Duke Energy Ohio. This analysis relies upon a statistical analysis of actual customer billed energy (both electricity and natural gas) consumption before and after participation in the PER program to estimate the impact of the program. Table 1 presents the results of this billing analysis.

Table 1: Ohio PER Average Annual Savings, Per Participant

Billing Analysis	
kWh	636
Therm	35

For this analysis, data are available both across households (i.e., cross-sectional) and over time (i.e., time-series). With this type of data, known as “panel” data, it becomes possible to control, simultaneously, for differences across households as well as differences across periods in time through the use of a “fixed-effects” panel model specification. The fixed-effect refers to the model specification aspect that differences across homes that do not vary over the estimation period (such as square footage, heating system, etc.) can be explained, in large part, by customer-specific intercept terms that capture the net change in consumption due to the program, controlling for other factors that do change with time (e.g., the weather).

Because the consumption data in the panel model includes months before and after the installation of measures through the program, the period of program participation (or the participation window) may be defined specifically for each customer. This feature of the panel model allows for the pre-installation months of consumption to effectively act as controls for post-participation months. In addition, this model specification, unlike annual pre/post-participation models such as annual change models, does not require a full year of post-participation data. Effectively, the participant becomes their own control group, thus eliminating the need for a non-participant group. We know the exact month of participation in the program for each participant, and are able to construct customer specific models that measure the change in usage consumption immediately before and after the date of program participation, controlling for weather and customer characteristics.

The fixed effects model can be viewed as a type of differencing model in which all characteristics of the home, which (1) are independent of time and (2) determine the level of energy consumption, are captured within the customer-specific constant terms. In other words, differences in customer characteristics that cause variation in the level of energy consumption, such as building size and structure, are captured by constant terms representing each unique household.

Algebraically, the fixed-effect panel data model is described as follows:

$$y_{it} = \alpha_i + \beta x_{it} + \varepsilon_{it},$$

where:

- y_{it} = energy consumption for home i during month t
- α_i = constant term for site i
- β = vector of coefficients
- x = vector of variables that represent factors causing changes in energy consumption for home i during month t (i.e., weather and participation)
- ε = error term for home i during month t .

With this specification, the only information necessary for estimation is those factors that vary month to month for each customer, and that will affect energy use, which effectively are weather conditions and program participation. Other non-measurable factors can be captured through the use of monthly indicator variables (e.g., to capture the effect of potentially seasonal energy loads).

The effect of the program, in the case the Personal Energy Report kit as well as recommended measures, is done by including a variable which is equal to one for all months after the customer received the kit and the report. The coefficient on this variable is the savings associated with the kit. In order to account for differences in billing days, the usage was normalized by days in the billing cycle. The estimated electric model is presented in Table 2.⁵

⁵ The model includes weather terms and monthly indicator terms as well as the terms presented in the variables presented in Table 1. These terms were not included in order make interpretation clearer.

Table 2: Estimated Electricity Model – dependent variable is daily kWh usage, January 2005 through April 2008.

Independent Variable	Coefficient	t-value
Indicator variable for months after participation in program	-1.74	-38.5
Sample Size	1,253,756 obs (22,074 homes)	
R-Squared	66%	

This estimated model shows that the PER program (both kits and recommended measures) results in an annual savings of 635 kWh. This estimate is precisely estimated, with the 90% confidence interval extending from savings of 592 kWh to 679 kWh per year.

The natural gas model is presented in Table 3 below.

Table 3: Estimated Natural Gas Model – dependent variable is daily Therm usage, January 2005 through April 2008.

Independent Variable	Coefficient	t-value
Indicator variable for months after participation in program	-0.096	-21.2
Sample Size	976,020 obs (22,074 homes)	
R-Squared	72%	

This estimated model shows that the PER program results in an annual savings of 35 Therms. This estimate is very precisely estimated, with a 90% confidence interval extending from a savings of 32 Therms to 38 Therms.

Free Ridership

This kWh and Therm estimates presented above are based on a model that contains on data on participants. There are no non-participants in the model. As such, the estimates are net self-selection (and false response) bias. However, these estimates do not control for the effect of free ridership. Therefore, these are gross savings estimates, and must be corrected for free ridership to get the net impacts of the program.

In order to estimate the free ridership associated with the PER program, a sample of the PER participants were surveyed to determine how influential was the Personalized Energy Report in their decision to install the recommended measures.⁶ The customer was given five possible answers:

- Only factor

⁶ The survey instrument is included in the Appendix to this report.

- Major factor
- One of many factors
- Was going to do it anyway
- Already did this before receiving my PER

For customers that stated that the PER was the only factor, they were assumed to be completely non-free riders. For those where the PER was a major factor, they were assigned a 25% free rider factor, where the PER was one of many factors, they were assigned a 50% factor, and those who answered that they were going to do it anyway, they were assigned a 100% free ridership factor.

Following that approach, the following free ridership rates by measure types were developed:

Table 4: Estimated Free Ridership by Major Measures.

Measure	Free Ridership Rate
Install CFLs	33%
Insulate Water Heater	54%
Insulate Attic	61%
Insulate Walls	54%
Clean Air Ducts	50%
New Central Air Conditioner	62%
New Furnace	63%
New Heat Pump	77%
New Refrigerator	68%

To convert these individual measure free ridership rates to an aggregate free ridership value, each measure was weighted by the number of respondents installing the measure. The result was a 49% overall free ridership rate for the program.

Appendix A: Ohio PER Customer Satisfaction Survey

The following is the text of the questions from the online Ohio PER customer satisfaction survey.

Thank you for participating in the Duke Energy Personalized Energy Report Program!

As you may recall, you were sent an Energy Efficiency Kit containing a showerhead, faucet aerators, compact fluorescent light bulbs and other items to help you start saving energy and money.

To determine how helpful the program is to our customers, we are asking participants like you to complete this survey telling us how you have used the kit. In addition, there are a few questions regarding whether or not you have implemented any of the recommendations provided in the Personalized Energy Report.

Please remember, we are only obtaining your feedback. By answering the questions in the survey, you are NOT signing up for anything.

Please click [here](#) to begin the survey. If you have any questions while completing this survey, please contact us via e-mail at Market.Research@duke-energy.com. Thank you in advance for your participation.

Best regards,
Duke Energy

Have you moved since requesting your Personalized Energy Report from Duke Energy?

Yes
No

Would you be interested in participating in future online market research studies from Duke Energy?

Yes
No

Appliances

Please indicate if you have any of the following appliances, and how many of each you have. (Check all that apply)

Yes, I have a

How Many? (If more than 1)

- Plasma Television
- LCD Television
- Projection Television
- Traditional Tube Television
- Laptop Computer
- Desktop Computer
- DVD player
- DVR (Digital Video Recorder)
- TIVO or Cable/Dish
- Fireplace
- Wood Stove
- Portable Space Heater
- Halogen Pole Lamp
- Ceiling Fan
- Dishwasher
- Frost Free Refrigerator
- Stand alone Freezer
- Refrigerator (no freezer)
- Heated Waterbed
- Humidifier
- Dehumidifier

Other Appliances

Do you have any other appliances in your home? Please check all that apply.

Yes, I have

- Air Purifier
- Sump Pump
- Bottled Water Dispenser w/ heating element
- Copier
- Fax Machine
- Cell Phone Charger
- Heated Towel Bar
- Aquarium
- Disposal
- Inside garden with Grow Lamps
- Sauna
- Video Game Console (Playstation, XBox, etc.)
- Pool Pump
- Heated Pool
- Hot Tub/Spa

- Stand Alone Air Compressor
- Attic Fan

Kit Material Use

The following questions apply to the items that were in the Energy Efficiency kit sent to you. We want to ask if you have used the items in the kit. If you have, we would like to ask a couple of questions about how you used the items.

Have you installed any of the following items from the kit?

Yes

No

No, but plan to do this

Don't know

- Energy efficient showerhead
- Kitchen faucet aerator
- Bathroom faucet aerator
- 15 Watt mini compact fluorescent lights
- 20 Watt mini compact fluorescent lights
- Weather stripping
- Window shrink fit
- Gaskets on outlet boxes or wall switches

Showerhead

Typically how many showers per week are taken using this showerhead?

Do you think your showers are longer, shorter, or about the same as they were with the old unit?

Longer

Shorter

About the Same

Were you already planning on installing an energy-efficient showerhead before you received your Energy Efficiency Kit?

Yes

No

Kitchen Faucet Aerator

Was there an aerator on the faucet that you had to remove?

Yes

No

Kitchen Faucet Aerator

Was the old aerator working well when you removed it?

Yes

No

Kitchen Faucet Aerator

Were you already planning on installing a new kitchen faucet aerator before you received your Energy Efficiency Kit?

Yes

No

Bathroom Faucet Aerator

Was there an aerator on the faucet that you had to remove?

Yes

No

Bathroom Faucet Aerator

Was the old aerator working well when you removed it?

Yes

No

Bathroom Faucet Aerator

Were you already planning on installing a new bathroom faucet aerator before you received your Energy Efficiency Kit?

Yes

No

15 Watt Mini Compact Fluorescent Light (CFL)

How many watts was the old bulb you took out?

<= 44

45 -70

71 -99

>= 100

On average, how many hours per day do you use this bulb?

Is the CFL still in place or have you removed it?

Still in place
Removed it

Were you already planning on purchasing a new CFL before you received your Energy Efficiency Kit?

Yes
No

15 Watt Mini Compact Fluorescent Light (CFL)
How many were you planning on purchasing?

20 Watt Mini Compact Fluorescent Light (CFL)
How many watts was the old bulb you took out?

<= 44
45 -70
71 -99
>= 100

On average, how many hours per day do you use this bulb?

Is the CFL still in place or have you removed it?

Still in place
Removed it

Were you already planning on purchasing a new CFL before you received your Energy Efficiency Kit?

Yes
No

20 Watt Mini Compact Fluorescent Light (CFL)
How many were you planning on purchasing?

Closed Cell Weather-stripping – 17 feet
How many of the 17 feet did you use?

Were you already going to install weather-stripping before you received your Energy Efficiency Kit?

Yes
No

Window Shrink Fit

Would you consider the window on which you used the kit to be a small window, an average sized window or a large window?

Small window

Average sized window

Large window

Was the window a single pane window, a single pane window with a storm window, or a double pane window?

Single pane window

Single pane window with a storm window

Double pane window

Were you already going to install a window shrink fit kit before you received your Energy Efficiency Kit?

Yes

No

Wall Outlet / Switch Insulators

How many gaskets have you installed?

Were you already going to install gaskets before you received your Energy Efficiency Kit?

Yes

No

Installations Based on Report Recommendations

The next set of questions ask about the actions you have taken or plan to take based on recommendations that were included on your Personalized Energy Report. These questions are only about things that you have done after receiving your report.

Have you taken any of the following actions since receiving your report?

Yes

No

No, but plan to do this

Don't know

- Installed new natural gas or propane furnace
- Installed new heat pump
- Installed new central air conditioning
- Installed window covering shrink-fit storm windows
- Insulated side walls of home
- Insulated the attic
- Insulated heating or air conditioning ducts
- Repaired or fixed holes in heating or cooling ducts
- Replaced furnace filters
- Installed new refrigerator

Install a New Furnace

Is the furnace a high efficiency unit in which...

The exhausts exit out a plastic pipe coming through the side of the home

The exhausts go up a chimney, similar to a standard efficiency unit

Don't know

Install New Heat Pump

Is the heat pump a high efficiency unit (>13 *SEER) or a standard efficiency unit(<13 *SEER)?

High Efficiency Unit

Standard Efficiency Unit

Don't know

What is the *SEER number for you unit?

< = 11

12

13

>= 14

Don't Know

* SEER -Seasonal Energy Efficiency Ratio

Install New Central Air Conditioning

Is the air conditioner a high efficiency unit (>13 SEER) or a standard efficiency unit (< 13 SEER)?

High Efficiency Unit

Standard Efficiency Unit

Don't know

What is the *SEER number for you unit?

< = 11

12

13

>= 14

Don't Know

* SEER -Seasonal Energy Efficiency Ratio

Plastic Wrap-type Window Kits

How many windows have you covered with these kits?

On average, would you consider the windows on which you installed the kit to be small windows, average sized windows or large windows?

Small window

Average sized window

Large window

What type of window is it?

Single pane

Single with storm

Double pane

Insulate Side Walls

How many walls did you have insulated?

What type of insulation did you add?

Fiberglass

Cellulose

Foam

Other

How many inches of thickness did you add?

1-3

4-6

7-12

>=13

Insulate Attic

Did you insulate part of the attic or the entire attic?

Insulated part of the attic

Insulated the entire attic

What type of insulation did you add?

Fiberglass

Cellulose

Foam

Other

How many inches of insulation depth did you add to the attic?

How thick was the insulation before you added more?

1-3

4-6

7-12

≥ 13

Insulate Heating or Air Conditioning Ducts

Are these ducts located in a heated or unheated part of the home?

Unheated area

Heated area

Don't know

Replace Furnace Filters

How often do you now change the filter?

Less than once a year

Once a year

Twice a year

More than twice a year

Don't know

How often did you change your filter prior to reading your report?

Less than once a year

Once a year

Twice a year

More than twice a year
Don't know

Install New Refrigerator
Is the refrigerator Energy Star compliant?

Yes
No
Don't know

Are you keeping your old refrigerator plugged in as a backup?

Yes
No
Don't know

Actions Taken

The next set of questions asks about actions you have taken as a result of the information you learned from your Personalized Energy Report. These questions are only about things that you have done after reading the report.

Have you taken any of the following actions since receiving your report?

Yes
No
No, but plan to
Don't know

- Turn off heat in unused rooms
- For electrically heated homes, have you cleaned electric baseboard heating registers of dust
- Keep draperies open on sunny days and closed at night
- Insulate your hot water heater

Turn Off Heat in Unused Rooms
How many rooms do you not heat in the winter?

Clean Baseboards of Dust
How many electric baseboard heating registers have you cleaned?

Keep Draperies Open On Sunny Days And Closed At Night
How many windows do you manage the coverings to save energy?

Insulate Hot Water Heater

How many gallons of water does your tank hold?

How is your water tank heated?

Gas

Electricity

Purchase and Install Compact Fluorescent Light (CFLs)

Have you purchased and used additional compact fluorescent light bulbs in your home?

Yes

No

No, but plan to do this

Don't know

Purchase and Install Compact Fluorescent Light (CFLs)

How many CFLs have you purchased and installed since reading the report?

On average, what wattage bulb did you remove from the fixture before you installed the CFL?

<= 44

45 -70

71 -99

>= 100

Considering all CFL locations and uses, on average, how many hours are these CFL bulbs on each day?

Additional Actions Taken

The next set of questions asks about additional actions you have taken as a result of the information you learned from your Personalized Energy Report. These questions are only about things that you have done after reviewing the report.

Have you taken any of the following actions since receiving your report?

Yes

No

No, but plan to do this

Don't know

- Wash laundry in cold water
- Lower thermostat temperature in winter

- Stopped using a fireplace to reduce the heat loss going up the chimney
- Close-off or seal-off the fireplace to reduce heat loss

Wash Laundry in Cold Water

How many loads of laundry do you wash per week?

Lower Thermostat Temperature in the Winter

How many degrees have you lowered the temperature at night?

0

1-3

4-6

7-10

>=11

How many degrees have you lowered the temperature during the day?

0

1-3

4-6

7-10

>=11

Usefulness of Report

The next set of questions asks how useful you thought the different sections in the Personalized Energy Report were to you.

How useful were each of the following sections of your Personalized Energy Report?

Not at all Useful 1

2

Somewhat Useful 3

4

Very Useful 5

Did not read that section

- Your Home's Month-to-Month Electricity And Gas Usage & Bill Amount
- Your Home's Month-to-Month Electricity & Gas Bill Amount Trends (Bar Chart)
- How Your Household Uses Electricity and Gas (Pie Chart)
- Your Home's Annual Electric And Gas Usage Compared To Similar Homes
- Energy Efficiency Starter Kit Tips
- Energy Savings Tips for your Home

The next set of questions asks how understandable you thought the different sections in the Personalized Energy Report were to you.

How understandable were each of the following sections of your Personalized Energy Report?

Very Confusing 1

2

Somewhat Confusing 3

4

Very Clear 5

Did not read that section

- Your Home's Month-to-Month Electricity And Gas Usage & Bill Amount
- Your Home's Month-to-Month Electricity & Gas Bill Amount Trends (Bar Chart)
- How Your Household Uses Electricity and Gas (Pie Chart)
- Your Home's Annual Electric And Gas Usage Compared To Similar Homes
- Energy Efficiency Starter Kit Tips
- Energy Savings Tips for Your Home

Overall Satisfaction with Report

Overall, how satisfied were you with the information you received in your Personalized Energy Report?

Very Dissatisfied 1

2

Neither Satisfied nor Dissatisfied 3

4

Very Satisfied 5

What additional information would you like to have seen on your Personalized Energy Report?

Other Products and Services

Have you signed up for any Duke Energy products or services since receiving the report?

(check all that apply)

- Yes, I signed up for Budget Billing
- Yes, I signed up for e-Bill
- Yes, I signed up for SmartSaver
- Yes, I signed up for Power Manager
- No, I have not made any changes

The Duke Energy Web Site

Have you visited the Duke Energy Web Site that is referenced in your Personalized Energy Report to identify additional ways to save energy in your home?

Yes

No

No, but plan to do this

Don't know

The Duke Energy Web Site

Did you find the web site helpful?

Yes

Somewhat

No

Demographics

The below questions are for classification purposes only.

What is the approximate square footage (heated area) of your home?

Less than 500

501 -999

1,000 -1,499

1,500 -1,999

2,000 -2,499

2,500 -2,999

3,000 or more

Don't Know

What is your age group?

18 -34

35 -49

50 -59

60 -64

65 -74

Over 74

Which of the following categories best describes your annual household income before taxes?

Up to \$15,000

\$15,000 up to \$30,000

\$30,000 up to \$50,000
\$50,000 up to \$75,000
\$75,000 up to \$100,000
Over \$100,000

Thank you for completing this survey!

If you would be interested in participating in future online market research studies from Duke Energy please fill in your name, address and email address below.

Name
Address
City
State
Zip
Email address

Appendix B – Ohio PER Impact Evaluation Survey

A

Please answer the questions in this survey by darkening the circles next to the responses associated with each question using blue or black ink. For example ☐ is fully filled in when it looks like this: ☒



QUESTIONS FOR KIT MATERIAL USE

The first set of questions refer to the materials you received in the Energy Efficiency Kit mailed to you from Duke Energy. This kit included a number of items such as a showerhead, aerators, compact fluorescent light bulbs and other items. Please provide your response to each of the following questions about the materials you received in the kit.

15-WATT MINI COMPACT FLORESCENT LIGHT (CFL)

1. Have you installed the 15-watt CFL bulb in a light fixture? ☐ Yes ☐ No ☐ Don't know
If yes...
2. How many watts was the old bulb you took out? ☐ ≤44 ☐ 45-70 ☐ 71-99 ☐ ≥100
3. On average, how many hours per day do you use this bulb? ☐ <1 ☐ 1-2 ☐ 3-4 ☐ 5-10 ☐ 11-12 ☐ 13-24

20-WATT MINI COMPACT FLORESCENT LIGHT

1. Have you installed the 20-watt CFL bulb in a light fixture? ☐ Yes ☐ No ☐ Don't know
If yes...
2. How many watts was the old bulb you took out? ☐ ≤44 ☐ 45-70 ☐ 71-99 ☐ ≥100
3. On average, how many hours per day do you use this bulb? ☐ <1 ☐ 1-2 ☐ 3-4 ☐ 5-10 ☐ 11-12 ☐ 13-24

CLOSED CELL WEATHER-STRIPPING – 17 FEET

1. Have you installed any of the weather-stripping on your doors or windows or used it to seal cracks? ☐ Yes ☐ No ☐ Don't know
2. If yes, how many feet of the 17-foot roll have you used? ☐ 1-5 ☐ 6-10 ☐ 11-17

WINDOW COVERING SHRINK-FIT STORM WINDOW

1. Have you installed the window shrink-fit kit? ☐ Yes ☐ No ☐ Don't know
If yes...
2. What size window did you cover? ☐ Small ☐ Average ☐ Large
3. What type of window is it? ☐ Single pane ☐ Single with storm ☐ Double pane

SHOWERHEAD

1. Have you installed the energy-efficient showerhead? ☐ Yes ☐ No ☐ Don't know
If yes...
2. Typically how many showers per week are taken using this showerhead? ☐ 0-4 ☐ 5-10 ☐ 11-15 ☐ 16-20 ☐ ≥21
3. Would you estimate that the amount of water coming through the new showerhead is: ☐ Less than the old unit ☐ About the same ☐ More than the old unit

BATHROOM FAUCET AERATOR

1. Have you installed the faucet aerator in your bathroom? ☐ Yes ☐ No ☐ Don't know
If yes...
2. Was there an aerator on the faucet that you had to remove? ☐ Yes ☐ No ☐ Don't know
3. If yes, would you estimate that the amount of water coming through the new aerator is: ☐ Less than the old unit ☐ About the same, or ☐ More than the old unit

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KITCHEN FAUCET AERATOR

1. Have you installed the faucet aerator in your kitchen? ☐ Yes ☐ No ☐ Don't know
If yes...
2. Was there an aerator on the faucet that you had to remove? ☐ Yes ☐ No ☐ Don't know
3. If yes, would you estimate that the amount of water coming through the new aerator is: ☐ Less than the old unit ☐ About the same
☐ More than the old unit

WALL PLUG OUTLET AND SWITCH INSULATORS

1. Have you installed the insulating gaskets on any outlet boxes or wall switches? ☐ Yes ☐ No ☐ Don't know
2. If yes, how many have you installed? ☐ 1-2 ☐ 3-5 ☐ 6-8

REPORT RECOMMENDATIONS

This set of questions ask about the actions you have taken or plan to take based on the recommendations that were included on your Personalized Energy Report. These questions are only about things that you have done after receiving your report.

LOWERED THE TEMPERATURE IN YOUR HOME DURING THE WINTER

1. Have you lowered the temperature of your home to save money or energy during the winter months?
☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
If yes...
2. How many degrees have you lowered the temperature at night? ☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ ≥11
3. How many degrees have you lowered the temperature during the day? ☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ ≥11

PURCHASED AND INSTALLED COMPACT FLORESCENT LIGHTS (CFLs)

1. Have you purchased and used additional compact fluorescent light bulbs in your home? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
If yes...
2. How many CFLs have you purchased and installed since reading the report? ☐ 1-2 ☐ 3-5 ☐ 6-9 ☐ ≥10
3. On average, what wattage bulb did you remove from the fixture before you installed the CFL? ☐ ≤44 ☐ 45-70 ☐ 71-99 ☐ ≥100
4. Considering all CFL locations and uses, on average, how many hours per day do you use these bulbs?
☐ ≤1 ☐ 1-2 ☐ 3-4 ☐ 5-9 ☐ 10-12 ☐ 13-24
5. When did you install this measure? Month _____ Year _____
6. How influential was the Personalized Energy Report in your decision to install this measure?
☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
7. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

WASHED LAUNDRY IN COLD WATER

1. Have you switched from using hot water to do your laundry to using cold water? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
2. If yes, how many loads of laundry do you do per week? ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10 ☐ 11-12 ☐ ≥13

REPLACED FURNACE FILTERS

1. Have you replaced your furnace filter? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
- If yes...
2. How often do you now change the filter? ☐ Less than once a year ☐ Once a year ☐ Twice a year ☐ Don't know
3. How often did you change your filter prior to reading the report? ☐ Less than once a year ☐ Once a year ☐ Twice a year ☐ More than twice a year ☐ Don't know

TURNED OFF HEAT IN UNUSED ROOMS

1. Have you closed the heating vents or chosen not to heat unused rooms? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
2. If yes, how many rooms do you not heat in the winter? ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ ≥6

INSTALLED WINDOW COVERING SHRINK-FIT STORM WINDOWS

1. Have you purchased and installed any plastic wrap-type window kits that cover the entire window to help keep the cold out? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
- If yes...
2. How many windows have you covered with these kits? ☐ 1-3 ☐ 4-7 ☐ 8-10 ☐ ≥11
3. What type of window is it? ☐ Single pane ☐ Single with storm ☐ Double pane

INSULATED HOT WATER HEATER TANK

1. Have you insulated your hot water tank? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
- If yes...
2. How many gallons of water does your tank hold? ☐ 30 ☐ 50 ☐ 60 ☐ 75 ☐ ≥80 ☐ Don't know
3. When did you install this measure? Month _____ Year _____
4. How influential was the Personalized Energy Report in your decision to install this measure?
- ☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
5. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

KEEP DRAPERIES OPEN ON SUNNY DAYS AND CLOSED AT NIGHT

1. Do you manage your window coverings and draperies so that they are open when the sun is shining in and closed at other times? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
2. If yes, for how many windows do you manage the coverings to save energy? ☐ 1-3 ☐ 4-7 ☐ 8-12 ☐ ≥13

CLEANED ELECTRIC BASEBOARD HEATING REGISTERS OF DUST

1. For electrically heated homes, have you cleaned any of the baseboards? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
2. If yes, how many baseboards have you cleaned? ☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ ≥11

INSULATED THE CEILING OR ATTIC

1. Have you had your attic insulated? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
2. Did you insulate part of the ceiling or all of it? ☐ Part of ceiling ☐ Entire ceiling
3. What type of insulation did you add? ☐ Fiberglass ☐ Cellulose ☐ Foam ☐ Other
4. How many inches of thickness did you add? ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10 ☐ ≥11

5. How thick was the insulation before you added more? ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10 ☐ ≥11
6. When did you install this measure? Month _____ Year _____
7. How influential was the Personalized Energy Report in your decision to install this measure?
- ☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
8. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

INSULATED SIDE WALLS OF HOME

1. Have you had the side walls of your home insulated since you received your Personalized Energy Report?
- ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
- If yes...
2. How many walls did you have insulated? ☐ 1 ☐ 2 ☐ 3 ☐ ≥4
3. What type of insulation did you add? ☐ Fiberglass ☐ Cellulose ☐ Foam ☐ Other
4. How many inches of thickness did you add? ☐ 1-3 ☐ 4-6 ☐ 7-12 ☐ ≥13
5. When did you install this measure? Month _____ Year _____
6. How influential was the Personalized Energy Report in your decision to install this measure?
- ☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
7. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

CLOSED-OFF OR SEALED-UP THE FIREPLACE

1. Have you stopped using a fireplace to reduce the heat loss going up the chimney during the winter?
- ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
2. Have you closed-off or sealed the fireplace to reduce the heat loss?
- ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know

INSULATED OR REPAIRED HEATING OR AIR CONDITIONING DUCTS

1. Have you insulated any of your heating or cooling ducts that deliver air to the rooms of the home?
- ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
- If yes...
2. Are these ducts located in a heated or unheated part of the home?
- ☐ Unheated area ☐ Heated area ☐ Don't know
3. Have you repaired or fixed holes in any of your heating or cooling ducts that deliver air to the rooms of the home?
- ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
4. When did you install this measure? Month _____ Year _____
5. How influential was the Personalized Energy Report in your decision to install this measure?
- ☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
6. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

INSTALLED NEW CENTRAL AIR CONDITIONING

1. Have you installed a new central air conditioning unit in your home?
- ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know

If yes...

2. Is the air conditioner a high efficiency unit (>13 SEER) or a standard efficiency unit (<13 SEER)? ☐ High efficiency ☐ Standard ☐ Don't know
3. What is the SEER number for your unit? ☐ <11 ☐ 12 ☐ 13 ☐ ≥14 ☐ Don't know
4. When did you install this measure? Month _____ Year _____
5. How influential was the Personalized Energy Report in your decision to install this measure?
☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
6. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

INSTALLED NEW NATURAL GAS OR PROPANE FURNACE

1. Have you installed a new natural gas or propane furnace in your home?
☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
2. If yes, is the furnace a high efficiency unit in which the exhaust exits a plastic pipe coming through the side of the home, or does the exhaust go up a chimney or flue similar to a standard efficiency unit? ☐ Plastic pipe ☐ Chimney or flue ☐ Don't know
3. When did you install this measure? Month _____ Year _____
4. How influential was the Personalized Energy Report in your decision to install this measure?
☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
5. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

INSTALLED NEW HEAT PUMP

1. Have you installed a new heat pump in your home? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
- If yes...
2. Is the heat pump a high efficiency unit (>13 SEER) or a standard efficiency unit (<13)? ☐ High efficiency ☐ Standard ☐ Don't know
3. What is the SEER number for your unit? ☐ <11 ☐ 12 ☐ 13 ☐ ≥14 ☐ Don't know
4. When did you install this measure? Month _____ Year _____
5. How influential was the Personalized Energy Report in your decision to install this measure?
☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
6. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

INSTALLED NEW REFRIGERATOR

1. Have you purchased a new refrigerator? ☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
- If yes...
2. Is the refrigerator Energy Star compliant? ☐ Yes ☐ No ☐ Don't know
3. Are you keeping your old refrigerator plugged in as a backup? ☐ Yes ☐ No ☐ Don't know
4. When did you install this measure? Month _____ Year _____
5. How influential was the Personalized Energy Report in your decision to install this measure?
☐ Only factor ☐ Major factor ☐ One of many factors ☐ Was going to do it anyway ☐ Already did this before receiving my PER
6. Did you do this as part of a major renovation of your home? ☐ Yes ☐ No

THE DUKE ENERGY WEB SITE

1. Have you visited the Duke Energy Web site that is referenced in your Personalized Energy Report to identify additional ways to save energy in your home?
☐ Yes ☐ No but plan to do this ☐ No ☐ Don't know
2. If yes, did you find this Web site helpful? ☐ Yes ☐ Somewhat ☐ No

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Summary: Text Appendix J of Status Report electronically filed by Anita M Schafer on behalf of Watts, Elizabeth H. Ms.