			Sta	ate	Total
			North Carolina	South Carolina	
		Count	13	5	18
	Yes	% within State	29.5%	13.9%	22.5%
Are your central air/heat ducts located in the attic?		Count	20	17	37
	NO	% within State	45.5%	47.2%	46.3%
	N/A	Count	4	9	13
		% within State	9.1%	25.0%	16.3%
	DK/NS	Count	7	5	12
		% within State	15.9%	13.9%	15.0%
Total		Count	44	36	80
Total	Mary St.	% within State	100.0%	100.0%	100.0%

Are	your	central	air/heat	ducts	located	in the	attic?*	State
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#### Does your house have cold drafts in the winter? \* State

			Sta	ate	Total
			North Carolina	South Carolina	providente e
		Count	26	17	43
Does your house have cold drafts in the winter?	Yes	% within State	59.1%	47.2%	53.8%
	No	Count	18	19	37
		% within State	40.9%	52.8%	46.3%
Tatal		Count	44	36	80
IOTAI	Converse .	% within State	100.0%	100.0%	100.0%

#### Does your house have sweaty windows in the winter? \* State

			Sta	State	
	1.20		North Carolina	South Carolina	
		Count	16	10	26
Does your house have sweaty windows in the winter?	Yes	% within State	36.4%	27.8%	32.5%
	No	Count	28	26	54
		% within State	63.6%	72.2%	67.5%
		Count	44	36	80
lotal	1.1	% within State	100.0%	100.0%	100.0%

			Sta	ate	Total
			North Carolina	South Carolina	
Do you notice uneven temperatures between the rooms in your home?	Yes	Count	27	19	46
		% within State	61.4%	52.8%	57.5%
	No	Count	17	17	34
		% within State	38.6%	47.2%	42.5%
Total		Count	44	36	80
		% within State	100.0%	100.0%	100.0%

#### Does your heating system keep your home comfortable in winter? \* State

			Sta	ate	Total
	Maran		North Carolina	South Carolina	
		Count	37	33	70
Does your heating system keep your home comfortable in winter?	Yes	% within State	84.1%	91.7%	87.5%
	No	Count	7	3	10
		% within State	15.9%	8.3%	12.5%
Tatal		Count	44	36	80
Iotal		% within State	100.0%	100.0%	100.0%

### Does your cooling system keep your home comfortable in summer? \* State

			Sta	ate	Total
	-		North Carolina	South Carolina	
		Count	37	32	69
Ye Does your cooling system keep your home comfortable No in summer? Dr	Yes	% within State	84.1%	88.9%	86.3%
	No	Count	4	4	8
		% within State	9.1%	11.1%	10.0%
		Count	3	0	3
	DK/NS	% within State	6.8%	0.0%	3.8%
Tabl		Count	44	36	80
IOTAI		% within State	100.0%	100.0%	100.0%

•

			Sta	ate	Total
	i la la		North Carolina	South Carolina	
	Maa	Count	23	20	43
Do you have a programmable	Yes	% within State	52.3%	55.6%	53.8%
	No	Count	19	16	35
thermostat?		% within State	43.2%	44.4%	43.8%
	DK/NS	Count	2	0	2
		% within State	4.5%	0.0%	2.5%
Total		Count	44	36	80
		% within State	100.0%	100.0%	100.0%

#### Do you have a programmable thermostat? \* State

			Sta	ate	Total
			North Carolina	South Carolina	
	0	Count	1	0	1
	U	% within State	2.3%	0.0%	1.3%
		Count	30	29	59
		% within State	68.2%	80.6%	73.8%
		Count	9	5	14
How many thermostats are there in your home?	2	% within State	20.5%	13.9%	17.5%
	3	Count	3	-1	4
		% within State	6.8%	2.8%	5.0%
	4 or more DK/NS	Count	1	0	1
		% within State	2.3%	0.0%	1.3%
		Count	0	1	1
		% within State	0.0%	2.8%	1.3%
Total		Count	44	36	80
TOTAL		% within State	100.0%	100.0%	100.0%

			Sta	State	Total
			North Carolina	South Carolina	(Ada)
	Less than 69	Count	4	5	9
	degrees	% within State	9.1%	13.9%	11.3%
		Count	17	18	35
What temperature is	69-72 degrees	% within State	38.6%	50.0%	43.8%
your thermostat set to on a typical summer	73-78 degrees	Count	9	7	16
		% within State	20.5%	19.4%	20.0%
weekday afternoon?		Count	9	2	11
	Off	% within State	20.5%	5.6%	13.8%
	DK/NS	Count	5	4	9
		% within State	11.4%	11.1%	11.3%
Tetal		Count	44	36	80
lotal		% within State	100.0%	100.0%	100.0%

What temperature is	your thermostat set to on a typical summer weekday afternoon? * State
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			St	ate	Total
			North Carolina	South Carolina	
	Less than 67	Count	7	4	11
	degrees	% within State	15.9%	11.1%	13.8%
	07 70 4	Count	12	5	17
67-70 degrees	% within State	27.3%	13.9%	21.3%	
のなどとしめ		Count	7	10	17
What temperature is	/1-/3 degrees	% within State	15.9%	27.8%	21.3%
your thermostat set to	74-77 degrees	Count	8	11	19
on a typical winter		% within State	18.2%	30.6%	23.8%
weekday afternoon?		Count	3	3	6
	78 degrees or higher	% within State	6.8%	8.3%	7.5%
		Count	2	1	3
	Off	% within State	4.5%	2.8%	3.8%
		Count	5	2	7
	DK/NS	% within State	11.4%	5.6%	8.8%
Total		Count	44	36	80
IOTAI		% within State	100.0%	100.0%	100.0%

DC	you nav	e a swittining poor	, not-tub or spar	Glate	
			Sta	State	
	Same?		North Carolina	South Carolina	
	Mar	Count	0	3	3
Do you have a swimming pool, hot-tub or spa?	Yes	% within State	0.0%	8.3%	3.8%
	No	Count	44	33	77
		% within State	100.0%	91.7%	96.3%
Tatal		Count	44	36	80
IOTAI	P - E	% within State	100.0%	100.0%	100.0%

Do you have	a swimming	pool, hot-tub	or spa? * State
			the second se

#### Would a two-degree increase in the summer afternoon temperature in your home affect your comfort \*

		State			
			St	ate	Total
			North Carolina	South Carolina	
	Mat et ell	Count	24	16	40
	NOT at all	% within State	54.5%	44.4%	50.0%
	Slightly	Count	11	11	22
Would a two-degree increase in the summer		% within State	25.0%	30.6%	27.5%
	Moderately, or	Count	4	2	6
atternoon temperature in		% within State	9.1%	5.6%	7.5%
comfort	1. 1. 1. 1.	Count	2	3	5
Common	Greatly	% within State	4.5%	8.3%	6.3%
DK/NS		Count	3	4	7
	% within State	6.8%	11.1%	8.8%	
Tatal		Count	44	36	80
rotai		% within State	100.0%	100.0%	100.0%

			St	ate	Total
			North Carolina	South Carolina	
		Count	25	10	35
		% within State	56.8%	27.8%	43.8%
		Count	8	11	19
	2	% within State	18.2%	30.6%	23.8%
3 How many people live in this	Count	7	9	16	
	3	% within State	15.9%	25.0%	20.0%
home?	4	Count	0	3	3
		% within State	0.0%	8.3%	3.8%
		Count	3	3	6
	5	% within State	6.8%	8.3%	7.5%
	Prefer not to	Count	1	0	1
	answer	% within State	2.3%	0.0%	1.3%
Total		Count	44	36	80
IOTAI		% within State	100.0%	100.0%	100.0%

How many	people	live in this	home?	* State
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#### How many of them are teenagers? \* State

			Sta	State	
	1419761	15 - 1992 - Z	North Carolina	South Carolina	
		Count	40	27	67
	0	% within State	90.9%	75.0%	83.8%
		Count	1	6	7
	1	% within State	2.3%	16.7%	8.8%
		Count	0	2	2
How many of them are	2	% within State	0.0%	5.6%	2.5%
teenagers?		Count	2	0	2
	3	% within State	4.5%	0.0%	2.5%
	가는 끝난 말!	Count	0	1	1
	4	% within State	0.0%	2.8%	1.3%
	Prefer not to	Count	1	0	1
	answer	% within State	2.3%	0.0%	1.3%
		Count	44	36	80
Iotal		% within State	100.0%	100.0%	100.0%

			St	ate	Total
and the second second			North Carolina	South Carolina	
		Count	7	5	12
	U	% within State	15.9%	13.9%	15.0%
		Count	27	15	42
		% within State	61.4%	41.7%	52.5%
	2	Count	6	9	15
How many persons are		% within State	13.6%	25.0%	18.8%
usually nome on a weekday	3	Count	2	6	8
		% within State	4.5%	16.7%	10.0%
	-	Count	0	1	1
	5	% within State	0.0%	2.8%	1.3%
	Prefer not to	Count	2	0	2
	answer	% within State	4.5%	0.0%	2.5%
Total		Count	44	36	80
TOTAL		% within State	100.0%	100.0%	100.0%

How many persons are usually home on a weekday afternoon? \* State

Are you planning on making any large purchases to improve energy efficiency in the next 3 years? \*

State

			Sta	ate	Total
		11. J. C.	North Carolina	South Carolina	
		Count	3	11	14
Are you planning on making any large purchases to	res	% within State	6.8%	30.6%	17.5%
	No DK/NS	Count	34	21	55
improve energy efficiency in		% within State	77.3%	58.3%	68.8%
the next 3 years?		Count	7	4	11
		% within State	15.9%	11.1%	13.8%
Total		Count	44	36	80
		% within State	100.0%	100.0%	100.0%

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			Stat	e	Total
	March		North Carolina	South Carolina	
		Count	2	3	5
	18-34	% within State	4.5%	8.3%	6.3%
		Count	6	8	14
	35-49	% within State	13.6%	22.2%	17.5%
		Count	12	1	13
	50-59	% within State	27.3%	2.8%	16.3%
What is your age group?		Count	6	6	12
	60-64	% within State	13.6%	16.7%	15.0%
		Count	12	11	23
	65-74	% within State	27.3%	30.6%	28.8%
		Count	5	6	11
	Over 74	% within State	11.4%	16.7%	13.8%
	Prefer	Count ·	1	1	2
	not to answer	% within State	2.3%	2.8%	2.5%
Tatal		Count	44	36	80
IOIAI		% within State	100.0%	100.0%	100.0%

What is your age group? \* State

			Sta	ite	Total
			North Carolina	South Carolina	
	Under \$15,000	Count	17	14	31
	Under \$15,000	% within State	38.6%	38.9%	38.8%
	\$15,000 <mark>-</mark> \$29,999	Count	7	10	17
		% within State	15.9%	27.8%	21.3%
Please indicate your annual	\$30,000-\$49,999	Count	6	5	11
		% within State	13.6%	13.9%	13.8%
		Count	4	1	5
nousenoid income	\$50,000-\$74,999	% within State	9.1%	2.8%	6.3%
		Count	8	3	11
	Preter Not to Answer	% within State	18.2%	8.3%	13.8%
	DV/NO	Count	2	3	5
DK/NS	% within State	4.5%	8.3%	6.3%	
		Count	44	36	80
IOTAI		% within State	100.0%	100.0%	100.0%

## **Non-Participant Survey Households**

			Sta	ite	Total
	All and a second se		North Carolina	South Carolina	- 12 A
	Single-family home, detached	Count	23	42	65
	construction	% within State	74.2%	85.7%	81.3%
	Single family home, factory	Count	0	1	1
Carlelour a	manufactured/modular	% within State	0.0%	2.0%	1.3%
In what type of		Count	0	1	1
building do you	Single family, mobile nome	% within State	0.0%	2.0%	1.3%
INGI	Two or Three family attached	Count	4	4	8
	residence-traditional structure	% within State	12.9%	8.2%	10.0%
	Apartment (4 + families)	Count	4	1	5
	traditional structure	% within State	12.9%	2.0%	6.3%
Total		Count	31	49	80
TOLAI		% within State	100.0%	100.0%	100.0%

			Stat	te	Total
			North Carolina	South Carolina	
	1959 and before	Count	11	16	27
		% within State	35.5%	32.7%	33.8%
	1960-1979	Count	7	10	17
		% within State	22.6%	20.4%	21.3%
		Count	0	2	2
	1980-1989	% within State	0.0%	4.1%	2.5%
1990-1997 What year was your residence built?	Count	1	3	4	
	1990-1997	% within State	3.2%	6.1%	5.0%
	1000 0000	Count	0	1	1
	1998-2000	% within State	0.0%	2.0%	1.3%
	0004 0007	Count	0	5	5
	2001-2007	% within State	0.0%	10.2%	6.3%
	0000	Count	0	1	1
	2008-present	% within State	0.0%	2.0%	1.3%
	DIANO	Count	12	11	23
	DKINS	% within State	38.7%	22.4%	28.8%
Total		Count	31	49	80
IOUAI		% within State	100.0%	100.0%	100.0%

			Sta	ate	Total
			North Carolina	South Carolina	
		Count	3	0	3
	1 to 3	% within State	9.7%	0.0%	3.8%
		Count	5	10	15
	4	% within State	16.1%	20.4%	18.8%
		Count	14	18	32
How many rooms are in your	5	% within State	45.2%	36.7%	40.0%
home (excluding bathrooms,	6	Count	5	14	19
but including finished		% within State	16.1%	28.6%	23.8%
basements)?		Count	2	6	8
	1	% within State	6.5%	12.2%	10.0%
		Count	1	1	2
	10 or more	% within State	3.2%	2.0%	2.5%
		Count	1	0	1
	DK/NS	% within State	3.2%	0.0%	1.3%
		Count	31	49	80
IOTAI		% within State	100.0%	100.0%	100.0%

How many rooms are in	your home (excluding	g bathrooms, but includin	g finished basements)? * State
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Which of the following best describes your home's heating system?	North C	North Carolina N=31		South Carolina N=49		Total N=80	
None	0	0.0%	0	0.0%	0	0.0%	
Central forced air furnace	22	71.0%	24	49.0%	46	57.5%	
Electric Baseboard	5	16.1%	4	8.2%	9	11.3%	
Heat Pump	1	3.2%	13	26.5%	14	17.5%	
Geothermal Heat Pump	0	0.0%	0	0.0%	0	0.0%	
Gas pack / gas log fireplace	1	3.2%	0	0.0%	1	1.3%	
Other: listed below	1	3.2%	8	16.3%	9	11.3%	
Don't know	1	3.2%	3	6.1%	4	5.0%	

May total to more than 100% because respondents could give multiple responses.

Nine respondents mentioned "other" types of heating system; these are listed below.

- Heat pump is broken, using space heaters (N=2)
- Space heaters (N=2)
- Portable plug-in heaters
- Portable oil heater
- Freestanding natural gas heater with a blower
- Wall-mounted interior natural gas furnace in the living room

Refused to answer

			Sta	te	Total
			North Carolina	South Carolina	
	0.4	Count	5	11	16
	0-4 years	% within State	16.1%	22.4%	20.0%
	5-9 vears	Count	6	7	13
5-9 years	% within State	19.4%	14.3%	16.3%	
	10.44	Count	1	6	7
How old is your heating system?	10-14 years	% within State	3.2%	12.2%	8.8%
	15-19 years	Count	2	3	5
		% within State	6.5%	6.1%	6.3%
	10	Count	5	5	10
	19 years or older	% within State	16.1%	10.2%	12.5%
	DUCTO	Count	12	17	29
	DK/NS	% within State	38.7%	34.7%	36.3%
Total		Count	31	49	80
Total		% within State	100.0%	100.0%	100.0%

What is the primary fuel used in	your heating sy	vstem? * State
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			Sta	Total	
	1.48	and and	North Carolina	South Carolina	
and the second second	Flootricity	Count	9	27	36
	Electricity Natural Gas	% within State	29.0%	55.1%	45.0%
		Count	20	19	39
		% within State	64.5%	38.8%	48.8%
College March	Oil	Count	1	1	2
What is the primary fuel		% within State	3.2%	2.0%	2.5%
used in your neating		Count	0	1	1
system	Propane	% within State	0.0%	2.0%	1.3%
a la ginaria		Count	0	1	1
San San	Refused	% within State	0.0%	2.0%	1.3%
	DUCALO	Count	1	0	1
	DK/NS	% within State	3.2%	0.0%	1.3%
Total		Count	31	49	80

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		% within State	100.0%	100.0%	100.0%
What is the se	condary fuel u	sed in your prima	ry heating system,	if any? * State	
			St	ate	Total
			North Carolina	South Carolina	
	Electricity	Count	5	3	8
		% within State	16.1%	6.1%	10.0%
Real Property and	Natural Gas	Count	1	0	1
What is the secondary fuel		% within State	3.2%	0.0%	1.3%
used in your primary neating		Count	24	45	69
system, il dity :	None	% within State	77.4%	91.8%	86.3%
	DUCID	Count	1	1	2
	DK/NS	% within State	3.2%	2.0%	2.5%
Total		Count	31	49	80
IOIAI		% within State	100.0%	100.0%	100.0%

Do you use one or more of the following to cool your home?	North C N=	arolina 31	South C	arolina 49	T	otal =80
None, do not cool the home	0	0.0%	0	0.0%	0	0.0%
Heat pump for cooling	2	6.5%	10	20.4%	12	15.0%
Central air conditioning	17	54.8%	22	44.9%	39	48.8%
Through the wall or window air conditioning unit	9	29.0%	17	34.7%	26	32.5%
Geothermal Heat pump	0	0.0%	0	0.0%	0	0.0%
Fans (ceiling, window, portable)	0	0.0%	1	2.0%	1	1.3%
Gas pack for cooling	1	3.2%	0	0.0%	1	1.3%
Don't know	2	6.5%	0	0.0%	2	2.5%

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			Sta	Total	
			North Carolina	South Carolina	
	1000	Count	5	8	13
STREET STOR	1	% within State	16.1%	16.3%	16.3%
		Count	4	6	10
	2	% within State	12.9%	12.2%	12.5%
	3	Count	0	3	3
How many window-unit or		% within State	0.0%	6.1%	3.8%
through the wall air	4	Count	0	2	2
conditioner(s) do you use :		% within State	0.0%	4.1%	2.5%
		Count	1	0	1
	DK/NS	% within State	3.2%	0.0%	1.3%
		Count	21	30	51
	10210	% within State	67.7%	61.2%	63.8%
Tatal		Count	31	49	80
Total	1. A. A.	% within State	100.0%	100.0%	100.0%

How many window-unit or through the wall air conditioner	(9	) do y	you use? * State	
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What is the fuel used in your cooling system?	North C	arolina 31	South C	Carolina 49	Total N=80	
Electricity	30	96.8%	48	98.0%	78	97.5%
Natural Gas	0	0.0%	0	0.0%	0	0.0%
Oil	0	0.0%	0	0.0%	0	0.0%
Propane	0	0.0%	0	0.0%	0	0.0%
None (no cooling system)	0	0.0%	1	2.0%	1	1.3%
DK/NS	1	3.2%	0	0.0%	1	1.3%

			Sta	te	Total	
			North Carolina	South Carolina		
	0.4.0000	Count	9	15	24	
	0-4 years	% within State	29.0%	30.6%	30.0%	
		Count	7	12	19	
State - State Provide the	5-9 years	% within State	22.6%	24.5%	23.8%	
	10-14 years	Count	Summer 1	6	7	
How old is your cooling		% within State	3.2%	12.2%	8.8%	
system?		Count	3	2	5	
	15-19 years	% within State	9.7%	4.1%	6.3%	
	10	Count	2	3	5	
	19 years or older	% within State	6.5%	6.1%	6.3%	
	DIVINO	Count	9	11	20	
	DK/NS	% within State	29.0%	22.4%	25.0%	
Tatal		Count	31	49	80	
IOUAI	Submittee States	% within State	100.0%	100.0%	100.0%	

How old	is vour	coolina	system?	* State

What is the fuel used by your water heater?	North Carolina N=31		South Carolina N=49		Total N=80	
Electricity	18	58.1%	39	79.6%	57	71.3%
Natural Gas	10	32.3%	8	16.3%	18	22.5%
Oil	0	0.0%	0	0.0%	0	0.0%
Propane	0	0.0%	0	0.0%	0	0.0%
No water heater	0	0.0%	0	0.0%	0	0.0%
DK/NS	3	9.7%	4	8.2%	7	8.8%

			Sta	te	Total
			North Carolina	South Carolina	
	0-4 years	Count	7	12	19
0-4 years	% within State	22.6%	24.5%	23.8%	
	5.0	Count	4	7	11
	5-9 years	% within State	12.9%	14.3%	13.8%
	10-14 years	Count	1	7	8
How old is your water		% within State	3.2%	14.3%	10.0%
heater?		Count	2	4	6
	15-19 years	% within State	6.5%	8.2%	7.5%
		Count	2	1	3
	More than 19 years	% within State	6.5%	2.0%	3.8%
	DIVINO	Count	15	18	33
	DK/NS	% within State	48.4%	36.7%	41.3%
Total		Count	31	49	80
IUlai	100	% within State	100.0%	100.0%	100.0%

How old is	your water	heater? *	State	Crosstabulation
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What type of fuel do you use for indoor cooking on the stovetop or range?	oor cooking North Carolina N=31		South Carolina N=49		Total N=80	
Electricity	28	90.3%	44	89.8%	72	90.0%
Natural Gas	3	9.7%	5	10.2%	8	10.0%
Oil	0	0.0%	0	0.0%	0	0.0%
Propane	0	0.0%	0	0.0%	0	0.0%
None (no stove)	0	0.0%	0	0.0%	0	0.0%
DK/NS	0	0.0%	0	0.0%	0	0.0%

May total to more than 100% because respondents could give multiple responses.

What type of fuel do you use for indoor cooking in the oven?	North C N=	arolina 31	South N	Carolina =49	TN	otal =80
Electricity	27	87.1%	44	89.8%	71	88.8%
Natural Gas	3	9.7%	5	10.2%	8	10.0%
Oil	0	0.0%	0	0.0%	0	0.0%
Propane	0	0.0%	0	0.0%	0	0.0%
None (no oven)	1	3.2%	0	0.0%	1	1.3%
DK/NS	0	0.0%	0	0.0%	0	0.0%

What type of fuel do you use for clothes drying?	clothes drying? North Carolina		South Carolina N=49		Total N=80	
Electricity	25	80.6%	42	85.7%	67	83.8%
Natural Gas	0	0.0%	2	4.1%	2	2.5%
Oil	0	0.0%	0	0.0%	0	0.0%
Propane	0	0.0%	0	0.0%	0	0.0%
None (no dryer)	6	19.4%	6	12.2%	12	15.0%
DK/NS	0	0.0%	0	0.0%	0	0.0%

May total to more than 100% because respondents could give multiple responses.

			SI	ate	Total
Anna ann an Anna			North Carolina	South Carolina	
	500 40 000	Count	2	6	8
	500 to 999	% within State	6.5%	12.2%	10.0%
	1000 1- 1100	Count	10	19	29
	1000 to 1499	% within State	32.3%	38.8%	36.3%
About how many square feet	1500 to 1999	Count	. 0	3	3
of living space are in your		% within State	0.0%	6.1%	3.8%
nome	2500 to 2999	Count	2	0	2
		% within State	6.5%	0.0%	2.5%
	DUCALO	Count	17	21	38
	DK/NS	% within State	54.8%	42.9%	47.5%
Tetel		Count	31	49	80
IOUAI		% within State	100.0%	100.0%	100.0%

Do you own or rent your home? \* State

	NU NE S	All All All All	State		Total
			North Carolina	South Carolina	
		Count	14	30	44
Do you own or rent your	Own	% within State	45.2%	61.2%	55.0%
home?	125	Count	17	19	36
	Rent	% within State	54.8%	38.8%	45.0%
Tetal		Count	31	49	80
lotal		% within State	100.0%	100.0%	100.0%

Tiow many lev		in your nome (not i	State		Total
		Section and	North Carolina	South Carolina	
		Count	26	43	69
How many levels are in your	One	% within State	83.9%	87.8%	86.3%
home (not including your	Ture	Count	5	6	11
Dasementy	IWO	% within State	16.1%	12.2%	13.8%
Tatal		Count	31	49	80
lotal		% within State	100.0%	100.0%	100.0%

How many levels are in	your home	(not including	your basement)? * State
------------------------	-----------	----------------	-------------------------

Does	your home have a	heated or unheate	d basement? * S	tate	
			Stat	State	
			North Carolina	South Carolina	
	Heated	Count	1	1	2
		% within State	3.2%	2.0%	2.5%
bosted or unbosted	Unheated	Count	4	3	7
basement?		% within State	12.9%	6.1%	8.8%
	No basement	Count	26	45	71
	No basement	% within State	83.9%	91.8%	88.8%
T-1-1		Count	31	49	80
TOLAI		% within State	100.0%	100.0%	100.0%

#### Does your home have an attic? \* State

			State		Total
		and the second second	North Carolina	South Carolina	
		Count	18	24	42
Does your home have an	Yes	% within State	58.1%	49.0%	52.5%
attic?		Count	13	25	38
	No	% within State	41.9%	51.0%	47.5%
		Count	31	49	80
IOTAI	Sure	% within State	100.0%	100.0%	100.0%

			Sta	ate	Total
	- 12-15-	The second s	North Carolina	South Carolina	
	Mag	Count	3	4	7
	res	% within State	9.7%	8.2%	8.8%
	No re your central air/heat	Count	14	19	33
Are your central air/heat		% within State	45.2%	38.8%	41.3%
ducts located in the attic?	N/A	Count	13	23	36
		% within State	41.9%	46.9%	45.0%
	DKAIS	Count	1	3	4
	DK/NS	% within State	3.2%	6.1%	5.0%
Total		Count	31	49	80
IUGI		% within State	100.0%	100.0%	100.0%

#### Does your house have cold drafts in the winter? \* State

			Sta	ate	Total
	21.2		North Carolina South Carolina		
		Count	20	22	42
Does your house have cold	Yes	% within State	64.5%	44.9%	52.5%
drafts in the winter? No		Count	11	27	38
	NO	% within State	35.5%	55.1%	47.5%
<b>T</b> .4.1		Count	31	49	80
Iotai	nd us	% within State	100.0%	100.0%	100.0%

#### Does your house have sweaty windows in the winter? \* State

		4.0	Sta	State	
	de la sur		North Carolina South Carolina	A started	
		Count	8	15	23
	Yes	% within State	25.8%	30.6%	28.8%
Does your house have sweaty windows in the		Count	22	33	55
	No	% within State	71.0%	67.3%	68.8%
winter?		Count	1	1	2
	DK/NS	% within State	3.2%	2.0%	2.5%
<b>T</b> -1-1		Count	31	49	80
lotal	Specific St	% within State	100.0%	100.0%	100.0%

			State		Total
		1940	North Carolina	South Carolina	
		Count	20	29	49
	Yes	% within State	64.5%	59.2%	61.3%
Do you notice uneven temperatures between the	No	Count	11	19	30
		% within State	35.5%	38.8%	37.5%
rooms in your nome?	DK/NS	Count	0	1	1
		% within State	0.0%	2.0%	1.3%
		Count	31	49	80
IOTAI	1.14	% within State	100.0%	100.0%	100.0%

Do you notice uneven temperatures between the rooms in your home? \* State

#### Does your heating system keep your home comfortable in winter? \* State

			Sta	State	
Construction of the second		والدين والبرجي	North Carolina	South Carolina	
	Vee	Count	23	42	65
Does your heating system	res	% within State	74.2%	85.7%	81.3%
		Count	6	7	13
keep your nome comfortable	NO	% within State	19.4%	14.3%	16.3%
	-	Count	2	0	2
DK/NS	DK/NS	% within State	6.5%	0.0%	2.5%
Table		Count	31	49	80
IOLAI		% within State	100.0%	100.0%	100.0%

#### Does your cooling system keep your home comfortable in summer? \* State

			State		Total
	111	a presentation	North Carolina South Carolina	South Carolina	
		Count	28	42	70
	Yes	% within State	90.3%	85.7%	87.5%
Does your cooling system keep your home comfortable	No	Count	3	6	9
		% within State	9.7%	12.2%	11.3%
		Count	0	1	1
	DK/NS	% within State	0.0%	2.0%	1.3%
		Count	31	49	80
IOTAI	Sen o	% within State	100.0%	100.0%	100.0%

			State		Total
			North Carolina	South Carolina	
		Count	15	21	36
	Yes	% within State	48.4%	42.9%	45.0%
Do you have a programmable	No	Count	15	27	42
thermostat?		% within State	48.4%	55.1%	52.5%
	DICALO	Count	1	1	2
間にためます。	DK/NS	% within State	3.2%	2.0%	2.5%
		Count	31	49	80
IOTAI		% within State	100.0%	100.0%	100.0%

Do you	have	a prog	rammable	thermostat? '	State
--------	------	--------	----------	---------------	-------

#### How many thermostats are there in your home? \* State

			Sta	ate	Total
			North Carolina	South Carolina	
		Count	0	3	3
	U	% within State	0.0%	6.1%	3.8%
		Count	28	41	69
	1	% within State	90.3%	83.7%	86.3%
How many thermostats are	2	Count	2	3	5
there in your home?		% within State	6.5%	6.1%	6.3%
1.0		Count	0	1	1
C. C	3	% within State	0.0%	2.0%	1.3%
Stand Stand Could		Count	1	1	2
	4 or more	% within State	3.2%	2.0%	2.5%
		Count	31	49	80
Iotal	M. A.	% within State	100.0%	100.0%	100.0%

and the second design of the	And a second sec	the second s	the second se	Concernance of the local division	and the second se
			Sta	State	
			North Carolina	South Carolina	
	Loss than 60 deserves	Count	9	12	21
	Less than 69 degrees % wi	% within State	29.0%	24.5%	26.3%
	69-72 degrees Cour % wi	Count	7	19	26
		% within State	22.6%	38.8%	32.5%
What temperature is your	73-78 degrees Count % within Sta	Count	10	11	21
thermostat set to on a typical summer weekday afternoon?		% within State	32.3%	22.4%	26.3%
Summer weekday anomoon	04	Count	4	1	5
	On	% within State	12.9%	2.0%	6.3%
	DKING	Count	1	6	7
	DIVINS	% within State	3.2%	12.2%	8.8%
Total		Count	31	49	80
		% within State	100.0%	100.0%	100.0%

What temperature is your thermostat set to on a typical summer we	ekday afternoon? * State
---	--------------------------

What temperature is	your thermostat set to on a ty	pical winter weekday	/ afternoon? * State
	A REAL PROPERTY AND A REAL	and send of the	

			SI	ate	Total
			North Carolina	South Carolina	
	Less than 67	Count	3	3	6
	degrees	% within State	9.7%	6.1%	7.5%
	67-70	Count	8	17	25
	degrees	% within State	25.8%	34.7%	31.3%
	71-73	Count	7	10	17
	degrees	% within State	22.6%	20.4%	21.3%
What temperature is your	74-77	Count	7	13	20
thermostat set to on a typical	degrees	% within State	22.6%	26.5%	25.0%
winter weekday alternoon?	78 degrees or	Count	2	1	3
	higher	% within State	6.5%	2.0%	3.8%
		Count	1	0	1
	Off	% within State	3.2%	0.0%	1.3%
		Count	3	5	8
	DK/NS	% within State	9.7%	10.2%	10.0%
Total		Count	31	49	80

		% within S	tate 100.0	0% 100.0%	6 100.0
Do	you have	e a swimming pool	, hot-tub or spa? *	State	
			Sta	ate	Total
			North Carolina	South Carolina	
	Vee	Count	0	3	3
Do you have a swimming	res	% within State	0.0%	6.1%	3.8%
pool, hot-tub or spa?	1.5	Count	31	46	77
	NO	% within State	100.0%	93.9%	96.3%
Total		Count	31	49	80
IUIAI		% within State	100.0%	100.0%	100.0%

#### Would a two-degree increase in the summer afternoon temperature in your home affect your comfort \*

		State			
			Sta	ate	Total
			North Carolina	South Carolina	1997
	Net et ell	Count	14	17	31
	NOT at all	% within State	45.2%	34.7%	38.8%
	Olivebal	Count	4	10	14
Would a two-degree increase	Slightly	% within State	12.9%	20.4%	17.5%
in the summer afternoon	Moderately	Count	7	11	18
temperature in your home		% within State	22.6%	22.4%	22.5%
affect your comfort	Count Greatly % within State	Count	4	8	12
		% within State	12.9%	16.3%	15.0%
	DUALD	Count	2	3	5
	DK/NS	% within State	6.5%	6.1%	6.3%
Tatal		Count	31	49	80
Iotai		% within State	100.0%	100.0%	100.0%

			St	ate	Total
			North Carolina	South Carolina	
		Count	9	10	19
		% within State	29.0%	20.4%	23.8%
		Count	10	24	34
	2	% within State	32.3%	49.0%	42.5%
		Count	6	9	15
	3	% within State	19.4%	18.4%	18.8%
How many people live in this	4	Count	5	1	6
home?		% within State	16.1%	2.0%	7.5%
		Count	0	4	4
	5	% within State	0.0%	8.2%	5.0%
		Count	1	0	1
	6	% within State	3.2%	0.0%	1.3%
	Prefer not to	Count	0	1	1
	answer	% within State	0.0%	2.0%	1.3%
Total		Count	31	49	80
IUIAI	1.1.1.1	% within State	100.0%	100.0%	100.0%

#### How many of them are teenagers? \* State

			Sta	State	
har and			North Carolina	South Carolina	un hall
		Count	25	45	70
	0	% within State	80.6%	91.8%	87.5%
ALL DIS GIRLIS		Count	4	3	7
How many of them are		% within State	12.9%	6.1%	8.8%
teenagers?		Count	2	0	2
	2	% within State	6.5%	0.0%	2.5%
	Prefer not to	Count	0	1	1
	answer	% within State	0.0%	2.0%	1.3%
		Count	31	49	80
TOTAL		% within State	100.0%	100.0%	100.0%

			Sta	te	Total
			North Carolina	South Carolina	
		Count	3	3	6
	0	% within State	9.7%	6.1%	7.5%
		Count	14	23	37
	1	% within State	45.2%	46.9%	46.3%
	1.445	Count	6	16	22
	2	% within State	19.4%	32.7%	27.5%
How many persons are	3	Count	2	4	6
usually home on a weekday		% within State	6.5%	8.2%	7.5%
aremoon		Count	5	0	5
	4	% within State	16.1%	0.0%	6.3%
		Count	1	2	3
	5	% within State	3.2%	4.1%	3.8%
	Prefer not to	Count	0	1	1
	answer	% within State	0.0%	2.0%	1.3%
Tatal		Count	31	49	80
10(8)		% within State	100.0%	100.0%	100.0%

wavelly have an avealulay of . . .

Are you planning on making any large purchases to improve energy efficiency in the next 3 years? \*

State

			State		Total
	1		North Carolina	South Carolina	a
		Count	2	12	14
Are you planning on making	Yes	% within State	6.5%	24.5%	17.5%
any large purchases to		Count	25	28	53
improve energy efficiency in	No	% within State	80.6%	57.1%	66.3%
the next 3 years?	DK/NS	Count	4	9	13
		% within State	12.9%	18.4%	16.3%
Total		Count	31	49	80
		% within State	100.0%	100.0%	100.0%

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			St	ate	Total
	_		North Carolina	South Carolina	
	40.04	Count	8	5	13
	18-34	% within State	25.8%	10.2%	16.3%
	05.40	Count	4	12	16
	35-49	% within State	12.9%	24.5%	20.0%
		Count	5	9	14
	50-59	% within State	16.1%	18.4%	17.5%
	60-64	Count	5	6	11
What is your age group?		% within State	16.1%	12.2%	13.8%
		Count	4	8	12
	65-74	% within State	12.9%	16.3%	15.0%
		Count	4	7	11
	Over 74	% within State	12.9%	14.3%	13.8%
	Prefer not	Count	1	2	3
	to answer	% within State	3.2%	4.1%	3.8%
Tatal		Count	31	49	80
IOIAI		% within State	100.0%	100.0%	100.0%

			Sta	ate	Total
		27	North Carolina	South Carolina	
	Under \$15,000	Count	11	15	26
		% within State	35.5%	30.6%	32.5%
	\$45 000 \$00 000	Count	9	6	15
	\$15,000-\$29,999	% within State	29.0%	12.2%	18.8%
	\$20,000 \$40,000	Count	1	6	7
	\$30,000-\$49,999	% within State	3.2%	12.2%	8.8%
	\$50,000-\$74,999	Count	3	2	5
Please indicate your annual household		% within State	9.7%	4.1%	6.3%
		Count	1	1	2
	\$75,000-\$100,000	% within State	3.2%	2.0%	2.5%
	0	Count	0	1	1
	Over \$100,000	% within State	0.0%	2.0%	1.3%
	Prefer Not to	Count	6	15	21
	Answer	% within State	19.4%	30.6%	26.3%
	DK/NS	Count	0	3	3
		% within State	0.0%	6.1%	3.8%
Fotal		Count	31	49	80
I Utal		% within State	100.0%	100.0%	100.0%

## **Appendix I: Auditor Training Guide**



### Appendix J: Flyer at Kick-off Event



We want to help you and your neighbors save money and energy at home.

**4500** Enroll now and you

could be our lucky

winner!\*

VISA\* Gift Card

Please join us to learn more about the FREE walkthrough energy assessments we'll be performing in your neighborhood through our Residential Neighborhood Program. There will be demonstrations of our FREE energy-saving products and a FREE meal. Also, learn how to enter our sweepstakes for a chance to win a \$500 gift card. After the presentation, you are invited to join us for a FREE showing of Frozen\*\*. Don't forget your blankets, lawn chairs, and FM radios!

Greenwood's Auto Drive In 3109 Hwy 25 South Greenwood, SC 29646

Wednesday, August 13, 2014 Begins at 7:30 p.m.

RSVP by calling 855.767.3853

The Residential Neighborhood Program is a FREE walkthrough energy assessment and improvement program for qualified customers.

In the days following this neighborhood event, an Energy Specialist will visit your house to perform a walkthrough assessment that will show you where your home is wasting energy.

During the FREE walkthrough assessment, we'll also give you up to 16 energy-saving products and services that could help you save money on your electric bill. These energy-saving measures can cost up to \$210, but we'll give them to you for free – and install them, too. Services provided are based on your home's specific energy usage and needs.

Learn more at duke-energy.com/mp

Enter to wis our surregulates and read complete tomo and conditions on our website. No participation necessary to a
 \*\*Disney's Proces is extent PG. Pornstal Goldance Suggesting, Come Material May Not the Guidable for Celliforn.

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**Residential Neighborhood Program** 



### Appendix K: EISA Schedule and CFL Baseline

As stipulated in the Energy Independence and Security Act (EISA) of 2007, manufacturers of standard incandescent screw-based light bulbs must begin producing bulbs which use at least 27% less energy for a similar lumen output. The law is being phased in as seen in Table 115. As a result, it is necessary to adjust the baseline wattage that a CFL should be evaluated against throughout its effective useful life (EUL).

### **Table 115. EISA Schedule**

Current Bulb Wattage	New EISA Compliant Wattage	Standard Effective Date
100	72	1/1/2012
75	53	1/1/2013
60	43	1/1/2014
40	29	1/1/2014

TecMarket Works has developed a dynamic approach to estimating future CFL baseline wattages wherein each year of a CFL's EUL is prescribed a baseline value based on the most current research on the availability of standard incandescent light bulbs in the marketplace. Much of this research, to this point, has focused on 100-watt bulbs as they were the first to phase out and therefore offer the most robust data. The effect of EISA on the availability of other incandescent bulb wattages as they are phased out is expected to be similar.

Such an approach is necessary because of the difference in EUL between the efficient and baseline technologies in question (one year for an incandescent and five years for a CFL). In the absence of the program, it is assumed that each year a new incandescent bulb would have to be purchased. The average wattage of this purchase decreases each year with the eroding availability of the standard incandescent bulbs due to EISA. Table 116 contains the baseline wattages from which savings are estimated.

100-watt		75-watt			60-watt			40-watt			
Year	Phase	Baseline	Year	Phase	Baseline	Year	Phase	Baseline	Year	Phase	Baseline
2012	0%	100	2012	0%	75	2012	0%	60	2012	0%	40
2013	55%	84.6	2013	0%	75	2013	0%	60	2013	0%	40
2014	60%	83.2	2014	60%	61.8	2014	0%	60	2014	0%	40
2015	70%	80.4	2015	80%	57.4	2015	55%	50.65	2015	60%	33.4
2016	80%	77.6	2016	100%	53	2016	60%	49.8	2016	80%	31.2
2017	90%	74.8	2017	100%	53	2017	70%	48.1	2017	100%	29
2018	100%	72	2018	100%	53	2018	80%	46.4	2018	100%	29

#### Table 116. Baselines by Year and Wattage

A study completed in January of 2013 found that nearly half of retailers surveyed (44.6% or 45 out of 101) still have a supply of 100-watt incandescent light bulbs in stock<sup>45</sup>. The primary conclusion of this study was that 100-watt bulb availability for 2012 was not substantially impacted by EISA to the degree that energy impact baseline calculations should be adjusted for savings estimations in 2012, but that a phased-in calculation approach for 2013 and beyond is warranted. Accordingly, baselines are discounted starting in the year following the standard effective date of the respective wattage's phase out per EISA, not in the same year.

An additional adjustment was considered that would further delay the effects of EISA to account for standard wattage incandescent bulbs that remain in storage beyond the time that they are no longer available for purchase. A review of Duke Energy's residential efficiency program evaluations for 2012 and 2013 revealed that the number of incandescent bulbs stored in a typical home is insufficient to justify the use of such an adjustment.

A more recent study has found that 100-watt bulbs reached 24% availability seven quarters after the EISA standard took effect<sup>46</sup>. This approach assumes a 10% reduction in availability, for each year after the second until 100-watt bulbs are completely phased out. At this point, baseline wattage is set at EISA's minimally compliant wattage, taken from Table 115.

<sup>&</sup>lt;sup>45</sup> Indiana Statewide Core Program Evaluation Team. "Indiana 2012 EISA Bulb Availability Study." June 20, 2013. Pg. 3.

<sup>&</sup>lt;sup>46</sup> Cadmus Group. "Summary of EISA2007 Lighting Survey Results for DP&L Q1, Q2, &Q3 2013." Memorandum. October 11, 2013. Pg. 2.

### Appendix L: DSMore Table

Impacts		123.4		EM&V gross	EM&V PTOSS		Combined			EM&V net kW		
Technology	Product	State	EM&V gross savings	kW (coincident	kW (non- coincident	Unit of measure	spillover less freeridership	EM&V net savings	EM&V net kW (coincident	(non- coincident	EM&V load shape	EUL (whole number)
1	Sec. 1		(kwh/unit)	peak/unit)	peak/unit)		adjustment	(kwh/unit)	peak/unit)	peak/unit)	(yes/no)	
Residential Neighborhood Program	1.53	NC, SC	357	0.0964	0.1112	participant	2.1%	350	0.0944	0.1089	no	7
	240											
	1.22								~		- Mitouh-	
Program wide	1		357	0.0964	0.1112		2.1%	350	0.0944	0.1089		7

#### **STAFF-DR-01-035**

#### **REQUEST:**

Refer to the Application, Exhibit I, page 40, Attending the Community Meeting. The Kentucky participation rate in community meetings is significantly lower at 6.9 percent than that in Ohio at 25.7 percent. Explain whether Duke Kentucky has adopted any marketing measures to increase Kentucky attendance.

#### **RESPONSE:**

While it appears that the participation rate in OH is higher than in KY, the percentages provided were based on the survey results of the participants. In actuality, the participation rate in community meetings in both KY and OH has been about 5-7%.

The same marketing measures are performed in both states to encourage customers to attend the community meetings. These marketing measures include a letter introducing the customer to the program, a follow up postcard inviting them to the kickoff event, as well as flyers that are placed on customer's doors and/or public places a few days in advance of the event.

#### PERSON RESPONSIBLE: Lorraine Maggio

#### **STAFF-DR-01-036**

#### **REQUEST:**

Refer to the Application, Exhibit I, page 49. Explain how the auditor records are confirmed for quality control and assurance.

#### **RESPONSE:**

Ten percent of all installations performed by the vendor's crew are randomly checked for quality control by their direct supervisor. In addition, five percent of the installations are also performed by a Duke Energy employee or contractor to ensure that the installation information is accurate. Each quality control inspection is rated on a pass/fail and all discrepancies are identified and addressed.

#### PERSON RESPONSIBLE: Lorraine Maggio

#### **STAFF-DR-01-037**

#### **REQUEST:**

Refer to the Application, Exhibit I.

- a. Based on the findings and recommendations of TecMarket Works, explain what recommendations Duke Kentucky is considering implementing and what program improvements have been made.
- b. State whether any lessons have been learned since the program was implemented.
   Provide a full description of any such lessons.
- c. Provide the cost of the Process and Impact Evaluation of the 2013-2014 Residential Neighborhood Program in Ohio and Kentucky prepared by TecMarket Works, the amount applicable to Kentucky, and explain whether it is part of the cost to be recovered in this proceeding.

#### **RESPONSE:**

- a) The recommendations that were presented in the report were from the participants' view to increase participation. At this point in time, Duke Energy has no plans to increase the measures that are being provided to the customers. Several of the suggestions, such as insulation, sealing leaky doors and thermostats are measures that are available through the weatherization program.
- b) Some of the lessons learned in the delivery of the program include:
  - a. 'Right sizing' the neighborhood so that the impact of being in the neighborhood does not wear off after a long period of time. The 'right

size' for most neighborhoods seems to be  $\sim$ 900 to 1200 homes. Moving forward, we will work to meet those requirements.

b. Increasing the presence of the crews in the neighborhoods has been another lesson learned. In the past, the crew worked from scheduled appointments, and as a result was less visible. Going forward, the crew will work in a more structured pattern street by street, increasing their visibility within the neighborhood, hopefully resulting in higher penetration rates.

c.) Invoices received for the evaluations are broken down into the time frames of July,
2013 – June, 2014 (refer to p. 1 Exhibit B 2015 Amendment Filing) and from July, 2014
– June, 2015 (costs will be included in the annual DSM cost recovery filing to be filed in
November 2015).

		ntucky	Ohio		Total		
Invoices received July 2013 through June 2014	\$	13,324.57	\$	32,630.46	\$	45,955.03	
invoices received July 2014 through June 2015	\$	27,177.41	\$	55,793.79	\$	82,971.20	

**PERSON RESPONSIBLE:** Lorraine Maggio/Rose Stoeckle (c)

#### **STAFF-DR-01-038**

#### **REQUEST:**

Refer to the Energy Efficiency in Schools Program – Evaluation, Measurement & Varication for Duke Energy Kentucky, prepared by Cadmus, dated July 31, 2015.<sup>1</sup>

- a. Based on the findings and recommendations of Cadmus, explain what recommendations Duke Kentucky is considering implementing and what improvements have been made to the program since its inception.
- b. State whether any lessons have been learned regarding the program. Provide a full description of any such lessons.
- c. Provide the cost of the evaluation prepared by Cadmus.
- d. If the Commission were to agree to discontinuing the annual evaluations, explain how that would affect the cost-effectiveness of the program and the ability to closely monitor the program.

#### **RESPONSE:**

a. Duke reviewed the Cadmus team's evaluation and areas for potential improvements. Below is a summary to address each recommendation from the evaluation report and provide potential areas Duke Energy Kentucky could explore to further refine program operations or expand program benefits.

<sup>&</sup>lt;sup>1</sup> Case No. 2012-00085 Application of Duke Energy Kentucky, Inc. for an Energy Efficiency Cost Recovery Mechanism and for Approval of Additional Programs for Inclusion in its Existing Portfolio (filed Aug 17, 2015) located in the Post Case Referenced Correspondence files.

Recommendation: Continue using the same program delivery mechanism and processes.

The Energy Education in Schools Program has grown dramatically in Kentucky since its inception, largely driven by the addition of The National Theatre for Children's Performance Program. This Program has reached a broader audience and has reinforced the more in depth classroom teaching curriculum provided by NEED, which appeals to a smaller audience of science teachers. Together the system of Programs offers a well-received energy efficiency educational curriculum for teachers and students. The metrics also tell a positive story and together the Programs have exceeded participation goals and shown high satisfaction. Duke Energy agrees with the Cadmus recommendation above to continue them.

*Recommendation:* Consider modifying the quantity and type of items included in the Energy Efficiency Home Kits, if Duke Energy finds it cost-effectively and sufficiently beneficial to do so.

The Program will seek opportunities for increasing savings through modifications to the Energy Efficiency Home Kit. The water measure installations will be reinforced in the curriculum and tied directly to saving energy and money in the home. Duke Energy Kentucky will review the quality performance of the water measure items with the kit vendor and consider cost effective alternatives if available. There are plans to upgrade CFLs with LEDs in early 2016 which will offer the latest technology and further increase satisfaction ratings. LEDs at current prices limit the quantities Duke Energy Kentucky can offer in the kit without jeopardizing the cost effectiveness scores. The only item that

could be eliminated based on low "installation" rates could be the hot water temperature bag but this adds to the portfolio of water measures and is a minor cost to the kit.

*Recommendations:* Consider increasing outreach to adults in the student's household through modifications to the business reply cards included in Energy Efficiency Home Kits or additional follow-up surveys.

Duke Energy will consider the suggested outreach to parents using the BRC, via the online participant survey, which could be modified more easily at minimal cost, and include energy saving messages along with the survey questions. Another tactic planned is the use of social media, such as Facebook and Twitter postings on the school's pages where parents are likely to read and respond to tags, photos messages and comments around the week of the school performance. More online and interactive games and teaching lessons offered by NTC will hopefully engage parents through students as they work with classroom and take home assignments.

*Recommendations:* Future evaluations should consider including additional, indepth phone interviews with school staff that have participated in the program, as well as schools that have not participated in the program.

NTC has identified schools that have not hosted a performance to date and developed a specific outreach plan beginning this fall to include personal visits to the schools by an NTC employee to gather feedback and present the curriculum benefits and offering. Additionally the non-participating schools may receive personal contact with a Duke Energy Kentucky area manager to encourage participation and the Program Manager will request their input on barriers to school participation. Additionally, our K12 partner, NEED, through the teacher workshops, offers the opportunity to hold focus groups with

teachers that have participated in one or both K12 programs to gather feedback and reveal insights on household kit participation as well as other opportunities for improvement.

*Recommendations:* Consider providing schools with bins to collect unused Energy Efficiency Home Kit items for purpose of including in future kits or donating to charity.

Duke Energy traditionally has not supported collecting or giving away unused bulbs or water measures since the Program is tied to the direct billing accounts of customers that have ordered the kits.

# *Recommendations:* Future evaluations should consider including additional populations for billing analysis.

Cadmus recommended three groups for the billing analysis: the program kit participants, the homes of children that attended the presentations but did not receive a kit, and a control group of homes not exposed to the performances and outreach, if those populations are available. It would not be feasible for Duke Energy to survey the students that attended the presentations but did not receive a kit since this information is not made available to Duke Energy. Additionally, the performances are assembly style for the student body so most of the students have attended the presentations. It is not known which specific student households at the school did or did not attend the performance.

b. The two K12 programs have proven to reach students successfully in different ways and increased energy efficiency behavior. The live interactive theatrical presentations and supplemental classroom workbooks provide awareness and exposure to create an interest in energy efficiency and make it fun to learn. As the focus on math and science increases at schools, the NEED curriculum provides math and science teachers with valuable state standard lessons that meet their classroom requirements and provide more advanced learning tools on energy education for the classroom, thus filling a void in energy educational content for teachers.

Two separate K12 Programs created some overlap which has been addressed. The separate Program sign up forms for the same K12 home kit initially created some confusion and overlap at schools but the NEED teacher training workshops have provided a forum to provide more clarity and direction for teachers in schools that participate in both programs. Additionally, NEED targets the intermediate grades levels (6-8) more effectively with the content, while NTC performances resonate best with the elementary students at 2-3 grade levels.

In the last six months, as part of Duke Energy Kentucky's sourcing requirements, a request for proposal was issued for the performance program and after reviewing proposals from multiple vendors, Duke Energy Kentucky selected to renew The National Theatre for Children contract which offered value pricing, broad appeal and reach, and strong teacher satisfaction ratings.

c. Invoices received for the evaluation from TecMarket Works and from Cadmus, who acquired TecMarket Works in 2015, are broken down into the time frames of July, 2013 – June, 2014 (refer to p. 1 Exhibit B 2015 Amendment Filing) and from July, 2014 – June, 2015 (costs will be included in the annual DSM cost recovery filing to be filed in November 2015).

	Invoices Received
Invoices received July 2013 through June 2014	\$ 2,555.81
invoices received July 2014 through June 2015	\$ 50,265.19

d. EMV costs are not included in cost effectiveness calculations, therefore this change would have no impact on cost effectiveness. The reduction in cost would, however, reduce the amount of costs that are funded by customers through the DSM rider. Based on the demonstrated history of EMV reports for the program, it is Duke Energy Kentucky's opinion that continuing with annual evaluations would provide little new/updated information about the program. Under the proposed model, Duke Energy Kentucky will continue to perform verifications of the program data provided by the program implementer, and then the third-party evaluator would do a full independent evaluation every 2-3 years to ensure that the verifications are being done correctly, update the program impacts, and identify opportunities for program improvement.

#### **PERSON RESPONSIBLE:**

- a. Christine Smith
- b. Christine Smith
- c. Rose Stoeckle
- d. Roshena Ham