

Figure 30. Likelihood of Buying and Using CFLs in the Future on 1-10 Scale

Among the 61 people who were more likely to buy and use CFLs in the future, 45.9% said it was because the bulbs last longer, 26.2% liked the brightness of the bulbs, and 23% said they appreciated the savings on their utility bills. Table 21 presents their reasons for being more likely while Table 22 shows reasons for being less likely.

Table 21. Reasons for Being More Likely to Purchase CFLs in Future

Reason for being more likely to buy CFLs	N Responses	% of Respondents
Last longer	28	45.9%
Like the brightness	16	26.2%
Save money on utility bills	14	23.0%
Like the light quality	10	16.4%
Use less energy	9	14.8%
More durable	5	8.2%
Incandescents are being phased out	3	4.9%
The bulbs are not as hot.	2	3.3%
Lower carbon footprint	1	1.6%
Appearance	1	1.6%
Never had a problem with them.	1	1.6%

**Note: Multiple responses were possible: 61 people gave 90 responses.*

Only 7 people (8.5% of all tenants surveyed) felt they would be less likely to purchase CFLs in the future. Among these people, the most common reasons were that CFLs were too expensive and that they burned out too quickly. Other reasons are shown in Table 22 below.

Table 22. Reasons for Being Less Likely to Purchase CFLs in the Future

Reason for being more likely to buy CFLs	N Responses	% of Respondents
Too expensive	3	42.9%
Burn out too quickly	3	42.9%
Not bright enough	2	28.6%
Bulb shape	1	14.3%
Dislike light quality	1	14.3%

**Note: Multiple responses were possible: 7 people gave 10 responses.*

Because intended future behavior is not the same as present behavior, we also asked about any CFL purchases that tenants may have made after participating in the program. While 91.5% of survey respondents said that they had not purchased any additional CFLs since the program, 8.5% of tenants had done so. These seven CFL purchasers bought a combined total of 18 CFLs for an average of 2.6 CFLs apiece. Of these 18 bulbs, 14 CFLs were reported to be in current use. This represents an average of 2.0 CFLs apiece among those who purchased them. The seven CFL buyers rated the program's influence on their purchase decisions at an average of 8.9 on a scale of 1 to 10, with 10 being most influential.

When considering these findings about new CFL purchases it is important to keep in mind that the acquisition of additional light bulbs within the few months of the original CFL installs is to some extent a function of the number of additional light sockets within the home and the degree

to which property managers made tenants aware that any burned out Duke Energy CFLs can be replaced for free under a two year warranty.

Factors Influencing the Purchase of CFLs

Light bulb purchases may be influenced by a number of different factors affecting a buyer's decision. To determine which factors have more influence, all survey respondents were asked to score the importance of various light bulb characteristics using a scale of 1 to 10 with 1 being not at all important and 10 being very important. When the responses are ranked according to mean importance scores "energy savings" topped the list of reasons with a mean importance rating of 9.8 on the 10 point scale (Table 23). "Cost savings on utility bill" immediately followed with a rating of 9.7. "Purchase price of the bulb" (9.4) and "Availability in stores where you normally shop" (9.2) also scored highly. The least important characteristics included "Ability to dim light levels" (4.6) and "attractive appearance" (5.4). Overall this suggests that an effective way to increase CFL adoption and installation by tenants of multi-family properties is to focus messaging on cost and energy savings and to make the bulbs available in stores where tenants normally shop.

Table 23. Importance of Bulb Characteristics in Purchasing Bulbs

Bulb Characteristic	Mean Importance
Energy savings	9.8
Cost savings on your utility bill	9.7
Purchase price of the bulb	9.4
Availability of the bulb in stores you normally shop	9.2
Selection of wattage and light output levels available	8.8
Ease of bulb disposal	8.1
Speed of which the bulb comes up to full lighting level	7.3
Recommendations from the utility company	7.1
Availability of utility programs or services that offer the bulbs to you directly	7.0
Mercury content of the bulb	6.5
Recommendations from family and friends	6.5
Attractiveness or appearance of the bulb	5.4
Ability to dim the lighting level	4.6

Current and Future LED Use

The survey also contained a battery of questions regarding LED use. According to tenants we spoke with, their previous experience with LEDs was minimal. Ninety five percent (95.1%) of survey respondents said they had never installed any LEDs in their homes, compared to just 3.7% who had and 1.2% who were unsure. Among the three people reporting previous LED use, two people said they began using LEDs within the past year, while one person had been using LEDs for more than four years. All three people said they purchased their LEDs from a retail store, but only one person indicated that the LEDs were actually installed when their landlord

came in to install the program CFLs. This person claimed to have seven LEDs installed in the home and another five extra LEDs on hand to replace those that burned out. The other two people reported that they no longer had their LEDs installed, nor did they have any LEDs in storage.

When asked if they had any plans to purchase LEDs before their landlord installed the CFLs, 87.8% said they did not and 7.3% said they were not sure. Only four out of the 82 survey respondents (4.9%) said they had already planned to purchase LEDs. This group included the one person with four years of prior LED experience, but not the other two people who had tried LEDs more recently.

Interestingly, the program sparked a modicum of additional LED interest among those with no prior experience, yet it had a similarly off-putting nature for an equal number of program participants. After gaining experience with the use of CFLs through the program 14.6% of survey respondents said they were now more likely to buy and use LEDs. However, the exact same percentage (14.6%) said they were now less likely to try LEDs. A near majority (48.8%) said they were neither more nor less likely, while 22% remained unsure (Figure 31).

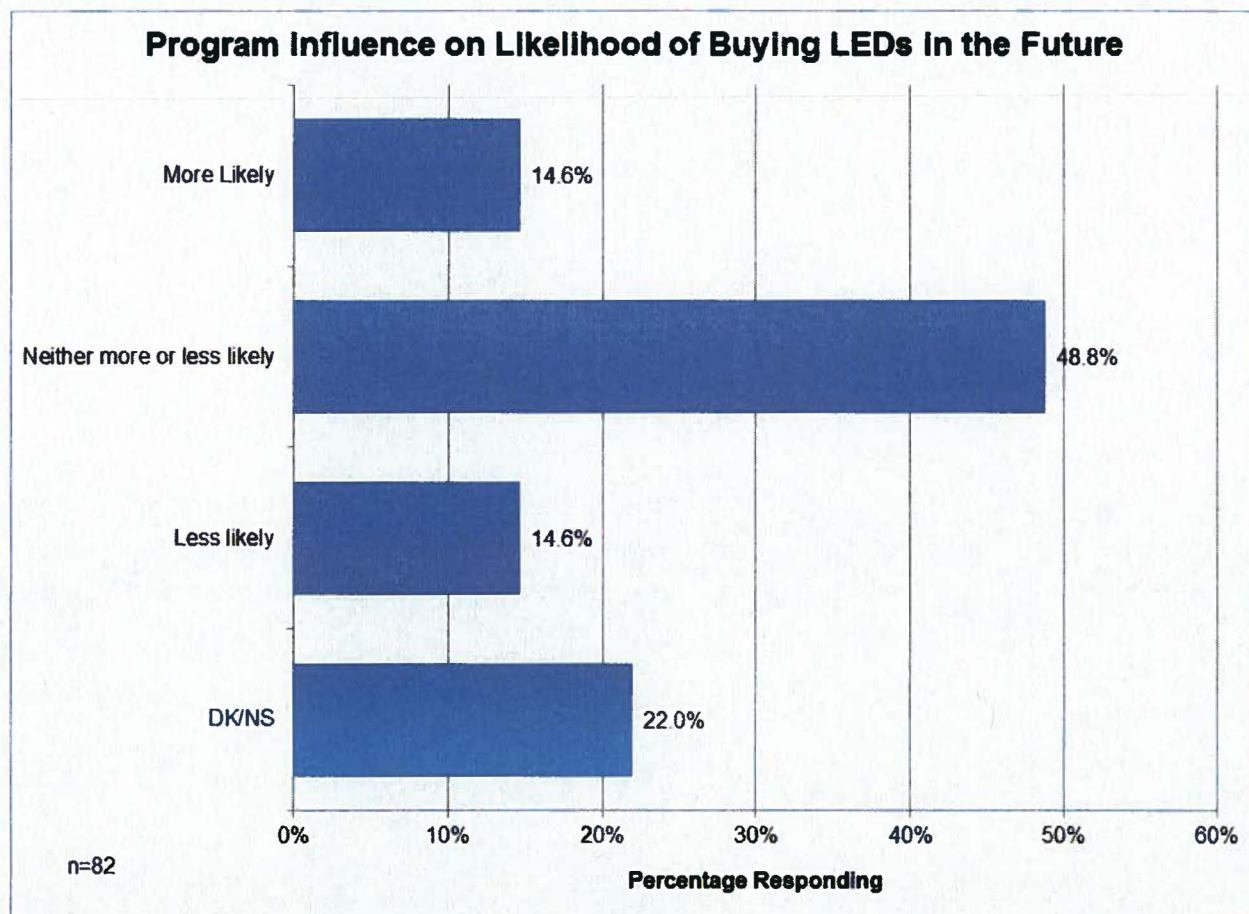


Figure 31. Likelihood of Future LED Purchases

In all twelve people said they were now more likely to purchase LEDs, but no one had yet made an actual LED purchase since receiving the program CFLs. When asked why they felt they were

now more likely to purchase LEDs in the future, half of the dozen people (50%) indicated that it was because LEDs are brighter, while 16.7% apiece said that LEDs last longer and have a better reputation. As noted above, an equal number of people (12) said their experience with the program CFLs made them less likely to use LEDs in the future. Their top reasons included now being satisfied with CFLs (33.3%) and the higher cost of LEDs (33.3%). Table 24 and Table 25 show the full range of their reasoning.

Table 24. Reasons for Being More Likely to Purchase LEDs in Future

Reason for being more likely to buy CFLs	N Responses	% of Respondents
Brighter	6	50.0%
Last longer	2	16.7%
Better reputation	2	16.7%
Save more energy	1	8.3%
Less expensive to run	1	8.3%
Light quality	1	8.3%

**Note: Multiple responses were possible: 12 people gave 13 responses.*

Table 25. Reasons for Being Less Likely to Purchase LEDs in the Future

Reason for being more likely to buy CFLs	N Responses	% of Respondents
Satisfied with CFLs	4	33.3%
Too expensive	4	33.3%
Not bright enough	2	16.7%
Don't like light quality	2	16.7%
Because I am a renter	1	8.3%

**Note: Multiple responses were possible: 12 people gave 13 responses.*

Tenant responses were somewhat more distinct when a follow up question asked them to rate the likelihood of buying and using LEDs in the future using a 1 to 10 scale, with 10 being the most likely. In this case, survey respondents indicated a clear disinterest in buying and using LEDs in the future. More than half (52.4%) rated their likelihood at a 3 or less, and 40.1% rated their likelihood a 1, thus indicating they are not at all likely to purchase and use LEDs (Figure 32). On the other end of the scale, 17% rated their likelihood of future LED purchases with top two box scores of either 9 or 10. The mean level of likelihood was 4.1.

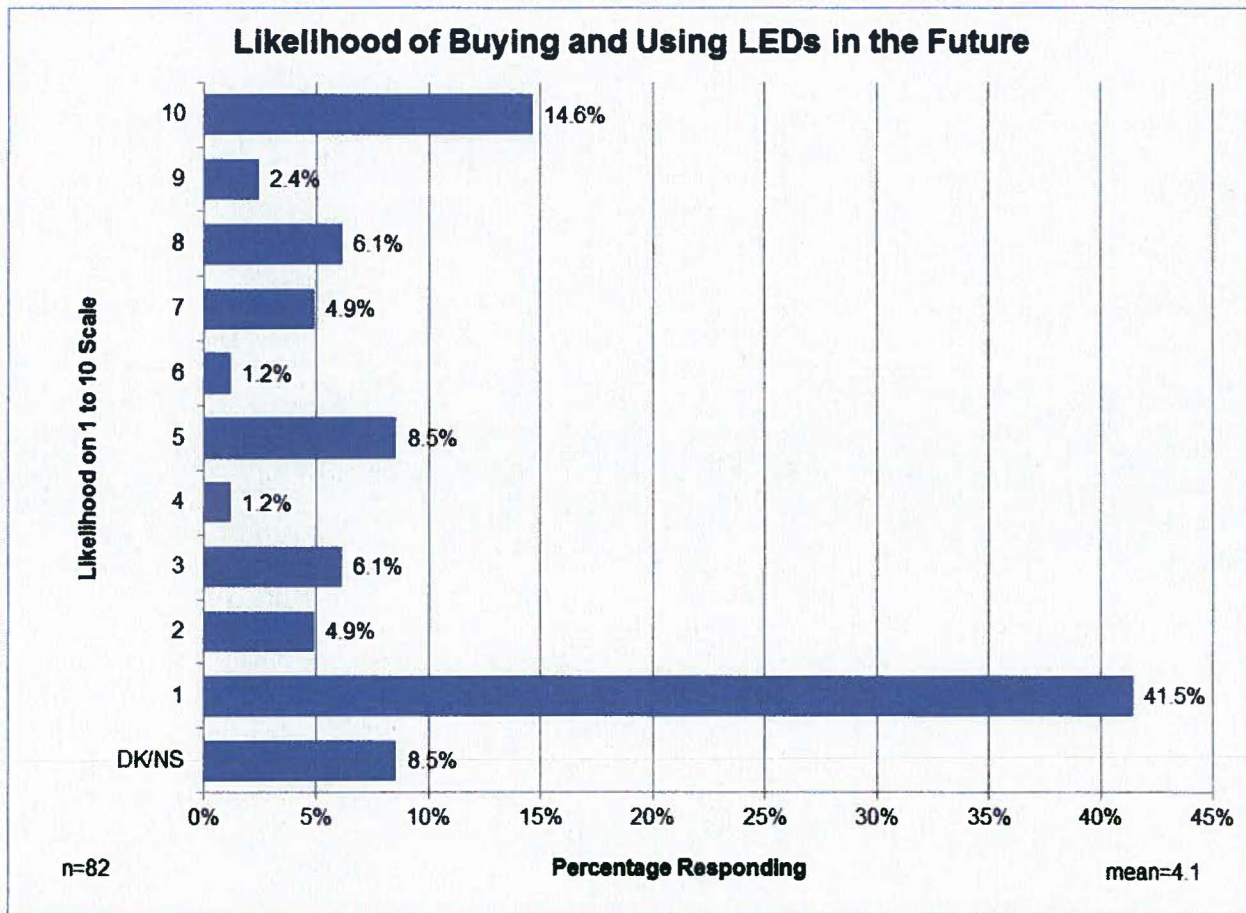


Figure 32. Likelihood of Buying and Using LEDs in the Future on 1-10 Scale

Specialty Bulbs

Next the survey asked about types of specialty bulbs in tenant homes and how many of those bulbs were CFLs and LEDs. Overall these two kinds of energy efficient bulbs accounted for less than a combined one quarter (24.8%) of all specialty bulbs in tenant homes. When asked about the particularly specialty bulbs that they had, three-way bulbs proved to be the most popular type with 17 people reporting a total of 39 bulbs. Of these 39 bulbs, 23% were said to be CFLs. None were LEDs. Candelabras were the one type of bulb that respondents reported having in all three varieties: CFL (37%), LED (5%), and other varieties including incandescents (58%). Survey respondents said they had no other type of specialty LED besides candelabras. A more complete breakdown by bulb type is displayed in the table below.

Table 26. Prevalance of Specialty Bulbs

	Bulb Type	Dim-mable	Outdoor Flood	Three-Way	Spot-light	Reces-sed	Candel-abra	Other
Number of Respondents by Bulb Type	CFLs	--	--	5	--	1	6	3
	LEDs	--	--	--	--	--	1	--
	Other	2	--	12	--	3	7	11
	Total	2	--	17	--	4	14	14
Bulb Count by Type	CFLs	--	--	9	--	1	14	6
	LEDs	--	--	--	--	--	2	--
	Other	7	1	30	2	8	22	27
	Total	7	1	39	2	9	38	33
Percent by Bulb Type	CFLs	--	--	23%	--	11%	37%	18%
	LEDs	--	--	--	--	--	5%	--
	Other	100%	100%	77%	100%	89%	58%	82%
Average # Bulbs per Respondent		2.3	1.0	2.2	2.0	1.8	2.5	2.2
Estimated Average # Hours of Use	CFLs	--	--	--	--	1.0	2.3	2.0
	LEDs	--	--	--	--	--	2.0	--

Interest in Specialty Bulb Program

All survey respondents were asked about their interest in participating in a Duke Energy program that delivers specialty bulbs via direct mail. They rated their interest using a scale of 1 to 10 with 1 being not at all interested and 10 being very interested. Overall survey respondents were more interested in receiving CFLs than LEDs. Their mean ratings for interest averaged 5.5 for CFLs and only 3.9 for LEDs. Top two box scores of either a 9 or 10 on the 10 point scale show a combined 35% for CFLs compared to 22.4% giving 9 or 10 ratings for LEDs. The full range of responses is show in Figure 33 below.

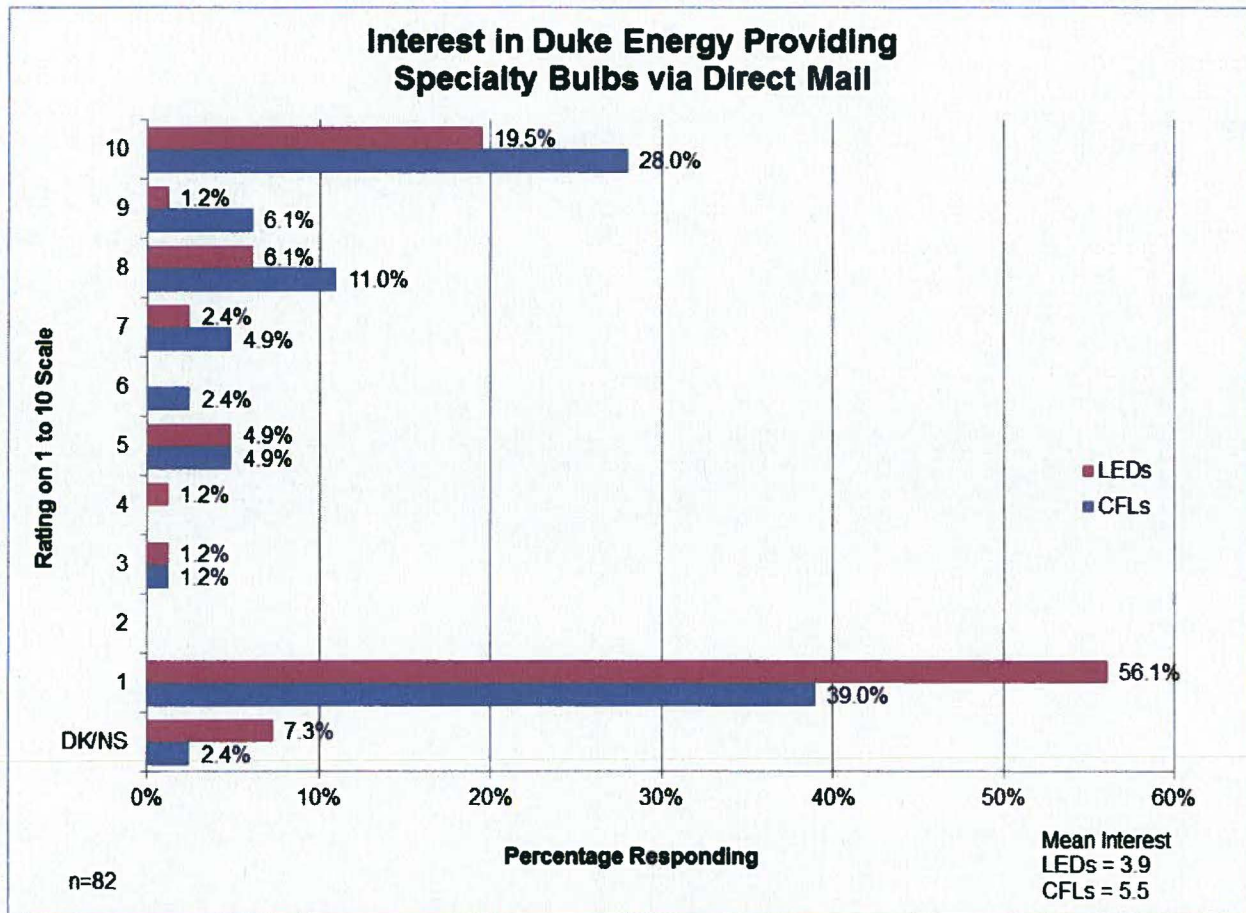


Figure 33. Interest in Direct Mail Specialty CFL Program

As a follow up, program participants were asked to indicate their interest in specific types of CFL and LED bulbs and to estimate the number of hours that they'd use the bulbs each day. Types of specialty bulbs included: dimmable bulbs, outdoor floods, three-ways, spotlights, recessed, candelabras, and other types. Three-way bulbs proved to be the most desired bulb type for both CFLs (36.6%) and LEDs (22%). Recessed CFLs (mean of 8.6 hours/day) and spotlight LEDs (mean of 9.5 hours/day) were the bulb types that respondents expected to be used most frequently. The table below provides a comparison of their relative interest in various bulb types and the anticipated hours of use. When level of interest and anticipated hours of use are considered together, three-way bulbs appear to be the type of CFL and LED that would yield the greatest interest and a high level of daily use.

Table 27. Interest in Specialty Bulbs by Type and Hours of Use

Bulb Type	CFLs			LEDs		
	# Responses	% Responses	Avg Hrs/Day	# Responses	% Responses	Avg Hrs/Day
Three-Way	30	36.6%	5.1	18	22.0%	4.3
Dimmable	11	13.4%	6.6	6	7.3%	4.3
Candelabra	11	13.4%	6.2	10	12.2%	6.1
Other	6	7.3%	3.6	4	4.9%	3.1
Outdoor Flood	5	6.1%	8.1	4	4.9%	9.3
Spotlight	4	4.9%	7.4	3	3.7%	9.5
Recessed	4	4.9%	8.6	5	6.1%	7.2

Next 10 Bulb Purchases

Finally to summarize this battery of bulb purchase questions, the survey asked respondents to consider the next 10 light bulbs that they intended to buy and to categorize them by bulb type. CFLs were the overwhelmingly favorite category with 87.8% of respondents indicating that they planned to buy CFLs in the future. Incandescents were the next most popular bulb type with 64.6% of respondents. CFLs were also the overwhelmingly favorite bulb type in terms of the number of bulbs that tenants intended to purchase, representing seventy percent (70.5%) of planned bulb purchases for an average of 8 bulbs per person (Table 28).

Table 28. Anticipated Next 10 Bulb Purchases

	Incandescents	Halogens	CFLs	LEDs	Other	DK/NS
Number Respondents	53	35	72	33	34	29
Percentage Respondents by Bulb Type	64.6%	42.7%	87.8%	40.2%	41.5%	35.4%
Number of Planned Bulbs to Be Purchased	179	11	578	7	6	39
Percentage of Total Intended Bulb Purchases	21.8%	1.3%	70.5%	0.9%	0.7%	4.8%
Average Number Bulbs	3.4	0.3	8.0	0.2	0.2	1.3

**Note: Multiple responses were possible by the same person.*

Program Influence on Tenant Energy Savings Behaviors

To assess if tenant participation in the program was influential in changing energy-related behaviors, the survey asked participants if they had changed any habits related to energy use. Among those surveyed, 84.1% said they had made no changes to their behavior, compared to 15.9% who had. When asked to specify what types of behavior changes they had made, 13 people described taking 17 actions to save energy. Table 29 displays the type and frequency of their replies, the most prevalent of which was turning off or using fewer lights which received 9 replies and represents 69.2% of all replies or 11% of the total survey population.

Table 29. Tenant Energy Saving Actions

Behavior Change	Frequency of Response*	Percentage Among People Who Have Changed Behavior	Percentage of Total Survey Population Responding
Turn off/use fewer lights	9	69.2%	11.0%
Unplug when not in use	2	15.4%	2.4%
Increased awareness of energy use	2	15.4%	2.4%
Use less HVAC	2	15.4%	2.4%
Re-installed old incandescents	1	7.7%	1.2%
Installed low flow showerhead	1	7.7%	1.2%

*Note: 13 people took a total of 17 energy saving actions.

Verbatim comments are shown below.

- *I am more aware of my energy use and try to turn lights off when they're not needed.*
- *I don't use lighting as often. I don't keep heat on as high; I have baseboard electric, which I now keep at 60 in winter in my bedroom and it had been at 70.*
- *I go down to one light at night now.*
- *I have been much more conscious of turning out the lights.*
- *I have been unplugging the microwave and any lamps that are not in use.*
- *I re-installed some of my old incandescent bulbs.*
- *I try to turn off lights when I am not around them.*
- *I try to use lights only when they're needed.*
- *I turn off things when I don't need them like extra lights. I also keep my temperature at a lower set level.*
- *I'm concerned about my utility bills being high. I really need to budget and not waste money on utilities. I noticed the savings from the CFLs and I am now more aware of my energy usage habits as well.*
- *The bulbs I've been buying have saved me some energy. I unplugged a DVR when I'm not using it and I installed a low flow showerhead.*
- *The lights are brighter, so I don't need to use as many lights. I like the brightness. It makes me feel good for my soul.*
- *We try to turn lights off when they're not needed.*

Although this program is not considered to be a behavior change program, these results show that the act of directly installing CFLs may potentially be having a modest influence on tenant energy savings actions amongst the recipients. While measuring that influence would require further investigation using a different research design, we can suggest that if behavior driven efficiency changes among tenants are desired by Duke Energy, then additional steps toward energy efficiency awareness and education may need to be added.

Energy Efficiency Improvements Made After CFL Installs

After participating in the direct install CFL program, surveyed tenants reported a number of different types of additional efficiency improvements had been made to their homes. Although 79.3% of respondents reported taking no action, 17 tenants (21.7%) reported that they or their property managers had taken a total of 25 additional energy saving actions after the CFLs had been installed. Low flow showerheads (8.5%) were the most common upgrade, followed by weatherstripping (7.3%), and caulking (6.1%) as shown in Figure 34.

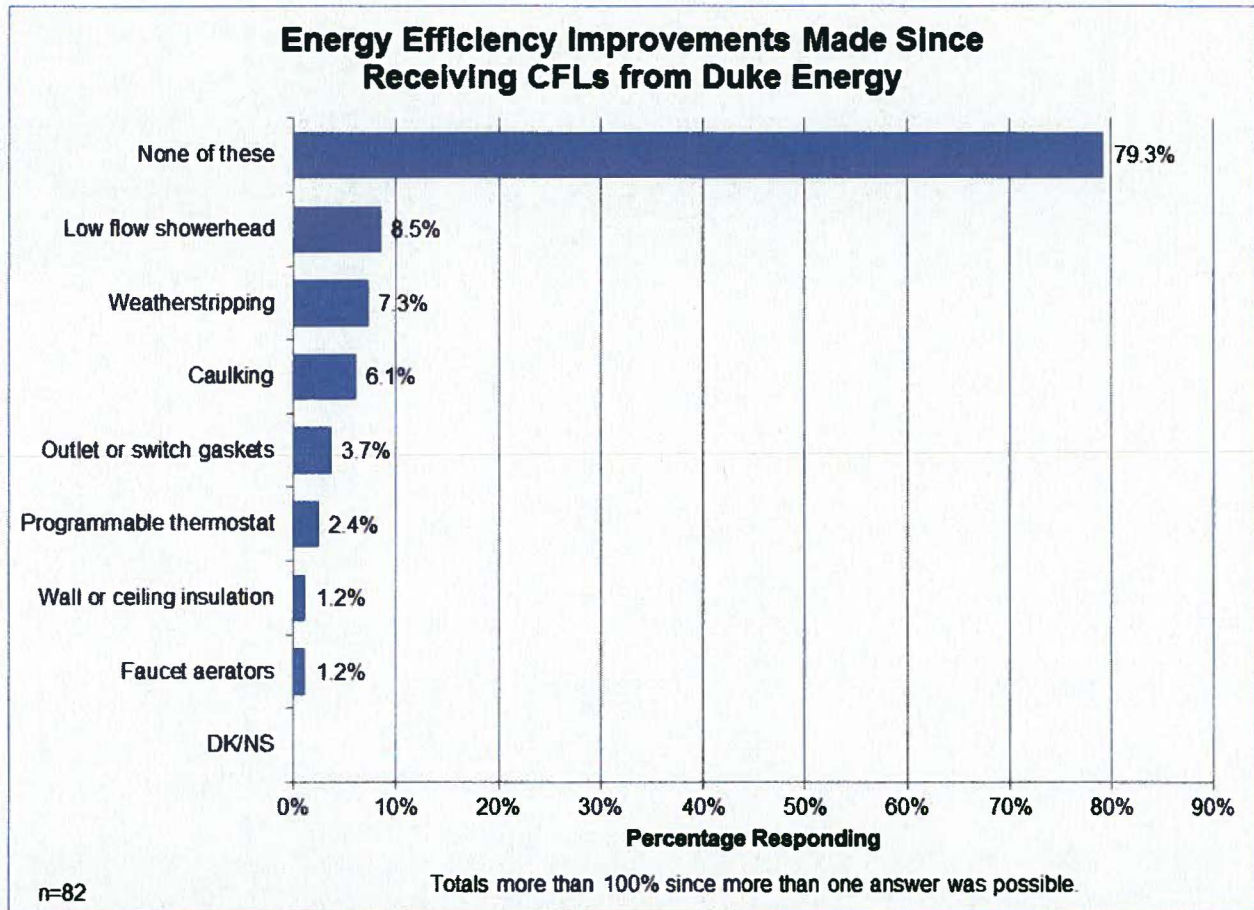


Figure 34. Energy Efficiency Improvements after CFL Installs

When asked who was responsible for the additional improvements, tenants claimed to have initiated nine of the 25 improvements (36%), while saying that their landlords were responsible for 12 improvements (48%), and remaining unclear on who had made 4 changes (16%). in the figure below. A breakdown of improvements by responsible party is shown in the table below.

Table 30. Subsequent Energy Efficiency Improvements

Improvement	Improvement		Responsible Party					
			Tenant		Landlord		Not Sure	
	N	%	N	%	N	%	N	%
None of these	65	79.3%	--	--	--	--	--	--
DK/NS	0	0.0%	--	--	--	--	--	--
Low flow showerhead	7	8.5%	3	42.9%	3	42.9%	1	14.3%
Weather stripping	6	7.3%	4	66.7%	1	16.7%	1	16.7%
Caulking	5	6.1%	1	20.0%	3	60.0%	1	20.0%
Outlet or switch gaskets	3	3.7%	1	33.3%	2	66.7%	--	--
Programmable thermostat	2	2.4%	--	--	1	50.0%	1	50.0%
Wall or ceiling insulation	1	1.2%	--	--	1	100.0%	--	--
Faucet aerators	1	1.2%	--	--	1	100.0%	--	--
Total Number of Improvements	25	--	9	36%	12	48%	4	16%

**Note: Multiple responses were possible by the same person.*

Attitudes and Awareness

Because tenants were informed about the program by their property managers and not by Duke Energy directly, the survey sought to ascertain why customers thought that Duke Energy was providing free CFLs through the direct install program. The most frequently mentioned reason was "Duke Energy wants to save their customers money" followed closely by "Duke Energy wants to save energy for economic reasons." The complete distribution of responses is presented in Figure 35 below. Note that multiple responses were possible and therefore percentages total more than 100%.

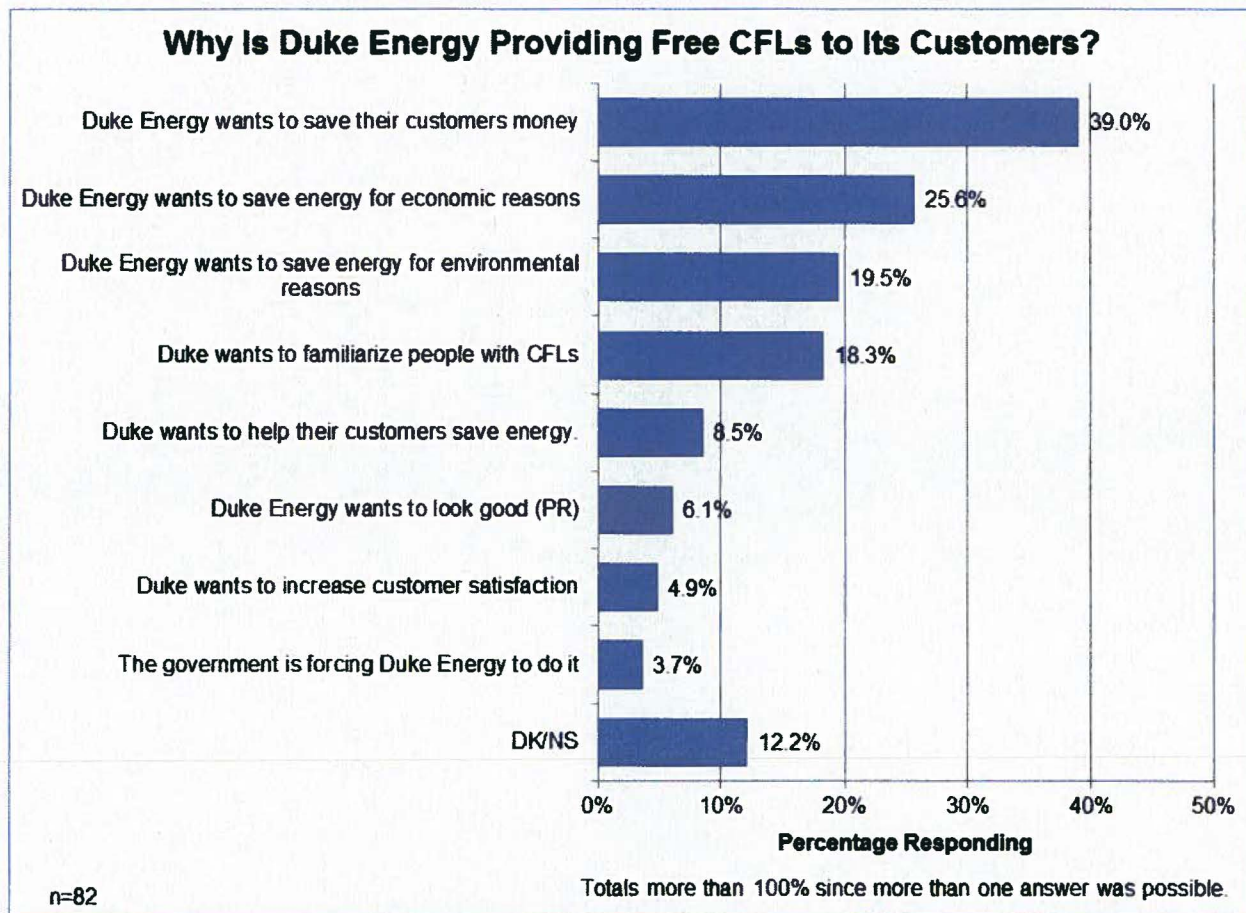


Figure 35. Customer Perceptions of Duke Energy’s Reasons for Giving Free CFLs

Frequency of Visits to Tenant Units

To assess how the installs and any associated quality assurance inspections conducted by Honeywell were affecting tenants, the survey asked how many times their homes were entered as part of the program. Among those we spoke with, 78% indicated that their units were visited one time, compared to 9.8% whose units were entered twice (Figure 36). No tenants reported more than 2 visits. The mean number of visits was 1.0. This aligns with the program’s design and indicates that property manager initiated CFL installs are occurring at the intended frequency of visits to complete the required activities.

Three tenants (3.7%) were unsure of the number visits. But more interestingly, seven people (8.5% of respondents) reported zero visits to their units. The survey did not have a follow up question to identify the incongruity of such a response compared to their survey responses regarding the number of CFLs that had been installed. However, it is plausible that the incongruity arises because the property managers entered the apartments while tenants were not home, and thus tenants did not recall any interruptions.

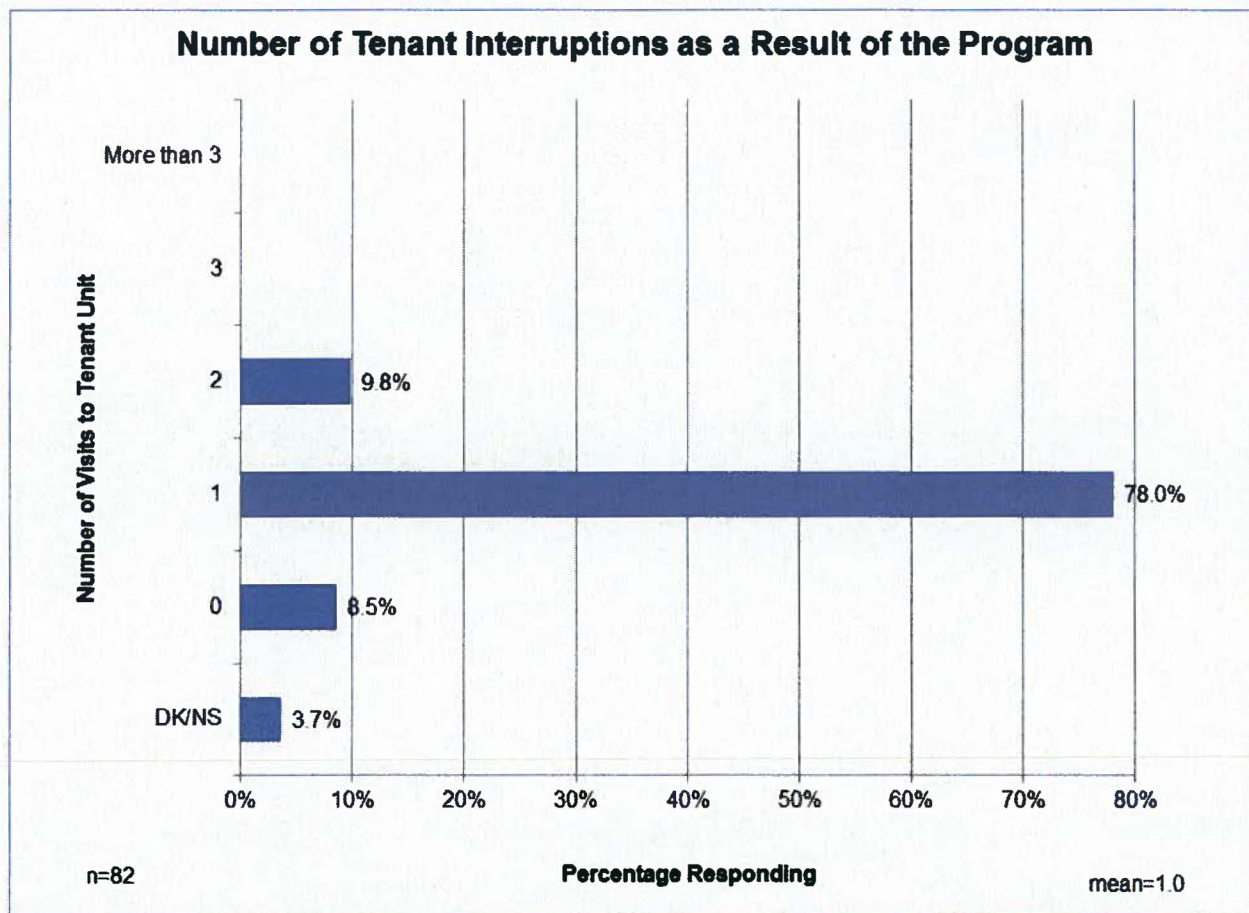


Figure 36. Number of Tenant Interruptions

If tenants reported being visited more than one time, the survey asked them about their experience with the additional interruptions. All respondents felt the additional visits were reasonable. Their verbatim comments are shown below.

- *I feel fine about them coming in twice.*
- *The number of visits was fine by me.*
- *It didn't bother me at all.*
- *I'm fine with them.*
- *I like the program.*
- *OK.*
- *It was fine. (2)*

Customer Satisfaction

Customer satisfaction is high among surveyed tenants in the Kentucky service territory. They were asked to rate their satisfaction with various program attributes using a 1 to 10 scale, with 1 being very dissatisfied and 10 being very satisfied (Figure 37). Tenants rated the light quality of the CFLs with a mean score of 8.6 on the 10 point scale, while bulb quality scored slightly better at 8.8. Customer satisfaction with the program rated a very high mean score of 9.5, while overall satisfaction with Duke Energy scored 9.0.

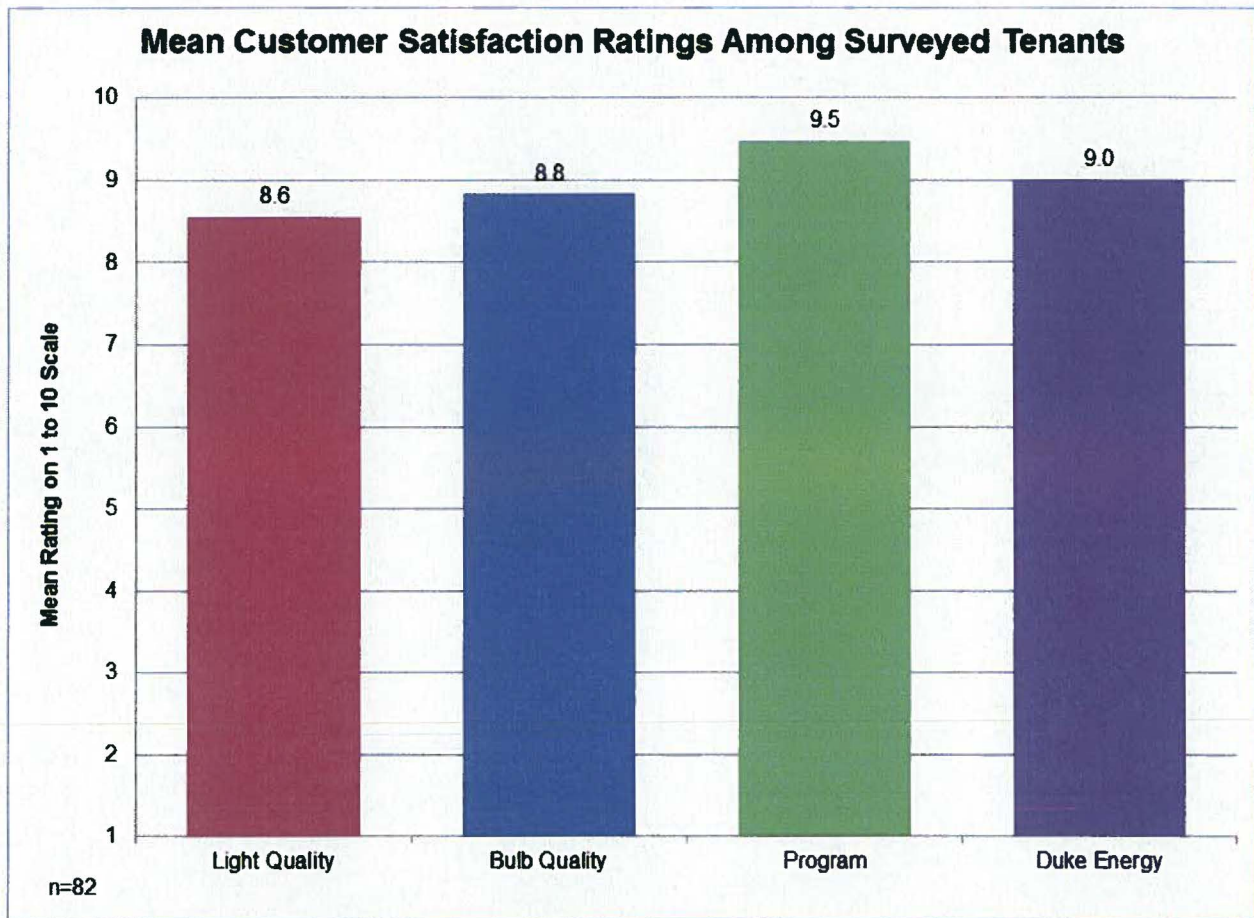


Figure 37. Customer Satisfaction Ratings

Satisfaction with Light Quality

The overall satisfaction scores for light quality using the 10-point scale show a mean satisfaction rating of 8.6 with 56.1% of respondents rating the light quality with a 9 or 10. The distribution of scores is presented in Figure 38.

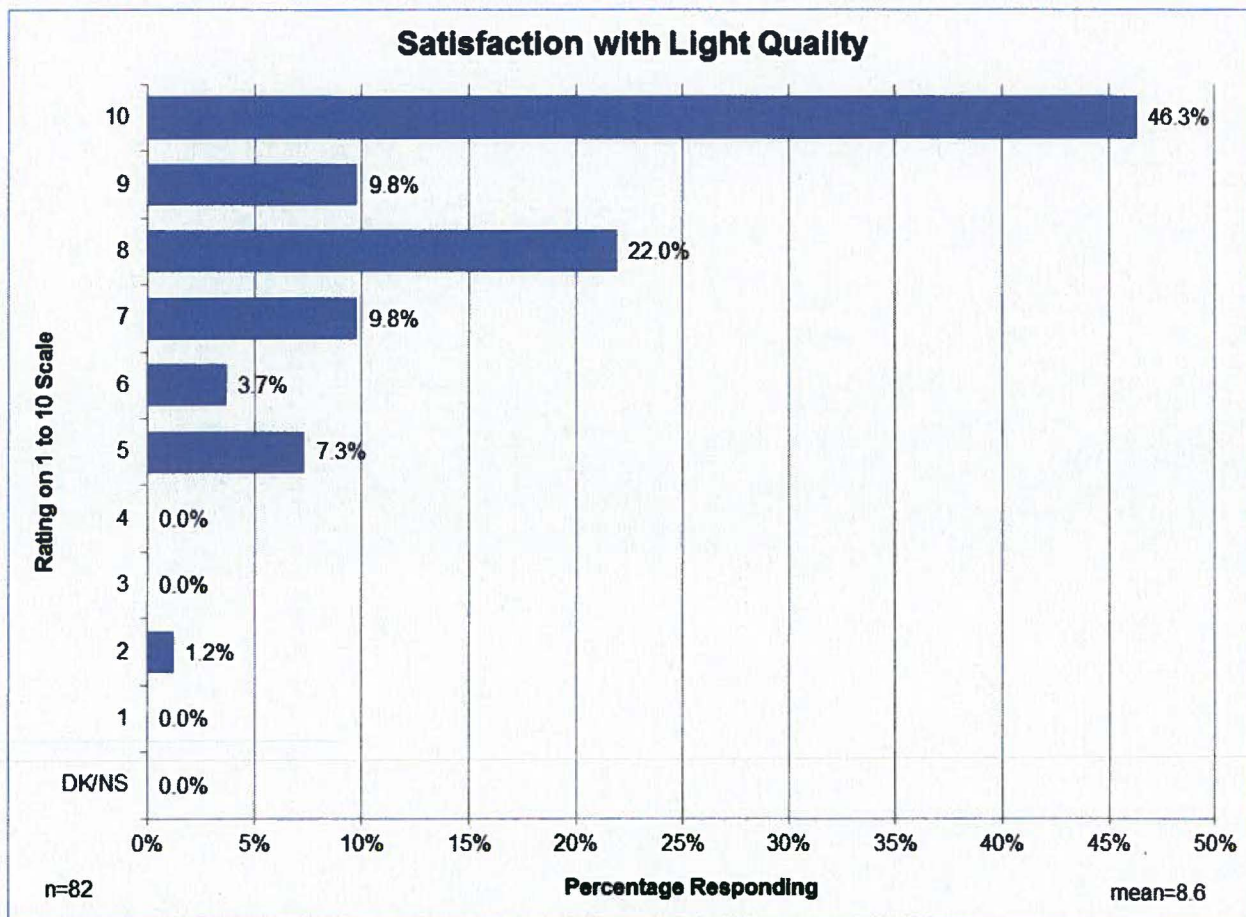


Figure 38. Customer Satisfaction with Quality of Light

The following are the reasons for tenants rating their satisfaction with the program at a 7 or less on the 10 point scale. Not being bright enough was by far the most common reason. Table 31 shows a tally of reasons for being less than fully satisfied, while the list below presents the actual comments.

Table 31. Light Quality: Reasons for Satisfaction Ratings of 7 or Less

Reason for Score of 7 or Less	Frequency of Response
Not bright enough	14
Flickering light	3
Light color	3
Too long to warm up	1

Specific verbatim responses were as follows:

- *I was less than satisfied because they're not bright enough.*
- *I am pleased with the light quality when they work properly, however a number of the installed CFLs began flickering almost immediately.*
- *I don't like the yellow colored light they emit. Also, the CFLs are darker than standard incandescent lights and they don't put out as much light.*

- *I was less than satisfied because CFLs take too long to warm up and then they're not bright enough.*
- *The CFLs are not bright enough.*
- *They are too dim.*
- *They're not bright enough and I don't like the color of the light.*
- *I was less than satisfied because they're not bright enough.*
- *The CFLs seem to flicker.*
- *CFLs are not as bright and I had two that were flickering.*
- *CFLs are too dim.*
- *I don't see much difference; they are dim to begin with.*
- *I think that the light is dim from the CFLs; I'm not used to it, they are a bit dark.*
- *It has a yellowish tint.*
- *They are not as bright as I would like them to be.*
- *They don't put out enough light.*
- *They're not as bright as old bulbs and they don't give out as much light.*
- *DK/NS*

Satisfaction with Bulb Quality

Using the same 10-point scale tenants rated their satisfaction with the overall bulb quality, at an average satisfaction rating of 8.8. More than two thirds (69.5%) percent rated their satisfaction as a 9 or 10. The remainder of the ratings is shown in Figure 39. Table 32 shows reasons for lower satisfaction rating. The most common reason was the CFLs burning out too quickly.

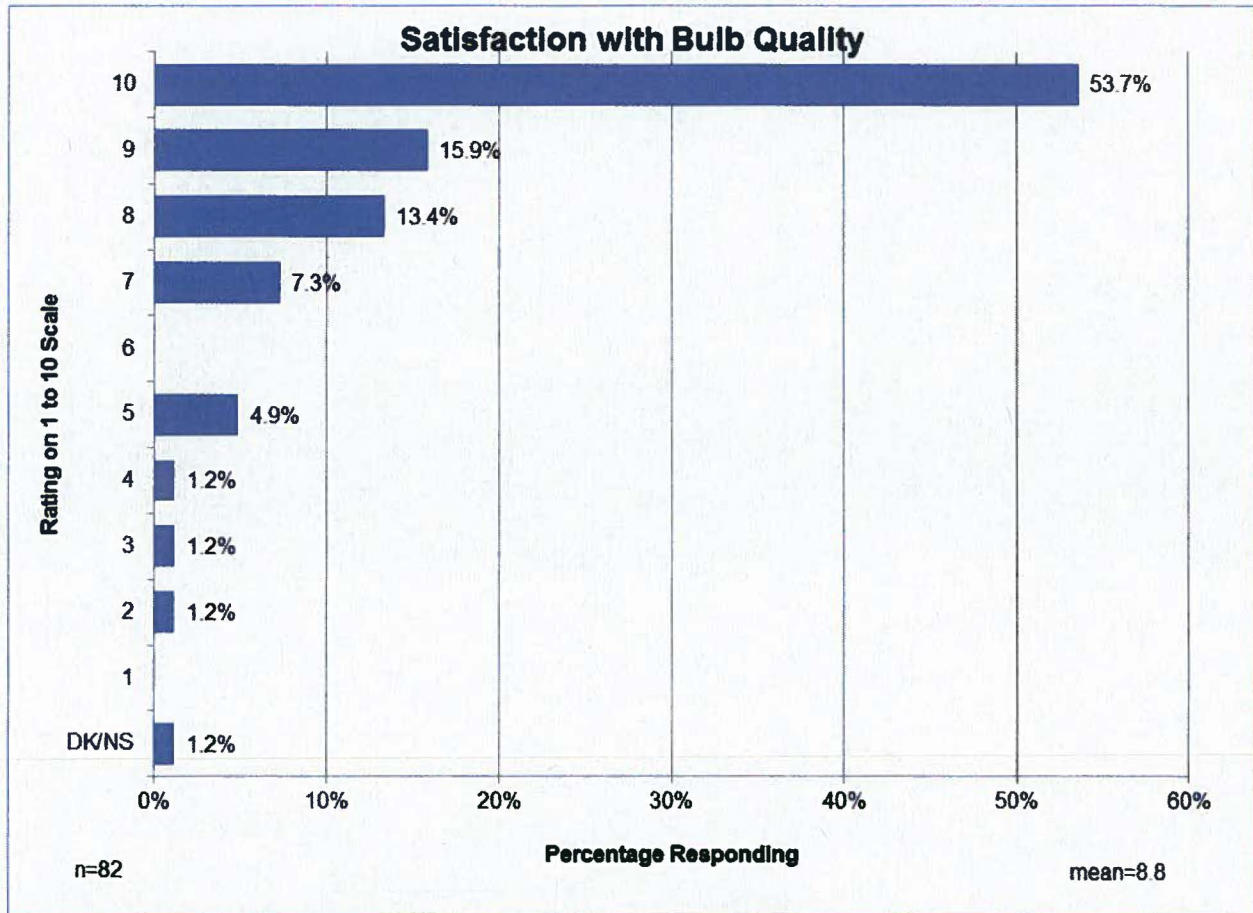


Figure 39. Customer Satisfaction with Overall Bulb Quality

Table 32. Bulb Quality: Reasons for Satisfaction Ratings of 7 or Less

Reason for Score of 7 or Less	Frequency of Response
CFL burned out	6
Flickering light	4
Bulb size or shape	2
Not bright enough	1
Too long to warm up	1
No cost savings	1

Specific verbatim comments are below.

- *I was less than satisfied because one CFL burnt out in less than a month and they don't fit some of my fixtures.*
- *Four bulbs burned out.*
- *I was less than satisfied because one CFL burned out almost immediately.*
- *I've had issues with them burning out very quickly; I was really surprised.*
- *I was less than satisfied because I dislike the shape of the bulb, specifically the small end.*
- *I am not finding any cost savings by using these bulbs.*

- *Four of the installed CFLs began flickering constantly.*
- *They cost more and I don't notice them lasting any longer.*
- *The CFLs seem to flicker.*
- *One of them keeps on flickering after the light switch is turned off; I don't understand why it does this.*
- *I was less than satisfied because the CFLs take too long to warm up.*
- *I had to replace three CFLs when they were supposed to last so long.*
- *CFLs are not as bright and I had two that were flickering.*

Satisfaction with the Program

The overall satisfaction scores for the direct install CFL program are very high with a mean rating of 9.5. Eighty four percent (84.2%) of respondents rated the program with a 9 or 10 (Figure 40). Only four people gave scores of 7 or less. We asked each how the program might be improved. Their verbatim responses are shown below the figure.

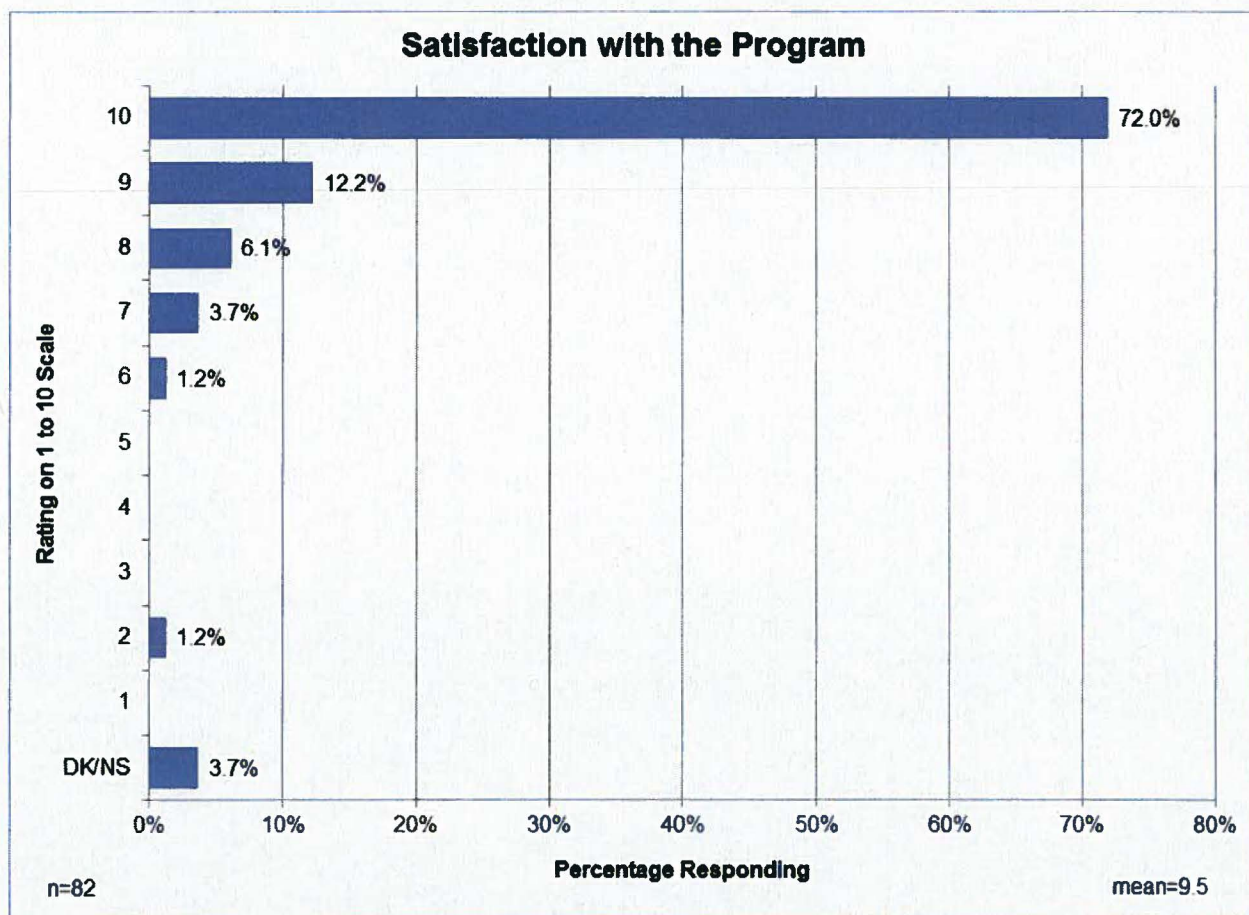


Figure 40. Customer Satisfaction with Direct Install CFL Program

Verbtain responses were as follows.

- *The maintenance people who installed the bulbs were not very nice. They came into my apartment and did not explain why they were there. They removed, and took with them,*

some CFLs that I had purchased and installed on my own. These bulbs are dimmer than the ones I had paid for and installed.

- *Duke could offer displeased customers the option to re-install incandescent bulbs.*
- *The bulbs could be brighter.*
- DK/NS

Satisfaction with Duke Energy

Tenant satisfaction with Duke Energy was nearly as high as for the program, with a mean satisfaction score of 9.0 on the same 10-point scale. Seventy three percent (73.2%) of respondents rated the program with a 9 or 10, as shown in Figure 41 below. Those who rated their satisfaction as less than an 8 explained their reasons as shown in Table 33.

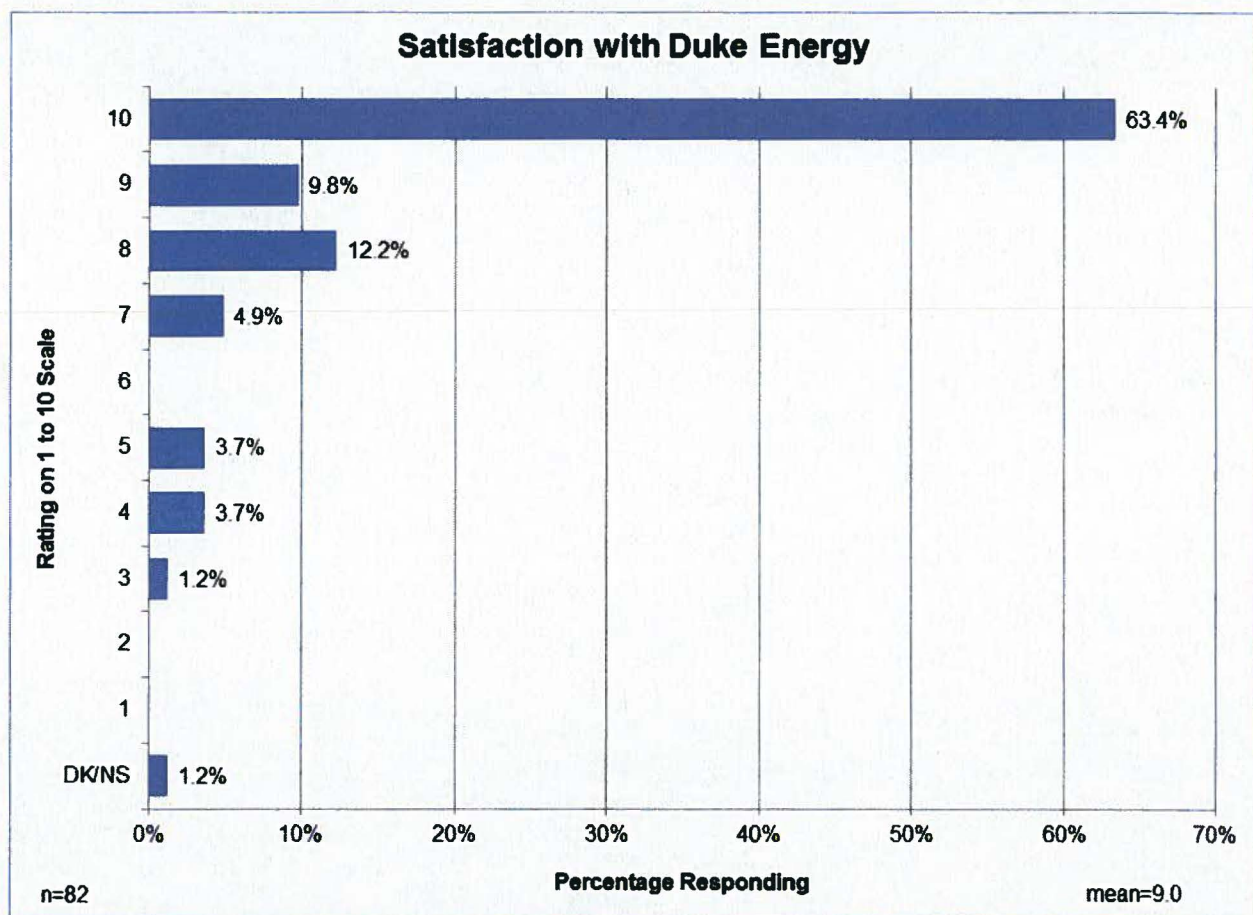


Figure 41. Customer Satisfaction with Duke Energy

Table 33. Satisfaction with Duke Energy: How to Improve for Those with Score of 7 or Less

Reason for Score of 7 or Less	Frequency of Response
Billing issues	4
Customer service issues	3
High bills	2
DK/NS	2

Verbtain responses are noted below.

- *They charge too much.*
- *Duke could improve repair response time and provide better, more consistent customer service.*
- *Duke should offer more education about their programs offered about energy conservation. Their customer involvement about conservation should be increased, as well as letting the customer know exactly where their power is coming from. Give a detailed breakdown of what the costs are for making this power and where exactly our money is going to when we pay our bills.*
- *They charge me for using a credit card. They seem more money-oriented rather than people-oriented.*
- *Our original power company, who was bought out by Duke, was a nicer company.*
- *A lot of their customer service representatives are not cooperative or flexible.*
- *I'm on a fixed income and the customer service representatives keep trying to get me to make a higher payment that I can't afford every month. I can't afford the rates as they are and I'm worried that they'll go higher.*
- *Duke in Kentucky could offer an income-based equal payment plan akin to the one offered in Ohio.*
- *For the last four months, I am getting my Duke bill very late; I don't know if it is the mail or Duke.*
- *Stop charging to make a payment over the telephone.*
- DK/NS (2)

Key Findings and Conclusions from Tenant Survey

In summary, the program appears to be operating as intended in that is systematically replacing high numbers of incandescent lights with CFLs in multifamily homes that would not have otherwise been likely to make the switch.

Overall tenants are highly satisfied with the program, rating their satisfaction at an average of 9.5 on a 10-point scale. Satisfaction with Duke Energy was nearly as high with score a 9.0. Tenants were also well satisfied with the quality of the CFLs (8.8) and with the light quality they provide (8.6). The CFL scores were primarily diminished due to some tenants desiring brighter bulbs.

Ninety eight (97.6%) percent of tenants surveyed claimed to have at least one CFL installed in a permanent fixture of their homes. The number of installed CFLs reported ranged from one to 14 with an average of 8.6 CFLs per household. The most common locations for CFL installs were bathrooms (27.1%) and kitchens (21.2%), which when combined accounted for nearly half (48.8%) of all replacement locations.

The percentage of socket penetration was also notable, with 31.7% of respondents indicating that all sockets in their homes now contained CFLs and 73.2% saying that they had three or fewer sockets containing non-CFLs. Less than one non-CFL bulb (mean = 0.96) was said to be used for more than two hours per day.

Overall tenant estimates of CFL usage times averaged 3.4 hours per day, with more than half (56.0%) being used for two hours or less per day. Ninety one percent (91.5%) of tenants indicated that their hours of bulb usage remained the same after the new CFL where installed.

The vast majority (93.6%) of survey respondents indicated that the old bulbs removed were some type of incandescent lamp. Just over one third (33.9%) of tenants reported storing the old bulbs for future use. The average number of incandescents in storage was 3.8.

Nearly two thirds (62.2%) of survey respondents indicated that this was their first time using CFLs. Among those who had begun using CFLs prior to joining the program, the average time of prior use was 2.2 years. The average number of previously installed CFLs was 3.8 per home.

In addition to achieving direct energy savings through the installation of the CFLs, the program also seems to be achieving its secondary objective of familiarizing Duke Energy's customers with the bulbs and encouraging their continued use in the future. That influence was obviated by the findings that nearly three quarters (74.4%) of surveyed tenants said they were more likely purchase CFLs after their experience in the program, and that almost two thirds (64%) rated their likelihood of buying CFLs in the future at a 9 or 10, on a 10 point scale. The leading reason for these ratings was that CFLs last longer than incandescent bulbs, while saving energy was the most popular bulb characteristic associated with CFLs.

Interestingly, the survey also found that 12 of the 82 survey respondents (14.6%) claimed that their landlords had not installed CFLs in their units, but no tenants reported living in homes without CFLs installed. Correlation with a follow up question revealed that five of the 12 respondents indicated CFLs were installed prior to moving in. Because this finding does not account for the remaining seven respondents it may be possible that some respondents were installing their own CFLs or that some property managers are not installing all the CFLs they were claiming. However, no issues with installed-CFL bulb counts were revealed during the program's formal quality assurance reviews. Moreover, the opportunity for potential miscounts will be mitigated through program design changes as the install process shifts to one of direct vendor CFL installs starting in January of 2014.

Recommendations for Program Improvements

Recommendation: Providing an option for high watt equivalent (100 Watt) bulbs may address participant desires for brighter bulbs.

Recommendation: Overall tenants and their landlords appear interested in finding additional ways to save energy. Therefore TecMarket Works encourages Duke Energy to look for further energy saving measures that may be introduced to multi-family properties, such as building envelope improvements and water conservation measures. Additional energy savings opportunities may also be realized if the program increases its behavior change messaging.

Recommendation: Future marketing strategies may want to emphasize 1) the energy savings associated with CFLs, 2) cost savings on utility bills, and 3) long bulb life associated with CFLs, as tenant surveys indicate these messages are most influential.

Appendix A: Management Interview Instrument

Name: _____

Title: _____

Position description and general responsibilities:

We are conducting this interview to obtain your opinions about and experiences with the [STATE NAME] Property Managers CFL campaign. We'll talk about only this specific campaign and its objectives, your thoughts on improving the program, and the technologies the program covers. The interview will take about an hour to complete. May we begin?

General Description of Program

1. Describe the [STATE NAME] Property Managers CFL campaign. How has the program changed since it was first started?

Program Objectives

2. In your own words, please describe the [STATE NAME] Property Managers CFL campaign's current objectives. How have these changed over time?

3. In your opinion, which objectives do you think are best being met or will be met?

4. Are there any program objectives that are not being addressed or not being addressed as well as possible or that you think should have more attention focused on them? If yes, which ones? How should these objectives be addressed? What should be changed?

5. Should the program objectives be changed in any way due to technology-based, market-based, or management based conditions? What objectives would you change? What program changes would you put into place as a result, and how would it affect program operations?

Operational Efficiency (Manager's Role)

6. Please describe your role and scope of responsibility in detail. What is it that you are responsible for as it relates to this program? When did you take on this role? *If a recent change in management...* Do you feel that Duke Energy gave you enough time to adequately prepare to manage this program? Did you get all the support that you needed to manage this program?

7. Please review with us how the [STATE NAME] Property Managers CFL campaign operates relative to your duties, that is, please walk us through the processes and procedures and key events that allow you to currently fulfill your duties.

8. Have any recent changes been made to your duties? If so, please tell us what changes were made and why they were made. What are the results of the change?

Program Design & Implementation

Property Manager Practices

9. *(If not captured earlier)* Please explain how the interactions between the property managers, tenants and the Duke [STATE NAME] Property Managers CFL campaign management team work. Do you think these interactions or means of communication should be changed in any way? If so, how and why?

10. Describe your quality control and tracking process.

11. Are key industry experts, trade professionals or peers used for assessing what the technologies or models should be included in the program? If so, how does this work?

12. Are key industry experts and trade professionals used in other advisory roles such as market or marketing experts or industry professionals? If so how does this work and what kind of support is obtained?

13. Describe the training and development orientation used to train the property managers for the [STATE NAME] Property Managers CFL campaign. Are property managers getting adequate program information? What can be done that could help improve property manager effectiveness? Can we obtain any informational materials that are being used?

Market Info

14. What market information, research or market assessments are you using to determine the best target markets or market segments to focus on?

15. What market information, research or market assessments are you using to identify market barriers, and develop more effective delivery mechanisms?

16. Anything on the horizon that you think will impact the sales or use of CFL or incandescent bulbs? What is that and how do you think it will affect your program

Overall Strengths, Needs, and Suggestions

17. Overall, what about the [STATE] Property Managers CFL campaign works well and why?

18. What doesn't work well and why? Do you think this discourages participation or interest?

19. Do you have suggestions for improvements to the program that would increase participation rates or interest levels?

20. Do you have suggestions for the making the program operate more smoothly or effectively?

21. Do you have suggestions for improving or increasing energy impacts?

Operational, Market, & Technical Barriers and Suggestions

22. Can you identify any market, operational or technical barriers that impede a more efficient program operation?

23. In what ways can these operations or operational efficiencies be improved?

Attracting More Participation (Suggestions)

24. In what ways can the program attract more property managers?

25. In what ways can the program attract more tenant/household participation?

Assessment Basis

26. How do you make sure that the best information and practices are being used in the [STATE NAME] Property Managers CFL campaign?

27. *(If not collected in #14 or other above)* What market information, research or market assessments are you using to determine the best target markets and program opportunities, market barriers, delivery mechanisms and program approach?

Closing Suggestions and Comments

28. If you could change any one thing about the program, what would you change and why?

29. Are there any other issues or topics you think we should know about and discuss for this evaluation?

Appendix B: Property Manager Survey Instrument

INSTRUMENT

We are conducting this interview to obtain your opinions about and experiences with the Duke Energy CFL campaign in [State Name]. We'll talk about your understanding of the CFL campaign and its objectives, your thoughts on improving the program, and the technologies the program covers. The interview will take about 20-30 minutes to complete. May we begin?

Identification:*

Survey ID: _____

Name: _____

Title: _____

Company: _____

Address: _____

City: _____

State: _____

Zip: _____

Phone: _____

Email: _____

Position description and general responsibilities:

Program Design and Design Assistance

1. Do you feel that the proper CFLs (wattage, size, etc) are being covered through the program?

Yes *ask: Why?:* _____

No *ask: Why?:* _____

Not sure

2. Was the number of bulbs appropriate?

Yes: _____

No *ask: What should it be?:* _____

Not sure

3. How many bulbs do you typically order per one bedroom unit?

- 0 1 2 3 4 5 6 7 8 9 10 11 12+
 Don't have units of this size

4. How many bulbs do you typically order per two bedroom unit?

- 0 1 2 3 4 5 6 7 8 9 10 11 12+
 Don't have units of this size

5. How many bulbs do you typically order per three bedroom unit?

- 0 1 2 3 4 5 6 7 8 9 10 11 12+
 Don't have units of this size

6. Of the bulbs you order, on average how many bulbs do you eventually install per unit?

- All that were ordered for that unit
 One less than ordered for that unit
 Two less than ordered for that unit
 Three less than ordered for that unit
 More than three less than ordered for that unit
 Don't know / Not sure

7. Are there other types of bulbs that you think should be included in the program? If so, what are they?

- No
 Higher watt equivalent
 Lower watt equivalent
 Hollywood/globe bulbs
 Dimmable bulbs
 Outdoor flood bulbs
 Three-way bulbs
 Spotlight bulbs
 Recessed bulbs
 Candelabra bulbs
 LED Bulbs
 Other
 Don't Know / Not Sure

8. Are there other energy efficient products that you think should be included in the program? If so, what are they?

- No
- Power strips
- Weather stripping
- Door sweeps
- Programmable thermostats
- Water heater blankets
- Other (*please specify:*)
- Don't Know / Not Sure

8a. Would you be interested in participating in Duke Energy's Appliance Recycling Program, which offers a financial incentive to program participants for allowing the utility to collect and recycle old working refrigerators and freezers?

- Yes, interested
- Possibly interested
- No, don't need refrigerators
- No, keep old refrigerators
- No (*please specify*)
- Other (*please specify*)
- Don't Know/Not Sure

Reasons for Participation in the Program

We would like to better understand why property managers become partners in the Duke Energy CFL campaign in [State Name].

9. How long have you been a partner in the Duke Energy CFL campaign?

- Less than 3 months
- 3-6 months
- 6-12 months
- 12-18 months
- Longer than 18 months
- Don't Know / Not Sure

10. What are your primary reasons for becoming involved in the program? Why do you continue to be a partner?

(Check all that apply)

- Your company told you to
- It provides a service to your tenants
- It's something you believe in professionally
- It's a wise business move
- It saves money
- It's good for the environment
- Other
- Don't Know / Not Sure

11. Are your primary reasons for participation being met?

- Yes
- No - *ask: Why?:* _____

12. Has this program made a difference in your business? How?

13. How do you think Duke Energy can get more property managers to participate in this program?

(Check all that apply)

- Free shipping
- Hire someone to do the bulb installations
- Simpler sign up process *(Ask how to improve.)*
- Easier bulb ordering process *(Ask how to improve.)*
- Allow bulbs to be installed in common areas
- Different bulb types
- Schedule during slow periods for easier workflow
- Longer time to do the installs *(Ask how much longer.)*
- Allow bulb replacements as units become vacant instead of all at once
- Simpler documentation process *(Ask how to improve.)*
- Easier extra bulb return process *(Ask how to improve.)*
- Better marketing to property managers *(Ask how to improve.)*
- Better materials for tenants
- Other *(Ask to specify.)*

Don't Know / Not Sure

Program Participation Experiences

The next questions ask about the process for participation.

**14. Do you think the bulb ordering and shipping process could be improved in any way?
How?**

15. Do you feel that the lead time, ordering support, and training provided by Duke Energy, AM Conservation or Honeywell was adequate? Did you receive any support, what did you receive, was it helpful, would you change any of this?

16. How do you make tenants aware of the CFL Program?

Use the form letter provided

Use our own letter

Post notice in common areas

Phone calls

Emails

Public meetings

Newsletter

I don't inform them

No formal process

Other

17. Do tenants generally respond favorably or unfavorably?

Favorably

Unfavorably

Don't know

18. Do you have the right materials such as information sheets, brochures or marketing materials that you need to understand the benefits of the bulbs and discuss them effectively with your tenants?

Yes: _____

No ask: **What else do you need?:**

I don't use them

I don't discuss this with tenants

Bulb Install Experiences

19. Please describe the process you used to install the new bulbs. What challenges did you have with the installation process? What could be improved? What worked well?

20. Did you install the full amount of (#) bulbs in each unit? If not, why?

Yes

No, only replaced burned out bulbs

No, not existing CFLs

No, only at tenant request

No, other (*specify*)

Don't Know / Not Sure

21. If you did not install the full amount of bulbs, what happened to the bulbs that didn't make it into sockets?

Returned

Waiting to be returned

In storage

Installed in common areas such as hallways, parking garages, laundry rooms, fitness rooms, etc.

Installed in business or administrative areas

Installed extras in other tenant sockets

Given to tenants for future use

Took them home

Other (*specify*)

Don't Know / Not Sure

22. Of the ## CFLs that Duke sent to you, how many do you think have been installed?

(fill in as number if close estimate is possible):

(fill in as estimated percentage if number is not readily recalled):

Not Sure (*enter NS*): _____

Standard Practice vs. Duke Energy campaign CFL Practices

We would like to know what your bulb replacement practices were before your involvement in the Duke Energy CFL campaign.

23. Prior to your participation in this program what was your standard practice for bulb replacement?

(check all that apply)

- Replaced burned out bulbs after tenants moved out
- Replaced burned out bulbs as needed/upon request
- Replaced burned out bulbs according to maintenance schedule
- Didn't replace bulbs / Tenant responsibility
- No standard practice
- Other (*please specify*)
- Don't Know / Not Sure

24. What wattage bulbs did you typically use before?

(check all that apply)

- Incandescent 40 watt
- Incandescent 60 watt
- Incandescent 75 watt
- Incandescent 100 watt
- Incandescent >100 watt
- CFL 9-13 watt (40 watt equivalent)
- CFL 13-15 watt (60 watt equivalent)
- CFL 18-25 watt (75 watt equivalent)
- CFL 23-30 watt (100 watt equivalent)
- CFL 30-52 watt (150 watt equivalent)
- No standard bulbs
- Other (*please specify*)
- Don't Know / Not Sure

25. Was this the most common wattage of bulbs that you replaced?

- Yes: _____
- No **What was?:** _____
- Other (please specify): _____
- Don't Know / Not Sure

26. How many bulbs of this wattage would you say that you replaced?
(fill in number)

27. Did you replace bulbs of other wattages?

- No: _____
- Yes **what wattage?:** _____
- Other *(please specify):* _____
- Don't Know/ Not Sure

28. How many bulbs of this wattage would you say that you replaced?
(fill in number)

29. What did you do with the incandescents that you removed?

- Recycled them
- Threw them away
- Stored them
- Gave them away
- Other (please specify)
- DK/NS

30. Have you changed your standard process for bulb replacement after participating in this program?

- Yes *(ask How?):* _____
- No

31. Would you have provided or installed CFLs without the program?

- Yes
- No
- Other *(please specify):* _____

Don't Know / Not Sure

32. If the program were to be discontinued, would you continue to provide the CFLs?

Yes

No (*ask Why?*): _____

Other (*please specify*): _____

Don't Know / Not Sure

33. In your opinion is the Duke Energy CFL campaign needed to get people to buy and use more efficient bulbs? Why?

Yes (*ask Why?*): _____

No (*ask Why?*): _____

Program Improvement

The next questions ask about program improvement.

34. Overall, what about the Duke Energy CFL campaign do you think works well and why?

(Check all that apply)

- Sign up process
- Ordering process
- Variety of bulbs
- Shipping costs
- Shipping process
- Property manager training
- Tenant leave behind materials
- Installation checklists
- Documentation / reporting process
- Communication with Honeywell
- Communication with Duke
- Follow up process
- Other (*specify*)
- Don't Know / Not Sure

35. What changes would you suggest to improve the program?

(Check all that apply)

- Free shipping
- Hire someone do the bulb installations
- Better website (*ask how to improve?*)
- Simpler sign up process (*ask how to improve?*)
- Easier bulb ordering process (*ask how to improve?*)
- Allow bulbs to be installed in common areas
- Different bulb types
- Schedule during slow periods for easier workflow (*ask when?*)
- Longer time to do the installs (*ask how much longer?*)
- Allow bulb replacements as units become vacant instead of all at once
- Simpler documentation process (*ask how to improve?*)
- Easier extra bulb return process (*ask how to improve?*)
- Better marketing to property managers (*ask how to improve?*)
- More / better materials for tenants (*ask how to improve?*)
- Other (*please specify*)
- Don't Know / Not Sure

36. Do you feel that communications between you and Duke/Honeywell program staff is adequate? How might this be improved?

(check all that apply)

- Fine as is
- Ask my preference for how to be contacted
- Faster / more responsive communication
- More email communications
- Other (*specify*)
- Don't Know / Not Sure

37. What as your experience of the program's quality assurance process?

38. Was your property involved in an onsite quality assurance inspection? And if so, was the inspection conducted while your property was in the middle of the install process or after the installs were complete?

- No

- Yes, mid process
- Yes, after completion
- DK/NS
- Other: _____

39. On a scale of 1 to 10, where 1 equals very dissatisfied and 10 equals very satisfied, how satisfied were you with the quality assurance inspection process?

1 2 3 4 5 6 7 8 9 10 NA

For any number response

40. Why do you give that response?

41. What specific benefits do you and your company receive as a result of participating in this CFL campaign?

(check all that apply)

- Improves image by doing something to save tenants money
- Improves image by doing something for environment
- Improves relations with existing tenants
- Makes it easier to attract new tenants
- Other *(please specify)*
- Don't Know / Not Sure

42. What do you think are the primary benefits to the tenants who have CFLs installed as part of this campaign?

- They save money on purchasing the bulbs
- Lower monthly bills
- Improved lighting quality
- Other *(please specify)*
- Don't Know / Not Sure

43. Have you heard any tenant feedback about the bulbs or the program? What have you heard?

(check all that apply)

- Like the program
- Don't like the program

- Like the bulbs
- Don't like the bulbs
- Like the lighting quality
- Don't like the lighting quality
- Liked the installation process
- Didn't like the installation process
- Appreciate saving money by not purchasing the bulbs themselves
- Lower monthly bills
- Positive impression of Duke Energy
- Negative impression of Duke Energy
- Other (*please specify*)
- Don't Know / Not Sure

Program Satisfaction

The next questions ask about satisfaction with the program.

On a scale from 1-10, with 1 indicating that you were very dissatisfied, and 10 indicating that you were very satisfied, please rate your satisfaction with...

44. The Property Manager CFL program

1 2 3 4 5 6 7 8 9 10 DK/NS

If 7 or less to q44,

44a. How could this be improved?

45. ...Duke Energy overall.

1 2 3 4 5 6 7 8 9 10 DK/NS

If 7 or less to q45

45a. How could this be improved?

Property Information

We're just about done. We just need to ask you some questions about your units.

46. What year were your units built?

- 1959 and before
- 1960-1979
- 1980-1989
- 1990-1997
- 1998-2000
- 2001-2007
- 2008-present
- Don't Know

47. Which of the following best describes your units' heating systems?

- None
- Individual forced air furnace
- Electric Baseboard
- Heat Pump
- Geothermal Heat Pump
- Shared central heating
- Other (*please specify*)

48. How old are your heating systems?

(mark all that apply)

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 19 years or older
- DK/NS
- Do not have
- Other

49. What is the primary fuel used in your heating systems?

- Electricity
- Natural Gas
- Oil

- Propane
- Other
- None

50. What is the secondary fuel used in the heating system, if applicable?

- Electricity
- Natural Gas
- Oil
- Propane
- Other
- None

51. Do you use one or more of the following to cool your units? (Mark all that apply)

- None, do not cool the units
- Through the wall or window air conditioning unit
- Individual central air conditioning
- Shared central air conditioning
- Heat pump for cooling
- Geothermal Heat pump
- Other

52. What is the fuel used in the cooling systems?

- Electricity
- Natural Gas
- Oil
- Propane
- Other
- None

53. How old are your cooling systems?

(Mark all that apply)

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years

- 19 years or older
- Don't know
- Do not have
- Other

54. What is the fuel used by your water heaters?

(Mark all that apply)

- Electricity
- Natural Gas
- Oil
- Propane
- Other
- No water heaters

55. How old are your water heaters?

(Mark all that apply)

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 19 years or older
- Don't know
- Do not have
- Other

56. Do your units have clothes dryers?

(Mark all that apply)

- Yes, individual dryers in units
- Yes, shared dryers in common areas
- Some units have individual dryers. Others do not
- No, there are no dryers
- Other
- Don't know / Not sure

57. What type of fuel do you use for clothes drying?

(Mark all that apply)

- Electricity
- Natural Gas
- Oil
- Propane
- Other
- No clothes dryers
- DK/NS

58. About how many square feet of living space are in your units?

(Mark all that apply)

(Do not include garages or other unheated areas)

Note: A 10-foot by 12 foot room is 120 square feet

- Less than 500
- 500 – 999
- 1000 – 1499
- 1500 – 1999
- 2000 – 2499
- 2500 – 2999
- 3000 – 3499
- 3500 – 3999
- 4000 or more
- Don't know

59. Do your units have heated or unheated basements?

(Mark all that apply)

- Heated
- Unheated
- No basements
- Don't know / Not sure

Thank You!

Appendix C: Tenant Survey Instrument

Use four attempts at different times of the day and different days before dropping from contact list. Call times are from 10:00 a.m. to 8:00 p.m. Eastern, or 9-7 Central Monday through Saturday. No calls on Sunday.

Note: Only read words in bold type.

for answering machine 1st through penultimate attempts:

Hello, my name is [name] and I am calling with a survey about the CFLs that your landlord installed. I'm sorry I missed you. I'll try again another time.

for answering machine - Final Attempt:

Hello, my name is [name] and I am calling with a survey about the CFLs that your landlord installed. This is my last attempt at reaching you, my apologies for any inconvenience.

if person answers

Hello, my name is _____ . May I speak with _____ please?

I am calling on behalf of Duke Energy to conduct a customer survey about a program offered by Duke Energy where your landlord installed compact fluorescent lightbulbs (or CFLs) in your apartment.

We are conducting this survey to get feedback on what happened to the CFLs installed, which may have been installed before you moved in. We are not selling anything, there are no wrong answers, and your responses to our survey questions will be combined with other responses and used to help us make improvements to the program.

Note: If this is not a good time, ask if there is a better time to schedule a callback.

Survey Identification*

Surveyor Name: _____

Survey ID: _____

1. I'd like to talk about the CFLs installed in your home through this program. Our records indicate that your landlord installed (#) CFLs, is this correct?*

- Yes
- I think so / probably
- No
- Don't Know

2. How many of the CFLs are now installed in the permanent light fixtures in your home?*
Enter -99 for "Don't know, Not sure, or Refused"

Questions about 3 installed CFLs

"Now I'm going to ask you about some of the CFL bulbs installed in your home..."
(Repeat Q3 a to e for up to 3 installed bulbs)

3. For the first CFL, in which room was the bulb installed?

- Living / family room
- Dining room
- Kitchen
- Master bedroom
- Bedroom 2
- Bedroom 3 or other bedroom
- Hall
- Closet
- Basement
- Garage
- Bathroom
- Other: _____

3a. Was the previously installed bulb a standard bulb or a CFL?

- Standard Incandescent
- I had a CFL installed there
- There was no bulb in the socket
- New CFL bulb was in place when I moved in
- Don't know/Don't remember – *ask if it was installed when they moved in*

3b. How many watts was the old bulb that was removed?

- Less than 44
- 45-70
- 71-99
- 100 or more
- There was no bulb in the socket
- DK/NS

3c. What did you do with the incandescent you removed?

- Recycled It
- Threw it away
- Stored it
- Installer removed it
- DK/NS

3d. On average, approximately how many hours per day is this light used?

- Less than 1
- 1 to 2

- 3 to 4
- 5 to 10
- 11 to 12
- 13 to 24
- DK/NS

3e. Did the hours of use for this fixture increase, decrease or stay the same since you replaced the old bulb with the CFL?

- Increased (*ask: How many hours per day?*): _____
- Decreased (*ask: How many hours per day?*): _____
- Stayed the same
- The bulb has been in place since I moved in
- DK/NS
- Not Applicable

Second Bulb

3~. For the second CFL, in which room was the bulb installed?

- Living / family room
- Dining room
- Kitchen
- Master bedroom
- Bedroom 2
- Bedroom 3 or other bedroom
- Hall
- Closet
- Basement
- Garage
- Bathroom
- Other: _____

3a~. Was the previously installed bulb a standard bulb or a CFL?

- Standard Incandescent
- I had a CFL installed there
- There was no bulb in the socket
- New CFL bulb was in place when I moved in
- Don't know/Don't remember – *ask if it was installed when they moved in*

3b~. How many watts was the old bulb that was removed?

- Less than 44
- 45-70
- 71-99
- 100 or more
- There was no bulb in the socket
- DK/NS

3c~. What did you do with the incandescent you removed?

- Recycled It
- Threw it away
- Stored it
- Installer removed it
- DK/NS

3d~. On average, approximately how many hours per day is this light used?

- Less than 1
- 1 to 2
- 3 to 4
- 5 to 10
- 11 to 12
- 13 to 24
- DK/NS

3e~. Did the hours of use for this fixture increase, decrease or stay the same since you replaced the old bulb with the CFL?

- Increased (*ask: How many hours per day?*): _____
- Decreased (*ask: How many hours per day?*): _____
- Stayed the same
- The bulb has been in place since I moved in
- DK/NS
- Not Applicable

Third Bulb

3-. For the third CFL, in which room was the bulb installed?

- Living / family room
- Dining room
- Kitchen
- Master bedroom
- Bedroom 2
- Bedroom 3 or other bedroom
- Hall
- Closet
- Basement
- Garage
- Bathroom
- Other: _____

3a- Was the previously installed bulb a standard bulb or a CFL?

- Standard Incandescent
- I had a CFL installed there
- There was no bulb in the socket
- New CFL bulb was in place when I moved in

Don't know/Don't remember – *ask if it was installed when they moved in*

3b- How many watts was the old bulb that was removed?

- Less than 44
- 45-70
- 71-99
- 100 or more
- DK/NS

3c- What did you do with the incandescent you removed?

- Recycled It
- Threw it away
- Stored it
- Installer removed it
- DK/NS

3d- On average, approximately how many hours per day is this light used?

- Less than 1
- 1 to 2
- 3 to 4
- 5 to 10
- 11 to 12
- 13 to 24
- DK/NS

3e- Did the hours of use for this fixture increase, decrease or stay the same since you replaced the old bulb with the CFL?

- Increased (*ask: How many hours per day?*): _____
- Decreased (*ask: How many hours per day?*): _____
- Stayed the same
- The bulb has been in place since I moved in
- DK/NS
- Not Applicable

Satisfaction

4. How many standard incandescent bulbs do you have in storage to replace bulbs that burn out?*

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7 – 11

- 12+
- DK/NS

5. Have you removed or replaced any of the CFLs?*

- Yes, my property manager replaced them with one or more CFLs from the company's supply of bulbs (*ask: How many?*)
- Yes, my property manager replaced them with one or more normal incandescent bulbs from the company's supply of bulbs (*ask: How many?*)
- Yes, I replaced them with one or more CFLs of my own (*ask: How many?*)
- Yes, I replaced them with one or more normal incandescent bulbs of my own (*ask: How many?*)
- Left the socket empty
- No
- Don't know / Not sure

5a. Why did you remove or replace them?

- Not bright enough
- Did not like the color of the light
- The light was too bright
- Too slow to start
- Burned out
- Not working properly
- Did not like appearance / shape of the bulbs
- Other

6. On a 1-to-10 scale with 1 being very dissatisfied and 10 being very satisfied, please rate your satisfaction with the light quality of your free CFLs.*

- very dissatisfied
- 1
- ...
- 10
- very satisfied
- DK/NS

If 7 or less.

6a. Why were you less than satisfied with the light quality?

7. On a 1-to-10 scale with 1 being very dissatisfied and 10 being very satisfied, please rate your satisfaction with the overall bulb quality of your free CFLs.*

- very dissatisfied
- 1
- ...
- 10
- very satisfied
- DK/NS

If 7 or less.

7a. Why were you less than satisfied with the quality of the CFLs?

8. On a scale from 1-10, with 1 indicating that you were very dissatisfied, and 10 indicating that you were very satisfied, please rate your satisfaction with the direct install CFL program?*

very dissatisfied

1

...

10

very satisfied

DK/NS

If 7 or less

8a. How could this be improved?

9. On a scale from 1-10, with 1 indicating that you were very dissatisfied, and 10 indicating that you were very satisfied, please rate your satisfaction with Duke Energy overall?*

very dissatisfied

1

...

10

very satisfied

DK/NS

If 7 or less,

9a. How could this be improved?

more questions about CFLs

10. Using the same scale, please rate your satisfaction with the Property Manager CFL Program overall?*

very dissatisfied

1

...

10

very satisfied

DK/NS

If 7 or less,

10a. How could this be improved?

11. Considering the day the CFLs were installed plus any other related visits before or after that, how many total visits to your home were involved in the CFL program?

- 0
- 1
- 2
- 3
- More than 3
- DK/NS

If more than 1,

11a. How did feel about that number of visits in order for you to participate in this program?

12. Before you received these free CFLs from Duke Energy had you already installed CFLs in your home?*

- CFL bulbs were installed before I moved in
- Yes, I installed one or more CFL bulbs
- No
- Don't Know / Not sure

12a. How many CFLs were you using in your home before your property manager had the new bulbs installed?

13. How many years have you been using CFLs?*

- Never purchased before
- 1 year or less
- >1 to 2 years
- >2 to 3 years
- >3 to 4 years
- 4 or more years

14. Were you planning on buying CFLs for your home before you received the CFLs as part of this program?

- Yes
- No
- Maybe
- DK/NS
- No, already have them installed in all available sockets

15. Did your experience with the CFLs provided by the this program make it more or less likely that you would purchase and install CFLs in the future when these eventually burn out?*

- More likely
- Less likely
- Neither more nor less likely

15a. Why are you more likely to use CFLs in the future?

15b. Why are you less likely to use CFLs in the future?

16. Have you purchased any additional CFLs since receiving the free CFLs?*

- Yes
- No
- Don't Know / Not Sure

16a. How many did you purchase?

Enter -99 for Don't know, Not sure, or Refused

16b. How many of those are you currently using?

Enter -99 for Don't know, Not sure, or Refused

16c. Using a 1 to 10 scale, with 1 meaning that the Duke program had no influence, and a 10 to mean that the Duke program was very influential, please rate the influence of this program on your decision to purchase additional CFLs.

Not at all influential

1

...

10

very influential

DK/NS

16d. On a 1-to-10 scale with 1 being very unlikely and 10 being very likely, please rate your likelihood of buying and using CFLs in the future:

very unlikely

1

...

10

very likely

DK/NS
