Deja A’s Home Energy Savings

MISSION STATEMENT

I want to accomplish ways to save energy in my house by replacing the Incandescent lights to LED lights.

STATEMENT OF NEED

After doing activities in school, we learned and discussed ways to save energy.At home, my Grandmother and I reviewed our energy bill.We discovered that our electric bill is above average homes by 40%.We decided to play detective and went around our house to find ways to make our house more energy efficient. One thing we came up with is the type of lights we use in our house aren't efficient. I learned through our lessons in class and guest speaker information that LED lights are more energy efficient.By changing my Incandescent lights to LED lights will save energy and save money.

GOAL

My goal is to evaluate a way to reduce the usage of energy used everyday in my house. We leave a lot of lights on and that means it is going to cost more. I want to research different light fixtures that would be more energy efficient After reviewing the types of lights we have in our house, I want to compare different light fixtures that would be more energy efficient for or home.

ECONOMIC AND ENVIRONMENT

Using energy more efficiently is a really effective way to save money. Also, it can lower individual utility bills.

As for the environment,LED bulbs create less greenhouse gas emissions, such as, Co-2 .LED bulbs create 80% less greenhouse gas than incandescent. Due to a longer life span,LED lights last longer so there's less replacement; therefore, less waste

PROS AND CONS

Pros: One of the pros of using efficient energy is that you save money. Another one is you increase your freedom. The less energy you use every day, the more opportunities you will have. Also you will become a Conscientious consumer. It's important that people know the reliance of fossil fuel on the environment and the future of our world.

Cons:While you save energy by switching to efficient energy use, it can cost to make the change.

COMPARISON

A 60W incandescent light bulb consumes 60 kWh every 1000 hours. But the 12W LED light bulb only consumes 12 kWh of energy every 1000 hours. When i was comparing LED and incandescent light bulbs I found out that LEDs cost $1.38 per year and incandescent cost $10.95 per year. So after I compared I found out we would save about $9.12, therefor switching from incandescent to LED is more energy efficient .

RAW DATA

Kitchen 3 120 watt bulbs 1 ½ hours a day; Kitchen 1 120 watt bulb night light 8 hours; Laundry 1 60 watt bulb 10 mins a day; Bedroom 1, 1 60 watt bulb 13 hours a day; Bedroom 2, 1 60 watt bulb 1 hour a day; Master bedroom 1 60 watt bulb 3 hours a day; Bathroom 1, 10 60 watt bulbs 2 hours a day; Bathroom 2, 1 60 watt bulb 2 hours a day; Dining room 5 60 watt bulbs 1 hour a day; Study room, 1 60 watt bulb 2 hours a day.

Deja Abernathy's House

Room	Existing Fixture Type	Fixture Quantity	Wattage	Operation		Hours/yr of Op.	kWh		New Fixture Type	New Fixture Quantity	New Watts	Operation		Hours/yr of Op.	kWh		KWH Savings	Est. Bulb Unit Cost		Est. Cost
				#hrs/day	days/yr							#hrs/day	days/yr							
Kitchen	Incandescent	4	120	3.125	365	**1,141**	547.50		Par 38 LED	4	11	3.125	365	**1,141**	50.19		497	**$ 9.99**	$	39.96
Laundry	Incandescent	2	60	0.17	365	**61**	7.30		LED A19	2	9	0.17	365	**61**	1.10		6	**$ 1.24**	$	2.48
Bedroom 1	Incandescent	1	60	13	365	**4,745**	284.70		LED	1	9	13	365	**4,745**	42.71		242	**$ 1.24**	$	1.24
Bedroom 2	Incandescent	1	60	1	365	**365**	21.90		LED	1	9	1	365	**365**	3.29		19	**$ 1.24**	$	1.24
Master Bedroom	Incandescent	3	60	3	365	**1,095**	197.10		LED	3	9	3	365	**1,095**	29.57		168	**$ 1.24**	$	3.72
Bathroom 1	Incandescent	4	60	2	365	**730**	175.20		LED	4	9	2	365	**730**	26.28		149	**$ 1.24**	$	4.96
Master Bathroom	Incandescent	10	60	1	365	**365**	219.00		LED	10	9	1	365	**365**	32.85		186	**$ 1.24**	$	12.40
Formal Dining Room	Incandescent	5	60	1	365	**365**	109.50		LED	5	9	1	365	**365**	16.43		93	**$ 1.24**	$	6.20
Study	Incandescent	3	60	2	365	**730**	131.40		LED	3	9	2	365	**730**	19.71		112	**$ 1.24**	$	3.72
Totals		33					1,893.60			33					222.10		1,471		$	75.92

	Total kWh/yr saved	
	$/kWh	$ 0.085
	Total $/yr saved	**$ 125.08**
	1st yr bulbs	$ 75.92
	1st yr Net	$ 49.16
	2nd yr Net	**$ 125.08**

IMPACT ANALYSIS

When looking at the data I discovered that right now we use about 1694 kWh per year with incandescent lights. If we change to LED lights we will use about 222kWh per year. This saves 1,472 kWh of energy per year.

By making this change, we will save approximately $125.00 per year.

DISCOUNTS

How you would get discounts would be by looking for the instant discount sign from Powers Shift by NV Energy. You will need to find Energy Star qualifying LED bulbs at the stores i will list in a moment. Not only when you buy the LED lights will you be saving energy on your energy bills every month but you will also be making your home more energy efficient.

These are the stores where you can find the discounts

*Ace Hardware *Costco *Lowe’s

*Batteries Plus *Home Depot

REFERENCES

Energy Star

https://www.energystar.gov/index.cfm?c=heat_cool.pr_hvac

Family Handy Man, Energy Saving tips

https://www.familyhandyman.com/skills/smart-homeowner/energy-saving-tips/

NV Energy, save energy

https://www.nvenergy.com/save-with-powershift.html

CONCLUSION

In conclusion, another energy saving idea would to get a smart light switch and dimmer switches. I hope the information I have given will help people consider making their homes energy efficient by switching all their incandescent bulbs to LED bulbs.

THANK YOU