2 for the Price of 1: Shine Bright for Less

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What & Why?

- Current system Inefficient
- New and better technology available
- Environmentally Friendly
- Fluorescent vs LED lighting

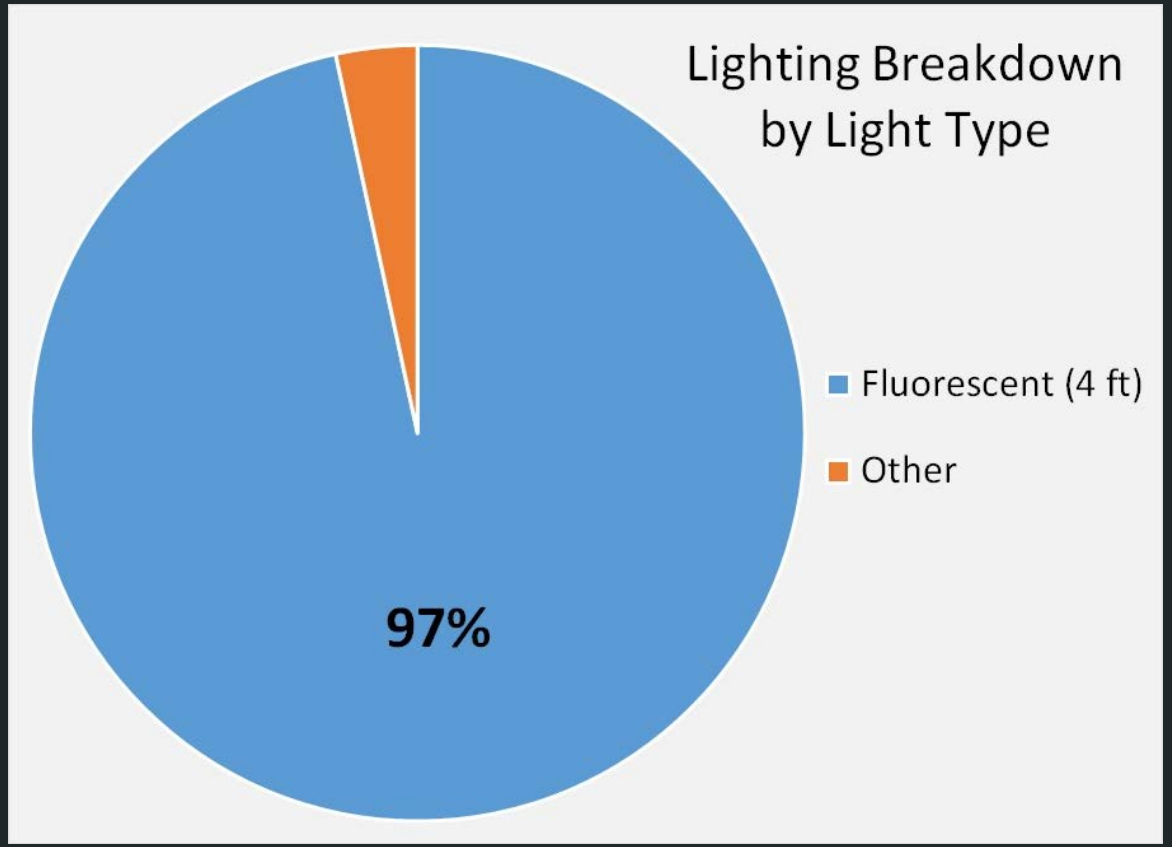
Light Energy Audit

- Agriculture and Bioresources Building
- Lights for lighting purposes
- Experiment related lights not included
- Used to compare different lighting systems

Majority of Lights

4ft Fluorescent tubes are dominant lighting type in building.

4ft fluorescents are where greatest savings can be realized



LED Options

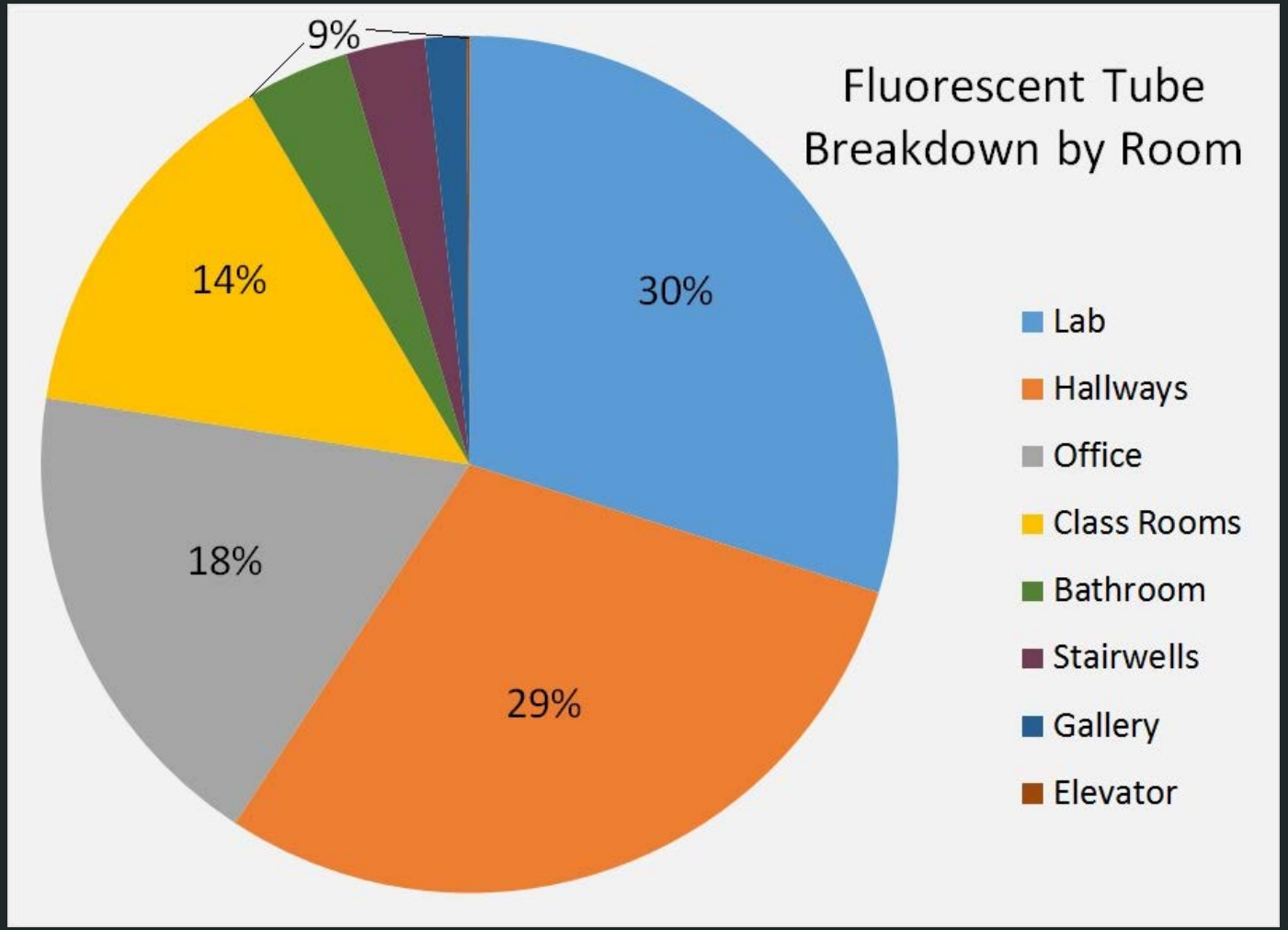
Two options:

1. Complete Retrofit
   - University just converted to T8
2. Bulb Substitution
   - No retrofit required

http://ceblightledlight.com/products/2-3-1.jpg
http://i.ebayimg.com/images/g/argAAMXQDmpTX7z1/s-l300.jpg

Comparison of Light Bulbs

	T8 Fluorescent	T8 LED
Wattage	33w (including ballast)	21w (including ballast)
Life Expectancy	30 000 hours	50 000 hours
Cost/Bulb	$3.00	$11.00
Lumens	2950	2100
Beam Angel	360°	124°
Mercury	Yes	No


Fluorescent Tube Breakdown by Room
30%
29%
18%
14%
9%
Lab
Hallways
Office
Class Rooms
Bathroom
Stairwells
Gallery
Elevator

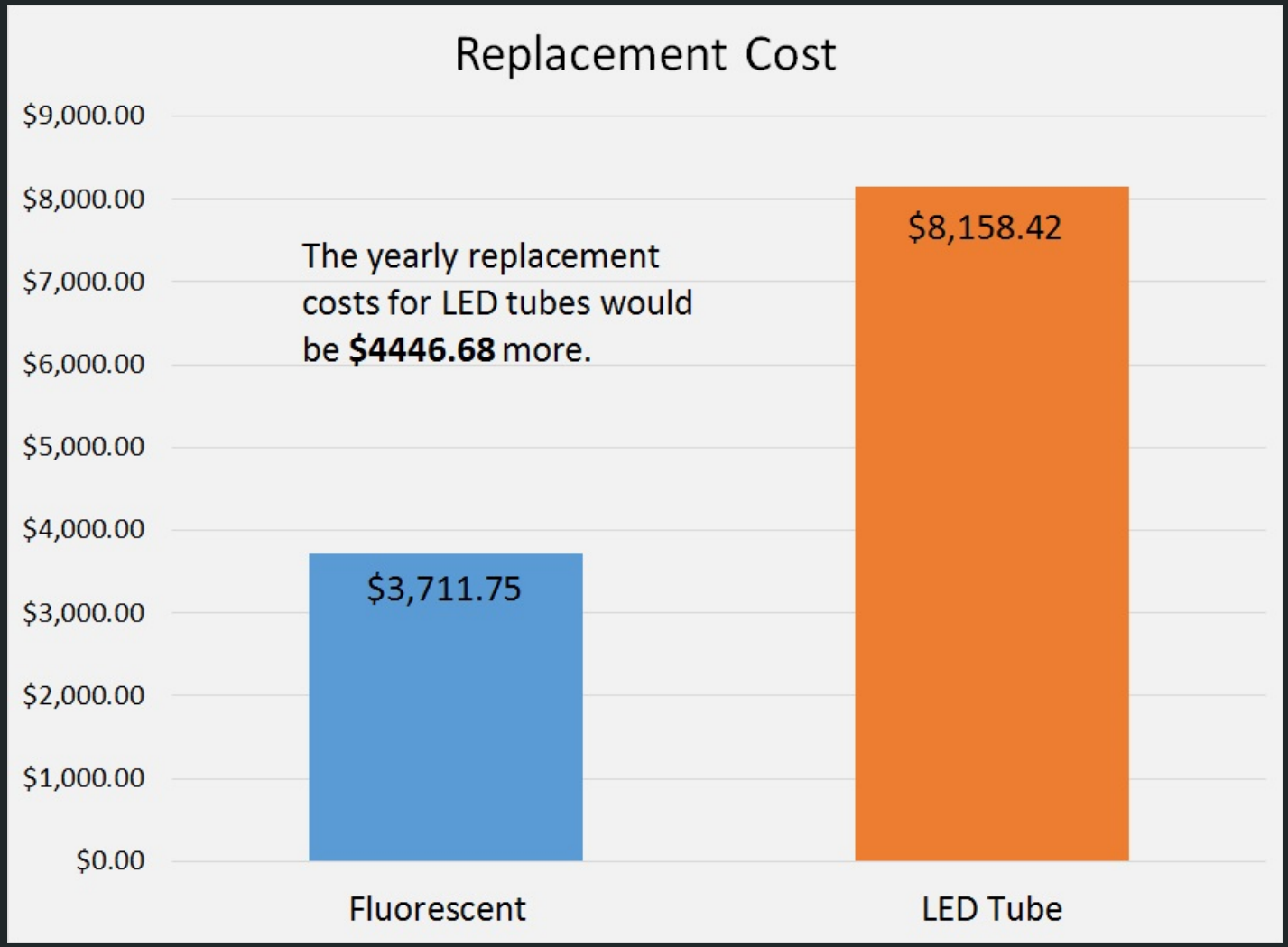
Crunching the Numbers

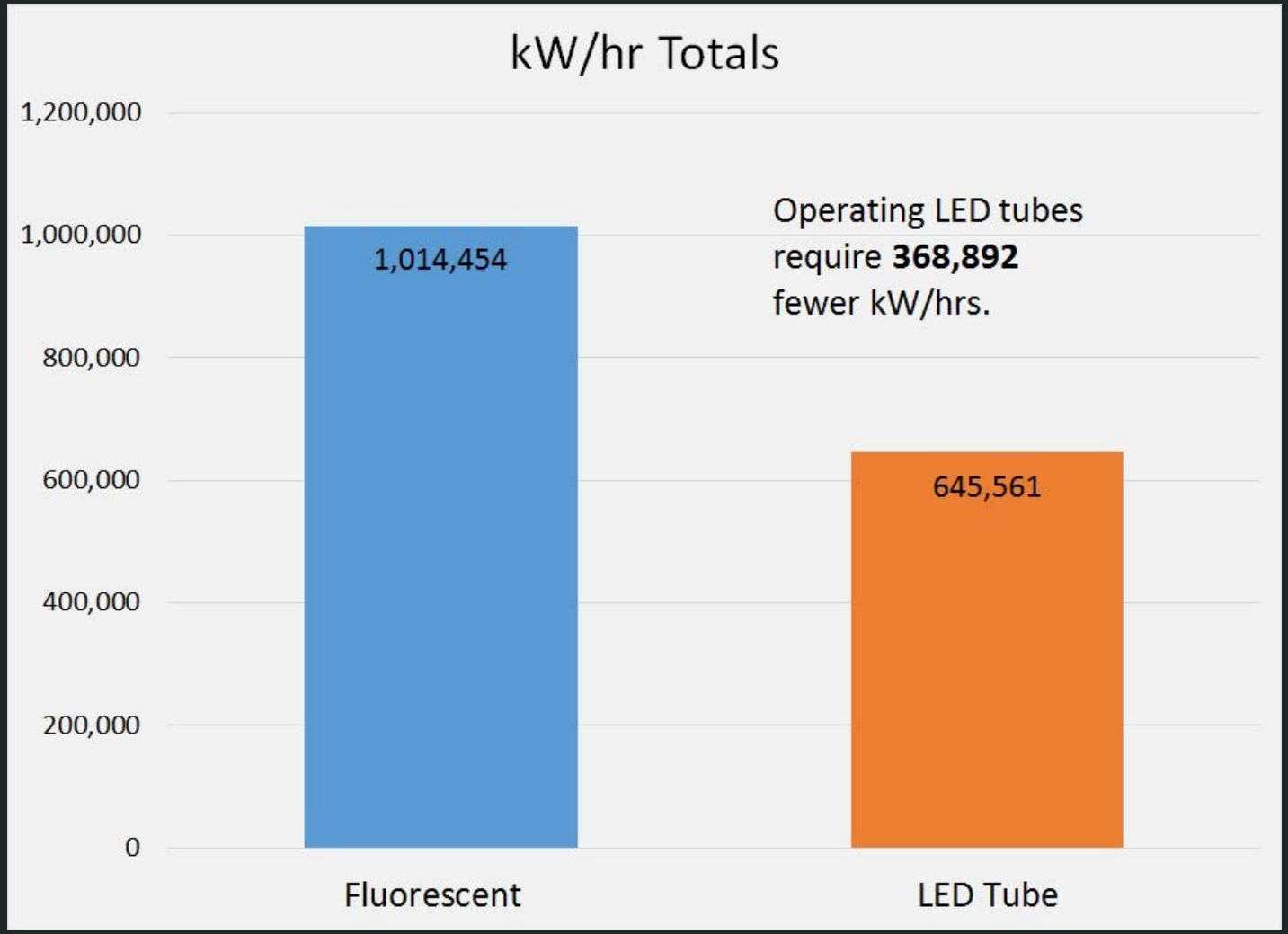
Needed to Know:

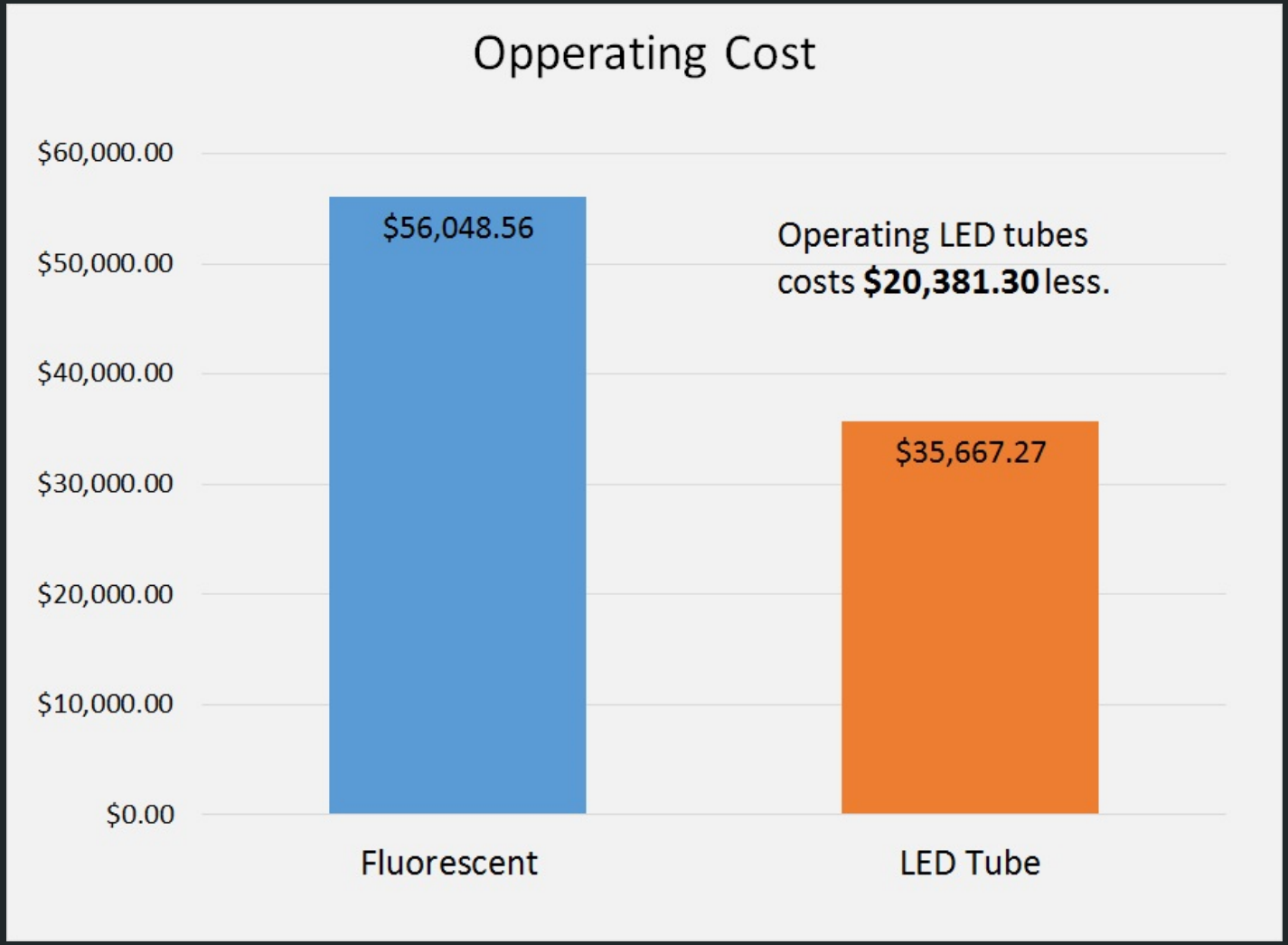
- Replacement Costs ($/yr)
- Energy Usage (kW*h/yr)
- Operating Costs ($/yr)

Assumptions:

- Disposal Cost
- Hours of Operation
- Bulb Lifespan
- Bulb Costs


Replacement Cost
$9,000.00
$8,000.00
$7,000.00
$6,000.00
$5,000.00
$4,000.00
$3,000.00
$2,000.00
$1,000.00
$0.00
The yearly replacement costs for LED tubes would be **$4446.68** more.
$3,711.75
$8,158.42
Fluorescent
LED Tube


kW/hr Totals
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
1,014,454
645,561
Operating LED tubes require **368,892** fewer kW/hrs.
Fluorescent
LED Tube


Opperating Cost
$60,000.00
$50,000.00
$40,000.00
$30,000.00
$20,000.00
$10,000.00
$0.00
$56,048.56
$35,667.27
Operating LED tubes costs $20,381.30 less.
Fluorescent
LED Tube

Cost Savings

Annual Electrical Savings:

$20381.30

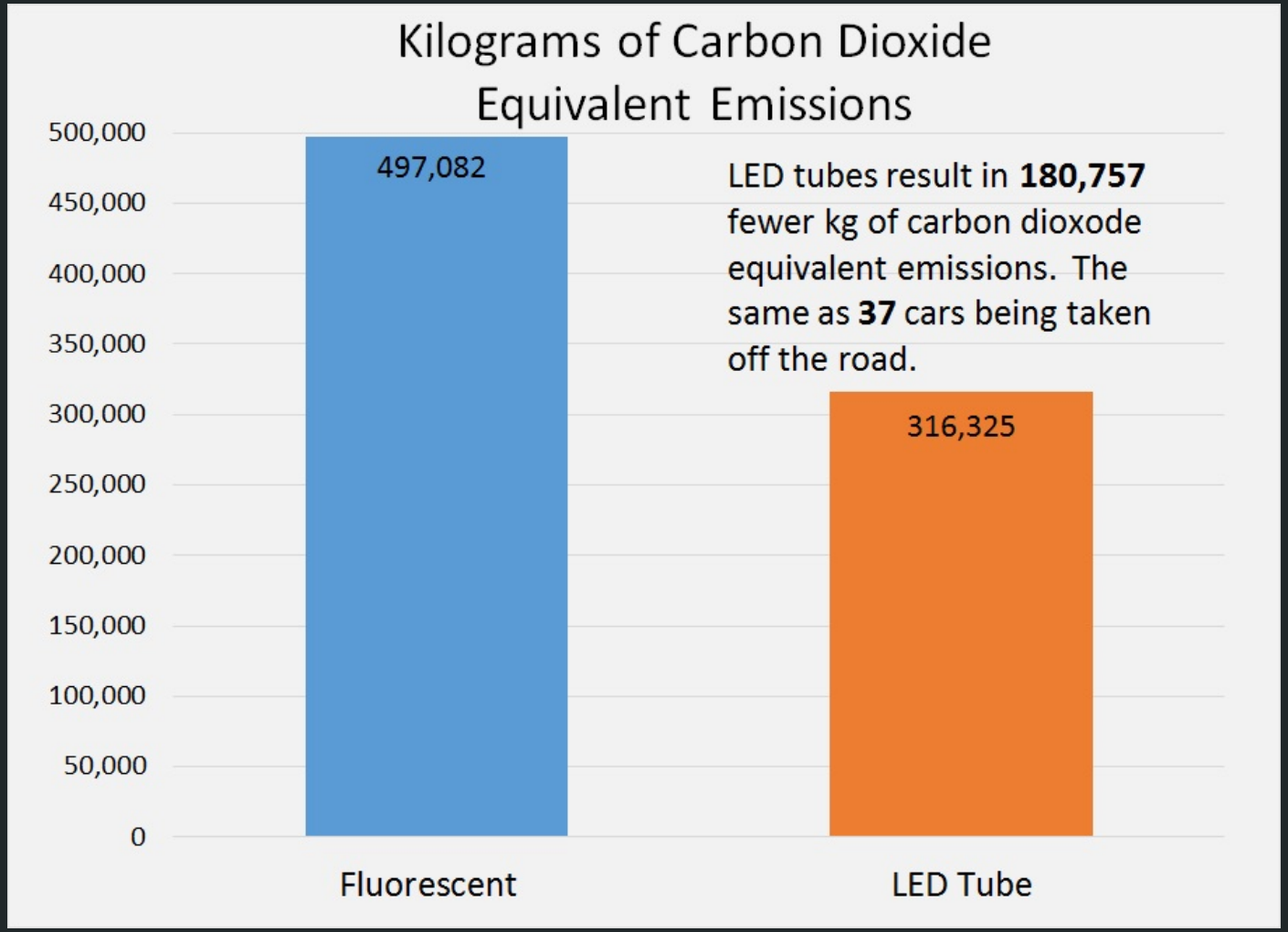
Additional Cost of LED’s:

$4446.68

Total Annual Savings:

$15,934.62

But Wait There’s More…..


Kilograms of Carbon Dioxide Equivalent Emissions
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
497,082
316,325
LED tubes result in **180,757** fewer kg of carbon dioxode equivalent emissions. The same as **37** cars being taken off the road.
Fluorescent
LED Tube

Conclusion

- Obvious Decision
- Easy switch
- Save money
- Reduce GHG emissions

More environmentally sustainable option at the change of a bulb!!!

Acknowledgements

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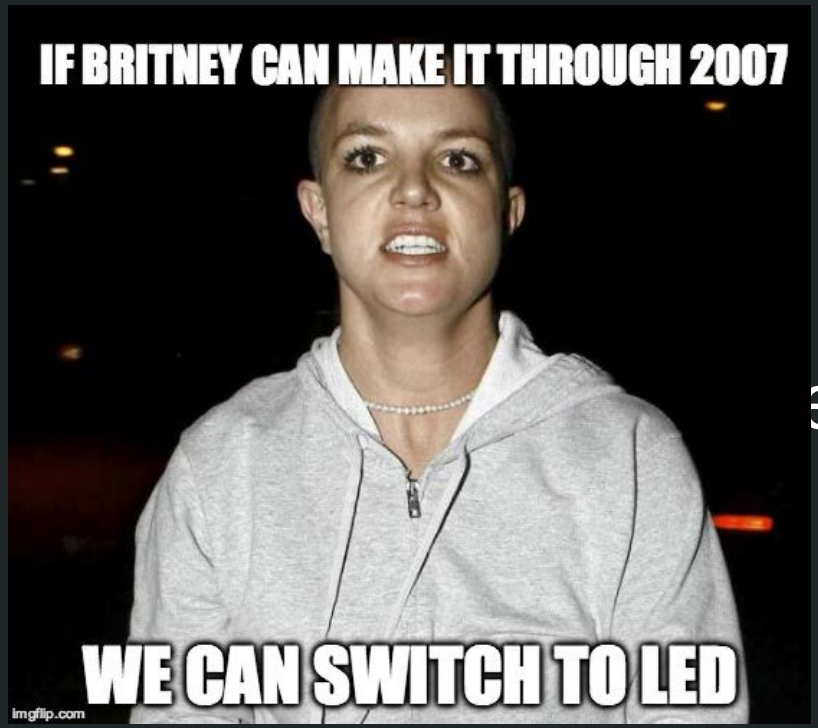
FMD Staff


IF BRITNEY CAN MAKE IT THROUGH 2007
WE CAN SWITCH TO LED
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I DON'T ALWAYS
CHANGE THE LIGHTS
BUT WHEN I DO,
I SWITCH TO LED
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