

Light Switch

Cost Comparison

Bulb Electricity Cost		Bulb Type					Per House	Cost per Day				Per Month	Per Year
kW/hr	Cost/watt	Type	Wattage	Lumens	Cost/Bulb	Life/Hrs	# of bulbs	Hrs/day	Cost/day	Replacement/day	House/day		
0-500	0.076115	Incandescent	60	900	\$0.75	3000	75	3	\$0.014	\$0.00075	\$1.03	\$31.28	\$375.33
501-1000	0.093374	Incandescent	60	900	\$0.75	3000	75	3	\$0.017	\$0.00075	\$1.26	\$38.35	\$460.10
over 1000	0.099703	Incandescent	60	900	\$0.75	3000	75	3	\$0.018	\$0.00075	\$1.35	\$40.95	\$491.29

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kW/hr	Cost/watt	Type	Wattage	Lumens	Cost/Bulb	Life/Hrs		Hrs/day	Cost/day	Replacement	House/day		
0-500	0.076115	LED	10	900	\$2.00	10000	75	3	\$0.002	\$0.00060	\$0.17	\$5.23	\$62.73
501-1000	0.093374	LED	10	900	\$2.00	10000	75	3	\$0.003	\$0.00060	\$0.21	\$6.39	\$76.68
over 1000	0.099703	LED	10	900	\$2.00	10000	75	3	\$0.003	\$0.00060	\$0.22	\$6.82	\$81.88

Bulb Cost Savings											Per Month	Per Year
0-500											\$26.05	\$312.60
501-1000											\$31.95	\$383.42
over 1000											\$34.12	\$409.41

HVAC Cost Savings	kwh savings / lightbulb	AZ mos / year AC usage	ASHRAE cooling offset rule	Energy savings kwh	Cost / watt	# of bulbs	Per Month	Per Year
	228	0.583333	32.5	43.22498	0.076115	75	\$20.56	\$246.76

Total Cost Savings											Per Month	Per Year
0-500											\$46.62	\$559.36
501-1000											\$52.52	\$630.17
over 1000											\$54.68	\$656.16

Installation Cost							Cost per bulb	# of bulbs	One time cost	
							\$5.00	75	\$375.00	\$375.00

Net Cost Savings											First Month	First Year
0-500											-\$328.38	\$184.36
501-1000											-\$322.48	\$255.17
over 1000											-\$320.32	\$281.16

Return	WACC	
NPV (Perpetuity)	0.04	\$13,071.09
IRR		14%

Months to Breakeven		
0-500	8.04	0.67
501-1000	7.14	0.60
over 1000	6.86	0.57