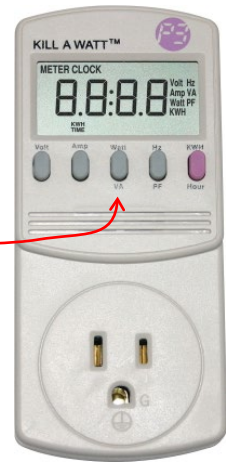


WINDOWS TO THE UNIVERSE: PLUGGED IN TO CO₂

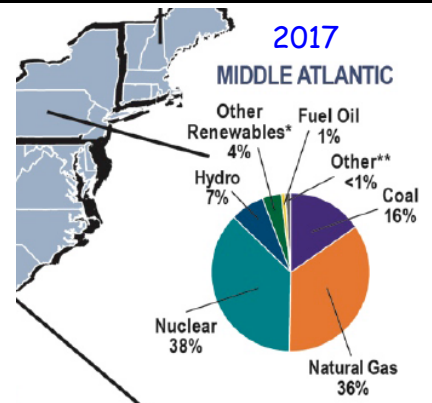
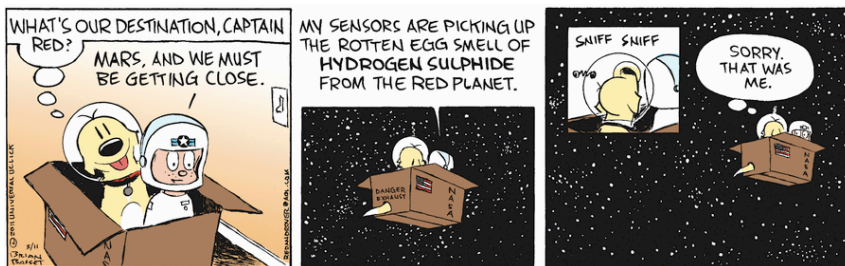
ELECTRICITY USED BY APPLIANCE IN ONE YEAR

Use a Kill-A-Watt meter to measure the power drawn by some appliances while in use and record them below.



- Plug the Kill-A-Watt into an outlet
- Plug appliance into the Kill-A-Watt, press "Watt" →
- Record the power used (B)
- Estimate the hours it's used each day (C)
- Multiply the power times the hours (B x C) for Watt-hours per day
- Divide by 1000 to change to kilowatts (1 kW = 1000 W) for kWhr per day
- Multiply by 365 for kWhr per year¹⁵

A	B	C	D	E	F
Appliance	Power Used	Daily hours of use	Energy per Day		Energy per Year
	Watts	Hours/Day	Watt-hours	kilowatt-hours	KWhr/year
			B x C	D/1000	
"100 W" Incandescent	89	5	445	0.445	162.4
"100 W" CFL	17	5	85	0.085	31.0
"100 W" LED	12	5	60	0.060	21.9



Using the 2017 New York fuel diversity¹ shown by the Edison Electric Institute² and the pounds of CO₂ released by each fuel producing 1 kWhr, calculate the CO₂ released by annual use of each appliance.²

Appliance	kWhr produced (G)			Pounds of CO ₂ /kWhr			Total CO ₂ (sum) pounds
	Coal	N. Gas	Oil	Coal	N. Gas	Oil	
	F x 0.16	F x 0.36	F x 0.01	G x 2.095	G x 1.321	G x 1.969	
"100 W" Incandescent	26.0	58.5	1.62	54.4	77.2	3.20	134.9
"100 W" CFL	4.96	11.2	0.31	10.4	15.8	0.61	25.8
"100 W" LED	3.5	7.9	0.22	7.34	10.4	0.43	18.2

¹ <https://www.nytimes.com/interactive/2020/10/28/climate/how-electricity-generation-changed-in-your-state-election.html>

² http://www.eei.org/issuesandpolicy/generation/fueldiversity/Documents/map_fuel_diversity.pdf