

# Energy 101

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NEW HAMPSHIRE STATE ENERGY MANAGEMENT OFFICE (SEM)  
NEW HAMPSHIRE DEPARTMENT OF ADMINISTRATIVE SERVICES



# What Is Energy?

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Its most basic definition -

Energy is the ability to do work



# Energy Comes in Different Forms

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- Heat (thermal)
- Light (radiant)
- Electrical



Coal, natural gas, nuclear, hydropower, petroleum, ethanol, wind, biomass, solar, and hydro are called energy sources.



# Energy sources are divided into two groups:

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- Renewable (an energy source that can be easily replenished)
- Nonrenewable (an energy source that cannot be easily replenished)



# Renewable Energy

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There are five main renewable sources.



# Solar Energy



Solar energy comes from the sun.

# Geothermal Energy



Geothermal energy is heat within the earth.



# Wind Energy



Today, the windmill's modern equivalent—a *wind turbine* can use the wind's energy to generate electricity.

# Biomass Energy



Biomass is organic material that comes from plants and animals.

# Hydropower



Hydropower is energy in moving water.

# Nonrenewable Energy

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- Crude Oil
- Hydrocarbon gas liquids
- Natural gas
- Propane

Nonrenewable energy sources accounted for about 90% of U.S. energy consumption in 2017.

# Secondary Energy Sources

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Secondary energy sources are made from other energy sources. They include electricity and hydrogen.

# How Is Energy Measured?

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oil in barrels  
or gallons

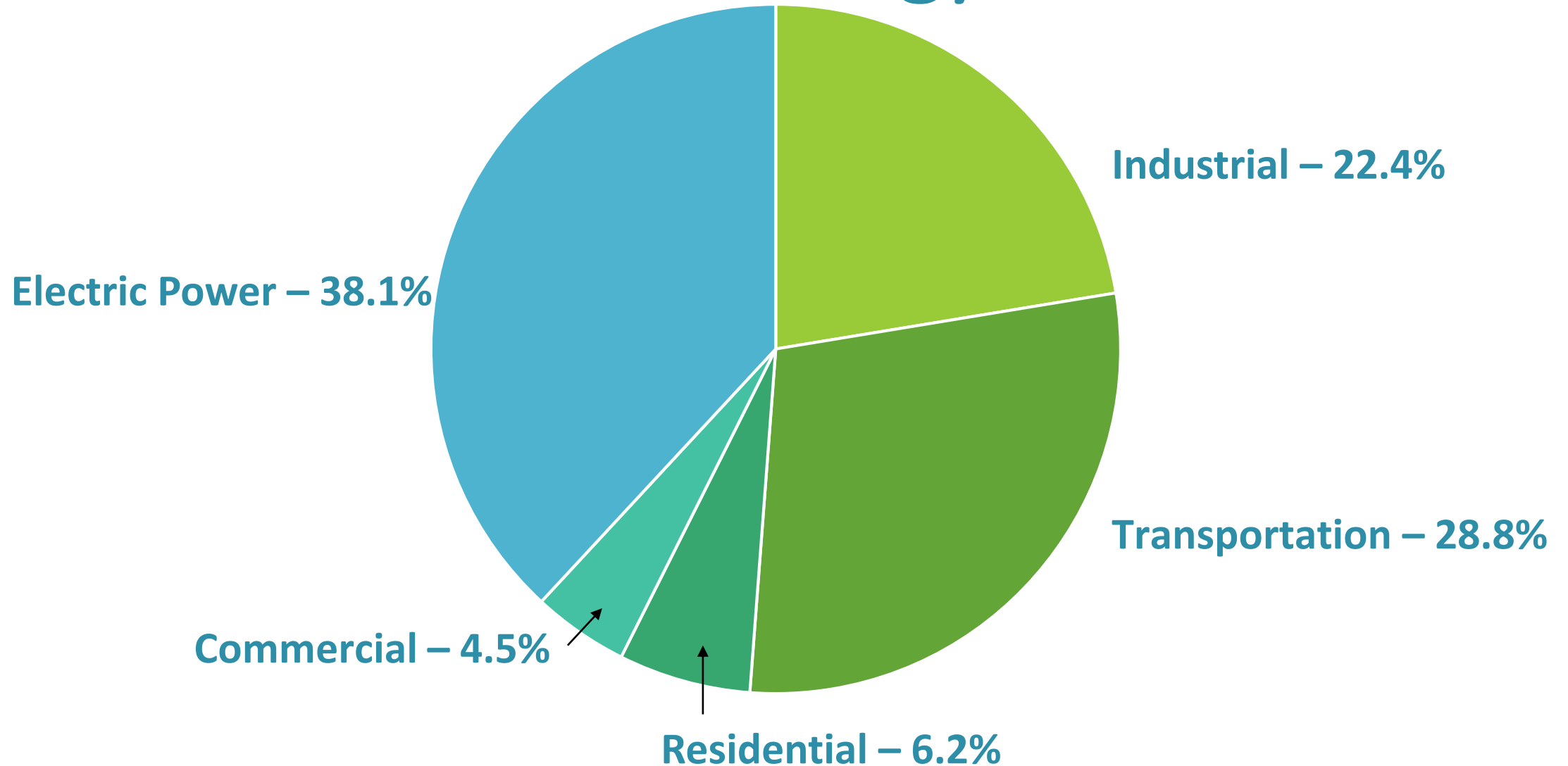
natural gas in therms

wood chips or pellets in  
short tons

electricity in kilowatts (KW0)  
and kilowatthours (KWH)

BTU's In the United States, British thermal units (Btu), a measure of heat energy, is commonly used for comparing different types of energy to each other.

# How We Use Energy in the U.S.





Homes in NH use nearly 32% less energy than the U.S. national average

The most recent data revealed that an individual in NH spent \$3360 per year for energy that's primarily in the form of gasoline, heating fuel and electricity.



How much does it cost to power up the 700 buildings the State either owns or rents each year?



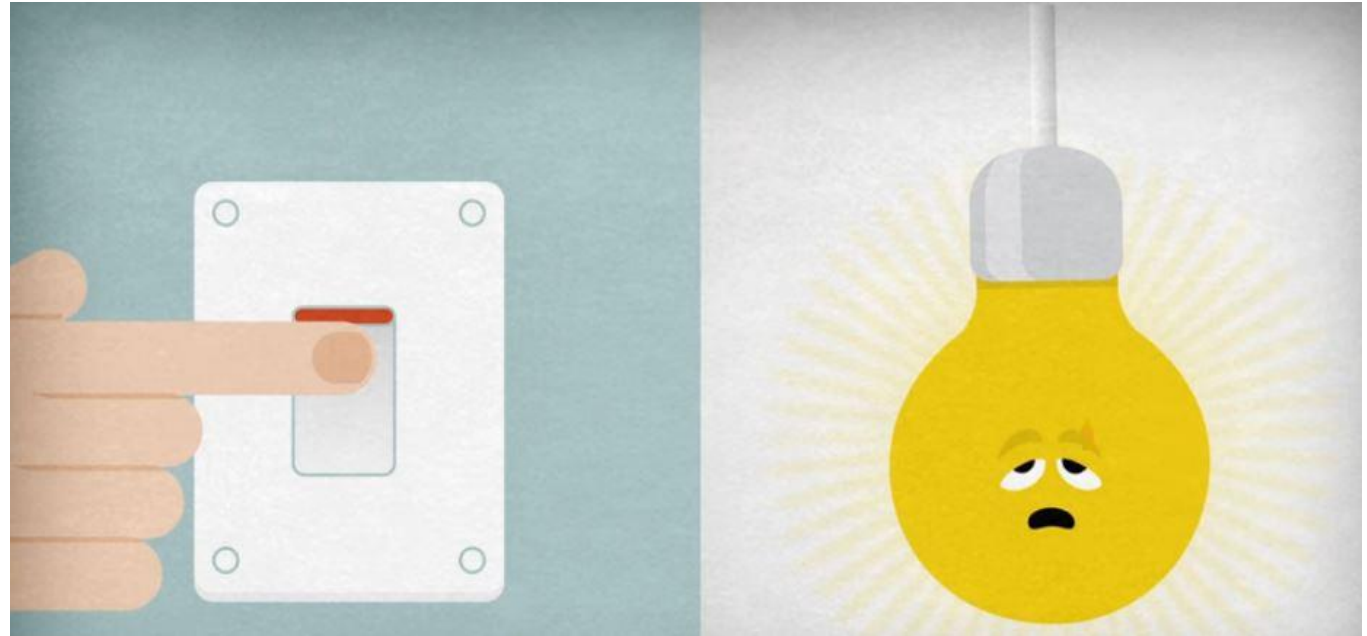
# \$18,006,350

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# So, How Do We Conserve Energy at Our Worksites?

Turn off lights when not needed.



# Switch out old style light bulbs for energy efficient bulbs for your task lights

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Old style  
Mercury  
filled bulb



Newer CFL Bulbs



Newest LED Bulbs

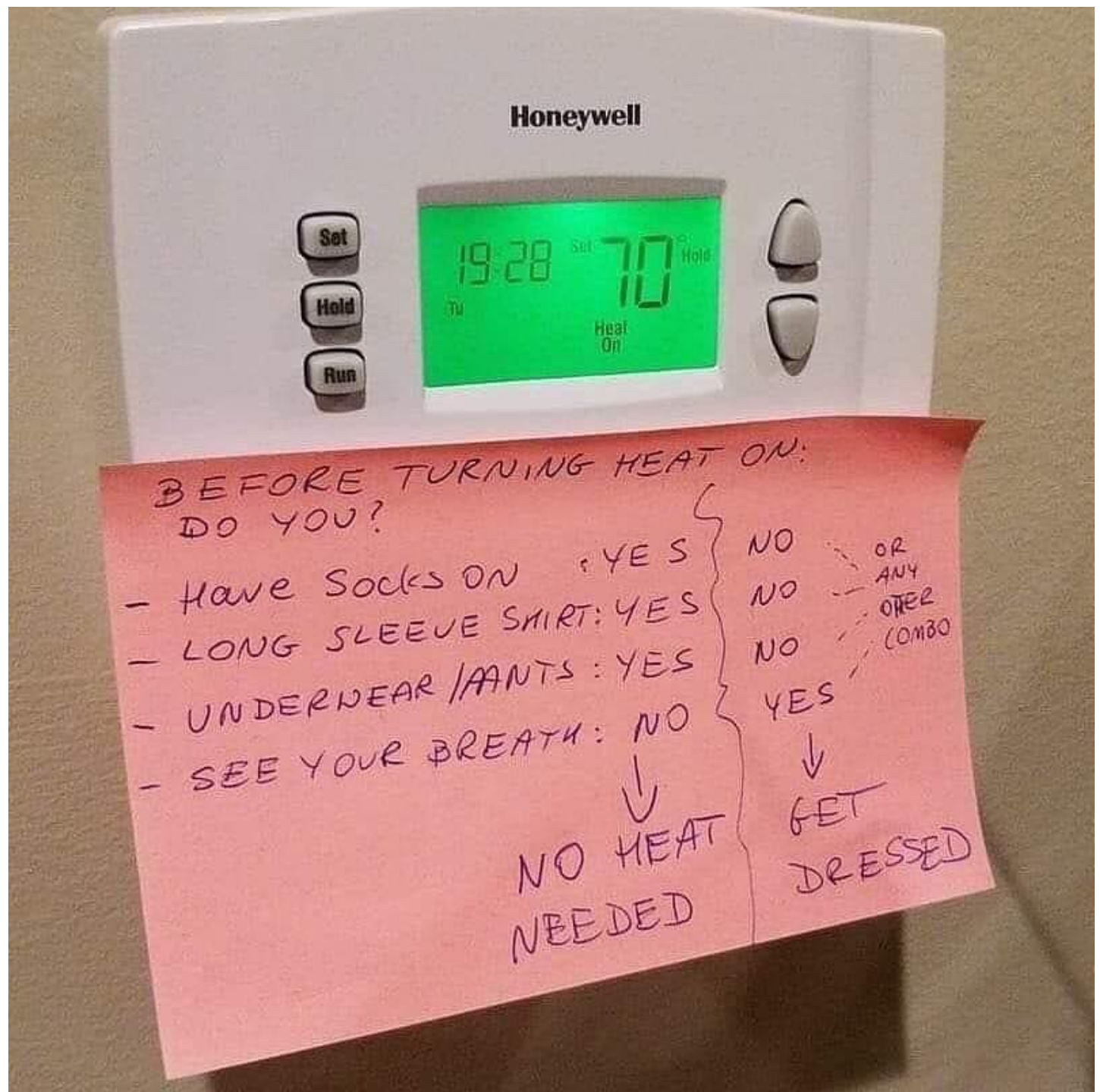
Take advantage of natural daylight

Control direct sunlight

Place Lights off Notes above switches

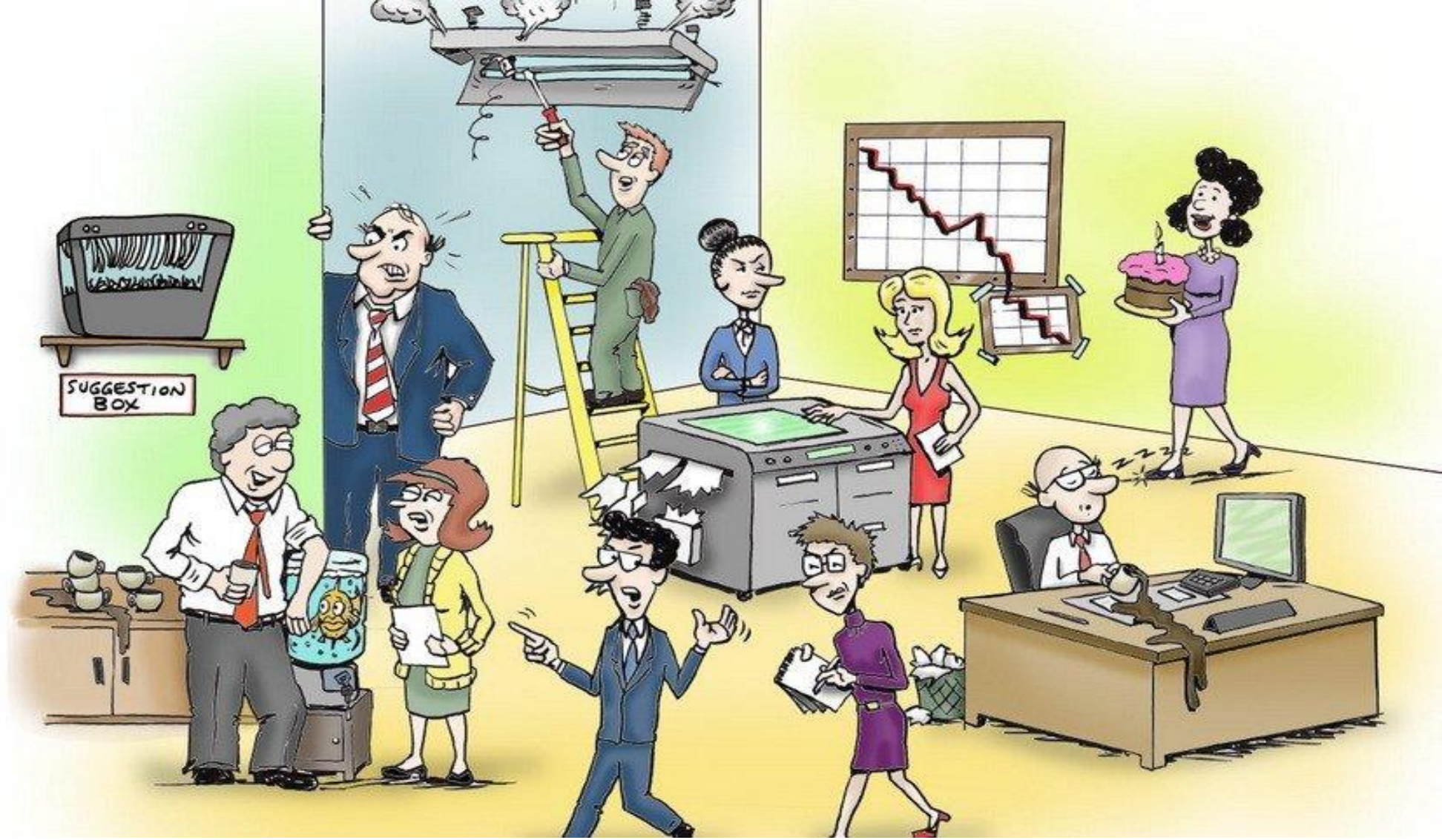
Close windows when you leave office

Monitor the thermostat, if possible



BEFORE TURNING HEAT ON:  
DO YOU?

- HAVE SOCKS ON : YES
  - LONG SLEEVE SHIRT: YES
  - UNDERWEAR / PANTS : YES
  - SEE YOUR BREATH: NO
- NO  
NO  
NO  
YES
- OR ANY OTHER COMBO
- ↓  
NO HEAT NEEDED
- ↓  
GET DRESSED



Powering down the office

**Turn off computers, monitors, printers and copiers during non-business hours.**

**DoIT makes sure the built-in power saver mode for your office equipment is on.**

**DoIT also makes sure your screen saver is compatible with your computer's power management features, and that the setup allows the system to go into power saver mode.**

**If given the choice, Using a laptop computer instead of a desk-top system can save 80-90% in electrical cost**

**Use a power strip and flip one switch, as opposed to multiple plugs.  
Inactive equipment can be shut down when the cubicle is unoccupied.**

**Offer Suggestions to Management**

# Contact Information:

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