

"CITIZENS FOR CLEAN & GREEN" - CARBON REDUCTION PLEDGE

I pledge to take actions to reduce my carbon footprint, to lower my environmental impact, and to help make Roanoke a more sustainable place to live, work and play. Commit to this pledge online at the City of Roanoke Sustainability website (www.roanokeva.gov/873/Sustainability) or mail the attached pledge card to: Nell Boyle, Dept. of General Services, 215 Church Avenue SW, Roanoke, VA 24011.



TIER 1 COMMITMENTS - Easy Effort and Minimal or No Cost (\$)

- Participate in the city's recycling program for aluminum cans, steel, glass, paper & plastics (#1 and #2).**
 - o Recycled aluminum uses 95% less energy than virgin aluminum from bauxite ore.¹
- Adjust your thermostat up a few degrees in summer (75 °F or higher) and down in winter (68 °F or lower).**
 - o Energy savings can be as much as 1% for each degree set higher in summer and lower in winter.²
- Wash clothes in cold water and dry laundry using a clothesline instead of using the dryer when possible.**
 - o Heating water accounts for 85-90% of the energy to wash clothes. EnergyStar® rated appliances save 20% energy & 35% water.³
- Turn off lights, unplug electronics/chargers when not in use, and set computers to "power-saving mode".**
 - o Enabling computer power management options can save as much as 60-80% of the energy that would have been wasted.⁴
- Maintain proper air pressure in tires.**
 - o Underinflated tires can reduce fuel economy by up to 3%.⁵

TIER 2 COMMITMENTS - Moderate Effort and Cost (\$\$)

- Replace the most frequently used light bulbs in your house with LED bulbs; replace all other incandescent bulbs with LED bulbs as they burn out.**
 - o LED bulbs use 75% less energy and last 25 times longer than incandescent lights. Implemented at the national level, LED lights can save more than \$5 billion dollars in annual energy bills. Payback time for these more expensive lights is less than 1 year.⁶
- Reduce energy use for hot water by installing water saving fixtures and showerheads, and insulating your water heater and pipes.**
 - o Water heating accounts for approximately 20% of total home energy use and costs an average household over \$300 a year.⁷
- Seal air leaks around windows, doors and other wall penetrations with weather stripping, caulk or insulation.**
 - o Air leakage can add 10% to your annual energy bill which equates to about \$70 per year for the average home.⁸
- Avoid the use of second refrigerators or run them only for special situations rather than full time.**
 - o 15% of all households use a second refrigerator that is more than 20 years old, uses 1000 kWh/yr, and costs \$100 annually.⁹
- Reduce "vampire" energy use by turning off power strips connected to devices or with a "smart power strip".**
 - o Vampire energy are 10% of residential energy use - taken across all U.S. households, this wastes an estimated 52 billion kWh of electricity, costs consumers more than \$5 billion, and emits more than 50 billion pounds of carbon dioxide each year.¹⁰

TIER 3 COMMITMENTS - More Difficult

- Bike, walk, carpool or use public transportation at least once per week for errands or your work commute.**
 - o For each individual, a 5 mile roundtrip by car avoided weekly would reduce carbon dioxide emissions by about 200 lbs.¹¹
- Buy a programmable thermostat and adjust the temperature at night and when the house is unoccupied.**
 - o Save 5 - 10% of the energy and cost to cool/heat your house by setting the thermostat 5 - 10 degrees warmer/cooler.¹²
- Hire a weatherization expert to conduct a blower door test on your house, then seal major leaks, insulate ducts for air conditioning and forced air heating systems and increase attic insulation levels.**
 - o In a typical house, 20% of the air that moves through the duct system is lost due to leaks, holes, and poorly connected ducts.¹³
- Choose Energy Star appliances and electronic devices when purchasing these items.**
 - o Over 20% of all electricity use in a house is for home appliances.¹⁴
- When purchasing a new/used vehicle, select models that get at least 20% better fuel economy than your current vehicle.**
 - o 30% of all greenhouse gas emissions in the US are a result of transportation.¹⁵
- MEASURE YOUR CARBON FOOTPRINT AND TAKE ACTION TO REDUCE IT BY 2% PER YEAR TO HELP ROANOKE MEET ITS COMMUNITY-WIDE CARBON DIOXIDE EMISSIONS REDUCTION GOAL OF 10% OVER THE NEXT 5 YEARS.**



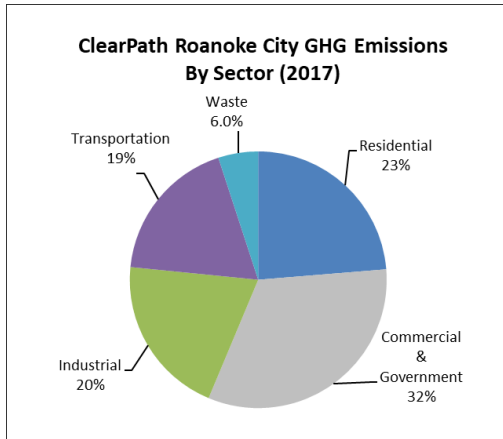
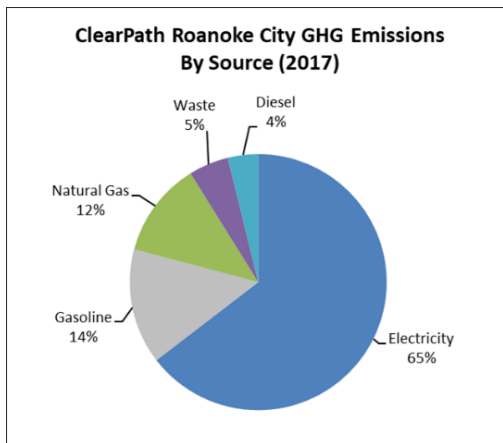
REFERENCES:

- ¹www.eia.doe.gov/kids/energyfacts/saving/
- ²http://apps1.eere.energy.gov/consumer/your_home/space_heating_cooling/index.cfm/mytopic=12720
- ³www.energy.gov/energysaver/appliances-and-electronics/laundry
- ⁴RMI Home Energy Brief #7; <https://rmi.org/insight/home-energy-briefs-7-electronics/>
- ⁵www.fueleconomy.gov/feg/maintain.jsp
- ⁶www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting
- ⁷RMI Home Energy Brief #5; <https://rmi.org/insight/home-energy-briefs-5-water-heating/>
- ⁸RMI Home Energy Brief #1; <https://rmi.org/insight/home-energy-briefs-1-building-envelope/>
- ⁹www.washingtonpost.com/news/wonk/wp/2014/11/26/why-its-not-okay-to-have-a-second-refrigerator/?noredirect=on
- ¹⁰www.srpnet.com/energy/DIY/vampire.aspx
- ¹¹5 mile/week x 52 weeks/yr x 20 lbs CO₂/gallon / 25 mile/gallon = 208 lb CO₂
- ¹²www.norbord.com/na/blog/programmable-thermostats-do-they-really-save-money/
- ¹³www.energystar.gov/index.cfm?c=home_improvement.hm_improvement_ducts
- ¹⁴www.energysage.com/energy-efficiency/costs-benefits/energy-star-rebates/
- ¹⁵www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

RESOURCES:

- City of Roanoke Recycling - request recycling bins by calling 853-2000 (press option 1)
- Carpool Matching - RIDE Solutions - www.ridesolutions.org
- Free water-conservation kits - Western VA Water Authority office downtown
- Roanoke bus routes & Star Line Trolley Information - www.valleymetro.com
- Energy Star appliances - www.energystar.gov/
- Vehicle Fuel Efficiency information - www.fueleconomy.gov/
- EPA Carbon Calculator - www3.epa.gov/carbon-footprint-calculator/
- Rocky Mountain Institute Household Energy Briefs - <https://rmi.org/rmi-insights/>
- Calculate saving for unplugging a 2nd refrigerator - www.energystar.gov/index.cfm?fuseaction=refrig.calculator
- Household Carbon Emissions - <http://saveaton.org/>

Community Emissions Inventory



“CITIZENS FOR CLEAN & GREEN ” - PLEDGE CARD

Name: _____

Address: _____

Phone: _____

Email: _____

Check the box if you would like more info about this initiative:

Check the box if you have already completed a carbon footprint:

How many of the commitments (1 - 16) do you already practice? _____

Check the box if you would like to help your neighborhood or organization participate in this initiative:

How did you find out about this pledge? Please circle or specify:

Friend City Message Facebook

Company/Organization: _____

Other: _____

Mail to: Nell Boyle, Sustainability & Outreach Coordinator, Dept. of General Services, 215 Church Avenue SW, Roanoke, VA 24011.