Community Climate Action Grant Program
Emissions Reduction Calculations

The grant application requests that you estimate the greenhouse gas emissions reduction of your project. Please read through this section to help you complete this part of the application successfully. If you need assistance with these calculations, please email Orange County Sustainability **before August 8 at 5 pm**.

Does your project save energy or reduce food waste?

If your project saves on electricity, gasoline, or natural gas, or if it reduces food waste, you will need to calculate the total amount saved in a year in the following units:

- ○ Electricity: kWh
- ○ Gasoline: gallons
- ○ Natural Gas: BTUs (British Thermal Units)
- ○ Food Waste: pounds

Is your project a solar installation?

Solar projects will need to know how many kWh of electricity will be produced in a year and should use 25 years as the project lifetime.

Do you have a nature-based project (example: tree planting, restoration)?

If you have a nature-based project like tree planting, soil health practices, community garden, wetland restoration, or prairie regeneration, these tools can help you calculate GHG emission reductions:

Tool	Best Application	Notes
COMET-Planner	○ soil health ○ forest & grassland restoration ○ conservation practices	○ Select state and land management practice ○ Get GHG reduction estimates per acre ○ User-friendly | No login required ○ Tonnes = metric tons

i-Tree Tools	○ tree planting ○ urban forestry ○ community canopy projects	○ Requires tree species and location

Emissions Factors

Emissions Factors for common energy types - When you save a gallon of gas or a kilowatt-hour of electricity, how many pounds of greenhouse gas emissions are avoided? It can depend on where you live and where your energy comes from, but it is a relationship that is summed up in one number, the emissions factor. The table below provides the emissions factors that will be applied in the scoring of all applications.

Energy Type (Utility)	2022 Emissions Factor*	2022 Emissions Factor*
Electricity (Primarily Duke Energy Carolinas)	0.0002087	Metric tons CO2e / kWh
Natural Gas (Primarily Dominion Energy)	0.053	metric tonnes CO2e (mt) / million BTU (mmBTU)
	0.0053	Metric tons CO2e / therm
Gasoline (various)	0.00889	Metric tons CO2e / gallon

Emissions factor for gasoline comes from EPA's Greenhouse Gas Equivalencies Calculator. All other emissions factors are sourced from Orange County's 2017 Greenhouse Gas Emissions Inventory.