

# GO ZERO CALCULATOR – ESTIMATIONS

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## METRICS FOR GO ZERO CALCULATOR

### Home and Energy Use

FORMULA [xm=c] lbs

#### Electricity

**Input:** x = Kilowatt-hours (kWh) per year

Or, if you don't know your average annual use, please select your home size:

Single family home  Town home  Apartment

(Calc: Single Family Home x =13159, Town home x =9240, Apartment x =7147)

(Calc: m=1.52 lbs)

#### Natural Gas

**Input:** x = therms per year

Or, if you don't know your average annual use, please select your home size:

Single family home  Town home  Apartment

(Calc: Single Family Home x =753, Town home x =696, Apartment x =502)

(Calc: m=11.71 lbs)

#### Heating Oil

**Input:** x = gallons per year

Or, if you don't know your average annual use, please select your home size:

Single family home  Town home  Apartment

(Calc: Single Family Home x =770, Town home x=649, Apartment x=710)

(Calc: m=22.39 lbs)

#### Propane

**Input:** x = gallons per year

Or, if you don't know your average annual use, please select your home size:

Single family home  Town home  Apartment

(Calc: Single Family Home x =476, Town home x =565, Apartment x =307)

(Calc: m=12.65 lbs)

#### Waste and Recycling

**Input:** x = number of individuals in household

My household recycles, m=574 lbs of CO<sub>2</sub>

My household does not recycle, m= 1021 lbs of CO<sub>2</sub>

## Auto Transportation

FORMULA  $[z=m \cdot c]$  lbs

### Vehicle 1:

**Input:**  $x$  = miles driven per year

Hint: 11,700 miles per year, per vehicle is about average in the U.S.

The fuel efficiency of my vehicle is **Input:**  $y$  =miles per gallon (mpg).

Or, if you don't know your vehicle's fuel efficiency, please select its size:

(Calc: Compact or Smaller  $y = 25.2$ , Midsize Sedan  $y = 22.2$ , Large Sedan  $y = 21.2$ , Station Wagon  $y = 23.8$ , Truck or Van  $y = 17.2$ , Minivan  $y = 20.1$ , Sport Utility  $y = 18.8$ )

(Calc:  $x/y = z$ )

(Calc:  $m=19.64$  lbs)

### Air Travel

**Input:**  $x$  = air miles flown per year.

(Calc:  $m=0.61$  lbs)

## STEP TWO -- CALCULATE YOUR IMPACT

### Calculate Your Impact

FORMULA  $[(\text{sum of all } c)/m=i]$  tons

Your estimated CO<sub>2</sub> emissions is \_\_\_i\_\_\_ tons per year.

(calc:  $m=2,000$ )

You can help to offset your impact by planting \_\_\_t\_\_\_ trees.

FORMULA  $[i/m=t]$  trees

(Calc:  $m=1.19$  tons)

## STEP THREE – GO ZERO

FORMULA  $[8i=d]$  USD

Total \$ [d.00]

## Sources

### Electricity

CO<sub>2</sub> Coefficient: 1.52 pounds CO<sub>2</sub>/kilowatt-hour

CO<sub>2</sub> Source: <http://www.epa.gov/cleanenergy/energy-resources/refs.html>

Average electricity use by household type source:

<http://www.eia.gov/consumption/residential/data/2005/#tabs-2>

### Natural Gas

CO<sub>2</sub> Coefficient: 11.71 pounds of CO<sub>2</sub> per therm (117.080 pounds CO<sub>2</sub> per million Btu)

CO<sub>2</sub> Source: Energy Information Administration Voluntary Reporting of Greenhouse Gases Program Fuel Emissions coefficients - <http://205.254.135.24/oiaf/1605/coefficients.html>

Average natural gas use by household type source:

<http://www.eia.gov/consumption/residential/data/2005/#tabs-2>

## Home Heating Oil

CO<sub>2</sub> Coefficient: 22.39 pounds CO<sub>2</sub> /gallon

CO<sub>2</sub> Source: Energy Information Administration Voluntary Reporting of Greenhouse Gases Program Fuel Emissions coefficients - <http://205.254.135.24/oiaf/1605/coefficients.html>

Average home heating oil (fuel oil) use by household type source:

<http://www.eia.gov/consumption/residential/data/2005/#tabs-2>

## Propane

CO<sub>2</sub> Coefficient: 12.65 lbs CO<sub>2</sub> /gallon

CO<sub>2</sub> Source: Energy Information Administration Voluntary Reporting of Greenhouse Gases Program Fuel Emissions coefficients - <http://205.254.135.24/oiaf/1605/coefficients.html>

Average home propane (liquid propane gas) use by household type source:

<http://www.eia.gov/consumption/residential/data/2005/#tabs-2>

## Waste and Recycling

Waste CO<sub>2</sub> Coefficient: 2.8 lbs of CO<sub>2</sub> /day/individual

Recycling CO<sub>2</sub> Coefficient: 1.57 lbs of CO<sub>2</sub>/day/individual

The EPA estimates an average household of one person creates 1,021 pounds of CO<sub>2</sub> from waste each year. If you recycle, the EPA estimates that average decreases to 574 pounds of CO<sub>2</sub> from waste each year.

CO<sub>2</sub> Source: EPA Household Emissions Calculator:

[http://www.epa.gov/climatechange/emissions/ind\\_calculator2.html#c=waste&p=reduceOnTheRoad&m=calc\\_currentEmissions](http://www.epa.gov/climatechange/emissions/ind_calculator2.html#c=waste&p=reduceOnTheRoad&m=calc_currentEmissions)

## Auto Transportation

CO<sub>2</sub> Coefficient: 19.65 pounds CO<sub>2</sub>/gallon

CO<sub>2</sub> Source: Energy Information Administration Voluntary Reporting of Greenhouse Gases Program Fuel Emissions coefficients; <http://205.254.135.24/oiaf/1605/coefficients.html>

## Air Travel

CO<sub>2</sub> Coefficient: 0.61 lbs of CO<sub>2</sub> per mile flown

Air travel definitions and factors are from the EPA May 2008 Climate Leaders Greenhouse Gas Core Modules Guidance

CO<sub>2</sub> Source: [http://www.epa.gov/climateleaders/documents/resources/commute\\_travel\\_product.pdf](http://www.epa.gov/climateleaders/documents/resources/commute_travel_product.pdf)