

ONE WAY TO ESTIMATE YOUR CARBON FOOTPRINT (at least part of it)

STEPS:

- 1 Gather up your utility bills. Best is if you have 12 months of usage. One or two months can be used as an estimate.
For PG&E customers, you can access your historical usage at www.pge.com/myhome and select "Analyze my energy use."
You will need your account number. PG&E may also provide this information by phone.
- 2 For each car in your household, estimate annual miles driven and average miles per gallon (mpg).
- 3 Estimate the total air miles flown by each member of your household. For round trips, be sure to double the one-way distance.
- 4 Enter your data on the worksheet and get out your calculator!

If you should happen to have more than two houses or more than three cars in your household, use additional sheets!

SOME COMMENTS:

NOTE: These estimates do not include other sources of CO₂, e.g. emissions resulting from purchase of goods and services, waste disposal, energy consumption at your work place, energy consumption for lodging while away from home, etc. Some estimates show emissions rates doubling if food, goods and services are included.

<u>Some rough comparisons (all include housing, transport, food, goods, services):</u>	<u>lb CO₂/yr</u>
Per Person, United States	44,000
Per Person, Globally	10,000
Per Person, China	8,000
Per Person, India	3,000

Try some on-line calculators! Note that you will likely get somewhat different results, due to different assumptions and inclusion or exclusion of different CO₂ categories. Here are a few to try out, recommended by CAS staffer Aaron Pope.

<http://of2.iearn.org/> (aimed at kids)

<http://www.earthlab.com/>

http://www.carbonfund.org/site/pages/carbon_calculators/

https://auscalc.footprintnetwork.org/ecological_footprint.html (said to be "visually the coolest!" by Aaron)

Notes/data sources:

- 1 Lbs CO₂ per kWh and per therm based on PG&E estimates, see www.pge.com/about/environment/calculator/assumptions.shtml
This is specific to PG&E's resource mix for electricity generation, which includes non carbon sources such as nuclear, hydro, and renewables.
- 2 Lbs CO₂ per gallon of gas: 1 gal gas x 6.3 lb/gal x 87% carbon/gal x 44 lbs CO₂/12 lb C = 20 lbs CO₂/gal. www.fueleconomy.gov/Feg/co2.shtml
See, e.g., www.fueleconomy.gov/Feg/co2.shtml
- 3 Lbs CO₂ per air mile: approximate value based on a non-scientific survey of web sites. See e.g. www.coolcalifornia.org/doc.html
Air travel CO₂ emissions per mile vary with length of trip, aircraft, passenger loading, etc., and whether the impact of contrails are included.
- 4 Per person U.S., Global, China, India figures from <http://www.earth-policy.org/Indicators/CO2/2008.htm>

WORKSHEET -- Household Housing, Car, and Air Travel Carbon Footprint

House 1	Electricity Usage in kilowatt hours (kWh)	<input type="text"/>	X	<input type="text" value="0.524"/>	=	<input type="text"/>	% of total <input type="text"/>				
		kWh per year		lb CO2/kWh		lb CO2/year					
	Natural Gas usage in therms (therms)	<input type="text"/>	X	<input type="text" value="13.446"/>	=	<input type="text"/>	<input type="text"/>				
		therms per year		lb CO2/therm		lb CO2/year					
						+					
House 2	Electricity Usage in kilowatt hours (kWh)	<input type="text"/>	X	<input type="text" value="0.524"/>	=	<input type="text"/>	<input type="text"/>				
		kWh per year		lb CO2/kWh		lb CO2/year					
	Natural Gas usage in therms (therms)	<input type="text"/>	X	<input type="text" value="13.446"/>	=	<input type="text"/>	<input type="text"/>				
		therms per year		lb CO2/therm		lb CO2/year					
						+					
Car 1	<input type="text"/>	/	<input type="text"/>	=	<input type="text"/>	X	<input type="text" value="20"/>	=	<input type="text"/>	<input type="text"/>	
	annual miles driven		miles per gallon		gallons gas		lb CO2/gal		lb CO2/year		
									+		
Car 2	<input type="text"/>	/	<input type="text"/>	=	<input type="text"/>	X	<input type="text" value="20"/>	=	<input type="text"/>	<input type="text"/>	
	annual miles driven		miles per gallon		gallons gas		lb CO2/gal		lb CO2/year		
									+		
Car 3	<input type="text"/>	/	<input type="text"/>	=	<input type="text"/>	X	<input type="text" value="20"/>	=	<input type="text"/>	<input type="text"/>	
	annual miles driven		miles per gallon		gallons gas		lb CO2/gal		lb CO2/year		
									+		
Air miles	<input type="text"/>	X	<input type="text" value="0.5"/>	=	<input type="text"/>				lb CO2/year	<input type="text"/>	
		air miles		lb CO2/air mile							
									=		
TOTAL CO2 EMISSIONS FOR YOUR HOUSEHOLD, ANNUAL (sum up numbers above)							<input type="text"/>			lbs CO2/year	<input type="text" value="100%"/>

Number of people in your household	<input type="text"/>	people in household
TOTAL CO2 EMISSIONS PER PERSON, ANNUAL (household total divided by people in household)	<input type="text"/>	lbs CO2/year