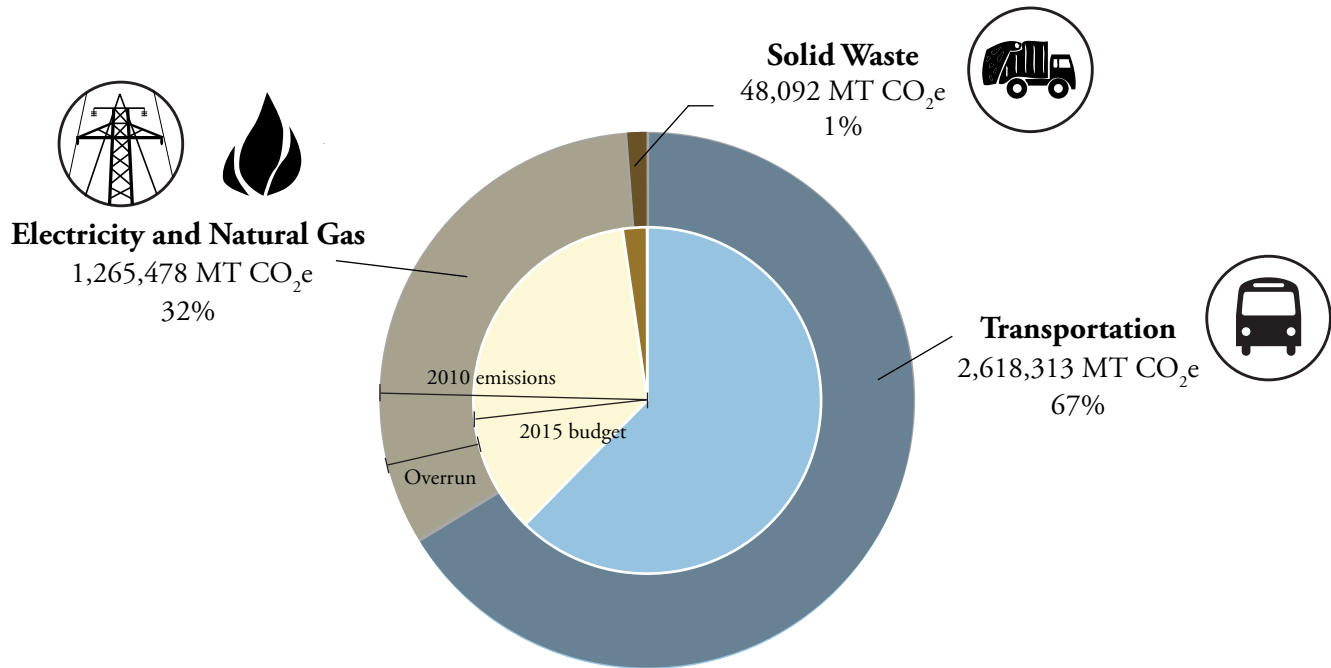


Sonoma County Carbon Budget and Economic Impact for 2010

Presented May 26, 2011

The following chart details the contributions from transportation, electricity and natural gas, and solid waste to Sonoma County's GHG emissions in 2010. The inner circle is sized to represent the 2015 "carbon budget" of greenhouse gas emissions, as adopted by all Sonoma County jurisdictions in 2005. Countywide actual emissions in 2010 are represented by the larger circle. The donut-shaped area around the inner circle shows the amount we are over our carbon budget.



Carbon Budget

Carbon Budget based on 2015 goal:	2,721,660 MT CO ₂ e
2010 Carbon Emissions:	3,931,883 MT CO ₂ e
(Budget Deficit):	<u>(1,210,223 MT CO₂e)</u>

Estimated Fossil Fuel Consumption in 2010

Transportation fuels consumed in Sonoma County:
213 million gallons of gasoline and 55 million gallons of diesel



Electricity consumed in Sonoma County:
2,579,590 MWh



Natural gas used in Sonoma County:
115,203,510 therms



Estimated Economic Impact

Local dollars leaving Sonoma County annually:

\$831,915,470 (assumes \$3.09/gal for gasoline and \$3.16/gal for diesel)

\$165,764,693 (assumes \$0.153/kWh)

\$115,203,510 (assumes \$1.00/therm)

Fossil fuel related expenses: \$1.11 billion

Factors affecting Sonoma County's GHG emission levels

GHG emissions may fluctuate each year depending on:

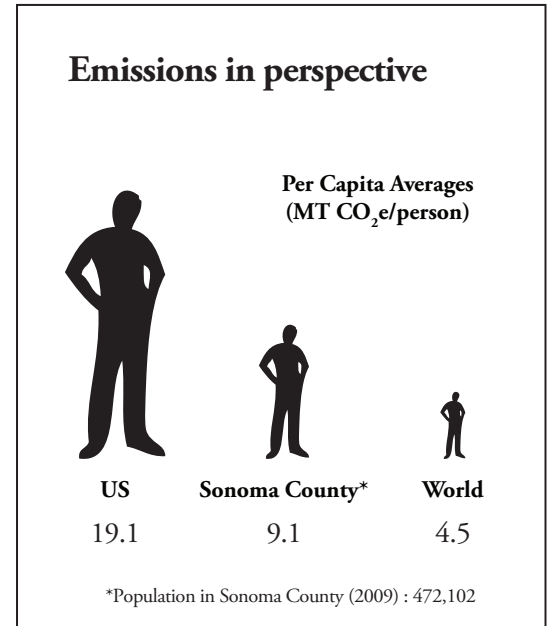
Weather, including heat waves and precipitation: PG&E's electricity procurement includes a large portion of low-GHG hydroelectric power from the Pacific Northwest. During years of high rainfall, PG&E's emission factors decrease (the electricity used in Sonoma County includes more hydro electricity, which is cleaner). Heat waves result in increased air conditioning use, requiring peaker plants (which are often older and dirtier sources of power) to supply power during hours of highest energy use in the region.

Population: Transportation related emissions increase as the population increases.

Economy: In booming economic times, GHG emissions increase. In a recession with higher unemployment or more vacant buildings, GHG emissions decrease.

For example, according to the 2005 countywide GHG emissions inventory, between 1990 and 2000 GHGs increased by 28%. Key factors during that decade included an increase in VMT of 42.5% and an increase in population of 18%. The dip in emissions in 2005 and 2006 corresponds with an increase in the proportion of electricity from hydropower. Although total greenhouse gases emitted by Sonoma County in 2009 decreased from 2008, according to the Climate Protection Campaign, the economic downturn is the probable main cause of this decrease.

In order to meet our GHG reduction target, we need policies and programs that can override these major factors.



Sources and Assumptions:

Greenhouse gas emissions (GHG) may be expressed as carbon dioxide equivalent (CO₂e) to include methane and other greenhouse gases. The convention for expressing GHG emissions is Metric Tonnes (MT) or Million Metric Tonnes (MMT), following the Intergovernmental Panel on Climate Change (IPCC) guidance. Notable conversion rates: 2204.6 lbs = 1MT. Emissions from agriculture, forestry, and other biomass were not included in this report.

Gasoline and diesel consumed in Sonoma County was estimated by multiplying the statewide fuel demand by the ratio of Sonoma County vehicle population to statewide vehicle population. Source: Gary Yowell, California Energy Commission
California aggregated weekly gasoline prices: The Energy Information Administration (EIA): http://tonto.eia.doe.gov/dnav/pet/pet_pri_gnd_dcus_sca_w.htm

For fossil fuel-related electricity costs: Total electricity consumed 2,579,590 MWh x \$153/MWh (Source: PG&E system average bundled customer rates for 2010, California Public Utilities Commission (CPUC): http://www.cpuc.ca.gov/PUC/energy/Electric+Rates/ENGRD/ratesNCharts_elect.htm) = Total electricity costs (\$394,677,840) x 42% for fossil fuel-related costs (Source: PG&E's 2010 power mix: Natural gas (24%) and unspecified sources (18%)). MWh electricity and therms natural gas consumption: Source: Steven Mac, California Energy Commission
Natural gas rates: PG&E average residential baseline charge for 2010: <http://www.pge.com/tariffs/GRF.SHTML>
\$1.00/therm was the average PG&E residential base rate for natural gas in 2010.
CPUC: <http://www.cpuc.ca.gov/PUC/energy/Electric+Rates/ENGRD/ratesNDeliveryGas.htm>

PG&E Carbon Dioxide (CO₂) Emissions Rates

Electricity: 0.559 lbs CO₂ per kWh (2010 projection based on the average of the 2005-2009 factors)

Natural Gas (all years - lbs CO₂ per therm): 11.7

Source: <http://www.pge.com/myhome/environment/calculator/assumptions.shtml>

Transportation emissions from Vehicle Miles Travelled calculated using ICLEI software, assumes 1,562 MT CO₂ per Vehicle Mile Travelled

This handout was produced by the Regional Climate Protection Authority.

For more information, check <http://www.sctainfo.org/data.htm>