

Energy Leader Newsletter Jan - Mar 2016



VCREA

Ventura County Regional Energy Alliance

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About VCREA

VCREA is a Joint Powers Agency composed of public agencies working in collaboration to address good energy stewardship through integrated demand side management practices in the Ventura County region.

Ventura Partnership

The Ventura Partnership encompasses the cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, Santa Paula, Simi Valley, Thousand Oaks, the City of Ventura, and the County of Ventura to support energy efficiency improvements in public agencies and throughout the community. VCREA welcomes the City of Simi Valley as the newest member of the partnership!

Our Website and Newsletter

Energy Leader is a quarterly publication published to provide valuable resources and information regarding energy efficiency in the Ventura County region. To receive our newsletter by e-mail, please log on to www.vcenergy.org. VCREA is your one source resource for energy efficiency.

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CLIMATE ON THE MOVE

What is Climate Change?

Climate change results from the concentration of certain **greenhouse gases, or GHGs**, in our Earth's atmosphere. While some of these gases are good for the planet, too many result in excessive heating of the earth's atmosphere, known as the greenhouse effect. Too many of these gases and the earth's atmosphere changes in unpredictable ways!

- Some places become too hot, some too dry, some too wet, and yes, some too cool.
- Glaciers and icecaps melt, sea levels rise, and other new phenomena occur.
- There are more unique weather events (hurricanes, blizzards, droughts).

Our planet is changing. California is changing. Ventura County is changing.

What are Greenhouse Gases?

The most significant GHG is carbon dioxide but there are at least 6 others. While some emissions occur naturally (volcanic eruptions, wildfires), the vast majority of them are the result of human activity; especially the combustion of fossil fuels (oil, natural gas, coal, wood, gasoline, diesel and others). Vehicles are the major source of emissions in California. Some GHGs are known as "fugitive" because they escape before being combusted, as we have seen in the recent gas leak at Porter Ranch.

How do we measure GHGs?

Strictly speaking, we do not "measure" GHGs. There are sophisticated technologies to do so, but we normally "calculate" emissions of

GHGs by measuring inputs: amount of fuel burned by scientifically agreed upon factors (so much volume of fuel for so much GHG). The standard unit of measurement is a metric ton of carbon dioxide equivalent. While there are 6 GHGs, we report them in units that are equivalent to carbon dioxide. For example, one metric ton of methane is equivalent to 25 metric tons of carbon dioxide (MTCO_{2e}).

What does a metric ton of carbon dioxide look like?

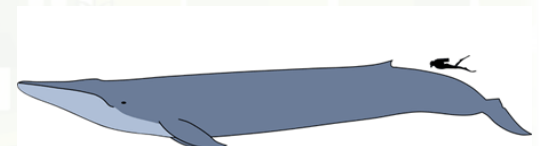
It can be difficult to wrap your head around a TON of anything. Following are some comparison.

The new extinct **California Grizzly Bear** weighed an average of .75 US tons (T) or .68 metric tons (MT).



The SI Symbol for a Ton can be written t or T and a Metric Ton can be mt, Mt or MT.

The **blue whale** that migrates off our coast weighs an average of **100-150 metric tons**.



Source: http://www.whalewatchreport.net/images/whales/blue_whale_size.png

The average American adult weighs 166 pounds – if you were in a room with 13 of your friends, your combined weight would equal a ton of CO₂.

sce.com/ctac

socalgas.com/erc

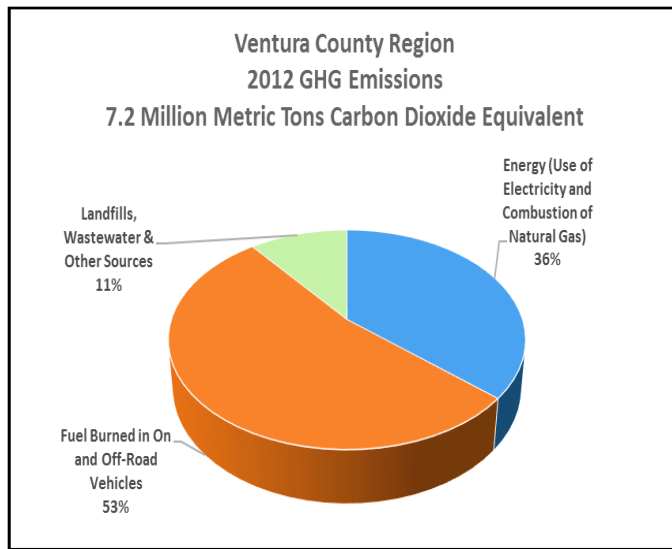
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GHGs in Ventura County

What is VCREA'S GHG Inventory?

With funding for a report and project by Southern California Edison Company under the auspices of the California Public Utility Commission, VCREA developed an accounting of emissions resulting from the use of electricity, combustion of natural gas, combustion of fuels in vehicles and off-road equipment, and emissions from other sources (landfills, wastewater treatment plants, and from other substances like refrigerants and insulators). Annual inventories (2010, 2011 and 2012) were developed for the region as a whole and for the individual City partners to promote GHG reduction.

The results for each year showed little difference. The 2012 regional footprint is summarized below:



Ventura County bus ridership is about 4.5 million per year!

Did you know Ventura County carpooling/ride-sharing has 11-13% participation, better than the state average?

Learn how you can participate in ride-sharing at www.goventura.org.

Another source of information about GHG emissions in our region is public reporting that complies with California's Cap and Trade regulations. Organizations with significant emissions submit verified annual reports to the California Air Resources Board.

The following shows by Facility and Industry what commercial GHGs were reported for the County in 2012:

Facility	MT (CO ₂ e)	Industry Type	Location
Aera Energy Ventura Basin	14,289	Oil and Gas Production	Unincorporated Area
Aera Energy Ventura Gas Plant	7,869	Oil and Gas Production	Unincorporated Area
Amgen Inc.	23,211	Other Combustion Source	Thousand Oaks
California State University, Channel Islands	106,985	Cogeneration	Camarillo
E.F. Oxnard LLC	82,804	Cogeneration	Oxnard
Houweling Nurseries	24,412	Cogeneration	Camarillo
Mandalay Generating Station	135,517	In-State Electricity Generation	Oxnard
New-Indy Oxnard LLC	124,336	Other Combustion Source	Oxnard
Ormond Beach Generating Station	149,250	In-State Electricity Generation	Oxnard
Oxy - SCVGP 755	82,032	Oil and Gas Production / Supplier of Natural Gas	Unincorporated Area
Oxy - Ventura 755	13,429	Oil and Gas Production	Unincorporated Area
Southern California Edison (SCE) - McGrath Peaker	904	In-State Electricity Generation	Oxnard
The P&G Paper Products Co.	330,803	Other Combustion Source	Oxnard
Toland Landfill - Ventura Regional Sanitation District	11,516	In-State Electricity Generation - Landfill Gas	Unincorporated Area
Total	1,107,357		

The California Energy Commission estimates that about 62% of the natural gas consumed in Ventura County is used in residential applications, for things like heating, water heating and cooking. Residential use of electricity accounted for about 30%, with the remaining 70% used in commercial and industrial locations.

Most emissions in our region result from the combustion of diesel fuel and gasoline in our cars, trucks and off-road vehicles. And a large percentage of that combustion occurs on state highways: when Ventura County residents commute within the County or travel outside our borders, or when passenger cars and commercial vehicles travel into or out of the County or through it to other destinations. This travel on State highways accounts for more than half of the GHG emissions that occur within our County's geographic boundaries. While fuel efficiency standards and more efficient cars are reducing on-road vehicle emissions year to year, they will remain a significant contributor to GHGs for Ventura County.

GHGs in Our Cities

The VCREA Partnership

Since the Ventura County Regional Energy Alliance partnership began offering incentives to its government partners in 2006, VCREA projects have resulted in almost 35 thousand metric tons of cumulative, avoided GHG emissions or, on average, 3,500 metric tons. That's 35,000 blue whales! Following are some partner highlights (note: Due to joining VCREA post inventory, Simi Valley is excluded.):

The City of Camarillo (2012 population: 66,095)

Source	MT CO2e	%
Energy	198,893	48.8%
Vehicles	152,959	37.6%
Other	55,398	13.6%
Total	407,250	



In 2012, the CO₂ e emissions for the City of Camarillo totaled a little of 407,000 metric tons. With the 150 annual MT of GHG savings from the City of Camarillo's well

refurbishment, an average car could be driven for 243 days non-stop.

The City of Fillmore (2012 population: 15,074)

Source	MT CO2e	%
Energy	29,284	49.9%
Vehicles	21,187	36.1%
Other	8,248	14.0%
Total	58,719	



In 2012, the CO₂e emissions for the City of Fillmore totaled a little less than 59,000 metric tons. Fillmore's Direct Install Program and Savings by Design projects (320.5 metric

tons) helped us avoid as many emissions as would be created by burning 344,275 pounds of coal.

The City of Moorpark (2012 population 34,661)

Source	MT CO2e	%
Energy	83,780	51.6%
Vehicles	51,683	31.9%
Other	26,796	16.5%
Total	162,259	



In 2012, the CO₂e emissions for the City of Moorpark totaled 162,259 metric tons. As a result of incentives provided through VCREA, Moorpark has saved 48 metric tons of CO₂,

enough to meet the energy needs of the average American household for 3.7 years.

The City of Ojai (2012 population 7,500)

Source	MT CO2e	%
Energy	26,578	58.9%
Vehicles	11,171	24.7%
Other	7,409	16.4%
Total	45,158	

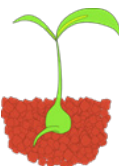


Ojai's 2012 CO₂e emissions were a little more than 45,000 metric tons. Through their participation in the California Solar Initiative in the years 2010 through 2012, homeowners and

businesses in Ojai reduced the City's carbon footprint by 317 metric tons of CO₂e.

The City of Oxnard (2012 population 199,447)

Source	MT CO2e	%
Energy	428,642	43.5%
Vehicles	357,537	36.2%
Other	200,154	20.3%
Total	986,332	

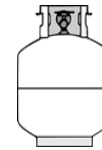


The City of Oxnard's 2012 CO₂e emissions were a 986,000 metric tons. The City of Oxnard's Advanced Water Purification System resulted in GHG savings that are equivalent to

planting 39,000 trees to capture and store carbon.

The City of Port Hueneme (2012 population 21,583)

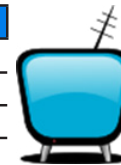
Source	MT CO2e	%
Energy	45,520	43.8%
Vehicles	41,273	39.7%
Other	17,168	16.5%
Total	103,961	



The City of Port Hueneme's 2012 GHG emissions were slightly less than 104,000 metric tons of CO₂e. The City's water filtration replacement resulted in annual GHG savings of 135 metric tons of CO₂e. That is like eliminating 5,625 propane cylinders used for home barbecues.

The City of San Buenaventura (2012 population 106,667)

Source	MT CO2e	%
Energy	288,239	41.7%
Vehicles	297,403	43.0%
Other	105,428	15.3%
Total	691,070	



The City of Ventura's 2012 GHG emissions totaled 691,070 metric tons of CO₂e. With the work on the City of Ventura's Police and Fire Headquarters chillers, their emissions were reduced to the point where

a 42 inch LCD TV could be used for 23.5 years continuously. That's a LOT of "Friends" re-runs!!

The City of Santa Paula (2012 Population 29,742)

Source	MT CO2e	%
Energy	51,976	45.2%
Vehicles	38,045	33.1%
Other	24,848	21.6%
Total	114,869	

Travel Map



The City of Santa Paula's 2012 GHG emissions were almost 115,000 metric tons of CO₂e. The City's water reclamation project, incentivized with VCREA and other funds, saves 66 metric tons of CO₂ per year. That's

equivalent to 158,500 miles driven by the average passenger vehicle, or driving from Ventura to Washington DC and back 30 times.

The City of Thousand Oaks (2012 Population 127,432)

Source	MT CO2e	%
Energy	449,783	50.7%
Vehicles	328,386	37.0%
Other	109,408	12.3%
Total	887,577	



The City of Thousand Oaks' 2012 GHG emission totals were 887,577 metric tons CO₂e. The City of Thousand Oaks produces renewable energy at its Hill Canyon Wastewater Treatment Plant through combustion

of methane gas from its wastewater treatment plant in two cogeneration units and through its photovoltaic array. In 2012, the GHG savings totaled 1,577 metric tons of CO₂e. Those savings are the equivalent to planting 40,436 seedlings that would store and capture emissions in the city of a thousand trees.

Unincorporated Area (2012 Population 96,147)

Source	MT CO2e	%
Energy	717,475	56.0%
Vehicles	441,892	34.5%
Other	121,498	9.5%
Total	1,280,865	



The unincorporated area of Ventura County includes communities like Casa Conejo, Channel Islands Beach, El Rio, Meiners Oaks, Mira Monte, Oak Park, Oak View, Piru and smaller areas that are not large enough to meet the criteria for census defined places. Total emissions for 2012 were 1.28

million metric tons. Since VCREA began providing incentives in 2006, the County of Ventura has replaced and installed enough energy efficient lighting to reduce annual GHG emissions by 1,306 metric tons. With those savings, a single 13-watt compact fluorescent light bulb could be lit for 11,400 years continuously.

California's GHGs

California Greenhouse Gas Emission Inventory Program

The Global Warming Solutions Act of 2006 (AB 32) requires that the California Air Resources Board (CARB) determine the statewide 1990 GHG emission level and approve a statewide GHG emissions limit, equal to the 1990 level, to be achieved by 2020. Assembly Bill 1803, which became law in 2006, made CARB responsible to prepare, adopt, and update California's greenhouse gas inventory.

The CARB GHG Emission Inventory program provides multiple products listed below, in addition to the 1990 GHG emission level and 2020 limit, and annual GHG emission inventory.

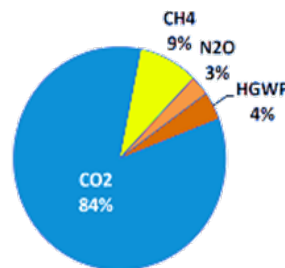
New 2015 Edition - Emission Inventory bullet California's 2000-2013 greenhouse gas emission inventory has been released.

Go to the inventory!

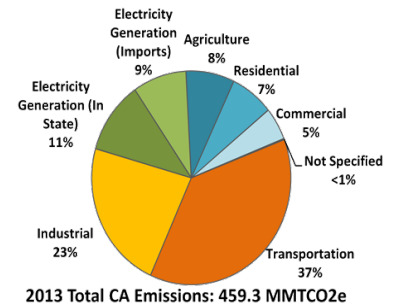
See [California's GHG Inventory](http://www.arb.ca.gov/cc/inventory/data/data.htm) at <http://www.arb.ca.gov/cc/inventory/data/data.htm>.

See our local [Ventura County Climate on the Move GHG inventory report](http://www.vcenergy.org) at www.vcenergy.org.

CA Emissions by GHG



CA Emissions by Sector



2013 Total CA Emissions: 459.3 MMTCO₂e

Please note that, carbon dioxide equivalent values are calculated using the IPCC's Fourth Assessment Report Global Warming Potentials for this inventory. [Learn more at www.arb.ca.gov](http://www.arb.ca.gov).

VCREA'S CLIMATE ACTION PLAN: NEXT STEPS

During the first quarter of 2016, VCREA staff will be meeting with City staff and Councils to review their inventory results, projected emissions and efforts that could be taken to reduce our regional carbon footprint. Stay tuned for more information, in this newsletter and at our next Board meeting in April 2016. See the [full report at www.vcenergy.org](http://www.vcenergy.org).

UPCOMING VCREA OUTREACH EVENTS

- JAN 29 County Government Center HOA Event (Ventura)
- MAR 18-21 Ventura Spring Show (Ventura Fair Grounds)
- APR 9 Oxnard Earth Day (Oxnard)
- APR 16 Thousand Oaks Earth Day (Thousand Oaks)
- APR 16-17 Conejo Home and Garden Show (Westlake)
- APR 23 CSUCI STEM Expo (Ventura Fair Grounds)
- APR 23 Ojai Earth Day (Ojai)



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Our Partners



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