



Newsletter

The Alamo Sierran e-Newsletter - September, 2014

* General Meetings *

Tuesday, September 16th: Chief Sustainability Officer for San Antonio's Office of Sustainability

Doug Melnick comes to San Antonio from Albany, NY. Under his leadership, Albany was recognized recently by Governor Cuomo as one of six cities in New York to have participated in the Climate Smart Communities Certification Program, which you can read about [here](#). Mr. Melnick's bio can be found [here](#).

Tuesday, October 21st: Texas Parks and Wildlife Department

Jessica Alderson, Urban Biologist, Texas Parks and Wildlife Department, will discuss impact of drought on wildlife.

Times, maps and speaker bios are on our Events page.

Lion's Field Events

Monthly films and presentations for your edification and enjoyment

Wednesday, August 27th: Learn about the Fundamentals of Streetcars

Dave Dobbs of [Austin's Light Rail Now! website](#) will discuss the fundamentals of streetcars. He is very knowledgeable about all aspects of multimodal transit, of which the streetcar is a part, plus transit oriented development, across the country.

Wednesday, September 24th: The Cove

The Cove examines dolphin hunting practices in Japan and was awarded the Academy Award for Best Documentary Feature in 2010.

Wednesday, October 22nd: Introduction to Native Plants of Bexar County

John Nikolatos and Joan Miller, from the [Native Plant Society of Texas](#), will discuss growing native plants to conserve water. John will give an introduction and Joan will present ten native plants recommended for San Antonio.

Our Lion's Field events are **free** and open to the public. They occur on the fourth Wednesday of each month at the Lion's Field Adult Center, 2809 Broadway @ Mulberry. Programs begin at **6:30 p.m.**

Visit our Lion's Field Events page for a map and additional information.

Global warming: Natural gas versus coal as fuel

This is the third in a series of articles on global climate change. The first, in the July issue, was *Global warming: what is actually going on?* The second, in August (this is the print edition), was *What Really Are Greenhouse Gases?*

Next month: *Methane, the 2nd Most Important Greenhouse Gas*. There is some stuff about methane not covered in the article below, in particular about a major new source of atmospheric methane, the melting of methane clathrate.

Below is the table of the key greenhouse gases also shown in last month's article, [from Wikipedia](#):

Key Greenhouse Gases		
Gas	Current concentration	Greenhouse effect contribution
Water vapor, H ₂ O	0-4%	36-72%
Carbon dioxide, CO ₂	400 ppm (0.04%)	9-26%
Methane, CH ₄	2 ppm (0.0002%)	4-9%

As mentioned last month, we are really concerned about the rapid increase in the concentration of CO₂ in the atmosphere as it is the most important greenhouse gas. When methane is burned twice as much water vapor, H₂O, results as CO₂. Compared to burning coal, which mostly results in CO₂. So on the face of it, replacing coal with natural gas as a fuel is a no-brainer, right? But there is some important small print.

Burning coal and natural gas

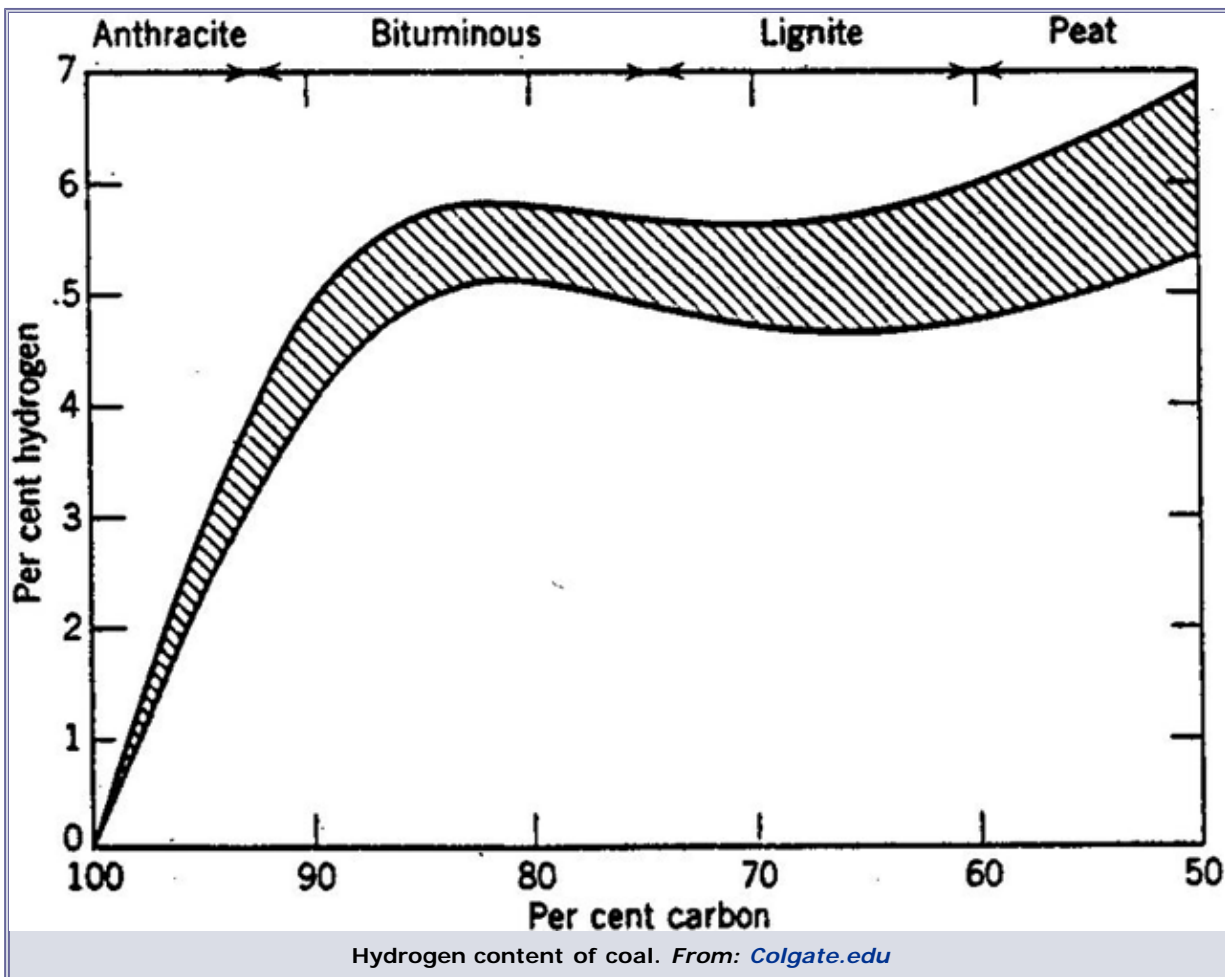
Coal has been the key fuel for electric power generation for 100 years and also has been extensively used for steel making and heating. As coal is mostly carbon, the result of burning coal is mostly CO₂ (depending upon the type of coal). Some developing countries are installing hundreds of new coal-fired power plants each year. I have driven past many coal-fired power plants with enormous piles of coal waiting to be burned, and have seen very long trains of

gondola cars filled with coal headed for power plants.

We have heard that natural gas is a "clean" or even "green" fuel compared to coal. This is largely true. This is simply because natural gas is almost entirely methane, CH_4 . As mentioned above, the key point is when methane is burned twice as much water vapor results as CO_2 .

Burning methane results in 57% as much CO_2 as bituminous coal (from a [government publication](#)). But as discussed in the next section, the whole truth is more complex.

Have a look at this graph of the hydrogen content of coal. Much of the coal burned for fuel in the US is bituminous, 5-6% hydrogen. The really hard stuff used for making steel, anthracite, can have very little hydrogen. Lignite is a "young" coal, brownish and is often burned at power plants near lignite mines. Lignite results in relatively more CO_2 than bituminous due to the low energy content. Peat is what would have turned into coal given more time, and has historically been used for fuel particularly in Ireland and Great Britain. There are Wikipedia articles on these types of coal, particularly [this one on peat](#), which mentions enormous amounts of CO_2 resulting since 1997 from peat fires in Indonesia, which is still happening.



There is a good article at [BillMoyers.com](#), [Wishful Thinking About Natural Gas](#). From the article:

That truth is basic chemistry: when you burn natural gas, the amount of carbon dioxide produced is, other things being equal, much less than when you burn an equivalent amount of coal or oil. It can be as much as 50 percent less compared with coal, and 20 percent to 30 percent less compared with diesel fuel, gasoline or home heating oil. When it comes to a greenhouse gas (GHG) heading for the atmosphere, that's a substantial difference. It means that if you replace oil or coal with gas without otherwise increasing your energy usage, you can significantly reduce your short-term carbon footprint.

Replacing coal gives you other benefits as well, such as reducing the sulfate pollution that causes acid rain, particulate emissions that cause lung disease and mercury that causes brain damage. And if less coal is mined, then occupational death and disease can be reduced in coal miners and the destruction caused by damaging forms of mining, including the removal, in some parts of the country, of entire mountains can be reduced or halted.

But the whole truth is more complex

As the [Moyers.com article](#) goes on to say, replacing coal with natural gas as fuel is great, unless there are leaks in production, distribution or consumption. Per the table above and as will be discussed in next month's article, methane is much more effective as a greenhouse gas than CO_2 , and so is the next most worrisome greenhouse gas in spite of its low atmospheric concentration.

The big problem is those leaks. It is thought that much of the leakage now is due to damaged or incorrectly

maintained equipment and pipelines. For example, for several years I have smelled a gas leak on I-10 just east of Ft Stockton. You can smell gas leaks as methyl mercaptan is added when gas is put in pipelines. Before this addition natural gas is odorless (unless it contains hydrogen sulfide, H₂S, a poisonous gas).

Likewise, you know that smell if you've had a gas stove leak. Or if you have had a BBQ propane bottle or home propane tank refilled, as mercaptan is added to propane also (propane is an even worse greenhouse gas!) It was noticed there was a decrease in atmospheric methane a few decades ago. This was possibly due to increased capture of natural gas from oil storage facilities at wells. Prior to that the gas would simply be allowed to escape in some cases, in others it would be flared. As natural gas has become more profitable more oil wells are being connected to gas gathering networks.

In the Eagle Ford shale oil/gas play southeast of San Antonio there have been thousands of new wells drilled in the last few years with many more planned. As shale has low porosity and permeability compared to sandstone and limestone, fracturing treatment is required (fracking). There are reports of sharply higher rates of illness across the area due to respiratory problems. Here are a few examples: [Gas field illnesses probed](#), [Fracking the Eagle Ford Shale: Big Oil and Bad Air on the Texas Prairie](#), and [Environmental Costs Missing From Eagle Ford Shale Reports \(The Rivard Report\)](#).

Food for thought

Growth for the sake of growth is the ideology of the cancer cell.

- Edward Abbey

As the new atmospheric contaminants responsible for these illnesses are largely odorless they are difficult to detect. But continuing gas leakage from wellheads and oil storage facilities is very likely a component. See the next article below for more information about this.

For further information...

Here's an [NPR item](#) on a US DOE initiative to reduce methane leaks. And [another](#) that methane leaks are probably about 50% higher than US EPA estimates.

And, [one about Google Street View cars in a pilot project](#) where they are fitted with methane leak detectors; there is a map. What a great idea!

Here's one about [Methane leaks of shale gas may undermine its climate benefits](#). If there is more than 3% leakage greenhouse gas effects may increase instead of being reduced by replacement of coal with natural gas. I listened to an NPR broadcast recently (sorry, can't find it now!) stating that Eagle Ford wells in some cases are leaking up to 9% of production.

by Kevin Hartley, Newsletter Editor

Social Events

[meet and greet your Sierra Club friends](#)

Friday, September 26th, 6-8 PM: *Fratello's Deli*

Good selection of sandwiches and pizza. 2503 Broadway St.

Friday, October 24th, 6-8 PM: *Candlelight Coffeehouse*

One of our favorite places, it features good food and a nice quiet atmosphere. 3011 N St Mary's St.

If you're not busy on these days, then get out of the house and join us for a meal and a chance to "meet and greet" some of your fellow members. If you would like to be reminded about our upcoming Socials, email [Lloyd Cortez](#). Then one week before the next Social, you will receive an email notice.



Visit our Social Events page for maps, times and more information about these gatherings.

ExCom needs candidates

Are you interested in helping the Alamo Group? We must elect at least three new volunteers for three-year terms on the Executive Committee to begin serving in January 2015. If you are interested in being considered as a candidate, please send us a 100-word statement by October 15 on why you would like to be on the committee. Please send nominations and statements to nomination committee member [Libby Day](#).

ExCom responsibilities as described by the Sierra Club are:

- Understand and promote the mission of the Sierra Club
- Attend Executive Committee meetings and General meetings
- Lead and provide educational training and/or conservation opportunities to the general membership
- Promote the Outings Program
- Participate in long range planning
- Actively assist in fundraising activities or contribute financially
- Ensure financial stability and solvency
- Modify and allocate resources; must be consistent with the opportunities, the abilities, and the commitment of the chapter/group
- Monitor, question, and evaluate club activities
- Provide Leadership and Vision within the chapter/group

Contribute a sense of camaraderie and teamwork

by Margaret Day, Executive Committee Chair

Gas flaring: why is this done?

When we see gas flares we think of all that CO₂ and heat being added to the atmosphere. In some cases small or short-term flares are more or less necessary. But for the most part flaring results from oil company economics calculations that include only direct costs/benefits.

I remember flying above a major oil field in Nigeria at night 30 years ago. Big gas flares horizon to horizon. So these wells had gas separating from the oil at the surface but a gas gathering network and pipeline to a refinery or liquification plant was not deemed profitable.

In the enormous Eagle Ford shale play southeast of San Antonio the same thing is happening. Some oil wells produce a lot of gas along with the oil but there may be no gas pipeline nearby. With no gas pipeline, if the oil is produced the gas must be flared. The environmental and societal impacts were left out of the economics calculations when such wells were planned and are ignored or labeled inevitable. If these less tangible costs were factored in maybe such wells would not have been drilled until a gas pipeline were available.

Up in Flames: a San Antonio Express-News investigative series

A good job has been done investigating gas flaring in the Eagle Ford shale play by the newspaper. You can read an introduction to this four-part series at mysa.com. There is a map of gas flares at oil wells. If you are an Express-News subscriber you can read all four articles at expressnews.com. They have been printed serially Sunday 8/24 through Wednesday 8/27.

This scale of flaring would certainly not have been allowed to happen in Europe and in most US states. As covered in the series people are getting sick as the gas flared (and likely some leaks before/during flaring) includes poisons and carcinogens, such as carbon monoxide, hydrogen sulfide and benzene. The very loud noise of the flares is making some areas unlivable. From part one, Sister Elizabeth Riebschlaeger, a nun with the Sisters of Charity of the Incarnate Word has said "It's an environmental tragedy. There are lots of people who bought nice, quiet country places who now find that same quiet environment destroyed."

And there are many more problems, as covered in the series.

As part one mentions, "the [Texas] Railroad Commission — an agency critics say is too cozy with the industry it regulates — is leaving it up to the industry it regulates to solve the problem". Commission chairman Barry Smitherman says in a video that the flaring is done as regrettably gas pipelines are not available yet. Again, this begs the question: why produce the oil at all until the well can be connected to a gas pipeline? Because there is a lot of money to be made, and the environmental and societal impacts can be ignored.

Inevitably some of the produced gas is leaking instead of being burned. How much is not known. As mentioned about this is dirty, toxic gas. The previous article mentions various reports about the general problem of gas leakage, and how this undermines the concept that natural gas is a greener fuel than coal.

TCEQ (Texas Commission on Environmental Quality) isn't much help. From part two, "TCEQ spokesman Terry Clawson said air monitoring stations in South Texas haven't detected 'any significant impact on air quality.'" Regarding approvals for gas pipelines in part one, "The TCEQ is really falling down on the job in every way," said Elena Craft of the Environmental Defense Fund, an environmental group that has partnered with the industry. "We're going on three years where we've had businesses losing money and a deterioration in environmental quality. We have this abundance of natural resources and we're just wasting them. That's not smart. And for what? Some partisan personal political statement?"

by Kevin Hartley, Newsletter Editor

Volunteers Needed for Tabling Events

Volunteers are needed for tabling events. We go to "green" events and man a table where we provide info about our local and national Sierra Club and collect signatures on petitions concerning local environmental issues. For more info or to sign up contact [Gay Wright](mailto:Gay.Wright@sierraclub.org), (210) 343-0222.

- **Wednesday, Sept 10th** — "UTSA Volunteer Opportunities Fair", One UTSA Circle, 78249. University Center, 1st floor corridor, 9 a.m. - 1 p.m.
- **Saturday, October 4th** — "Solar Fest", EcoCentre 1802 N. Main, 10 a.m. - 3 p.m.



Flare photo by
Alice Canestaro-Garcia

Sign Up for Action Alerts

The Sierra Club is all about citizen action on critical issues. Quick citizen input often spells the difference between

victory and defeat for important measures at the local and state levels. Sign up now to receive our local e-mail Conservation Action Alerts and let your voice be heard. **Call (674-9489) or email Loyd Cortez** and we'll add your name to our growing list of environmental activists.

Outings: The Call of the Wild

Visit the [Alamo Sierra Club Outings page](#) on Meetup for detailed information about **all** of our upcoming Sierra Club Outings.



Bring Your Used Batteries to the General Membership Meeting

Don't throw those small batteries in the trash bin where they will end up in our landfills. Bring them to the monthly general meetings where we will have a container for you to place them in. Thanks to Gay Wright for coordinating this recycling effort.

