

## **The Year In Review—**

The following words attempt to capture the activity and achievements of our association during the past year. By publishing these efforts we can continue to compare our work to the [overall mission](#) we have set for ourselves. Let us highlight (here) what has been accomplished for our [supporting members](#), our affiliates and our industry, represented by both IGSHPA® (the [International Ground Source Heat Pump Association](#)) and GEO® (the [Geothermal Exchange Organization](#)).

Though we are a non-profit 501c3 all-volunteer organization, we are trying to work together to make progress in bringing more greenhouse gas-free geo heat pump heating, cooling, and hot water production to California (a state that currently [ranks 47th](#) in per capita geo heat pump installations).

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## **Communications—**

We began the year with 35 [blog posts](#) on our website and end the year with 50. We also ended the year with a total of 76 [news posts](#), split among four technical categories.

President Bill, Director Terry Proffer and some others wrote President-Elect Trump in support of legislation to reinstate geothermal heat pump technology as eligible for a 30% federal tax credit. Following the recommendation of GEO (The Geothermal Exchange Organization) Bill wrote two more sets of letters over the year to legislative sponsors in the Senate and House to support two pieces of targeted legislation and encouraged the membership to follow.

The CaliforniaGeo Board has decided to expand its outreach through social media platforms. It is also preparing bulk mailing lists for targeted messaging to various industry professionals, policy organizations, regulators, and housing proponents. Thanks to help from member [Enertech Global](#), activation will begin in early 2018.

Todd Bradford of ENGEO (San Ramon) joined our [Board of Directors](#) in May.

A page on our website called **Engineer's Corner** was developed so that high quality reports and analyses of geothermal project tests and engineering could be featured. A peer review system was developed by Terry Proffer that would vet each paper before a CaliforniaGeo Board recommendation would be considered to post the work. The first benefit of this feature is that here is an opportunity for professionals in the geothermal design/installation/techniques community to share what they've learned with all of us. The second benefit is that many of us can quickly advance our knowledge by reading these works.

CaliforniaGeo became a separate **YouTube channel** for video links that feature our technology. There is a slowly growing list of content there for all to see.

### ***Training—***

The CaliforniaGeo annual board meeting in April identified twelve topics from which our future **production of webinars** will come. As some of these are planned, produced, marketed, and analyzed, we will be more able to craft the content of future live seminars around the state and to coordinate efforts with IGSHPA toward future certification training in California.

### ***Collaboration—***

After attending two work sessions in San Francisco and submitting written comment, CaliforniaGeo's contribution featured common purpose with the **Bay Area Air Quality Management District** (BAAQMD). Our organization's goals and means made it into their 2017 Climate Protection Plan. The central feature of the plan is to **improve air quality** in the nine county Bay Area, including reduction in future methane combustion by buildings. Geo Heat Pumps solidly contribute to this strategy.

The **Western Cooling Efficiency Center** is continuing a two year, multi-million dollar grant award from the California Energy Commission's EPIC research program to monitor and analyze actual building performance of helical, wide-but-shallow boreholes as geo heat exchangers for the Central Valley. CaliforniaGeo President Bill Martin is serving as a member of the TAC (Technical Advisory Committee) for this project.

The recently published **Bi-National Industry Standard** for ANSI/CSA/IGSHPA C448 Series-16 continued to expand and CaliforniaGeo wrote a condensation of the **Table of Contents** and gained copyright approval for its distribution. This will accelerate awareness of the publication's availability and industry reliance on its content. Migration of C448 into the Uniform Mechanical Code and the International Mechanical Code is expected, as is eventual inclusion into IAPMO rules. This will help unify permitting and inspections of geo work in California.

### **Other News—**

**California Air Districts**



New pollution regulations from three Air Pollution Control Districts in 2018 impose a reduction in NOx from fossil furnaces, boilers and water heaters from 40 to 14 Nanograms per joule. Mitigation fees of up to \$200 per non-condensing furnace maintain the installation option for no longer than 36 months. More air districts will likely follow, and this will further tilt the future landscape in our favor.

In June, a California **supreme court ruling** validated the state's carbon auctions under Cap and Trade that had been suspect because they weren't implemented with a (Prop. 13 required) minimum 2/3 majority vote in the Legislature. C & T came as a result of Assembly Bill 32 in 2006, which passed under Governor Schwarzenegger with a simple majority vote.

Whether it's an effort to tie social or environmental costs to carbon, every increment upward sets the table better for sustainable renewables that we access with geothermal heat pumps.

CaliforniaGeo has recently discussed and recognized two pithy quotes that feature the benefits of GeoExchange® technology for heating compared to fossil fuels.

The first is from Xiaobing Liu of the Oak Ridge National Laboratory and uses a comparison that resembles trying to kill houseflies using cannonballs—

***"We use a flame that burns at approximately 3,000 degrees Fahrenheit to heat our homes when we only need 76°–80° Fahrenheit. Why do we do that?"***

The second is from CaliforniaGeo President Bill Martin regarding how our HVAC equipment operates compared to fossil-based emissions that foul the air—

***"Our geothermal heat pump technology is all about physics and not at all about chemistry. There's only energy conduction through heat transfer without any combustion."***

This is our annual report for 2017. We invite you to [Join Us](#) to assist our efforts to green the environment, clean the air, and improve the efficiency of heating, cooling, and water heating equipment using the earth as our thermal battery.

We are a tax deductible, non-profit 501c6 organization that would welcome your help!

Thank you!

**—Bill Martin,**  
President, California Geothermal Heat Pump Association

**Climate change?** You be the judge.

Following all-time precipitation records for '16-'17, California set many new heat records locally (it hit 114°F in San Jose in June). We saw global average temperatures rise higher for another year. Californians experienced the longest run of dry Santa Ana winds ever, and saw record low fuel moisture levels feeding the worst and most deadly fire season on record. Hopefully, policymakers will talk less in the future about "thoughts and prayers," and more about shedding carbon.