

## **The Year In Review—**

Here's an attempt to capture the activity and achievements of our Association during the past year. We will continue to compare each year's work to our [overall mission](#). Here are this year's highlights for review by 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](#)). Both have been a support to our efforts and also deserve your membership.

We are a non-profit 501 c6 all-volunteer organization with a [history](#), working for progress in bringing more greenhouse gas-free geo heat pump heating, cooling, and hot water production to California, where installations by 2015 [ranked 47th per capita](#) in the nation. It is our job to improve that record and we need the help of our members and others to get it done.

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## **Communications—**

After a 2017 year that negatively affected the geo heat pump market, the GeoExchange Organization® was successful in extending the former federal tax credit for geo heat pumps beyond 2016 to correct a lapse that began on 1/1/17. Details are available [HERE](#), and they have made 2018 much improved for our industry.

2018 was the first year that new pollution regulations from three of California's Air Pollution Control Districts (APCDs) imposed a reduction in NOx from fossil furnaces, boilers and water heaters from 40 to 14 Nanograms per joule. Here's an excerpt from the specs of a major American furnace manufacturer who is still struggling to cope and uses the mitigation fee approach for compliance in such APCDs. This situation suggests there is no more "low hanging fruit" in fossil furnace construction to be had.

- All models comply with California 40 ng/J Low NOx emissions standard
- For installation in California's South Coast Air Quality Management District (SCAQMD) only: This furnace does not meet the SCAQMD Rule 1111 14 ng/J NOx emission limit, and thus is subject to a mitigation fee of up to \$450. This furnace is not eligible for the SCAQMD Clean Air Furnace Rebate Program: [www.CleanAirFurnaceRebate.com](http://www.CleanAirFurnaceRebate.com).



That's good news for beneficial electrification advocates who favor refrigerant-compression equipment to improve air quality. At least within critical regulatory districts, builders may begin to find "at scale" geo heat pump installation a better course in the future. The public is warming to this shift, as well.

While some see this as regulation run amok, and attacks on an existing industry, others may ask the question “Is catastrophic climate change” a threat that can wait until certain business models volunteer to stop utilizing carbon?

Our website began the year with **50 Blog posts** and ended the year with **60**. We now total **89 News Posts** split among four categories (some with commentary). Coverage of topics by major news organizations that parallel our efforts continued to expand—a welcome trend.

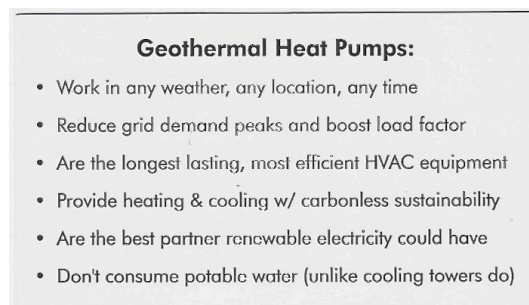
Thanks to a start-up contribution from member [Enertech Global, LLC](#), we initiated a personalized bulk mailing system (that some of you have already experienced). After building a contact list, we’re fine-tuning a strategy to push the green and renewable message of geo heat pump use to more people inside and outside California. Constant Contact® is our provider, where an email target is called a “contact” and any crafted message to a contact is referred to as a “campaign.” We are working with just under 400 contacts and (as of mid-December) have produced 41 campaigns, split among sub-sets of our contacts with particular interests. Requests for unsubscription have occurred, but thus far have been few.



**Membership—**

CaliforniaGeo grew in 2018 by 8 full memberships and 7 affiliate memberships. Frequently, these were individuals who had recently received a bulk email featured “campaign.” Full members are listed in our website’s [Membership Directory](#), and Affiliates are featured [HERE](#). Google analytics has consistently ranked our membership directory as one of the top three landing spots for outsiders visiting our website. It would be crazy not to provide access to a [JOIN LINK](#) for you now.

This year, CaliforniaGeo produced a universal business card for members that contains our branding, logo, and a technical promotion for what geo heat pumps can accomplish. A sample of the front and back of the card is below:



Members and Affiliates have each received a supply of 12 cards for distribution to their business contacts and colleagues.

### **Training—**

Training and certification programs for professionals and entry-level laymen are already [sponsored by IGHSPA®](#) in a number of formats; some of these are through distance learning and some extended outside U.S. borders.

CaliforniaGeo has never planned on duplicating any of IGHSPA's efforts. But, some time ago we produced three webinars with limited success and a day-long seminar that was successful. Such programs are a chicken-egg or *Field of Dreams* proposition. The question is, if we build and offer it, *will they sign up?*

Since we have not been overrun with training requests, we felt it best to winnow down the topics for coverage. The CaliforniaGeo Board of Directors chewed on this one for a part of 2018 and came up with the following prioritized list.

- a. \_\_\_1\_\_\_ Geo heat exchangers and how they interact with geo heat pumps
- b. \_\_\_2\_\_\_ Design of geo-equipped buildings (how to start from an architect's view)
- c. \_\_\_3\_\_\_ Design of engineering systems for geo building projects (engineer's view)
- d. \_\_\_9\_\_\_ Best practices for installation of Geoexchange® loop/header systems
- e. \_\_\_12\_\_\_ Commissioning steps for geo heat pump systems in buildings large and small
- f. \_\_\_7\_\_\_ Mechanical contractor's guide to adding a geo-side to their services list
- g. \_\_\_8\_\_\_ Metrics and methods to illustrate costs, savings, and returns on geo investment
- h. \_\_\_4\_\_\_ Pros and cons of various heat exchanger types for geo heat pump projects
- i. \_\_\_10\_\_\_ Long-term management concerns for the underground thermal aquifer
- j. \_\_\_6\_\_\_ Available formal training and certifications surrounding the geo profession
- k. \_\_\_5\_\_\_ Case study review (residential and multi-residential projects)
- l. \_\_\_11\_\_\_ Case Study review (small and large commercial projects)

We are continuing to develop content outlines for the top five in the list above. That way, as membership requests it, we will be ready to work out the logistics and offer a well-planned product. Recipients of this annual report are welcome to weigh-in on the priority choices (above). We can be reached on our [Contact Us](#) page on our website.

### **Collaboration—**

CaliforniaGeo supported two of its members during a May proposal review meeting in Sacramento with representatives from the State Hospital Board and the Department of General Services. Our role was to help explain geo heat pump technology to those officials in support of what will likely become the largest geo retrofit in history of a California government facility.

Hopefully, when this project has been completed and proven successful, there will be more opportunity for similar retrofits and a closer role in advocating to the state's architectural professionals for geo technology from the onset of planning for new buildings.

At an August EPRI (Electric Power Research Institute) conference in Long Beach, we supported our manufacturing members, and IGSHPA and GEO colleagues by helping to staff a [Beneficial Electrification](#) booth where we met with a wide cross section of the "greenly stimulated" public. It was a chance to make contacts and "talk turkey" with others and often was a reminder what a best-kept secret our technology remains—and we were talking to energy people! The exhibit hall contained a number of electrically-powered gadgets, vehicles, and other doodads. Our favorite was a Lithium-ion powered schoolbus made by Canadians—and CG Prexy Bill later learned his local school district already had one and is seeking three more.

### ***Other News—***

Only limited amounts of news can be shared, but two upcoming major projects powered by geothermal heat pumps are beginning in two well-known areas of California—one in the southland and one in the San Francisco Bay Area. They both involve members of our organization.

Just 300 yards north of the Los Angeles Coliseum will be the [George Lucas Museum of Narrative Art](#). It will be served by grouted geothermal boreholes, drilled in typical vertical fashion. And staying with a sports metaphor, the [San Francisco Shipyard](#) project is partially on the site of baseball's former Candlestick Park, ESE of the city. It will be a mixed multi-residential, commercial, and retail district of (currently) unknown proportions. But a unique slant will be that its heat exchange will come from the waters of San Francisco Bay to serve geo heat pumps through a district loop system.

Google's new headquarters is called the [Bay View Project](#). It's 1.1 million square feet will be handled by geo using dual service underground pilings containing heat exchange piping. Its Mountain View location is already christened as a high tech neighborhood in that the newest NASA-Ames [\(Sustainability Base\)](#) at Moffett Field is served by geo as well.

**That's it for 2018 from CaliforniaGeo.**