

Geothermal Exchange Organization

# GEO Industry News



## GEO 2017 • Year in Review

### Focus on Federal Tax Credits and the States

#### GEO Advocacy in Washington

The biggest story of 2017 for the Geothermal Exchange Organization (GEO) was its continuing fight to reinstate and extend now-lapsed 30% federal tax credits for residential geothermal heat pump (GHP) installations, and 10% credits for commercial jobs.

It's been an uphill battle for the GHP industry since the end of 2015. In December of that year, Congress passed a spending bill that extended tax credits for big wind and solar power through 2021, but left GHPs and other clean energy technologies in the cold. As a result, tax credits for GHPs, fuel cells, microturbines, small wind, and combined heat and power expired on Dec. 31, 2016.

With thousands of jobs on the line, GEO and its allies urged key House and Senate members to take immediate action to fix the "error" and ensure equal tax treatment for all clean energy technologies. But even with mounting recognition and support in Congress to fix the inequity, a tumultuous election and partisan politics stood in the way of every hoped-for avenue to success.

Since early 2017, GEO Members, supporters and allies lobbied hard in Washington for legislation that would reinstate and extend our tax credits in line with the solar industry. Our coalition partners include the National Rural Electric Cooperative Association, the Association of Homebuilders, the Hydrogen and Fuel Cell Association and the American Gas Association.

GEO's message to legislators is clear: Congress shouldn't be picking winners and losers when it comes to renewable energy and fairness in tax policy. When Congress extended the tax credits for solar, they should have done the same for GHPs and the other so-called "orphaned technologies" struggling against conventional, fossil-fueled equipment for market share.

The GHP industry hung its hopes on [H.R. 1090](#), introduced in early 2017 by Representatives Tom Reed (R-NY) and Mike Thompson (D-CA)—and [S. 1409](#), introduced in June by Senators Tom Carper [D-DE] and Dean Heller (R-NV). Both bills would reinstate and extend residential and commercial tax credits for GHPs and other orphaned technologies until Jan. 1, 2022, just like Congress did for solar two years ago:

- The residential income tax credit would be retroactive to Jan. 1, 2017.
- The residential credit would be 30% of installed cost, and continue at that level until 2020 when it would drop to 26% and then at 22% for 2021 and end on Dec. 31, 2021.
- The 10% commercial investment tax credit would be extended until Jan. 1, 2022, and change the language for placed in service to "property the construction of which begins before Jan.1, 2022."

# GEO Heat Pump Manufacturers News

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GEO's strong, coordinated campaign to regain GHP tax credits included several Executive Fly-Ins to Washington in 2017, plus GEO Board Members, staff and industry volunteers making hundreds of visits to House and Senate legislative offices. Grassroots efforts by GEO members and supporters included job site visits set up for key legislators to show them firsthand the value of GHPs and plead our case for tax credit parity with solar.

GEO and its DC lobby team issued several press releases and op-ed pieces that ran in trade, environmental and Beltway political publications. GEO President and CEO Doug Dougherty appeared in a [YouTube video](#) in which he explains the issue, and in a radio interview about the tax credits on House Speaker Ryan's home-town station in Janesville, WI. Throughout the process, industry stakeholders called their federal representatives and senators, and sent thousands of letters and emails to drive home the impact that the lost tax credits are having on their businesses.

Yet even with scores of cosponsors for H.R. 1090 among legislators from both sides of the aisle and promises from leadership to fix the problem, GEO and its many supporters were met with nothing but dashed hopes and unfulfilled promises as the year progressed. And that spelled disaster.

The GHP industry experienced a 50% loss of residential sales during the year, with hundreds of layoffs and thousands more jobs in jeopardy. Industry investment and jobs were slashed, affecting the entire U.S.-based technology supply chain. Distributors, dealers, contractors, installers, drillers—plus all the small businesses in the GHP supply chain—including their employees and the families that they support—have all been seriously hurt by congressional inaction.

To pass, legislation for GHP and orphaned technologies tax credits must be part of a larger bill. GEO hopes for parity with solar ran high on Nov. 2, when the U.S. House of Representatives released H.R. 1, the Tax Cut and Jobs Act, which included residential and commercial tax credits for GHPs. But to the surprise and dismay of stakeholders, the House tax credit provision was cut from the final tax reform bill that went to President Trump for signature on Dec. 15.

After removing GHP parity language from the tax bill, congressional leaders promised to address the issue in a bill to extend more than 30 popular, but short-term, business tax breaks. The Senate released its Tax Extenders Act of 2017 ([S.2256](#)) on Dec. 20, which also includes S. 1409 language for extending both residential (Sec. 25D) and commercial (48[a]) tax credits. They would be reinstated retroactively for five years (Jan. 1, 2017 through Dec. 31, 2021, with a phase-out of 25D similar to solar), and "placed in service" language changed to "construction commenced."

GEO ended the year hoping that the tax extenders bill would be part of a continuing spending resolution in early 2018. The association's immediate priority was to remind congressional leadership of their promises, to ensure that the tax extender bill retained provisions for GHP parity with solar, and pushing for support of the legislation in both houses of Congress.

## Geothermal Advocacy in the States

During 2017, GEO continued to support the efforts by state-level stakeholders in their quest for public policies favorable to GHPs. State associations are the roots of the U.S. geothermal heat pump (GHP) industry, as stakeholders realize their lack of political representation in the past is what created many of the obstacles to our technology they face today. Without a seat at the table, an industry has no voice.

State GHP associations have become the defining link to local politics and policies that directly affect unit sales on the local and regional level. They are increasingly taking the lead on activism and technology promotion that is vital to an expanded GHP marketplace. In addition to their untiring efforts to change state energy, regulatory and tax policies in favor of GHPs, state GHP associations sponsor several increasingly well-attended training sessions, workshops and annual meetings/expos that draw industry stakeholders, utility management, the public and the press.

GEO has played a key role in providing assistance, encouragement and guidance that has fostered formation of new GHP associations, development of strategies focused on local issues, and guidance through the often complex obstacle course of legislative and regulatory rules unique to each state. Part of that effort has included regular GEO-sponsored conference calls with state association leaders, where they can describe their work and compare notes in an effort to avoid duplication of effort and to maximize their efficiency in accomplishing industry goals. Following are highlights of state association advocacy for the GHP industry during the year.

**California** The California Geothermal Energy Association (CalGeo) provided a condensed table of contents for geothermal international standard CA448 on its website, [here](#). The association ended 2017 seeking party of interest stature in a California Public Utilities Commission proceeding on extension of natural gas to residential customers in the southern San Joaquin Valley. Success would provide a practical example that could help efforts to change California Title 24 building codes to promote GHPs for heating and cooling over natural gas.

**Connecticut** The Connecticut Geothermal Association (CT-Geo) worked on several awareness-raising efforts, including a home show with Energize CT, the state's largest investor-owned utility. The association is considering advertising, and was in discussions with the CT Green Bank, an experienced green project lender.

**Illinois** Since GEO lobbied with the Geothermal Alliance of Illinois (GAOI) to change state energy efficiency law that allows state funds to be used for GHP rebates, ComEd has started a program offering \$1,000 per ton up to \$6,000 for GHP installations. Working under a provision that requires contractor certification to qualify for state energy efficiency programs, GAOI is working on training initiatives that have built the number of qualified contractors under the program to 29. Last February, GAOI worked with GEO to change an important data point in the newest version of the *Illinois Technical Reference Manual*. The Useful Life of a commercial GHP system was changed from 15 years to 25 years (conventional heat pumps remain at 15 years). Plans for a commercial GHP rebate program are being negotiated.

**Iowa** The Iowa Geothermal Association (IGA) successfully advocated for a 10% standalone tax credit for residential installations of GHPs in lieu of federal tax incentives that was signed into law in January. However, efforts to make permanent the state's geothermal installation property tax exemption and providing a 10% tax credit for commercial and institutional jobs were rebuffed by the legislature in 2017.

**Michigan** The Michigan Geothermal Energy Association (MGEA) supported state legislation ([SB 438](#)) passed in late-2016 that recognizes geothermal energy as a renewable resource. The mandate’s definition of geothermal energy is a source that naturally replenishes over a human, not a geological, time frame and that is ultimately derived from solar power, water power, or wind power.” The new law makes GHPs eligible for Renewable Energy Credits (RECs). With the Michigan Electric Coop Association (MECA), the association is working with several groups that have been formed to implement rules governing a host of new state energy policies under the new law. They will recommend to the State of Michigan how to best measure, quantify and report the energy produced by GHPs in order to determine the appropriate number of RECs they should be granted. GEO is working with MECA and MGEA on the most suitable methodology

**Minnesota** GEO has initiated conversations with Otter Tail Power Co. and the Minnesota Commerce Department to discuss ways to eliminate the state’s fuel switching prohibition, which is detrimental to the GHP market in the state. The Minnesota Geothermal Heat Pump Association (MNGHPA) is looking at options to develop a master installer program to help sustain and grow the association. MNGHPA supports efforts like Lake County Power’s loop lease program.

**NEGPA and Vermont** The New England Geothermal Professionals Association (NEGPA) is setting up promotions and publicity for GHPs across the region, and GEO is working to help start up a Vermont geothermal association. Burlington Electric Department agreed to sign on as a charter member to encourage GHPs. The group wants to eliminate the state sales tax on geothermal equipment and arrange for geothermal incentives from the state’s clean energy development fund. Alignment and partnership with Efficiency Vermont is another key goal.

**New York** 2017 was a big year for GHPs in the Empire State. The New York Geothermal

Energy Organization (NY-GEO) was the most active state group during the year, with several successes for the technology. While NY-GEO and its allies in the business and environmental communities were unable to convince the governor to institute state-level tax credits, they successfully advocated for—and won—several exciting new incentives for GHP installations:

- In May, NY-GEO applauded Gov. Cuomo’s program to rescue geothermal jobs. Developed by the [New York State Energy Research and Development Authority](#) (NYSERDA), the program allocates \$15 million over the next two years to support geothermal installation rebates of \$6,000 for an average-size home. For more information, visit NYSEDA's website, [here](#).
- In mid -November and early December, NYSEDA announced several programs to incentivize installation of efficient and environmentally friendly geothermal heating and cooling systems in the state. On Nov. 16, the agency announced up to \$1.8 million available for community campaigns to help residents and businesses to install clean heating and cooling systems. More information about the Clean Heating and Cooling Community Campaign can be found [here](#).

### In Memory of Jim Ashley

James Willis Ashley, 79, of Danville, Vermont, passed away at home on Sunday, Aug. 6 after a long fight with pancreatic cancer. He was a tireless promoter of geothermal heat pumps. Jim studied geology at Syracuse University and graduate school at Boston College. Jim practiced as a geologist for DuBois & King, and as a hydrogeologist for the State of Vermont. Following his retirement from state service, Jim developed his geothermal consulting business and served as president of the New England Geothermal Professionals Association.

- On Dec. 6, NYSERDA and the New York Power Authority (NYPA) announced availability of \$3.8 million for a statewide Geothermal Clean Energy Challenge, designed to help stimulate financing and installation of large-scale geothermal heat pump systems at state and local governmental entities, public and private schools and healthcare facilities. More information is available on the [Geothermal Challenge website](#).
- On Dec. 7, NYSERDA announced that GHPs and so-called “cold-climate” air-source heat pump manufacturers, distributors, designers and installers are eligible for marketing and training funding through the agency’s latest Cooperative Advertising and Promotions for HVAC Program Opportunity Notice. The program provides \$1.5 million for cost-shared advertising, special promotions, and/or events (including training) for eligible HVAC technologies, offering incentives up to 50% of the total cost for educational and marketing promotion to eligible HVAC partners. Find more information [here](#).
- New York’s most important legislation for GHPs in 2017 was Senate Bill S688, signed into law by Gov. Cuomo on Nov. 30. The mandate includes GHPs in New York’s on-bill financing program. Now customers are able to access low-interest financing for GHP installations through certain New York State Energy Research and Development Authority programs, and pay off the financing on their utility bill. More details about the bill, including text, can be accessed [here](#).

NY-GEO and its members were also successful in extending the stated service life of GHPs and ground heat exchangers in the Empire State’s Technical Resources Manual, which guides renewable energy decisions among policy makers. The association is working on two initiatives for monetizing the value of geothermal heat pumps. One is focused on getting a special geothermal rate with a large New York utility, while the other is a more general proceeding on the topic of renewable heating. Finally, the association continues its work on the fine points of renewable energy credits while starting a mentoring program as part of the NYSERDA geothermal incentive rollout.

**Wisconsin** The Wisconsin Geothermal Association (WGA) is working with the state’s energy efficiency rebate program, and making headway with state regulators on increasing recognition and incentives for GHPs. WGA is also pursuing a master installer training program.

**Virginia** The Virginia Geothermal Heat Pump Association (VGHPA) advocated GHP tax credit legislation in the state. If passed, the tax credit would cover 25% of residential GHP equipment (Energy Star-rated) and installation cost, with a \$10,000 cap. Consumers can take \$2,500 annually on their taxes, with credit not exceeding 50% of taxable liability, and can be carried forward for 10 years. Aggregate cap for any fiscal year is \$10 million, and the credit sunsets at the end of 2022. Confronted by state budget constraints, Assembly Bill 1891 and Senate Bill 1392 were set aside, and the VGHPA tasked with an economic analysis for future consideration.

## **GEO-IGSHPA Alliance**

2017 saw continuing cooperation by GEO and the International Ground Source Heat Pump Association (IGSHPA), with GEO Chief Operating Officer Ryan Dougherty continuing his service as primary liaison between the two organizations. The April edition of *GEO Industry News* featured a keynote address delivered by GEO Board Member Michael Albertson (WaterFurnace) at the IGSHPA 2017 Conference and Expo in Denver, CO. GEO’s monthly publication has also promoted IGSHPA training workshops and its annual conference and expo.

## GEO International Cooperation

**Canada** The Heating, Refrigeration and Air Conditioning Institute (HRAI) entered into a Memorandum of Understanding with GEO in 2016, and continued its collaboration during 2017. HRAI also works with the Ontario Geothermal Association (OGA), which has supported provincial initiatives for its Climate Change Action Plan and a carbon cap-and-trade system tied into such markets in British Columbia and California. Government funding will be available through the Ontario Climate Change Solutions Deployment Corp. to find and employ low carbon technologies. As a result of HRAI/OGA influence, Enbridge, one of the nation's largest natural gas distributors, announced their intent to install and own geothermal loops in new construction instead of gas in certain parts of their service territory.

## GEO 2017 Administration

**New GEO Board Member John Thomas** On June 7, the GEO Board of Directors unanimously elected John C. Thomas to its ranks. He is President and CEO of WaterFurnace International (Ft. Wayne, IN). He joins WaterFurnace Senior Vice President for Sales & Marketing Michael Albertson, who also serves on the GEO Board. Like other companies represented on the GEO Board, WaterFurnace will have a single vote. Thomas' career with Regal, as well as General Electric, spans several decades, a succession of progressively responsible roles and several corporate structures, including GE Power Systems and Industrial Systems. His senior leadership positions have included vice president—HVAC, vice president—global sourcing, vice president—global technology, and his most recent role as vice president—Asia-Pacific. He graduated Ohio State University, where he earned a Bachelor of Science in mechanical engineering. John and his family live in the Fort Wayne area.

### GEO 2017 Board of Directors

- Chairman Joe Parsons - Earthlinked Technologies
- Past Chairman Steve Smith - Enertech Global, LLC
- Vice Chairman Keith Swilley - Gulf Power-Southern Co.
- Secretary/Treasurer Phil Schoen - GEO-Enterprises
- Board Member Mike Albertson - WaterFurnace Intl.
- Board Member Rick Aldridge - ClimateMaster, Inc.
- Board Member Dan Ellis - ComfortWorks
- Board Member Martin Forsén - NIBE
- Board Member David Hules - Emerson Climate Technologies
- Board Member John Thomas - WaterFurnace

## Right-of-Way Deal Sets Precedent for Geothermal

Dec. 13 - *Green Energy Times* reported that the Village of Rhinebeck, NY decided to grant Right-of-Way to Dandelion Energy, allowing the company to install and own geothermal ground heat exchangers, essentially as a utility serving its future customers with ground-source heating and cooling. The ground loops are underground pipes containing water that transfers heat to and from a home or business throughout the year.

"The Right-of-Way will be an easement that allows Dandelion to install and own ground loops, the most expensive part of geothermal installations, on village property along the street in front of homes. The loops will be installed at no cost to the town or homeowners, who will have the option to connect to them and purchase renewable thermal energy, similarly to how homeowners with access can decide to hook up to natural gas. Dandelion estimates homeowners in the Village of Rhinebeck can save \$thousands per year by switching from heating oil to geothermal.

“Part of Dandelion’s technical innovation has been developing a small, fast drill that can install ground loops at significantly lower cost than a conventional drill as it rolls down a block, as Right-of-Way allows for. ‘By enabling Dandelion to install ground loops along the Right-of-Way in the Village of Rhinebeck, we remove the biggest barrier to homeowners adopting geothermal,’ said Mayor Bassett of the Village of Rhinebeck. ‘When the loops are installed at no upfront cost, homeowners can seamlessly switch and save thousands of dollars on heating each year, eliminate carbon monoxide risk in their homes, and reduce air pollution for our neighborhood. It’s a no-brainer.’” Read the article [here](#). (*Green Energy Times*)

## New York Providers Team Up for Affordable Geo Heating and Cooling

Jan. 9 – ACES Energy, Buffalo Geothermal, Dailey Electric, GeoTherm, Van Hee Mechanical, Phoenix Energy Supply, WaterFurnace and Earth Sensitive Solutions have teamed up to make geothermal heating and cooling available to every homeowner in Western New York. Together they have created a revolutionary concept called “GroundUp: Geothermal Alliance of Western New York,” to help homeowners easily transition to 100% clean energy.

“Our mission is to bring the highest quality and most affordable geothermal heating and cooling systems to the people of Western New York, from the GroundUp,” said Todd Schmiegel of Buffalo Geothermal. “Our goal is to inform the public about geothermal benefits and savings, ensure highest quality geothermal system installation and design, and provide affordable Geosystems to the consumer.”

GroundUp allows qualified homeowners, who are eligible to receive a rebate from New York State, to install geothermal heating and cooling HVAC systems in their home for a total cost of only \$24,000 after rebates, which is \$thousands cheaper than currently offered. Geothermal systems with dedicated heat pumps for producing domestic hot water are being offered for a total cost of \$26,000 to qualified homeowners. The deals are available immediately, and typically cover single family homes up to 4,000 sq.-ft. good insulation.

Installing geothermal systems in Western New York homes will also aid in reaching the state mandate to have a 40% reduction in greenhouse gas emissions by 2030. New York State Energy Research and Development Authority (NYSERDA) President and CEO Alicia Barton said, “Using clean energy technologies such as geothermal is critical to meeting Gov. Cuomo’s nation-leading clean energy goals. GroundUp’s ability to provide geothermal systems at a reduced price, together with the state’s rebate, will enable even more consumers to adopt this clean energy and help New York reduce greenhouse gas emissions.”

NYSERDA has up to \$15 million available in rebates for the installation of ground source heat pump systems for residences, businesses and institutions. Rebates are available to qualified installers for two years or until all funds have been exhausted. The total amount of the rebate will be deducted from the total cost of the system, thereby passing the savings along directly to consumers.



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“I’m very excited about the GroundUp program. This is great news for homeowners across Western New York,” said Assemblyman Sean Ryan. “Geothermal energy systems are a great way for homes and businesses to lower their energy costs, and lower their reliance on fossil fuels. I was pleased to recently announce a change in New York State law that will allow homeowners, small businesses, and not-for-profits to install geothermal systems as part of the On-Bill financing program. It is great to see that the state and private sector are working together to expand the use of this clean, energy efficient technology.”

Geothermal energy heating and cooling systems also allow homeowners more control over their energy bills. “New York’s over-dependence on natural gas for both heating buildings and generating electricity means that consumers are hostage to budget busting price spikes when cold spells hit,” said Bill Nowak, Executive Director of New York Geothermal Energy Organization. “It’s great to see geothermal companies pooling their buying power on behalf of consumers and helping to break the monopoly grip that fossil fuels have on our energy bills.”

GroundUp: Geothermal Alliance of Western New York is an initiative of the New York Geothermal Foundation and the first of its kind in the area to bring the revolutionary design of geothermal to every homeowner at a discounted, affordable price. Interested homeowners can find more information and contact approved installers at: [www.groundupgeo.org](http://www.groundupgeo.org) (GroundUp)

## England's 'Largest' District System

Jan. 9 – According to Edie, a British news blog, “Developers have secured a contract to deliver England's 'biggest shared ground loop heat pump system', which is expected to reduce the energy bills of local residents by up to 50%. The project will feature 16 shared ground loop systems serving eight tower blocks in Enfield, London.” The project will connect retrofitted heat pumps in 400 flats.

A spokesman for developer Kensa said, “This project is an excellent example of how district heating can be rolled out using the shared ground loop system architecture. Not only do ground-source heat pumps provide the lowest cost heat, they also deliver substantial carbon savings, and landlords benefit from the exceptionally low servicing and maintenance costs.”

The article says, “Each system will typically consist of clusters of eight boreholes serving individual heat pumps installed within the flats of half a tower block. The shared nature of the design reduces drilling costs, enables residents to choose their own energy supplier, and ensures funding through the Energy Company Obligations (ECO) scheme and government’s Renewable Heat Incentive (RHI).

“Estimates suggest that heat networks could deliver up to 18% of UK heating demand by 2030, up from current levels of 2% today. The government recently awarded £24m for nine district heat network infrastructure projects across the country to provide households and businesses with clean and efficient heating systems. Read the article [here](#). (Edie.net)

## New U.S. Embassy in London Relies on Geothermal

A new high-tech US embassy building was recently completed in London. The \$billion project has been in the works for seven years and it’s more energy efficient than you may expect, with rainwater recycling, solar panels and **geothermal heat pumps** for heating and cooling. It is slated for both LEED Platinum and BREEM Outstanding green building certifications. Read more about the building [here](#).

# NY-GEO 2018

## The New York Geothermal Energy Association's Premier Northeast Renewable Heating & Cooling Conference



Heating buildings by burning fossil fuels causes about 1/3 of the Greenhouse Gas (GHG) emissions in New York State. There is no way New York will reach its GHG goals without a massive conversion of buildings to renewable heating.

Our annual conference is the best place to learn about heating and cooling without burning fossil fuels and NY-GEO 2018 is the place to meet the movers and shakers as New York begins to embrace this incredible opportunity.

**Come learn what it's all about! Be part of the geothermal surge!**

There's a 10% early discount if you register by January 31st and a 2nd discount for those who have taken out a 2018 NY-GEO membership.

We urge you to consider becoming a sponsor – or an exhibitor at this year's conference.

# NY-GEO 2018

## Geothermal Heating & Cooling

April 18-19 Albany, NY

This conference is affordable! Not only that - PSEG Long Island and Versaprofiles have donated to a grant fund – we'll work with you to get you here – Admission help is also available to Gov't officials with no conference budgets.

Check our website NY-GEO.ORG for more details and registration information.

Meet over 200 key players as New York moves into the Renewable Heating & Cooling future.

Workshops are keyed to Engineers, Architects, Building Owners & Managers, Installers, Designers, Contractors, Consultants, Policy Makers and all who care about the transition to Renewable Energy. AIA, PDH BPI and LEEDs Continuing Education Credits Available!

## Sewage Could Heat Neighborhood

Jan. 6 – An article in the Minneapolis *Star Tribune* says, “Planners designing a sustainable mini-neighborhood near TCF Bank Stadium in Minneapolis want to heat buildings there with sewage flowing deep beneath the streets. It would be one of the largest applications of a burgeoning technology that draws energy from wastewater.

“Ever-Green Energy, which also runs a conventional system that heats and cools buildings in downtown St. Paul, is developing the sewage-heat system for Towerside, a futuristic “innovation district” taking shape in Minneapolis’ Prospect Park neighborhood. That would be the first large-scale example of wastewater heat recovery in Minnesota, an idea explored but never fully developed elsewhere in the state. Council officials say the proposal would require a change in state law, which does not allow them to sell or give away energy.

“The method of extracting energy from wastewater is similar to geothermal systems that rely on steady ground heat. The system draws in wastewater, which fluctuates between 53 and 72 degrees in the Twin Cities. A heat exchanger transfers the heat into fresh water pipes, and a heat pump elevates the temperature to levels high enough to heat a building. It can also be used for cooling, by sending energy from hot air in buildings back into the sewer system.” Read the article [here](#). (*Star Tribune*)

## Geo is Changing the HVAC Landscape

Dec. 4 – In an article for [Commercial Architecture](#) by geothermal heat pump consultant *Jay Egg (Egg Geothermal)*, he says, “Most would agree that green/sustainable building design and construction has become the norm, whether it’s a new or a renovation project. That does not mean that the quest has ended for improved energy efficiency, better indoor air quality and, most important, reduced environmental impact.”

According to Egg, “Ground-source heat pump geothermal technology is at the forefront of this unending effort because it can deliver efficient heating and cooling with minimal environmental impact and be effective virtually anywhere in the country. The market for these systems is expected to grow about 12% annually through 2021 and the technology continues to receive governmental and utility support.” Egg follows with a synopsis of government incentives for installing the technology, including contacts for more information.

Egg says, “The greatest growth in the geothermal industry has been realized in larger governmental and private-sector installations for commercial and mixed-use communities,” providing examples of large projects such as a geothermal heating and cooling system for Internet giant Google’s new office buildings in California. He also notes a pilot program by natural gas utility National Grid USA Service Co. Inc. that installed a multiple-home geothermal demonstration project at Glenwood Village, Riverhead, NY. “The loop field will be installed in a common recreation area and connected to 10 homes. Initial expectation is that homeowners in those experimental residences will experience a 25% reduction in HVAC costs,” he continued.

“There have also been some remarkable smaller companies popping up. One of those is Dandelion Energy, Saratoga Springs, NY. The 2017 startup aims to help homeowners replace their truck-delivered-fuel heating systems with affordable geothermal systems that provide heating, cooling, and hot water.” Egg says that retrofit markets are robust, “simply because of the considerable costs that can be incurred to replace chillers, heat pumps, and air-distribution equipment in those projects.”

Egg laments that geothermal is often misunderstood, citing the Empire State Plaza in Albany, NY. “Engineers stated that installing a geothermal system would not be possible, primarily because they thought the only approach was to drill holes for geothermal loops. In fact, the project can likely be completed using the existing cooling water from the Hudson River as a heat source/sink for the chillers and heat pumps.”

Regarding durability, Egg explains, “Geothermal designs are considered to be an infrastructure-level investment because the exchanger installed in the earth or an adjacent body of water will last for generations. The pumps, heat pumps, and controls that drive the system may need periodic replacement due to wear and tear, though properly specified and installed equipment will last between 20 and 50 years. But the geothermal exchanger (in-ground portion) is as permanent as the slab and structural pilings of the buildings themselves.” Read the entire article [here](#). ([Commercial Architecture](#))

## SAVE THE DATES!

### 2018 Geothermal and Related Conferences

- **Feb. 7-9**                      **Midwest Energy Efficiency Alliance (MEEA)**  
Chicago Hilton and Towers – [Information and Registration](#).
- **Feb. 21-22**                  **Wisconsin Geothermal Association (WGA)**  
Holiday Inn Conference Center, Stevens Point, WI – [Information and Registration](#).
- **Feb. 27-28**                  **Ontario (Canada) Geothermal Association (OGA)**  
Westin Toronto Airport Hotel, Mississauga, ON – [Information and Registration](#)
- **Feb. 28 - Mar. 1**          **Minnesota Geothermal Heat Pump Association (MGHPA)**  
Treasure Island Resort and Casino, Red Wing, MN – [Information and Registration](#).
- **March 12-14**                **Geothermal Alliance of Illinois (GAIO)**  
Doubletree Hotel, Bloomington, IL – [Information and Registration](#).
- **March 6-7**                  **Iowa Geothermal Association (IGA)**  
Prairie Meadows Casino, Altoona, IA – Information and Registration when available.
- **March 27-28**                **International Ground Source Heat Pump Association (IGSHPA)**  
Caribe Royale, Orlando, FL – [Information and Registration](#).
- **April 18-19**                 **New York Geothermal Energy Organization (NY-GEO)**  
Radisson Hotel, Albany, NY – [Information and Registration](#).
- **April 18-19**                 **Advancing Renewables in the Midwest**  
University of Missouri Campus, Columbia MO – [Information and Registration](#).

## Geothermal Resources Council Merges with Geothermal Energy Association

Jan. 9 – The Geothermal Resources Council (GRC) and the Geothermal Energy Association (GEA) are excited to announce their unification. Combining the GRC and GEA strengthens the voice of the geothermal electric power industry with a single organization devoted to advancing the science, education, and development of renewable geothermal energy resources.

The Geothermal Exchange Organization, primarily concerned with advancing geothermal heat pumps for heating and cooling buildings, has a cooperative Memorandum of Understanding with the GRC, to advance the production and use of geothermal energy.

Members of both organizations voted on the decision to unify and the results were overwhelmingly in favor. They will benefit from an increased value for their dues and improved networking relationships as the geothermal community moves forward together.

The activities of the GEA will be transitioned into the GRC in early 2018. One of the key activities is already underway through the establishment of a special committee, the GRC Policy Committee. This committee will focus on educating and lobbying leaders at state and federal levels to expand their knowledge about the geothermal industry. The committee will also assist the geothermal community in its awareness of opportunities to expand renewable energy projects, building a stronger platform for the entire U.S. energy grid. All members are encouraged to join in this new effort.

"Together, the now unified GRC and GEA can advance the geothermal community in more ways to connect with the larger energy industry and create a clean environment for future generations to enjoy," stated Maria Richards, President of the GRC Board of Directors.

Doug Glaspey, President of the Board of Directors for the GEA said, "The members of GEA look forward to working within a single organization to advocate for and advance sound geothermal law and policy that will expand our industry. The unification of our two organizations will allow us to pursue this mission in the most efficient manner possible."

The GRC will continue as a non-profit, 501(c)3 corporation serving as the professional educational association for the international geothermal community, as a focal point for continuing professional development through outreach, information transfer and education services.

The GRC's Policy Committee will file an annual 501 (h) election, which allows them to conduct legislative and regulatory advocacy. An additional membership fee to join the Policy Committee will raise the funds for their activities. This provides the GRC with a mechanism to keep their primary members' dues and funding completely separate.

The headquarters for the unified organization will be in Davis, California and operate under the name "Geothermal Resources Council" until further discussion of a possible name change is completed. For more information visit the GRC website at: [www.geothermal.org](http://www.geothermal.org) (Geothermal Resources Council)



### Join Our Effort!



The Geothermal Exchange Organization (GEO) is working hard for the geothermal heat pump industry with advocacy and outreach. To learn about how you can help, [CLICK HERE](#)



**Better  
TOGETHER**  
IGSHPA Conference & Expo 2018



This year we are bringing the ground source heat pump to the Sunshine State. With Conference sessions, training opportunities, and dedicated expo hours, you're sure to find all you

need to learn more about the ground-source heat pump industry. We're focusing this year's conference and expo on providing you with the tools and information you need to excel your business. You're sure to see some new faces and hear new ideas that can help support the industry. To be BETTER TOGETHER we need to come together.

## Join IGSHPA on March 27-28!

Here are the Top Five **Reasons to Attend the [IGSHPA Conference and Expo](#)** in Orlando



- 1-Session offerings are a mix of industry case studies, technical how-to's, and tools you can use to enhance your business in marketing, financing, and more!
- 2-Dedicated expo hall hours on Tuesday from 10am to noon.
- 3-Our second awards dinner on Wednesday night highlights innovative industry applications, notable achievements of our members, and exemplary industry supporters.
- 4-The welcome reception on Tuesday evening and the awards dinner Wednesday night provide attendees with networking opportunities.
- 5-Industry experts addressing large groups in panel settings.

[Click Here for Registration, Exhibitor Information, and Hotel Information](#)

# Certified GeoExchange® Designer Course

## Certification for HVAC Engineers, Architects and Designers

With the cooperation of the Geothermal Exchange Organization (GEO), the CGD® Training Course is presented by the International Ground Source Heat Pump Association (IGSHPA), with certification awarded by the Association of Energy Engineers (AEE). The CGD® Course covers the gamut of professional geothermal heat pump system applications, from an introduction to the technology to a complete review of commercial design processes.

**Who Should Attend** The 3- day comprehensive Installation Workshops are designed for GSHP installers, contractors, dealers, home builders, manufacturers, distributors, architects, heating cooling mechanical engineers, trenching/water well drilling contractors, and anyone who desires a working knowledge of this innovative technology. Representatives from public utilities, private utilities, and rural electric cooperatives can also benefit from training. Workshop information can help utility representatives serve as information sources on ground source heat pump systems.

**Accreditation** Upon successful completion of the workshop and passing the IGSHPA installer's exam, you will be issued IGSHPA accreditation as an installer of GSHP systems, a 3-year installer's card and certificate, and a 1-year IGSHPA membership.

**Topics** Design and Material Options • System Layout • Pipe Joining Techniques - Hands-on for butt, socket, saddle and electro fusion • Trenching/Drilling Processes • Air and Debris Purging • Pressure Drop Calculations • Pump and Fluid Selection • Thermal Conductivity • Start-up, Performance Checking and Troubleshooting

### [IGSHPA Certified GeoExchange Designer \(CGD Plus\) Accreditation](#)

March 27-28, at the IGSHPA 2018 Conference & Expo in Orlando, FL.  
**Click on the link above for more information and to register.**



*EO Industry News* is a publication of GEO, the Geothermal Exchange Organization, a non-profit trade association that advocates the environmental, energy efficiency and economic benefits of geothermal heat pump systems for heating and cooling of residential, commercial, and institutional buildings. For more information, visit our website: [www.GeoExchange.org](http://www.GeoExchange.org).

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