Volume Four • Number 10 October 19, 2017
Geothermal Exchange Organization
GEO Industry News

Broad-Based Utility Support is a Key to the GHP Industry's Future

Utilities are a natural partner for the geothermal heat pump (GHP) industry. Why? Because utilities have a broad consumer base and infrastructure, and need to both build load (sales) and levelize that demand to make the most efficient use of their electrical generation capacity throughout the year. GHPs are a technology that fills that niche.

The Geothermal Exchange Organization (GEO) has long recognized the key role that electric service providers can play in the promotion of the technology. And today, with a slow economy and the changing nature of government incentives for GHPs, that support is more crucial than ever. "The ability of GHPs to reduce on-peak kW demand has been demonstrated both in summer and winter," said GEO President and CEO Doug Dougherty. "It's incumbent on the GHP industry to demonstrate to the IOUs how our technology can further their energy efficiency and renewable energy goals."

Before electric industry deregulation in 2000, utilities were under regulatory pressure to control electric power growth and limit pollution from their power generation plants. A good way to do that was through Demand Side Management (DSM) programs to promote and finance energy efficiency.

Many utilities large and small sponsored major promotional and rebate programs for insulation, windows, lighting—and more efficient heating and cooling. Given the clean, renewable energy and cost savings that GHPs produced for home and building owners, they were a natural and effective component of utility DSM programs across the country. All that came to a halt in 2000, when deregulation of electricity markets shifted utility focus away from DSM.

GEO Heat Pump Manufacturers News

Click below to access the latest news from GEO Heat Pump Manufacturer Members

ClimateMaster Click Here | Earthlinked Technologies Click Here | Enertech Geothermal Made Better Click Here | WaterFurnace Smarter from the Ground Up Click Here

Utility Promotion of GHPs

"Fortunately, some electric providers around the country—including IOUs, non-profit electric cooperatives, and municipal providers—still recognize the system and ratepayer benefits of energy efficiency," said Dougherty. "Many still offer at least modest GHP incentives to their ratepayers In fact, more than 350 out of 900+ electric co-ops in the United States offer varying levels of cash rebates for the technology (see map on pg. 4).

Electric service providers offer low-cost on-bill financing that helps ratepayers pay for their GHPs, with monthly payments that are less than the cost of the energy they save on heating and cooling. Other incentives may include special lower electric rates for those who adopt GHPs, or cutting upfront cost with "loop lease" programs, where a utility installs an expensive portion of a GHP system at a ratepayer's property—the ground loop heat exchanger—then charges a low monthly fee for the renewable energy it provides.

According to Dougherty, there is a resurgence of interest by IOUs in the value of GHPs—among both electricity and natural gas providers. "Good examples of IOUs taking another look at GHPs can be found in Illinois and New York, where state geothermal associations are working hard to show the value of the technology to utilities and ratepayers," he said. "This is especially true where state strategic energy plans focus on carbon emission reductions. As DSM reemerges as an issue that IOUs have to address, GHPs are back in the game."

Illinois Rebates and Market Expansion

With the Geothermal Alliance of Illinois (GAOI), GEO was largely responsible for changing the state's Energy Efficiency Portfolio Standard to allow fuel switching, and making appropriate revisions to the state's Technical Resource Manual (TRM).

In turn, this prompted the state's largest utility, Commonwealth Edison (ComEd) to initiate a growing residential GHP rebate program for its ratepayers. GAOI has worked closely with ComEd to ensure its success. "In ComEd's case, their GHP program shows a new appreciation for the value of GHPs when it comes to DMS of their summer peak," said Dougherty.

According to GAOI Executive Director John Freitag, "We've made several recommendations on advancing the program. And we've been working to get more contractors into the ComEd approved dealer network." GAOI has developed training sessions to make more contractors eligible for the utility's network. The utility is promoting those sessions, and paying 80% of the $500 registration fees.

With the help of the University of Illinois at Chicago's Energy Resources Center and Inova Energy, GAOI is also working to develop a commercial GHP rebate program for ComEd. "Right now, we are putting together a pilot program," said Freitag. "And we're developing a new chapter on commercial GHP installations for the TRM Manual, which will allow ComEd to have a commercial GHP program." GAOI hopes to see it in place for 2018.

"From a marketing standpoint," said Dougherty, "GEO's work with GAOI has enhanced our technology's reach throughout ComEd's service territory of 3.8 million households. By any measure we've created a tremendous opportunity to expand and move the market for GHPs."

New York Promotes Carbon Reduction with GHPs

"New York is a great example of where change in public policies is coming from the regulators, opening an opportunity for electric and gas providers to promote GHPs," said Dougherty. The New York Geothermal Energy Organization (NY-GEO) is currently supporting a Central Hudson Gas and Electric proposal for an "earning adjustment mechanism" to help them pay for carbon emission reduction with electric vehicle and heat pump incentives. NY-GEO is also supporting a National Grid proposal called the Electric Heat Initiative, which includes GHPs.

"Both proposals are meant to help meeting the state's economic and environmental goals under the Gov. Cuomo's REV (Reforming the Energy Vision) process," explained NY-GEO Executive Director Bill Nowak. The association is also reviewing a Request for Information recently issued by Consolidated Edison (ConEd), which is seeking ways to reducing winter peak gas demand in New York City, which has essentially banned new gas lines. ConEd is considering various non-fossil fuel heating technologies, including GHPs. "That's a pretty remarkable and exciting event in terms of our industry," said Dougherty.

Nowak agrees with GEO that IOUs have a key role to play in the future of GHP technology. "Utilities are 'getting it'—they understand the value of GHPs, and that geothermal brings them both carbon reduction and peak demand reduction," he said.

Utilities, Public Policy and GHPs for the Long-Term

Even with federal rollbacks of limits on carbon emissions at power plants, utilities remain concerned with both efficiency and the environment. Several large IOUs like American Public Power and GEO Member Southern Co. are pushing ahead with their renewable energy goals.

"With proper changes to public policy and education, utilities are once again understanding the value of GHPs," said Dougherty. "This renewed appreciation by the IOUs has tremendous potential for the GHP industry. It's GEO's task to convince IOUs, co-ops and munis everywhere that if they aren't already, GHPs should play an integral role in their technology and DSM."

"There's plenty of opportunity for IOUs to craft programs to incentivize customers to install GHPs, either in new homes or retrofits," he continued. There are many electric co-op incentives already in place that IOUs can readily adopt, including the on-bill financing, special rate designs and loop-lease programs already mentioned that benefit GHP adopters.

GEO is developing state-level strategies to help ensure that the right public policies are in place for utilities to promote GHPs and bring down needless barriers to the technology. "GEO and its allies have been successful in securing recognition of GHPs as a thermal source of energy within the existing renewable portfolio standards of Maryland, Massachusetts, New Hampshire, Michigan and New Mexico," said Dougherty.

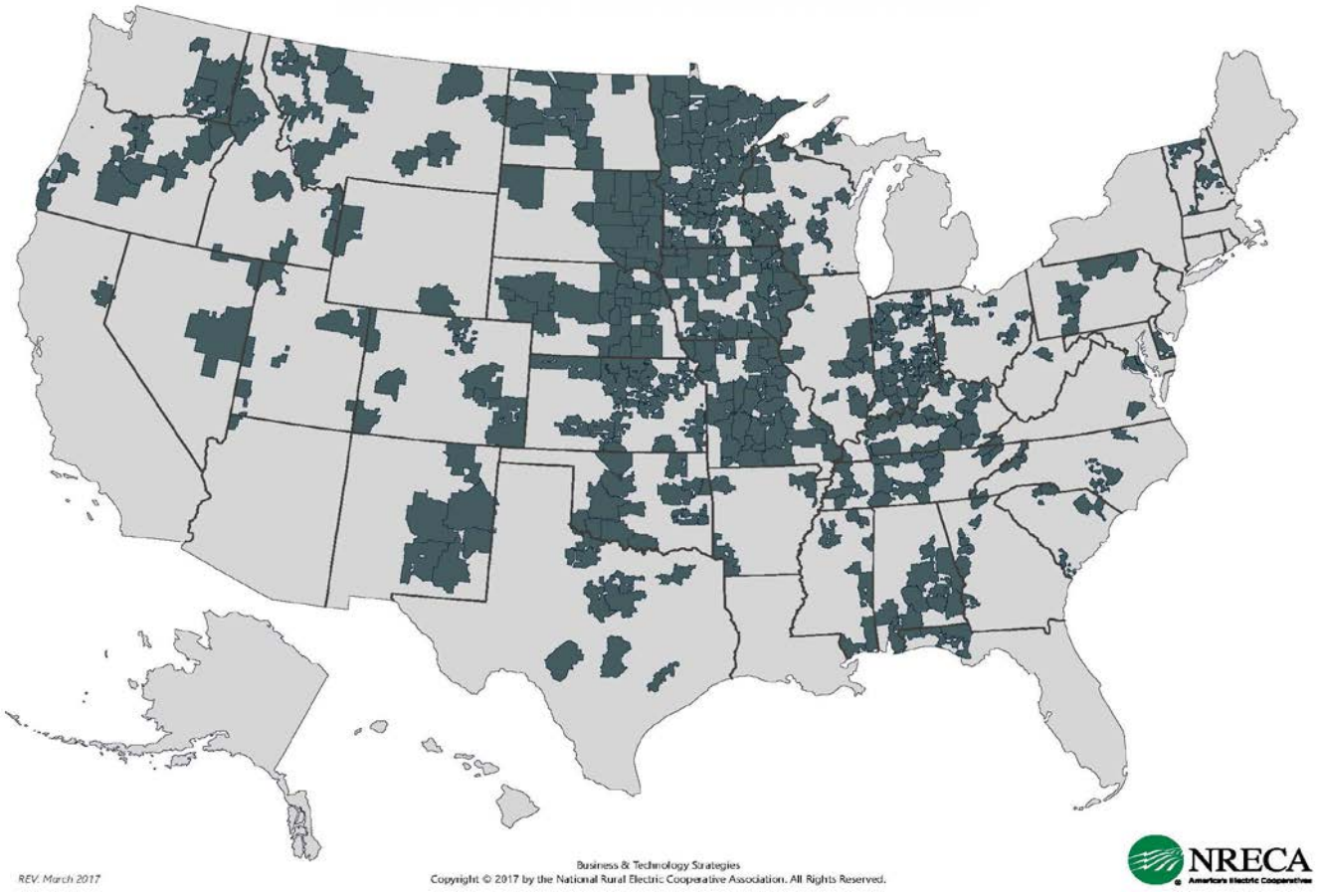
"In some states like Minnesota, there remains an arcane prohibition on fuel switching," he said. "GEO's strategy in Minnesota is to change public policy to allow electric providers like Otter Tail Power Co. to promote GHPs in place of fossil-fuel furnaces." In some of the more progressive states, Dougherty reiterated, energy efficiency policy is being driven by public utility commissions.

"An important component of GEO's encouragement of IOUs to promote GHP technologies is increased involvement and education through the National Association of Regulated Utility Commis-

sioners (NARUC)," Dougherty said. "This will ensure that regulatory policies promoting GHPs are shared among other states so that regulators everywhere fully understand the benefits of our technology.

"State recognition of GHPs as a source of clean, thermal energy in their energy efficiency and renewable energy portfolio standards creates the opportunity for IOUs to utilize the benefits of GHPs." State geothermal associations are of critical importance to this effort, paving the way for GHP inclusion in both utility and state renewable energy credit (REC) programs, which offer yet another important incentive for GHP adoption.

Dougherty is quick to point out, however, that it is important to have a long-term view. "In our enthusiasm for GHPs, we must all remember that making such changes are not done overnight. Intensive outreach and education efforts, as well as identifying and changing public policies to remove regulatory barriers to IOU promotion of GHPs is a long process. But if you are not at the table—you're out of the game." (TJC/GEO)



March 2017 map of over 350 of 900+ non-profit electric cooperatives across the nation sponsoring incentive programs that promote installation of GHP systems. Note that no further detail than co-op name and location is available from NRECA at the current time. Contact individual co-ops in your area to learn details about their specific support programs for GHPs. *Map courtesy of NRECA*

Geo Industry Continues Life Without Tax Credits

Sept. 25 – In an article in the Air Condition, Heating and Refrigeration News (*ACHR – The News*), journalist Nicole Krawcke extensively quotes Geothermal Exchange Organization (GEO) President and CEO in a discussion about the industry's continuing battel to reinstate and extend its federal tax credits.

"On Dec. 31, 2016, the 30% residential and 10% commercial federal tax credits for geothermal heat pumps expired while credits for solar and wind were extended. The geothermal industry has been working tirelessly to rectify this Congressional oversight and reinstate the geothermal tax credits to create parity amongst renewable energy technologies. Dougherty said the geothermal industry is banding together with other 'orphaned technologies' left out of the tax credit extension to create parity.

"'Since last December, when Congress extended solar and wind beyond 2016, we have been working to get the 'orphaned technologies' that were left behind included in the portion of the tax code in Section 48, which is commercial, and 25D, which is residential,' Dougherty said. 'We formed a coalition with the other orphaned technologies, which include combined heat and power, fuel cells, and small wind along with geothermal heat pumps. Our bill in the house, HR 1090, now has 113 bipartisan cosponsors, so we've built a large support behind our efforts, but it continues to be an uphill battle."

"The Reed Bill, legislation introduced by Tom Reed, R-N.Y., will attempt to reinstitute and extend the credits through 2021 for geothermal heat pumps, fuel cells, microturbines, small wind, and CHP equipment. Additionally, the recent introduction of S 1409 in the Senate by Sens. Tom Carper (D-DE), and Dean Heller (R-NV), which is very similar to HR 1090, would retroactively reinstate the residential and commercial tax credits for geothermal.

"All of the geothermal heat pumps installed here are made in the U.S."

Doug Dougherty - GEO

"'We're spending time on the Hill building support for the senate bill,' Dougherty said. 'However, there are two other energy-related issues that we think can be combined with our efforts that would get a lot of bipartisan support. One is a nuclear facility issue on a production tax credit tied to two nuclear power plants in South Carolina and Georgia, and the other is to amend the tax code for carbon dioxide sequestration. We think combining these three bills would garner support in Congress. I think that trifecta will work, so I'm fairly confident that we're going to get our tax credits reinstated.'

"According to Dougherty, the tax credit expiration has significantly hurt geothermal sales. 'I don't represent all the manufacturers, but sales are down more than 40 percent for the ones I do represent,' he said. "Enertech Global laid off 27 people in its production facility in Mitchell, SD— that's public record. The irony of all this is many of the HVAC contractors in the green space also sell solar, so now they're pushing solar for homeowners because of the tax credit. It's a double whammy.'

"'It's also a domestic job issue,' he continued. 'If you think about it, 76 percent of all solar panels installed in the U.S. are imported — and most of them come from China. So, you're giving a tax break to Chinese production facilities. All of the geothermal heat pumps installed here are made in the U.S. All of the components that go into a geothermal heat pump are made in the U.S. All of the pipe and grout that goes into the ground, the drill rigs that are produced, and all of the maintenance contracts that are done are all domestic 100%. The bottom line is, Congress created a tax application inequity that is wrong, and they've pledged to fix it. We've waited 18 months for them to fix it, and they haven't.'" Read the entire article here. (*ACHR – The News*)

Help GEO Win Tax Credit Parity with Solar

Make Your Voice Heard on This Paramount Issue!

UPDATE - Movement continues in the U.S. House of Representatives on adding support for H.R. 1090 (we now have 113 cosponsors) and in the Senate for S. 1409. Both bills give geothermal heat pumps parity in the tax code with solar, reinstating and extending our tax credits through 2021 with a 3-year phase-out.

- Check if your U.S. Congressperson is a cosponsor of H.R. 1090 (**click here**), and check if your U.S. Senator is a cosponsor of S. 1409 (**click here**).

- If not, email and/or call their offices, urging them to get on board. You can find contact information for your Representative **here**, and your Senator **here**.

- Urge them to help fix the inequity between solar and geothermal heat pumps by supporting our bills, and if appropriate, cite your personal experiences with business decline and layoffs since the geothermal tax credits expired last year.

More Than Clean Power Needed to Meet Renewables Targets

Sept. 19 – According to an article on GreenBuzz.com, "The corporate world has done an admirable job of inspiring additions of solar and wind electricity to the worldwide grid but if companies focus on addressing electricity alone—without considering how they fuel heating and cooling functions across factories or campuses—many will likely to fall short of their renewable energy aspirations.

Consequently, five manufacturing giants — Cargill, General Motors, Kimberly-Clark, Mars and P&G — and the city of Philadelphia have founded a new initiative, the Renewable Thermal Collaborative. It will be facilitated under the Renewable Energy Buyers Alliance umbrella by World Wildlife Fund, the Center for Climate and Energy Solutions and David Gardiner and Associates.

"Because thermal energy is a significant portion of what's required to manufacture our products, we view the Renewable Thermal Collaborative (RTC) as an important and strategic way to work together to help identify technology which delivers cost-effective and environmentally responsible solutions for a low carbon future," said Stewart Van Horn, director of global sustainability and energy solutions at Kimberly-Clark, in a statement.

The issue is also looming larger for U.S. cities that have set 100 percent renewable energy targets, because many use coal and natural gas to run the heating and cooling systems of municipal buildings. It will be impossible to achieve long-term climate and energy goals without dramatically increasing the use of renewable heating and cooling. Some renewable thermal options explored by the new working group include biomass, biogas, geothermal, landfill gas and solar thermal. Read the article **here**. (GreenBuzz.com) Learn more about the RTC **here**.

Registration □ Technical Program □ Student Program
AHR Expo □ Travel& Housing □ Committees

Get the tools, education, and contacts instrumental to your success at 2017 Groundwater Week, December 5-7, in Nashville, Tennessee!

Hands-on activity areas • Cutting-edge educational programming
New opportunities • Welcome reception, music, and more.

LEARN MORE REGISTER TODAY!

Pinewood Forrest is the First Large, All Geo Community in U.S.

The 234-Acre “Experiential” Development Commits to Utilizing Clean, Geothermal Energy for All Single-Family Residences and Townhomes

Sep 19 -- Pinewood Forrest, a new, innovative urban community in Fayetteville, GA announced plans to become the first large-scale fully geo-thermal community in the country. Every single-family home and town-home in the community, which is currently under construction, is being outfitted with a geothermal heat pump (GHP) system in place of traditional heating, air-conditioning and ventilation (HVAC) system.

Pinewood Forrest is a 234-acre master planned residential and mixed-use development located 24 miles south of Atlanta, adjacent to Pinewood Atlanta Studios in Fayetteville, Georgia. Envisioned as a haven for storytellers and creatives, the new urbanist community is a contemporary concept in suburban living.

The Pinewood Forrest development team is led by Fayetteville native and Chick-fil-A CEO Dan T. Cathy. Early partners in the project include hotel operator Hay Creek Hotels, residential marketing firm Ansley Atlanta Real Estate, and a Builders Guild comprised of four top home builders in the Atlanta area. GHPs to heat and cool homes are more efficient, more affordable, quieter and last longer than any other system. Geothermal is a clean, renewable energy source generated and stored in the Earth.

To access this energy, a borehole is drilled to reach consistent underground temperature of ~58 degrees year-round. GHP systems take advantage of this stable temperature to more efficiently heat and cool homes compared to traditional HVAC systems, which are above ground and exposed to more variable and extreme conditions. Geothermal systems offer up to 70% energy cost savings— that's more than $200 off a $300 electric bill—and are more durable and long lasting, with underground compo-nents potentially lasting more than 50 years compared to around 12 years with traditional systems.

"Our vision for this community includes providing residents with the most advanced technologies and systems available to make this a truly remarkable place to live. Geothermal energy is the smartest, most effective way to heat and cool a home and we are delighted to bring this innovative, future-proof solution to Pinewood Forrest," says Rob Parker, President, Pinewood Forrest.

"The collective power of immediate and meaningful cost savings paired with the undeniable environmental benefits delivers a smarter, healthier, more livable community to our residents now and gives them confidence and peace of mind for the future."

Pinewood Forrest, LLC is overseeing the installation and management of the geothermal systems for all residential units at the sustainably designed development, which will include around 700 single-

family homes and townhomes. Construction started on homes in April 2017, and the first phase will be delivered and occupied by year-end. Most costs for the systems are factored into mortgage payments.

In addition to environmental benefits, geothermal systems provide significant aesthetic advantages. Because there are no outdoor compressor units and the underground systems are virtually silent, residents can enjoy their homes and amenities of the Pinewood Forrest development without the distraction of noise and unsightly industrial equipment. Pinewood Forrest is connected by 15 miles of pedestrian pathways across 118 acres of public green space with gardens, gathering places and parks. The development will comprise 1,300 residences once complete, including 600 multi-family units. For more information on residences at Pinewood Forrest, visit their website, **here**. (PF press release)

Geo Helps Transform Minneapolis Warehouses

Sept. 14 – Rundown warehouses in south Minneapolis recently converted into apartments are on the National Register of Historic Places. "And now, they've been equipped with the latest in renewable energy technology," according to an article in the Minneapolis *Star Tribune*.

"Dominium, a Twin Cities-based apartment development and management company, transformed the buildings along the Hiawatha Corridor into Millworks Lofts, a 78-unit income-restricted rental building that opened this month." Because of their designation as National Historic places, "Dominium was able to use federal historic tax credits to help finance a historically sensitive rehab, including the preservation of several features, such as the original windows. Lake Street Sash and Door Company was a notable millwork company established in 1916.

"The three-story brick and timber building houses the bulk of the apartments, while the adjacent lumber sheds house a couple apartments, building amenities and indoor car and bike parking. An adjacent surface lot is atop the primary infrastructure for the ground source heat pump system, including 96 wells that are about 225-ft. deep. They form a network of tubes that are capable of heating and cooling the building depending on the season, a system that eliminates the need for natural gas heating, said Dominium developer Nick Andersen. While the parking lot behind the building provided space for the loop system, the soil conditions were also suitable.

The article says that geothermal was the best long-term decision to make for the project, which is the first affordable development in south Minneapolis to have such a system. Rents will range from $1,000 for a one-bedroom unit to $1,387 for the project's single three-bedroom apartment. Read the entire article here. (*Star Tribune*)

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**

Underground Secret Saves Money

Sept. 17 - Three new schools just opened in Fairfield, OH will rely on geothermal heat pump (GHP) systems for heating and cooling. According to an article in the *Dayton Daily News*, ""We chose the geothermal system because it is the most economical way to heat and cool a building," explained Tom Weiser, director of business operations for Fairfield Schools.

"'The payback on the additional cost of installing this type of system was estimated at a payback of five years on the elementaries and seven years on the Freshman building,' said Weiser. The freshman school shares the high school campus and has 145,000 square feet and 50 classrooms. The new elementary schools are identical with 90,366 square feet and 34 classrooms.

"Weiser said, 'at both elementaries there are 60 wells that were drilled straight down 450 feet each. At the freshman school there are 110 wells at 450 feet deep. When you consider that a line goes down 450 feet and loops back up 450 feet and take this by the number of wells, there are 10 miles of piping in the geo field at the elementaries and 18 miles of pipe at the freshman building.

Saving taxpayer money was the prime motivation for Fairfield school officials' decision to try the district's first geothermal system. "Weiser said another advantage of the system is that longevity. 'These systems are very reliable with few moving parts. The geo fields should serve the buildings for the term of their existence and are guaranteed for 50 years.'" Read the article **here**. (*Dayton Daily News*)

CEUs for Architects and Engineers!

Are you ready for NYSERDA's $1,200-$1,500 per ton Geothermal Rebate Program, and for NYPA's $100 million campus geothermal program?

It's Time to bone up on...

Geothermal Heating and Cooling

Earn 5 hours of AIA, PDH, BPI or LEED Credits – 9am-3pm each day for only $169 ($49 if taking the course w/o credits)

Buffalo, NY at National Grid HQ – Nov. 14
Syracuse, NY at National Grid HQ – Nov. 16

For details on location and registration go to: bit.ly/geoceus, Call (518) 3136-GEO, or Email nygeoinfo@gmail.com

Sponsored by NY-GEO and NYSERDA

Geo Paying Off in West Virginia

Sept. 22 – According to a report by Liz McCormick of West Virginia Public Broadcasting, "Some counties in West Virginia have been pushing the envelope for a future in geothermal energy use…like in a hand-ful of public schools." She describes Tuscarora Elementary School in Berkeley County, which "recently underwent a massive renovation to become a *greener*, more energy efficient school," with new walls, doors, LED lighting, and geothermal heat pumps.

"Outside the school, on its front lawn and beside the parking lot, the ground is now covered in straw to help the grass grow back. That's because 42 [boreholes] were built there this summer—each 400-ft. deep…. Off to the side of the school, there's a small, stone building that holds the school's lawnmowers and other equipment, and now also houses Tuscarora's geothermal heat pump system, which isn't that big—the system looks like it could fit into a large closet or shed.

"A constant, soft *buzzing* sound is the most you'll hear from one of these systems, because it makes no noise inside the school – no *whooshing* as it kicks the air on. The air coming into the school is regulated by a closed loop system of pipes that is in turn regulated by Earth's constant 55 degree Fahrenheit temperature. Principal Long also points out that the air quality in the building has improved. 'It's a tremendous savings financially, but it's also very energy efficient, so it's a savings to the environment as well,' Long said."

"Tuscarora is one of seven elementary schools in Berkeley County sporting geothermal heating and cooling systems. Six of which were installed within the past year," the article continues. "Berkeley County Schools Superintendent Manny Arvon is the driving force behind the geothermal initiative in the county. A year ago, Arvon hired the sustainable building company, CMTA Engineer Consulting, to lead the projects.

"Arvon says switching to greener technologies like geothermal was a no-brainer, because of one, environmental impact and two, cost savings in a county with a population that doesn't seem to stop growing…. Berkeley County Schools expect the geothermal system will cut electricity bills county-wide by almost 40 percent annually - from about $5.5 million down to $3.5 million. Arvon says the systems will pay for themselves in 15 years - and should last more than 50 years. Arvon says he plans to install geothermal heating and cooling systems into every new school building built in Berkeley County.

"According to the West Virginia Department of Education, Webster and Pocahontas Counties also have geothermal technology installed in some of their schools. Additionally, Monongalia County's Eastwood Elementary School has geothermal technology. Webster County High School was the first West Virginia school to have geothermal installed back in 1997. Read and hear the entire story **here**. (WV Public Broadcasting)

When you Think "GEOTHERMAL HEAT PUMPS"
Think "GEO" at www.GeoExchange.org

IGSHPA 2018 Call for Papers

You still have time to submit your abstract for the 2018 IGSHPA Conference and Expo "Better Together" in Orlando, Florida, March 27-28. Topics may include any GSHP industry related best practice, job or project, or innovation. For more information and instructions on how to submit your abstract for review, visit the IGSHPA website here.

Certified GeoExchange® Designer Courses

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 three 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. Information gathered from the workshops can help utility representatives serve as a source of information regarding money-saving concepts.

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. You will receive an installer's card and a certificate for 3 years. Also, you will receive a 1-year membership with IGSHPA after you have completed all requirements of the Installation Workshop.

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

November 7-9 • IGSHPA Headquarters, Stillwater, OK

Click HERE for more information and to register

IGSHPA Geothermal Training and Accreditation

IGSHPA offers several opportunities for you to become certified or accredited through one of their many training and workshop programs.

Please visit IGSHPA's training homepage for more info and to register.

IGSHPA Accredited Installers Workshop (also online)
Trainer: Garen Ewbank • Nov. 15-17 • Stillwater, OK

IGSHPA Certified GeoExchange Designer Workshop
Trainer: Terry Proffer • Nov. 7-9, 2017 • Stillwater, OK

IGSHPA Certified Geothermal Inspectors Workshop
Trainers: Cary Smith, John Turley • Nov. 30 – Dec. 1, 2017 • Stillwater, OK

IGSHPA Geothermal Installer Accreditation Training - HeatSpring
Trainer: Ryan Carda, P.E. • Rolling - Begin Immediately • Online

IGSHPA Certified GeoExchange Designer (CGD Plus) Accreditation
Trainer: Ryan Carda, P.E. • Rolling - Begin Immediately • Online

Support the Industry's
National Voice
Join GEO

GEO 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.**

In production of content for **GEO Industry News*****, the Geothermal Exchange Organization (GEO) intends no copyright infringement, citing the Copyright Disclaimer under Section 107 of the Copyright Act 1976, in which allowance is made for "fair use" of various content for purposes such as criticism, comment, news reporting, teaching, scholarship and research.***