Message from the Executive Director

We have a lot to talk about in our November newsletter! Please check out the articles. The most newsworthy is the IGSHPA annual conference in just a couple of weeks. Registrations are much better than expected for both IGSHPA and NGWA. We're expecting a lot of booth traffic, good attendance at the workshops, and much to announce at the conference. Just a quick "peek" into some of the topics...

1. Annual member meeting on Wednesday, announcing the new board member.
2. IGSHPA leadership address, outlining where we're headed in the future (including a training plan that was just approved by the board), Town Halls and Dig Deeper topics for 2022, and how we hope to add even more value to IGSHPA membership.
3. An exciting keynote on large geothermal projects and how our industry needs to scale up for what's predicted for geothermal developments.
4. And possibly the best part... catching up with friends and colleagues!

We recognize Dr. Bose at the conference for his contributions to IGSHPA. Please stop by the IGSHPA booth to see our tribute (in OSU Cowboy orange).

I'm really looking forward to my time in Nashville. I hope we will have a chance to discuss where IGSHPA has been in this past year and where we're going. Hoping to see you in December!

Sincerely,
Jeff Hammond
Executive Director
jeff@igshpa.org
International Ground Source Heat Pump Association

Our Annual Conference would not be possible without the generous support of our amazing sponsors!
Thank You Sponsors!

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IGSHPA Conference Schedule

This year there are three tracks, residential, commercial, and driller, as well as panel discussions, a keynote presentation on large scale geothermal developments, a working group session on regulations/standards, time in the exhibit hall to learn about new products and services, and much more. This year’s conference is in partnership with NGWA (National Ground Water Association), which means even more exhibitors and opportunities to learn and network. A PDF version of the schedule can be found here.

TUESDAY, DECEMBER 14
8:00am – 9:00am
Residential Track:
System Design Part I — Heat pump sizing considerations
(Jeff Hammond)
Limitations of residential load calculations, ACCA Manual S requirements,
ANSI/CSA/IGSHPA C448 guidelines, and other topics that help put residential equipment selection into perspective.

**Commercial Track:**
**System Design Part I — Building Loads and Equipment Selection**

*(Steve Hamstra)*
Recommended processes to follow for successful GSHP applications. We will cover the “in the building” portion of design including load analysis, energy modeling, system configurations, control applications and more, explaining why each step is important and highlighting areas for special diligence to ensure good projects.

**Driller Track:**
**Importance of Grouting in geothermal systems**

*(Tyler Harbeck)*
Reasons why selecting a high quality geothermal grouting product for GSHP applications is more than just an arbitrary decision.

**9:30am – 10:30am**
**Residential Track:**
**Residential System Design Part II — ground loop sizing considerations**

*(Jeff Hammond)*
Best practices for residential ground loop sizing, referencing ANSI/CSA/IGSHPA C448, as well as providing examples of several heat pump manufacturers’ software and the IGSHPA design manual.

**Commercial Track:**
**Commercial System Design Part II – Ground Loop**

*(Steve Hamstra)*
Steps for good heat exchanger design, highlighting some of the software tools available, discussing design parameters and how they impact the final design, as well as highlighting the potential integration of ground heat exchangers with other heat sources/sinks that can enhance the system performance and also increase the number of economically feasible GSHP projects.

**Driller Track:**
Thermally Enhanced Grout

(Tyler Harbeck)
Thermally enhanced grouting products impact on bore hole resistance, system design, and installed system performance.

10:45am – 11:45am
Residential Track:
Residential System Design Part III — pump system considerations

(Tom Wyer)
Pumping systems and components typically used in residential installations including a comparison of pressurized and non-pressurized flow centers and the requirements of ANSI/CSA/IGSHPA C448.

Commercial Track:
Not Just for Rich Folks: GSHP Designs to Expand the Market to K-12 Schools and Middle Class

(Dr. Steve Kavanaugh)
An overview of pump sizing design and the impact on efficiency. Other topics impacting a healthy commercial geothermal application will include fan power, considerations on system efficiency, and how simple designs can promote growth around the local installation area, especially affecting adoption of geothermal by schools, homeowners, and developers.

Driller Track:
Why are drillers important to geothermal?

(Brock Yordy)
Examples of water well drillers who have moved into geothermal successfully and tips for how drillers and contractors can work together on new opportunities.

1:00pm – 2:00pm
Residential Track:
Residential System Design Part IV — Hydronics and Geothermal, Best Practices/Design Recommendations

(Jim Cusack)
Designing hydronic systems for geothermal water-to-water heat pumps, including pipe spacing recommendations, outdoor temperature reset controls,
buffer tank sizing/selection, and other lessons learned to help design a trouble-free, comfortable hydronic system. Some “what not to do” tips and applications will be included to provide real-world examples.

**Commercial Track:**
**Water Quality & Final Commissioning**

*(Sean Hogan)*
Why commissioning is so important for long term reliability and performance. A discussion on water quality, lessons learned, and other tips will be included to help demonstrate best practices.

**Driller Track:**
**Panel Discussion of Drillers**
A moderated session covering topics related to vertical boring for geothermal systems, how to overcome some of the challenges, and tips on how/why to move into the geothermal business.

**2:30pm – 3:30pm**

**Residential Track:**
**Maximizing profit with your current workforce**

*(Rob Derksen)*
Explore how selling geothermal systems can result in better profitability without changing your current staffing levels. We will also touch on what may be your greatest sales asset that you haven’t deployed yet.

**Commercial Track:**
**Scaling Up: The impact of ground source heat pump systems in district energy applications**

*(Mike Walters)*
National and global familiarity with ground source heat pump technology is accelerating with the widespread awareness of the climate consequences of carbon emissions. While the cumulative impact of HP systems supporting individual buildings is not to be discounted, the opportunities of scale made possible with district energy applications of HPs represent potential for a greater leap forward in the face of mounting environmental urgency and accelerating transformation of the energy marketplace.

**Driller Track:**
Successful drilling in geothermal

(Dan Rau)
How a geothermal only business was planned and built, highlighting the methods and approach to geothermal design and installation. A few projects will be highlighted as examples, and there will be time for questions.

4:00pm – 5:00pm
Panel Discussion with OEM’s
Moderated session with the geothermal industry’s top geothermal heat pump manufacturers. Discussions to include industry challenges, supply chain outlook, tips on growing the industry, and other topics in these unique times in our industry.

5:30pm – 7:00pm
Welcome Party with NGWA

WEDNESDAY, DECEMBER 15
10:00am – 4:30pm
Hall is open
IGSHPA / GEO both will have two live sessions repeated throughout the day:

- 10:15am, 2:00pm, 3:30pm: Why Drillers Need to Expand into Geothermal
- 11:00am, 2:30pm: How to Sell Geothermal

10:00am – 10:30am
IGSHPA Annual Membership Meeting

10:30am – 11:00am
IGSHPA Leadership Address

11:00am – 12:00pm
IGSHPA Keynote: Getting to Scale: Reframing Geothermal Exchange in the Age of Electrification

(Greg Wolfson, EcoSmart Solution)
Ground source heat pumps, a key to geothermal exchange technology, is highly regarded among the renewable industry due to its resource sustainability and significant energy demand reduction. However, despite having a long,
developed history, geothermal exchange technology has yet to become mainstream presence with modern consumers and associated construction industries. While data suggests that the energy efficiency, resiliency, and reliability of geothermal exchange offers a strong alternative to more common heating and cooling solutions in a world of increased electrification and disastrous weather events, adoption and innovation in the sector are not keeping pace with other renewable energy infrastructure. Whisper Valley is a master-planned community of 7,500 mixed use units in Austin, TX that provides the industry with pathways to scalability. This development, consisting of networked geothermal exchange grids – currently serving 265 occupied single-family residences to be expanded up to 850 homes – show how scale can be achieved within the industry. Working closely with the developer and builders of the project provides the capability to reduce costs of installation, operation, equipment, and local labor. During this presentation, we will explore how the lessons from Whisper Valley can be applied to the industry at large to deliver the growth and success we all envision.

1:00pm – 2:30pm & 2:45pm – 3:45pm
(15 minute break between sessions)

GEO Exchange Panel: State/Provincial Policies, Advocacy, Trends

GEO Exchange to moderate panel of experts on state/provincial policies, advocacy, trends, state/provincial geo associations, federal/local programs, new legislation, and other topics

THURSDAY, DECEMBER 16
8:00am – 9:30am
Residential Track:
Panel Discussion: Utility Involvement with Geothermal

Moderated session of utility representatives to discuss utility involvement with incentivizing, promoting and owning closed loop geothermal systems. Additional insight into the other benefits of geothermal to utilities will be discussed and why it is so important for contractors to promote geothermal in the utilities service area.

Commercial Track:
Why do we need geothermal in commercial (including
institutional and K-12) buildings?
Moderated session for discussion on the reasons for use of geothermal in commercial buildings beyond payback. Hear from a panel of engineers, OEMs, and installers.

Driller Track:
Commercial Urban Drilling – Challenges and Successes.
(Stan Reitsma)
Urban drilling has seen many successes over the years, such as the advancement of angled drilling techniques, deeper driller depths and more. However, as the geothermal industry grows, new challenges continue to emerge. A discussion about successes and emerging challenges facing commercial urban drillers will be the focus of this presentation.

10:00am – 2:30pm
Hall is open
IGSHPA / GEO both will have two live sessions repeated throughout the day:

- 10:15am, 1:00pm: Why Drillers Need to Expand into Geothermal
- 11:00am, 1:30pm: How to Sell Geothermal

12:30pm – 1:30pm
Residential Track:
Panel Discussion: 3rd Party Residential Financing
Moderated session about 3rd party financing for residential, including model representation from financial institutions.

Commercial Track:
Panel Discussion: 3rd Party Commercial Financing
Moderated session about 3rd party financing for commercial/multi-family, and large projects, including model representation from financial institutions.

Driller Track:
Working Group Session – Regulations/Standards, State and Provincial
This working group will be a strategy session on gathering local information and providing resources through the IGSHPA website and/or the NGWA website as a resource for drillers, loop installers, and mechanical contractors.
Pre-Registration REQUIRED for Working Group Session: Register here…

2:00pm – 3:00pm
Residential Track:
Panel of Residential Installers

This will be a continuation of the town hall event, talking with residential installation contractors.

Commercial Track:
Multi-Residential Carbon Targets: A Geothermal Game Changer

(Tim Weber)
Government mandates and municipal policy to reduce or eliminate fossil fuels is creating a challenge for developers and designers, forcing them to re-think how they design and construct buildings. Hear how Diverso Energy, a geothermal utility company, has turned this challenge into an opportunity by removing the technical and financial barriers of geothermal. As a result, geothermal is now considered the path of least resistance and quickly becoming the new status quo for Developers in Toronto.

Driller Track:
Beneficial Electrification

(Steve Koep)
As the carbon intensity of electricity continues to fall and the country moves toward a ‘clean’, carbon-free grid, all electric end uses, including ground-source heat pumps, are getting cleaner right along with it. That’s the essence of Beneficial Electrification (BE). Today’s ground-source heat pump (GSHP) technology constitutes one of the most impactful and scalable BE opportunities available. As the nation moves to decarbonize both new and existing buildings, GSHP technology is uniquely positioned as the most efficient and effective infrastructure choice for all-electric space conditioning and water heating. Electric utilities, whether member-owned, public-owned or investor-owned, are embracing this opportunity to build out the country’s electric HVAC infrastructure for the sustainable clean-energy future. Join us to learn ‘everything you ever wanted to know’ about BE!
ADDITIONAL TRAINING OUTSIDE OF TRACKS

Tuesday, December 14
8:00am, 10:00am, 1:00pm, 3:00pm

Hands-on Fusion Training (in cooperation with ISCO)
Requirements registration (some times may not show up if already full)
https://forms.gle/kg74qaiA5hEuXbyv6

Wednesday, December 15
8:00am or 10:00am

Electrofusion Demo (in cooperation with ISCO)
Requirements registration (some times may not show up if already full)
https://forms.gle/kg74qaiA5hEuXbyv6

9:00am – 10:30am

Preview of CGD (Certified GeoExchange Designer)
with Ed Lohrenz of GEOptimize
Requirements registration (may not show up if already full)
https://forms.gle/DWLcc3oLDyffoNZS7

10:15am, 2:00pm, or 3:30pm (held at IGSHPA booth)

Why Drillers Need to Expand Into Geothermal
with Jack DiEnna of Geo Nii
Registration NOT required

11:00am or 2:30pm (held at IGSHPA booth)

How to Sell Geothermal
with Pete Prydybasz of B.J. Terroni Company
Registration not required

Thursday, December 16
10:15am or 1:00pm (held at IGSHPA booth)

Why Drillers Need to Expand Into Geothermal
with Jack DiEnna of Geo Nii
Registration not required

11:00am or 1:30pm (held at IGSHPA booth)
How to Sell Geothermal
with Pete Prydybasz of B.J. Terroni Company

Registration not required

Training Opportunities!
In addition to the conference, there will be opportunities for three IGSHPA courses, leading up to the conference. The courses will be a hybrid approach, where the beginning coursework will be online, followed by the option to complete the course in person in Nashville or online. There will be three courses available:

**CGD** (Certified GeoExchange Designer – commercial applications) currently on-going held weekly {**Tuesday lunchtime for 10 weeks - 12:00 - 1:30 pm ET** (11:00 am - 12:30 pm CT, 9:00 - 10:30 am PT) from October 19 - December 15, 2021} info & registration here

**GGI** (Certified Geothermal Inspector) {**Wednesdays December 1, 8 & 15 from 9am-4:30pm CT**) info here & registration here

**AI** (Accredited Installer – residential/light commercial applications), **deadline to register 11/14 with the first live session on 11/15** info & registration here

See you in Nashville!

ANSI/CSA/IGSHPA C448 Standard Now Available
The ANSI/CSA/IGSHPA C448 Standard for the Design and Installation of Ground Source Heat Pump Systems for Commercial and Residential Buildings is now available for free viewing access at https://community.csagroup.org/docs/DOC-146037. Simply create a free account on CSA Communities to view the latest standard. It may still be downloaded as PDF on the IGSHPA website at https://igshpa.org/standards/ for $100 (IGSHPA member cost) or the hard copy may be purchased at the CSA website for $155 if desired.

Updates to the Residential/Light Commercial Design and Installation Manual

A number of updates have been made to the IGSHPA Residential and Light Commercial Design and Installation Manual. By the end of the week, you will be able to download the PDF for printing so that you can include the updated pages in your manual at https://igshpa.org/manuals/. IGSHPA is reviewing all of our materials, looking for updates, corrections, and improvements. Let us know if you see any additional updates that need to be made.
IGSHPA Virtual Town Halls

IGSHPA 2021 Virtual Town Halls have been well received by members and have brought new members to the organization. We appreciate the efforts of the speakers and the great questions that have been asked. October was our last Town Hall of 2021. If you missed October’s Town Hall you can watch it on our YouTube channel here: [https://youtu.be/MN54ljpjr1k](https://youtu.be/MN54ljpjr1k) We will start back up in January with an exciting Town Hall with speaker Martin Luymes of HRAI (Heating, Refrigeration, and Air Conditioning Institute of Canada) on the Dunsky Report, a new study that highlights the unique advantages of geothermal technology to both building occupants and the electricity grid. Stay tuned for more details!

We will announce 2022 Town Halls at the conference and follow up in the December newsletter. We have great topics all the way through June! Please submit recommendations for topics that you would like to learn more about or an abstract of a topic that you would like to present to [info@igspha.org](mailto:info@igspha.org).
New Benefit for Corporate Members

A new link was added to the top of the IGSHPA website (https://igshpa.org), “Job Board Listings”. As an added benefit to corporate members, job postings may be submitted to the Job Board for viewing on the IGSHPA website. Anyone may access the job board, but only corporate members may post. In this difficult time of finding good employees, we hope that this new benefit will help bring quality candidates to members’ organizations. Please let us know how this new service is working and provide any feedback to make it better.

IGSHPA MEMBERSHIP RENEWALS

November/December 2021 renewals are happening now! IGSHPA is still waving CEU's for those renewing within 2 years of their expiration. Use our Square Site to get your membership and certifications renewed here: igshpa.square.site Please contact us at info@igshpa.org if you have any questions.

More News & Events

December 8th, 2021 @ Noon PST
California Geo Underground: Geothermal As A Utility Service
Scott Musgrave of ORCA Energy, Seattle, will cover how to eliminate up-front GHEX challenges and costs on commercial projects to increase the chances a developer will choose Geo. Free to CalGeo professional and affiliate members, $10 to others.
Details and Registration at this link: https://www.californiageo.org/town-halls/

March 23 & 24, 2022- NY GEO Annual Conference
All paid registrations from the 2020/2021 conference will carry forward to NY-GEO 2022. Go here for more info or email nygeoinfo@gmail.com with any questions.

UPDATE from GeoExchange
Build Back Better Passes U.S. House

IGSHPA's partner, the Geothermal Exchange Organization (GEO), continues to push for inclusion in President Biden's ambitious climate and social spending package known as the Build Back Better Act. On November 19, the U.S. House of Representatives narrowly passed the $1.75 trillion bill. The legislation contains provisions that will, if enacted in their current form, have major impacts on the geothermal heat pump industry. In the current version of the bill:

- Geothermal heat pumps are granted ten year extensions in both residential and commercial installations at 30%.
- Commercial GHP installations are bumped up from 10% to 30%.
- Commercial GHP installations are eligible for direct payments to entities without tax liability, such as non-profits.
- Residential GHP installation tax credits have been made refundable (similar to direct pay for commercial).

The bill now moves to the Senate where additional negotiation is continuing. Senate Majority Leader Chuck Schumer is pushing for final action on the chamber before Christmas. GEO is deeply involved in the ongoing deliberations and discussions on Capitol Hill and continues to press for strong support of the geothermal industry. If you have any questions about GEO's efforts in Washington, please reach out to info@geoexchange.org.
At the February Town Hall meeting, the IGSHPA Board presented a working version of its joint Vision and Mission Statement with GeoExchange. If you have thoughts or comments on this statement, please reach out, we would love to get your input.