Agenda

Presented by John P. Ciovacco

Regional Energy and Climate Initiatives Favoring Heat Pumps
- Buildings' green house gas contribution
- Regional energy and environmental goals, policies and laws
- Building electrification impacts to regulated utilities
  - Electric utilities
  - Natural gas utilities
- Important trends from recent utility rate cases

Introduction to Electric Heat Pumps
- A brief history of heat pumps (not a new technology)
- Major types of heat pumps
  - Air source, ground source and water source
- How a heat pump works
- Operating cost comparisons with conventional systems
- How to calculate annual carbon and site energy savings

Focus on Refrigerants Used in Heat Pumps
- Understanding global warming potential of refrigerants
- What comes around goes around
- Today's commonly used refrigerants
- Next generation refrigerants: pros and cons
- Phase outs and regulations related to refrigerants

Design Principles for Heat Pump Systems
- Importance of hourly energy modeling
- Selecting the best type of heat pump and distribution system
- Impact of building envelope and ventilation upgrades
- Required formation thermal conductivity (FTC) testing
- The magic of simultaneous heating and cooling
- Electrical requirements, rate structures and grid impacts

District Thermal Infrastructure as an Alternative to Natural Gas
- Three (3) conditions favoring a district approach
- Thermal energy sources, sinks, and storage
- Why campuses will lead the way
- Issues of ground loop ownership and regulation
- Ground loop utility models / existing and projected

Pulling It All Together
- Incentives and financing available for heat pump systems
- Training and workforce development opportunities
- Yes – heat pumps <u>are</u> ready!
- No – heat pumps <u>are not</u> ready!

Are Heat Pumps Ready to Replace Fossil Fuels in Buildings?
Live, Interactive Webinar - Friday, October 30, 2020

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Learning Objectives

You'll be able to:

Discuss buildings' greenhouse gas contributions, and review regional energy and environmental goals, policies, and laws.

Identify the three types of heat pumps and how they work.

Compare operating cost with conventional systems and calculate annual carbon and site energy savings.

Identify commonly used refrigerants in heat pumps and their global warming potential.

Describe design considerations for heat pump systems, including the best type of system and building envelope and ventilation upgrades.

Discuss ways heat pumps are and are not completely ready to replace fossil fuels in buildings.

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Identify regional energy and climate initiatives favoring heat pumps

Examine the major types of heat pumps and compare operating costs with conventional systems

Analyze the global warming potential of refrigerants used in heat pumps

Understand how to select the best type of heat pump and distribution system

Learn about district thermal infrastructure as an alternative to natural gas

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Faculty

John P. Ciovacco is the President of Aztech Geothermal, LLC., an engineering driven heat pump design, installation and consulting company based in New York's Capital Region. While running Aztech Geothermal, he often serves as a resource to building owners, developers, construction companies, engineers, architects and investors regarding the latest renewable and energy efficiency technologies, government incentives and financing options. He also chairs the educational sessions at NY-GEO's annual heat pump conference which is widely regarded as the largest and most comprehensive in the nation. He has been a registered party to seven public utility rate cases (i.e., National Grid [Upstate], Central Hudson, O&R, ConEd, National Grid [Long Island], NYSEG/RG&E, and Corning Gas) representing the New York Geothermal Energy Organization (NY-GEO) as a board member. Recently he was appointed to the Department of Public Service's Strategic Advisory Group for Building Electrification to help guide policy and regulations needed to meet energy and climate goals for NYS. He is an IGSHPA Accredited Geothermal Installer, a Building Performance Institute (BPI) Certified Contractor, and a Certified Green Professional with the NAHB. He received his B.S. degree in Mechanical Engineering from Union College.

Additional Learning

Construction Cost Estimating and Value Engineering
- Wed., October 14, 2020 | 8:30 am - 3:20 pm CDT

Structural Steel Design Concepts
- Thurs., October 15, 2020 | 8:00 am - 1:30 pm CDT

Commercial Energy Conservation Code Essentials for Architects
- Fri., October 16, 2020 | 11:00 am - 2:15 pm CDT

Soils in Construction
- Tues., October 20, 2020 | 11:00 am - 3:00 pm CDT
- Wed., October 21, 2020 | 11:00 am - 3:00 pm CDT

Designing for Accessibility under ADA Standards and IBC
- Wed., October 21, 2020 | 8:30 am - 4:30 pm CDT

Small Wind Energy Systems
- Thurs., October 22, 2020 | 11:00 am - 1:00 pm CDT
- Fri., October 23, 2020 | 11:00 am - 1:00 pm CDT

2018 International Residential Code: Non-Structural Design
- Fri., October 23, 2020 | 11:00 am – 3:30 pm CDT

How to Navigate the New Federal Navigable Waters Protection Rule
- Fri., October 23, 2020 | 12:00 - 2:00 pm CDT

National Electrical Code 2020
- Fri., October 23, 2020 | 8:30 am - 5:00 pm CDT

International Building Code 2018
- Mon., October 26, 2020 | 9:00 am - 5:30 pm CDT

Special Inspections under the 2018 International Building Code Chapter 17
- Thurs., October 29, 2020 | 9:30 am - 4:20 pm CDT

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This course is approved by the American Planner Association AICP for CM | 6.5 for Certified Planners

The International Code Council has approved this event for .65 CEUs in the specialty area of Energy (Preferred Provider No. 1232).

Completion certificates will be awarded to participants who complete this event and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

Registration

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How to Register

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