

10:30 AM - 12:00 PM

Seminar 22 (Intermediate)

Investing in Decarbonization! Getting in on the 'Radiant Floor'

Room: Studio D

Sponsor: 6.5 Radiant Heating and Cooling, Young Engineers in ASHRAE

Chair: Cailin MacPherson, MacPherson Engineering, SK, Canada

Radiant floor heating and cooling systems can play a critical role in the effort to decarbonize construction, while ensuring comfortable, healthy indoor environments. Join this session to explore the key design considerations, strategies, and benefits of these systems, along with an honest discussion of the challenges that lead architects and builders to remove them. By combining theoretical energy simulations with lessons learned from real-life case studies of low carbon operations, we'll demonstrate how radiant systems are poised to play an important role in the future of decarbonization.

1. Radiant Floors: Decarbonization Using Building Simulation

Brett Banadyga, P.Eng., LEED Green Associate, Associate, The AME Consulting Group Ltd., Calgary, AB, Canada

2. De-Value Engineering of Radiant Floors

Ryan W Johnson, P.Eng., Associate, MacPherson Engineering, SK, Canada

3. The Learning Curve of Operating Radiant Floor Buildings

Christopher Sawicki, CEFP, Member, University of Regina, Regina, SK, Canada

10:30 AM - 12:00 PM

Seminar 23 (Intermediate)

Show Me the Money...to Successfully Decarbonize the Built Environment

Room: Studio E

Chair: Nora Wang Esram, American Council for an Energy-Efficient Economy, Washington, DC

Project financing can always get creative, and it has been doing that for a very long time to reduce energy consumption. This session covers existing building models and financing arrangements to be able to scale comprehensive retrofit projects toward building electrification that can take advantage of programs and incentives. In addition, two case studies that revolve around the different financing models to achieve the greenhouse gas emissions targeted. Another financial strategy, through on-bill financing is evaluated by modelling for a representative of 50,000 dwellings to find how to apply this process across affluent and disadvantaged communities.

1. Reach Decarbonization Projects with Long Payback Periods

Nora Wang Esram, American Council for an Energy-Efficient Economy, Washington, DC

2. Equitable Decarbonization: Leveraging Utility Bills for Residential Building Upgrades

Katelyn Stenger¹, Thomas Bowen², Janet Reyna¹, Lixi Liu¹, Anthony Fontanini¹, Noah Sandoval¹ and Christina Simeone², (1)National Renewable Energy Laboratory, Golden, CO, (2)National Renewable Energy Laboratory, Washington, DC

3. Supercharging Decarbonization through Innovative Financing Structures

Saad Rashid, P.Eng., Mott MacDonald, Toronto, ON, Canada