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### The Role of Ground-Source Heat Pumps in Achieving New Jersey's 80% by 2050 Goal: Addressing Emissions from the Buildings Sector

Sheryl Tembe  
NJDEP

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**MONTCLAIR STATE**  
UNIVERSITY

The Doctoral Program in Environmental Management and  
MSU Sustainability Seminar Series Present:

# The Role of Ground-Source Heat Pumps in Achieving New Jersey's 80% by 2050 Goal

## Addressing Emissions from the Buildings Sector

WHEN: October 23, 4:00 pm WHERE: CELS 120 lecture hall

**Sheryl Tembe, Ph.D.**

**NJDEP Bureau of Energy & Sustainability**



Dr. Sheryl Tembe's drive to improve building performance is integral to empowering communities by solving cross-cutting challenges. Sheryl holds a B.S. in Physics, B.A. in Geology, and a Ph.D. in Geosciences. Among her most valuable experiences was working on the San Andreas Fault Observatory at Depth scientific drilling project with the USGS Menlo Park, which ingrained the link between public safety and hazardous events. Her time at Karlsruhe Institute of Technology working on wellbore stability problems for carbon sequestration and enhanced geothermal systems brought environmental issues to the forefront to shape her next career step. Sheryl's activities at the NJDEP focus on New Jersey's clean energy future through the strategic alignment of the NJDEP mission, performance verification of technologies and assessment of market conditions. Sheryl contributes to several working groups, including the RGGI Funding Rule and the 2019 Energy Master Plan.

Emissions reduction and renewable energy sources are vital to health of New Jersey. Governor Murphy's executive orders and recent legislation target actions to improve our environment and create a sustainable future. The buildings sector is recognized as the second largest source of greenhouse gas emissions in New Jersey behind transportation, with the majority of emissions due to fossil fuel-based heating and cooling. To reach state's goal of 80% emissions reduction by 2050, reduction strategies for the built environment must implement technologies that displace fossil fuels and maximize clean and low-carbon electricity. Heat pumps are a key technology because of their high efficiency and capability to integrate with the increasing electrification of systems and end uses. Ground-source heat pumps notably deliver the highest efficiencies and therefore the deepest emissions reductions, even in extreme weather conditions. This presentation will discuss the current market conditions, challenges to adoption, and the NJDEP efforts to support the deployment of ground-source heat pumps.

For more information contact Dr. Pankaj Lal at 973-655-3137