

Phase Innovations Participates in Energy & Greenhouse Gas Impact Evaluation of Ventilation System



Phase Innovations, LLC.

Phase Innovations, LLC (Phase Innovations) has developed a room ventilation product sized to fit into a partially open window much like a window air conditioner. The ventilation product called PureAtmos® is used to manage fresh air entering the home year round. When used during the heating season, the product recovers heat from the exhaust air, warming the incoming air. When used during the cooling season, heat is removed from the incoming air. This provides fresh air inside the room with minimal energy loss.

Challenge

Phase Innovations requested the New York State Pollution Prevention Institute (NYSP21) to evaluate the estimated energy savings and greenhouse gas (GHG) impact of their PureAtmos® Ventilation System with heat recovery as compared to a whole house sized ventilation system also with heat recovery.¹

Solution

For this analysis, NYSP21 used Phase Innovations' product specifications to calculate the energy and GHG impact of the PureAtmos® product as compared to a whole house ventilation system with an energy recovery ventilator (ERV). NYSP21 calculated the energy consumption of the baseline house ventilation system including the electrical energy to operate the system and natural gas combustion to make up the heat lost through ventilation. The standard used for the analysis was the ANSI/ASHRAE Standard 62.2-2013.

Results

Based on information provided by Phase Innovations, NYSP21 estimates the annual energy use and GHG emissions impact per unit are as follows, as compared to a whole house energy recover ventilation system operating in a newly constructed, 2400 ft² single family residence with four bedrooms.

Challenge

- Phase Innovations requested NYSP21's assistance to conduct an energy and GHG impact of their PureAtmos® Ventilation System with heat recovery

Solution

- NYSP21 evaluated the estimated energy use and GHG impact for Phase Innovations' product as compared to a whole house ventilation system with an energy recovery ventilator

Results

- Phase Innovations' PureAtmos® room ventilation system has the potential to reduce electrical energy and fossil fuel consumption per household by an estimated:
 - 669.1 kWh/unit annually (electrical energy)
 - 324 kWh/unit annually (natural gas energy)
 - Total energy displaced: 992.6 kWh/unit annually

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 - 324 kWh/unit annually (natural gas energy)
 - Total energy displaced: 992.6 kWh/unit annually
- Phase Innovations' PureAtmos® room ventilation system has the potential to reduce annual GHG emissions by an estimated 93.3 kg CO₂ / unit annually

Note:

The estimated energy and GHG emission impact calculations noted above have been calculated by NYSP2I at RIT based on information and claims provided by NYSP2I by Phase Innovations about the PureAtmos® product as compared to a whole house energy recovery ventilation system in a 2400 ft² single family five bedroom house with ventilation rates per ANSI/ASHRAE Standard 62.2.-2013.

Phase Innovations, LLC

Nathan DeMario
CTO
125 Tech Park Drive
Rochester, NY 14623
716-597-1126
ncd4192@rit.edu

Partners

RIT



Cornell CALS
College of Agriculture and Life Sciences



For more information please contact us:

585-475-2512
www.rit.edu/affiliate/nysp2i/
nysp2i@rit.edu

111 Lomb Memorial Drive, Bldg 78
Rochester, NY 14623

Funding provided by the Environmental Protection Fund as administered by the NYS Department of Environmental Conservation. ©2019 Rochester Institute of Technology. Any opinions, findings, conclusions, or recommendations expressed are those of Rochester Institute of Technology and its NYS Pollution Prevention Institute and do not necessarily reflect the views of New York State.

¹United States Census Bureau, Characteristics of New Housing, Completed through 2017 - <https://www.census.gov/construction/chars/completed.html>