

LifeWall Energy Systems Participates in Energy & Greenhouse Gas Impact Evaluation



LifeWall Energy Systems, LLC

LifeWall Energy Systems, LLC (LifeWall) has developed a renewable energy system that integrates a home's energy components (i.e., solar panels, batteries, hot water tank, heat pump, etc.) that are typically purchased and installed separately, and includes a software interface for system monitoring/control. LifeWall's renewable energy system uses solar PV and batteries to offset the consumption of grid power. LifeWall claims that their renewable energy system provides net zero annual energy consumption for the homeowner, and suggests the average homeowner's annual energy consumption and costs can be reduced by up to 100%.

Challenge

LifeWall requested the New York State Pollution Prevention Institute (NYSP2I) to evaluate the estimated energy savings and greenhouse gas (GHG) impact of their renewable energy system, as compared to new construction, standard home energy systems.

Solution

NYSP2I evaluated the estimated energy use and GHG impact for LifeWall's renewable energy system vs. systems found in new-construction multi-family units such as apartments or townhomes. The baseline used for the analysis was U.S. average 2-4 unit apartment buildings constructed with energy conservation in mind per the 2012 International Energy Conservation Code (IECC 2012).

Results

Operating at the size and efficiency provided by LifeWall, the energy and associated GHG impact were determined based on offsetting 100% of the annual grid electric energy and natural gas use for new home construction. NYSP2I estimates the annual energy use and GHG emissions impact per unit as follows:

Challenge

- LifeWall Energy Systems requested NYSP2I's assistance to conduct an energy and GHG impact comparison between their renewable energy system and new construction, standard home energy systems

Solution

- NYSP2I evaluated the estimated energy use and GHG impact for LifeWall's renewable energy system vs. systems found in new-construction multi-family units

Results

- LifeWall's renewable energy system has the potential to reduce annual GHG emissions by an estimated 2.47 MT CO₂ per unit annually; and displace annual fossil fuel energy use per unit:
 - 2,700 kWh/unit annually (electric energy)
 - 10,150 kWh/unit annually (natural gas energy)

- Operating as a “net-zero” energy system, LifeWall’s renewable energy system has the potential to yield a per household clean energy impact, displacing annual fossil fuel based energy use by: 12,850 kWh/unit annually
 - 2,700 kWh/unit annually (electric energy)
 - 10,150 kWh/unit annually (natural gas energy)
- Consistent with this energy savings, LifeWall’s renewable energy system has the potential to reduce annual GHG emissions by an estimated 2.47 MT CO2 per 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 to NYSP2I by LifeWall as compared to an average 2-4 unit apartment building unit built to IECC 2012 standards. There is potential for additional emissions avoidance when considering the source energy consumption as a percentage of electricity transferred to and from the NYS electric grid.

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