Conserving Energy (and Saving Money!) this Winter Season

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The chilly weather of winter is here – and so is the higher energy consumption related to heating. Residential heating generates 324 million metric tons of carbon dioxide emissions annually in the United States.[1] The Environmental Protection Agency (EPA) estimates that home heating accounts for ~40% of residential energy consumption at a national cost of $73 billion annually.[1] New Jersey homeowners utilize proportionally more energy for heating (49%), which may be related to the mid-Atlantic climate and home sizes being approximately 20% larger than the national average.[2]

Keeping kids and family members thermally comfortable at home is important. However, lowering the thermostat setting by even one degree Fahrenheit during this winter season can save money while also reducing energy usage and decreasing carbon emissions. Winterization techniques and replacement of inefficient heating systems and older windows can further improve energy efficiency.

Thermostat Setting

One of the simplest ways to save energy and household costs is adjusting the thermostat. The Department of Energy (DOE) suggests residential thermostats be set at 68°F when inhabitants are home and awake.[3] Special circumstances – like the presence of a newborn baby – may prompt a warmer temperature setting in the home. Wherever your thermostat is set, consider that even a 1°F lower adjustment will achieve environmental benefits while not causing a perceptible difference in comfort. A study commissioned by the DOE calculated that a national thermostat adjustment of 1°F in all residential and commercial settings would produce a 0.43% reduction in US carbon emissions. This is the equivalent carbon savings of taking 5 million vehicles off the road![4]

A programmable thermostat can automatically reduce the temperature setting by 7-10°F (to 58-61°F) during the hours when you are away from home.[3] It's a common misconception that furnaces use excessive energy to rewarm a cooler home. Actually, by lowering residential temperatures while you are away or asleep, the home will lose less energy since the temperature gradient between the outdoors and indoors is minimized.

Weatherizing for Winter

Weatherizing your home allows already warmed air to remain indoors and keeps cold, outdoor air from entering the space. Air sealing includes caulking cracks, caulking around window and door frames, and weatherstripping doors and windows. An inflatable chimney balloon can minimize the heat loss from the fireplace flue. Adding insulation to older homes can also be an effective strategy for improving energy efficiency. The Home Energy Saver™ tool developed by the DOE can provide specific guidance based on your zip code and home's age. Both professional and do-it-yourself home energy assessments are likely to reduce costs and importantly, carbon emissions related to residential space heating.

Special Considerations for Low-Income Families

Low-income families may be disproportionately affected by energy inefficiency due to residence in older or poorly maintained homes. They may also have insecurity regarding winter utility costs. The national Low Income Home Energy Assistance Program (LIHEAP) financially assists qualified families with heating (and cooling) bills. The New Jersey LIHEAP website provides links to eligibility information, application completion, and application submission to the appropriate local agency. A Winter Termination Program separately protects qualifying participants from having their heat disconnected in

winter. This benefit should be requested directly from the utility provider. New Jersey's Weatherization Assistance Program can additionally assist LIHEAP beneficiaries with improving the energy efficiency of their home, including replacement of older furnaces.

References:

[1] US EPA. "Renewable Space Heating." Last updated: 14 July 2021. Accessed 22 October 2021. https://www.epa.gov/rhc/renewable-space-heating#Footnotes

[2] US Energy Information Administration. "Household Energy Use in New Jersey." 2009. Accessed 22 October 2021. https://www.eia.gov/consumption/residential/reports/2009/state_briefs/pdf/NJ.pdf

[3] US DOE, Office of Energy Efficiency & Renewable Energy. "Thermostats." 2021. Accessed 22 October 2021. https://www.energy.gov/energysaver/thermostats

[4] Blasing TJ and Schroeder D. "Energy, Carbon-Emission and Financial Savings from Thermostat Control." May 2013. https://info.ornl.gov›sites›files›Pub41328