Georgia Tech School of Public Policy measures Dunwoody climate impact

The expression "Butterfly Effect" comes from the notion that the fluttering of a butterfly's wing may set off unnoticed currents of air that can ultimately build up, through a chain reaction, into a large storm. What might appear to be an essentially meaningless action can produce a large cumulative effect over a period of time or distance.

How would this work in reality? What would be a concrete example of the butterfly effect, inside your own home in Dunwoody, say, in your living room? A new study from GA Tech sheds some light on this.

Consider if you replaced a 60 Watt incandescent light bulb in your lamp with a new LED replacement purchased at the supermarket or hardware store. What impact could that possibly have? You'd be surprised.

With just one 60 Watt equivalent LED bulb, which costs around \$10, the energy efficiency savings alone would pay for that bulb in seven months. It uses less electricity, and by generating less heat, it requires your central air conditioner to work less, thus using less electricity for cooling.

That new bulb will last at least nine years. What is the additional impact of this one bulb?

Once the bulb has paid for itself, it is essentially free. Over nine years you avoid paying for the electricity of the original incandescent bulb, saving you \$180. In addition to the direct savings, what about the impact that your one bulb has on your neighbors, the City of Dunwoody, the County, etc?

Based on calculations in a new GA Tech study, one LED

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bulb will also yield a reduction in regulated toxic pollution (excluding mercury) of eight pounds, a reduction in CO2 emissions of 343 pounds, and a \$6 reduction in healthcare costs associated with the mercury and particulate pollution that comes from burning coal to make the electricity. And that isn't putting any value on the millions of gallons of Georgia surface water your power company uses to make steam for making the power in the first place.

out how to afford both.

These are just some of the room had that much of an imlatest results of research performed by the Georgia Institute of Technology Climate and Energy Policy Lab.

That's just one bulb. How many bulbs are in your house? Let's assume ten. How many households in Dunwoody? The answer is nearly 20,000.

If each household in Dunwoody buys ten LED bulbs, each gets back their money in about seven months from the savings, with a present value of \$13.8 million. During the life of all those bulbs, it would result in electrical savings of \$36 million throughout Dunwoody, reduce community healthcare costs by \$1.2 million, result in a reduction in regulated toxic pollution (excluding mercury) of 1.6 million pounds, and avoid 68 million pounds of CO2.

Who would have thought some light bulbs in your living

pact? That's just one example of the "Butterfly Effect."

For more information regarding the Georgia Tech study, contact Xiaojing Sun or Matt Cox at matt.cox@gatech.edu.



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