

# **DO RESIDENTIAL ENERGY AUDITS CONTRIBUTE TO REDUCED ENERGY CONSUMPTION?**

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The purpose of this paper is to analyze the effect of residential energy audits on residential energy consumption. Two fundamental questions are addressed in the analysis:

- \* Do residential households reduce their energy consumption as a result of the audit?
- \* What is the impact on energy consumption of each of the various recommendations made to the households as a result of the audit?

Two separate models are used to address the two questions listed above. They will be referred to as the "net impact model" and the "recommendations model." Both of the models use the methodology of multiple regression analysis. At the end, the paper also proposes an analytical approach that could be used in a future analysis to strengthen and extend the results presented in this paper.

## **THE NET IMPACT MODEL**

The net impact model<sup>2</sup> compares the pre-audit and post-audit energy consumption of a participant in the residential energy audit program in order to measure the impact of the audit on energy consumption. This change in a participant's energy consumption is not a true measure of the effect of the audit since it is possible that non-participants had also attained possible reductions over the same period on their own. The possible reductions attained by nonparticipants are viewed as trend changes in energy consumption. Hence, the model compares a participant's pre-audit/post-audit energy consumption change to a non-participant's energy consumption change over the same time period.

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<sup>1</sup> The opinions expressed by the author are his alone, and do not necessarily reflect the views of the District of Columbia Public Service Commission.

<sup>2</sup> This is an extension of the model used by the Potomac Electric Power Company (Pepco) in its report entitled "Energy Avoidance Analysis: District of Columbia" dated December 1986.