Proponents argue that energy efficiency offers large opportunities to reduce environmental externalities at low cost. We use a randomized experiment and a structural model to evaluate this argument at two home energy retrofit programs in Wisconsin, which subsidized energy efficiency investments such as new insulation and heating systems. Two key facts drive the welfare analysis. First, the programs provided inflated energy savings estimates to households. Second, the programs’ subsidies were not closely related to environmental externality reductions. In our structural model, these facts imply that programs reduced total surplus. However, a counterfactual program that provides unbiased energy savings predictions and sets subsidies equal to externality reductions would increase total surplus.

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