

# **Are Implementers and Evaluators Missing the Forest for the Trees?**

## *Winning the Battle and Losing the War from Embedded Energy Use and Location*

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### **ABSTRACT**

In early energy conservation and energy efficiency efforts, implementers and evaluators focused on delivering and analyzing the effects of individual measures. More recently implementers and evaluators have come to understand that measures are embedded in systems and that by taking into account the interactions among measures, through a whole systems or whole buildings approach, even greater energy savings are possible. Even more recently, regional and national market transformation organizations have broadened their scope by undertaking portfolio analysis to optimize the potential savings.

In this paper, we argue that while it is important to continue to evaluate programs as we have in the past, we also need to expand our focus to a meta-systems or societal level. Solutions leading to energy efficiency are embedded in a context. The goal of this paper is to discuss issues that arise when taking into account the larger societal context and to discuss the need for evaluators to broaden the scope of their thinking and to bring to bear their skills to influence local, regional, national, and international policies to reduce societal energy use.

Our current efficiency efforts may result in more efficient new residential and commercial buildings that reduce the rate of growth in energy consumption. Future efforts may result in net-zero energy buildings. Even with these savings, the geographic placement of such buildings and the nature of designs may result in huge energy expenditures to both construct infrastructure and transport the workforce that uses the building to and from the building. The energy burden imposed by locational decisions may far exceed the energy savings from making a building more efficient. Thus, without analysis of the energy implications of siting and infrastructure development and action to implement more energy efficient policies, we may create a landscape dotted with efficient buildings whose use cause increased use of energy.

The authors provide concrete analytic examples from the commercial building sector showing how the energy use from locational and other policy decisions associated with a commercial building can outweigh the energy to be saved from making commercial buildings more efficient. The authors will briefly review some of the existing work that has been done. They also discuss who else might be interested in these issues.