

Session 5A

TOP DOWN, BOTTOM UP

Moderator: Maureen McNamara, U.S. EPA ENERGY STAR Program

PAPERS:

The View from the Top: Application of Macro-Economic Models to Measure Energy-Efficiency Program Savings in California

Hossein Haeri, Ph.D., The Cadmus Group, Portland, Oregon

Jim Stewart, Ph.D., The Cadmus Group, Portland, Oregon

Bottom-up Evaluation of Municipal Energy and Climate Policy—More Than an Alternative to Top Down Approaches?

Jan Kaselofsky, Wuppertal Institute for Climate, Environment and Energy, Wuppertal, Germany

Steven März, Wuppertal Institute for Climate, Environment and Energy, Wuppertal, Germany

Ralf Schüle, Wuppertal Institute for Climate, Environment and Energy, Wuppertal, Germany

SESSION SUMMARY:

Energy efficiency is a cost effective resource for lowering energy bills, stabilizing energy prices, enhancing grid reliability, and reducing air pollutants including greenhouse gas emissions. In fact the burning of coal, natural gas and oil for electricity and heat is the largest single source of greenhouse gas emissions worldwide¹. Energy efficiency's importance as a resource for addressing a host of system and environmental needs underscores the need for effective evaluation.

When it comes to measuring program and policy effectiveness for reducing energy consumption and related greenhouse gas emissions is it more effective to account for savings from a bottoms-up, measure, end-use, or program basis, or should the view be from the top down, accounting for savings based on impacts to aggregate consumption and macroeconomic data? What are the shortcomings and relevant advantages of each approach?

The first paper looks at this issue from the top down, taking a decade-long look at the electricity efficiency programs of the California Investor Owned Utilities using panel data regression analysis of electricity use (1990-2010) to estimate program savings. Motivated by perceived shortcomings in the bottom up approach traditionally used in the state, the California Public Utilities decided to investigate the viability of using alternative top-down approaches. The paper describes the scope of the project, discusses the bottom-up approach, reviews literature on top-down measurement, and reports preliminary findings from the analysis.

Tackling the issue from the perspective of a German municipality (Hamburg) looking to evaluate the effectiveness of its Climate Action Plan, the second paper advocates the need to go beyond monitoring of greenhouse gas inventories (a top-down approach) to include bottom-up measurement. The paper discusses efforts to develop an adequate instrument for bottom-up evaluation of the city's Climate Action Plan and discusses shortcomings in the typical practice of monitoring greenhouse gas inventories to assess performance of local actions.

¹ <http://www.epa.gov/climatechange/ghgemissions/global.html>