

Abstract

The EMV Forum requested the preparation of a scoping paper with the purpose of improving Forum members' understanding of how net energy savings is defined, how stakeholders use net savings, and the opportunities and barriers to increasing the consistency of and quality in net savings definitions and measurement in the region. Three issues motivated the request for the study: 1) the prevailing lack of consistency in definitions and measurement in the Northeast; 2) expanded use of energy savings estimates by diverse audiences, particularly with applications to climate change policies; and 3) increasing challenges of determining program "attribution"—that is, demonstrating that an energy efficiency program in a given year caused savings to occur in the face of extensive prior program activity and the existence of additional influences promoting efficient actions. The paper explores these topics through a literature review of over 100 sources, interviews with 12 experts on energy efficiency programs and air regulation, and feedback from Forum members. The paper captures the perspectives of energy and air regulators, program administrators, and energy efficiency and other social science evaluators.

The paper finds that the energy efficiency community persists in using different definitions of net savings, although the most common definitions emphasize the concepts of free ridership and spillover. Other potential concepts—rebound, leakage, realization rates—are sometimes considered as part of net savings and other times as adjusted gross savings. The paper also highlights the arguments for and against the measurement of net savings. Arguments for net savings focusing on determining actual program impacts and insuring that ratepayer and taxpayer funds are spent responsibly; arguments against measuring net savings highlight challenges with measurement methods and the focus on free ridership at the expense of other program impacts. The paper discusses the key advantages and disadvantages of current net savings methods, addressing issues such as validity (especially construct validity), reliability, and bias as well as the psychological and behavioral processes that affect how people respond to questions designed to measure free ridership and spillover. The scoping paper examines the ways in which approaches to net savings do and do not meet current and evolving policy needs, with the latter focused especially on the needs of air regulators who may rely on adjusted gross instead of net savings. Finally, the paper examines the advantages and disadvantages of pursuing a consistent regional approach to net savings and the potential challenges of implementing consistency.

The paper concludes that, without a policy driver, Forum members have no motivation to increase consistency in net savings definition or methodologies. Furthermore, the air regulation and energy efficiency communities do not share a common language or understanding of what might be needed to translate energy savings into emissions reductions. The paper offers numerous recommendations related to adopting consistent definitions of adjusted gross savings, net savings, and attribution, advocating for higher-quality data for use in methods to estimate net savings, moving toward consistency in approaches to net savings, and identifying ways of translating energy savings into emissions reductions through methods that are mutually acceptable to the energy efficiency and the air regulation communities.