

**Evaluation Area:** Process

**Program and Policy Approaches:** Upstream Lighting Program Measurement and Evaluation

**Focus:** Methods

### **Plugging the Holes in Leakage: Methods for Calculating the Leakage into Upstream Residential Lighting Programs**

As savings from upstream lighting programs diminish with the increasingly-efficient market baseline, program administrators are becoming increasingly concerned with preserving remaining savings. One opportunity to preserve savings is to limit the leakage out of program savings to customers of other program administrators, and to account for leakage “in” of bulbs from other upstream lighting program service areas. This paper draws on results of recently completed upstream lighting program evaluations to calculate a leakage in rate using two standard industry methods to estimate leakage out. One methodology relies on customer intercept interviews both within the utility territory and in bordering utility jurisdictions also containing upstream lighting programs. The second methodology relies on geographic proximity analysis of program-participating stores as well as stores associated with upstream programs within other jurisdictions. We then discuss the limits and advantages of both methods in developing “total leakage” estimates, which incorporate both leakage out and leakage in. The paper will present maps, charts, and graphs highlighting key elements of these methodologies.

The authors will also lay out the policy debate surrounding leakage and will categorize positions of several jurisdictions across the U.S. based on a review of secondary literature. Leakage in is not a globally accepted phenomena, and in many states, no program receives credit for bulbs sold to out-of-territory customers, even if those customers live in a jurisdiction with an upstream lighting program of its own. TRMs across the country include myriad methods to estimate leakage out, but describe no clear criteria as to when measuring leakage in is also appropriate. Evaluators estimating leakage into a particular program administrator’s service area are therefore faced with several challenges including defining an acceptable methodology for all stakeholders involved and coordinating data collection in territories from which leakage into the evaluated program territory occurs.

Lastly, the paper will discuss the challenges associated with each method, and present a sensitivity analysis of key assumptions. Evaluation results based on our completed research varied by methodology, as did the cost to execute the necessary research. This paper will arm program evaluators with new methods to approach leakage calculations, and help quantify the costs and benefits of calculating leakage in rates.