ENERGYSAVVY

159 S Jackson St. #420
Seattle, WA 98104

info@energysavvy.com
877 217 2685

energysavvy.com

Savings Measurement Software: Principles for Utility DSM Programs

In order to meet utility DSM needs, savings measurement software tools need to show that their estimates of savings are appropriate to guide the operation and aid in overseeing such programs*. A clear articulation of what is required of these tools is a necessary step to guide the way in which tools are verified and selected.

To be useful for utility DSM, savings measurement software must be:

1. **Accurate, and clear about precision.** Savings measurement software must insure accuracy while delivering the best, clearest answers that are supported by the data. Maximizing the precision of results must not come at the cost of either false precision or failing to identify and address reasonable sources of potential bias. In each of these regards, as in many others, savings measurement tools should meet the same standards as the best practices in energy efficiency evaluation.

2. **Reliable**. Savings measurement software should produce results consistently and robustly. That means that the same value, measured on different days or in different contexts, should be the same. Reasonable testing should confirm that multiple measurements of the same value at different times do not differ any more than the reported precision and random chance would allow for a wide range of applicable conditions.

3. **Transparent.** The methodology, operation, and verification of savings measurement software must be understandable to stakeholders. That means that stakeholders should get a reasonable answer to the question of "how did you come up with this number?" and “why should we trust the results?” This answer should include a detailed explanation of the savings measurement software’s methodology, results, and a description of the scrutiny or verification process that both methodology and results underwent.

4. **Standards-compliant**. Wherever possible, relevant industry standards should be used in areas like data interchange (e.g. BEDES and/or HPXML), savings methodology (e.g. ASHRAE 14-2002 or BPI-2400-S-2012), and reporting of results (e.g. NEEP EM&V Methods Standardized Reporting Forms).

5. **Built upon evaluation, measurement and verification (EM&V) best practices**. In order to effectively support and complement a third-party evaluation, savings measurement software methodology must build on top of existing best practices in energy efficiency program evaluation. Savings measurement software should refer to standards or best practices from energy efficiency program evaluation to establish what are acceptable practices, though practices may need to be revisited and adapted to the context of software tools and ever-increasing data volumes.

6. **Appropriate to the program being measured**. Different programs have different needs, depending upon the regulatory framework (such as rules about how baselines should be measured or what savings can be claimed), the nature of the measures, the scale of the program, the available data, and the approach to measuring, attributing, and claiming savings. Savings measurement software needs to be adapted to work for the specific needs of the program in question.

7. **Ensures security and privacy**. Savings measurement software necessarily relies upon information about homes and businesses, including usage data. As such, savings measurement software tools must ensure that they protect that information and the privacy of utility customers appropriately.

* Savings measurement software is complementary to, and supportive of, independent third-party evaluation of DSM savings.