

# How Many Evaluators Does It Take...: A Look at Measure Assumption Inconsistencies Across TRMs

*Logan Jacobson, E-Source*

Compiling a technical reference manual—and then building programs around that TRM—is often like a puzzle. Putting the pieces together to make a document on which program administrators can base their programs can be time-consuming and tricky, but fulfilling when it is completed. However, until very recently there was a missing piece to the puzzle—looking across TRMs to see which measures may be missing and which values may be inconsistent.

By analyzing data from our proprietary database, sourced from compiling and extracting data from an unprecedented number of TRMs, we have access to an astounding amount of measure-level assumptions and values. Our careful investigation of 32 TRMs across the U.S. and Canada shows that there are more differences between TRMs, in terms of technology coverage, than there are similarities. We can portray which measures are the most common, and which jurisdictions may be missing those popular measures from their TRMs. For these common measures, we can dissect the data across a multitude of factors, including by measure, jurisdiction, TRM version, and technology category.

This is helpful for program planning teams, enabling them to find new measures for their DSM portfolios. Energy efficiency program stakeholders will find that, by looking outside of their own jurisdictions at what technologies are being documented for savings estimation methods, there is no shortage of potentially applicable technologies. Our database characterizes a total of 433 distinct technology types.

Once those missing measures are identified, we can look across the jurisdictions to see the range of savings associated with that missing measure. Our research reveals a wide variation in values. For example, faucet aerators are one of the most common measures across TRMs because they are not climate-dependent. When we look at the range of effective useful life values, only a few TRMs have those values, and the range is from 5 years to 10 years, with an average of 8.8 years. This inconsistency was surprising because we expected the EUL assumption for faucet aerators to be well established and agreed upon.

Prior to our research, there was no easy way to shed light on these inconsistencies. This ground-breaking data has never before been available all in one place. These discoveries are relevant to the IEPEC audience because of the many ways TRMs are used by industry experts, including:

- **Evaluators** determine the portfolio and program savings.
- **TRM developers** seek more visibility into what other TRMs contain
- **Program planners** help find new measures
- **Implementers** benchmark the savings for existing programs or determine savings for custom programs
- **Business development professionals** more accurately respond to RFPs

Utilities and program service providers will also gain useful insights for benchmarking their own measure mix compared with peers.

For the poster, we would have charts and graphs illustrating measure coverage across TRM jurisdictions (the missing piece), plus the measure breakdown for a single measure by:

- range (Min, max, mean) of EUL
- range of incremental cost
- # of TRMs with that measure

We will also be able to demonstrate, on screen, many ways to sort the data or drill down and filter on relevant attributes on a real-time basis.

ESTABLISHED

A **faucet aerator\*** reduces hot water consumption and water heater load when added to a kitchen or bathroom.

**How it shines:**  
It appears in nearly all TRMs

**Area for improvement:**  
Measure life and energy-savings estimates are inconsistent

\* Those rated at 1.5 gallons per minute

A **smart thermostat**, like the Nest, empowers users to control their HVAC settings remotely and set schedules using online interfaces.

**How it shines:**  
Because the technology is gaining in popularity among customers, many TRMs include it

**Area for improvement:**  
Energy-savings estimates are inconsistent beyond climate differences

An **ozone laundry system** uses standard commercial-scale washing equipment with a retrofit ozone generator to clean clothes with less hot water.

**How it shines:**  
Measure lives and energy savings are consistent across TRMs

**Area for improvement:**  
It only appears in three TRMs, but because its assumptions aren't climate-specific, they are applicable to all jurisdictions

EMERGING

E Source

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Logan Jacobson  
Analyst, E Source

IEPEC 2017

**E Source Measure Insights** enables evaluators to benchmark their measure assumptions against those in other technical reference manuals (TRMs). We studied the measure assumptions for three measures that span the spectrum of emerging to established technology and found that each one had room for improvement in terms of adoption and consistency in assumptions.

For more information about  
**Measure Insights**,  
visit

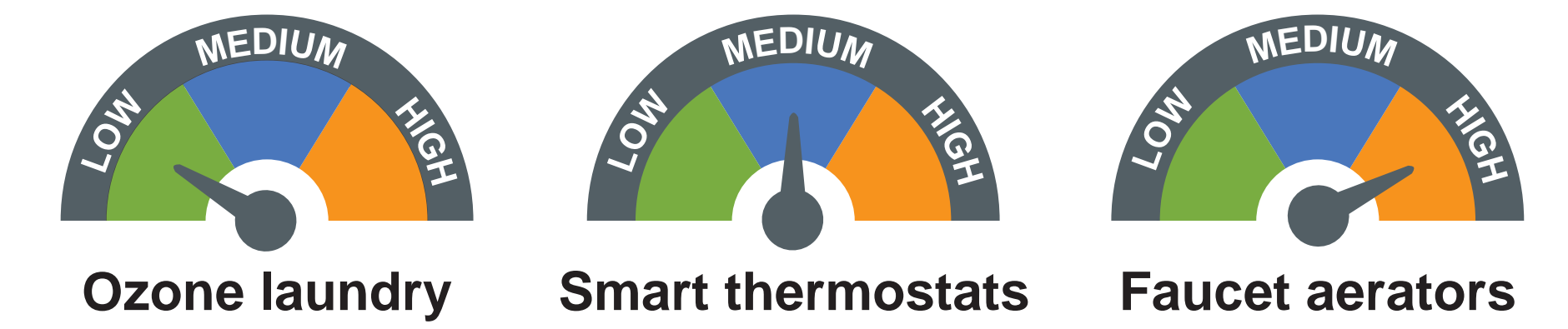
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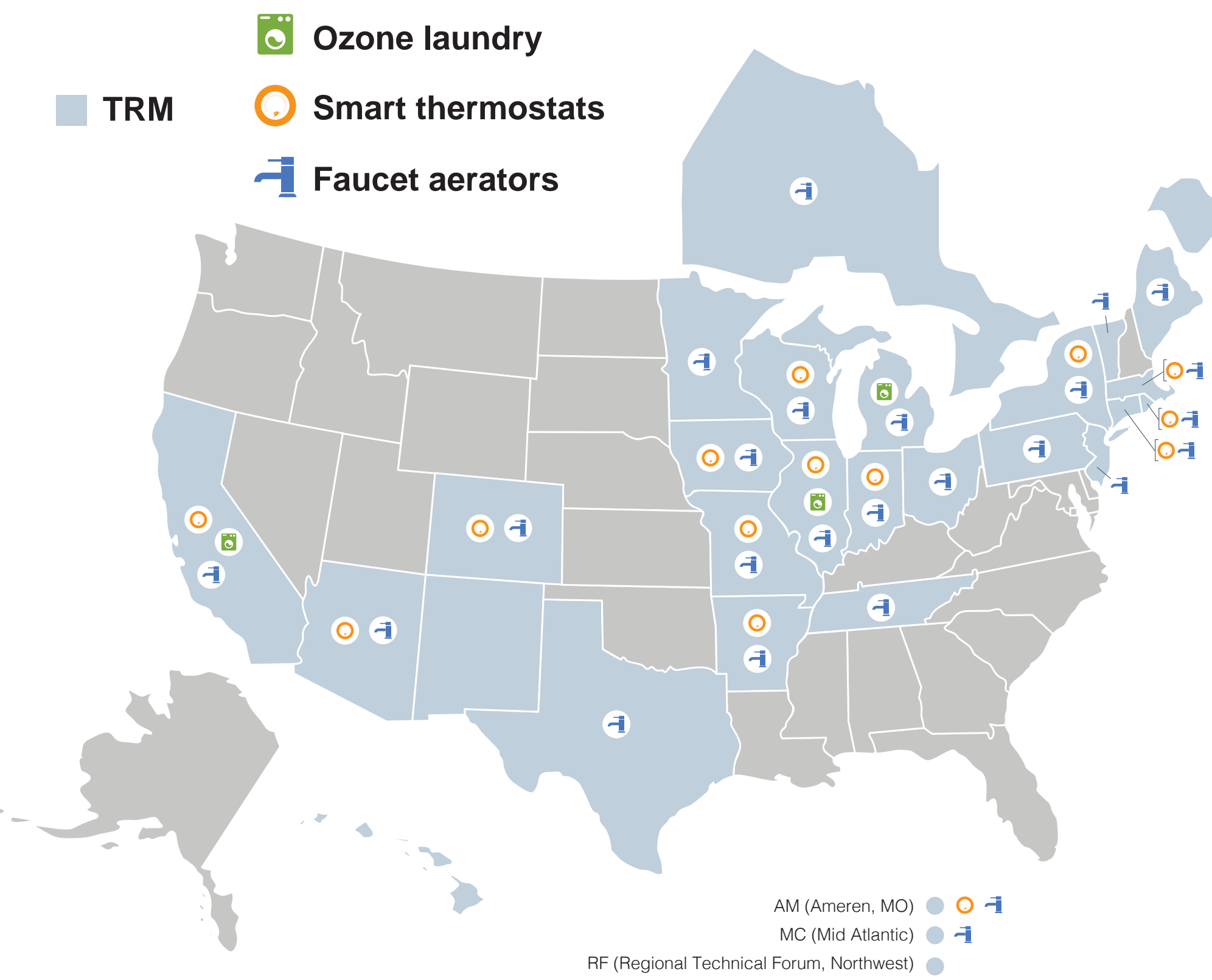
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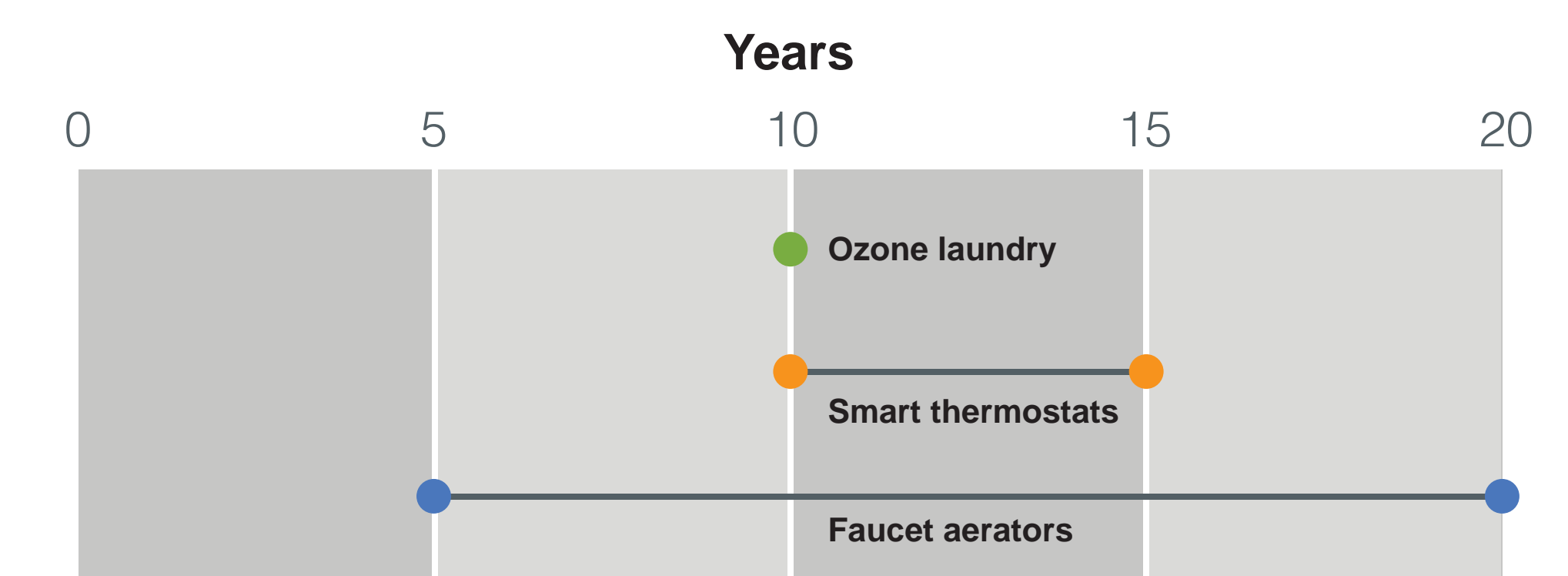
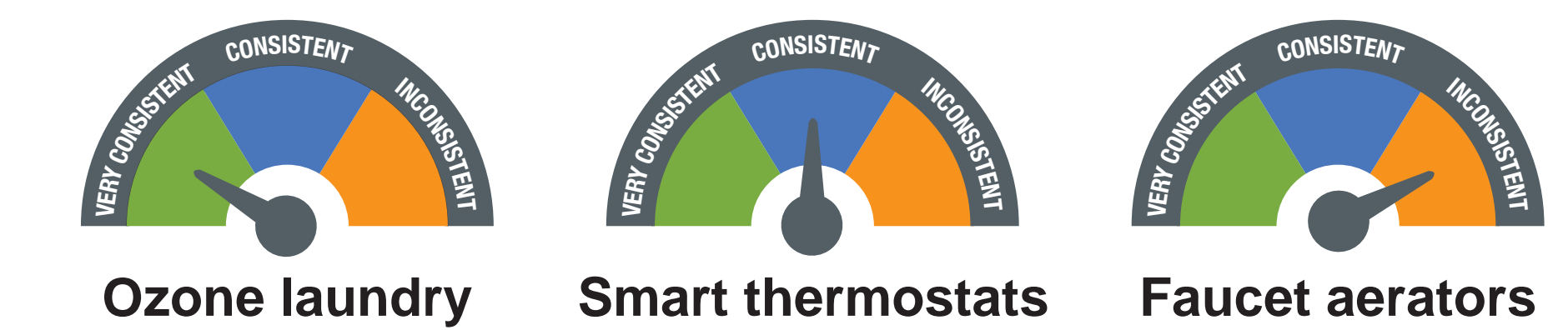
## Adoption



LEGEND



## Measure life



## Energy savings

