

High Performance Windows – Measure Lifetime

Overview

With recent advancements in window technologies, momentum towards electrification, and a need to improve building envelope performance, there is an exciting opportunity to begin building window programs that are cost-effective and popular among utility customers. This memo outlines the recommended lifetime assumptions for window products, which are substantially longer than most traditional energy efficiency measures.

Measure Lifetime

The recommended lifetime for a high performance window measure¹ is 40 years. Many Technical Reference Manual's (TRM's) and equivalent resources limit the lifetime of envelope measures to 20 years. However, this vastly underrepresents the true lifetime and value of window replacements measures, among other envelope measures, which will be crucial to inform utility cost-effectiveness calculations.

Weatherization is one of the largest and most impactful efficiency measures in the built environment and will be an essential intervention to reduce winter peaking and support electrification efforts. Lengthening lifetimes for envelope measures will be critical to allow utilities to incentivize weatherization and support electrification efforts across the country.

Research shows that windows stay installed for longer than 20 years.

A [2014 MN CARD study](#) on Window Retrofit Technologies outlined a product lifetime of 35-45 years, with homeowners typically replacing windows after 36 years.

NEEA's [High-Performance Window Market Characterization Study](#) found that 68% of respondents who had windows replaced reported that the old windows were more than 20 years old.

States are using longer lifetimes for window measures.

- ◆ The [Northwest Regional Technical Forum \(RTF\)](#) uses a 45-year lifetime for high performance window measures
- ◆ The [Illinois TRM](#) references a 40-year measure lifetime for triple and thin triple pane windows
- ◆ The [Michigan MEMD](#) uses a measure life of 25 years for window replacement.

As new window initiatives and programs are launched, we will see an increase in window measures being added to state TRM's (or equivalents) and it will be important to set a precedent for envelope measure lifetimes that accurately reflects reality based on empirical research, and supports the success of weatherization programs.

¹ PAWS defines high performance windows as those that meet Energy Star v7