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Poster Title: I Can See Clearly Now: Visualizing the Market for Residential Window Retrofits

Abstract: There exists significant energy savings potential from retrofitting residential windows, yet there are market barriers that have yet to be addressed to lead to widescale upgrades. This poster will present graphical information on current technical innovations and market conditions and offer a jumping off point for strategizing how to address this saving opportunity. Using R statistical software's charting capabilities (e.g., ggplot2), we will create innovative graphics to illustrate barriers to increasing market penetration, heat maps showing where efficient window market adoption is most prevalent, and line graphs which will chart where future market share is expected to be in five years. As utilities are faced with challenges when designing their energy efficiency portfolios (such as higher cost-effectiveness targets and inability to count on highly cost effective and high volume measures such as CFLs), gathering current market data is crucial to allow a fresh look at program offerings to support the development of innovative and cost-effective program strategies.

The poster will rely on data from a market research study conducted for a large west cost utility to inform a number of key topics related to 0.20 U-factor windows in residential applications, including:

- Market availability
- Regional variations in window performance
- Incentive programs aimed at increasing window technology adoption
- Barriers to increasing market penetration

Research for this study included interviews with experts and manufacturers as well as an extensive literature review of previous residential windows research and recent publications on the efficient windows market. This review included a deep dive into two well-known programs, including the Department of Energy's R5 Volume Purchase Program and the ENERGY STAR Most Efficient Program.

The Department of Energy's R5 Volume Purchase Program is a market transformation program that aims to reduce the incremental cost of highly insulated windows compared to ENERGY STAR windows, and raise the public's and buyers' awareness of efficient windows technologies. Similar to the R5 Program, albeit with differences in the specifics, the ENERGY STAR Most Efficient Program goes beyond the standard ENERGY STAR requirements, recognizing products that provide the most energy efficiency through the latest technological innovations.

This poster will be of interest to researchers wishing to understand the underlying barriers to market penetration in the efficient windows market, as well as those seeking to understand expert opinions on where the market will be within the coming years. As energy efficiency program providers look to find new and innovative program strategies to achieve their goals in a changing landscape, current and robust market data are critical to support those efforts. The poster's use of visuals will be an effective method to convey a range of technical and market data for a wide variety of conference attendees.