

# SECONDARY GLAZING SYSTEMS: MARKET AND DEPLOYMENT DEVELOPMENT EXECUTIVE SUMMARY

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## **I.0 EXECUTIVE SUMMARY**

Secondary glazing systems (SGS) are an envelope retrofit technology in commercial buildings that improves thermal performance of poorly performing existing windows. Simulation and field research in the last five years has shown significant potential for energy savings, especially in heating dominated climate zones. The Department of Energy's High Impact Technology (HIT) Catalyst, which identifies cost-effective and under-utilized technologies, ranks secondary glazing fourth in the list of 400 top energy efficiency measures in 2021 (U.S. DOE, 2021).

Slipstream conducted a market research study to understand current SGS market volume in Illinois, its potential for growth and challenges to higher market adoption.

We interviewed product manufacturers and customers to gather data on current product supply channels, installation and maintenance practices, and financial metrics that drive decision making (Table 1 1). We also reviewed literature and field study data to determine energy savings, return on investment (ROI), and other non-energy benefits.

*Table 1- Interviews for Market Research*

<b>Stakeholder</b>	<b>Organization</b>
Manufacturer interviews	Allied Window Alpen Indow Inovues
Customer interviews	U.S. GSA Rivetna Architects City of Madison

Findings from this study show high energy savings potential from commercial SGS retrofits in climate zone 5A, which covers ComEd's service territory. Savings vary significantly based on the characteristics of the existing building and are estimated to offer a 10-30% reduction in total energy use. Field studies show that SGS retrofits can save 7.6 kBtu/sf and 15.1 kBtu/sf whole building energy savings from a single pane and double pane SGS retrofit, respectively. This energy savings translates to \$0.09/sf energy cost savings.

SGS also results in significant non-energy benefits such as an increase in thermal comfort, noise reduction, glare control etc., However, technology awareness is a key barrier to higher SGS adoption. Customers are largely unaware of this technology and default to windows replacements for improving envelope performance. Creating educational programs to increase measure awareness and incorporating the measure in utility energy efficiency programs will help advance measure uptake and capture energy lost through poorly performing window assemblies.