WexEnergy Project Takeaways

IncubateEnergy Demo Day
October 19th – 20th, 2021

Doug Lindsey, EPRI
James Linder, TVA
Rachel Rosen, WexEnergy
WHAT IS A WINDOWSKIN®?

WINDOWSKIN® IS A TRANSPARENT WINDOW INSULATION PANEL THAT SNAPS-ON TO THE INSIDE WINDOWPANE. WINDOWSKIN FITS ALL RECTANGULAR WINDOWS.
**IMPACT OF WINDOWSKIN®**

WINDOWSKIN reduces energy usage and costs and improves comfort by keeping heat inside in the winter and outside in the summer.

**IR IMAGE OF 25 YEAR OLD HIGH-QUALITY DOUBLE-Pane WINDOW.**

**BUILDING OCCUPANTS ARE COMFORTABLE WHEN THE SURFACE TEMPERATURE OF WINDOW GLAZING IS ABOVE 54°F**

<table>
<thead>
<tr>
<th>Outdoor Temp:</th>
<th>17°F</th>
</tr>
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<tbody>
<tr>
<td>Indoor T-stat Setting:</td>
<td>68°F</td>
</tr>
<tr>
<td>Indoor Temp:</td>
<td>65°F</td>
</tr>
<tr>
<td>Window to Wall Ratio:</td>
<td>&gt;50%</td>
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</table>

CUSTOMERS SAY:

“...PRIOR TO (WindowSkin) INSTALL, ONE COULD STAND 3 TO 4 FEET FROM THE (DOUBLE-PANE) WINDOWS AND FEEL THE ICE-COLD AIR, DURING THE WINTER MONTHS, EMANATING OUT.

...AFTER INSTALL, THAT RANGE BECAME ABOUT A FOOT OR LESS.”

— Executive Dir. of Housing Authority Canton, NY
WINDOWSKIN®: HIGH PERFORMING WINDOW ENERGY RETROFIT

AFFORDABLE & COST EFFECTIVE
EASY INSTALL!

TRANSPARENT & FEATHERWEIGHT

WINDOWS & WINDOW TREATMENTS
OPEN AND CLOSE

DURABLE & LONG LASTING
100% MADE IN THE USA
GREENGUARD® & CRADLE-TO-CRADLE™ CERTIFIED MATERIALS
**WINDOWSKIN® PROJECT DEPLOYMENT**

**WINDOWSKINS WILL BE INSTALLED IN AT LEAST 10 HOMES OF INCOME ELIGIBLE HOMEOWNERS IN NASHVILLE, TN.**

*Photo courtesy of Ed Louie, PNNL August, 2021*
PROJECT STATUS

WexEnergy is in the MANUFACTURING phase of this project. WindowSkin installation will begin very soon.

Please refer to slides 14 – 22 to gain a deeper understanding of this project, to date, and each phase of the process.
1. **Key Takeaways**

**TVA reported:**
*WindowsKins®* are an "easy sell" to their customers

*BECAUSE*

*Windows open & close, just as they always have!*
2. **Key Takeaways**

**TVA & CLEARResult reported:**

*WindowSkins®* are attractive for utility program implementers & trade allies because:

- **✓** *WindowSkins* can be fitted to most windows
- **✓** *WindowSkins* are easy to install
- **✓** Replacement windows are too expensive for their budgets
3. **Key Takeaways**

*WindowsKINS*® **are a universal solution for a universal problem**

*Because they fit 95+% of windows in this Incubation Energy Project*
KEY LESSONS LEARNED

✓ WexEnergy improved its virtual training webinar and materials based on user feedback.

✓ WexEnergy is developing a platform to further simplify and accelerate window measurement phase.

✓ Improving the measurement process through an application/platform will reduce time spent on-site & increased productivity.
OUR TEAM

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Please contact a team member to get more information about this project.
THANK YOU

Please refer to Appendix Slides 14 – 22 for a Deeper Dive into the WexEnergy – TVA Demonstration Project
STAGES OF THE WEXENERGY – TVA DEMONSTRATION PROJECT

1. PRE-SCREEN HOMES FOR WindowSkin® RETROFIT

2. WexEnergy provided a virtual training Webinar to CLEAResult

3. SITE VISITS TO MEASURE WINDOWS TO QUALIFY HOMES FOR WindowSkin RETROFIT
   ✓ CLEAResult SITE VISITS & DATA UPLOAD TO WEXENERGY
   ✓ WEXENERGY REVIEW OF MEASUREMENT DATA
   ✓ FINAL QUALIFICATION OF HOMES BASED ON PREDETERMINED VALUES

4. MANUFACTURING & DELIVERY OF WINDOWSKINS INSTALLATION OF WINDOWSKINS

5. COLLECTION OF ENERGY CONSUMPTION DATA (12 MONTHS) AND TELEPHONE INTERVIEWS WITH HOMEOWNERS

6. REPORT RESULTS
1. **Pre-screening**

TVA provided EPRI with information on homes previously improved through their HomeUplift program.

EPRI pared the list of sites that could fit within project requirements.

WexEnergy provided additional input based on preliminary info provided.

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<th>stateabbr</th>
<th>zip</th>
<th>sqfootage</th>
<th>yearbuilt</th>
<th>numberofwindows</th>
<th>Sq. Ft./window</th>
<th>windowtype</th>
<th>Wex Ranking</th>
<th>Initial Screening</th>
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2a. **Virtual Webinar Measurement Training**

WEXENERGY shipped measurements tools to CLEAResult and provided virtual training on how to catalog and measure windows for WINDOWSkin® installation.
QUALIFIED WINDOWS

EGRESS WINDOW  FIXED WINDOW  FRENCH DOOR WINDOW  GARDEN WINDOW
HOPPER WINDOW  GLASS BLOCK  JALOUSIE WINDOW  LUNETTE WINDOW
ORIEL WINDOW  PALLADIAN WINDOW  PICTURE WINDOW  RADIUS WINDOW
ROUND WINDOW  SINGLE HUNG WINDOW  SKYLIGHT WINDOW  STORM WINDOW
THREE-PANEL SLIDER WINDOW  TILT-AND-TURN WINDOW  TRANSOM WINDOW  TWO PANEL WINDOW
WindowSkin Measurement Training w. CLEAResult & TVA 07072021
3. **SITE VISITS**

- CLEAResult SITE VISITS & DATA UPLOAD TO WEXENERGY
- WEXENERGY REVIEWS MEASUREMENT DATA
- FINAL QUALIFICATION OF HOMES BASED ON PREDETERMINED PARAMETERS
4. **WindowSkin Manufacturing**

- ✔ WindowSkins are custom manufactured to optimize fit for each window
- ✔ Utilities can expect delivery of WindowSkin 6 – 10 weeks following order confirmation
5. **DATA COLLECTION**

- **✓** TVA WILL MONITOR ENERGY CONSUMPTION OF HOMES RETROFITTED WITH WINDOWSKINS FOR A 12 MONTH PERIOD.

- **✓** TELEPHONE INTERVIEWS WILL BE CONDUCTED TO GAIN HOME OWNER’S PERSPECTIVE ON THEIR WINDOWSKIN® INSTALLATION
✓ TVA WILL CONSOLIDATE THE INFORMATION GATHERED AND PRESENT IT IN REPORT FORM IN Q1/Q2 – 2023