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Energy Efficiency Through Windows

Qualitative Research Full Report
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Introduction: Background, Objectives, Methodology + Respondents

Introduction

Background

- NEEA's Window Attachments Initiative recently went through Initiative Start and is ready to begin market interventions. One of the products being investigated is a new-to-the market window attachment that is similar to traditional storm windows, but offers greater energy efficiency for the residential sector. At the same time, the product is significantly less expensive than replacement windows, which offer greater energy efficiency than the attachments.
- The energy savings potential of this product is dependent on a number of factors, including, but not limited to:
 - The number of households in Oregon, Washington, Idaho and Montana that would qualify for savings – this only includes homes that have metal framed windows or single pane wood framed windows (~ 13%).
 - The percent of those home owners or primary decision-makers (to be collectively referred to as home owners in this report) that would select this new product over current storm windows or replacement windows.
- To maximize potential savings, the Window Attachments team will need to design interventions that reduce market barriers to position the product for the greatest success in working with the Attachments Energy Rating Council.

Introduction

Business Objectives

- To qualitatively understand the perception and decision-making process for upgrading residential windows so that NEEA can design interventions that have the highest likelihood of reducing market barriers that drive a sustained market change.

Research Objectives

- To explore home owners' usage and attitudes of the window category as a whole but particularly those looking to upgrade or those that have recently upgraded their windows.
- To understand the hierarchy of home owners' needs when considering window upgrades.
- To gain awareness of the benefits, barriers and unmet needs when upgrading windows.
- To understand consumer feedback to the product – in particular, what do they perceive to be the pros and cons vs. other product offerings.

Introduction



Research Methodology

Online Research

- Arrow G recruited 45 respondents across the 4-state region for 30 to participate in a 3-day online blog/QualBoard experience that combined questions and activities to complete.
- Arrow G worked closely with the NEEA team to build relevant and engaging activities for the blog. Initial thoughts included seeking to understand current experiences, photos and videos of current windows, triggers to purchase windows, current understanding of category benefits available, and the tools respondents use to educate themselves during the purchase process.
- Research was conducted 11/13 through 11/16 - 2017

Introduction

Respondents

- Participants were recruited according to the following specifications:
- State Representation:
 - OR: 22
 - WA: 13
 - ID: 3
 - MT: 3
- Total household income was evenly mixed ranging from 35K – 100+K.
- None work in related energy, home improvement product or research/marketing fields.
- Mix of female/male head of household.
- All share equally or are primary decision maker for windows/window upgrades.
- Fit into one of three segments:
 - **Purchasers – 13 Respondents**
 - Homeowners who have upgraded their windows in the past 12 months.
 - **Intenders – 14 Respondents**
 - Homeowners of homes with wood or metal framed windows that are considering upgrading their windows in the next 1 – 2 years.
 - **Non-Purchasers – 14 Respondents**
 - Homeowners of homes with wood or metal framed windows that are not currently considering upgrading their windows, but are open to the idea in the next 3 to 5 years.

Executive Summary

Snapshot of Key Findings

1)

Home improvements fall into three main categories: Home Reliability, Livability, and Return On Investment (ROI)/Expense Driven. Home Reliability dominates the priority list.

2)

Projects that simultaneously improve livability/functionality and improve ROI rank the highest on the “future project” list.

3)

The path to larger home improvement projects (windows included) has three major steps: Inspiration, Consultation, and Realization.

4)

While window replacements/upgrades are done reactively, proactively, or as part of a larger project, being reactive (fixing a problem) is the most common scenario.

5)

Windows are and can be an extremely rich and emotional household component.

Snapshot of Key Findings

6)

Having windows be identical to or match each other is critical so window “work” often times involves multiple windows in order to achieve a coordinated state

7)

Real efforts are being made to be more energy efficient and save money, but the expense and construction components that go along with replacing/upgrading windows are an added (and significant) barrier.

8)

Real confusion exists around the definition/usage of storm windows and whether the concept could potentially be outdated.

9)

From a concept perspective, cost-saving and energy efficiency are seen as the most logical areas for storm window messaging to address with other benefits being secondary.

10)

When messaging speaks to savings, the next question is “how much?” Specificity of the financial savings is desired and expected.

Key Finding:

Three Categories for Home Improvements

Home improvements fall into three main categories: Home Reliability, Livability, and Return On Investment (ROI)/Expense Driven. Home Reliability dominates the priority list.

- Home Reliability: Structural maintenance and upkeep to ensure the home survives and the investment is protected.
- Livability: Focused on improving overall living experience - often times creating more room/space or upgrading things seen as old and outdated.
- ROI/Expense Driven: Done to improve the overall value of the house or to save money by adding efficiency through redesign/remodel or changes in product.



RECOMMENDATION:

Use messaging which directly places window upgrades and replacements in the Home Reliability realm – a project that you simply must do to secure your investment and future.

Key Finding:

Improve Livability and Function

Projects that simultaneously improve livability, functionality and improve ROI rank the highest on the “future project” list.

- Kitchen and bedroom additions/renovations and bathrooms additions are projects that people connect directly with improved quality of life and ROI.
- Windows are often a part of these projects, but are not the main reason for the project.



RECOMMENDATION:

Use messaging with improved quality of life/ROI case studies that can place window upgrades and replacements in this realm.

Key Finding:

Three Steps to Home Improvements

The path to larger home improvement projects (windows included) has three major steps: Inspiration, Consultation, and Realization.

- Inspiration: I've seen what I want/need.
- Consultation: I've taken my want/need to "my expert" and received information and feedback on what I need to buy.
- Realization: I have decided on what to purchase and am moving forward with the project.



RECOMMENDATION:

Show target audiences you understand them by offering communication and solutions that speak to each stage of their buying journey.

Key Finding:

Reactionary Mindset

While window replacements/upgrades are done reactively, proactively, or as part of a larger project, being reactive (fixing a problem) is the most common scenario.

- Reactive: Involves sensory data like feeling a draft, seeing mold, leaks, rot, moisture, or broken latches.
- Proactive: Homeowners deciding to do something to provide more comfort/security, reduce noise, update their home, or increase energy efficiency/save money.
- Add-on Project: Part of a bigger overall endeavor like a full kitchen or basement remodel/renovation.



RECOMMENDATION:

Show target audiences you understand them by offering communication and solutions that speak to these varied scenarios.

Key Finding:

Emotion Exists with Windows

Windows are and can be an extremely rich and emotional household component.

- Many meditative and serene moments are had at windows – particularly larger windows that offer grand views.
- Windows are the device through which people notice the passage of time and the evolution of their families.
- Windows provide a sincere connection to the outside world that people yearn for and hold in high regard.



RECOMMENDATION:

Leverage this deep emotional benefit and connection with target audiences in subsequent messaging.

Key Finding:

Aesthetics are Considered

Having windows be identical to or match each other is critical so window “work” often times involves multiple windows in order to achieve a coordinated state

- Consistency of house look/feel is important and because of that single window replacements can quickly transform into multiple window replacements in an effort to achieve this desired end state.
- Replacing one window can quickly turn into a project that entails every window in the house (or the front of the house or an entire floor/room) being replaced
- This leap that working on one window will lead to more work on more windows is a barrier due to perceived cost and project scope.



RECOMMENDATION:

Remove the expense mystery by providing a tool which can perform a rough calculation on what window attachments could potentially cost for a room or floor.

Use messaging and solutions that focus on matching existing windows so the mental jump to larger window projects is addressed.

Key Finding:

Energy Efficiency is important but not most important

Real efforts are being made to be more energy efficient and save money, but the expense and construction components that go along with replacing/upgrading windows are an added (and significant) barrier.

- Adding insulation, switching to LED light bulbs, burning firewood, wearing sweaters – this is all happening as people try to find ways to lower energy costs, but there isn't a huge price tag associated with these activities and they are not viewed as "projects." The risk is low so people change products and behaviors like this freely and without much proof.
- Window replacement/upgrade is viewed as a much bigger project from an expense/risk perspective and this placement into "project" space serves as a significant barrier.
 - Highlighting that the window attachment installation process does not require construction and has less disruption to the home may help overcome this barrier



RECOMMENDATION:

Use messaging and solutions that address the project/labor aspect of a new window attachment purchase. Build confidence and trust by directly speaking to and recognizing this intimidating part of the journey.

Key Finding:

Storm Windows Confuse

Significant confusion exists around the definition/usage of storm windows and whether the concept could potentially be outdated.

- While many respondents like the idea of cost savings and added efficiency, they don't know if they live in the right climate for storm windows.
- There are significant questions around storm window installation, seasonal usage, and whether newer windows now come with such advanced technology that they render storm windows pointless.



RECOMMENDATION:

The potential exists for some real education (or perhaps even a new name and definition) in the world of storm windows in order to address varying perceptions.

Key Finding:

Cost and Energy Savings most logical messages

From a concept perspective, cost-saving and energy efficiency are seen as the most logical areas for storm window messaging to address with other benefits being secondary.

- Because window replacements and upgrades are viewed as high dollar projects, communication on how much energy/money can be saved is effective in generating curiosity and leading potential customers farther down the path of wanting to learn more and ultimately to purchase.



RECOMMENDATION:

Use messaging which helps target audiences understand direct energy/cost savings and how, unlike other big household projects, window replacements and upgrades have the ability over time to “pay for themselves.”

Key Finding:

Specificity is Key

When messaging speaks to savings, the next question is “how much?” Specificity of the financial savings is desired and expected.

- There is limited trust in high dollar products/projects which claim they can save you money without addressing the specific monetary potential.



RECOMMENDATION:

Either provide or direct potential customers to a site, algorithm, or agency which can provide detailed and trusted information on what the potential savings are in real dollars and cents.



Exploratory Learning: People and Practices

About These Respondents

Key Learnings

- Respondents have a deep connection to the outdoors, often times citing hobbies and interests taking place outside the four walls of their homes like gardening, hiking, running, and playing with their children at local parks.
- Whether it's an elderly parent, kids, rescue dogs, everyone is actively taking care of something.
- This “caretaking” feeling extends to the home as these respondents are all very engaged in its continual maintenance and improvement.



“Loving my home is important to me. It is my sanctuary, something I have control over in a very uncontrollable world. Enjoying my space, and improving it, creates an environment that is mine, and the more I do to make it a nicer more enjoyable place, the better it is for me personally.”

About Their Homes

Key Learnings

- The homes the respondents live in are truly a mixed bag – from brand new construction to places dating back to the early 1900's.
- A lot of importance is placed on increased spatial areas – both inside and outside the house, respondents mention the want/need for lots of room.
- Space on the outside provides serenity and space on the inside improves livability and the potential to provide entertainment/gathering experiences.
- While there are always immediate household projects that need taken care of, wheels are constantly turning about the big future/dream projects they want to do.
- Most often the future projects involve adding space or renovating entire rooms which satisfy both the livability and ROI needs they have – renovations and remodels of kitchens, and master bath/bedroom are most often mentioned



Caretaking Vs. Homemaking

Key Learnings

- Home Reliability projects (new roofs, electrical work, plumbing, etc.) fall into a caretaker category and are considered most important and highest priority because the home's survival and longevity depend upon them being done.
- Homemaking projects (room remodels, aesthetic updates, appliance upgrades) are secondary and traditionally addressed after the caretaking has been accomplished.
- Important to note is that window upgrades/replacements can fall into both categories as they are sometimes done out of necessity and other times for cosmetic reasons.



“Roof and paint are key for the outside of the home – they are like protection. Carpeting, paint and furniture are important, but not as important as they are more for interior aesthetics and comfort. Windows can be both because sometimes you want to replace them and sometimes you have to.”

The 3 Steps of Home Improvement

Inspiration > Consultation > Realization

- **Inspiration**: Ideas abound as people get home improvements from the following – Pinterest is by far the most referenced and mentioned.
 - Internet: Pinterest, Instagram, Youtube, Houzz, Facebook, Apartment Therapy, Design Sponge, Consumer Reports
 - TV: HGTV
 - Magazines: Dwell, Martha Stewart Living, Sunset
 - Other Houses in Neighborhood
 - Trade Shows
- **Consultation**: Once ideas have been gathered there is a consultation process which takes place with an expert in the form of a store employee or a designer/contractor who is usually a friend or a comes by way of a recommendation. Consultation heavily influences product and brand purchase.
- **Realization**: Following the consult, the project becomes a “go.” Products and brands are decided upon and the project scheduling begins.

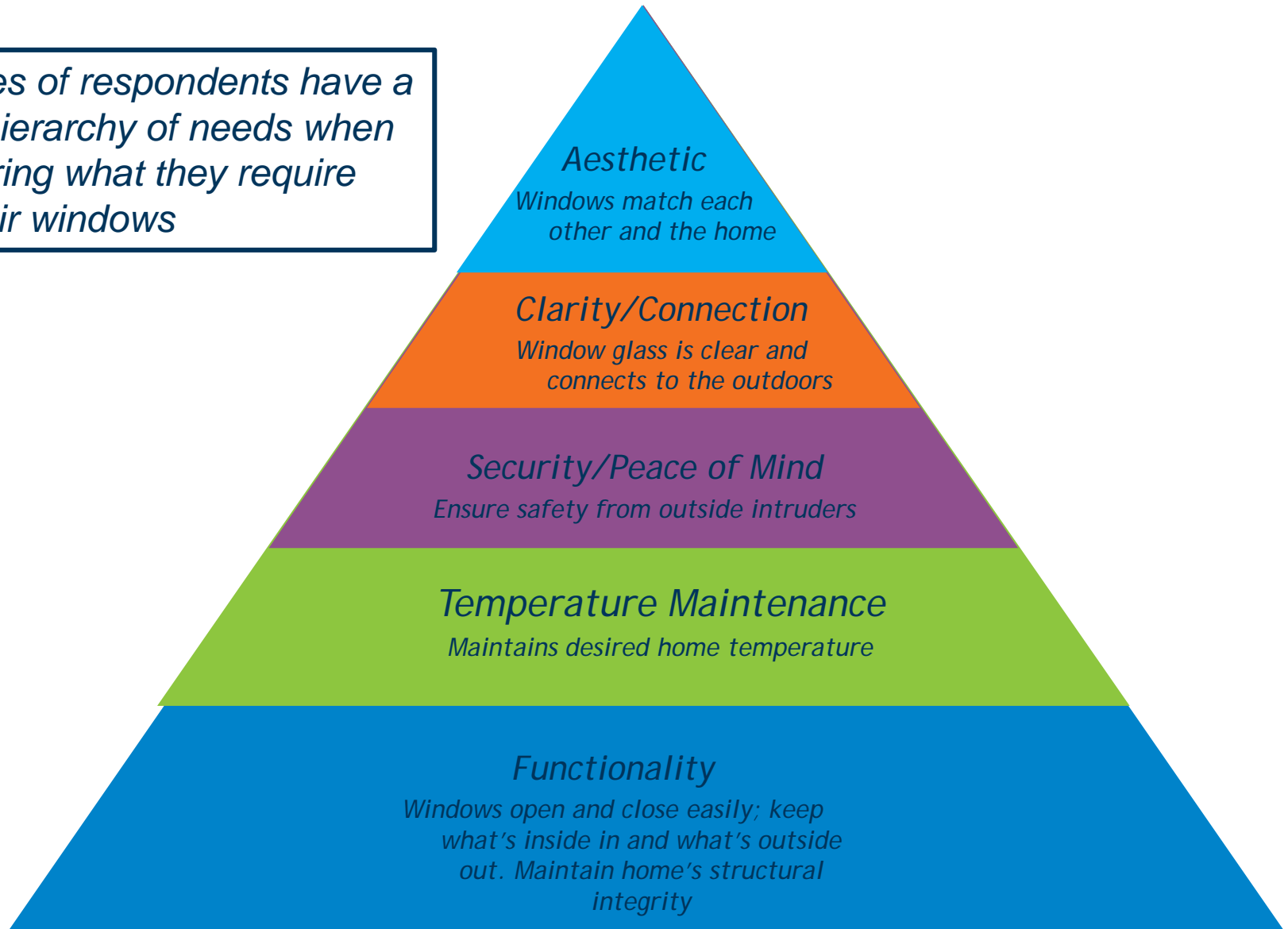
“I get all of my ideas for home improvement from Pinterest. I used to read a lot of magazines and home improvement books, but everything I need is on Pinterest and I can save those ideas, so that is where we go.”

“The internet is the go-to place to look for improvements - a tremendous resource for observing potential improvements and upgrades so I start there. When it is time, I call over several professionals to help make an estimate/quote on the upgrade, then depending on their vision matching my vision, we choose our supplier.”

Exploratory Learning: Window Needs

Windows Hierarchy of Needs

** All types of respondents have a similar hierarchy of needs when considering what they require from their windows*



Hierarchy of Needs

Functionality and Temperature Maintenance

1 Functionality

- Must open and close with ease.
- Let some things in when wanted like light and fresh air.
- Keep other things out like drafts, bugs, moisture, noise.
- Allow for an easy cleaning/maintenance experience with not a lot of moving parts and pieces.

"They serve a few roles. First, they provide a way to stay connected to the outside and bring light in. They also serve a role in the transfer of air too - to help cool the home in the summer and bring in fresh air. And third, they serve a role of insulating the home, so we conserve energy both in keeping the home cool in the summer and warm in the winter. Finally, they help to muffle outdoor noise and keep the home quiet."

2 Temperature Maintenance

- Don't disrupt the chosen household temperature or be a liability that costs money - help maintain and regulate it and work well.

"The effects of replacements and upgrades will be felt immediately because if you are living with leaky, drafty windows, the comfort at your home is less than what it could be. So immediate effects are an increase in comfort and a decrease in energy going out the window in the winter, and heat coming in during the summer. Long-term effects are a reduction in the amount it costs to heat or cool your home."

Hierarchy of Needs

Security and Clarity

3

Security / Peace of Mind

- Provide sound locking mechanisms to ensure safety.
- Allow visual access to the outside world to address any perceived threats.

"We bought our home when our children were newborn babies and we've watched out the window as they learned to walk, ride their bikes, go trick or treating, get on the school bus to school, and now as teenagers go on first dates and learn to drive. I have always opened the windows every morning – the habit of opening the windows and looking out on my kids as they've been growing up."

4

Clarity / Connection

- Windows are meant to be clear and there are a lot of negative emotions around frosted/rain glass and other view obstructions like condensation, mold, etc.
- Provide connection to the beauty of the outdoor surroundings.

"During the late spring, summer and into the fall it can be like living outside with all of the big windows I have in the house. I love the out of doors. During the winter months I need something that would not let all the heat out and cold air and rain in so replacing the windows was important."

Hierarchy of Needs

Aesthetic

5

Aesthetic Consistency

- Windows should all match one another and have the same (or similar) style and feel.
- Windows should also attempt to match the style of the home.

“Why would someone only replace or update half a house or just SOME of the windows? It drives me nuts. Anf if I replace the back half of my house where the windows are extremely outdated, then the front half won’t match. UGH! Bottom line is that to do it right you have to to replace them all. \$\$\$.”

Exploratory Learning: Window Upgrades and Replacements

Breakdown of Targets

Key Learnings

- **Recent Purchasers** have a higher confidence level and are not as intimidated by the customer journey or project work. Often times this type of work is familiar to them so they embrace it.
- **Non-Purchasers** and **Intenders** are alike in that they have similar barriers to purchase.
- **All** have mixed/various views of what storm windows are, how they function, and whether they are needed/required.



Impressions of Storm Windows

Key Learnings

- Storm windows are viewed as something separate from your permanent window that can be installed and removed.
- Respondents have impressions that storm windows are strong and sturdy, but also as things that are cumbersome, labor intensive, and requiring storage space.
- Some respondents express that storm windows are an outdated concept/idea.
- There is a perceived install/labor component to storm windows – people know they need to be installed but don't know how or when exactly.

"To me, the name "storm windows" mean something highly functional but not attractive. It doesn't carry a positive, but a more negative look and connotation."

"It reminds me of my grandmother and grandfather attaching and removing their outside storm windows to their early 20th century home in the fall and spring in Denver."



Storm Window Confusion

Key Learnings

- Confusion around storm windows exists in the following areas:
 - **Climate/Location Awareness:** What type of climate conditions warrant storm windows.
 - **Technology Advancements:** Whether current windows (specifically double paned) have better technology making storm windows pointless/redundant.
 - **Installation:** When exactly storm windows need installation and deinstallation – by season and geographic location
 - **Functionality:** Whether storm windows can open and shut along with the window it's covering.

“With the newer technology the features of the old storm windows are incorporated in the newer windows. This makes storm windows redundant unless you only have old windows. In my opinion the better value is the investment in new windows vs storm windows.”



Recent Purchasers

Are Less intimidated

Key Learnings

- Overall, recent purchasers are less intimidated by the project/labor side of window replacement which makes the purchase much easier.
- They also do diligent research and aren't afraid to spend money on the solution they want/need if it's right.
- These projects are viewed as construction projects and not just product purchases so consulting with contractors was seen as a must – and also as the biggest help in determining the right product.
- Most recent purchasers of new windows are in two scenarios:
 - **Reactive:** Dealing with window problems on a sensory level such as moisture, leaks, drafts, mold, creaks, cloudiness, or operational difficulty.
 - **Remodel:** The window was part of a larger project being done such as an addition or full room remodel. In this scenario, often times additional windows were bought for entire floors/houses in order to match the window(s) that were replaced in the remodel

“Energy efficiency was top priority because I was tired of feeling the outside coming in and no matter how much weatherization I did, it wouldn't work. And I did think about appearance too because I wanted to update the look of my house from old-looking aluminum windows.”



Recent Purchasers

Suggest Personalized research for best outcome

Key Learnings

- Overall, When asked to give advice recent purchasers recommend:
 - Doing your own personal up front research specifically searching inspiration and manufacturer sites in line in order to determine the window you want and need
 - Talking to a contractor who does this work – most often times this contractor will be a friend, will have done work for a friend, or be referred by a friend
 - Talking to others who have been through this process.
- Purchasers mention the following benefits to upgrading their windows – most often in this general order
 - Efficiency/Money Savings
 - Increased Comfort
 - Updated House/Aesthetic Beauty
 - Security/Peace of Mind
 - Improved Connection to Outside World
 - Reducing Mildew/Mold = Less Health Risk

“The new window works great, and have the proper flashing installed above them to prevent rot. The glass is clear, and cleans nicely. They are double paned, so we know we have the insulation. Plus, the clouding is gone, and we can see out into the backyard very well.”



Non-Purchasers /Intenders

Four key barriers to purchase

Key Learnings

- While similar triggers for replacement exist for these two segments, there are significant barriers to window upgrades and replacement which include:
 - **Cost:** The perception you now have to do a whole house/floor window replacement.
 - **Other Projects:** Projects with similar price tags rank higher due to perceived ROI benefit or improved livability/Home Reliability reasons.
 - **Savings Information:** Lack of information on exact cost/money savings due to increased energy efficiency.
 - **Consistency:** Inability to find options that match the style of the house or of the other windows, which directly translates into having to replace more windows in order to preserve consistency and aesthetic appeal.

"I have learned many Americans are in the same situation: paying more for heating costs rather than taking the leap on efficient windows. We feel stuck in our situation. If the government would send us renewable energy credits, or upfront credits, we would do more research. If we knew more we could install and save money."



Concept Evaluation

Concept Snapshot

| | Product Description | Comfort | Curb Appeal | Cost Effective/ Energy Bill | AERC Label |
|---------------|---|---|---|---|---|
| Understanding |  |  |  |  |  |
| Appeal |  |  |  |  |  |
| Relevance |  |  |  |  |  |

Overall Concept Feedback

Specificity and savings are key messages

The following concepts with images were tested in an online/qualboard format.

- **Overall Product Description**
- **Comfort**
- **Curb Appeal**
- **Cost Effective/Energy Bill**
- **AERC Label**
- Respondents were shown each piece of stimulus in isolation and then asked follow up questions to understand their level of understanding, appeal and relevance.
- There is a lot of interest and curiosity around these concepts (a good thing), but reception was generally lukewarm in regard to any real excitement or purchase intent due to an overall lack of specificity and perceived differentiation from anything else currently on the market.
- Overall, concepts that are ***specific*** and communicate ***energy/cost savings*** have the most opportunity.
 - Providing real/applicable savings percentages kept respondents from questioning the terminology (low-emissivity) and function.
- There is a complete lack of awareness on what low emissivity is/does as well as questions around the ingredients and function of the coating.

Concept Feedback

Recommendations

- Provide messaging which allows target customers to directly calculate potential energy/cost savings – show the direct effect to them specifically.
- Provide specific messaging which supplies detail to common questions:
 - **Function**: How do these windows work/apply/attach?
 - **Easy Purchase or Big Project**: Is this more of a DIY purchase or does it require third party installation?
 - **Relevance**: Which climates is this product most effective for?
 - **Savings**: How much energy can this save and how much money does that equate to?
- Avoid language that is too technical or asks more questions than it answers.

Product Description

Stimulus



Storm windows are attached to an existing window's interior or exterior to create an insulating pocket of air between the windows.

New to the market, low-e (or low-emissivity) storm windows have a coating that helps regulate interior temperatures by limiting unwanted heat escaping from or entering your home.

Product Description

Storm windows are attached to an existing window's interior or exterior to create an insulating pocket of air between the windows. New to the market, low-e (or low-emissivity) storm windows have a coating that helps regulate interior temperatures by limiting unwanted heat escaping from or entering your home.

Overall Understanding

- This description/picture provided a familiar definition of what respondents thought storm windows are – separate windows you add to pre-existing windows to increase energy efficiency.
- Questions exist in regard to how the windows are installed, how they work (coating), how much energy/money they can save, and terminology (low-emissivity).



- Installation seen as quick/easy - something you definitely could do yourself.
- “Insulating Pocket of Air” resonated more than “Low-E” and provided a clear and enticing understanding of how the window functions.
- The one piece singular glass surface (not separated by panes) provided in the picture makes it seem like this window will be easy to maintain and clean.
- Multi-seasonal and will provide efficiency help year-round.
- Window and efficiency upgrades can happen without having to completely replace every window.



- Does not address specific savings in either energy or money.
- The picture does not show any type of fastening device and makes the installation look easier than it will be – viewed with skepticism and deemed to be misleading.
- Confusion surrounds the coating and respondents were skeptical this could be a harmful chemical or marketing ploy.
- A lack of knowledge/understanding around the term “low-emissivity” is confusing.
- Perception that this product not needed because new double pane windows already perform this function.
- “New to market” implies risk.

Product Description



QUOTES

- *“Low-e or low emissivity lost me there. I won't spend much time with an ad that I have to look up the meaning of words used to describe it. If you have to, use the word but explain it in simple English.”*



QUESTIONS

- Does my location warrant storm windows?
- Would these work with my windows?
- Can these windows open?
- What is the price of these?
- How much energy and money could this save me?



Comfort

Stimulus



When applied to old, single-pane windows, low-e storm windows make your home more comfortable.

With an extra layer of insulation, you'll enjoy your views in a quieter, draft-free home. And thanks to the special low-e coating, you can control your comfort and stay warmer in the winter and cooler in the summer.

Comfort

When applied to old, single-pane windows, low-e storm windows make your home more comfortable. With an extra layer of insulation, you'll enjoy your views in a quieter, draft-free home. And thanks to the special low-e coating, you can control your comfort and stay warmer in the winter and cooler in the summer.

Overall Understanding

- Product seen as something akin to “help” for older windows (earmuffs and caps were mentioned) that will increase efficiency and save money.
- Positive responses surrounding the fact that you can use this product with existing windows.
- Questions exist in regard to how the windows are installed, how they work (low-e coating), and how much energy/money they can save.



- Respondents link the benefit of comfort with window efficiency – if they have a window that is “working right” (no leaks, drafts, etc.) then they perceive that window will not only be saving them money, but provide comfortable space.
- Respondents liked the sound dampening/noise reduction capabilities.
- The product is multi-seasonal and will provide efficiency help year-round.
- Window and efficiency upgrades can happen without having to completely replace every window.
- Windows seem reusable which puts the homeowner in control.



- Confusion surrounds the ingredients of the coating, how it would work, and what the ultimate benefit is. Put simply, respondents don’t know what low-e gives them and why they should care about it.
- The durability of the coating is seen as a potential issue – that it might have a limited life span.
- Respondents don’t like the word “applied” because it’s not specific enough on how exactly it will work.
- Lack of clarity on what season these are made for.
- Lack of cost and energy savings data/resources.

Comfort

QUOTES



- *"I like the clarity of the message, which seems to be it's for older, single-pane windows and not for more modern windows (such as replacements). I also like that it talks about both winter and summer benefits."*
- *"I would explain it as a snap-on layer to single-pane windows which makes them more energy efficient, sort of a poor-man's double-pane window without the expense and work of replacing the entire window."*

QUESTIONS



- How much money could this save me?
- Can these windows open?
- How do you install these windows?
- Can I install these myself?

Curb Appeal

Stimulus



Compared to older, single-pane windows, you can instantly boost your home's curb appeal by installing new, low-e storm windows.

These fully operable window upgrades come in standard and custom sizes and colors to work with any home's exterior.

Curb Appeal

Compared to older, single-pane windows, you can instantly boost your home's curb appeal by installing new, low-e storm windows. These fully operable window upgrades come in standard and custom sizes and colors to work with any home's exterior.

Overall Understanding

- Understood to be a way to upgrade the outward appearance of their home and add efficiency without a big price tag.



- “Fully operable” implies the ability to open and close these windows.
- Can match any homes exterior style and window size.
- Storm windows are not typically viewed as pretty (function over form) so the fact that they can do their job and look good is new/appealing/intriguing.



- The assumption is that “fully operable” means a window can be opened and closed, but there is a lack of certainty around this term and whether that’s exactly what it implies.
- The words “instantly boost your home’s curb appeal” can seem unbelievable.
- While curb appeal is desirable, storm windows are seen as something that have a more functional role - their existence in an aesthetic improvement place is viewed with skepticism.
- Lack of detail on installation components and process.
- Respondents want additional information on what all the window will do if it’s functioning as a storm window.

Curb Appeal



QUOTES

- *"I want them to look good, but my main intention and motivation to buy them is not what the neighbors think about how my home looks."*
- *"The downside for me is that old/ugly windows would not be replaced, so one side is still going to show the old window, even though the other side has an upgraded look. I don't know how much that will really boost curb appeal."*



QUESTIONS

- Are these new windows or add-ons to existing windows

Energy/Cost Savings

Stimulus



Low-e storm windows are a cost-effective way to enjoy lower energy bills every month.

Low-e storm windows can save you up to 50% compared to a full window replacement. And by increasing your home's insulation and eliminating air-leaks, you'll save money every month by reducing the energy you need to heat or cool your home.

Efficiency/Cost Savings

Low-e storm windows are a cost-effective way to enjoy lower energy bills every month. Low-e storm windows can save you up to 50% compared to a full window replacement. And by increasing your home's insulation and eliminating air-leaks, you'll save money every month by reducing the energy you need to heat or cool your home.

Overall Understanding

- This is a lower cost/cheaper alternative to add comfort and save money.
- This concept generated the most positivity because it began talking about specific savings.



- States specifics on what someone could stand to save which makes respondents really want to dig deeper and learn more about this product and how it could benefit them.
- The mental leap to comfort is made when mentioning increased efficiency.
- Builds confidence by providing messaging which mitigates monetary risk.
- The mention of 50% allowed respondents to begin “doing the math” for their own situations and gives them confidences to further explore a purchase.



- Some confusion exists over what they look like and how they operate.
- A lack of knowledge/understanding around the term “low-emissivity” is confusing.
- Lack of detail on installation components and process.
- Respondents are confused by what exactly the 50% is referring to.

Efficiency/Cost Savings



QUOTES

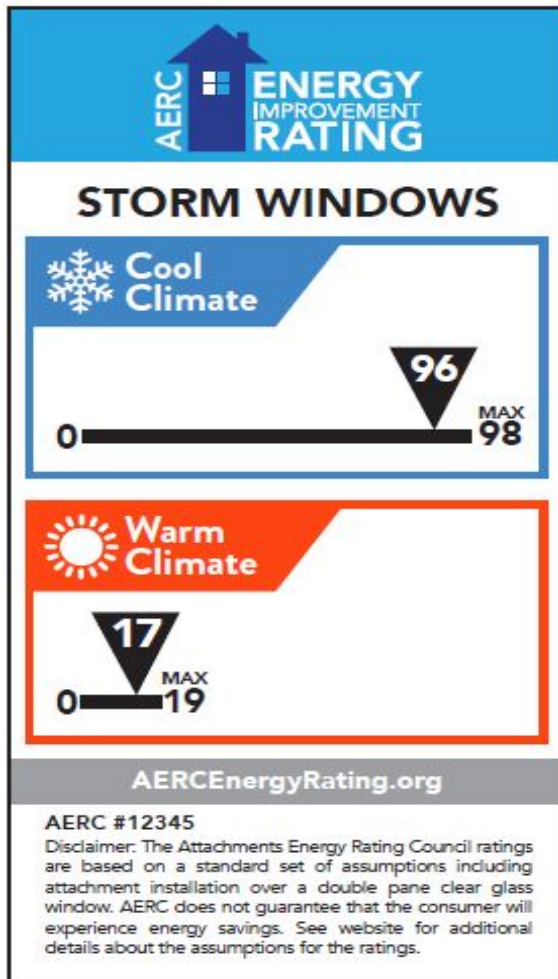
- *"I like that it could cost up to 50% less than fully replacing an existing window and help save money on my energy bill. I also like that it eliminates air leaks, keeping my family more comfortable throughout the year."*
- *I like "cost-effective way to enjoy lower energy bills every month" and "can save you up to 50% compared to a full window replacement" because this tells me I will save money. I also "eliminating air leaks" which tells me my family and I will be more comfortable throughout the year.*



QUESTIONS

- How can I see this product?
- How do these potential savings in cost and energy apply to me and my home specifically?

AERC Label



This label is from the Attachments Energy Ratings Council (AERC), an independent non-profit that certifies products such as storm windows. This label is used on products that have been tested in a lab to verify their energy savings.

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This label from the Attachments Energy Ratings Council (AERC), an independent non-profit that certifies products, such as storm windows. This label is used on products that have been tested in a lab to verify their energy savings.

Overall Understanding

- This product was independently tested by a lab to ensure it works well in warm and cold climates.
- The intent of this label is to garner trust but the agency is unfamiliar and the numbers/scales are confusing so it loses meaning and credibility.



- Non-Profit agency instills trust.
- The fact that these windows have been through some form of testing is well received.
- The scores “seem” like they are good.



- The numbers/scales seem meaningless and vague: 96 out of 98 / 17 out of 19 is confusing.
- Lack of specificity creates doubt and skepticism.
- Lack of information on what exact test were performed and how other windows ranked.
- AERC is a complete unknown.
- The fact that the rating was based on “assumptions” was seen as delegitimizing.

AERC Label



QUOTES

- *“It's a bit confusing. I think the higher the number, the more energy efficient. But I don't get the two different scales and why they're so different: 98 and 19 as the maximum. Seems like a lot more info is needed to clarify what the #s and scales actually signify.”*
- *It's indicating that the storm window scored really high, but I don't have a comparison. It'd be nice to see what the average score is for all storm windows and then this storm window's score too. That way I could see its relative performance as compared to other storm windows.*



QUESTIONS

- Can this link to an AERC site?
- Why is one number high and one number low?
- Is there a cost effectiveness or savings ratio too?
- How did other windows do in this test?

THANK YOU!

Amy Greene + Jennifer Lynch
Arrow G Consulting





TOGETHER We Are Transforming the Northwest





Appendix

Appendix

| | |
|--|---|
| Purchaser Discussion Guide: Days 1 & 2 |  Discussion Guide |
| Non-Purchaser Discussion Guide: Days 1 & 2 |  Discussion Guide |
| Intender Discussion Guide: Days 1 & 2 |  Discussion Guide |
| All Respondents Discussion Guide: Days 3 & 4 |  Discussion Guide |
| Project Screener |  Screener |