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Highly-Insulating (R-5) Windows and Low-e Storm Windows

Volume Purchase Program Overview

Building Technologies Program

July 22, 2009

www.R-5WindowsVolumePurchase.com



Why the Interest in Highly-Insulating Windows and Low-e Storm Windows?

- ❑ Windows in the U.S. account for 30% of building heating and cooling energy loss.
- ❑ The DOE Building Technologies Program has embraced the strategic goal of developing net-zero-energy buildings.
- ❑ Highly insulating R-5 windows are a key stepping stone to achieving net-zero-energy buildings.
- ❑ There is an increased interest in window retrofits in weatherization programs.
- ❑ Retrofitting of low-e storm windows can be a very cost effective solution in select residential and commercial buildings.





Highly-Insulating (R-5) Windows

- ❑ Whole-window R-value of 5 (a U-factor of 0.22 or less).
- ❑ Currently triple pane (sometimes includes suspended film), but other future options are conceivable.
- ❑ Current ENERGY STAR qualified windows have an U-factor of around 0.3.
- ❑ Increasing the R-value from 3 to 5 reduces average heat loss through the window by 40% and improves occupant comfort.
- ❑ Depending upon their structure, three pane R-5 windows can moderately to significantly lower noise levels compared to standard two pane windows.



Low-e Storm Windows

- ❑ Storm windows can reduce heat loss through the windows by 25% to 50% compared to single pane windows with a U-factor of 1.1. Low-e storm windows save even more energy.

- ❑ HUD's PATH program (with DOE and industry partners) field evaluation concluded that low-e storm windows reduced whole-house heating load by 20% and achieved less than a 5 year simple payback.
 - Chicago weatherization agency identified 6 older homes with single pane windows (U-factor of 1.1) for evaluation.

- ❑ Currently, low-e storm windows are a vendor specialty order.



DOE's Long-Term Goals

- Save energy
- Reduce the costs to buyers for R-5 windows and low-e storm windows
- Provide business to the manufactures
- Create jobs
- Develop a market for energy efficient products





Summary Process

- ❑ Identify and educate buyer groups. Buyer groups provide input on types, sizes and quantities of windows of interest as well as indicate intent to purchase windows when available.
- ❑ Partner with market transformation organizations and engage utilities to support high performance windows.
- ❑ *Reach-out to manufacturers and seek input on appropriate technical specifications and solicitation elements (terms and conditions).*
- ❑ Release solicitation and receive manufacturer's responses.
- ❑ Evaluate proposals and execute agreements with successful proposers.
- ❑ List products, specifications of those products and prices on web site.
- ❑ Engage buyers to purchase products directly from the suppliers listed on the web site.



Solicitation Approach

- ❑ Solicitation issued by PNNL on behalf of DOE under FAR requirements. RFP will be emailed to interested manufacturers/vendors, posted on the VP web site and listed in the commerce business daily.

- ❑ Manufacturers/vendors respond to solicitation with products and prices (including shipping and handling) that meet the minimum specifications.
 - Can choose to bid on R-5 windows, or low-e storm windows or both window products.
 - Can choose to bid products/prices with 'additional' (optional) features.

- ❑ PNNL will issue multiple awards to manufacturers/vendors meeting minimum specifications and requirements.
 - PNNL anticipates executing a 'basic ordering agreement' type contract.



Solicitation Approach (cont.)

- ❑ Products and prices are listed on the windows VP web site for purchase directly from the manufacturers/vendors. Neither DOE nor PNNL are involved in the transaction.
 - VP program partners will actively seek buyers for products.
 - Window sales data reporting to DOE will be required as part of the terms and conditions.

- ❑ Product prices cannot be increased for a period of time identified in the solicitation (and executed agreements), but can be decreased.
 - Manufacturers/vendors will be allowed to 'delist' products and PNNL will retain the right to "delist" products/manufacturers/vendors if contract terms and conditions are not met.

- ❑ A similar Phase II solicitation will be issued in 9-12 months after awards for those manufacturers not yet ready with products.



Schedule

- Develop specifications for solicitation: August 2009
- Release volume purchase RFP: October 2009
- Proposals due: December 2009
- Awards announced: March 2010
- Agreements completed: May 2010
- Windows available: July 2010
- Phase II Volume Purchase RFP: February 2011



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Specifications Development Approach

- ❑ Draft specifications have been developed for R-5 windows and low-e storm windows.

- ❑ Both 'mandatory' and 'additional' specifications are provided.
 - All mandatory specifications are required to be met to be qualified.
 - For additional products to qualify, all the additional **technical** specifications need to be met. Additional products that meet the mandatory specifications need only meet one of the non-technical specifications (e.g., colors, grids)
 - All products must meet the warranty and certification specifications to be qualified.

- ❑ Our goal is set the 'bar' (specifications) relatively high while at the same time qualifying as many products and manufacturers/vendors as possible at prices that are attractive to the buyers!

- ❑ We desire industry comment and feedback on specifications for each product.



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