

# NFRC's Infatuation with Digits

What does 0.01 mean?

# What body part is 0.01%

## NFRC Board Elections 2010

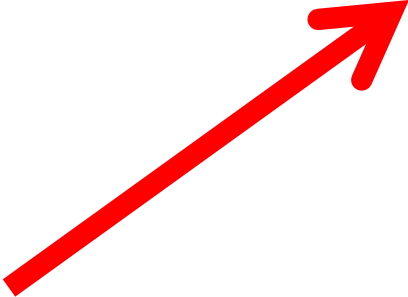
### Fenestration Industry Category (specified)

*Slot open for election (3 year position)*

Defined: All of the individuals serving in the Fenestration Industry Category shall be employed by or have a significant affiliation with current NFRC Members in good standing who are in the Fenestration Industry membership category. This seat is specifically for a primary glass manufacturer.

(Total 93 responses)

<b>Steve Farrar, Guardian Industries Corp.</b>	79.57% - (74 votes)
<b>Abstain</b>	20.43% - (19 votes)



## 2008 Energy STAR Windows Revisions - Technical Analysis

August 4, 2008

LBLN has provided technical support to the DOE 2008 effort to revise the Energy STAR windows requirements. Our work focused on two main areas:

Updating the modeling assumptions for RESFEN in order to generate space heating and cooling energy impacts from windows in typical new and existing houses throughout the United States:

- ["RESFEN6 Modeling Assumptions for the 2008 Energy Star Window Analysis"](#)
- [DOE-2 results of Typical New and Existing One and Two Story Homes](#)
- [Regression Expressions for DOE2 results](#)

Taking RESFEN results for individual houses and developing national energy savings estimates for proposed revisions:

- ["A National Energy Savings Model of US Window Sales"](#)
- [Output Data from the LBNL National Energy Savings Model of US Window Sales](#)  
(Note: This is a Microsoft Excel spreadsheet – when Excel asks if you want to "Update links to other data sources" click on the "No" button – otherwise, you will have to click through several error messages before the spreadsheet will open).
- [County zone definitions used in generating maps for LBNL Presentations on August 13, 2008](#) (an Excel spreadsheet)

LBLN Presentations at August 13, 2008 DOE Forum

- [Technical Support for the 2008 Energy Star Windows Revisions](#)
- [National Window Energy Savings Model: Application to Energy Star Criteria Revisions](#)
- [Tradeoff Analysis for E\\* Criteria Revision](#)
- [Energy Star Program Savings Estimate](#)

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	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Kbtu/sf																			
2																				
3																				
4	New, Furnace, Single story				New, Furnace, Two story				Existing, Furnace, Single story				Existing, Furnace, Two story							
5	Location	Climate	U-term	SHGC-term	Location	Climate	U-term	SHGC-term	Location	Climate	U-term	SHGC-term	Location	Climate	U'	SHGC'				
6	AK_Anchorage	45.2	32.7	-7.3	AK_Anchorage	40.9	32.4	-7.2	AK_Anchorage	88.2	35.4	-11.6	AK_Anchorage	75.5	35.1	-10.8				
7	AK_Fairbanks	67.0	40.4	-5.9	AK_Fairbanks	60.7	40.1	-5.5	AK_Fairbanks	127.2	43.4	-10.0	AK_Fairbanks	108.5	42.9	-8.6				
8	AL_Birmingham	13.9	11.9	-7.8	AL_Birmingham	11.6	11.7	-6.9	AL_Birmingham	18.0	12.2	-8.3	AL_Birmingham	16.3	12.2	-7.6				
9	AL_Mobile	6.7	8.1	-5.5	AL_Mobile	5.9	8.0	-4.9	AL_Mobile	9.8	8.7	-6.4	AL_Mobile	9.1	8.8	-5.8				
10	AR_Little_Rock	18.2	14.3	-9.1	AR_Little_Rock	15.1	14.3	-8.2	AR_Little_Rock	22.7	14.6	-9.5	AR_Little_Rock	20.6	14.6	-9.0				
11	AZ_Flagstaff	34.5	29.1	-23.3	AZ_Flagstaff	27.8	28.6	-21.4	AZ_Flagstaff	53.0	28.8	-23.0	AZ_Flagstaff	44.3	28.8	-21.6				
12	AZ_Phoenix	3.1	5.1	-2.5	AZ_Phoenix	2.9	5.1	-1.9	AZ_Phoenix	6.4	6.2	-4.0	AZ_Phoenix	5.8	6.2	-3.0				
13	AZ_Prescott	19.7	18.8	-15.0	AZ_Prescott	16.6	18.6	-13.6	AZ_Prescott	31.0	19.4	-16.0	AZ_Prescott	26.2	19.4	-14.5				
14	AZ_Tucson	5.0	7.7	-5.8	AZ_Tucson	4.4	7.6	-4.5	AZ_Tucson	9.3	8.8	-7.0	AZ_Tucson	8.3	8.7	-5.5				
15	CA_Arcata	20.0	20.2	-19.0	CA_Arcata	15.3	19.5	-17.0	CA_Arcata	32.5	20.8	-21.2	CA_Arcata	26.5	20.5	-19.7				
16	CA_Bakersfield	8.5	8.7	-5.8	CA_Bakersfield	6.9	8.5	-4.7	CA_Bakersfield	12.9	9.3	-6.6	CA_Bakersfield	11.1	9.3	-5.6				
17	CA_Daggett	6.1	8.7	-8.0	CA_Daggett	5.1	8.6	-6.6	CA_Daggett	10.7	9.8	-9.5	CA_Daggett	9.3	9.7	-7.9				
18	CA_Fresno	12.3	11.0	-7.2	CA_Fresno	10.0	10.8	-6.0	CA_Fresno	17.7	11.6	-7.9	CA_Fresno	15.2	11.6	-6.8				
19	CA_Los_Angeles	3.7	6.5	-6.3	CA_Los_Angeles	2.8	6.1	-4.6	CA_Los_Angeles	6.1	7.5	-7.7	CA_Los_Angeles	5.2	7.3	-6.1				
20	CA_RedBluff	17.3	14.0	-7.8	CA_RedBluff	14.6	13.9	-6.7	CA_RedBluff	24.3	14.3	-8.8	CA_RedBluff	21.4	14.4	-7.8				
21	CA_Sacramento	14.6	12.1	-8.4	CA_Sacramento	11.6	12.0	-7.3	CA_Sacramento	20.3	12.7	-9.5	CA_Sacramento	17.3	12.8	-8.4				
22	CA_San_Diego	2.2	4.7	-3.8	CA_San_Diego	1.7	4.3	-2.4	CA_San_Diego	4.1	5.6	-5.0	CA_San_Diego	3.5	5.4	-3.5				
23	CA_San_Francisco	15.8	16.1	-17.6	CA_San_Francisco	11.7	15.4	-14.8	CA_San_Francisco	20.9	16.7	-19.0	CA_San_Francisco	17.4	16.4	-16.7				
24	CO_Boulder (Denver)	20.7	20.5	-11.3	CO_Boulder (Denve)	18.4	20.3	-10.8	CO_Boulder (Denve)	47.4	23.0	-15.3	CO_Boulder (Denve)	38.2	22.8	-14.2				
25	CO_Grand_Junction	18.9	18.2	-9.7	CO_Grand_Junctor	16.8	18.0	-9.2	CO_Grand_Junctor	43.0	20.5	-13.4	CO_Grand_Junctor	34.7	20.3	-12.4				
26	CT_Hartford	26.4	21.7	-8.7	CT_Hartford	23.9	21.7	-8.7	CT_Hartford	49.7	24.3	-12.3	CT_Hartford	43.1	24.0	-11.9				
27	VA_Sterling (DC)	21.1	17.7	-8.1	VA_Sterling (DC)	19.4	17.6	-8.0	VA_Sterling (DC)	43.4	19.7	-11.3	VA_Sterling (DC)	35.8	19.6	-10.8				
28	DE_Wilmington	21.7	18.4	-8.8	DE_Wilmington	19.9	18.4	-8.8	DE_Wilmington	44.0	20.4	-12.1	DE_Wilmington	36.4	20.4	-11.7				
29	FL_Daytona_Beach	2.2	4.2	-2.1	FL_Daytona_Beach	2.0	4.2	-1.6	FL_Daytona_Beach	4.5	5.2	-3.5	FL_Daytona_Beach	4.1	5.1	-2.8				
30	FL_Jacksonville	5.5	6.9	-4.2	FL_Jacksonville	4.8	6.8	-3.6	FL_Jacksonville	9.4	7.5	-5.3	FL_Jacksonville	8.3	7.5	-4.7				
31	FL_Miami	0.3	1.3	1.1	FL_Miami	0.4	1.4	1.1	FL_Miami	0.8	1.8	0.4	FL_Miami	0.8	1.9	0.5				
32	FL_Tallahassee	6.5	7.5	-4.9	FL_Tallahassee	5.6	7.4	-3.9	FL_Tallahassee	10.9	8.1	-5.7	FL_Tallahassee	9.6	8.1	-4.6				
33	FL_Tampa	1.9	3.8	-1.4	FL_Tampa	1.8	3.8	-1.2	FL_Tampa	4.1	4.6	-2.6	FL_Tampa	3.8	4.6	-2.2				
34	GA_Atlanta	17.0	14.2	-9.4	GA_Atlanta	14.2	14.1	-8.5	GA_Atlanta	23.8	14.6	-10.4	GA_Atlanta	20.7	14.6	-9.5				
35	GA_Savannah	8.7	9.2	-6.1	GA_Savannah	7.5	9.0	-5.3	GA_Savannah	13.5	9.8	-7.1	GA_Savannah	11.9	9.7	-6.2				
36	HI_Honolulu	0.2	1.1	1.3	HI_Honolulu	0.2	1.0	1.3	HI_Honolulu	0.4	1.2	0.9	HI_Honolulu	0.3	1.2	1.0				
37	IA_Des_Moines	29.3	24.0	-9.9	IA_Des_Moines	26.7	24.0	-10.0	IA_Des_Moines	56.8	26.3	-13.4	IA_Des_Moines	48.8	26.2	-12.8				
38	ID_Boise	22.4	20.4	-9.4	ID_Boise	20.1	20.3	-9.1	ID_Boise	45.9	22.8	-13.4	ID_Boise	38.6	22.7	-12.7				
39	IL_Chicago	29.1	23.7	-9.0	IL_Chicago	26.5	23.7	-9.2	IL_Chicago	56.0	25.9	-12.1	IL_Chicago	48.3	25.8	-11.8				
40	IL_Springfield	26.3	22.2	-9.3	IL_Springfield	24.1	22.2	-9.4	IL_Springfield	50.8	24.4	-12.6	IL_Springfield	44.1	24.3	-12.1				
41	IN_Indianapolis	24.2	20.7	-8.0	IN_Indianapolis	22.1	20.6	-8.0	IN_Indianapolis	47.4	22.9	-11.4	IN_Indianapolis	40.7	22.7	-10.8				
42	KS_Wichita	21.8	19.1	-9.5	KS_Wichita	20.3	19.0	-9.2	KS_Wichita	40.8	21.3	-13.2	KS_Wichita	35.3	21.2	-12.3				
43	KY_Lexington	27.8	19.7	-8.0	KY_Lexington	23.8	19.6	-8.0	KY_Lexington	69.1	21.8	-11.9	KY_Lexington	50.2	22.0	-11.3				
44	KY_Louisville	24.0	17.4	-7.5	KY_Louisville	20.5	17.4	-7.3	KY_Louisville	60.9	19.5	-11.4	KY_Louisville	44.0	19.7	-10.7				
45	LA_Lake_Charles	7.9	8.4	-4.7	LA_Lake_Charles	7.0	8.3	-4.2	LA_Lake_Charles	11.2	9.0	-5.8	LA_Lake_Charles	10.5	9.0	-5.2				
46	LA_New_Orleans	5.5	6.9	-4.0	LA_New_Orleans	4.9	6.9	-3.5	LA_New_Orleans	8.2	7.6	-5.1	LA_New_Orleans	7.7	7.6	-4.5				
47	LA_Shreveport	10.5	10.3	-6.5	LA_Shreveport	9.1	10.2	-5.9	LA_Shreveport	14.4	10.8	-7.4	LA_Shreveport	13.3	10.8	-6.8				
48	MA_Boston	26.5	22.8	-10.8	MA_Boston	24.1	22.8	-11.0	MA_Boston	49.5	25.4	-14.7	MA_Boston	43.4	25.1	-14.3				
49	MD_Baltimore	20.7	17.8	-8.6	MD_Baltimore	19.1	17.8	-8.6	MD_Baltimore	42.2	19.9	-12.0	MD_Baltimore	35.0	19.8	-11.5				
50	ME_Portland	29.2	25.2	-12.4	ME_Portland	26.7	25.1	-12.5	ME_Portland	58.0	27.8	-16.5	ME_Portland	49.9	27.5	-15.8				
51	MI_Detroit	30.3	24.5	-9.1	MI_Detroit	27.5	24.5	-9.3	MI_Detroit	56.0	27.1	-12.6	MI_Detroit	49.0	26.8	-12.1				
52	MI_Grand_Rapids	32.0	25.2	-8.6	MI_Grand_Rapids	29.0	25.1	-8.7	MI_Grand_Rapids	59.0	28.0	-12.3	MI_Grand_Rapids	51.4	27.7	-11.7				
53	MI_Houghton	25.6	20.9	-10.9	MI_Houghton	22.5	20.9	-10.4	MI_Houghton	70.2	22.1	-14.1	MI_Houghton	60.8	21.8	-12.2				

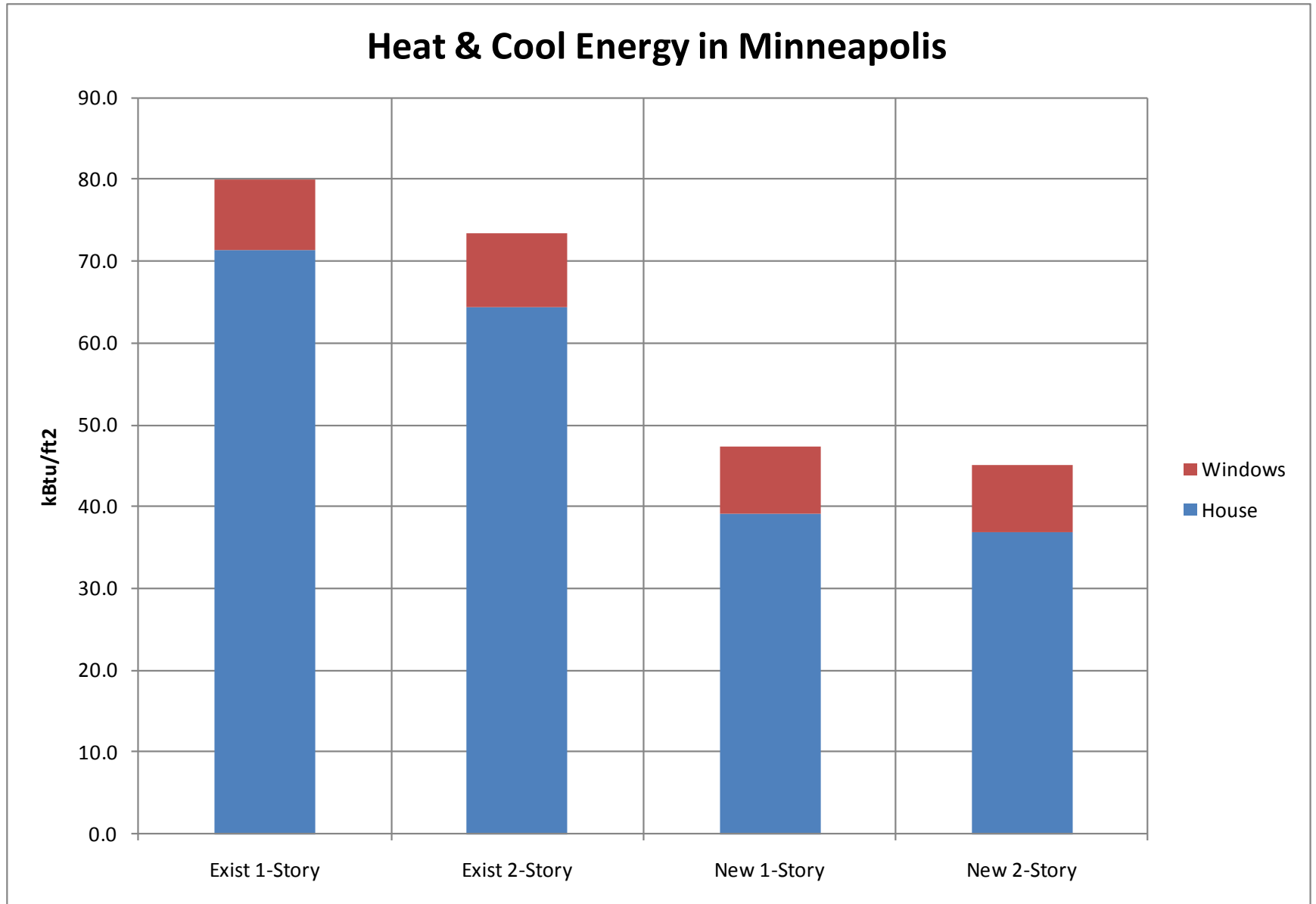
# Add Heat + Cool

- Use LBNL Site-to-Source scalar of 3.22

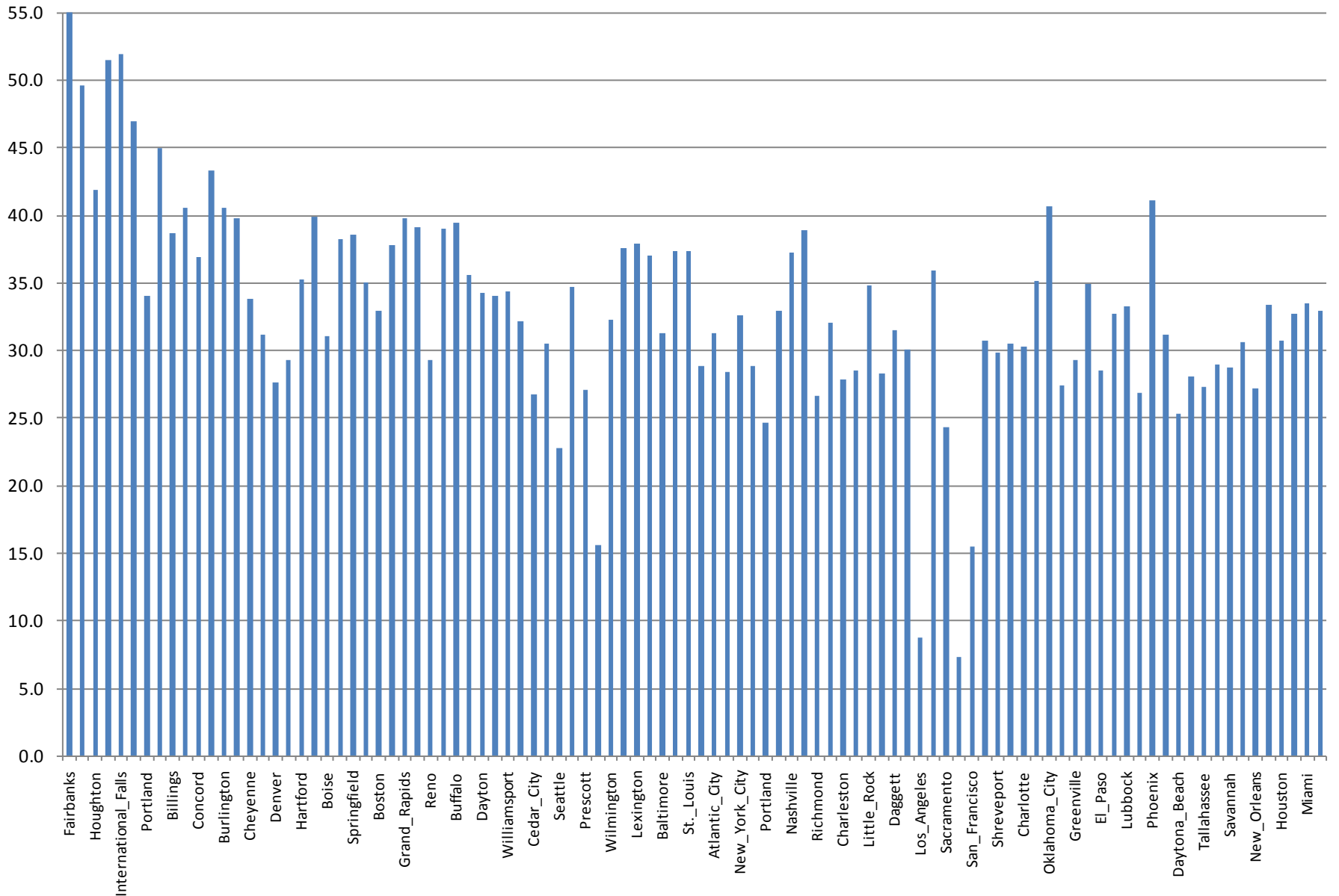
Total energy =

$$\text{Heat (gas) + Cool (electric) * 3.22}$$

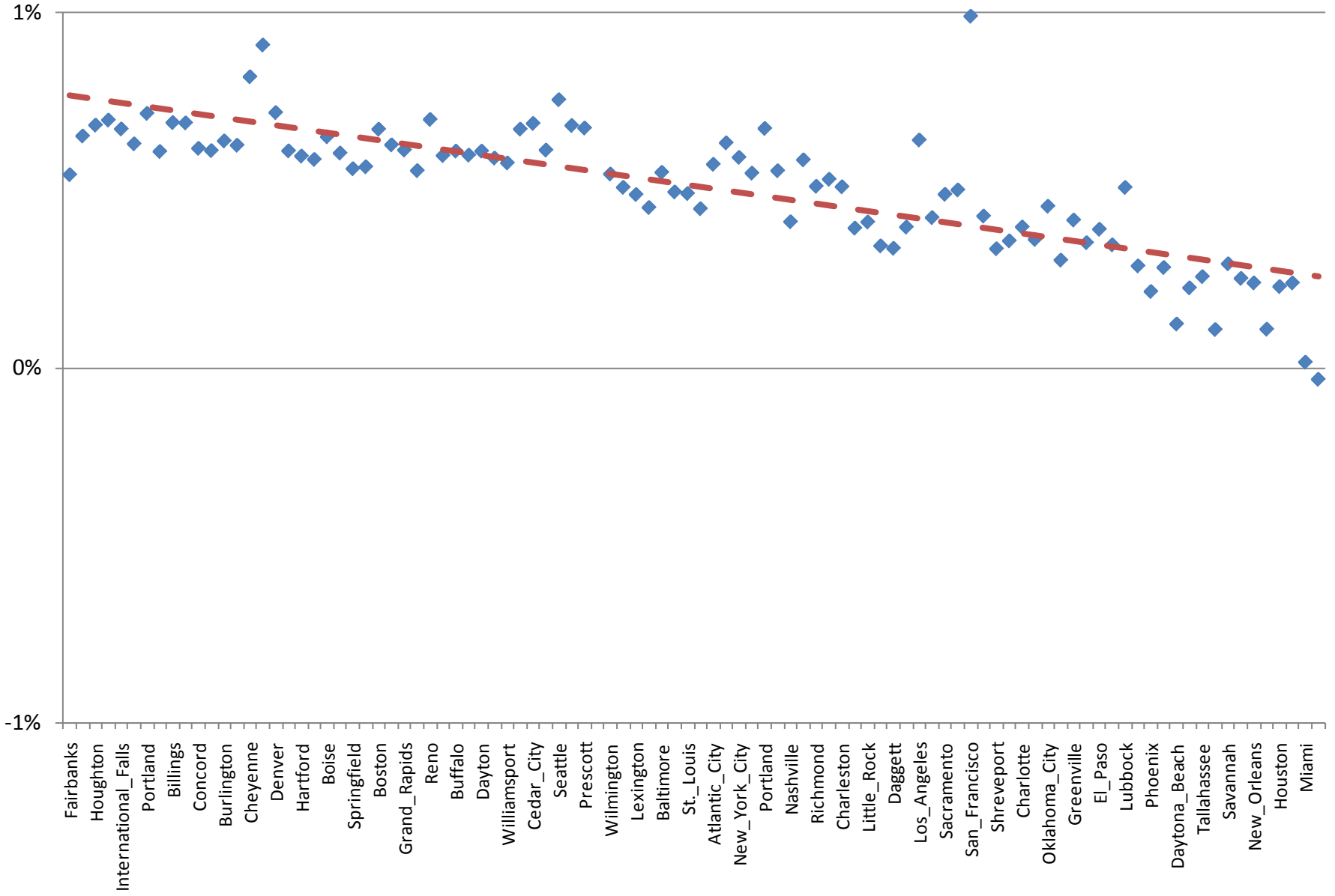
# Use New 2-Story for Window Sensitivity



## 2-Story New House Energy Consumption with Code Windows (kBtu/ft2)



# Building Energy Change for a U-Factor Increase of 0.01



# Building Energy Change for an SHGC Increase of 0.01

