



ENERGY STAR Homes: Where Are We Headed?

February 19, 2008

Heading Towards Carbon Neutral...



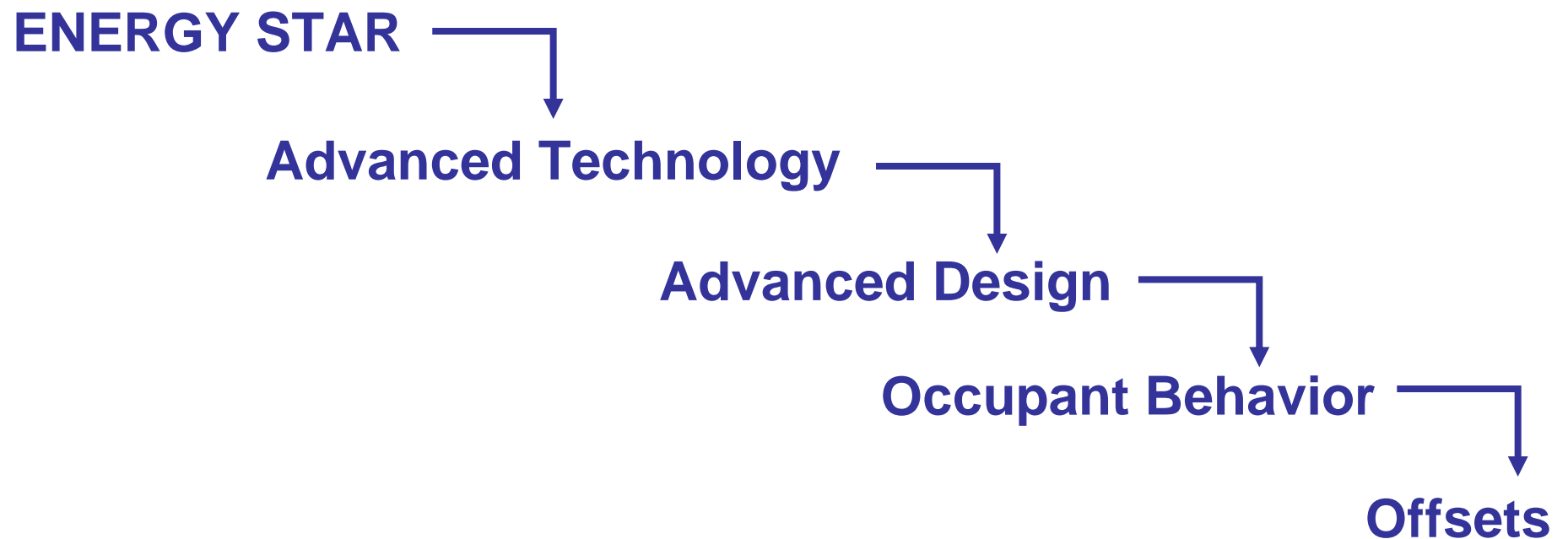
Ron Barrett

Like This?



Or This?

Or This?



Let's Run Some Numbers..



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- Climates
 - Houston, TX
 - Baltimore, MD
 - Minneapolis, MN
 - San Francisco, CA
- Permutations
 - 2006 HERS
 - 2006 ENERGY STAR
 - 2006 ENERGY STAR + Advanced Technologies
 - 2006 ENERGY STAR + Adv. Technologies + Advanced Design
 - 2006 ENERGY STAR + Adv. Technologies + Adv. Design + Occupant Behavior
- Metrics
 - HERS Index
 - % Carbon Savings
 - Monthly Cashflow

Advanced Technologies

Advanced Technologies	Houston, TX	Baltimore, MD	Minneapolis, MN	San Francisco, CA
> ENERGY STAR HVAC	X	X	X	
ECM Motors	X	X	X	X
Super-Tight Shell with HRV		X	X	
Increased Insulation	X	X	X	
Insulated Doors	X	X	X	
Best-in-Class Windows	X	X	X	
Instant Gas Water Heater	X	X	X	X
Pipe insulation	X	X	X	X
Low Flow Showerhead	X	X	X	X
Advanced Lighting Package	X	X	X	X
ENERGY STAR Clotheswasher	X	X	X	X
ENERGY STAR Dishwasher	X	X	X	X
ENERGY STAR Refrigerator	X	X	X	X
ENERGY STAR Ceiling Fans	X	X	X	X

Advanced Design

Advanced Design	Houston, TX	Baltimore, MD	Minneapolis, MN	San Francisco, CA
Reduced Window Area	18% -> 15%	18% -> 15%	18% -> 15%	18% -> 15%
Reduced House Size	2400 -> 2000	2400 -> 2000	2400 -> 2000	2400 -> 2000
Optimal Orientation	North	South	South	South
Ducts in Conditioned Space	x	x	x	x
Overhangs	x	x	x	x

Occupant Behavior

	Houston, TX	Baltimore, MD	Minneapolis, MN	San Francisco, CA
Occupant Behavior				
Real-Time Energy Display	7% Savings	7% Savings	7% Savings	7% Savings
Reduced DHW Setpoint	120 F	120 F	120 F	120 F

Houston

	HERS Index	Total Carbon Saved (lbs)	Total Carbon Saved (%)	Total Purchased Energy Saved (\$)	Total Purchased Energy Saved (%)	Net Cash Flow Impact (\$/Mo)
Baseline	100	-	-	-	-	-
ENERGY STAR	82	2,616	12%	221	13%	2
Advanced Technologies	67	5,547	26%	470	27%	-6
Advanced Design	58	7,358	35%	613	35%	-6
Occupant Behavior	56	8,320	39%	694	39%	0

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Baseline	100	-	-	-	-	-
Advanced Design	85	2,905	12%	303	15%	9
ENERGY STAR	61	7,216	30%	687	34%	-4
Occupant Behavior	56	9,212	38%	872	43%	-4
Advanced Technologies	54	10,255	43%	954	47%	2

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Minneapolis

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Baseline	100	-	-	-	-	-
ENERGY STAR	76	5,592	18%	495	20%	25
Advanced Technologies	60	9,117	30%	773	32%	2
Advanced Design	54	12,123	40%	1,028	42%	2
Occupant Behavior	52	13,416	44%	1,126	47%	9

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Advanced Technologies	72	3,849	22%	356	23%	-3
Advanced Design	70	4,642	27%	430	28%	-3
Occupant Behavior	67	5,517	32%	509	33%	3

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Carbon Savings Revisited

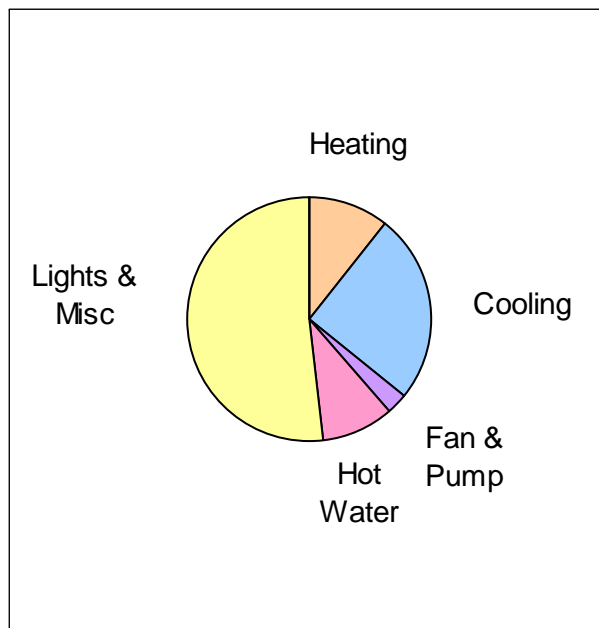
Location	Total Carbon Saved (%)
Houston	39%
Baltimore	43%
Minneapolis	44%
San Francisco	32%

What Part of the Pie is Left?

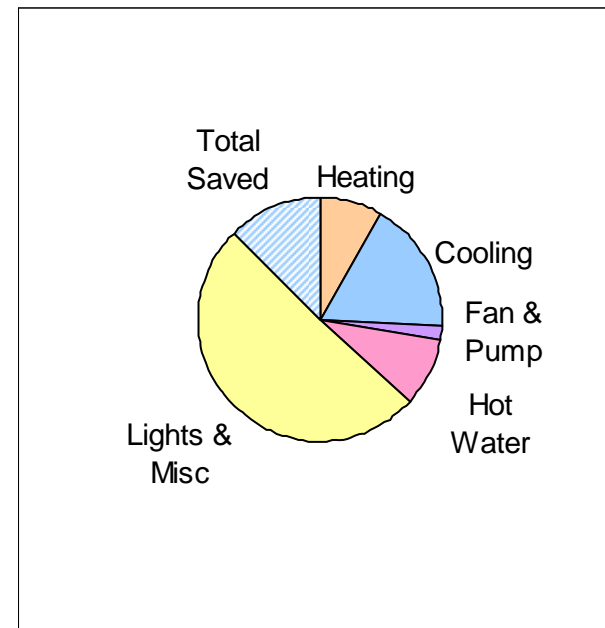


What Part of the Pie is Left - Houston?

Baseline

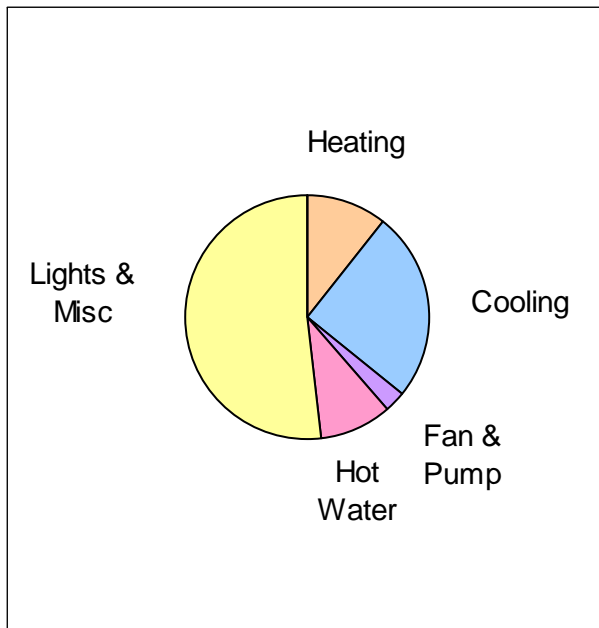


ENERGY STAR

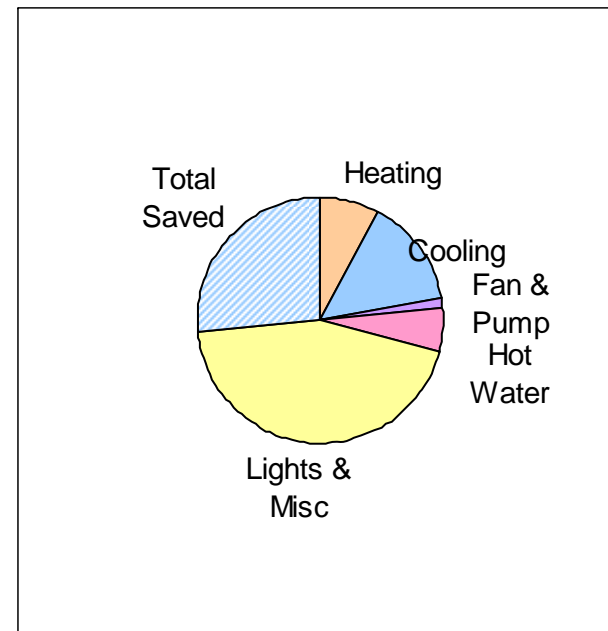


What Part of the Pie is Left - Houston?

Baseline

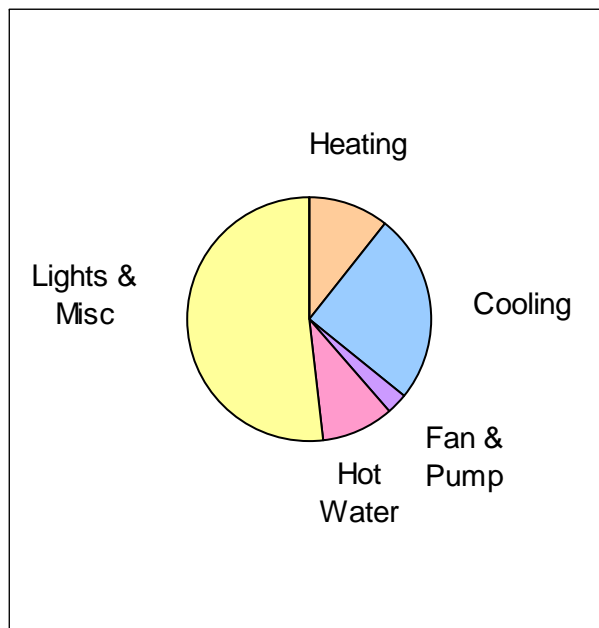


Adv. Technologies

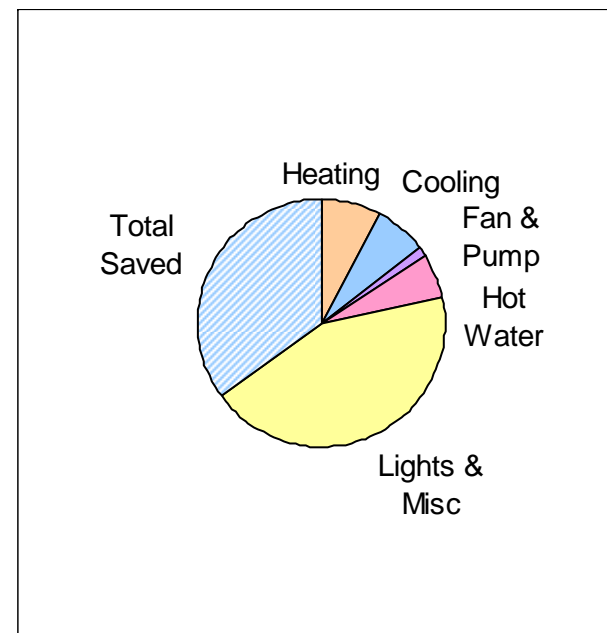


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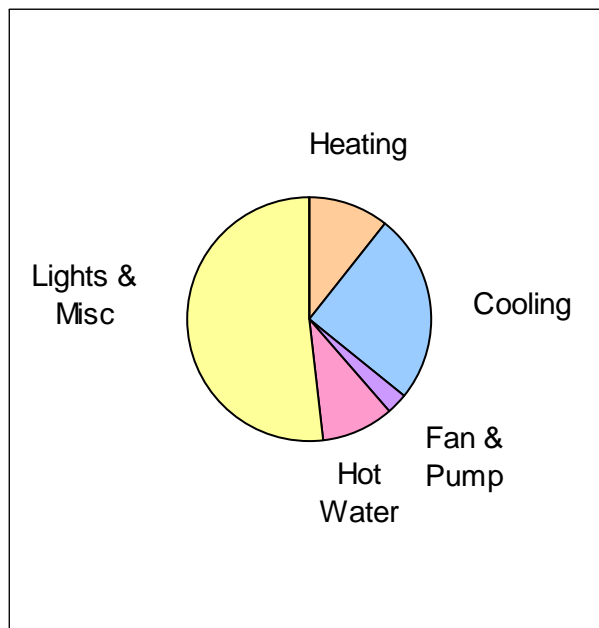


Adv. Design

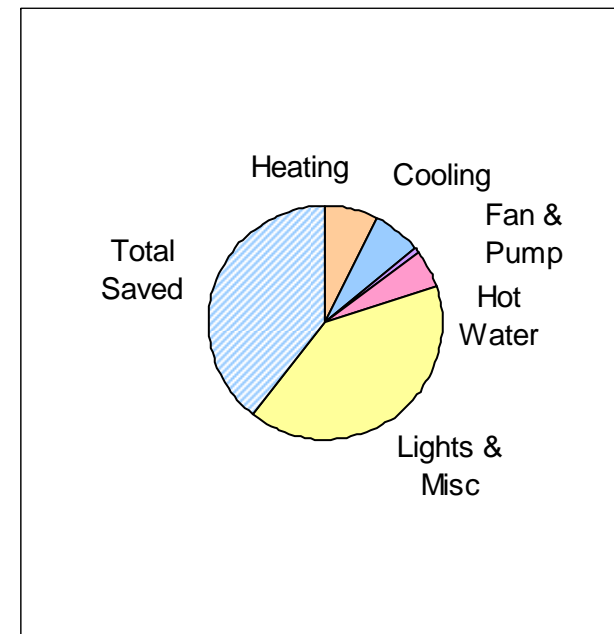


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Baseline

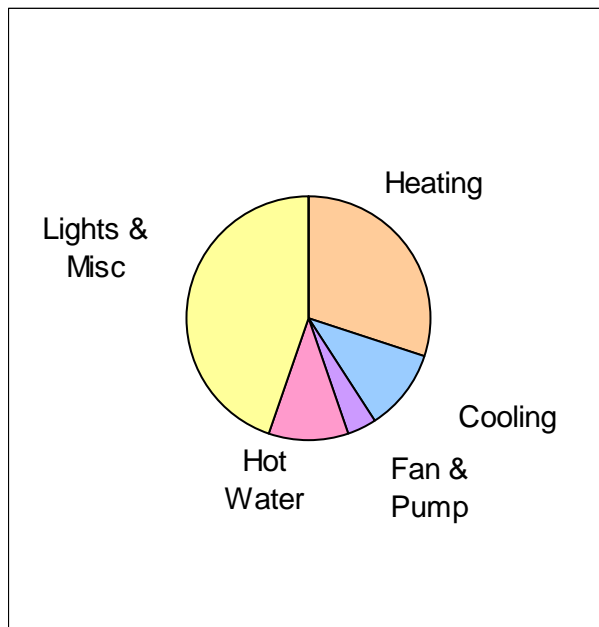


Occupant Behavior

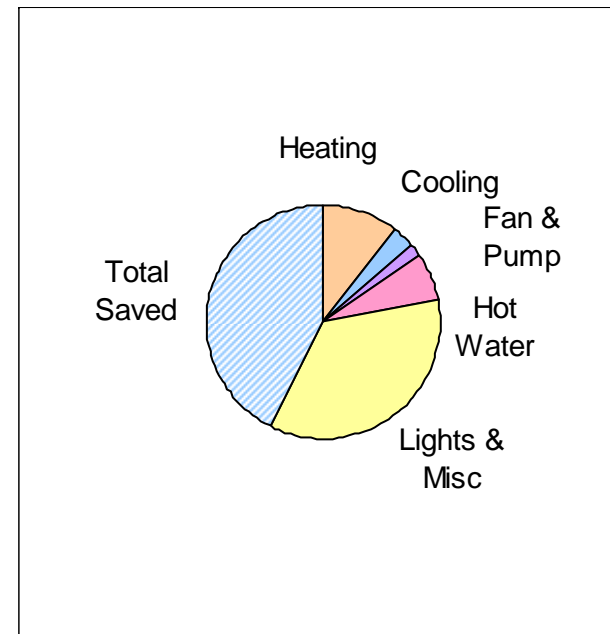


What Part of the Pie is Left - Baltimore?

Baseline

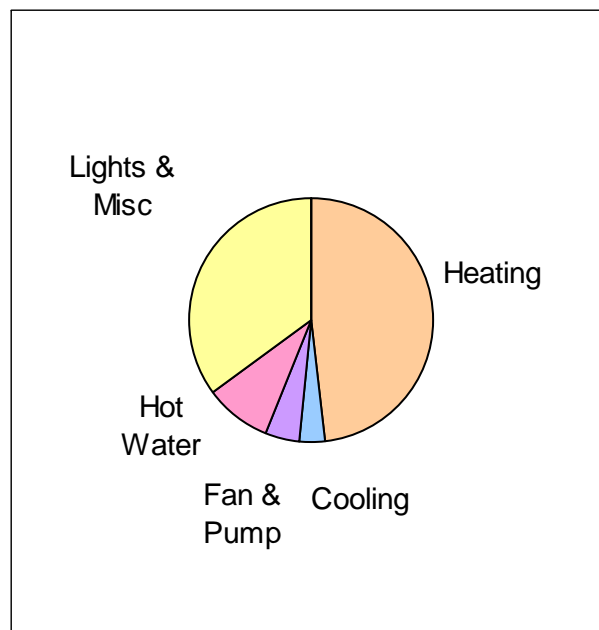


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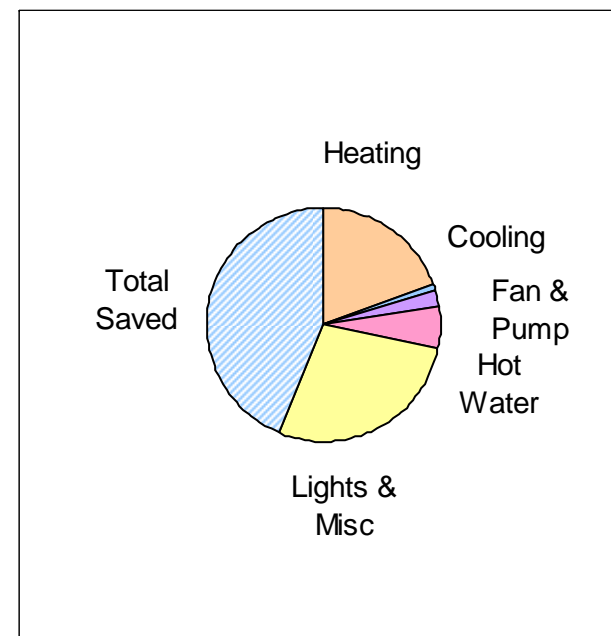


What Part of the Pie is Left - Minneapolis?

Baseline

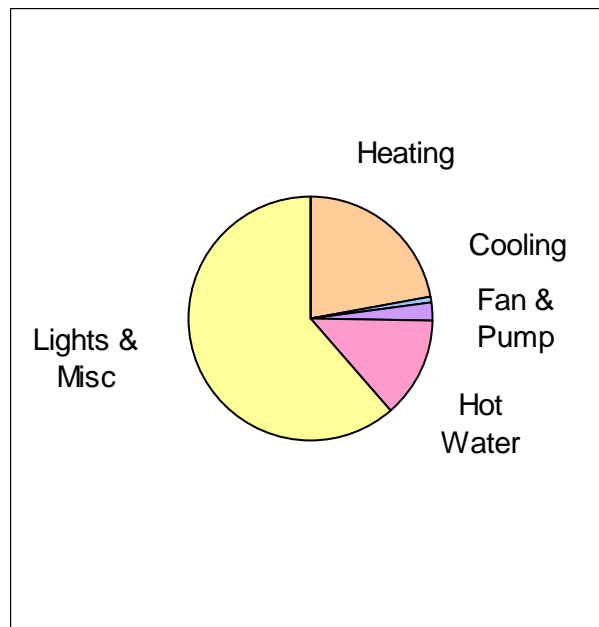


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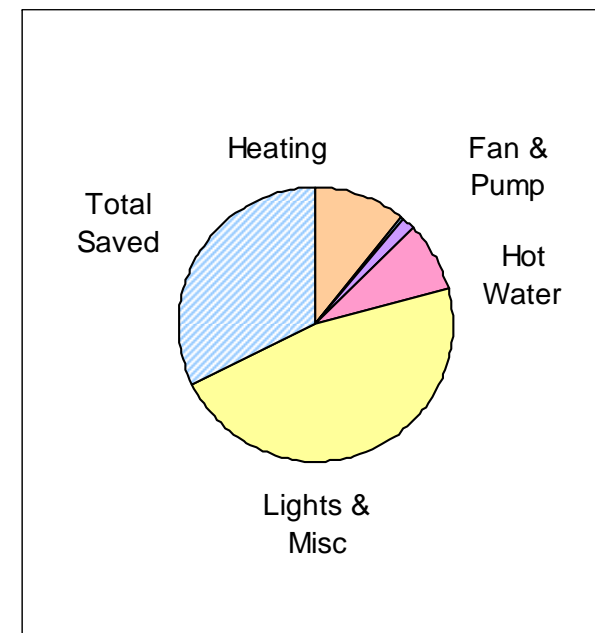


What Part of the Pie is Left – San Fran?

Baseline



Occupant Behavior



Polish it Off with Offsets

Assuming \$35/ton

Location	Without Offsets		With Offsets	
	Total Carbon Saved (%)	Net Cash Flow Impact (\$/Mo)	Total Carbon Saved (%)	Net Cash Flow Impact (\$/Mo)
Houston	39%	0	100%	-19
Baltimore	43%	2	100%	-18
Minneapolis	44%	9	100%	-16
San Francisco	32%	3	100%	-14

Contact Information

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