9ᵗʰ Edition Stretch Code Modeling Analysis

2000 sq.ft. 3 BR Family Home with Electric Heat Pump
Worcester, MA

HERS Index	
Target[5]	60
Example Base	63
Example Stretch	51

Incremental Costs and Benefits to Meet Stretch Code
0% of Total Construction Cost[4]

	COSTS		BENEFITS	NET	
BUILDER	Adjustments + HERS Rater Fee		Rebates[1]	Cost Compared to Base Code	
	-$2,305		**+$3,284**	**+$979**	
HOMEBUYER	Change to Downpayment[3]	Change to Annual Mortgage Payment[3]	Estimated Energy Cost Savings per Year[2]	Year 1 Cash Flow	Year 2+ Cash Flow
	$0	**$0**	**+$863**	**+$863**	**+$863**

1 – Incentives are determined using the Pay For Savings calculator. Savings compared to MA reference home.
   PFS Incentive = $0.50 * kWh savings + $50 * MMBtu savings + $4000 * 0.xx percent savings (single family home)
2 – Energy costs are based on $0.25/kWh, $1.21/therm, $2.90/gal propane, $2.88/gal oil. Savings are compared with Base Code home.
3 – 30-year mortgage assumes 10% down payment at 4% APR.
4 – NAHB New Contractor Built Median Cost Per Square Foot in North East US (2017) $161.53

Breakdown of Incremental Construction Costs to Meet Stretch Code

FEATURE	Base Code	Stretch Code	Construction Cost
HERS RATING	63	51	$500
WINDOWS (U-VALUE/SHGC)	.30/.30	.27/.30	$500
DHW	0.95 EF Tank Electric	3.75 UEF Heat Pump DHW	$705
HEATING	10 HSPF / 19 SEER Heat Pump	12 HSPF / 19 SEER Heat Pump	$600
COOLING			
DUCT LEAKAGE TO OUTSIDE	4 CFM25 / 100 CFA	*No change required*	*$0*
FOUNDATION	Unconditioned, uninsulated basement	*No change required*	*$0*
FLOOR	R38 fiberglass Grade 1	*No change required*	*$0*
WALLS	R21 fiberglass Grade 1	*No change required*	*$0*
HIGH EFFICACY LIGHTING	100% LED	*No change required*	*$0*
CEILING – FLAT	R-50 blown in cellulose	*No change required*	*$0*
AIR INFILTRATION	3.0 ACH50	*No change required*	*$0*
TOTAL			**$2,305**