

## Summary of “Stretch” Appendix to Mass. Energy Code, Adopted by BRS May 2009

Building category	Definition	Requirements based on energy performance (can do prescriptive instead where shown)	Alternative “prescriptive” requirement – specific efficiency measures	Source, comments	Benefit-cost modeling results
<b>New residential</b>	Single-family, multi-family of 3 stories or less	HERS index 65 above 3,000 ft <sup>2</sup> , 70 below 3,000 ft <sup>2</sup> , certified by HERS rater; follow Energy Star thermal bypass checklist	None	HERS rating = energy use as % of use under IECC code. Current Mass. code ~ HERS 99; soon-to-be-adopted IECC 2009 ~ HERS 92	Sample 3 bedroom home, estimate \$837/year savings (\$8,103 extra construction cost = \$527/year higher mortgage, but save \$1,364/year energy costs)
<b>Residential additions</b>	Expansions of existing living space	HERS 80 over 2,000 ft <sup>2</sup> , HERS 85 under 2,000 ft <sup>2</sup> ; certified by HERS rater (or prescriptive option)	Alternative path to a HERS - rating same as residential rehab below		3-bed home, estimate \$40/year savings (\$10,168 extra construction cost = \$661/year, but energy costs \$701/year lower)
<b>Major residential rehab/alterations</b>	Major alterations as in existing code – excludes storm windows, reroofing, doors, etc.	HERS 80 over 2,000 ft <sup>2</sup> , HERS 85 under 2,000 ft <sup>2</sup> ; certified by HERS rater (or prescriptive option)	Prescriptive option of Energy Star Homes program; insulation equal to IECC 2009 for climate zone 5	Quality air-sealing and insulation, EnergyStar windows	
<b>Large commercial and large residential multi-family</b>	Commercial above 100,000 ft <sup>2</sup> ; residential 4 stories or more and 100,000 ft <sup>2</sup>	Energy use 20% below ASHRAE 90.1 2007, determined by modeling	None	DOE, NGRID modeling show energy savings greater than 20%	
<b>Medium commercial and residential multi-family</b>	Commercial 5,000 to 100,000 ft <sup>2</sup> , residential 4 stories or more and below 100,000 ft <sup>2</sup>	Energy use 20% below ASHRAE 90.1 2007, determined by modeling	IECC 2009 with NBI Core performance: improved air sealing, insulation, lighting, etc.	Prescriptive based on New Buildings Institute program; used by utilities now for incentive programs	NGRID, NSTAR case studies. Example – 60,000 ft <sup>2</sup> office bldg., \$91,000 extra cost, \$29,500 annual energy savings; and \$63,100 NGRID rebate
<b>Small commercial</b>	Below 5,000 ft <sup>2</sup>	Exempt	Exempt		
<b>Specialty commercial</b>	Supermarkets, labs, warehouses below 40,000 ft <sup>2</sup>	Exempt	Exempt	Other specialty buildings can apply for waiver	
<b>Commercial alterations</b>		Exempt	Exempt		

\* IECC is the International Energy Conservation Code. The Green Communities Act passed in June, 2008 requires that Massachusetts adopt the latest version of this Code within one year of its publication. IECC 2009 was published in January, 2009.

\* ASHRAE is the American Society of Heating, Refrigeration and Air Conditioning Engineers.