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**"The road to energy independence, economic recovery and reductions in greenhouse gas emissions runs through the Building Sector."**

– Edward Mazria

# e-news bulletin

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## Oh, Those Sexy Building Codes

Architecture 2030's in-depth analysis ([Fact Sheet](#)) of the House Climate Bill sheds new light on the considerable advantages and efficacy of updating the national building energy code to meet the 2030 Challenge. Following is a commentary by Edward Mazria:



Mazria gives Senate testimony on building codes.

Buried deep within the 1,428-page Waxman-Markey climate bill ([H.R. 2454: American Clean Energy and Security Act of 2009](#)) passed by the House and now on the Senate floor, is *Section 201, pages 320-348*. It is this section that makes H.R. 2454 worth passing.

No matter what else is compromised or changed in the climate bill working its way through the Senate, *Section 201 must not be changed or weakened*. Why? Because all other energy and emissions reduction approaches pale in comparison to what Section 201 will accomplish. Without it, we simply

cannot meet the greenhouse gas (GHG) emissions reduction targets called for in the bill. We won't even come close.

Section 201 covers building energy codes – that's right, *building energy codes* – that will transform the entire built environment in the U.S. by 2050. That's because Section 201 affects all new building and major renovations and by 2050, more than three-quarters of the built environment in the U.S. will be either new or renovated.

Section 201 requires updating national building energy codes to meet the following energy reduction targets:

- in 2010, 30% below the baseline energy code (IECC 2006 and ASHRAE 90.1-2004),
- in 2014-2015, 50% below the baseline energy code, and
- every three years after, out to 2029-2030, an additional 5% reduction.

The targets outlined in Section 201 are simply more effective than *any* other energy and emissions reduction approach. The following graphs compare Section 201 with the call by some in Congress for a massive U.S. effort to build 100 new nuclear power plants in an attempt to move the country toward energy independence and significant GHG emissions reductions (click either image to enlarge):

July 23, 2009

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### H.R. 2454 Fact Sheet

An analysis of Sec. 201 of the Waxman-Markey bill; updating the national building energy code to meet the 2030 Challenge targets.

[Read it now \(pdf\)](#).



### 100 Nuclear Plants: The Answer?

How much energy could we deliver by building 100 new nuclear power plants in the U.S. by 2030?

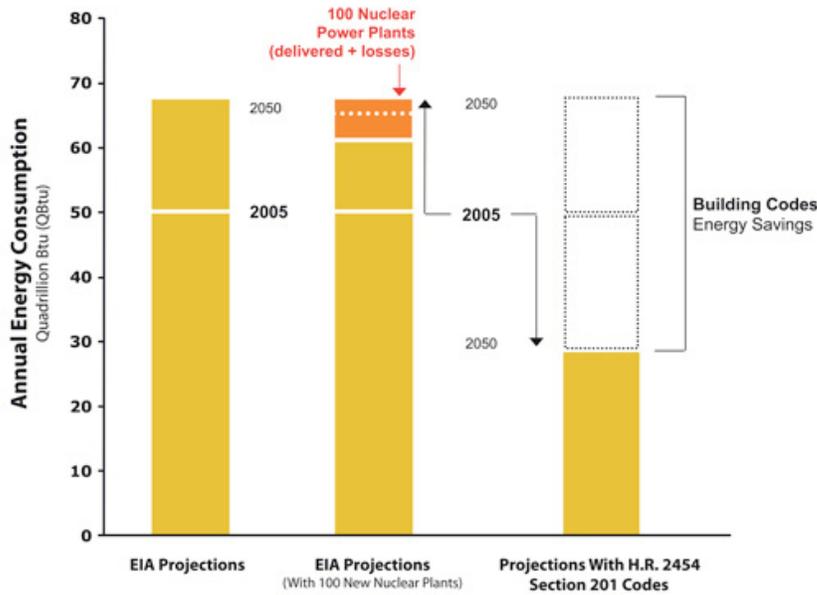
[Find out Here.](#)



### U.S. Governors Adopt the 2030 Challenge

The National Governors Association has joined the U.S. Conference of Mayors and the National Association of Counties in support of a carbon neutral Building Sector.

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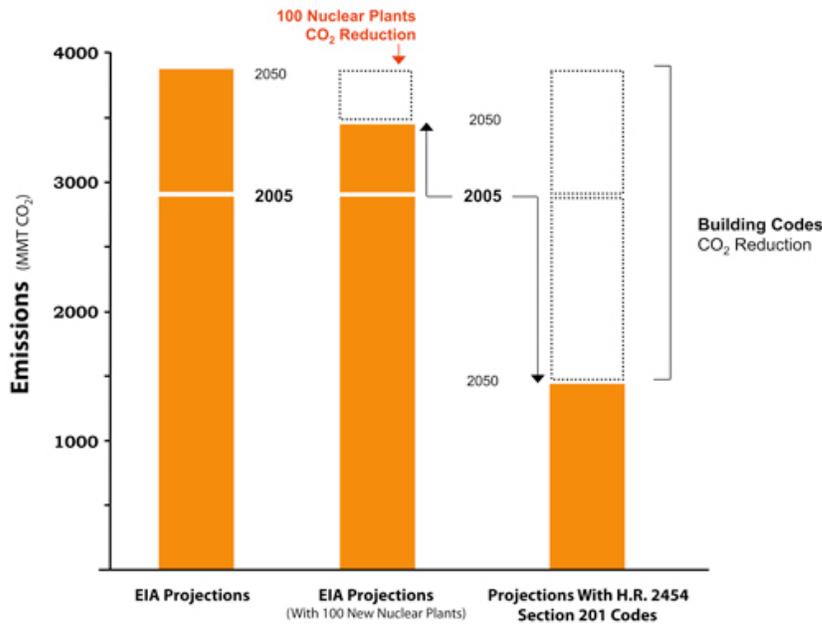


### U.S. BUILDING SECTOR ENERGY CONSUMPTION PROJECTIONS 2005-2050

Source: ©2009 2030, Inc. / Architecture 2030

Data Source: Energy Consumption and Projections: U.S. Energy Information Administration (EIA); U.S. Department of Energy (DOE). Building Code Energy Reductions Analysis: Architecture 2030.

Assumptions: The Building Sector will consume 78.6% of total U.S. electricity production in 2050 (EIA).



### U.S. BUILDING SECTOR CO<sub>2</sub> EMISSIONS PROJECTIONS 2005-2050

Source: ©2009 2030, Inc. / Architecture 2030

Data Source: CO<sub>2</sub> Emissions and Projections: U.S. Energy Information Administration (EIA); U.S. Department of Energy (DOE). CO<sub>2</sub> Reduction Analysis: Architecture 2030.

Assumptions: The Building Sector will consume 78.6% of total U.S. electricity production in 2050 (EIA).

The proof is in the data. There's simply no comparison. Whereas the 100 nuclear power plants only act as a replacement energy source, the updated building energy codes of Section 201



#### Schneider Electric Adopts the 2030 Challenge

Schneider Electric, a US and global company with 114,000 employees, over \$25 billion in sales, and offices in more than 100 countries has adopted the 2030 Challenge.

[Learn More.](#)



#### Edward Mazria Receives Hanley Award

The Hanley Foundation has announced that Edward Mazria is the first recipient of the Hanley Award for Vision and Leadership in Sustainable Housing.

[Learn More.](#)

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Go to the [News/Resources](#) section of our website to get the latest news updates on issues regarding climate change and the Building Sector.

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Architecture 2030

actually reduce energy consumption, eliminating the need for more plants. The codes also achieve more than *six times* the emissions reductions as 100 nuclear power plants. The codes accomplish all of this *at a fraction of the cost*. Here are the facts:

- Since June 2006, over *60,000* new homes have been designed, built, and certified to meet a minimum 50% energy reduction below the baseline energy code for heating and cooling.
- Studies by the Department of Energy's National Renewable Energy Laboratory (NREL) illustrate that meeting a 30% residential energy consumption reduction target below code will save households in every region of the U.S. between \$403 and \$612 per year *after* the cost of efficiency measures is factored in.
- At current energy prices and mortgage interest rates, NREL estimates that the average cost-neutral point for home efficiency upgrades is a 45% energy reduction below code.

The targets in Section 201 are set at a reasonable and beneficial pace for change that will achieve the reductions necessary within the timeline called for by the scientific community. Implementing these targets will reduce building sector energy consumption by:

- 18.35 Quadrillion Btus from projected 2030 levels (the equivalent of approximately two hundred and forty 1000 MW power plants), saving consumers an estimated \$218 billion in annual energy bills (2007 dollars),
- 18.7% below 2005 levels by 2030, and
- 40.4% below 2005 levels by 2050.

Implementing the targets in Sec. 201 would also reduce building sector CO<sub>2</sub> emissions by:

- 20.3% below 2005 levels by 2030 and
- 48.8% below 2005 levels by 2050, leaving only 34% of President Obama's 83% Building Sector reduction target to be accomplished with other clean energy sources.

It is clear that the building energy code targets set in Section 201 are not only essential for achieving the energy consumption and GHG emissions reductions needed, but that they also are the most cost effective approach for doing so.

**What about China and India?** The U.S., through our multi-national architecture and engineering design firms, heavily influences the global built environment. As our firms move the U.S. built environment into the 21st century they will, in both practice and influence, move China's and India's as well. This is, in fact, beginning to happen (see a list of multi-state and national firms that have adopted the 2030 Challenge in Appendix B of the Architecture 2030 [Fact Sheet](#)).

*To read Architecture 2030's complete analysis of H.R. 2454, Section 201 with sources and citations, download the Architecture 2030 Fact Sheet, [here](#).*

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