

## “Energy Use Intensities” (EUIs)

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*Editor's Note.* Here, Jim DePorche gives a historical background note on “Normative Energy Use Intensities” which are widely used to provide building energy performance benchmarks.

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Few in the ESCO industry are aware of it, but the original efforts to define “Normative EUIs” and building energy performance benchmarks were made by the AIA and Syska & Hennessy. Funded by the U.S. Departments of Energy & HUD, these benchmarks have been used by many in the industry when assessing a building’s energy savings potential.

The original effort to evolve a database of non-residential energy performance standards was based on a survey of buildings constructed in 1975 and 1976. The objective was to establish a reference for evaluation of alternative energy standards to be used in new building designs. One of the goals was to provide the industry a logical premise from which to proceed when emphasizing to owners the value of (alternate) energy efficient designs in future construction.

Using generally accepted statistical models, the results of the analysis were presented as the mean, the median, and the standard deviation on design energy performance in kBtu/square foot/year for buildings by type per climate zone. The need for a label for the end result of the analytical efforts led to the term Normative EUI (Energy Use indexes). Buildings constructed in this time period are today considered likely candidates for savings retrofits. The norms are still useful as reference points, but not as predictors of savings.

Politics prevented the planned enhancements by HUD and DOE, but a few years later a way around the politics was found, and another

survey was begun, from which similar data can be extracted. Updated every three years, it was called Commercial Building Characteristics, and later Commercial Building Energy Consumption and Expenditures. To bring EUIs up to date, do you recall Al Gore wanting to tax buildings for energy consumption over "X"? The benchmarks he wanted to use for each building's "X" would have come from these studies. An ugly thought.