



COMNET
Commercial Energy
Services Network



COMNET Overview

COMNET is a quality assurance initiative to standardize building energy modeling, by creating consistent baselines relative to various energy codes and standards. COMNET extends and supports existing systems for assessing and rating the energy efficiency of new commercial and multifamily buildings in the United States. The core component of COMNET is a set of guidelines and procedures that governs this standardization. COMNET offers quality assurance services to green building rating agencies, energy code authorities, utility energy efficiency programs, and other programs that rely on, or require, energy models. By creating streamlined processes with technical rigor, institutional credibility, consistency, and versatility, COMNET helps to make the evaluation of building energy models (BEM) more efficient and cost-effective. Specifically, COMNET provides step-by-step guidance on complying with IRS tax deductions (via ASHRAE 90.1-2001) LEED v3 (90.1-2007), and the upcoming LEED v4 (90.1-2010).

How does COMNET improve the energy modeling process?

Typically, hundreds of input parameters are required for a commercial building energy model. Training and experience are essential for modelers to learn which parameters are most sensitive given that unknown variables can often drive the greatest uncertainties in final simulation results. COMNET enhances productivity and quality by developing consensus guidelines and quality standards for building energy modeling and providing detailed specifications for energy analysis software.

What are the COMNET Modeling Guidelines and Procedures?

The COMNET Modeling Guidelines and Procedures (MGP) provide a comprehensive framework for modeling the expected energy performance of new buildings and major renovations. Methodologies for defining baselines, fixing input data, and considering various building systems differ widely with various codes and modelers. The COMNET MGP provides a single methodology for modeling the baseline, or reference building, that works across various programs, code jurisdictions, and organizations. COMNET currently supports programs and ratings that are based on ASHRAE 90.1 Appendix G (2001, 2007, 2010).

How does COMNET work with modeling software?

COMNET is working towards COMNET-accredited BEM software through the following strategies:

- automating the generation of the baseline building
- controlling neutral variables
- accrediting and continuously reviewing software products that have implemented the MGP
- developing standard XML format for outputs from building energy modeling tools
- developing and maintaining the COMNET portal to process and provide automated quality assurance (QA) for all COMNET accredited energy models
- selecting certain COMNET energy analyses for detailed QA checks by a qualified design professional

As a consensus standard, COMNET will harmonize efficiency programs, rating systems and modeling software.

Automatic Baseline Creation

The COMNET MGP goes beyond the capabilities of most existing modeling software by requiring that modeling software embed the capacity to automatically generate reference buildings, thereby streamlining the process for both energy modelers and compliance review authorities.

Standard Defaults

COMNET provides standard default values for inputs such as operating hours, setpoints, process loads and plug loads. COMNET defaults enable apples-to-apples comparisons and facilitate early model development when details are initially unknown.

Delivering Value

There is currently no standard way for building owners to demonstrate compliance with tax deduction provisions for energy-efficient commercial buildings, as created by the Energy Policy Act of 2005 and extended through 2013. The COMNET MGP was developed to provide owners across the country with a unified, convenient way to attain these federal energy efficiency incentives.

What is the COMNET Energy Modeling Portal?

In addition to the many COMNET MGP connections, COMNET also offers its [Energy Modeling Portal](#) that enables direct transfer of BEM data to any organization or program that requires energy modeling information. The portal currently links to LEED Automation Online, which eliminates manual transcription of data into LEED EAp2 and EAc1 template forms. The portal will be extended to provide similar transfer and QA services to code jurisdictions, utility efficiency programs and other rating agencies. The portal reduces errors, enhances accuracy, and saves time for energy modelers. For more on the portal, see the factsheet on the COMNET Energy Modeling Portal for LEED Online.

Who is referencing COMNET?

The COMNET MGP is influencing policies and programs in a variety of ways:

- **California Energy Commission**—The CEC is building a software compliance engine for future use with Title 24 that leverages the COMNET MGP.
- **Massachusetts**—The state's code body has proposed an energy stretch code that includes the COMNET MGP.
- **Washington, DC**—DC's Construction Code Coordinating Board (CCCB) voted to recommend an amendment to the International green Conservation Code (IgCC) to require the use of the COMNET MGP for all energy models submitted for building permits.
- **ENERGY STAR**—The US EPA's ENERGY STAR Multi-Family High Rise (MFHR) program is exploring adopting the COMNET MGP as its second approved modeling protocol.

More About COMNET

COMNET is managed by New Buildings Institute with support from the Architectural Energy Corporation, Institute for Market Transformation, and RESNET. Several committees also provide guidance and include members from the US Green Building Council, US DOE, US EPA, ASHRAE and the California Energy Commission. For more information, visit comnet.org