

Energy Code Pathways to ZNE 2016 Getting to Zero Forum

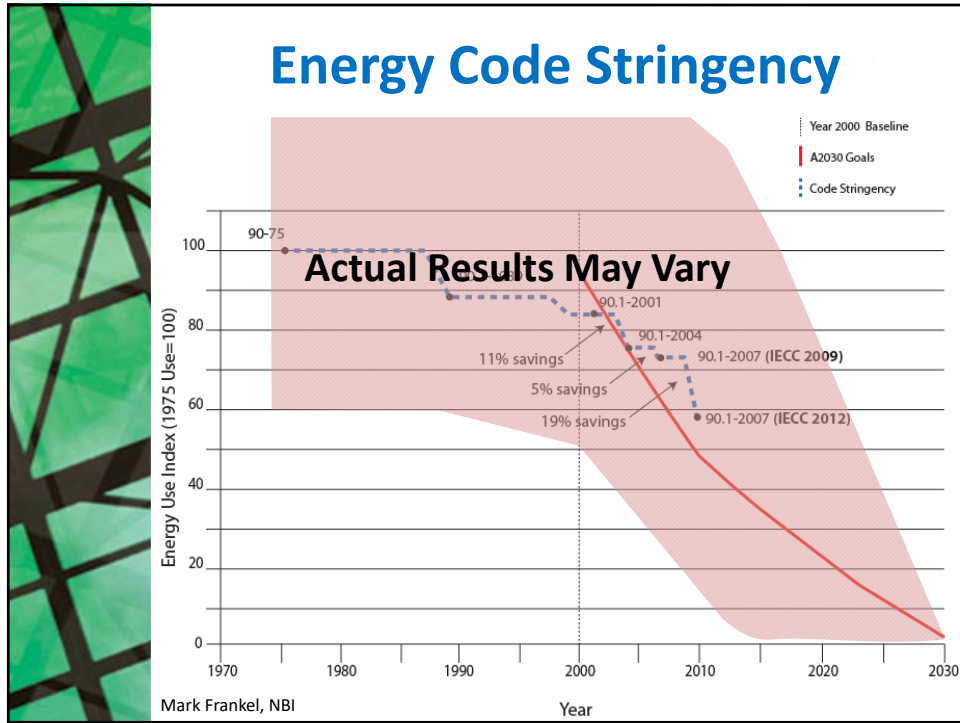
Moderator:
[Ryan Colker](#) | Director of the Consultative Council/Presidential Advisor,
National Institute of Building Sciences

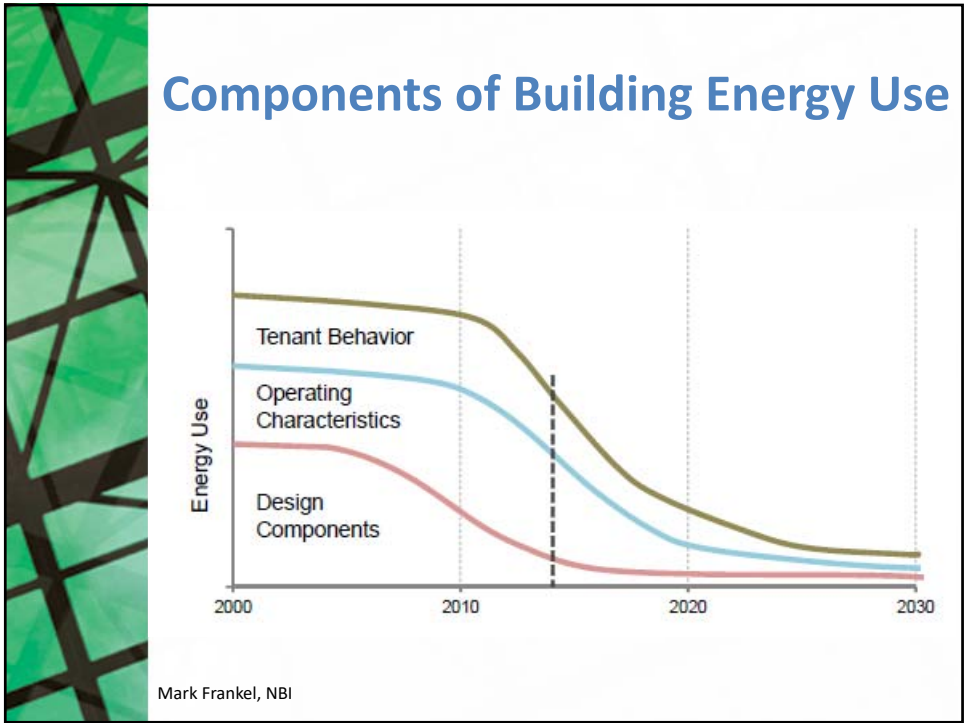
Speakers:
[Roger Hedrick](#) | Principal Engineer, NORESCO
No more easy refills: the move from Prescriptions to Performance Codes
[Mike Fowler](#) | Architect, Mithun
*Outcome-based Energy Budget Proposal for Washington State: A Road Map
to achieve Carbon Neutral by 2030*
[Heather Larson](#) | Alameda County Waste Management Authority
(StopWaste)
*Municipal ZNE reach codes in the San Francisco Bay Area; Bay REN's reach
code Municipal ZNE project*
[Kendra Tupper](#) | Energy Services Manager, City of Boulder
*Replicable, Scalable and Enforceable: The Keys to A Zero-Net Energy
Building Code*



Challenges Meet Solutions

- Are We Really Achieving Our Energy Efficiency Goals? Can We Do Better?
- Are Design-Based Strategies Meeting Our Goals?
- Are Component-Based Approaches Sufficient?
- Are We Adequately Addressing the Building Life-Cycle?
- **What Can We Do?**





Identifying a Path Forward

EVENT REPORT
May 2016

Getting to Outcome-Based Building Performance


Report from a Seattle Summit on Performance Disciplines

Presented by:
Mark Frankel, Technical Director
Jim Edlman, Director of Codes and Policy
New Buildings Institute

Host: Colleen O'Connell, Committee Chair
Council/Presidential Advisor
National Institute of Building Sciences

Event Sponsors:
National Institute of Building Sciences
nbi new buildings institute
U.S. Green Building Council (USGBC) | International Brotherhood of Building Trades (IBT) | National Association of Home Builders (NAHB) | National Electrical Contractors Association (NECA) | National Fire Protection Association (NFPA) | National Institute of Standards and Technology (NIST) | National Institute of Standards and Technology (NIST) | National Institute of Standards and Technology (NIST)

- Wide-ranging examination of key issues with recommendations
- <http://newbuildings.org/performance-outcomes-event-report>
- Work continues. . .



WBDG a program of the National Institute of Building Sciences
WHOLE BUILDING DESIGN GUIDE

HOME | ABOUT | CONTACT | SITE MAP | LOG IN

DESIGN GUIDANCE | PROJECT MANAGEMENT | OPERATIONS & MAINTENANCE | DOCUMENTS & REFERENCES | TOOLS | CONTINUING EDUCATION | BIM

A-C | D-H | I-R | S-W

Home > Outcome-Based Pathways for Achieving Energy Performance Goals

Outcome-Based Pathways for Achieving Energy Performance Goals

by Ryan M. Colker [Sustainable Buildings Industry Council](#)
Last updated: 03-25-2014

INTRODUCTION

Policy makers and the public are increasingly interested in reducing energy use. Whether due to a desire to reduce costs, [greenhouse gas emissions](#), or imported energy, achieving these goals will depend on actual and measurable results. Numerous approaches exist to reduce energy use. Model [energy codes](#) provide baseline requirements (where adopted). [Green building programs](#) provide additional guidance. Benchmarking and companion operations and maintenance practices along with ongoing commissioning also support achievement of performance goals. (See also [Meet Performance Objectives](#); [Optimize Energy Use](#); [Building Commissioning: Optimize Operational and Maintenance Practices](#).)

Within This Page

- [Introduction](#)
- [Additional Resources](#)

COMMENT ON THIS PAGE
BOOKMARK AND SHARE

RELATED RESOURCE PAGES

- [Codes and Standards Development](#)
- [Energy Codes and Standards](#)

VIEW RESOURCE PAGE INDEX

THIS PAGE CONTAINS LINKS TO

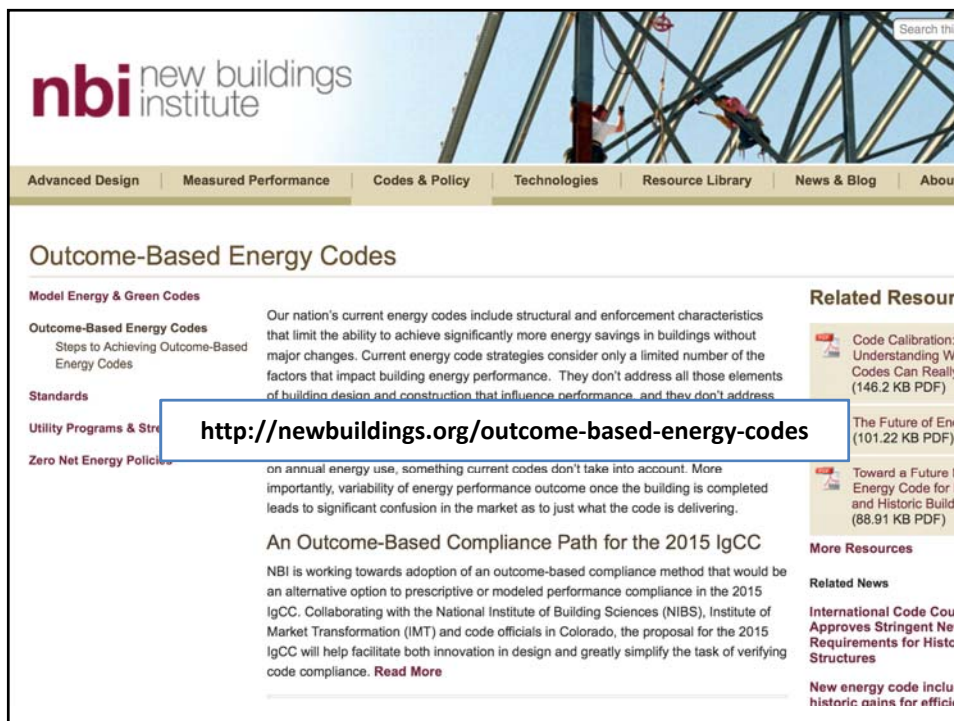
- [CONSTRUCTION CRITERIA BASE](#)

<http://www.wbdg.org/resources/outcomebasedpathways.php>

Living, Regenerative, and Adaptive Buildings
Low Impact Development Technologies
Materials
Measuring Performance of Sustainable Buildings
Microturbines
Mitigating Insurance Risks through Sustainability
Moisture Management
Mold and Moisture Dynamics
Mold Remediation Guidelines

Current model [energy codes and standards](#) only provide criteria prescribing how buildings are to be designed and constructed. The provisions in virtually all energy codes and standards are based on a number of prescribed criteria that must be satisfied by specific products, [materials](#) and components of a building. Unfortunately, many of those criteria do not account for the application of new technologies such as innovative window materials or creative design approaches such as [passive solar](#), building [form](#) and shape, and orientation. Current codes also do not cover all the energy consuming functions in a building, even though these functions contribute to the overall energy use and influence the energy use of equipment covered under the code. Plug and process loads, and elevators and escalators generally are not included. In California, for instance, plug loads account for about 40% of overall energy use in buildings—closer to 65% in [hospitals](#) and restaurants.¹

The closest these documents come to actual performance of a building is a simulation of how a building as designed is expected to perform compared to the same identical building but assumed



nbi new buildings institute

Advanced Design | Measured Performance | Codes & Policy | Technologies | Resource Library | News & Blog | About

Outcome-Based Energy Codes

Model Energy & Green Codes

Outcome-Based Energy Codes
Steps to Achieving Outcome-Based Energy Codes

Standards

Utility Programs & Strategies

Zero Net Energy Policies

Our nation's current energy codes include structural and enforcement characteristics that limit the ability to achieve significantly more energy savings in buildings without major changes. Current energy code strategies consider only a limited number of the factors that impact building energy performance. They don't address all those elements of building design and construction that influence performance, and they don't address

on annual energy use, something current codes don't take into account. More importantly, variability of energy performance outcome once the building is completed leads to significant confusion in the market as to just what the code is delivering.

An Outcome-Based Compliance Path for the 2015 IgCC

NBI is working towards adoption of an outcome-based compliance method that would be an alternative option to prescriptive or modeled performance compliance in the 2015 IgCC. Collaborating with the National Institute of Building Sciences (NIBS), Institute of Market Transformation (IMT) and code officials in Colorado, the proposal for the 2015 IgCC will help facilitate both innovation in design and greatly simplify the task of verifying code compliance. [Read More](#)

<http://newbuildings.org/outcome-based-energy-codes>

Related Resources

- Code Calibration: Understanding Why Codes Can Really (146.2 KB PDF)
- The Future of Energy (101.22 KB PDF)
- Toward a Future Model Energy Code for Existing and Historic Buildings (88.91 KB PDF)

More Resources

Related News

International Code Council Approves Stringent New Requirements for Historic Structures

New energy code includes historic gains for efficiency