

Washington State Energy Code



EVOLUTION OF THE WSEC – ALIGNING EFFICIENCY TARGETS WITH COMPLIANCE

**LISA ROSENOW
NORTHWEST ENERGY EFFICIENCY COUNCIL
LISA@PUTNAMPRICE.COM**

Aligning Efficiency Targets With Compliance



- Energy code policy in Washington State
- Supporting design & construction industry compliance and jurisdictional enforcement
- Learning objectives:
 - Identify under-enforced provisions and methods to improve compliance
 - Building technical support relationships with industry professionals



Washington State Energy Efficiency Target

- Our History – First WSEC was adopted in 1994 – **20 years!**
- Washington State Law
 - RCW-19-27A-160 - Requires **70%** improvement in residential and commercial building energy efficiency by 2031.
 - 2006 WSEC (roughly equivalent to ASHRAE 90.1-2007) is the baseline of this 2031 target.
- IECC adoption process in 2012
 - 2012 IECC was less stringent than the 2009 WSEC.
 - “Mash-up” process compared the two codes and in most cases adopted the most stringent requirement for each provision.
 - Efficiency was further increased by adding new scope.

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Energy Code Technical Advisory Group 2013-2015 Code Cycle

The Energy Code TAG will begin work shortly on reviewing the 2015 Washington State Energy Code. Most of the changes received in 2014 will be evaluated against the 2015 code.

IMPORTANT NOTE: In keeping with the adoption of other model codes, the changes made to the International Energy Conservation Code for the 2015 edition will be integrated into the draft 2015 Washington State Energy Code. The integrated draft consists of the 2015 IECC with 2012 WSEC amendments maintained where resulting in greater energy efficiency or where the SBCC intentionally adopted measures less stringent than the IECC. Code change proposals to amend or remove portions of the new model code language can be submitted until March 1, 2015.

Final Integrated Drafts (base code for Code Change Proposals):

- 2015 Integrated Draft WSEC - [Commercial](#)
- 2015 Integrated Draft WSEC - [Residential](#)

New proposals submitted by March 1 may address modifications to these baseline code provisions. Following the initial review, the TAG will report findings to the MVE Committee and Council in January.

Turning Policy into Results

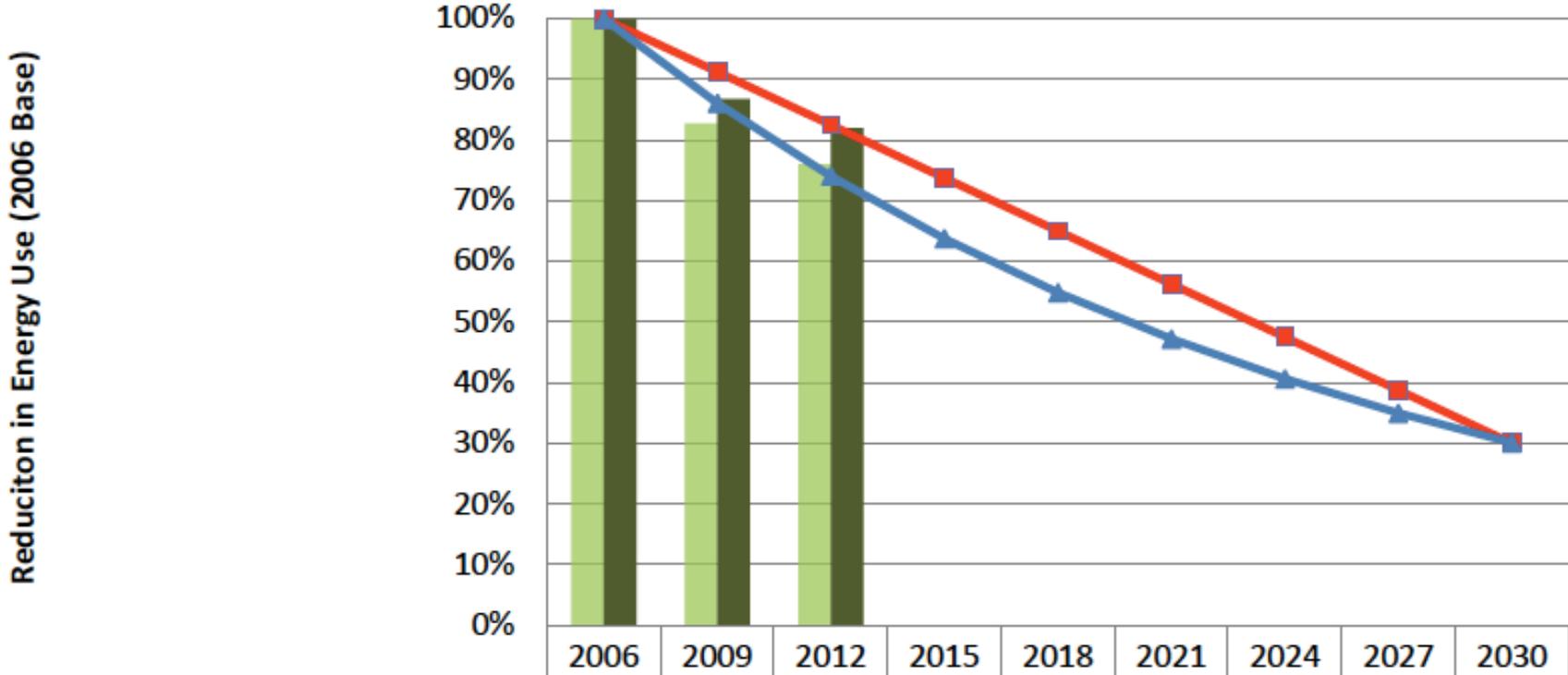


Goal – Questions – Support



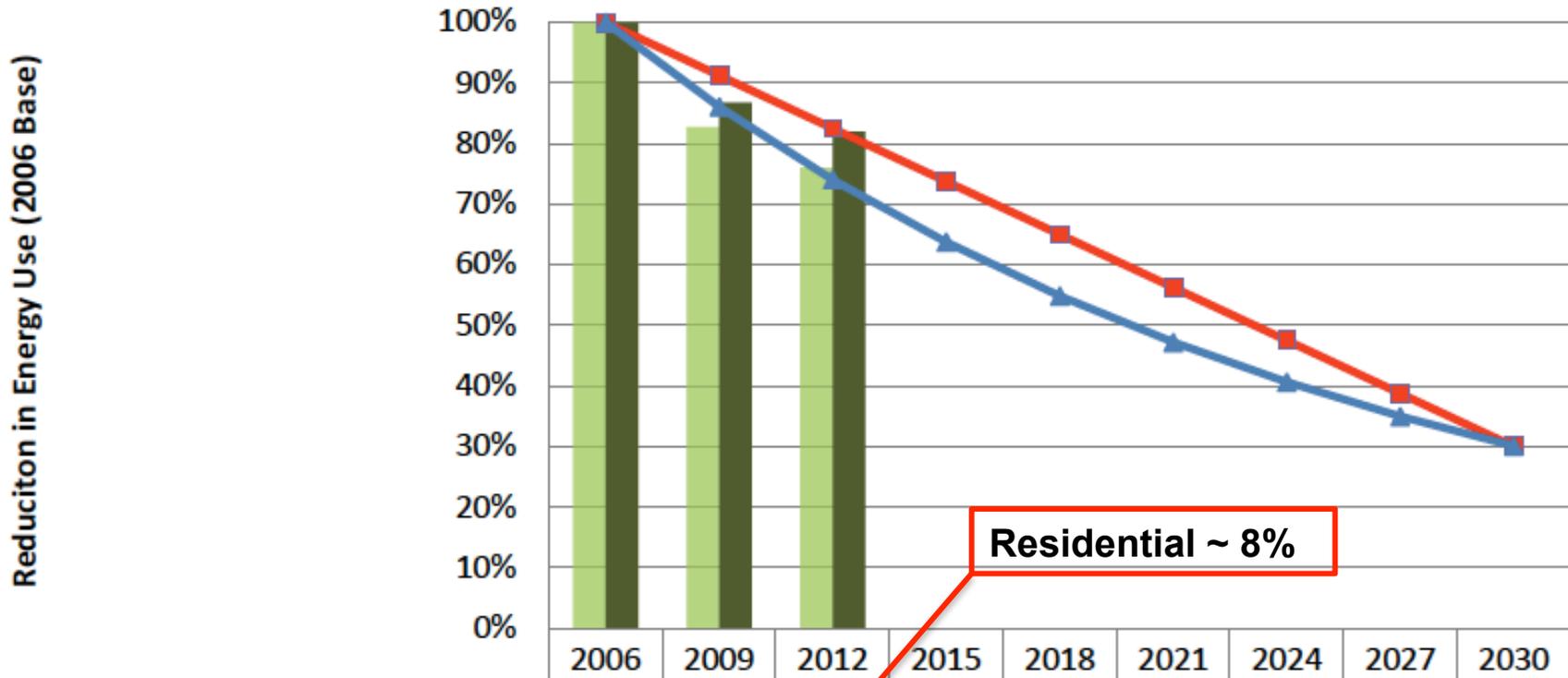
- Our Goal
 - Translate our energy efficiency target into real savings in residential & commercial buildings, new & retrofit
- The Questions We Ask
 - How close are we to achieving our goals?
 - What provisions are being enforced?
 - What provisions are under-enforced, and why?
- Supporting Compliance
 - On-call technical support and resources
 - Compliance documentation tools
 - **Training, training, training!**

Incremental Improvement Compared to Targets



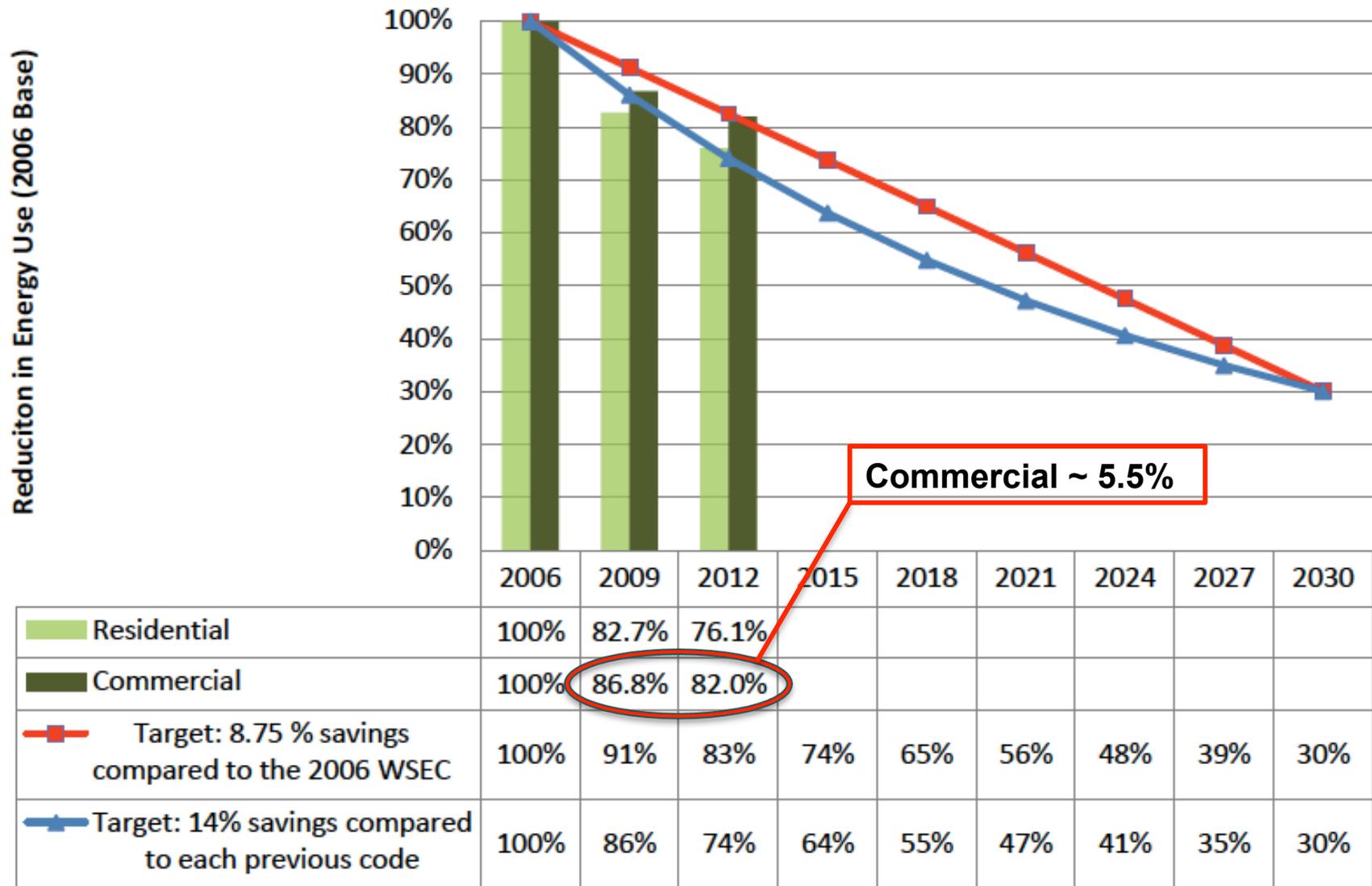
 Residential	100%	82.7%	76.1%						
 Commercial	100%	86.8%	82.0%						
 Target: 8.75 % savings compared to the 2006 WSEC	100%	91%	83%	74%	65%	56%	48%	39%	30%
 Target: 14% savings compared to each previous code	100%	86%	74%	64%	55%	47%	41%	35%	30%

Incremental Improvement Compared to Targets



	2006	2009	2012	2015	2018	2021	2024	2027	2030
■ Residential	100%	82.7%	76.1%						
■ Commercial	100%	86.8%	82.0%						
■ Target: 8.75 % savings compared to the 2006 WSEC	100%	91%	83%	74%	65%	56%	48%	39%	30%
▲ Target: 14% savings compared to each previous code	100%	86%	74%	64%	55%	47%	41%	35%	30%

Incremental Improvement Compared to Targets



Commercial ~ 5.5%

How Close Are We To Our Goals?



- Residential

- In a recent study of 69 single family homes constructed under the 2009 WSEC it was found that **96%** of these homes complied.

Source: WA State Department of Commerce, study funded by NEEA

- Highest reported residential energy code compliance rate in the US.
- Items evaluated in the study: floor, wall and ceiling insulation; windows; duct and envelope sealing; lighting and additional efficiency credits.

- Commercial

- A similar evaluation of energy code compliance has not recently been completed for commercial construction in Washington State.
- Obstacles – Funding, complexity of evaluating such a diverse sample

Identify Under-Enforced Provisions

- Sources of data
 - Technical support log – FAQs
 - Jurisdiction interviews
 - Online surveys
 - Pose questions to participants in classroom trainings
 - Develop compliance documentation database
- Common enforcement focus
 - Thermal envelope
 - Mechanical equipment efficiency and system sizing
 - Economizer
 - Lighting power
- Under-enforced provisions
 - Commercial envelope air leakage testing
 - Commissioning
 - Fan power limitation
 - Controls

Jurisdiction Interviews

- What support do they need to help them enforce the WSEC most effectively?

- **Large jurisdictions**

- More likely to have in-house expertise for Energy Code enforcement.
- *Weakest area of expertise is mechanical systems* even though complex system submittals are common.
- Often request topic specific technical resources, webinars and classroom trainings.

- **Small jurisdictions**

- Tend to focus on codes that are life-safety related - energy efficiency provisions are less of a priority.
- Commercial building permit applications are infrequent, so they are less familiar with the commercial energy code provisions.
- *Weakest area of expertise is mechanical systems*
- Benefits most from on-call technical support, classroom trainings (we go to them) and webinars.

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The **Northwest Energy Efficiency Council** is a non-profit trade association of the energy efficiency industry. NEEC member companies provide energy efficiency products and services and assist in the development and implementation of energy efficiency programs. NEEC advocates an affordable, energy efficient future for commercial, industrial and residential customers by:

- Promoting energy efficient products and services as the cleanest and lowest cost energy resource;
- Serving as the voice of the industry in state and local program and policy issues;
- Providing members with the most up-to-date information within the industry.

- NEEC provides training, technical support and educational resources to the design and construction industry for WSEC Commercial Provisions
- On-call Technical Support:
 - wsec@putnamprice.com
 - (206) 624-0283
 - NEEC Website – www.neec.net

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- WSU Energy Extension offers training, technical support and educational resources to homeowners and the design and construction industry for the WSEC Residential Provisions
- On-call Technical Support:
 - energycode@energy.wsu.edu
 - (360) 956-2042
 - WSU EEP Website - www.energy.wsu.edu/code



Codes & Standards

Instituting long-term energy savings

WSEC technical support services are made possible thanks to the generous support of the Northwest Energy Efficiency Alliance

More stringent codes and standards play an important role in helping the Northwest secure long-term energy savings. The Northwest Power and Conservation Council's 6th Power Plan estimates that over 40 percent of Northwest energy efficiency savings between now and 2030 will come from increased codes and standards.

Through aggregating and synthesizing knowledge, then convening and collaborating with our partners, NEEA gains an independent perspective. This helps us advance building energy codes and helped us provide training to more than 2000 building officials and trade allies around the region in 2011.

Through the following codes and standards initiatives, NEEA helps the region secure energy savings to help the Northwest meet its growing energy needs.



Codes

Helping to create new and more stringent building codes and providing technical support and training after adoption.



Standards

Serving as a technical expert during U.S. Department of Energy rulemaking process to encourage the adoption of optimal efficiency federal appliance and equipment standards.

www.neea.org

Related Resources

[Washington Residential Energy Code Compliance](#)

[Idaho Residential Code Compliance](#)

[2011 Residential Codes Energy Use Savings](#)

Conduit Spotlight

Energy Codes and Standards

The Codes & Standards Group is for people interested in building energy code development, adoption and implementation and in energy efficiency standards processes and progress. As a member of the group, you'll be notified periodically (not too often) of codes and standards news, including the nature of changes and upgrades, effective dates, expected regional energy savings, and how the changes may impact regional efficiency programs and initiatives. You'll be able to ask questions and provide feedback for the processes. Occasionally we might even ask you for help in providing data that's critical for enacting appropriate new codes and standards.



[Join the conversation >>](#)

Success Story

NEEA Builds Market Capacity Enabling More Energy-Efficient Codes

NEEC & WSU Outreach and Training



- **2013-14 Jurisdiction Office Visits for the 2012 WSEC**
 - NEEC and WSU collectively visited 24 different jurisdiction offices.
 - Purpose of visits were to inquire about what support they need and to answer WSEC-related questions.
 - Excellent opportunity to connect with the jurisdictional community.
 - We also attend and provide professional development training at Washington Association of Building Officials (WABO) meetings.
- **Residential Duct and Envelope Testing Training**
 - Since 2009, WSU has held 88 trainings on how to perform residential duct and envelope air leakage testing.
 - These trainings were attended by over 2,000 industry professionals.

NEEC & WSU Outreach and Training



- **2013-15 Classroom Trainings for the 2012 WSEC**
 - Commercial – 30 trainings attended by 1,288 industry professionals
 - Residential – 48 trainings attended by 1,307 industry professionals
 - Participants include: architects, engineers, lighting designers, contractors, product & service providers, building owners, developers, utilities and jurisdictions
 - Out of the 241 townships, cities and counties state-wide, at least 120 who oversee Code compliance have sent a representative to a NEEC or WSU training this code cycle.
- **Commercial compliance form webinars**
 - Live webinars held for the envelope and lighting compliance forms.
 - Each webinar was hosted at over 50 office locations.
 - Webinars are posted online for on-demand viewing.

WA State Energy Code Commercial Provisions



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