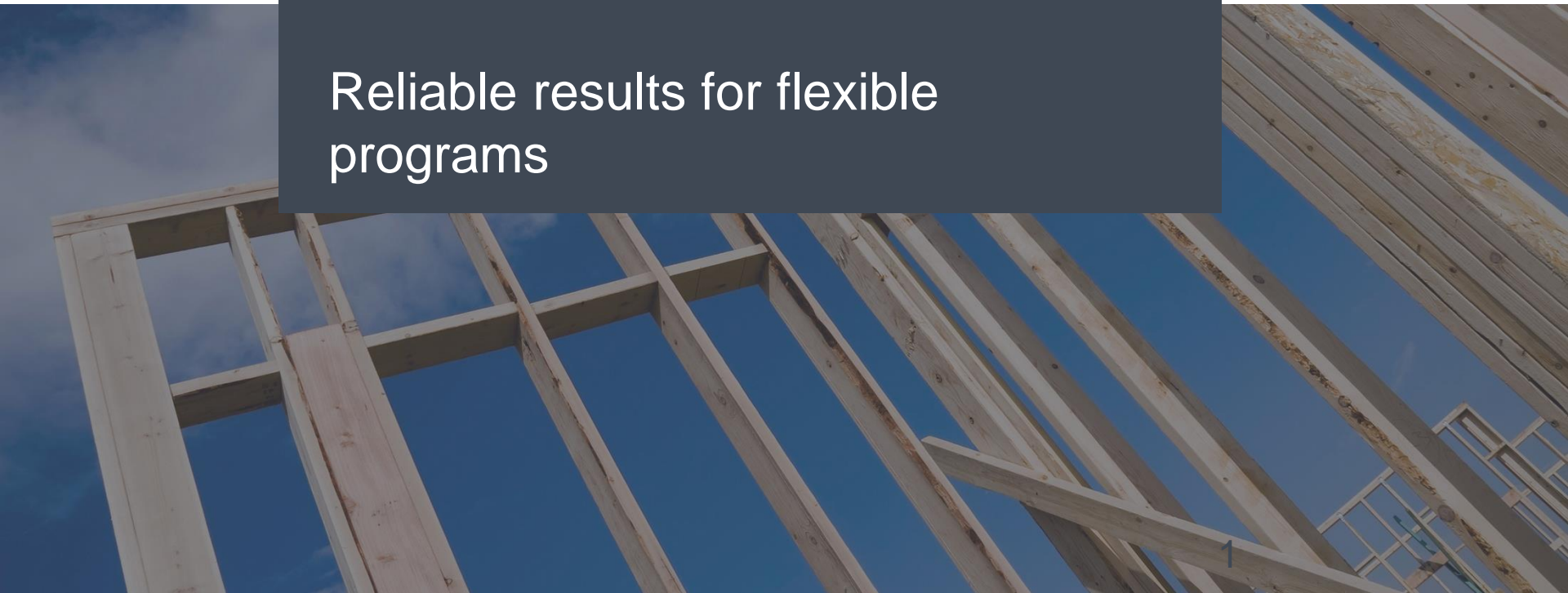# BetterBuilt NW

New Homes Performance Path

Reliable results for flexible programs

Introduction

- BPA launched the New Homes Performance Path in April

- The New Homes Performance Path builds on NEEA's work under the Next Step Home pilot

- NEEA has been working with utilities to plan programs

  - SnoPUD launched first NHPP-based program on May 16th

- The NHPP structure allows for flexibility in designing residential programs
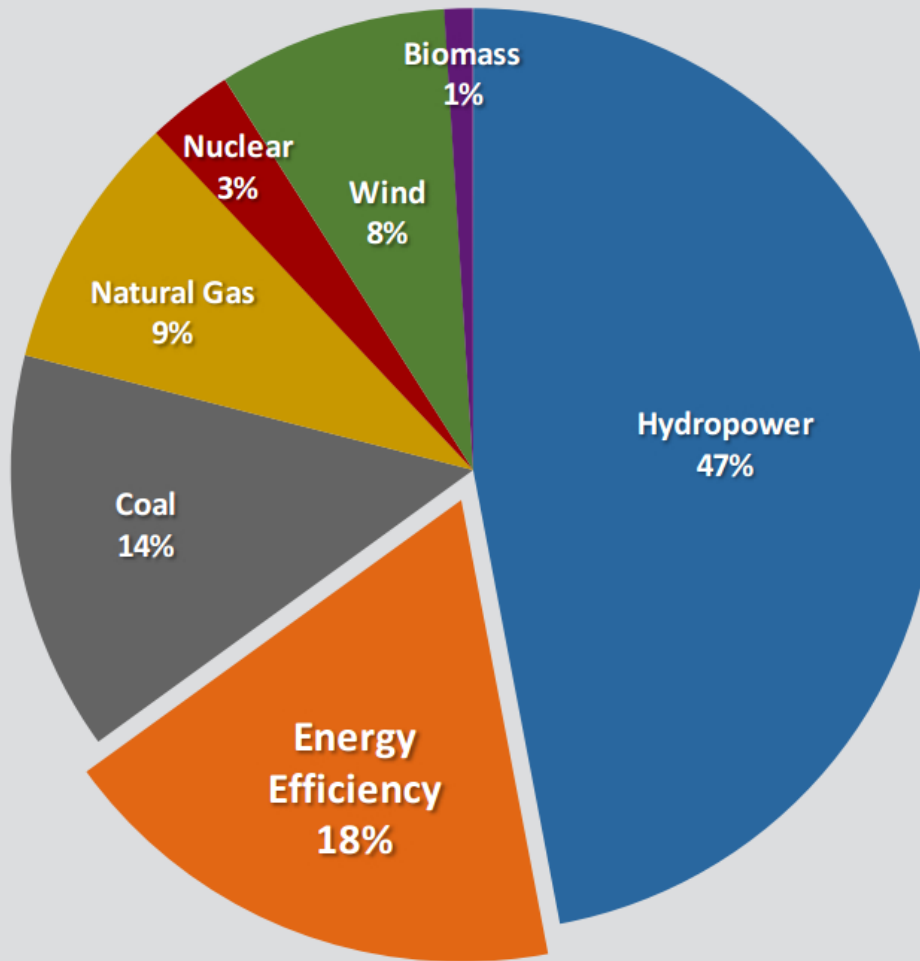
Learning Objectives

What we'll be focusing on today

1. Understand modeling impacts on programs
2. Benefits of standardized practices
3. Applying the protocol
4. Where to go for support

Understanding Impacts

Understanding Impacts

Since 1978, the region has met over half of its load growth through efficiency resources

$4 billion saved in energy bills

6,000 aMw – enough to power 5 cities the size of Seattle

Image and data courtesy of NW Power & Conservation Council

Understanding Impacts

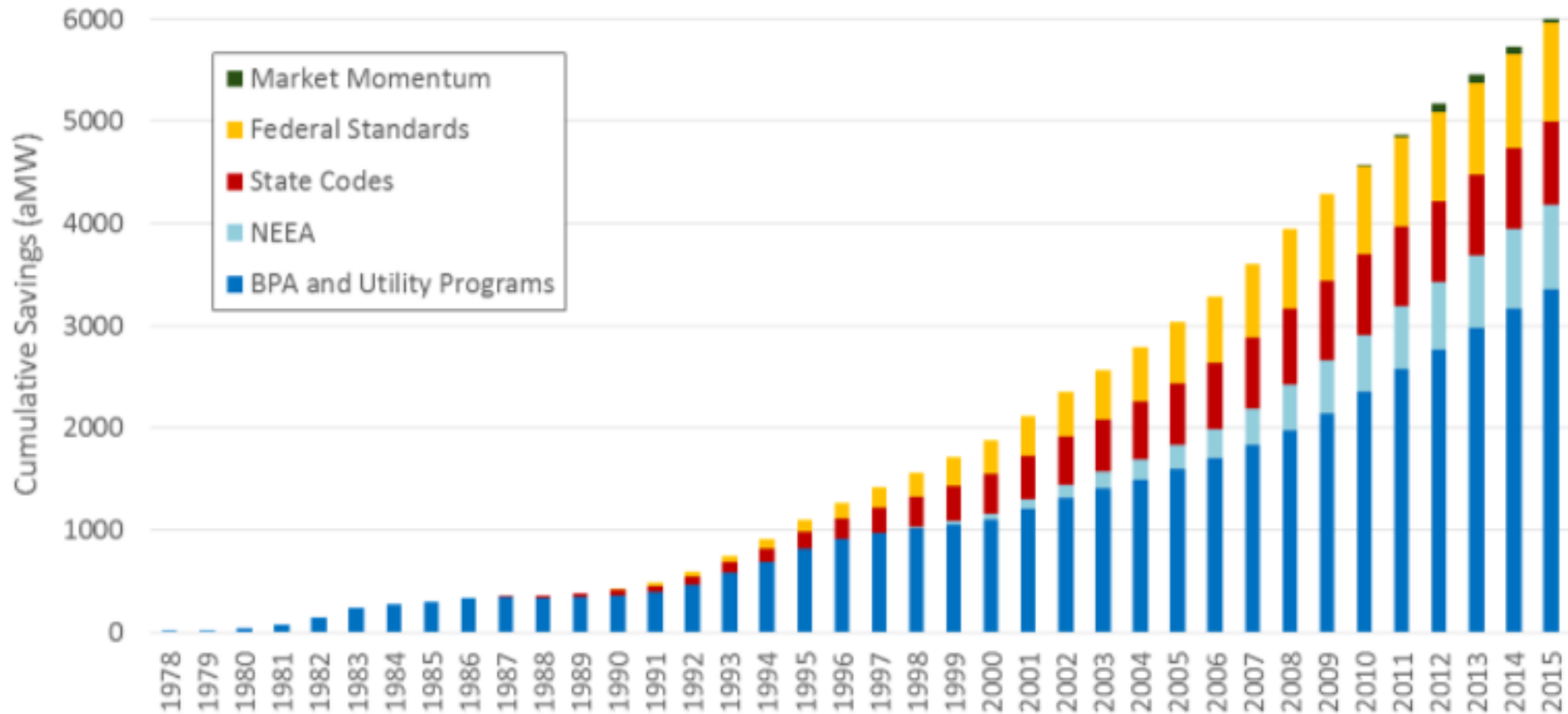Cumulative Regional Savings from All Mechanisms

Image and data courtesy of NW Power & Conservation Council

Understanding Impacts

Background - New Construction Standard Protocol

- Establishes a method for estimating "utility-grade" savings with REM/*Rate*™
  - o Standardized modeling and QA methods
- Enables utilities to incentivize homes based on REM/*Rate*™ results, modified via AXIS database
- Encourages partnerships between utilities, raters, and certification programs to create value

Understanding Impacts

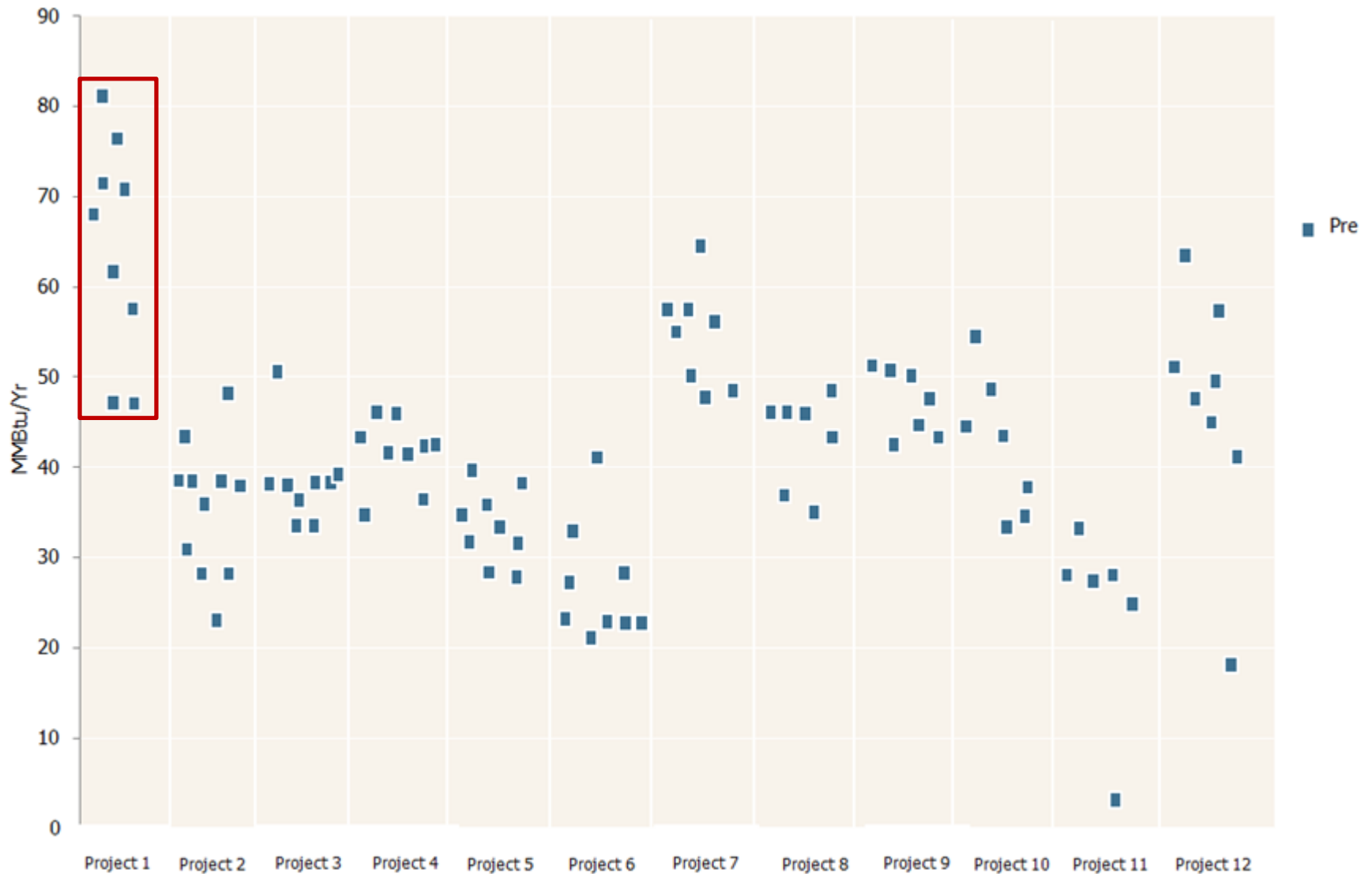What does it take to model "utility-grade" savings in REM/*Rate*™?

NEEA Pilot Rating Project (2015)

Goals:

- Quantify model variability introduced by Rater modeling practices, identify gaps in existing guidance
- Use findings to improve model consistency, accuracy, and fill gaps in existing modeling guidance

Understanding Impacts: "Ratings in the wild"

Understanding Impacts

Change in Savings 2014-2017 (WA)

Horizontal bar chart comparing 2017 code home (dark red) and 2014 code home (blue) values across savings percentages:

Savings	2017 code home	2014 code home
30%	3831	5062
25%	3193	4218
20%	2554	3374
15%	1916	2531
10%	1277	1687

Legend: ■ 2017 code home ■ 2014 code home
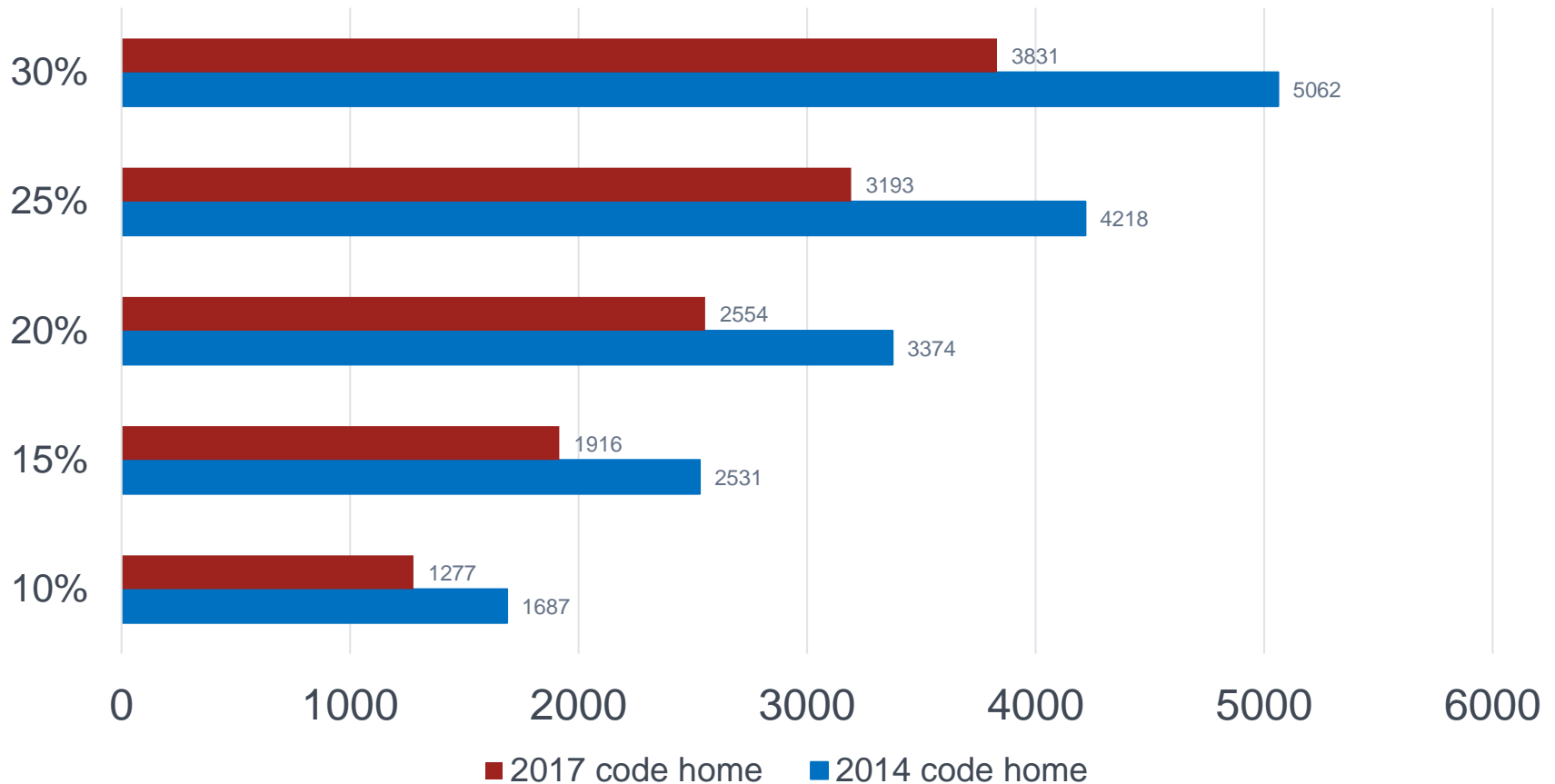
Understanding Impacts
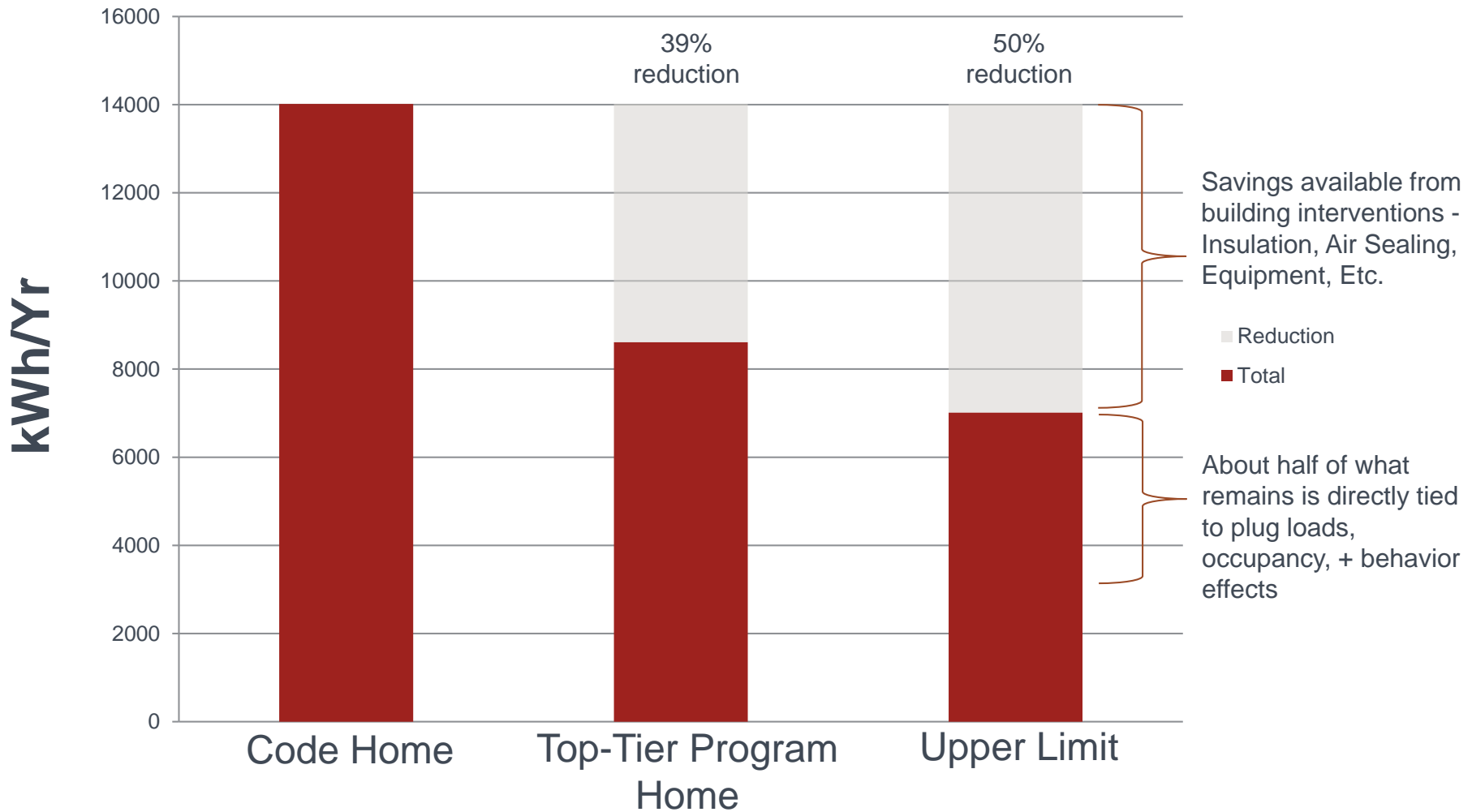
Understanding Impacts

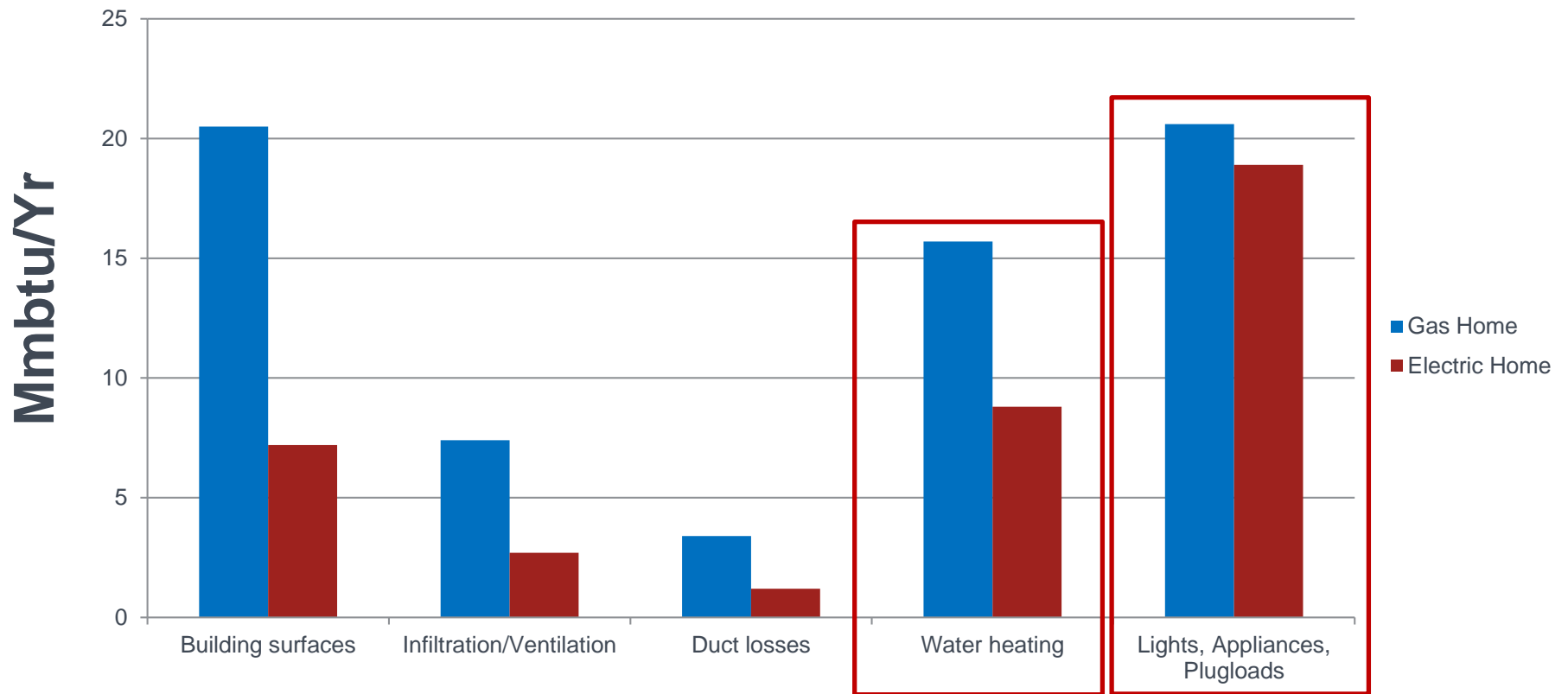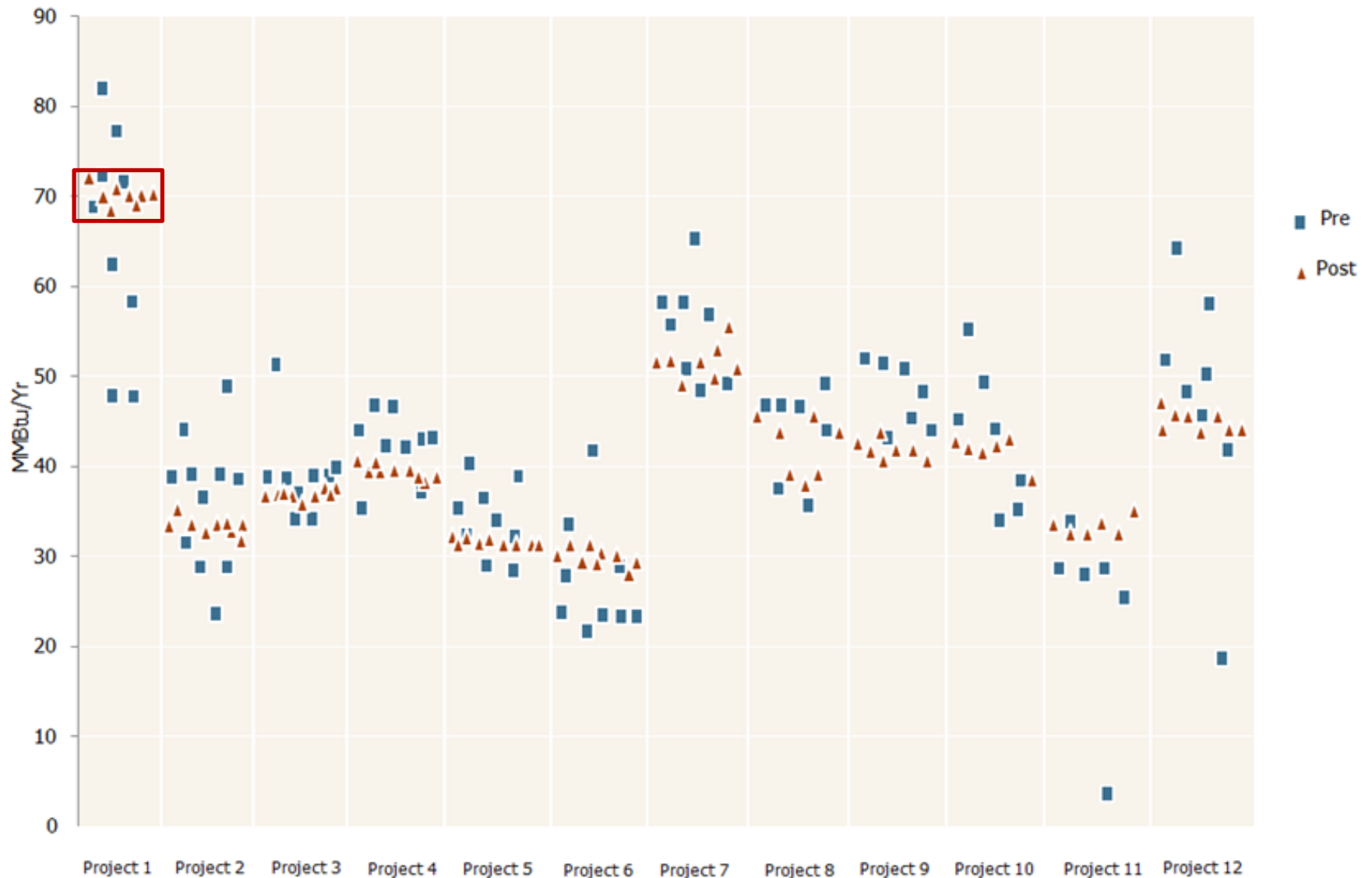Where do new homes use energy?

The Benefits of Standardized Practices

Benefits of Standardization

- Creates consistency in rating results

- Minimizes errors and error impacts to programs

- Closer alignment with actual energy use

Applying Consistent Practices

Benefits of Standardization

- Creates consistent practices for incentives and certifications – streamlines work processes

- Clear and consistent practices across raters/rating companies

- Data-driven program QA
    - Streamlines file review
    - Reduces administrative burden
    - Improves accuracy

Poll Question

Applying The Protocol

General Work Flow

Rater Plan Review, Design Consulting

Rater Field Inspections

AXIS Data Validation and File QA

Program Field QA

Project Initiated

Home Record Created in AXIS

Home Built

Final Model Uploaded to AXIS

Savings Calc'ed in AXIS

AXIS Utility Reports

Utility Pipeline Monitoring

Utility Incentive Paid
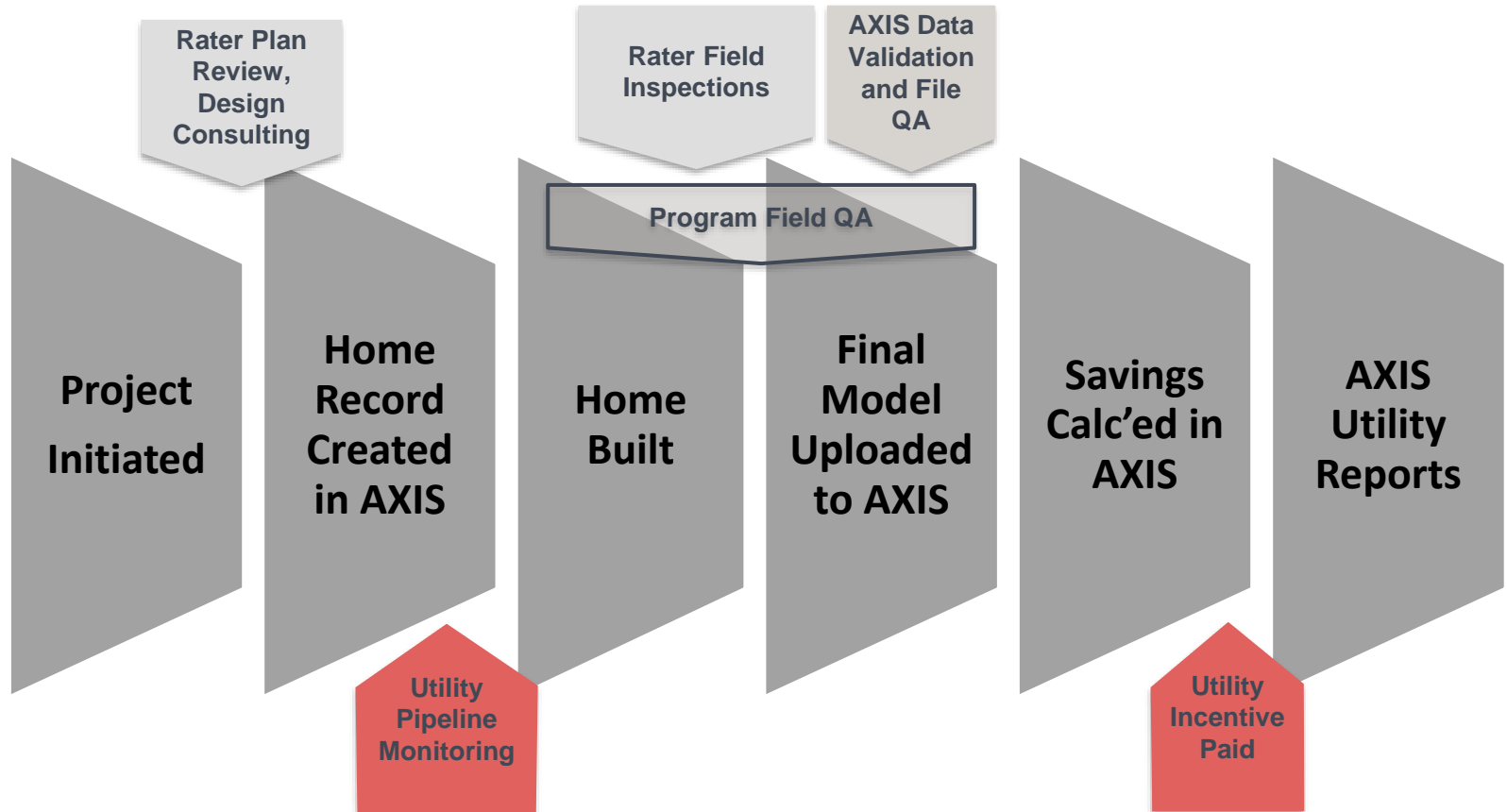
Applying The Protocol

Rater/verifier Qualifications

- Must be oriented on NW modeling requirements and workflow
- Remaining qualifications are divided according to services
    - Modeling – trained on REM/*Rate*™
        - Current HERS cert or verifiable experience modeling in other programs
    - Field verification – trained in field verification
        - Current HERS/BPI cert or verifiable experience verifying in other programs
    - Introductory training options are available for newbies. A list of trainings is available on betterbuiltnw.com

Applying The Protocol

Modeling Requirements

- Document is available on betterbuiltnw.com

- Requires "national" version of REM/*Rate*™ (v15.3)

- Aimed at creating consistent methods for programs across the region

    - Guidance for high performance building practices and systems

    - Guidance to supplement REM/*Rate*™'s internal help menus

    - Guidance to achieve more reliable model outputs

- Designed to be comprehensive and straight forward

Applying The Protocol

- Uses REM/*Rate*™'s UDRH structure to determine % improvement over code

  - For raters participating in programs that require a baseline model, this means they no longer have to create a separate model

- Rater/verifier selects and applies the appropriate UDRH file in REM/*Rate*™

  - UDRH files are available on betterbuiltnw.com

- UDRH file selection is based on:

  - State

  - HVAC configuration (Central vs Zonal)

  - Home size (only in Washington)

Applying The Protocol

UDRH file selection

State	HVAC Configuration	Floor Area	UDRH File
Washington	Zonal	$<1,500\ ft^2$	WA Perf Path Zonal - Small.udr
	Zonal	$1,500\text{-}5,000\ ft^2$	WA Perf Path Zonal - Medium.udr
	Zonal	$>5,000\ ft^2$	WA Perf Path Zonal - Large.udr
	Central	$<1,500\ ft^2$	WA Perf Path Central - Small.udr
	Central	$1,500\text{-}5,000\ ft^2$	WA Perf Path Central - Medium.udr
	Central	$>5,000\ ft^2$	WA Perf Path Central - Large.udr
Oregon	Zonal	Any	OR Perf Path Zonal.udr
	Central	Any	OR Perf Path Central.udr
Idaho	Zonal	Any	ID Perf Path Zonal.udr
	Central	Any	ID Perf Path Central.udr
Montana	Zonal	Any	MT Perf Path Zonal.udr
	Central	Any	MT Perf Path Central.udr

Applying The Protocol

Modeling Requirements

- Specific guidance on practices/systems present in NW homes

    - Thick walls
    - Foundation properties
    - Mini-split heat pumps
    - Electric resistance zone heaters
    - Fireplaces
    - Ventilation systems

Applying The Protocol

- AXIS database allows Rater/verifier to upload preliminary file with placeholder values to obtain savings estimates

- For field-verified components, final model inputs align with field observations

- AXIS database provides BPA-eligible incentive calculations

- Utility determines their own program threshold, incentive structure, and participation requirements

Applying The Protocol

- Streamlined QA protocol focused on

  - High-impact modeling components
  - Direct mentorship/training with Rater

- QA provided by NEEA <u>or</u> utility

- Once homes pass QA, automatic notifications are provided to utility on an opt-in basis
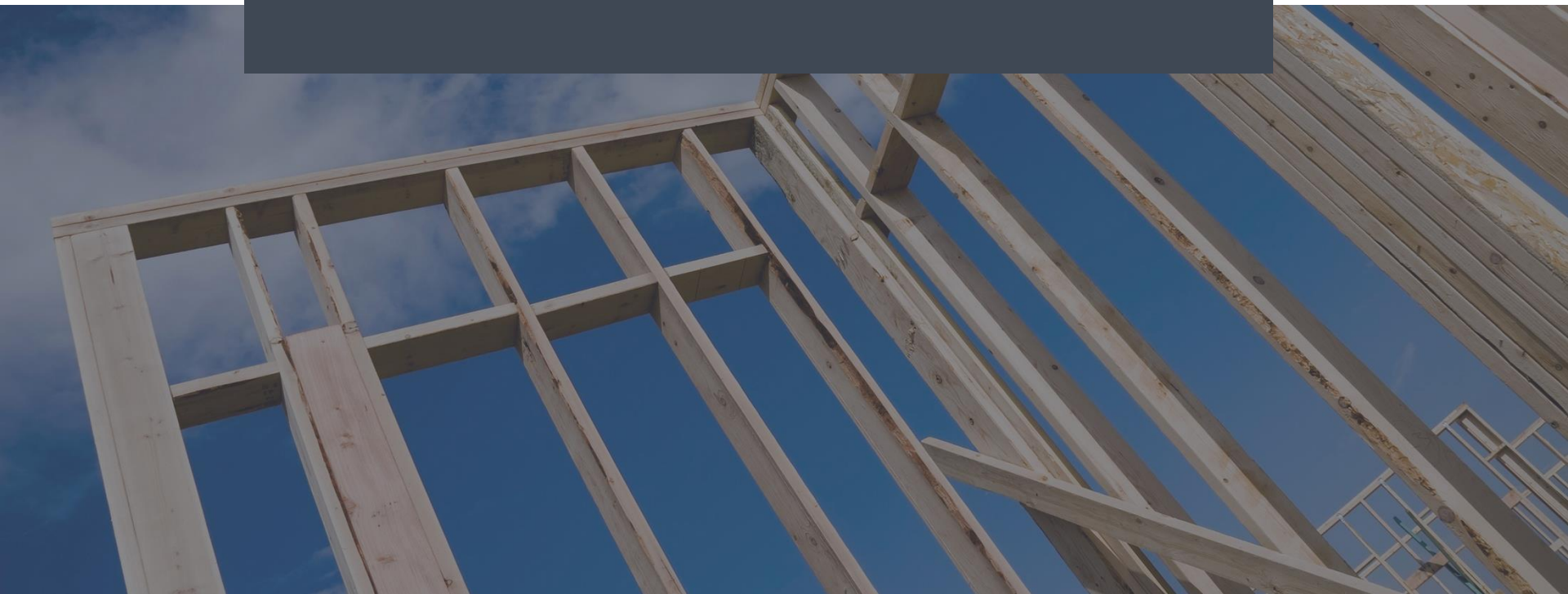
Where To Go for Support

www.betterbuiltnw.com

The resources you need to

Build

Energy-Efficient

Homes

BetterBuilt^{NW}

Resources

Find resources designed to support and promote energy-efficient home building

🔍 Search keyword, type, industry, etc.   *Search*

Marketing >

Training >

Performance Path >

Tools >

View All

Browse Resources

🔍 Search keyword, type, industry, etc.   **Search** | *Refine* ⌄   ⬆ Contribute a Resource

Performance Path ✖

RTF New Homes Standard Protocol

Performance Path

With the passage of the Northwest Power Act in 1980, Congress defined energy efficiency as a key resource for meeting the region's load growth. The Regional Technical Forum was established as a body that would provide the region with consistent and reliable quantification of energy savings estimates for specific efficient technologies or actions. The energy savings estimates generated through the public processes of the RTF enable accurate estimates of the region's efficiency potential vital to power system planning, as well as a better understanding of

Performance Path Overview

Performance Path

The New Homes Performance Path program provides an opportunity for Northwest utilities to participate in a residential single family new construction program based on energy savings estimates generated by the REM/Rate software, currently used by builders and home energy raters across the country. NEEA, the Regional Technical Forum (RTF), and Bonneville Power Administration (BPA) have created specific modeling requirements and program guidelines to ensure the program provides reliable energy savings for utilities across the Northwest.

Northwest Modeling Requirements

Performance Path

313.41 KB
pdf

This guide provides raters with technical guidance on modeling homes to generate northwest utility approved savings estimates. Utilities can then use these savings estimates to meet conservation goals and issue incentives for qualified projects. These requirements also provide information on how data is uploaded to the regional new homes database (Axis), and where supporting files are located.

Thanks for Tuning In