Northwest Energy Efficiency Taskforce
Executive Committee Meeting

Tuesday, October 16, 2012
Noon – 3:00 p.m.

Double Tree by Hilton Hotel
Spokane City Center
322 North Spokane Falls Court
Spokane, Washington

MEETING AGENDA

Noon	Working Lunch, Welcome, Introductions and "One Big Thing About Energy Efficiency in the Northwest" *Ken Canon, Facilitator*
12:45 p.m.	Regional Progress On Energy Efficiency - A Mid-Term Review **Charlie Black**, Power Division Director, Northwest Power and Conservation Council
1:10 p.m.	A Cautionary Note? Energy Trust of Oregon's Future Energy Efficiency Deployment Analysis **Elaine Prause,** Senior Manager of Planning, ETO
1:35 p.m.	Is the Northwest Doing Enough in Emerging Technology to Keep the Energy Efficiency Technology Pipeline Full? **Jeff Harris,** Director, Emerging Technology, NEEA **Ryan Fedie,** Manager, Engineering Services, BPA
2:15 p.m.	Discussion of the One Big Thing (or two or three) About Energy Efficiency in the Northwest. **NEET Executive Committee**
3:00	Meeting Adjourns

Northwest Energy Efficiency Taskforce
2012 Executive Committee

Chairs

Tom Karier, *Northwest Power and Conservation Council*
Pat Reiten, *Pacific Power*
Steve Wright, *Bonneville Power Administration*

Members

Jim Baggs, *Seattle City Light*
Richard Beam, *Providence Health and Services*
Greg Carrington, *Chelan County PUD*
Ralph Cavanagh, *Natural Resources Defense Council*
Ed Brost, *Franklin County PUD*
Ted Coates, *Tacoma Public Utilities*
Lisa Coltart, *BC Hydro*
Anita Decker, *Bonneville Power Administration*
Carol Dillin, *Portland General Electric*
Theresa Drake, *Idaho Power Company*.
Bill Drummond, *Bonneville Power Administration*
Kim Drury, *Northwest Energy Coalition*
Pat Egan, *Pacific Power*
Steve Eldrige, *Umatilla Electric Cooperative*
Bruce Folsom, *Avista Utilities*
Bill Gaines, *Tacoma Public Utilities*
Roger Gray, *Eugene Water and Electric Board*
Kathy Hadley, *National Center for Appropriate Technology*
Margie Harris, *Energy Trust of Oregon*
Phil Jones, *Washington Utility and Transportation Commission*
Paul Kjellander, *Idaho Public Utility Commission*
Joe Lukas, *Western Montana Generation and Transmission Cooperative*
Pat McGary, *Clark Public Utilities*
Sara Patton, *Northwest Energy Coalition*
Keith Phillips, *Washington Governor's Office*
Stan Price, *Northwest Energy Efficiency Council*
Bob Repine, *Oregon Department of Energy*
Bonnie Rouse, *Montana Department of Environmental Quality*
Bob Rowe, *Northwestern Energy*
John Savage, *Oregon Public Utility Commission*
Cal Shirley, *Puget Sound Energy*
Brian Skeahan, *Cowlitz County PUD*
Susan Stratton, *Northwest Energy Efficiency Alliance*
Jason Thackston, *Avista Utilities*
Phil Welker, *Portland Energy Conservation, Inc.*
Jim West, *Snohomish County PUD*
Roger Woodworth, *Avista Utilities*
Deb Young, *Northwestern Energy*
Dave Zepponi, *Northwest Food Processing Association*

Regional Progress on Energy Efficiency – A Mid-Term Review

Northwest Energy Efficiency Task Force Executive Committee Meeting

Charlie Black
Power Planning Division Director
Northwest Power and Conservation Council

October 16, 2012

Northwest Power and Conservation Council

Key Takeaways – The Good News

- The region acquired 277* average megawatts (aMW) of energy efficiency during 2011; this was 26% more than the goal of 220 aMW; it was also the seventh year in a row that the region exceeded its annual goals
- Levelized costs to acquire energy efficiency remain below costs of other resources
- The region appears to be on track to meet the Sixth Northwest Power Plan goal to acquire 1,200 aMW of energy efficiency during 2010-2014

*277 aMW is roughly equal to 1.4% of regional loads

Key Takeaways – The Challenges

- The available types of energy efficiency opportunities are changing; actions are needed to capture these new opportunities
- The region's utilities face varying circumstances that affect their economics and logistics of acquiring energy efficiency
- Question: Can and will the region as a whole sustain its strong recent performance in acquiring energy efficiency?

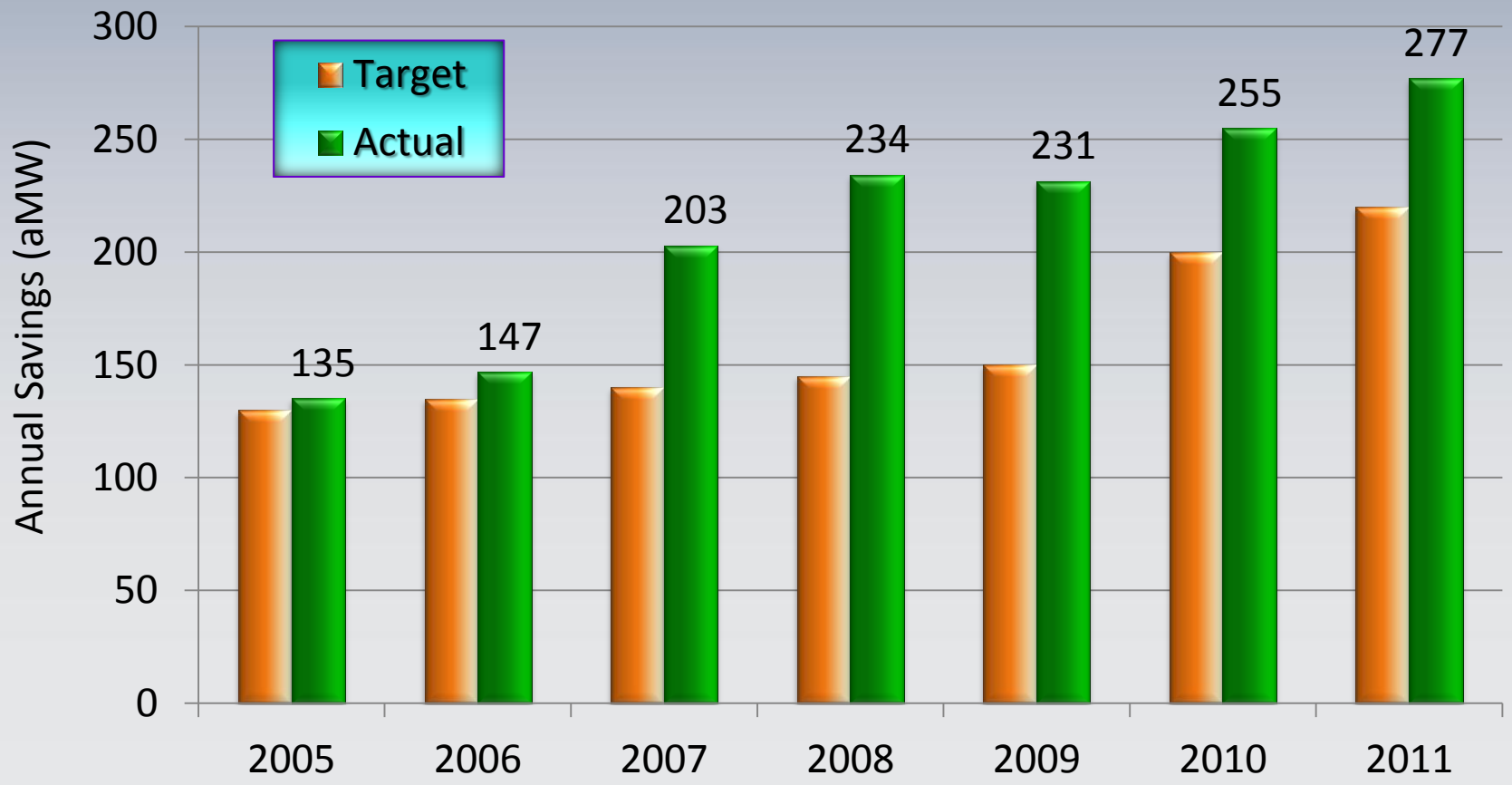
Mid-Term Assessment

- Major purposes:
  - Check on progress implementing the Sixth Northwest Power Plan
  - 'Tee up' issues for the upcoming Seventh Power Plan

Mid-Term Assessment

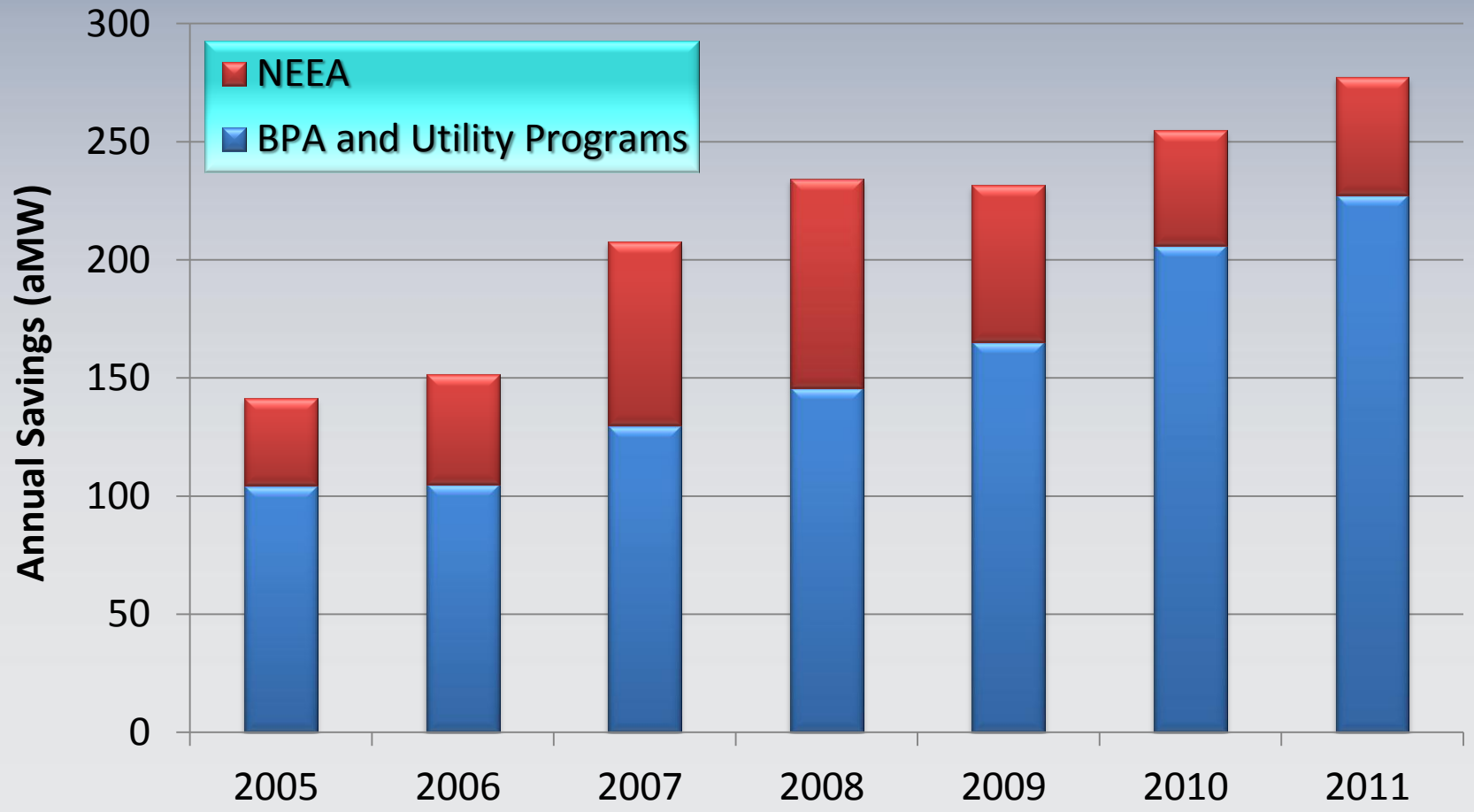
- Developments since early 2010:
  - Low market prices for natural gas and wholesale power
  - Slower than expected development of carbon regulation
  - Nevertheless, greenhouse gas emissions are declining
  - Reduced dispatch, announced retirements of coal plants
  - Slow load growth
  - Intra-regional conditions affect opportunities and needs
  - Wind resource development and integration
  - Emerging needs for peaking capacity and flexibility
- All of the above notwithstanding…

The Northwest Has Exceeded Its Energy Efficiency Goals Every Year Since 2005



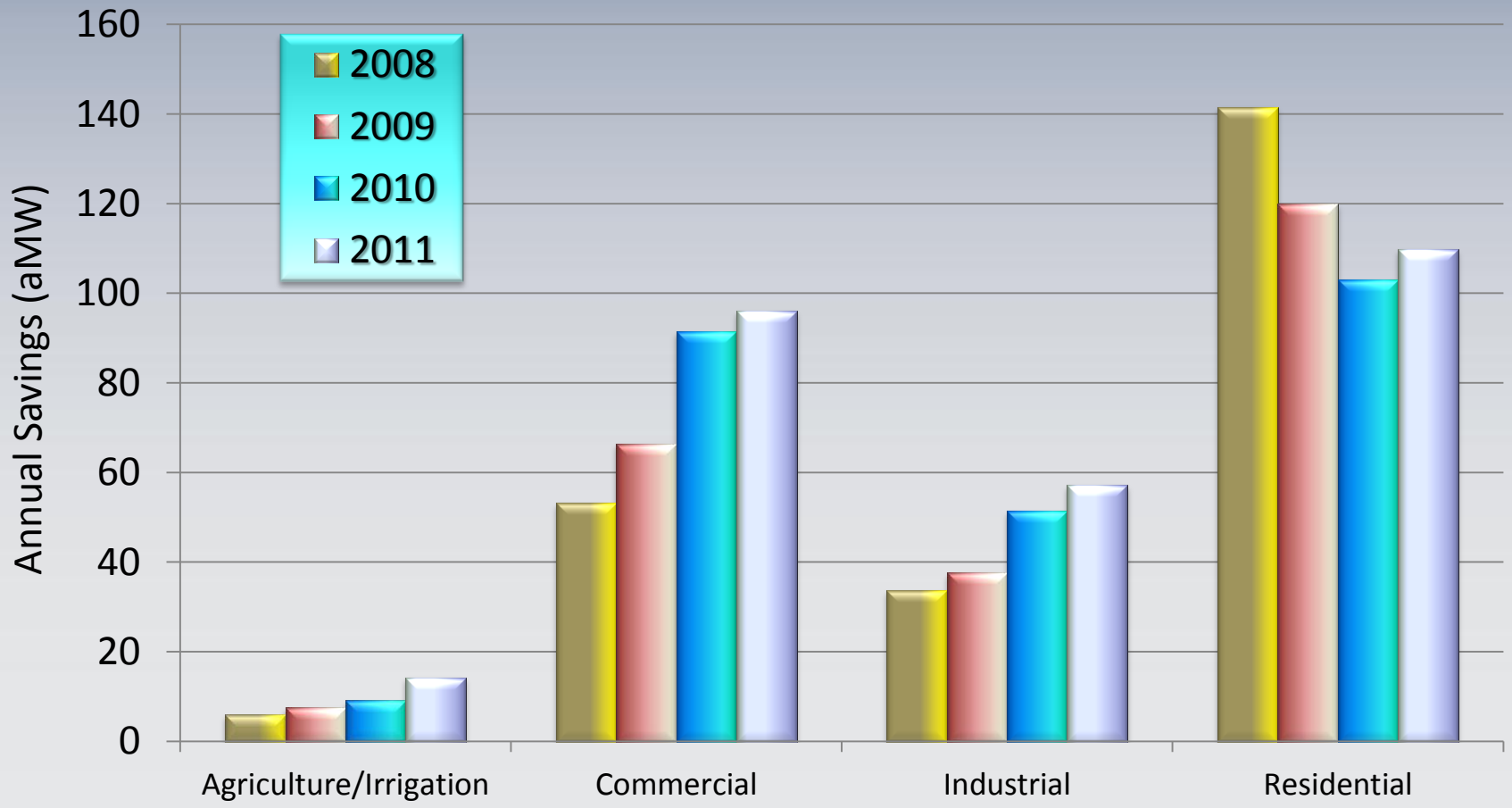
Northwest Power and Conservation Council

NEEA Continues to Contribute Significant Savings



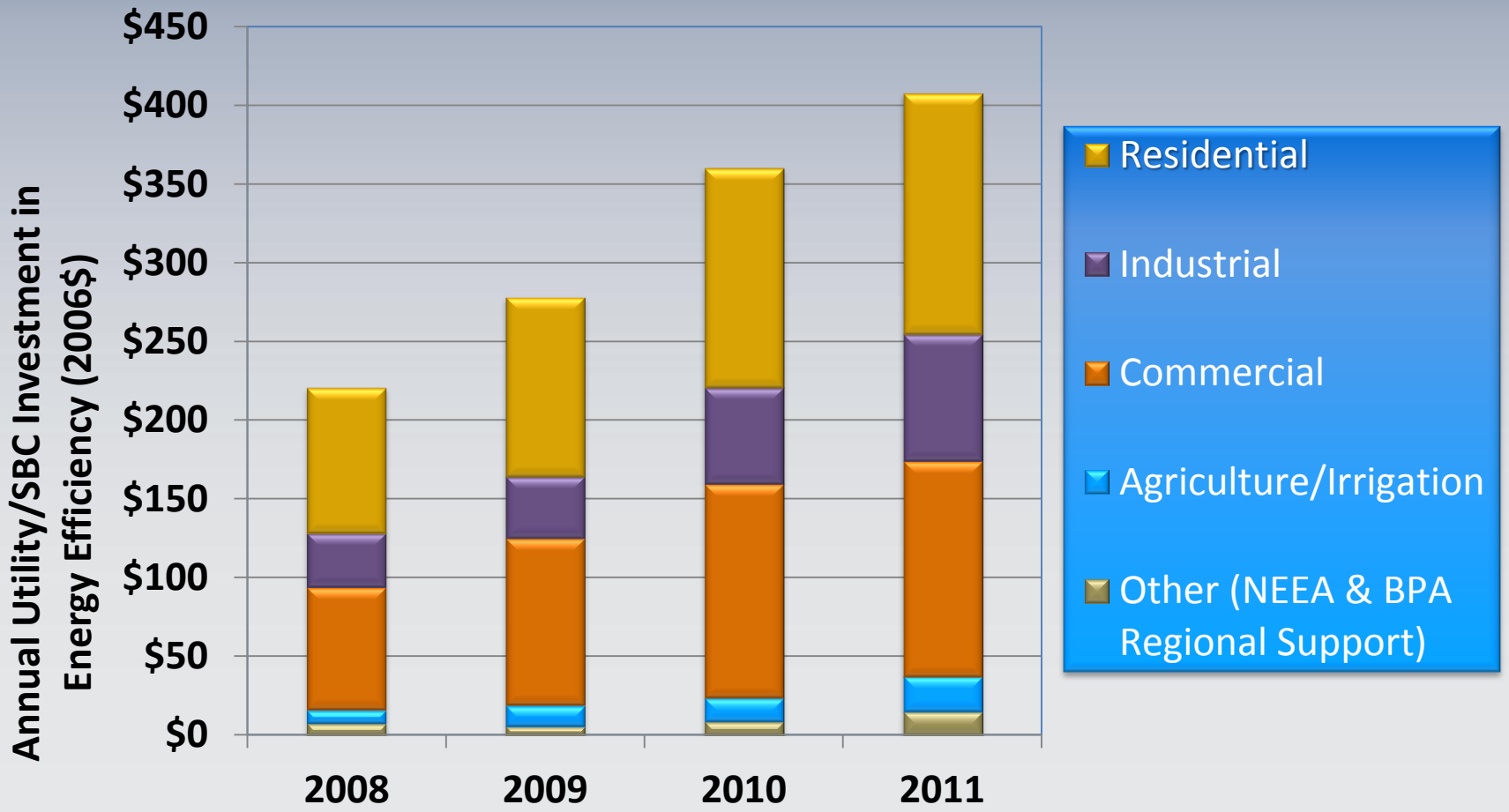
Northwest Power and Conservation Council

Decline in the Residential Sector More Than Offset by Growth in Other Sectors



Northwest Power and Conservation Council

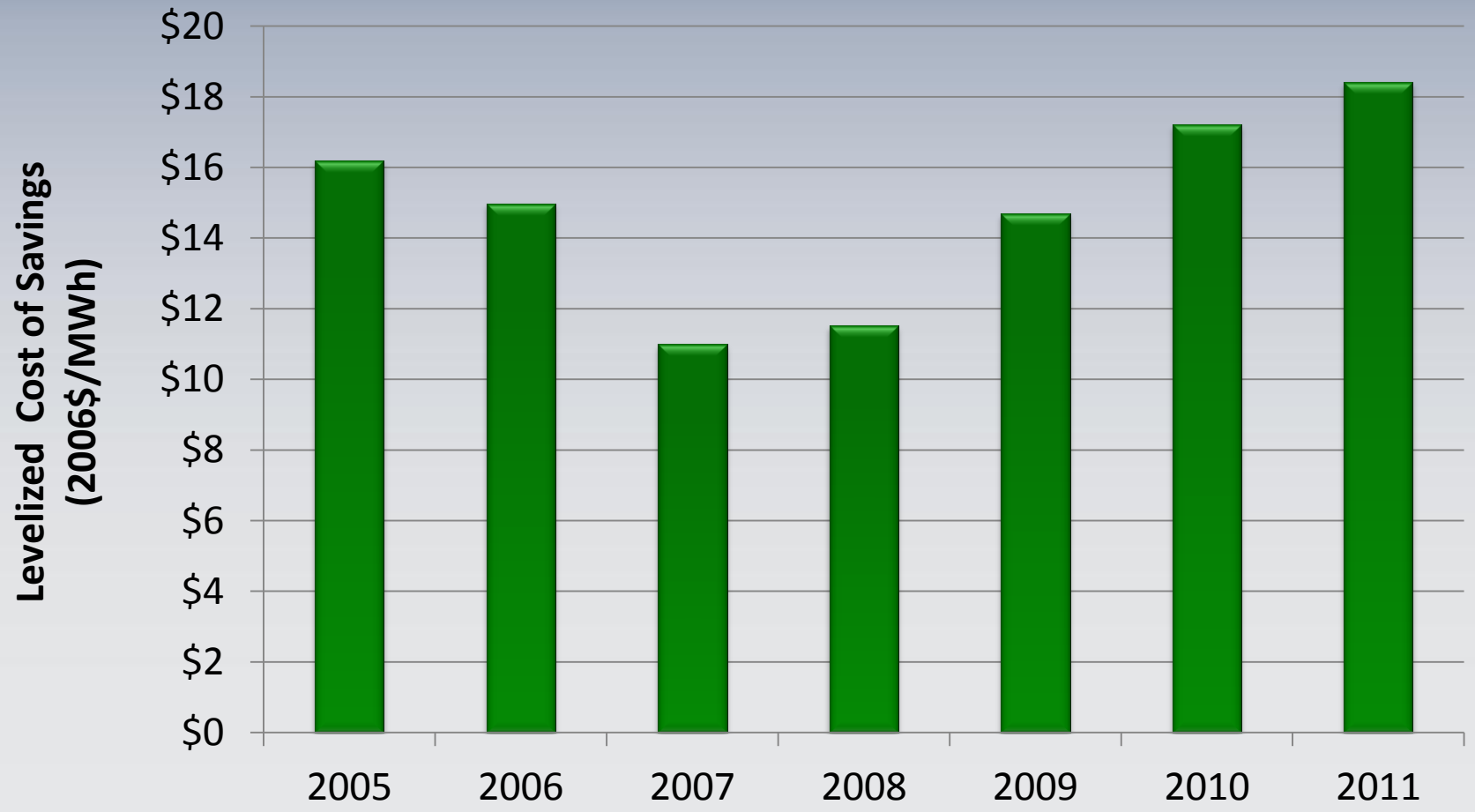
Regional Utility/SBC Investments in Energy Efficiency in 2011 Were $408 Million



Northwest Power and Conservation Council

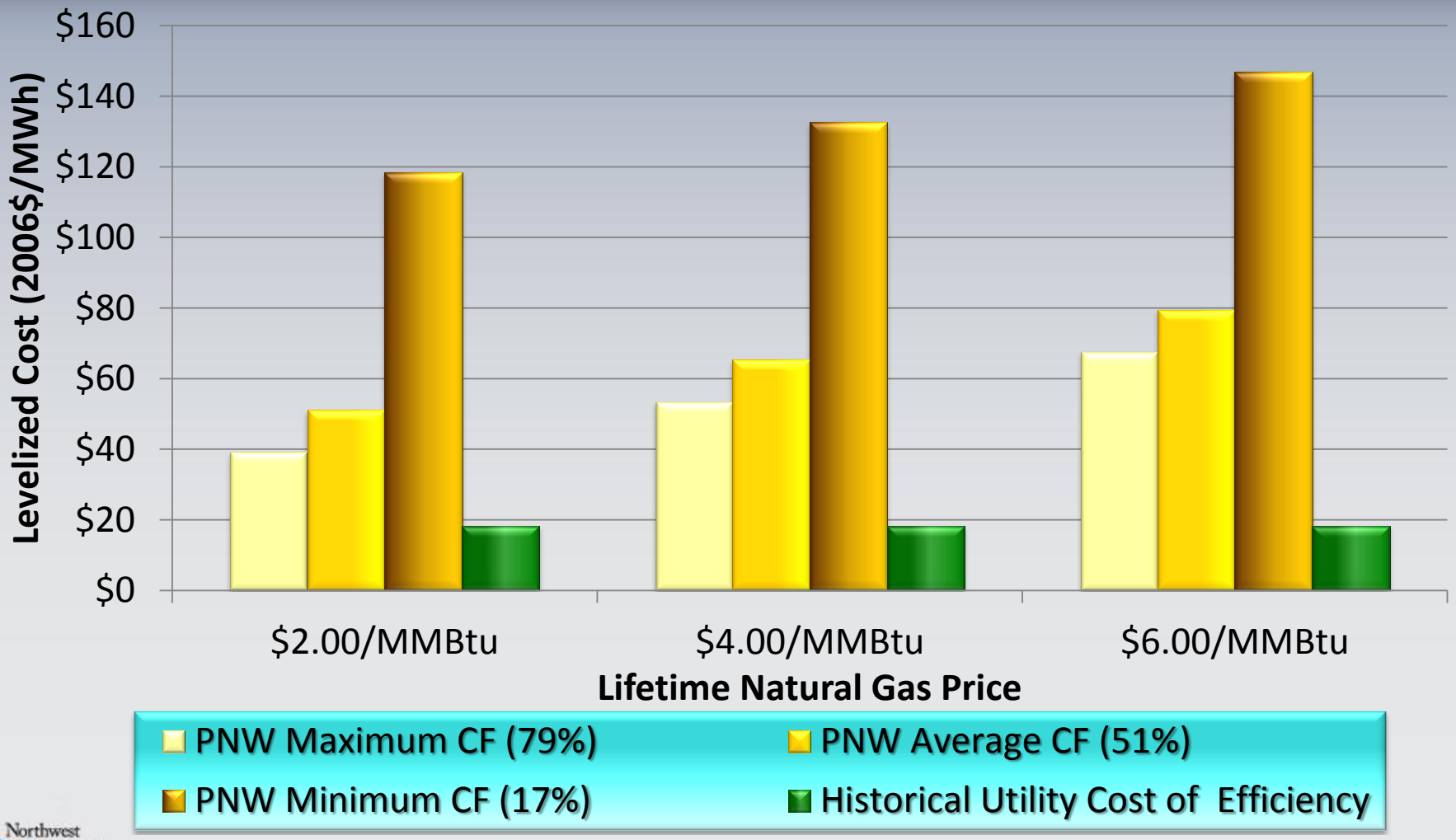
In 2011, U.S. utilities invested $5.23 billion (2006$) in energy efficiency. The Northwest is just under 5% of U.S. population, but made up about 8% of the total investment.

Utilities' Average Levelized Cost of Energy Efficiency is Below $20/MWh



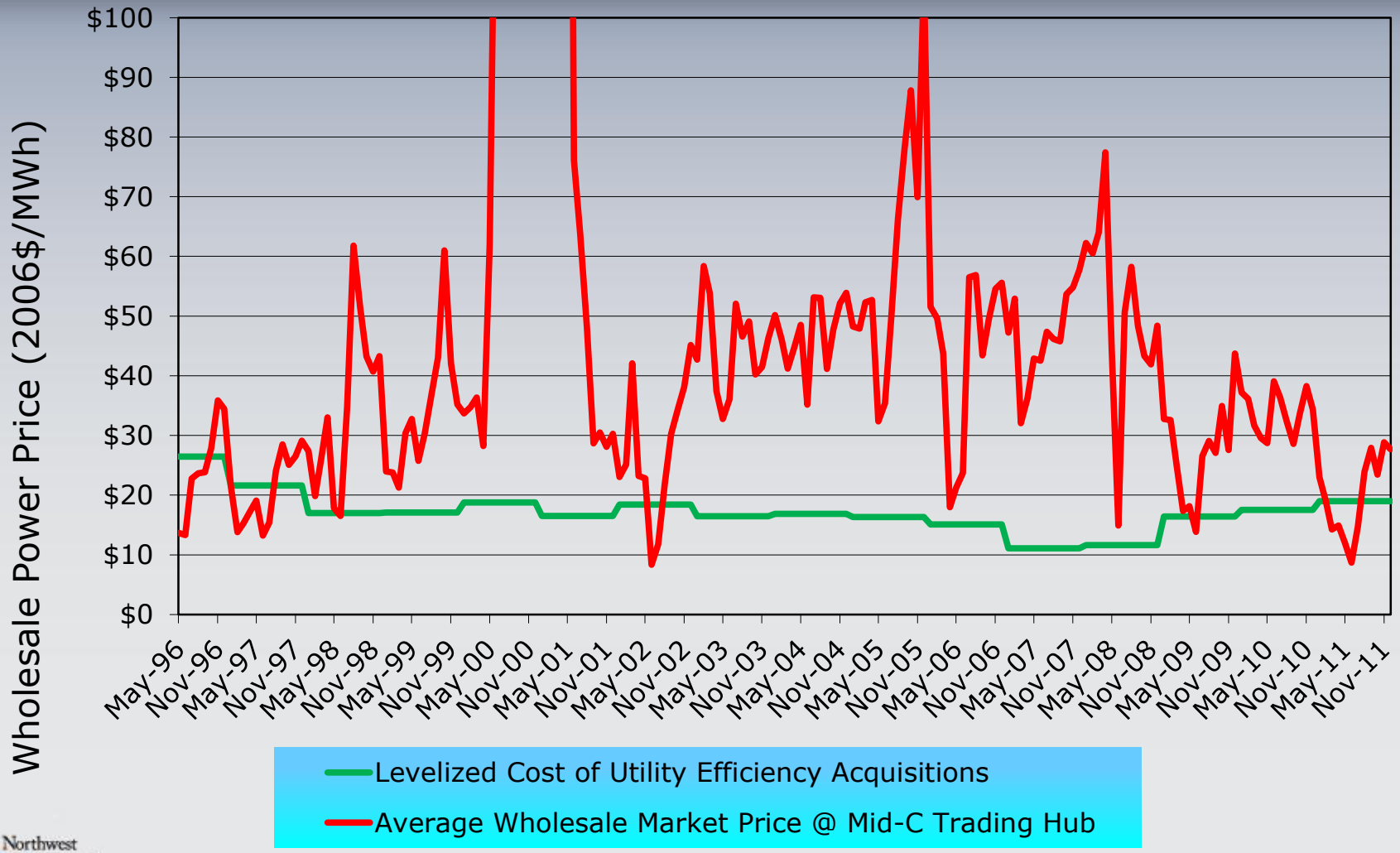
Northwest Power and Conservation Council

Levelized Cost of Energy Efficiency is Less Than Gas-Fired Combined Cycle Generation



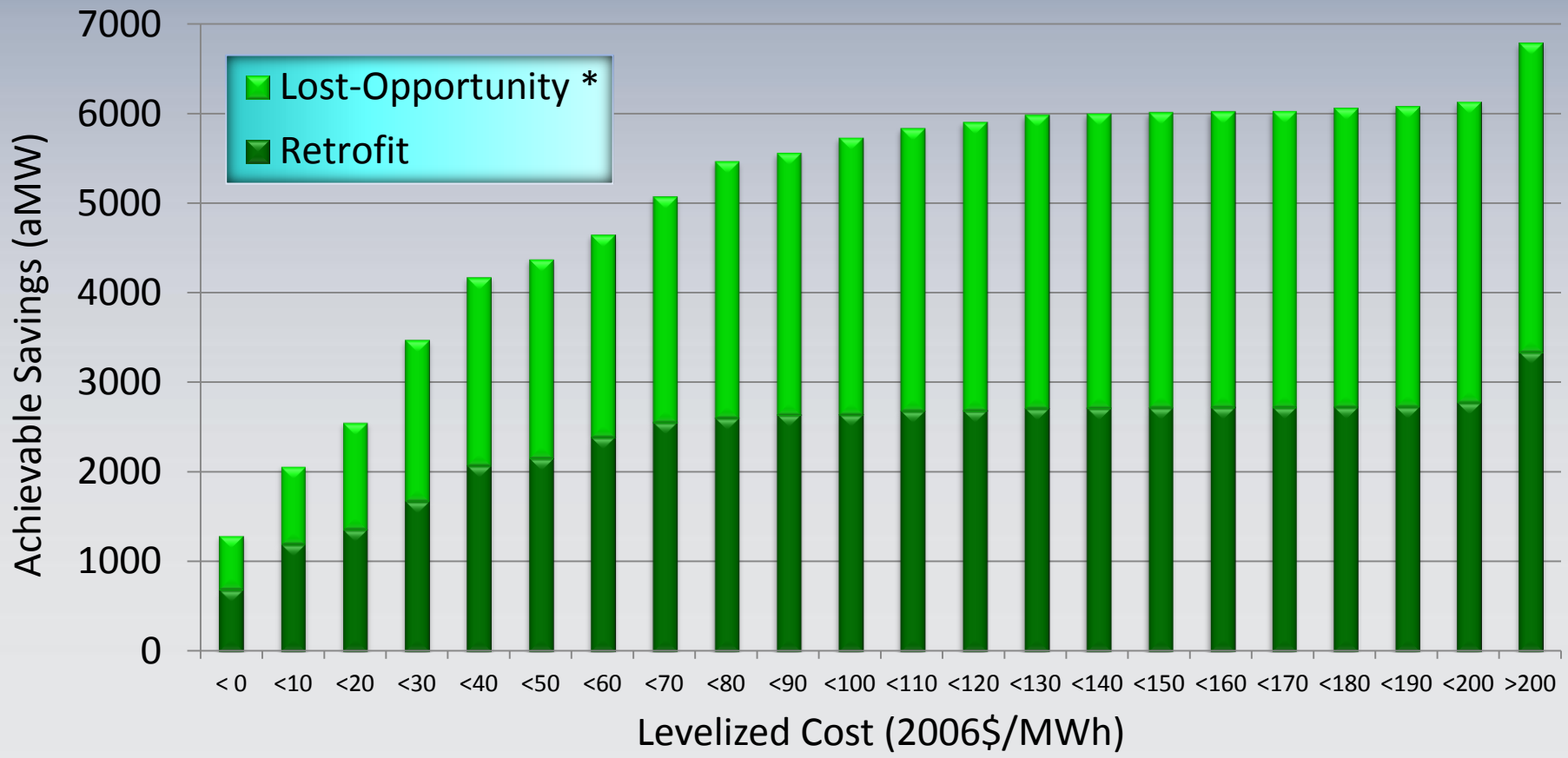
Northwest Power and Conservation Council

Levelized Cost of Energy Efficiency Also Lower and Less Volatile Than Wholesale Power Prices



Northwest Power and Conservation Council

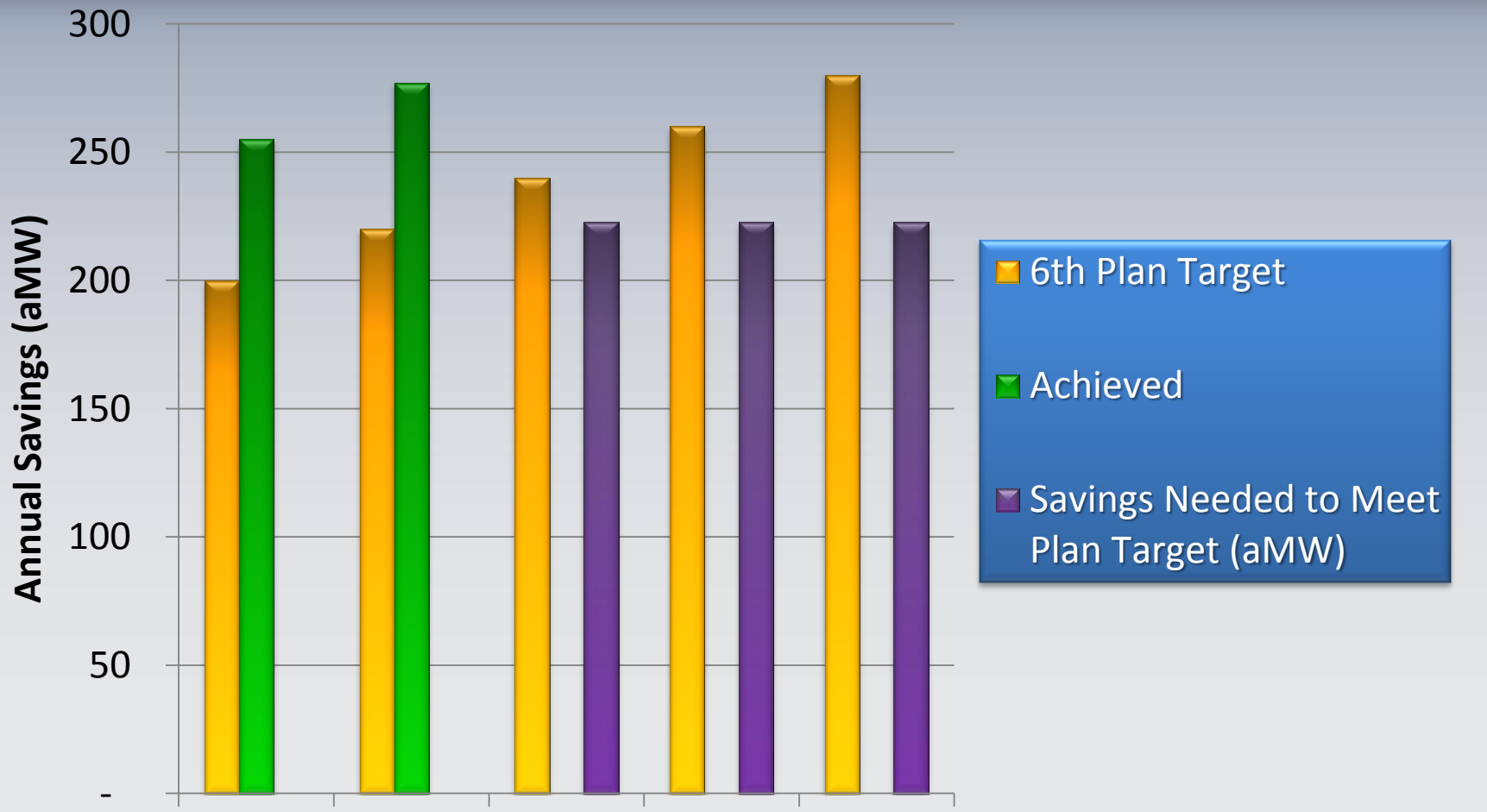
Over 4,000 aMW of Achievable Potential Exists at Levelized Costs Less Than $40 per MWh



*Lost-Opportunity Potential is Cumulative Amount Available by 2030

Northwest Power and Conservation Council

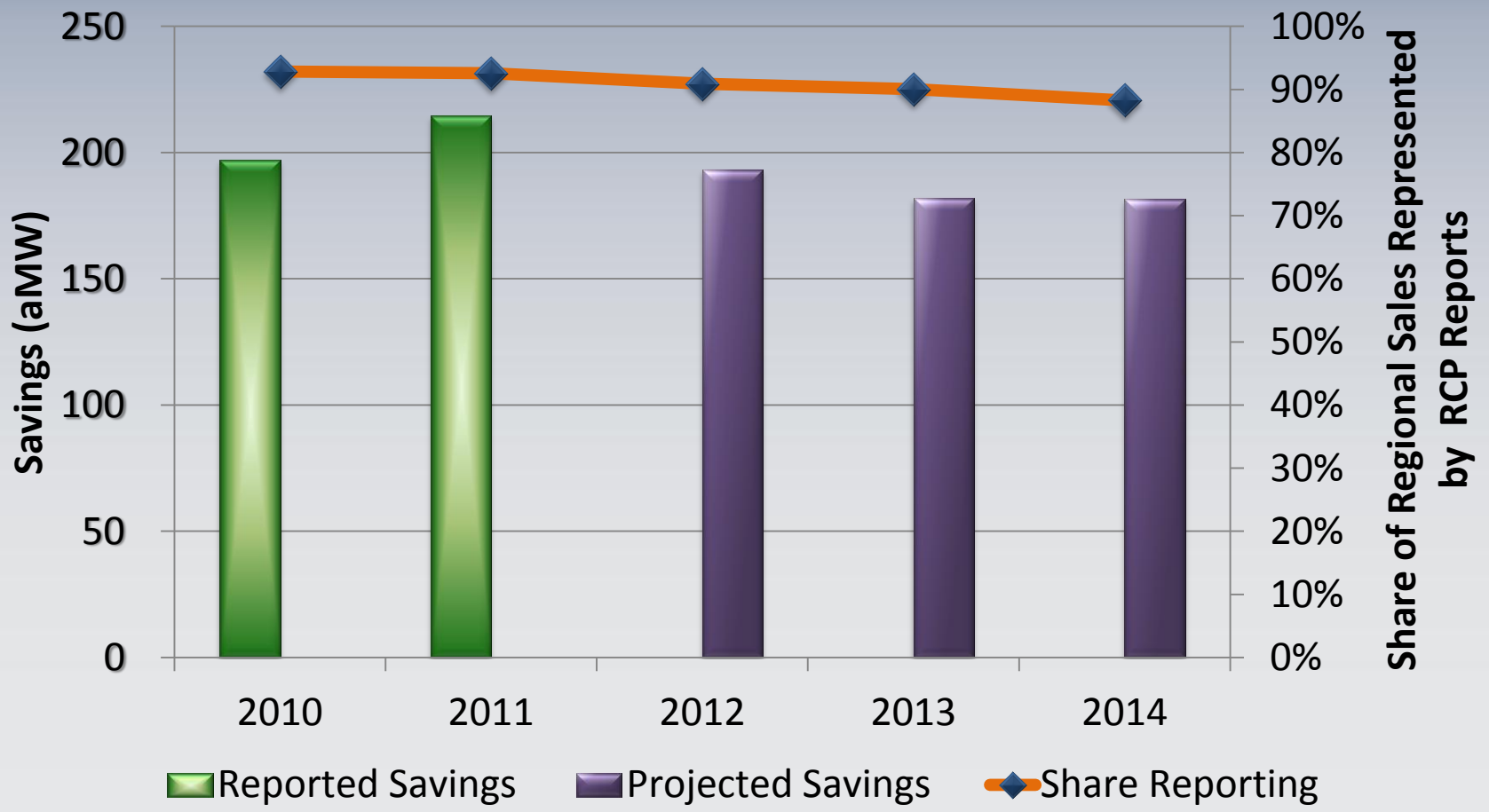
6th Plan Target of 1,200 aMW Can Be Met if Savings Average 225 aMW/yr* During 2012-2014



*This is roughly 85% of the Plan's Annual Targets for 2012 -2014

Northwest Power and Conservation Council

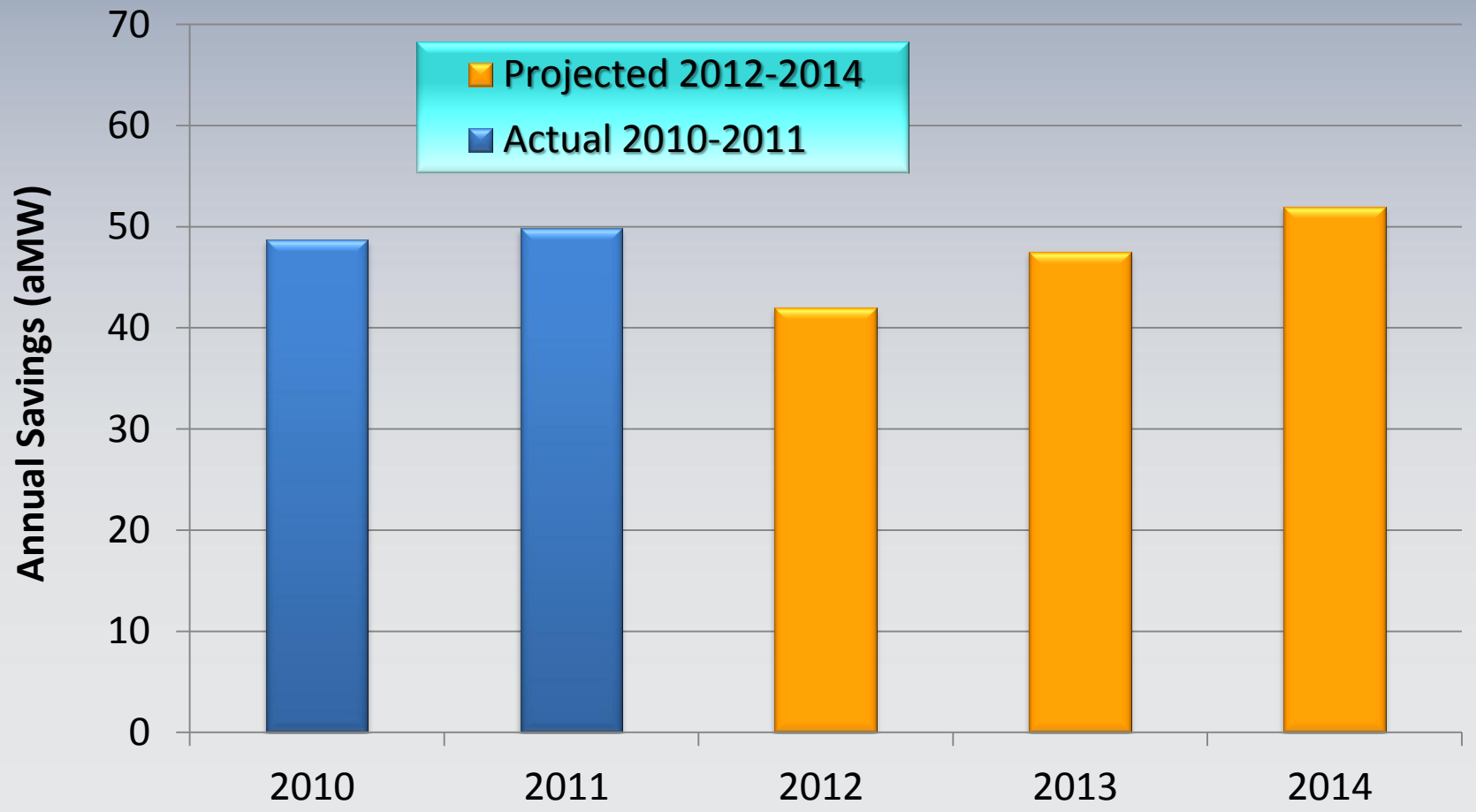
2010-2014 Savings by Reporting Utilities*



*Excludes savings from NEEA, BPA direct acquisitions and utilities not filing RCP Reports.

Northwest Power and Conservation Council

NEEA Contribution to Savings 2010-2014

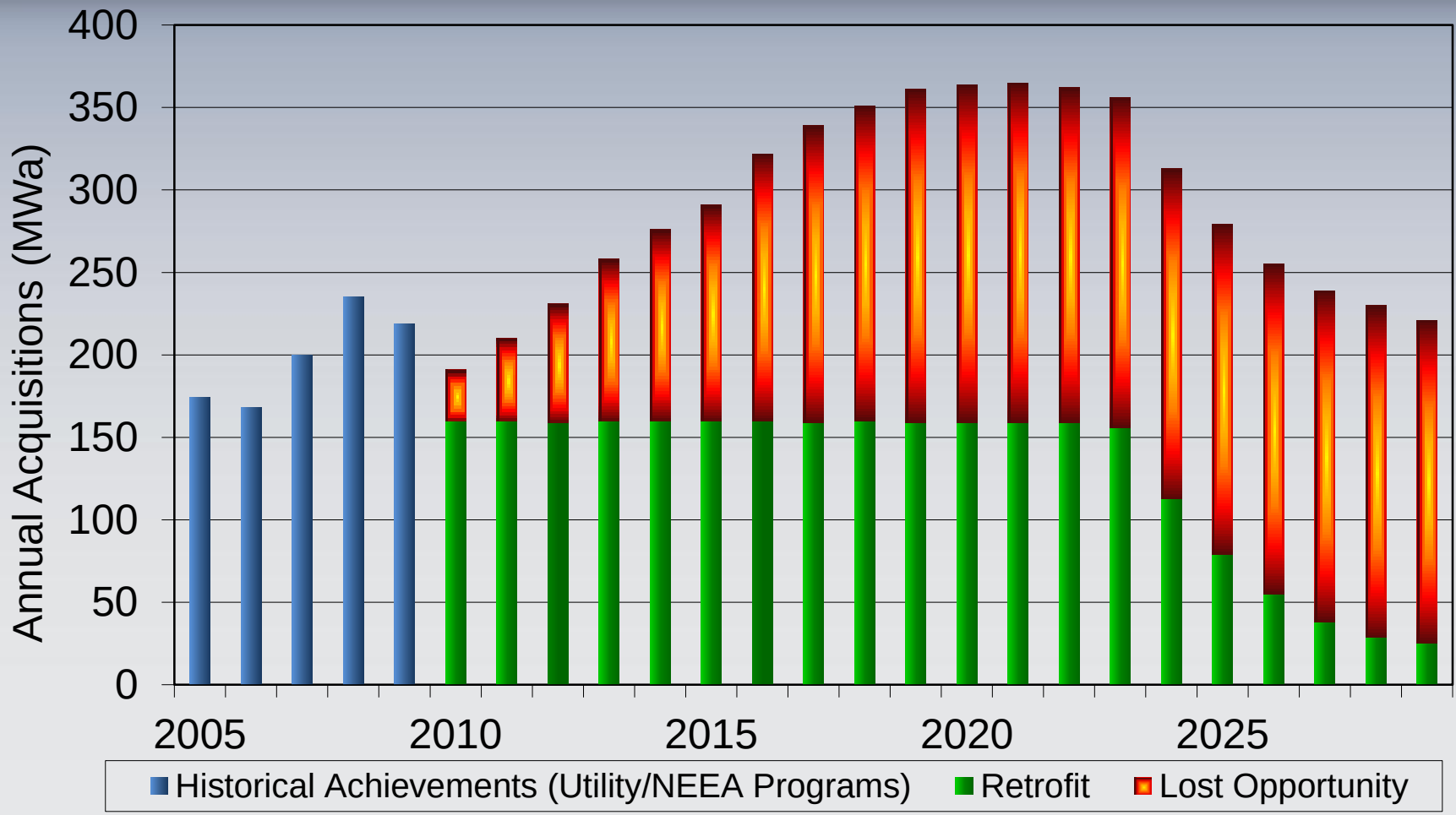


Northwest Power and Conservation Council

Changes in Available Types of Energy Efficiency

- Recent savings have come more from retrofit measures than lost opportunity measures
- Future savings will increasingly depend on lost opportunity

Savings Will Increasingly Depend on Lost Opportunity Measures



Actions Are Needed to Capture New Opportunities

- Counting on development and commercialization of new technologies
- Different types of programs are needed to acquire lost opportunity efficiency
- New codes and standards
  - Will capture savings for some measures
  - Will also require corresponding changes in program design (e.g., commercial lighting)

Regional Utilities Face Varying Circumstances

- Urban/rural
- Differing mixes of customer classes
- Surplus resources/deficit resources
- Above/below high water mark
- Load growth/slow or negative growth
- Some utilities have already acquired most of the available retrofit potential

Economics and Logistics Differ Across Utilities

- Relative economies of scale
  - Geographic density/market size
  - Availability of retailers, service providers
  - Staffing
- Resource potential/measure types
- Avoided costs
- Regulatory requirements, local policies

Question

Can and will the region as a whole sustain its strong recent performance in acquiring energy efficiency?

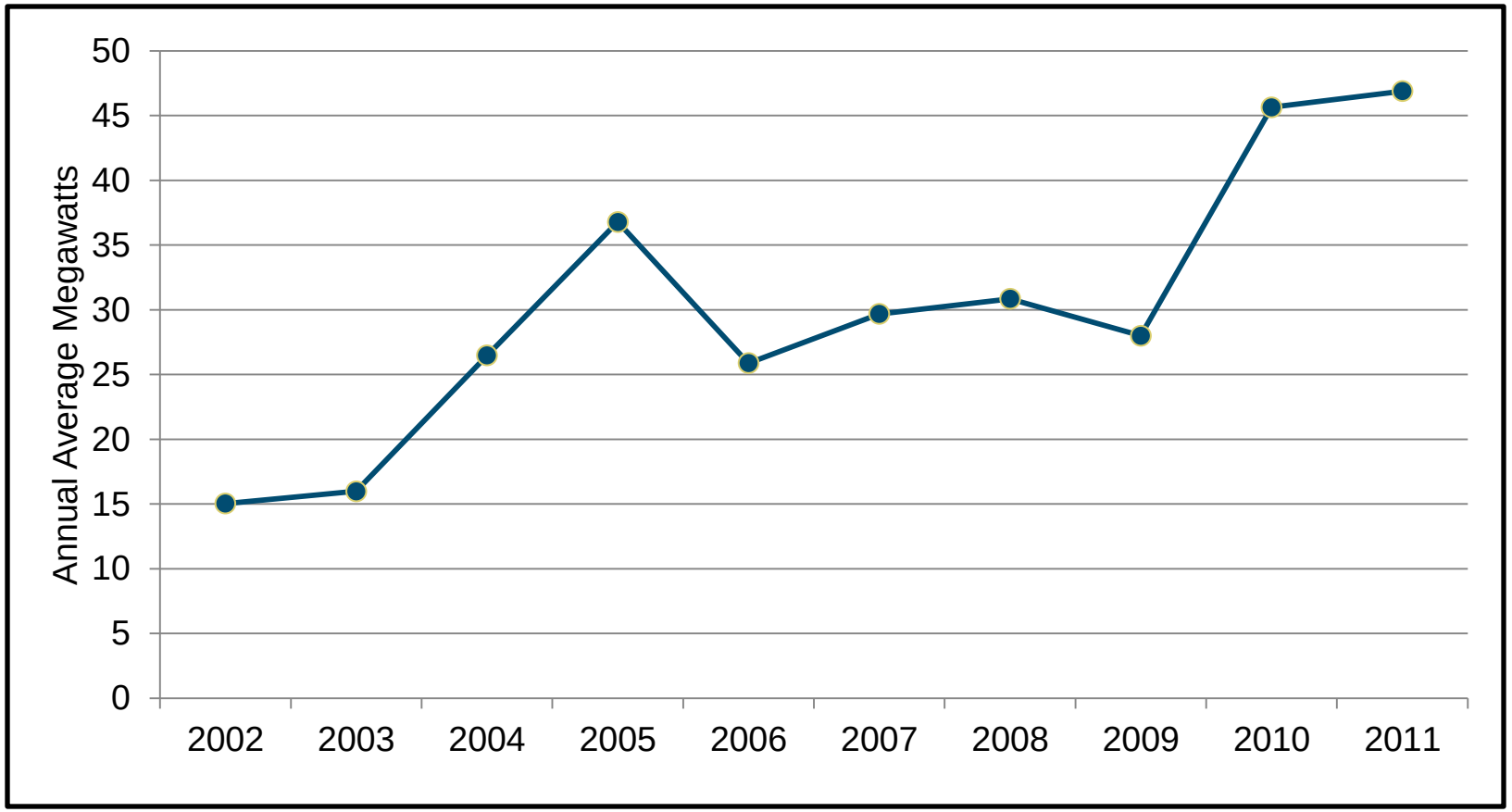
Energy Trust Long Term Planning

NEET Executive Committee

October 16, 2012

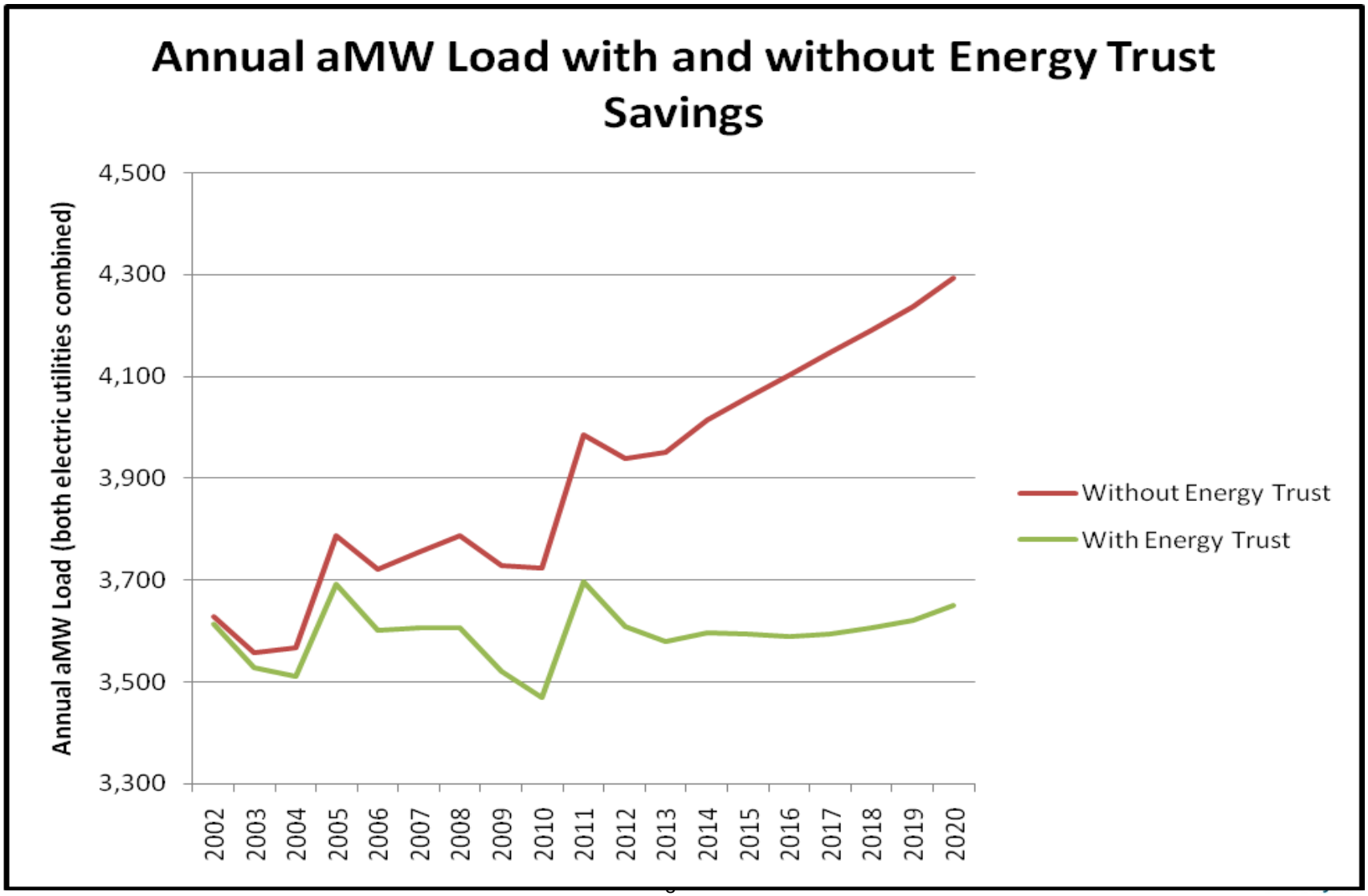
EnergyTrust of Oregon

Progress to Date – Electric Savings

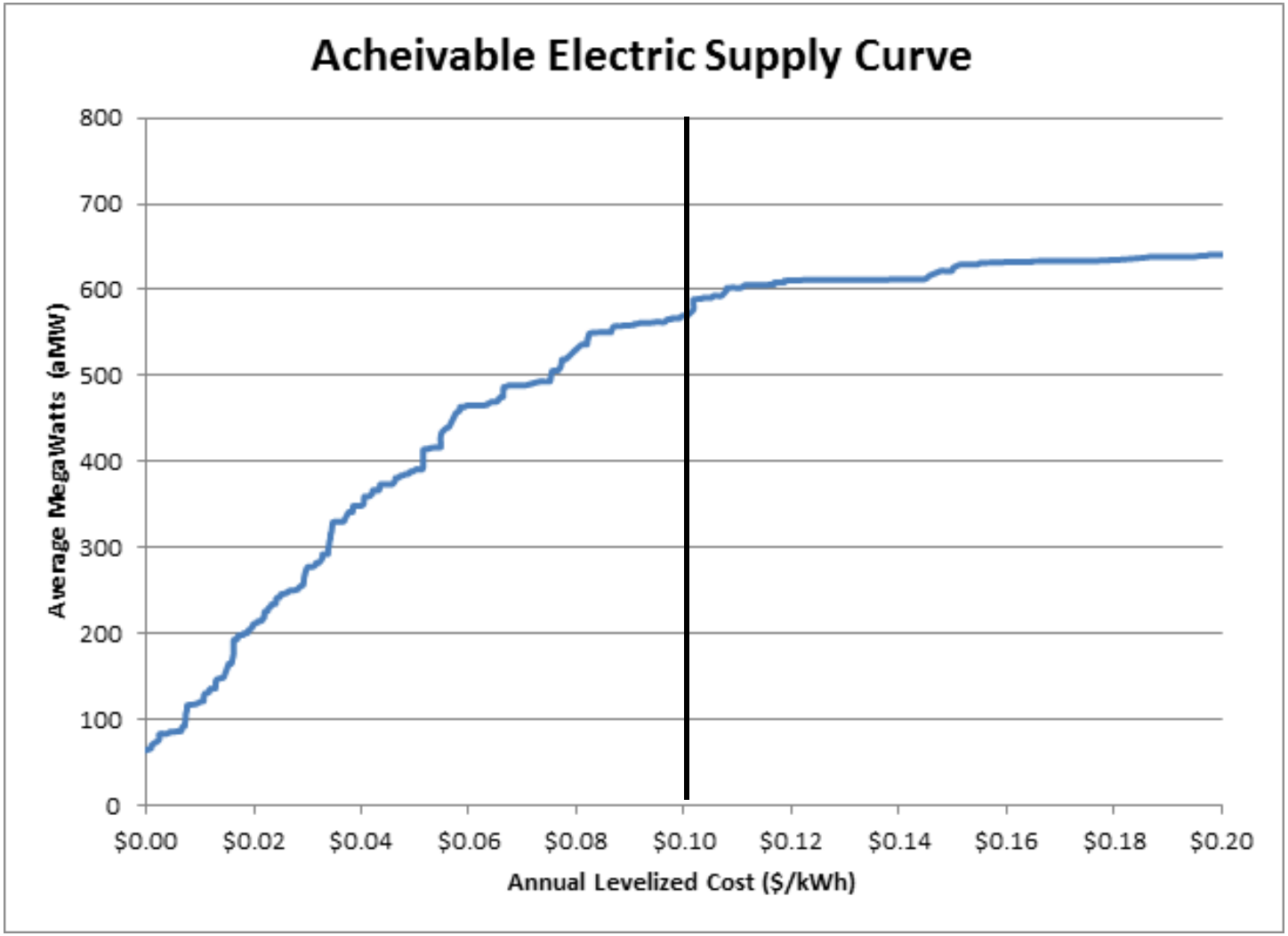


- In 2011, achieved 46.9aMW, spending $98M at 2.9c/kWh levelized cost
- Total cumulative impact of 322aMW

Cumulative Electric Load Growth Impacts

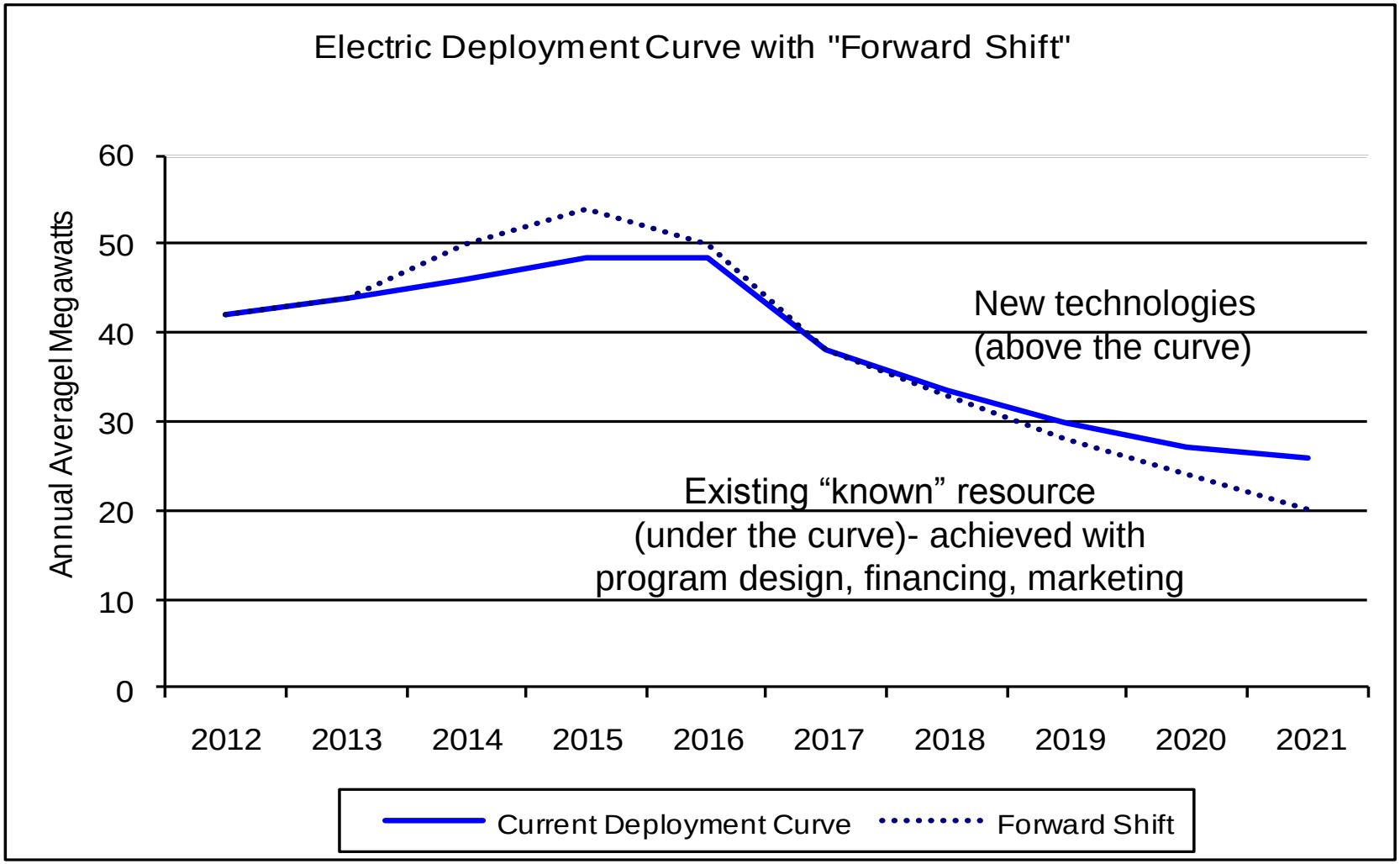


Most Proven Electric Efficiency is Cost-Effective Today

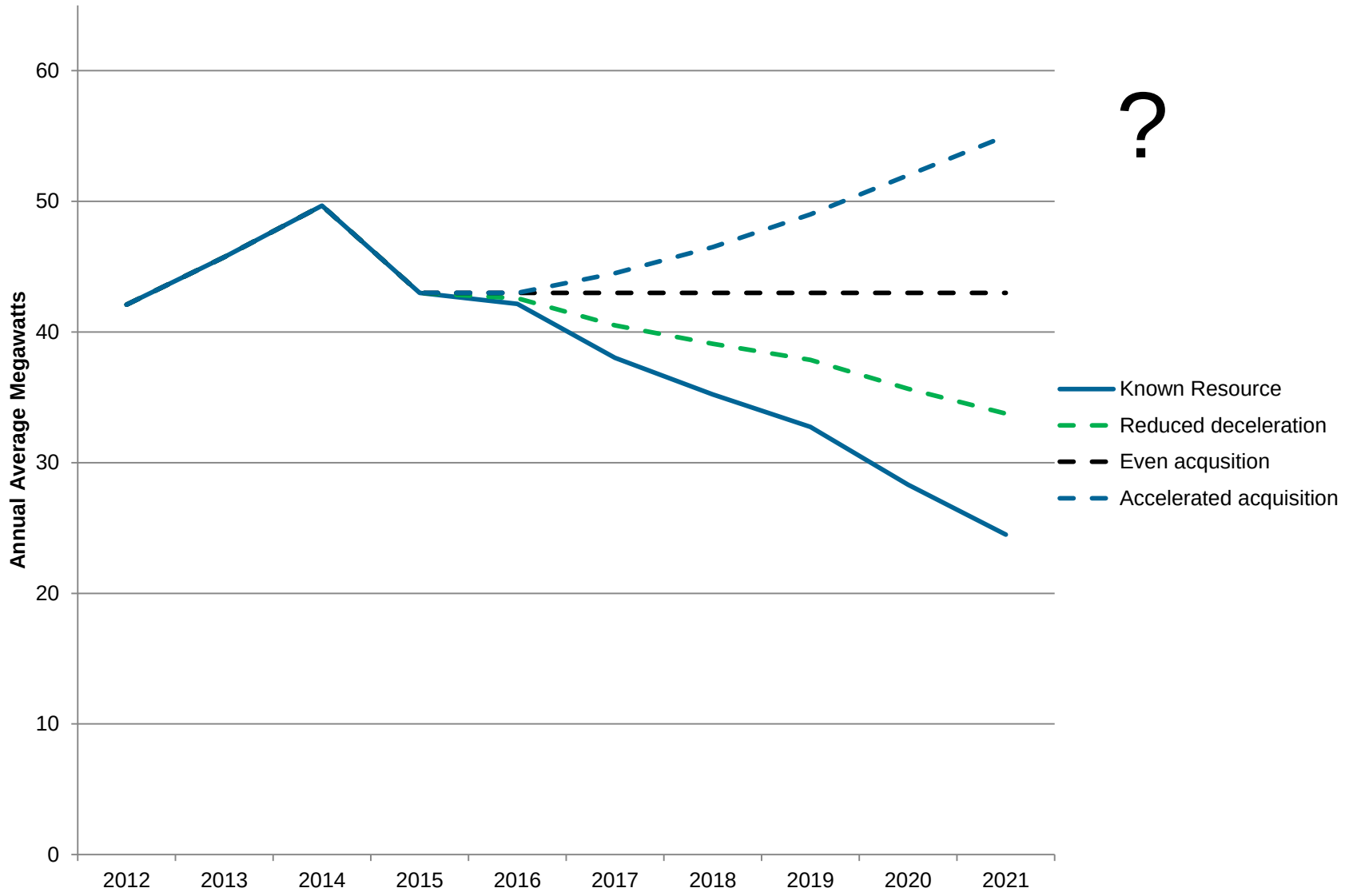


EnergyTrust of Oregon

Is Further Acceleration of Electric Efficiency Feasible? Wise?



Current Electric Deployment Curve with "New Technologies"



How to raise the curve?

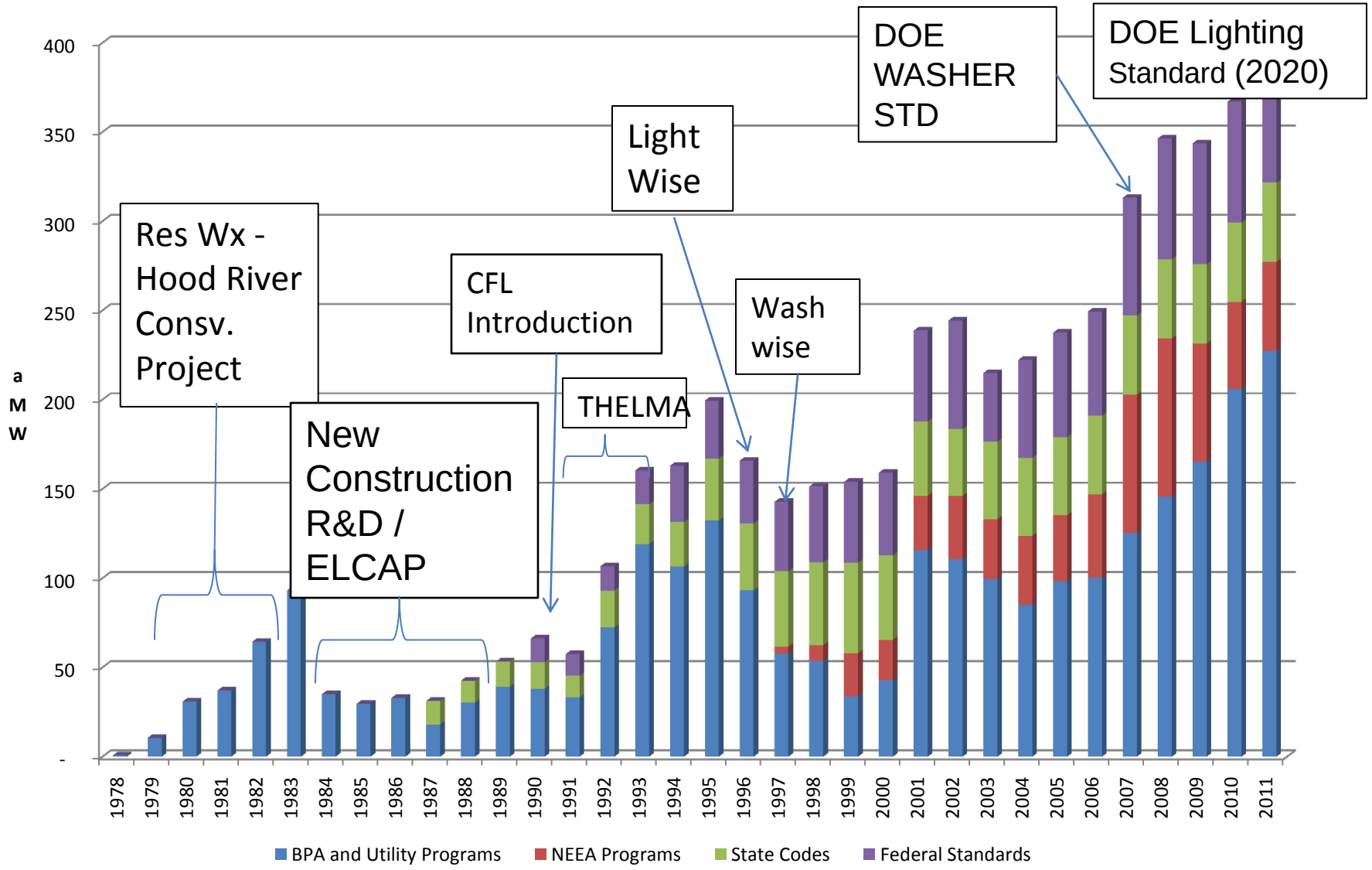
- We can influence future efficiency “proven” resources through technology field testing, evaluation, and feedback to manufacturers.
- Our current tech testing efforts are projected to replenish only a portion of the conservation potential we are acquiring each year now.
- We can step up our efforts selectively and strategically, either by expanding NEEA’s emerging tech efforts, and/or doing more at Energy Trust.
- Our role may be strongest when programs can act as a vehicle for tests.

Keeping the Energy Efficiency Pipeline Full

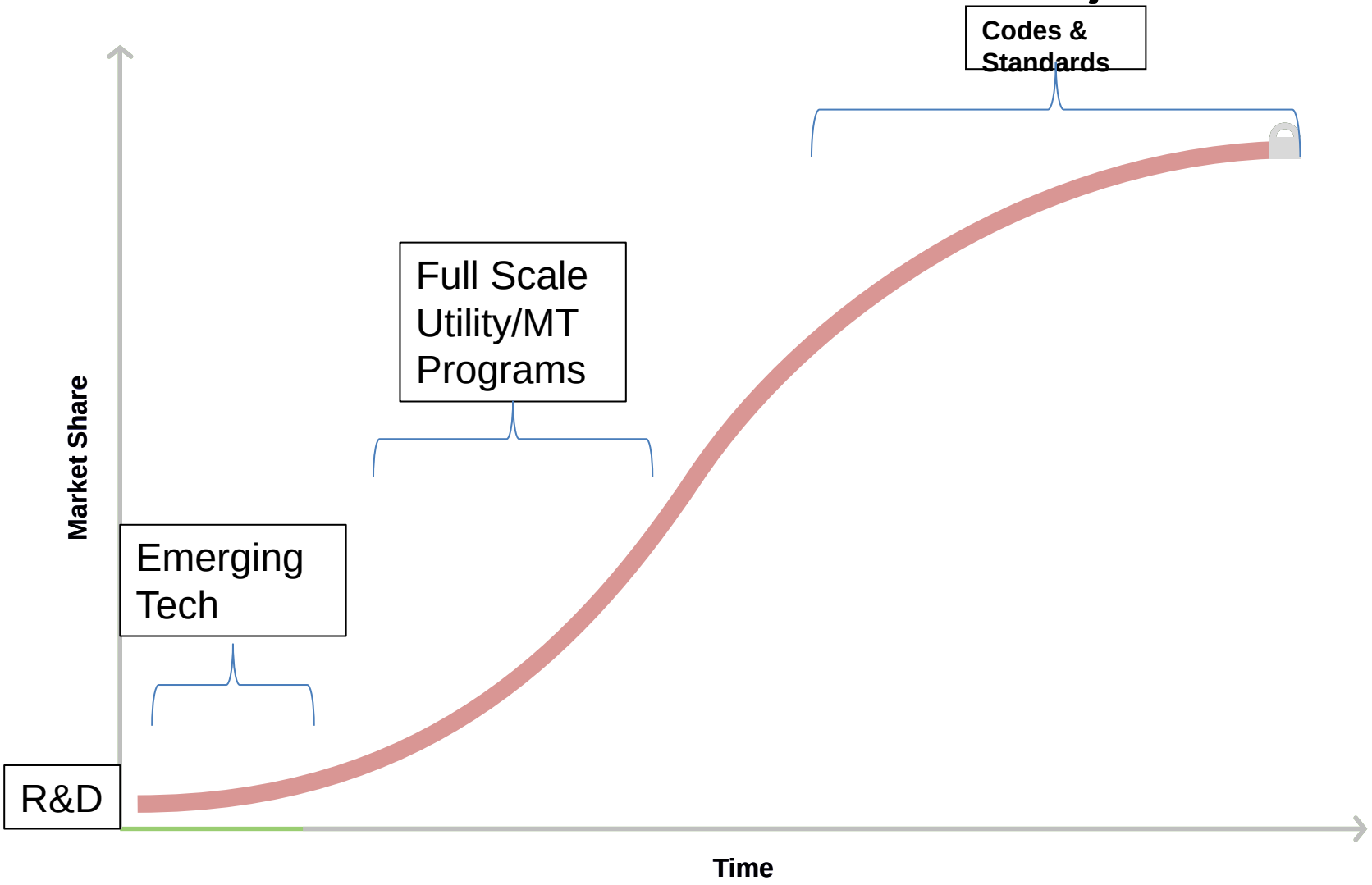
NEET Executive Committee Briefing
October 16, 2012

Jeff Harris – Director, Emerging Technologies NEEA
Ryan Fedie - Manager, Engineering Services BPA

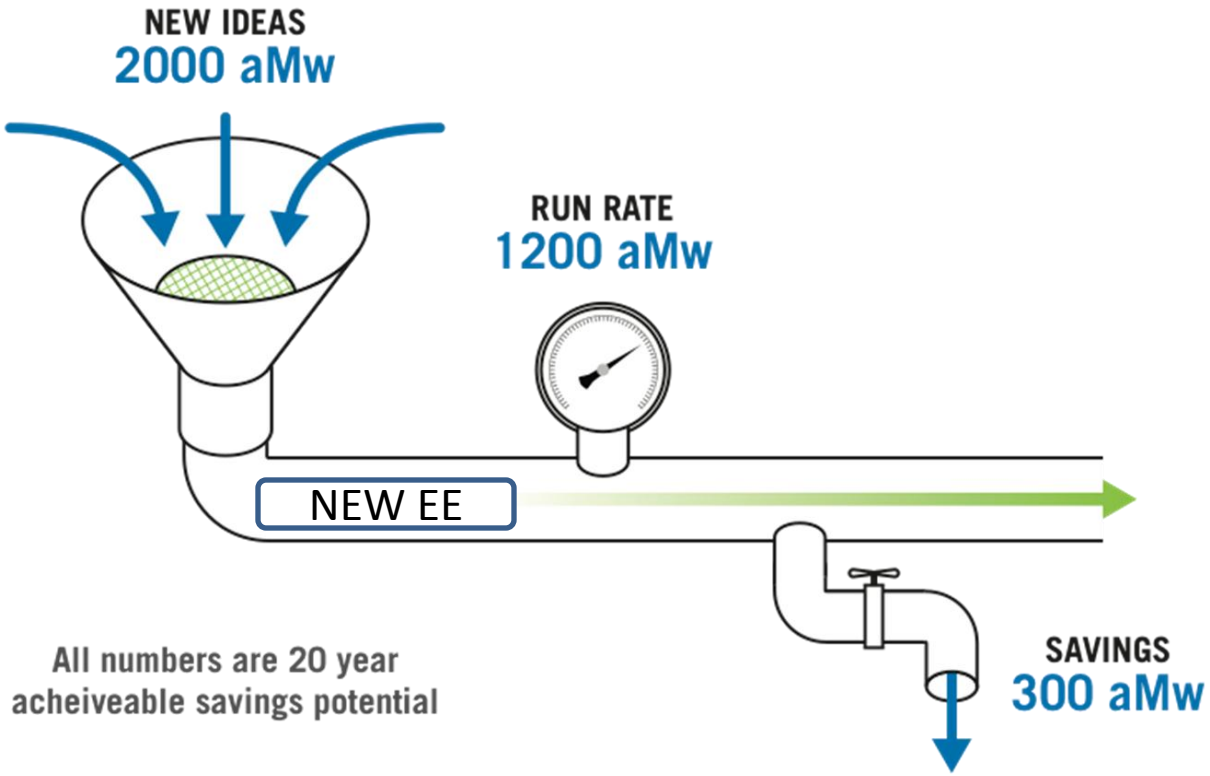
EE Pipeline – Historical View



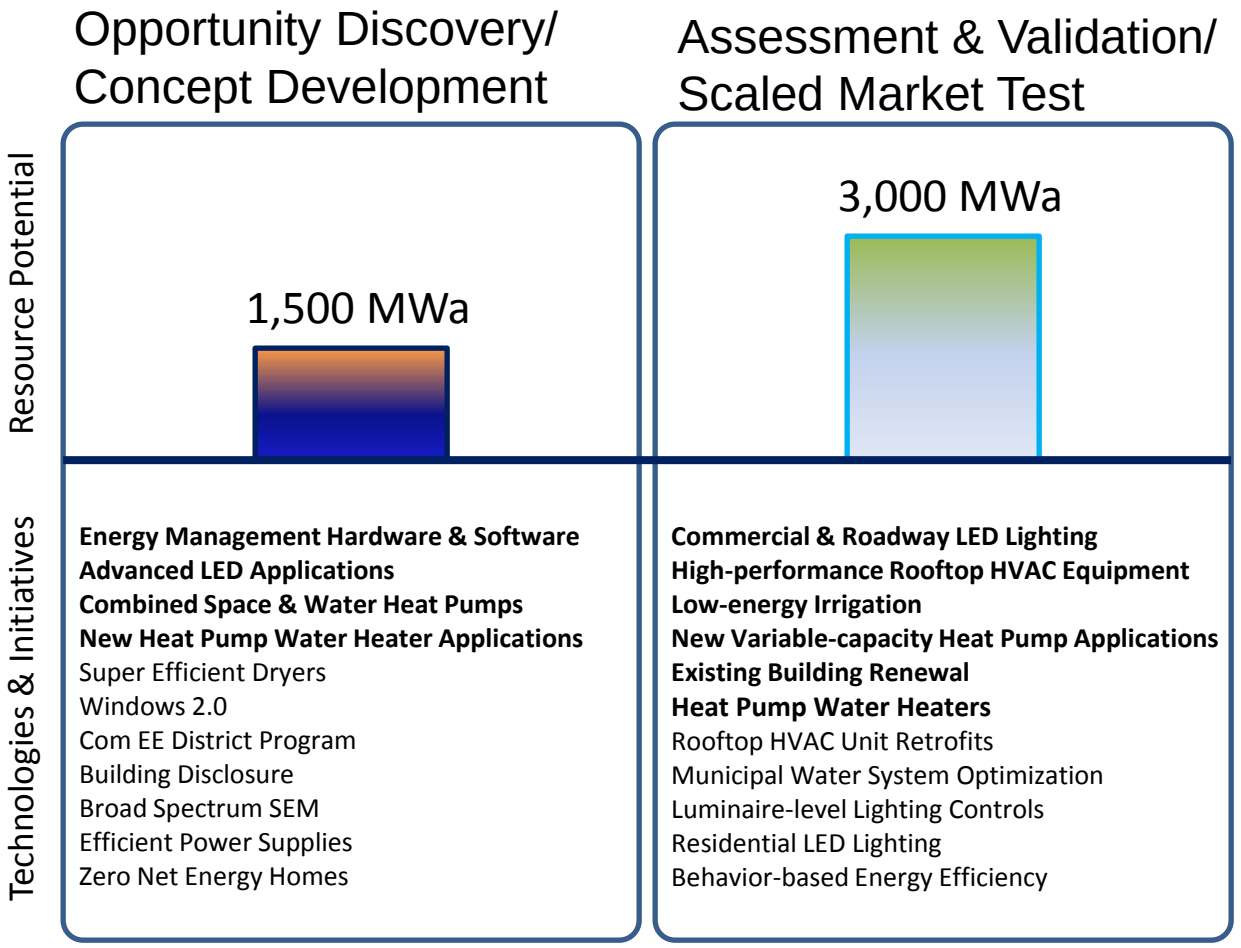
EE Innovation Life-cycle



Moving Into the Pipeline

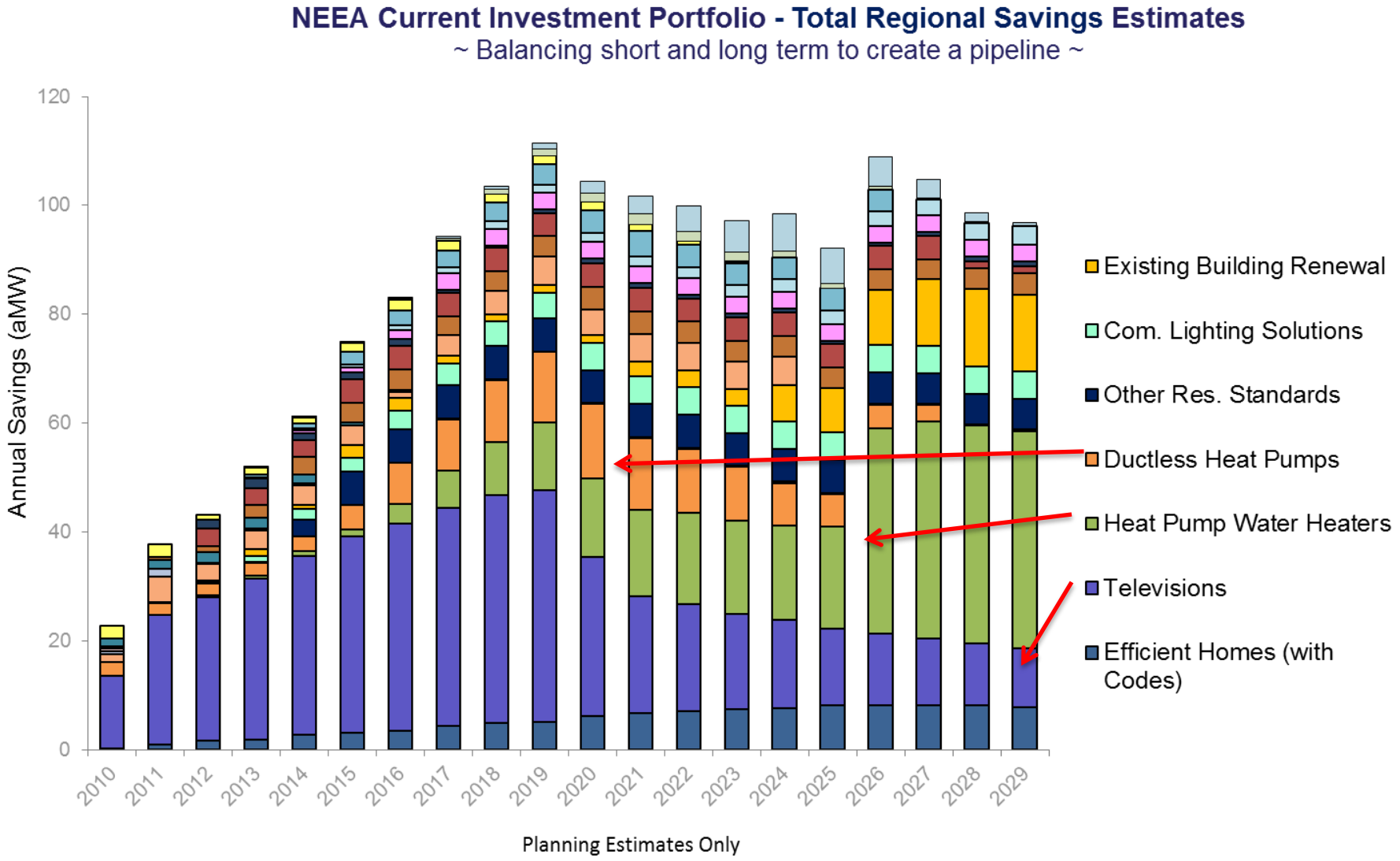


How are we doing?



ET: Selected New Technologies

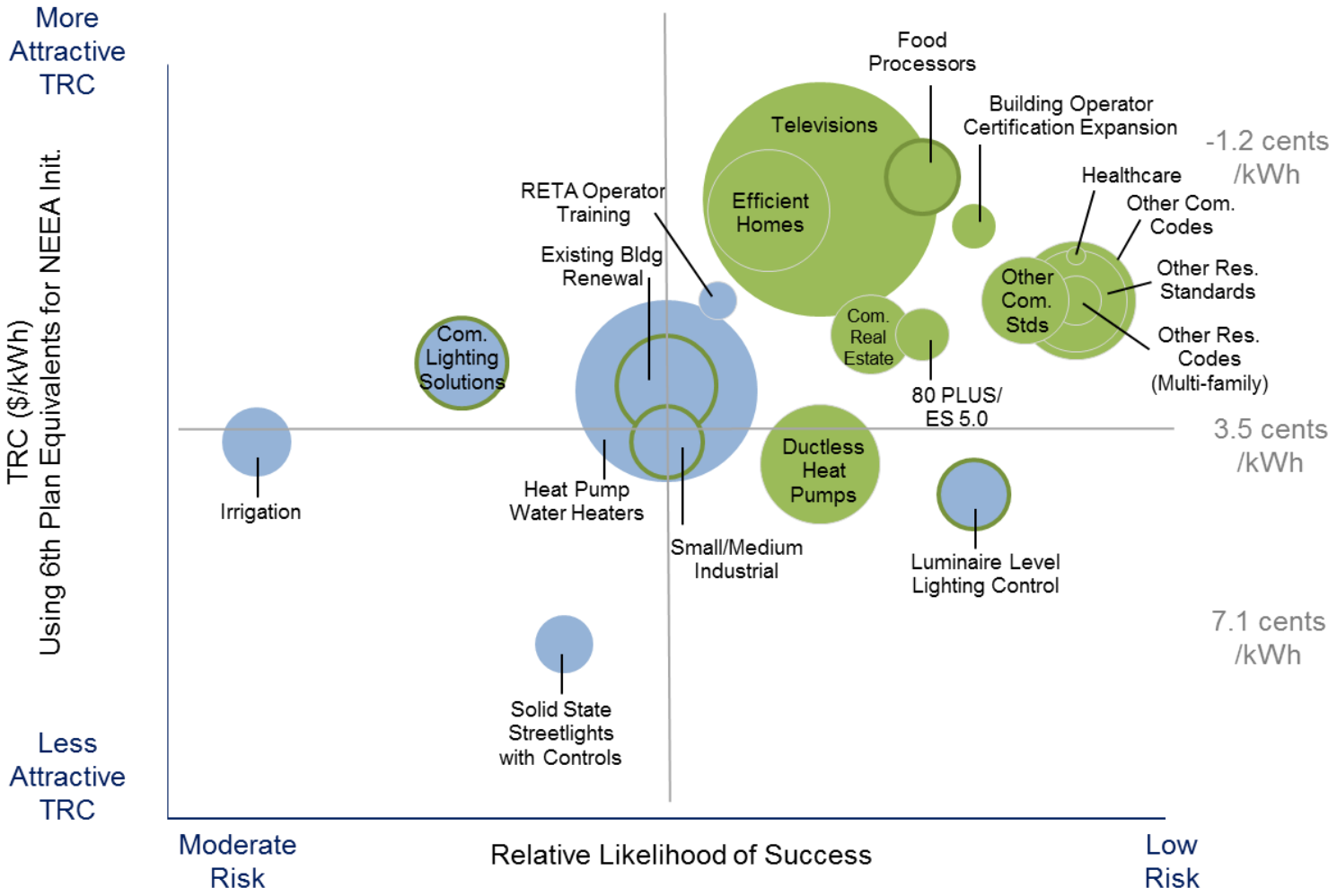
Filling the Pipeline: Are we doing Enough?



Are we doing enough?

Initiative Risk vs. TRC

Bubble size represents 20 year est. Total Regional Savings



Blue Bubbles are in development phases (IS to SA). The Net Levelized Cost comes from the 6th Power Plan.

Green bubbles are in implementation phase (SA to TC). TheNet Levelized Cost come from NEEA.

Green outline indicates additional savings potential from codes & standards development

Planning Estimates Only

Are we doing enough?

- Regional spending on ET is <$10 million/yr; ~ 0.1% of regional electric revenues annually;
- EE now represents 16% of regional energy resources
- EE Historic cost ~ 2.0 cents/kWH; less than half marginal costs
- 6th Plan goals: 85% of all load growth with EE; 7th plan goals?

Challenges and Opportunities

Opportunities:

- Many ET Collaboration efforts underway
- Major manufacturers interest
- New technology advances
- Active VC Community

Challenges:

- Collaboration time
- Difficulty in processing and prioritizing many new opportunities; death by opportunity
- Development time
- Shortage of skilled ET personnel

Questions or Comments?

Thank You!