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June 6, 2017

### MEMORANDUM

**TO: Power Committee**

**FROM: Jennifer Light, RTF Manager**

**SUBJECT: Overview of the Regional Technical Forum's Market Analysis Subcommittee**

### BACKGROUND:

**Presenter:** Jennifer Light

**Summary:** The Regional Technical Forum (RTF) created a new subcommittee in 2016 to support market analysis research taking place in the region. Understanding markets is critical to inform load forecasting and conservation planning. Market data directly informs the Council's, RTF, and utility baselines from which energy savings potential is determined. This subcommittee seeks to support regional entities – primarily Bonneville and the Northwest Energy Efficiency Alliance – throughout market research. The goal is to improve the rigor and credibility of research by leveraging the RTF's role of providing independent, technical expertise to the region. This presentation will provide an overview of the subcommittee, including work to date and plans for the remainder of 2017.

**Relevance:** Market data is critical for informing the Council's and utilities load forecasting and conservation planning. It also directly informs the development of baselines for determining RTF savings estimates.

Workplan: A.1.4 Conservation. Continue to lead the Regional Technical Forum and engage in the development and approval of measure savings estimates and protocols.

Background: Markets are changing, both due to energy efficiency program activity and other factors. Understanding these market changes is becoming increasingly important to program planners and implementers. It helps to inform in which markets programs might have the biggest impact, as well those that programs can quit to focus in other areas. The Northwest Energy Efficiency Alliance (NEEA) has collected market data for all of its initiative areas to report on market transformation savings to its utilities.

More recently, the Bonneville Power Administration (BPA) has development regional market models to understand total market change relative to the Plan baselines, including utility program, codes and standards, and market momentum savings. To ensure rigor and credibility of its market analysis, BPA was seeking an independent body to review its analysis. After several discussions with Council staff, NEEA staff, and other stakeholders, the idea was to leverage the RTF as an independent, technical body to support such review. The subcommittee launched in 2016, with an initial focus on reviewing BPA's residential and non-residential lighting market models. The role of the subcommittee is expanding in 2017 to support review of NEEA market analysis, new BPA market model development, and the development of a market data repository to make results available to interested stakeholders.

# RTF Market Analysis Subcommittee Overview

**Jennifer Light**

**June 13, 2017**

# Background

# Markets are Changing, both with and without Program Activity

- Programs are not the sole driver of efficiency adoption
- Product turnover cycles are adoption opportunities



- Understanding these market changes is becoming increasingly important to program planners and implementers
  - How much slower are the meters turning as a result of programs and changing markets?
  - In which markets are programs likely to have the biggest impact?
  - When can programs quit one market and move to the next?

# What is Market Analysis Research?

## Market Analysis Research

Mix of  
Efficient &  
Inefficient  
Product  
Sales

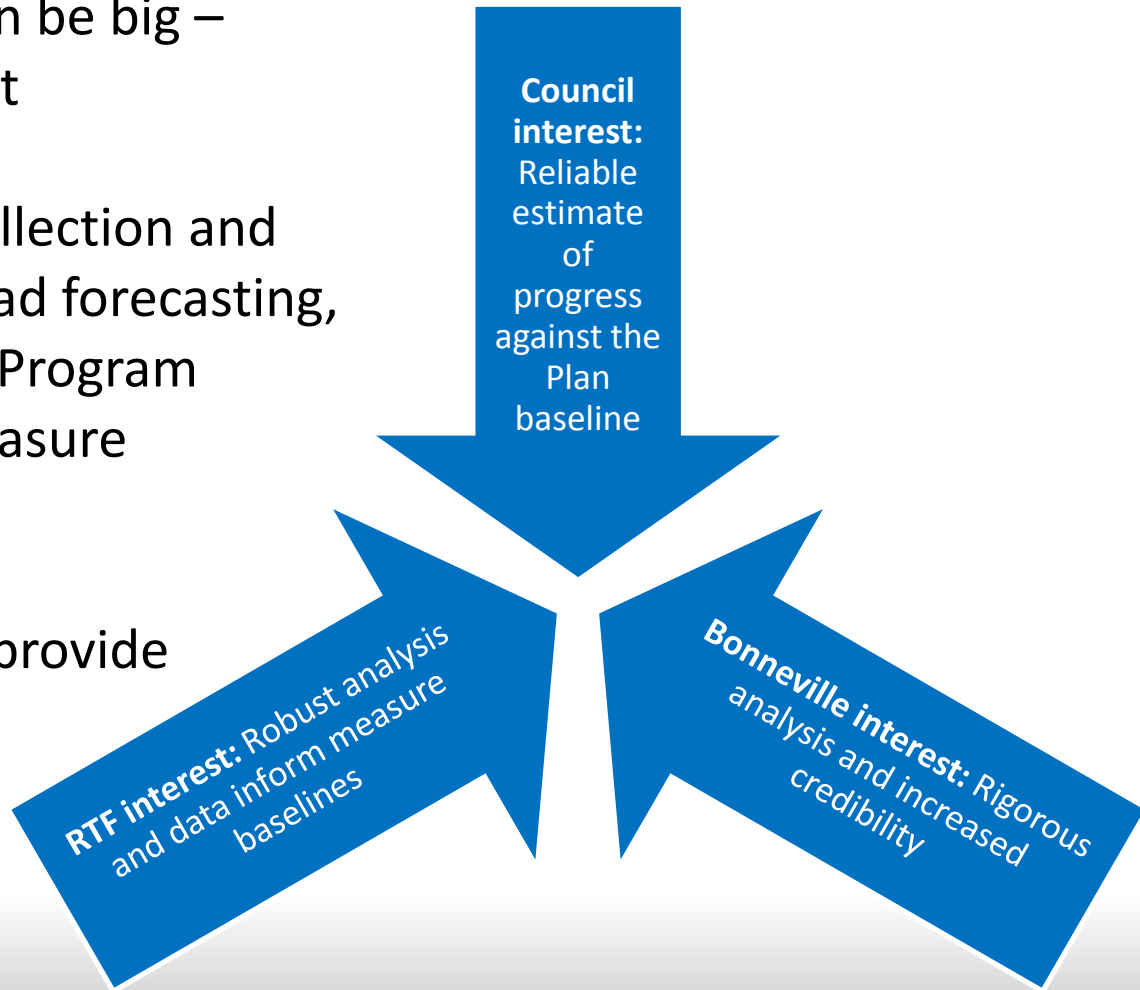
Identify  
Delivery  
Channels  
& Decision  
Events

Impact of  
Efficiency  
Standards  
& Codes

Track  
Changes  
Over Time

# Why Bring this to the RTF?

- Momentum savings can be big – important to get it right
- The underlying data collection and analysis is **critical** to load forecasting, conservation planning Program operation, and RTF measure development
- The RTF was set up to provide independent, technical expertise to the region on estimating energy savings



# Role of an Independent Reviewers

## Method Review

- Support during the initial **Planning** phases of the project
- Review and inform analytical approach, including how to go about data collection (ex: where to go to collect data) and what data to collect
- May help to inform prioritization of projects

## Model Review

- Support throughout the **In Flight** phases of the project
- Review and inform draft models, including feedback on key inputs, errors, and other questions that come up model development

## Final Review

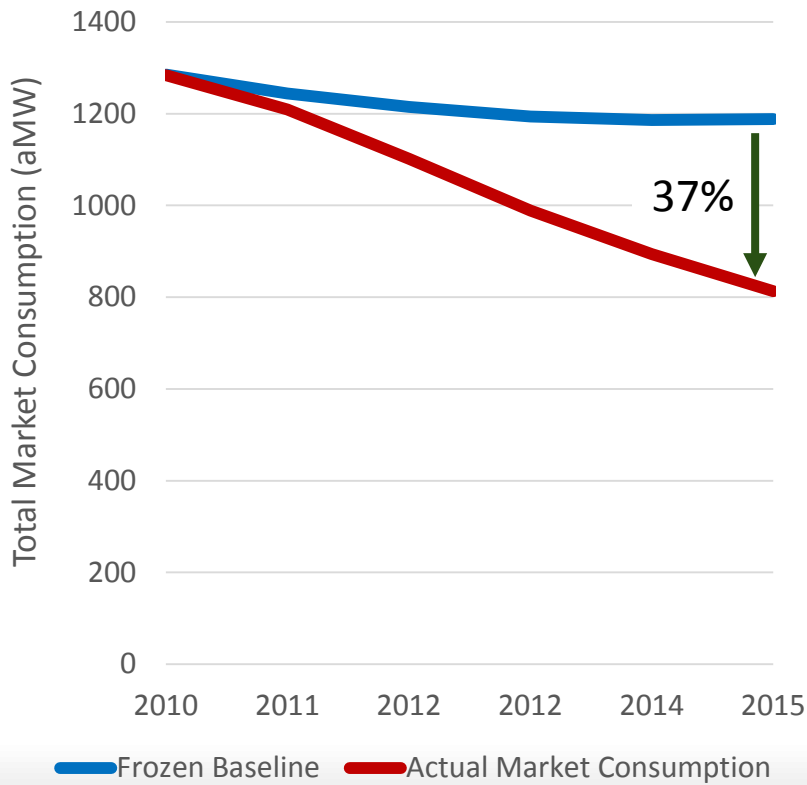
- Support in **Finalizing** the model
- Review and provide professional judgement on soundness of model results and identification of considerations for future research/continual improvement



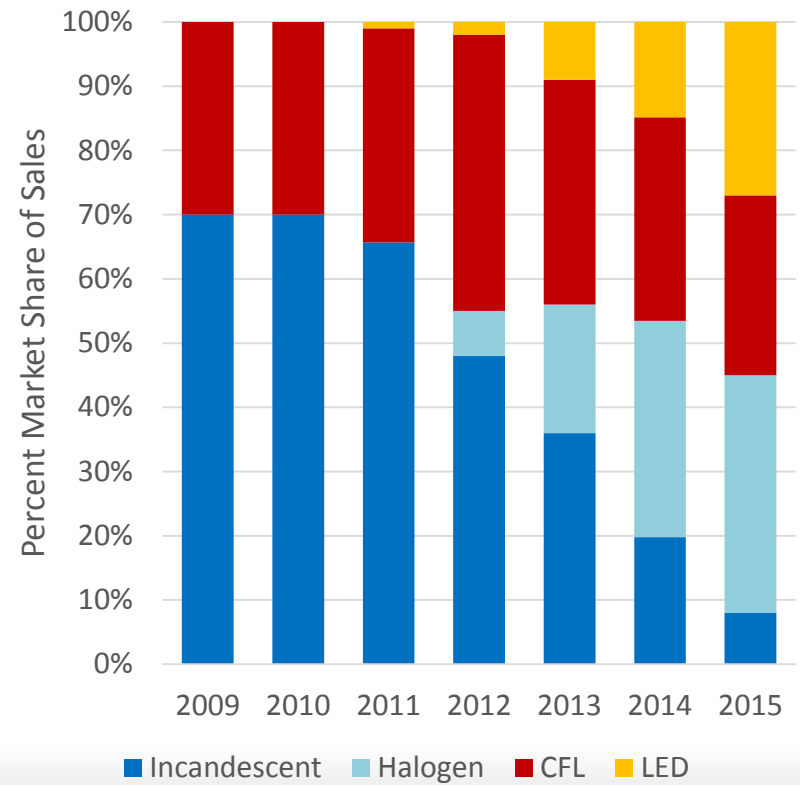
# Subcommittee Work to Date

# Review of Residential Lighting Market Model in 2016

Actual Market Consumption vs Frozen Baseline Consumption



Sales Market Share by Technology for General Purpose Lamps

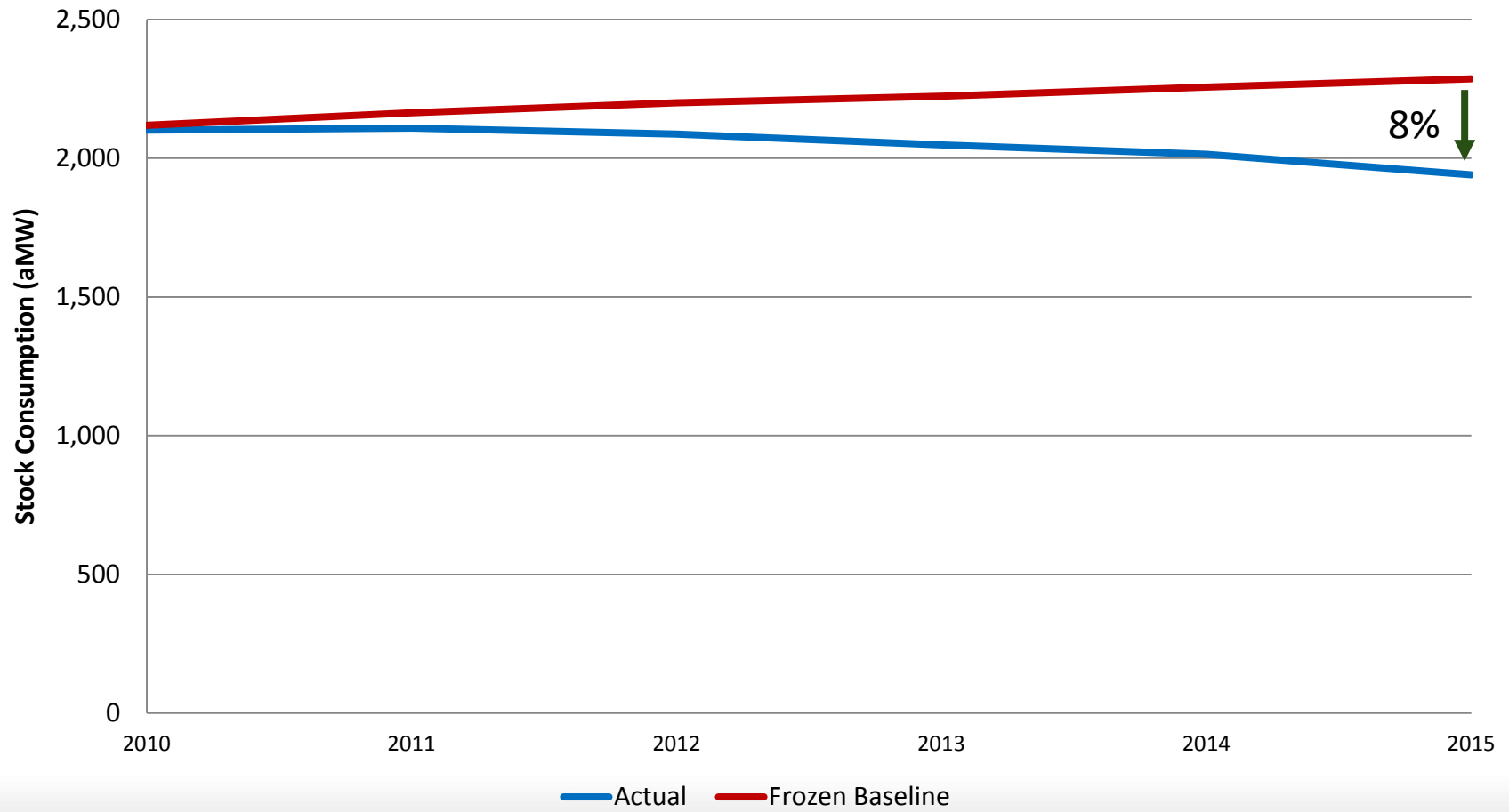


# Non-Residential Lighting Model

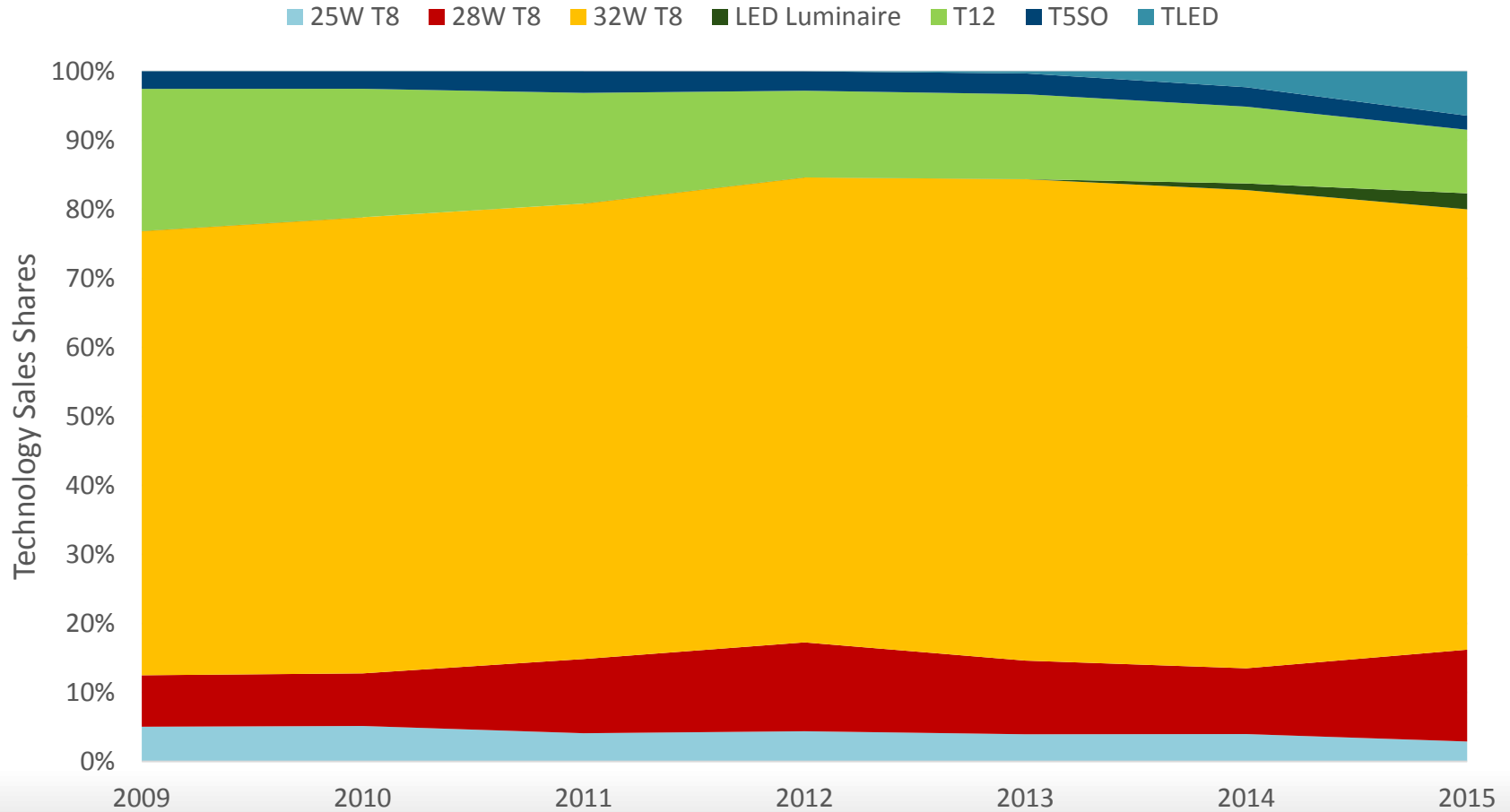
## Focus in Q1 of 2017

- Model tracks sales and stock of lamps, ballasts, and fixtures in the region
- Covers
  - 3 sectors (Commercial, Industrial, Outdoor)
  - 14 applications (ex: ambient linear, general purpose, parking garage, decorative)
  - 16 technologies (ex: halogen, high pressure sodium, LED lamps, TLEDs)
  - 3 purchase triggers (ex: ballast failure, lamp failure, fixture replacement)

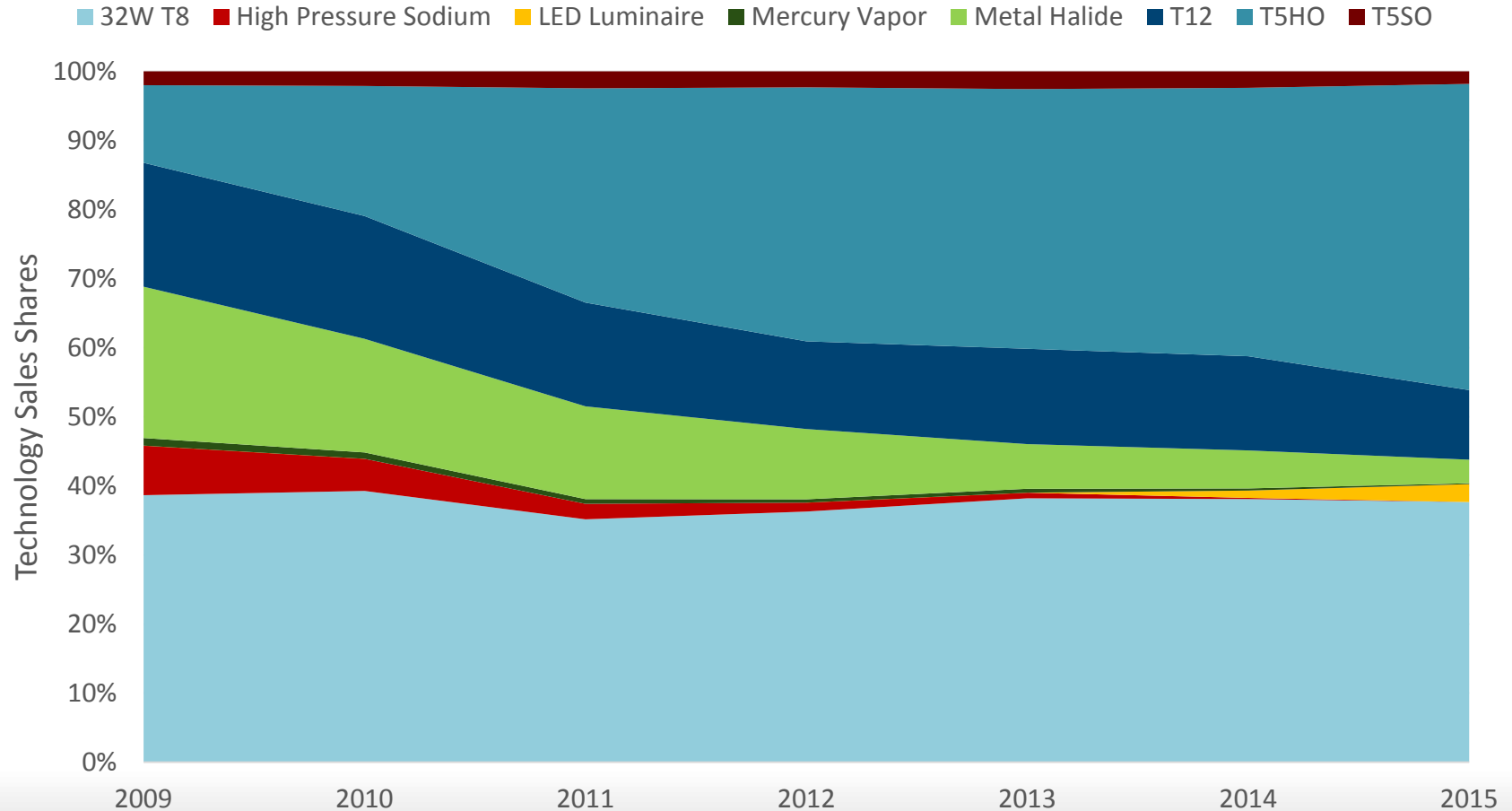
# Consumption in Non-Residential Lighting Dropped 8%



# Ambient Linear was one of the top savers with 47% market savings



# Bay Lighting with high output or in high ceilings was the biggest market saver



# Plans for Future Subcommittee Work

# Plans to Expand Work in 2017

- **Reviewing NEEA market analysis to help inform key decision points on several markets**
  - **Clothes washers, refrigerators, freezers, and room air conditioners**
- **Supporting BPA with development of up to three new market models**
  - **Residential HVAC, water heating, data centers**
- **Development of a market data repository to support the accessibility of market data for stakeholders**