

Non-residential GSFL Lighting Baseline

Market Research Findings
and Implications



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Topics Today

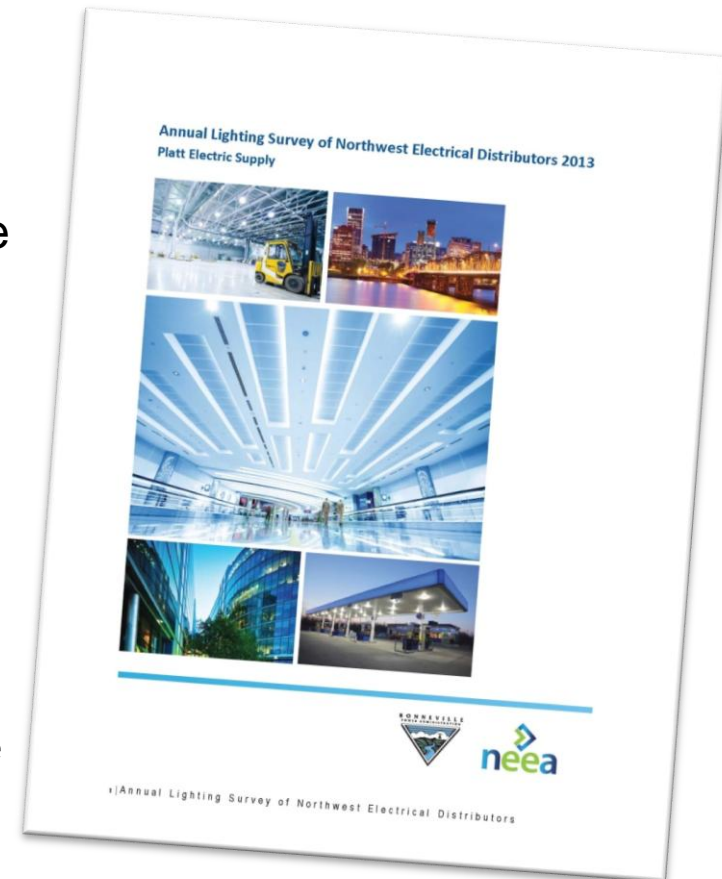
- Background
- T-12s
- Baseline types
- Non-program and
baseline savings
- New baseline
- Timing

What we didn't know then

- Compliant T-12s
- Exemptions and delays
- How will a lamp standard affect the system?
- Will market move to a brighter lamp?

Data Collection

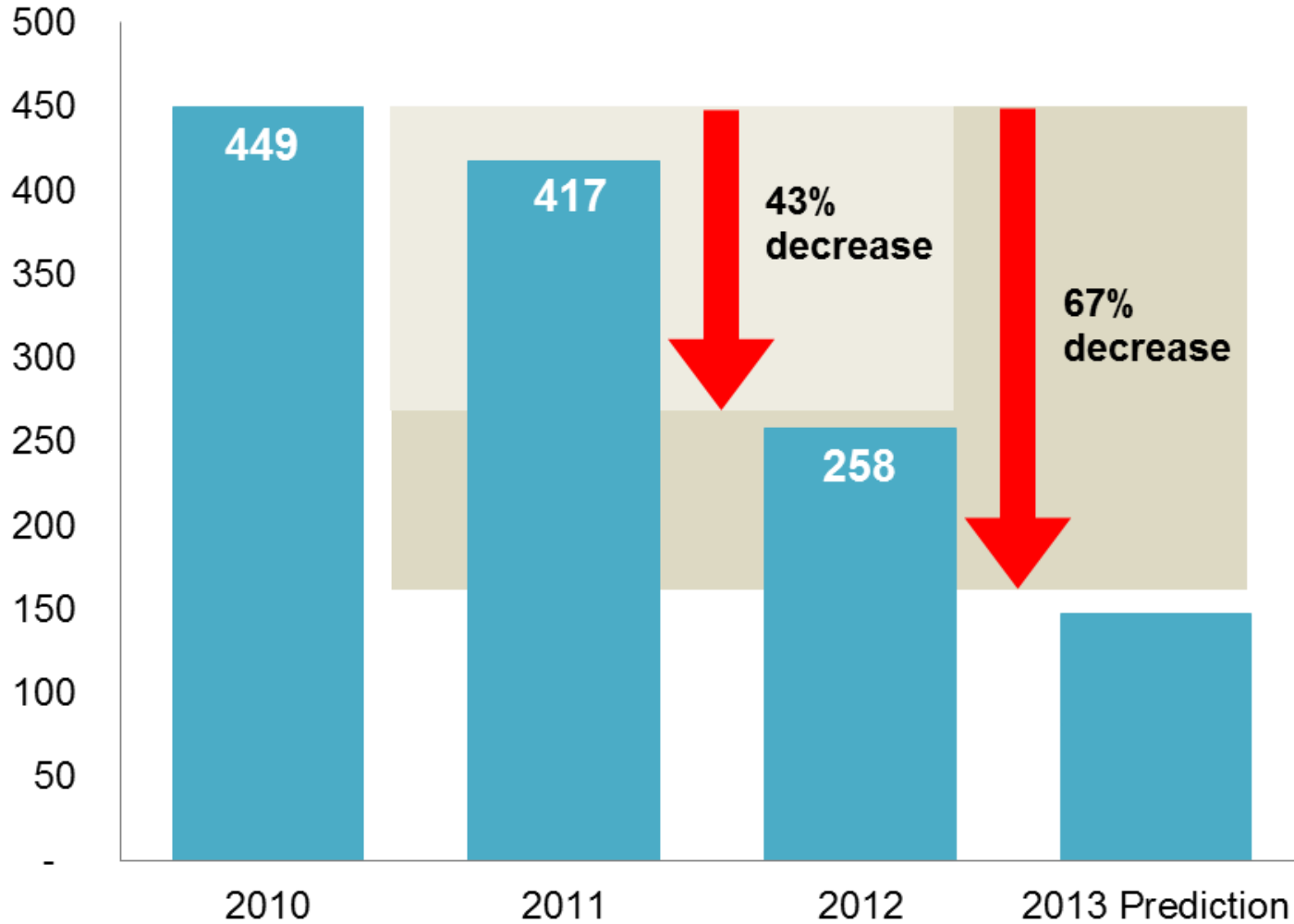
- Interviewed 20 distributors; in-depth, 90-min interviews.
 - All NW states represented; some rural, some urban, some small, some large.
 - Biggest differentiator among distributors is not size/location, but market niche.
- Received complete 2010–2012 GSFL and HID sales data from 11 distributors. Expect at least 2 more.
- Reflects an estimated 45-50% of the market non-residential market.



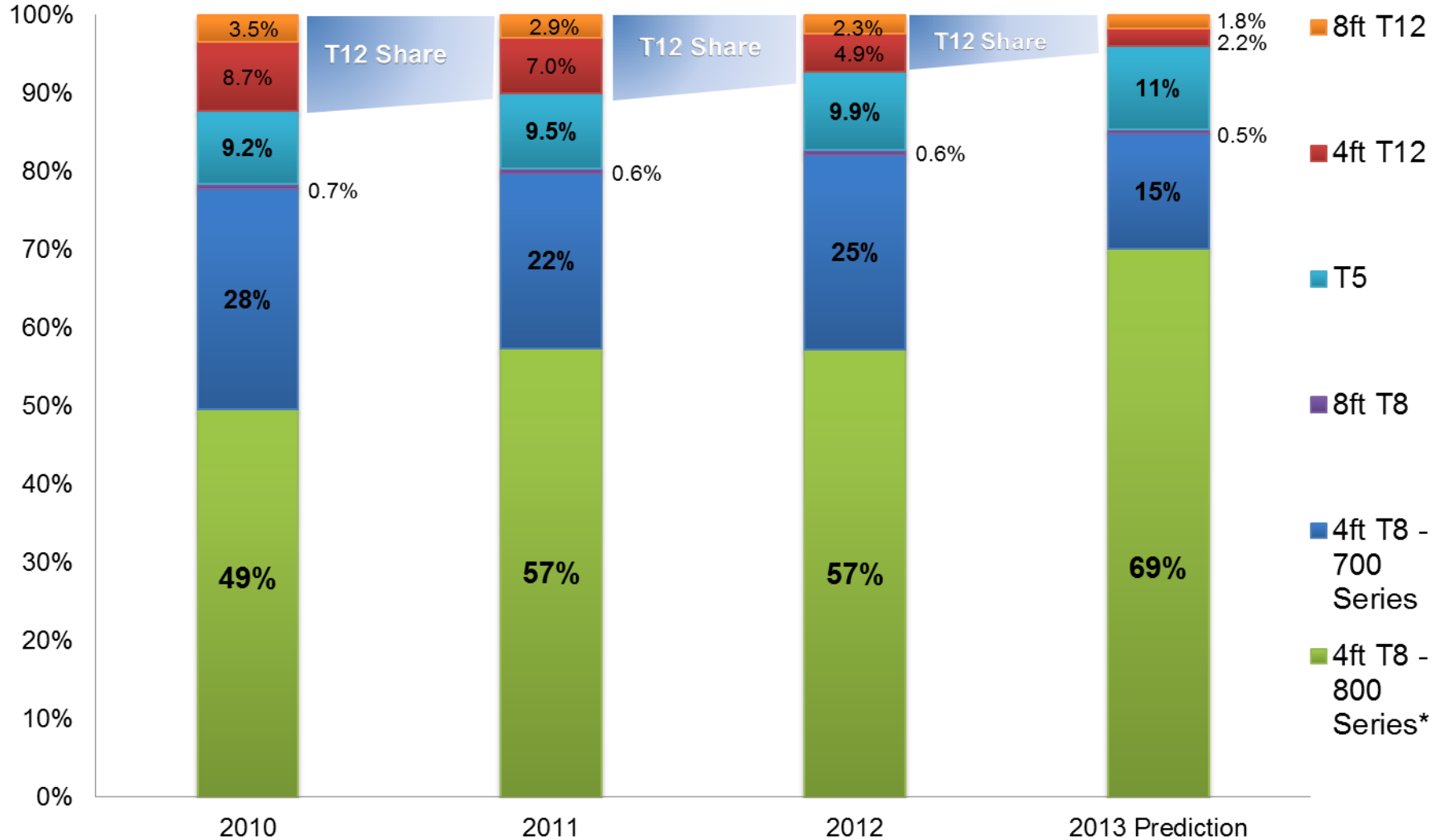
Further Data Collection and Analysis

- Interviewed 3 manufacturers
- Reviewed national sales data
- Reviewed channel-specific (retail, wholesale, etc.) national data
- Market insights further supported by Navigant's research in support of previous GSFL and ballast rulemakings as well as ongoing GSFL DOE rulemaking

T12 Lamp Shipments 2010-2013 (Thousands)

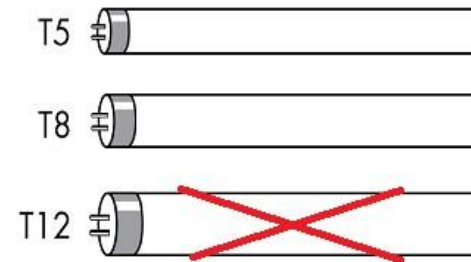


LFL Shipments by Type



Not only are T12 sales plummeting...

- Many distributors plan to **stop stocking** T-12s next year
- Remaining sales of T-12s are 100% **maintenance** market
- Big-box stores (non-distributor channels) are not selling significant volume of T-12s to C&I market
- Retailers/manufacturers not interested in maintaining SKUs



The standard is working as intended:

T-12s sales are **collapsing**

But ten years from now, there will still be some grizzled T-12 systems out there. And probably some seller somewhere selling T-12 lamps.



Understanding Baselines



ONLY
GSFL!!!

WHERE WE ARE



Pre-existing condition

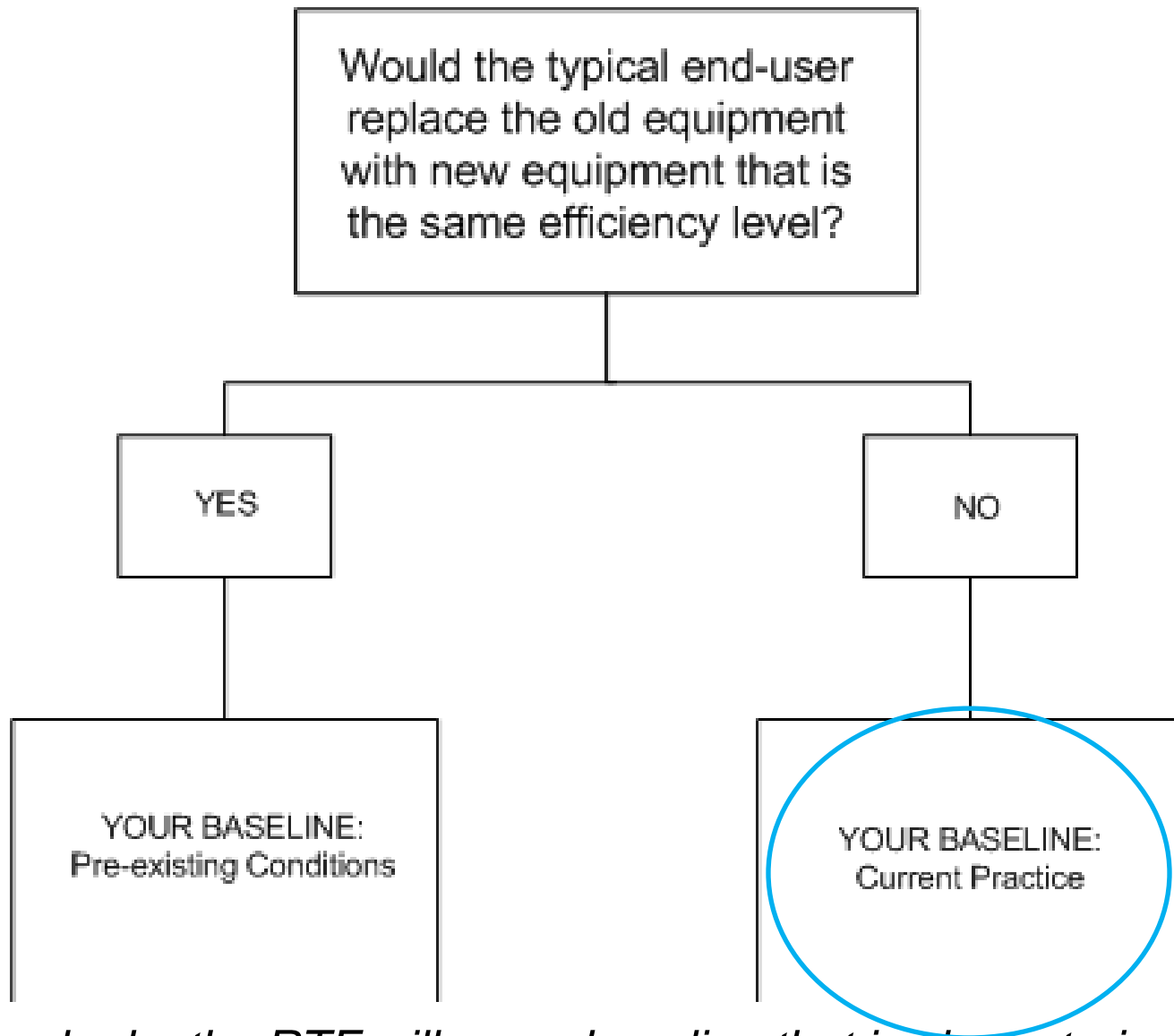
- Baseline for industrial and custom and will remain for HID etc.
- “what’s in the ceiling”**: pre-condition to post-condition

WHERE WE ARE GOING



Current Practice

- Baseline for most residential and much of commercial
- Reflects the choices a typical consumer makes**



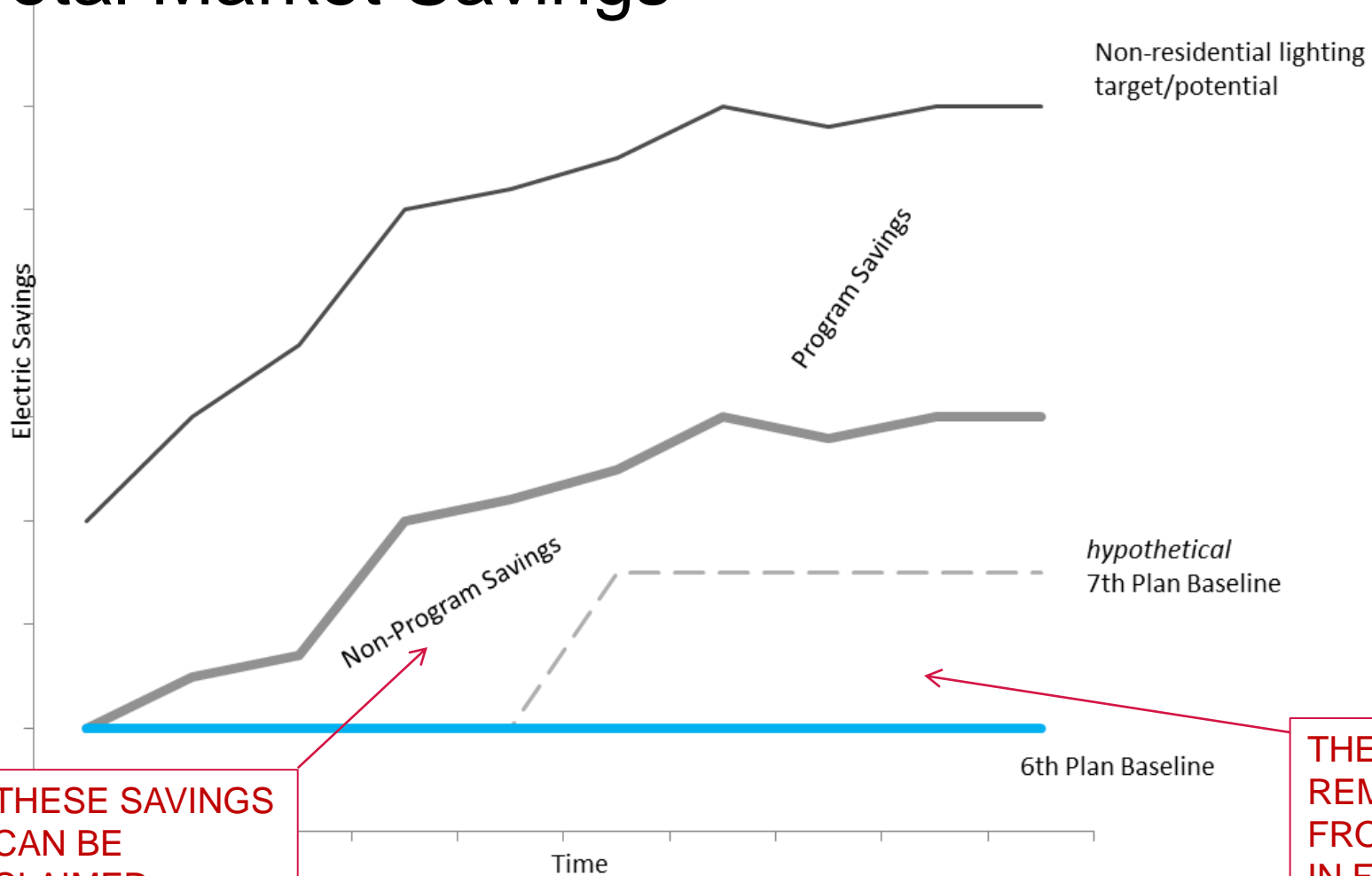
“As a general rule, the RTF will use a baseline that is characterized by current market practice or the minimum requirements of applicable codes or standards, whichever is more efficient.”

What about the existing T-12 systems in buildings?

- T-12s are out there
 - 25% in 2009 per CBSA
 - Data from current CBSA available within the year
 - Saturation expected to be lower due to big program push



Total Market Savings



THESE SAVINGS CAN BE CLAIMED TOWARDS TARGETS IN PRESENT

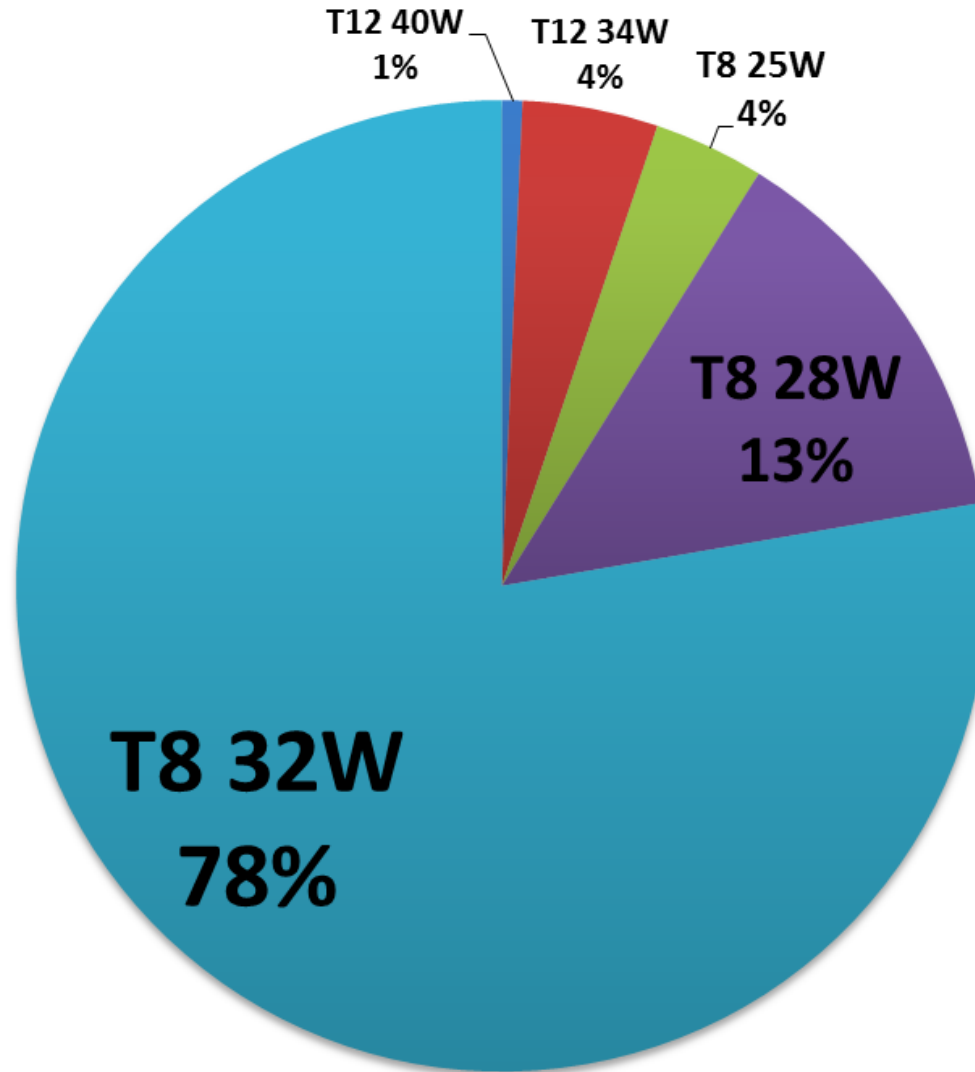
THESE SAVINGS REMOVED FROM TARGETS IN FUTURE

If T-12s aren't much of the market..
then what is?

As subtle as getting hit by a 2X4:
The market is DOMINATED by...



Sales by Lamp Wattage and Diameter - 4FT Lamps



Dividing the market

- Retrofit
- New Construction
- Maintenance

The draft baseline

| Typical Existing Condition / Obsolete Equipment | | |
|---|------------------------------|-------------------------|
| Lighting Systems Categories | Nominal Lamp Wattages in MML | Existing Average Lumens |
| All 4' T-12 | 34 | 1984 |
| All 4' T-12 | 40 | |
| All Slimline 8' T12 | 60 | 4625 |
| All Slimline 8' T12 | 75 | |
| All HO 8' T12 | 95 | 5729 |
| All HO 8' T12 | 110 | |
| All VHO 8' T12 | 185 | 8370 |
| All VHO 8' T12 | 215 | |

| New Current Practice (Market Average) Baseline | | | | | |
|--|--------------------------------------|-------------------------------|--|---------------------------|-------------------------------|
| Application's Typical Lamp Wattage | Market Average System Input Per Lamp | # of Lamps in Existing System | Market Average Fixture Adjustment (AKA "old ballast factor") | New Baseline System Watts | Lamps Included in Average |
| 34 | 30.7 | 1 | 0.90 | 30.7 | 4ft T8 4ft T12 |
| 60 | 55.3 | 1 | 0.92 | 55.3 | 4ft T8 4ft T12 8ft slim |
| 95 | 91.9 | 1 | 0.97 | 91.9 | 8FTHO 4ftT5HO |
| 185 | 134.3 | 1 | 0.73 | 134.3 | 8FTHO 4ftT5HO |

This is draft: after external review numbers may change slightly

No matter how you slice it...

| Four Foot T8/T12 Applications | | |
|-------------------------------|---------------------------|---------------------------|
| Market Segment | Average Wattage Per Lamp* | Watts Above/Below Average |
| New Construction | 28.6 | -2.1 |
| Maintenance | 32.4 | +1.7 |
| Retrofit | 28.4 | -2.3 |
| All Applications | 30.7 | - |

**8ft lamps scaled to approximate number of 4ft replacements*

When?

Implement on **April 1, 2014**

Summary of Research Findings

- Focus on T-12s provides diminishing returns
- Maintenance market is an untouched new opportunity
- LEDs are beginning the exponential ride: still small in the market, but need to watch

Summary of BPA actions

- Baseline will shift **April 1 2014** from existing condition to current practice for GSFL
- New and improved lighting calculator out **October 1, 2013**, fully adopted **April 1, 2014**
- BPA discussing with NEEA reporting lighting non-programmatic savings
- BPA and NEEA piloting approach to reach maintenance market
- Report on research findings available Fall 2013