



Non-Residential Lighting

Building Better Programs for Utilities

Presented by:

John Wilson, C&I Lighting Program Manager

Elizabeth Daykin, Commercial Planner

BPA Energy Efficiency



Session Agenda

- EPACK Fluorescent Lamp Ruling & BPA Plan of Action
- Lighting Program Design & Strategy
- Lighting Program Goals and Future



Big Picture Snapshot

- 2010 = 10 aMW
- 2011 = 13 aMW
- \$0.18 / kWh Portfolio Cost
- BPA will continue to incentivize high performance linear fluorescent technology
- BPA sees near tipping point for LED technology

Implementing the EPCACT 2007 General Service Fluorescent Lamp Standard



What it Meant Then & What it Means Now

What Legislation?

Federal Legislation	What's Effected	Effective Date
Energy Security Independence Act of 2007 (ESIA)	Standard Incandescent 'A' Lamps	Phases in: First step becomes effective January 1, 2012
Energy Policy Act of 2005 (EPACT)	General Service Fluorescent Lamps	Effective July 12, 2012
	Incandescent Reflector Lamps	

Mr. Wilson Goes to Washington

- Numerous legislative acts passed over the decades effecting the lighting industry
- Trend is two steps forward - one step back
- Congress or DOE passes new standard
- Industry vehemently opposes it while using the standard to advertising and sell product
- The Nation inches toward energy independence

EPACT Fluorescent Lamp Standard

- EPACT ruling will effect T12 baselines
- Since 2009 BPA has been telling utilities there would be a major negative shift in the program offerings
 - No more incentives for HPT8 from T12 baseline
- No guidance from RTF on how to implement new standard



EPACT Fluorescent Lamp Standard

- In 2007 when the GSFL standard was published no T12's met the requirements
- Since then, manufacturers have achieved efficacy not by dropping wattage, but by increasing lumens
 - No wattage reduction
 - Minimally compliant T12's produced by all manufactures
- That said, T8's have surpassed T12's and continue to gain market share

Why the GSFL Standard is Difficult to Implement

- EPACT GSFL ruling is a lamp standard
- BPA baseline designed around Fixture Wattage
 - Fixture Wattage = lamps x ballast factor
- Without market data, we don't know what's being installed
 - Least efficient ballast were available till 2010
 - T12 magnetic ballast have a 20+ year lifespan
 - Different ballast use varying degrees of power

So What's Going to Happen?!?

- Non action by BPA wasn't an option
- BPA set new baseline that keeps current program offerings overwhelmingly intact
- Savings for T12 baseline will shift ~10-20%
- Incentives for T12 to HPT8 will shift ~20-30%

So What's Going to Happen?!?

- New Lighting Calculator will be released Fall/Winter 2012 with new T12 baseline and reduced incentives
- Utilities can use existing lighting calculator 2.3 & Program Offerings through April 1, 2013
 - Possibly October 1, 2013
- BPA will host a brown bag in May / June with full details

Why Did BPA Choose this Route?

- We listened and worked with our Utilities
- Eliminating incentives all together only guarantees the majority of people will take the lowest cost solution
- Program incentives do more than incent people to install HPT8. Incentives drive:
 - De-lamping
 - Low wattage HP ballasts & lamps
 - Controls & More

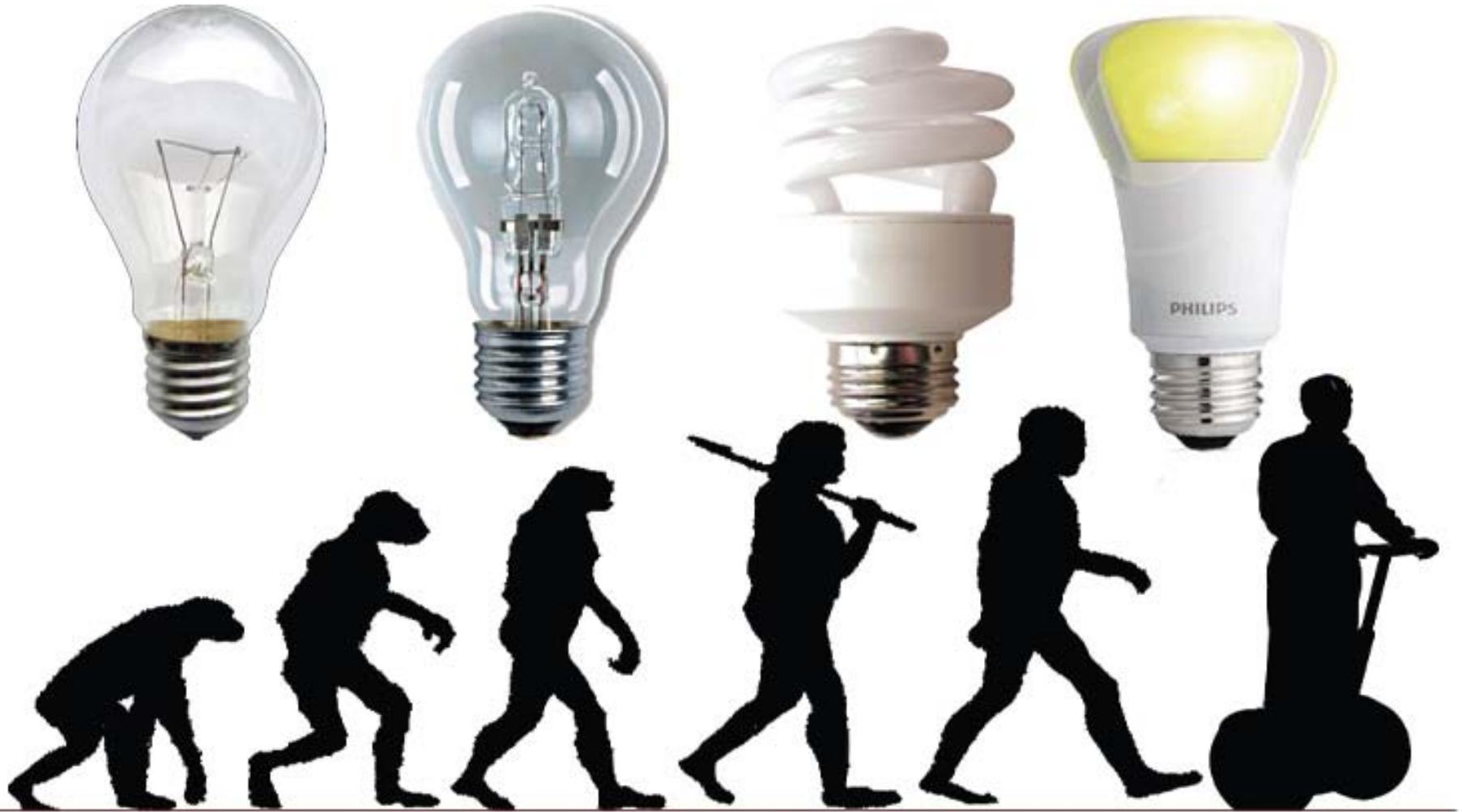
Updated Marketing Material

- 'Get the Skinny' Campaign very successful throughout the region
 - Focused on July 2012 backstop
 - Focused on incentives ending

- This material has been updated
 - No more effective dates
 - Messages reflect utility & market reality

- Still a great resource for utilities & trade allies
 - BPA will roll this back out in June 2012

Program Design & Strategy



Program Design & Strategy

Where do Program Offerings come from?

■ Incentives

- Incentives encourage specific behavior
- Incentives that make sense
- Incentives that work with the market

■ Program Guidelines (the fine print)

- BPAs high level way of enforcing quality control
- Currently working on simplifying this language



Program Design & Strategy

- Programs design & set strategy
 - Lighting Team Proposes reimbursement levels
 - Everything is subject to Planning Guidelines & Review

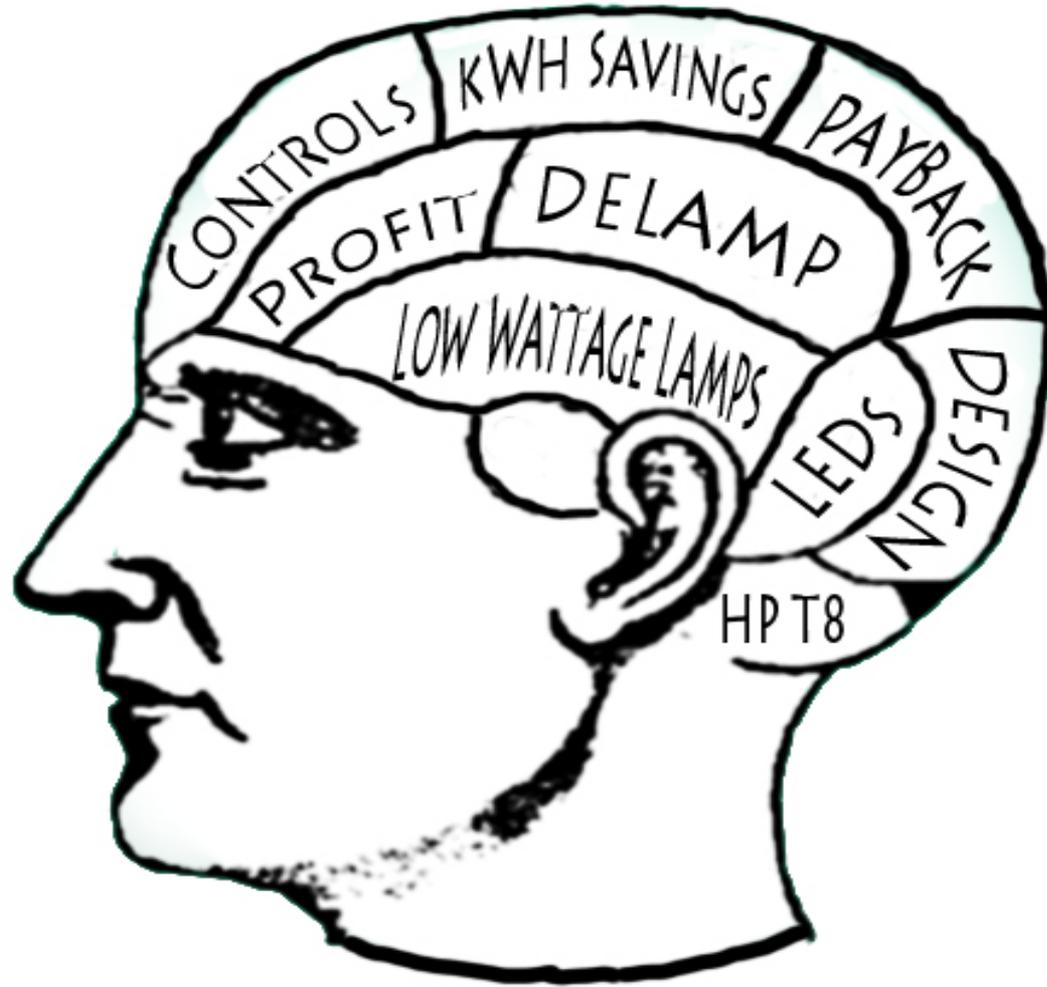
- BPA pays a premium in certain cases
 - Linear fluorescents
 - Sensors controlling less than 200 watts
 - Where else? Just look at your measure line \$ / kWh

- Method has worked well
 - Market uptake in A3 measure (\$15 premium for de-lamp)

Planning Guidelines & Policy

- **Cost Effectiveness**
 - Reimbursements only available for cost-effective measures
- **Incremental Cost**
 - Reimbursement cannot exceed incremental cost
- **Balance of Lifetime Cost vs. Portfolio Cap**
 - Average to \$0.20/kWh (< \$2.2 million / aMW)
 - Less than \$62/MWh levelized cost
- **Portfolio Balance**
- **Flat versus deemed incentives**

Comprehensive Lighting



Comprehensive Approach

Why Comprehensive?

- Incentives for linear fluorescents were going away
 - How to make up for this huge market share?
 - LED's not ready for prime time

- We saw missed opportunity
 - Building spaces over lit
 - High percentage of 1 for 1 jobs

- More kWh savings for low cost

Comprehensive Approach

What is Comprehensive? (in a nutshell)

- Hit everything – leave no socket behind
- Always
 - Reduce bulbs where you can
 - Install low wattage bulbs / ballasts
 - Use controls
- And when you can, redesign

Comprehensive Approach

- Why focus on Redesign?
 - Align with codes / IES standards
 - Goal is to achieve the correct light levels (not more or less)

- Challenges of Redesign
 - Most trade allies needs more education
 - Contractors are competing with their current practices as well as other contractors
 - Higher upfront cost to owners makes for a tough sell

- Lessons Learned
 - NEEA Pilot
 - NW TAN Training

Educating Everyone

- Trade Ally Network focused on educating all echelons of the industry
- Lighting 101 and then some for past 3 years
- 2012 focused on comprehensive design & new technology
- Education focus will remain on
 - New technology (LEDs)
 - Comprehensive redesign
 - Utilizing incentives available through BPA Lighting Calculator
 - Utilities overseeing more cost effective projects

Final Thoughts on Comprehensive

- Requires contractors going the extra mile
- Requires utilities guide contractors
- Requires BPA to develop incentive structures that align with comprehensive goals
- Requires BPA & regional partners to invest in greater education of trade allies and utilities



Goals & Objectives

for the

BPA Lighting Team

BPA & Emerging Tech

- BPA is working with several regional and national groups to follow emerging tech

- BPA's own E3T group provides constant updates

- BPA plays a unique roll in integrating and supporting LED Lighting
 - DOE is 100% behind solid state lighting
 - BPA is 100% behind cost effective savings

BPA & Emerging Tech

- Not all LEDs are created equal
- Where LEDs are cost effective and reliable – BPA will incentivize them
- LEDs require new program guidelines to help keep out undesirable products
- Incentives for LEDs will continue to roll out on a application by application basis...

Qualifying Products List



- **Design Lights Consortium**
- **Energy Star**
- **Lighting Design Lab**



- 3 lists is not operationally excellent



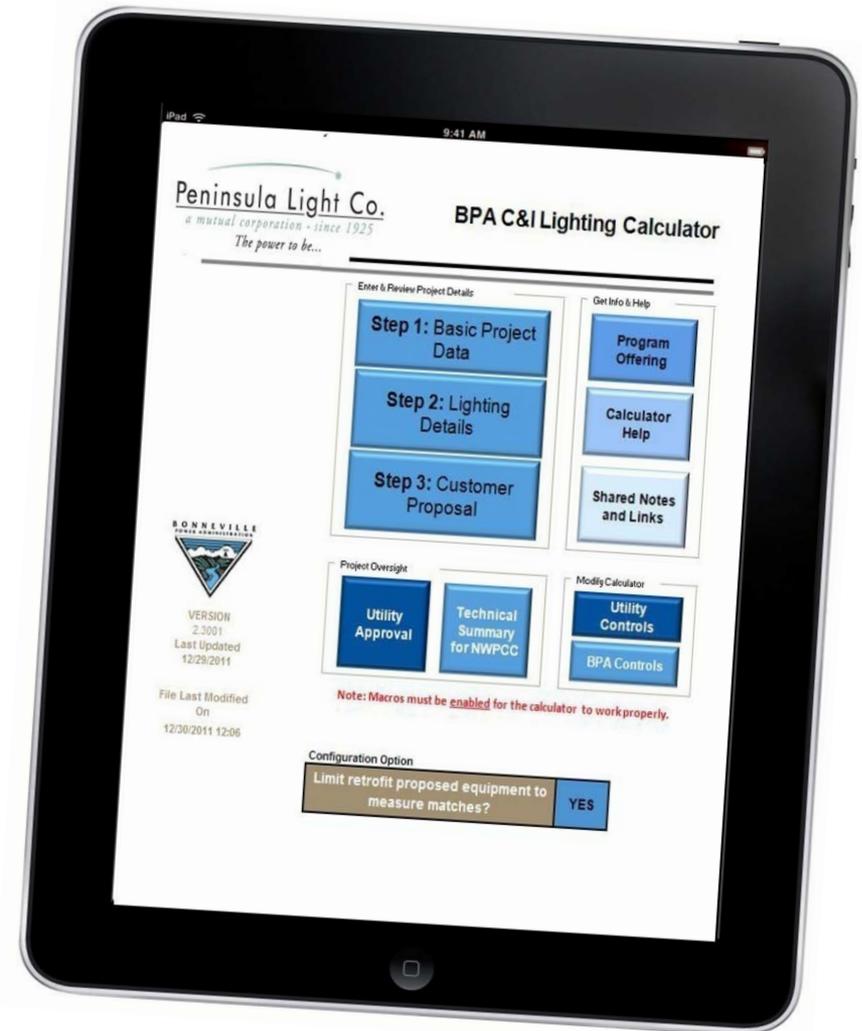
- What does the future of Qualified Products Lists look like?
- Challenge in setting the bar in performance

Future of the Lighting Calculator

- BPA's current lighting tool... is getting better all the time
- Many lessons learned for what does & doesn't work
- BPA has listened to feedback from utilities & trade allies
- Change is on the way...

Future of the Lighting Calculator

- Web based platform
- Relational databases
- Updates available by syncing online
- Enhanced utility controls
- Enhanced / simplified user controls
- Tablet compatible



Utility Focus

- Utilities are the real line of defense in achieving cost effective savings
 - BPA doesn't get to look at every project
- We need to work toward projects with
 - Greater savings
 - Lower \$ / kWh
 - Longer measure lives
- We are here to support you
 - Let us know what you need

Timeline of Events for C&I Lighting

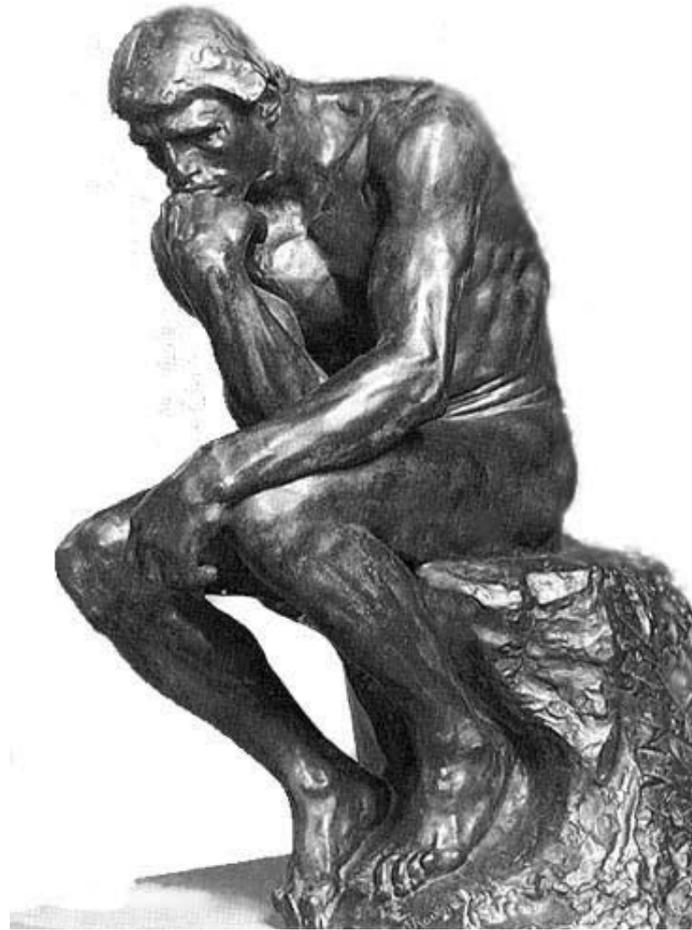
- **Fall, 2012** (Goal is October 1)
 - New BPA Lighting Calc 3.0
 - New GSFL Baseline
 - New RTF Protocols & Guidelines
 - Additional measures for LED Lighting
 - Removal of incentives for standard T8
 - And more... stay tuned

- **April 1, 2013**
 - BPA to retire calculator versions 2.2 & 2.3

What You Can Expect From Us

- 5 business day turn-around on requests to Lighting@BPA.gov
- Clear explanation when we decline a non-standard measure
- Transparency in our process
- Support from your TAN Lighting Specialist

Discussion / Questions



Contact

For more information, contact:

John Wilson
C&I Lighting Foreman
jawilson@bpa.gov
503.230.7319

For more information, contact:

Elizabeth Daykin
Planning Specialist
ebdaykin@bpa.gov
503.230.5761

Lighting@bpa.gov