

BPA's Plan for Implementing GSFL Standard (aka new baseline for T12s)



June 20, 2012

**Non-Residential Lighting Program Manager:
John Wilson**

Scope of Presentation

- Background / Update on DOE EPACT Ruling
- BPA Interim Arithmetic Baseline
- Review Timeline of Future Calculator Releases
- Update on Lighting Marketing



What's Going On?

- EPACT Legislation
 - General Service Fluorescent Lamp (GSFL) Ruling
- First notice was as early as 2007
- Since 2009 BPA has been telling utilities there would be a major negative shift in the program offerings / savings claimed with fluorescent lights

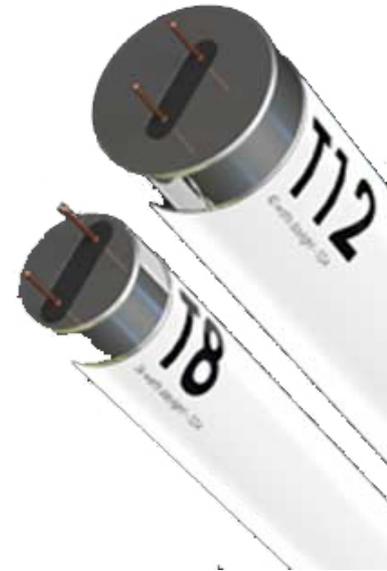
Quick Technical Slide

General Service Fluorescent Lamps means

- Most 4' & 8' linear fluorescent lamps
 - 4' bi-pin, 4' u-tube, 8' slim line, 8' HO

Lamps are Designated by Diameter

- T12 lamp is 1 ½" in diameter
- T8 lamp is 1" in diameter
- T8 Lamps are ~30-40% more efficient than T12



Quick Technical Slide

All fluorescent lamps require a ballast to operate

- T12 & T8 lamps require different ballasts
- Ballasts ultimately effect both power consumption and lumen output

BPA's Lighting Program baseline measures fixture wattage

- Fixture Wattage = lamp wattage x ballast factor

Efficacy = Lumens (Light Output) / Power



Guidance From the RTF



Guidance From the RTF

Specifically on the GSFL Standard

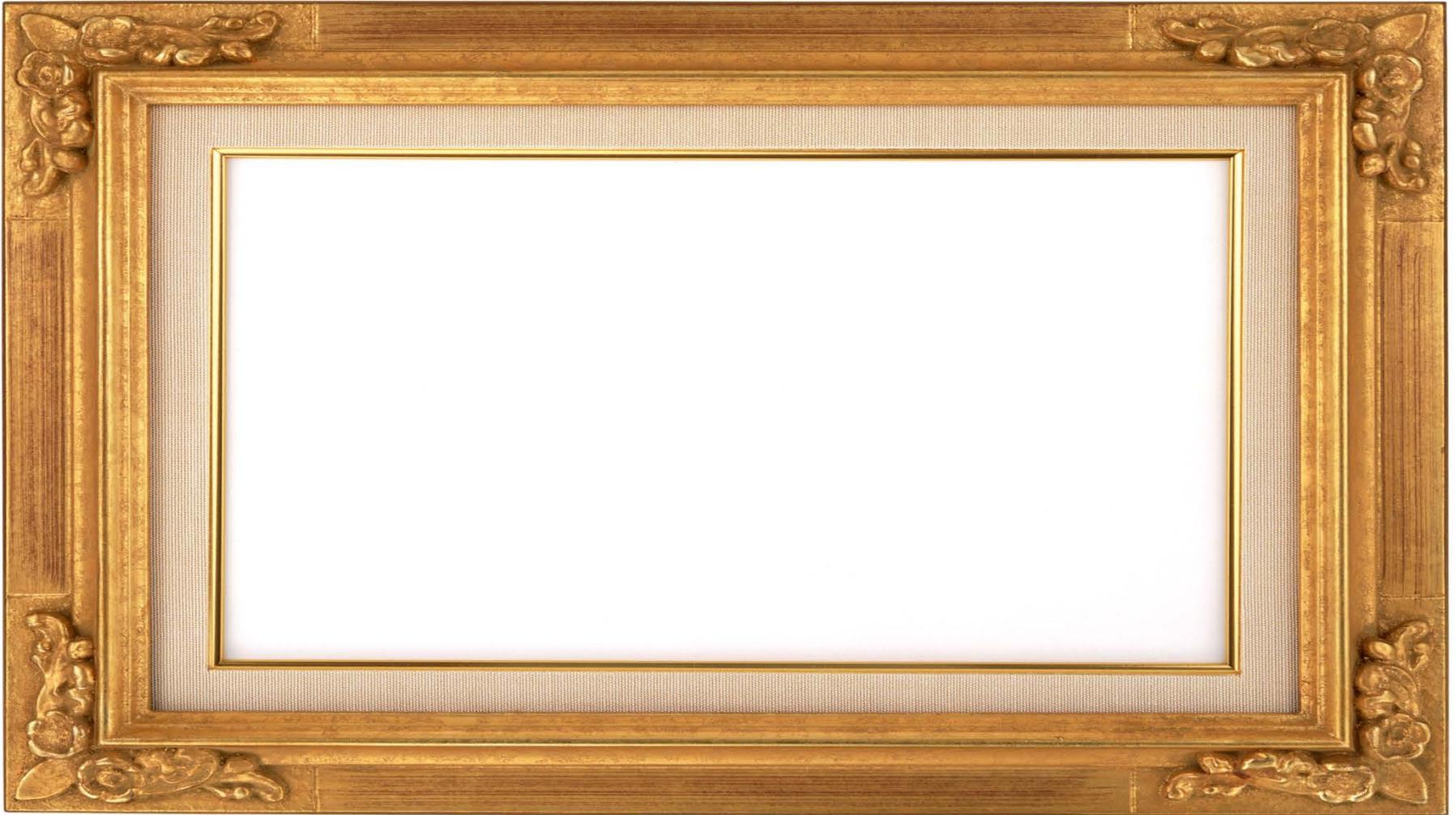
- Aware of this issue since 2007
- RTF Wants to make a decision based on empirical market data
- Real market data will not be available till ~ 2014-15
 - **Standard takes effect July 2012**
- RTF has effectively punted on baseline issue



BPA Policy on Codes and Standards

- It is BPA policy to:
 - Pay for only cost effective measures
 - **Not reimburse for measures covered by federal codes or standards**
- Codes/Standards savings are either accounted for through:
 - The Council baseline (making targets smaller)
 - Through non-programmatic savings

Framing the EPACT GSFL Issue



Framing the EPACT GSFL Issue

- GSFL ruling in 2007 meant something different than what it means in 2012
 - In 2007, T12's were going to disappear
 - In 2012, T12's are going to be brighter than ever
 - With a CRI which gives them exemption
- This isn't the first wave of energy efficient legislation

What Legislation?

Federal Legislation	What's Effected	Effective Date
Energy Independence and Security Act of 2007 (EISA)	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 14, 2012
	Incandescent Reflector Lamps	

General Service Fluorescent Lamp (GSFL) Ruling

Takes Effect July 2012

Lamp Type	Correlated Color Temp	Energy Conservation Standard (L/W)
4-Foot (T8-T12) Medium Bi-pin ≥25W	≤ 4,500 K	89
	> 4,500 K and ≤ 7,000 K	88
4-Foot (T8-T12) U-Shaped ≥25W	≤ 4,500 K	84
	> 4,500 K and ≤ 7,000 K	81
8-Foot (T8-T12) Single Pin Slimline ≥52W	≤ 4,500 K	97
	> 4,500 K and ≤ 7,000 K	93
8-Foot (T8-T12) High Output	≤ 4,500 K	92
	> 4,500 K and ≤ 7,000 K	88

Why the GSFL Ruling is Difficult to Implement

- In 2007 when GSFL standard was published no T12's met the requirements
- Since then, manufacturers have achieved efficacy not by dropping wattage but by increasing lumens
- Manufacturers have found exemptions to GSFL ruling (loopholes)
 - No wattage reduction
 - Minimally compliant T12's produced by all manufacturers

Why the GSFL Ruling is Difficult to Implement

- BPA Baseline designed around Fixture Wattage
- Fixture Wattage = lamps x ballast factor
- Without market data we don't know what sorts of ballasts are being installed
 - Least efficient ballast were available till 2010*
 - T12 magnetic ballasts have a 20+ year lifespan
 - Different ballasts use varying degrees of power

'What's in the Ceiling' Baseline

Example of Current Baseline Method

Lamp Wattage	# of Lamps	Initial Lumens	Efficacy (l/w)	Ballast Draw	Fixture Wattage
40	2	3150	78.8	+16 watts	96 watts

- Baseline = Fixture Wattage in Ceiling
- Fixture Wattage = Lamp Wattage + Ballast Draw

Calculating Baselines & Savings

Lighting is Unique in this Regard

Most other programs have baselines tied directly to codes, standards, and market research

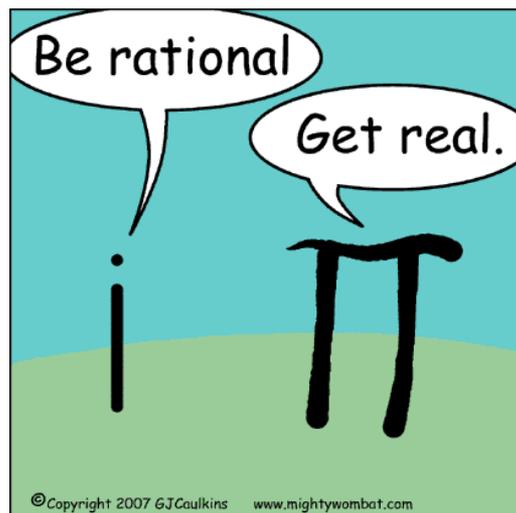
So the Big Issue Comes Down to...

How are we going to calculate lighting baselines going forward?

- BPA's position will be to act in accordance to what we are hearing from the RTF
- In the meanwhile, BPA will apply its interim plan to the existing baseline to account for the GSFL standard

BPA's Plan for Lighting Calc 3.0

Introducing BPA's Interim Arithmetic Baseline



Interim Arithmetic Baseline

Interim

- Until market data is available

Arithmetic

- Method can be applied evenly and objectively to all effected products

Implementing Interim Arithmetic Baseline

Step 1

- Identify affected lamps under GSFL ruling

Lamp Type
4-Foot (T8-T12) Medium Bi-pin $\geq 25W$
4-Foot (T8-T12) U-Shaped $\geq 25W$
8-Foot (T8-T12) Single Pin Slimline $\geq 52W$
8-Foot (T8-T12) High Output

Implementing Interim Arithmetic Baseline

Step 2

- Decouple lamp wattage from ballast wattage

Lamp Wattage	# of Lamps	Initial Lumens	Efficacy (l/w)	Ballast Draw	Fixture Wattage
40	2	3150	78.8	+16 watts	96 watts

GSFL ruling is a Lamp Ruling – not a fixture ruling

Implementing Interim Arithmetic Baseline

Step 3

- Apply new GSFL required efficacy & calculate 'Allowable Lamp Wattage'

Lamp Wattage	# of Lamps	Initial Lumens	Efficacy (l/w)	New GSFL Required Efficacy	Allowable Lamp Wattage
40	2	3150	78.8	89	35.4 watts

- Allowable Lamp Wattage = Lamp Lumens / Federal Standard

Implementing Interim Arithmetic Baseline

Step 4

- Add back in ballast factor

Lamp Wattage	# of Lamps	New GSFL Required Efficacy	Allowable Lamp Wattage	Ballast Draw	Arithmetic Baseline
40	2	89	35.4 (x2)	16 watts	86.8 watts

- Arithmetic Baseline = Allowable Lamp Wattage + Ballast Draw
- -9.5% baseline shift in this example

Effects on Savings & Incentives

Preliminary Results of BPA's Plan

- ~10% negative shift on programmatic savings across specific measures
- Depending on how much T12's weigh total portfolio, impact will be specific to utilities
- BPA forecasts negative impact on incentives around 15-25%

Implementing Interim Arithmetic Baseline

Real World Implications for Programs

- Lighting Calcs would be required to track two levels of savings
 - Savings from existing 'ceiling baseline' for customer information
 - Savings from new Arithmetic Baseline to report to BPA

Why Stay in the Linear Fluorescent Game

- Our customers tell us there are still lots of T12's throughout their service territory
- These savings are cheap & they open other doors
- BPA Programs incent more than just T12 to HP T8
 - Reduction in Fixtures
 - Reduction in Lamps
 - Low Output Ballasts / Low wattage lamps
 - Controls
- Ending incentives pushes contractors towards cheapest available option

Why Stay in the Linear Fluorescent Game

If we decide to get out now...

- No guarantee of how jobs are getting completed
- No real understanding of how much potential is left
- Market is not transformed throughout BPA's service territory (based on reliable but anecdotal evidence)
- Great opportunity to fumble late in the 4th quarter

**BPA Contributes Towards Another
Boom & Bust Cycle in Conservation**

Basic Timeline with Objectives

~Jan 2013:

Release BPA C&I calc 3.0 with new baseline and other improvements

April 1, 2013:

Notice in IM to retire versions 2.2 & 2.3 by October 1, 2013

October 1, 2013:

All BPA Option 1 utilities are using Lighting Calc version 3.0

Present Day – October 1, 2013

BPA Calculators 2.2 & 2.3 still available

Regional Dialogue

- Everyone wants to be in sync with the RTF
- When the RTF fails to provide guidance- regional parties start to move unilaterally
- NEEA being involved in Commercial Lighting can do a lot to coalesce IOUs and Publics
 - Regional Lighting Plan

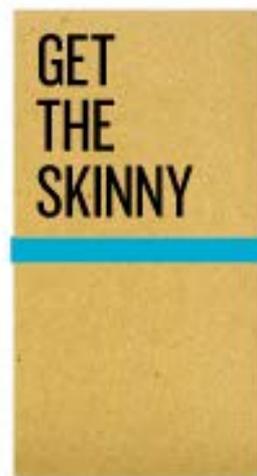
T8 Lighting Project Re-launch

- Updated Information and resources
- Inefficient T12 are still available.
- Upgrade incentives will continue to be available.



T8 Lighting Project Re-launch

- Updated marketing materials
 - Direct Mail
 - Bill Inserts
 - Email Content



In Closing

- For BPA Non Action – Is not an option (BPA is part of DOE)
- BPA worked hard with stakeholders to keep program incentives strong (and succeeded)
- Utilities can adopt version 3.0 with new baseline as soon as it is released, but will have until October 1, 2013 to submit projects under status quo on version 2.3



Questions?

