

Nonresidential Lighting Updates & Trends

**BPA Energy Efficiency Brown Bag
January 23, 2020**



Agenda

Welcome

Michelle Lichtenfels, C&I Sector Lead, BPA

Nonresidential Lighting Updates

Ryan LeBaron, Program Manager, BPA

Lighting Data Analysis

Kate Bushman, Trade Ally Network NW

National Lighting Trends

Eric Wilson, Sr. Program Manager,
Trade Ally Network NW

BPA Commercial & Industrial EE Program Staff & Tech Leads

✓ Commercial
section of
IM



Ryan LeBaron
Program Manager
Commercial



Eric Mullendore
Program Manager
Industrial

✓ Nonres
lighting



Rob Burr
Program Support
Commercial



Jennifer Wood
Program Support
Industrial

✓ Industrial
section of
IM

✓ Trade Ally
Network
NW



Jamie Anthony
Engineer, Tech Lead
Commercial



Todd Amundson
Engineer, Tech Lead
Industrial

✓ Energy
Smart
Industrial



Michelle Lichtenfels
C&I Sector Lead

Lighting Updates



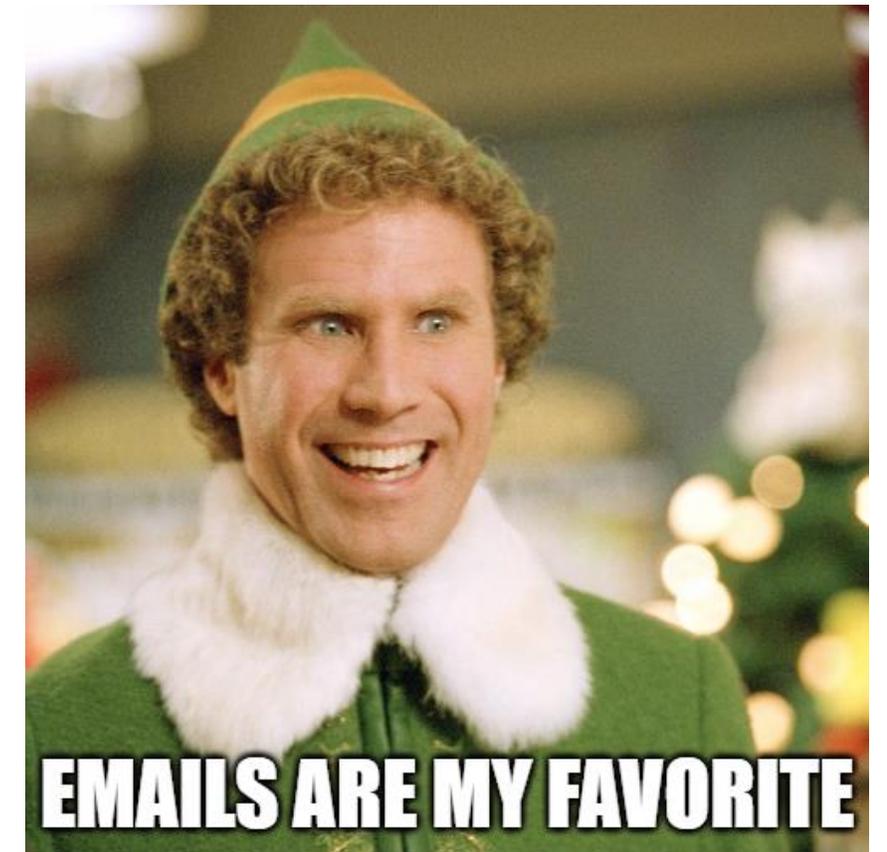
Lighting Updates

1. **Emailing** lighting calculators to BPA
2. **LC 5.0** non-standard measure quirk
3. **LC 5.1** in development
4. The importance of **building types**

Emailing Lighting Calculators to BPA

File extension .xls versus .XLS

Let us know if you don't receive
an **auto-reply**



Non-standard Quirk

Space: Restroom

Measure Type: **Non-standard** ←

	Existing Equipment	Proposed Equipment
Quantity	4	4
Class	T8	LED
Category	4 ft	Gen. Indoor / Outdoor
Subcategory	NLO Ballast	Standard
Lamp Wattage	32	40
Lamps per Fixture	2	1

Controls: No controls

0

[none]

% Reduction in Hours: 0

Notes:

+↓ ADD a new row BELOW the current one
 +↑ ADD a new row ABOVE the current one
 X DELETE row

<< < 13 > >> COPY PASTE



4,067	13 Restroom D ←	4 T8(s) 4 ft, NLO Ballast 32 W/lamp, 2 lamp(s)/fixture	4 LED(s) Gen. Indoor / Outdoor, Standard 40 W/lamp, 1 lamp(s)/fixture	[No controls specified]	Baseline Proposed Savings (% decrease)	987 670 316(32%)	59 40	Decommissioning: [none] Equipment Non-standard: 340 kWh @ \$0.13/kWh (\$44) Controls: [no controls specified]
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Non-standard Quirk

This is fairly rare

We are fixing it

Utility Review Portal

Bonneville Power Administration Lighting Calculator Version 5.0

HOME << Back

Req'd Project Info Add O&M Review Project Project Reports Save & Close Links

General Project Information

Add project information below, including a unique site ID, project sector, project completion date, project funding source, and project incentive for invoicing. Note that all fields are required.

Unique Site ID * Sector *

Completion Date Month Day Year *

Funding Source * Actual Project \$ *
Cost**

Invoice BPA For* Full BPA Incentive Amount, \$ 0
 Utility Passthrough Amount, \$ 0

** Total project cost for retrofits, incremental project cost for new construction.

Was this project completed at a federal site? * Yes No

User-Defined Fields

Add custom fields which will appear on the second page of the "Utility Summary" project report. Both the titles and content of the fields can be customized below.

Field 1: (title)

Field 2: (title)

* Required fields

Utility Project Approval Yes No

LC 5.1 is in Development

Emphasis is on:



- ✓ Speed/performance improvement for large projects
- ✓ Quirk fixes

The Importance of Building Types

Beware of multiple buildings / building types

Please email lighting@bpa.gov with any questions

Bonneville Power Administration Lighting Calculator Version 5.0

Minimize HOME << Back

Customer Trade Ally Spaces Measures Project Reports Save and Close Links

Enter the customer information in this tab. This section is mandatory.

Customer / Mailing Address

Company Name Dan's Auto Repair *

Street Address 123 Main St *

City Vancouver *

State WA * Zip Code 98555 *

Utility Information

Rate Class [Default Rate] *

Energy Rate (\$/kWh) \$0.0600 * Demand Rate (\$/kW) \$6.00 *

Project / Site Address Information

Project Name Better Lighting *

Building Type Automotive Repair *

Project Type Automotive Repair *

Use customer project type

Street Address Hospital *

City Industrial Plant with One Shift *

State Industrial Plant with Three Shifts *

Industrial Plant with Two Shifts

Library

Skip estimated project cost

Estimated Project Cost \$8,000 * *Round to the nearest dollar. For new construction projects, specify the incremental project cost.*

Customer Contact Information

Name Dan Wilson *

Phone Number (206) 555 - 5555 Ext. *

Email Address dan@aol.com *

This field auto populates.

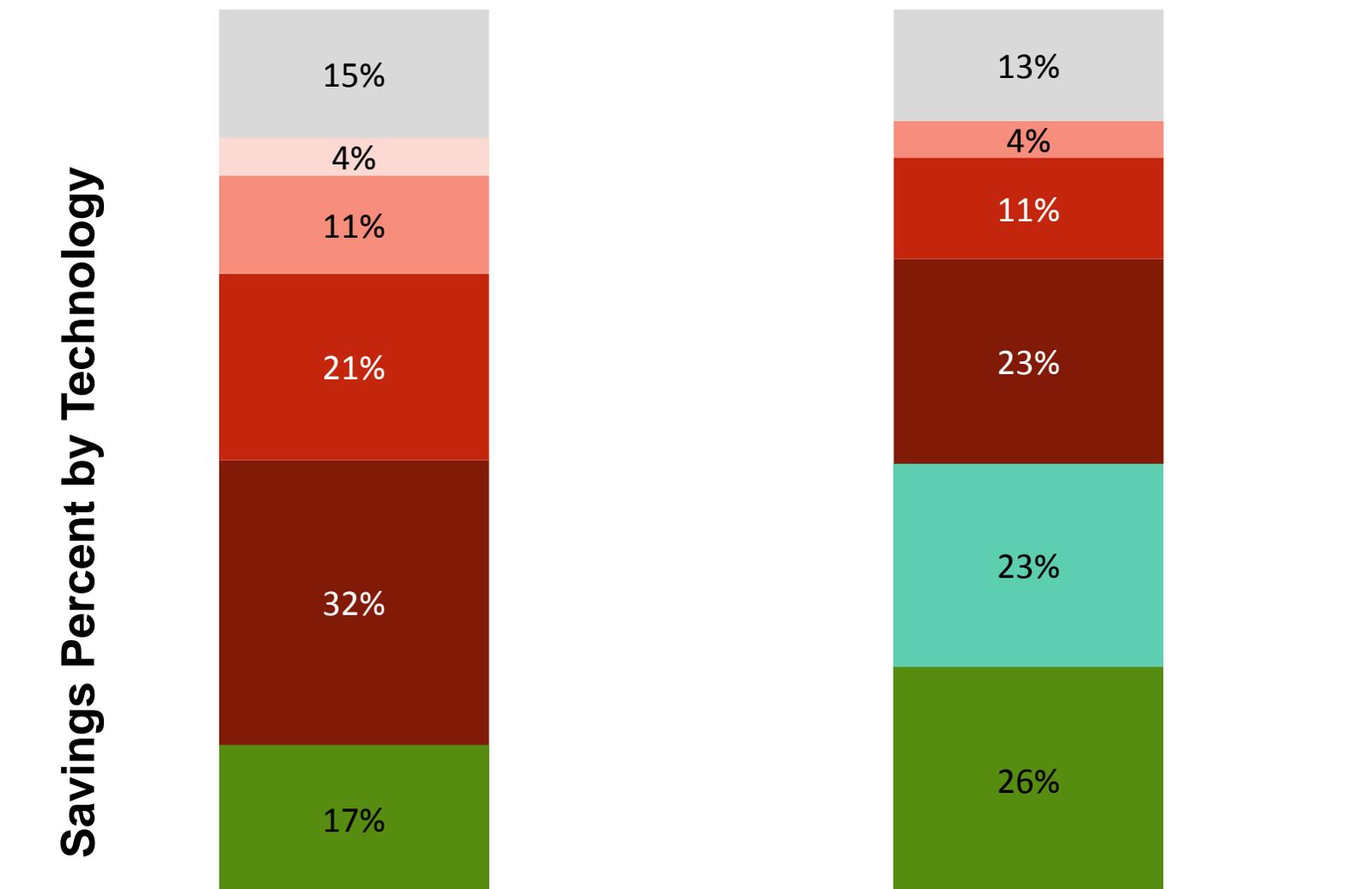
Lighting Data Analysis: Results and Insights from Lighting Calculator Data



Savings Mix Differed Between LC 3.3 and LC 4.0

LC 4.0 introduced new incentives and new baselines

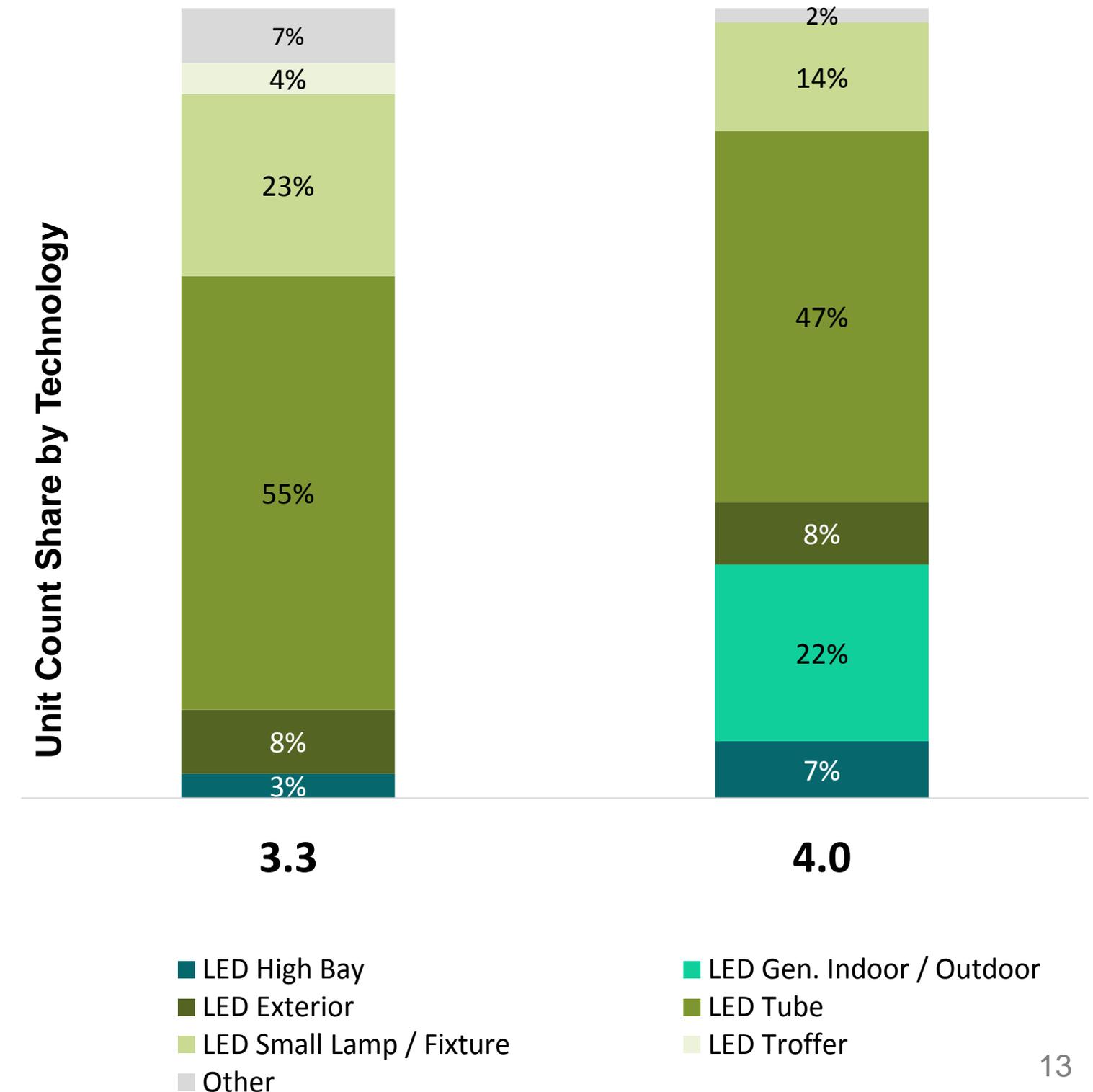
Biggest impact: **a shift toward high-bay and LED indoor/outdoor systems**



TLEDs Still Most Common Product, but Decreasing Share

TLEDs – still a very popular measure – showed a decrease in LC 4.0

This reflects an **increase in LED general indoor/outdoor**



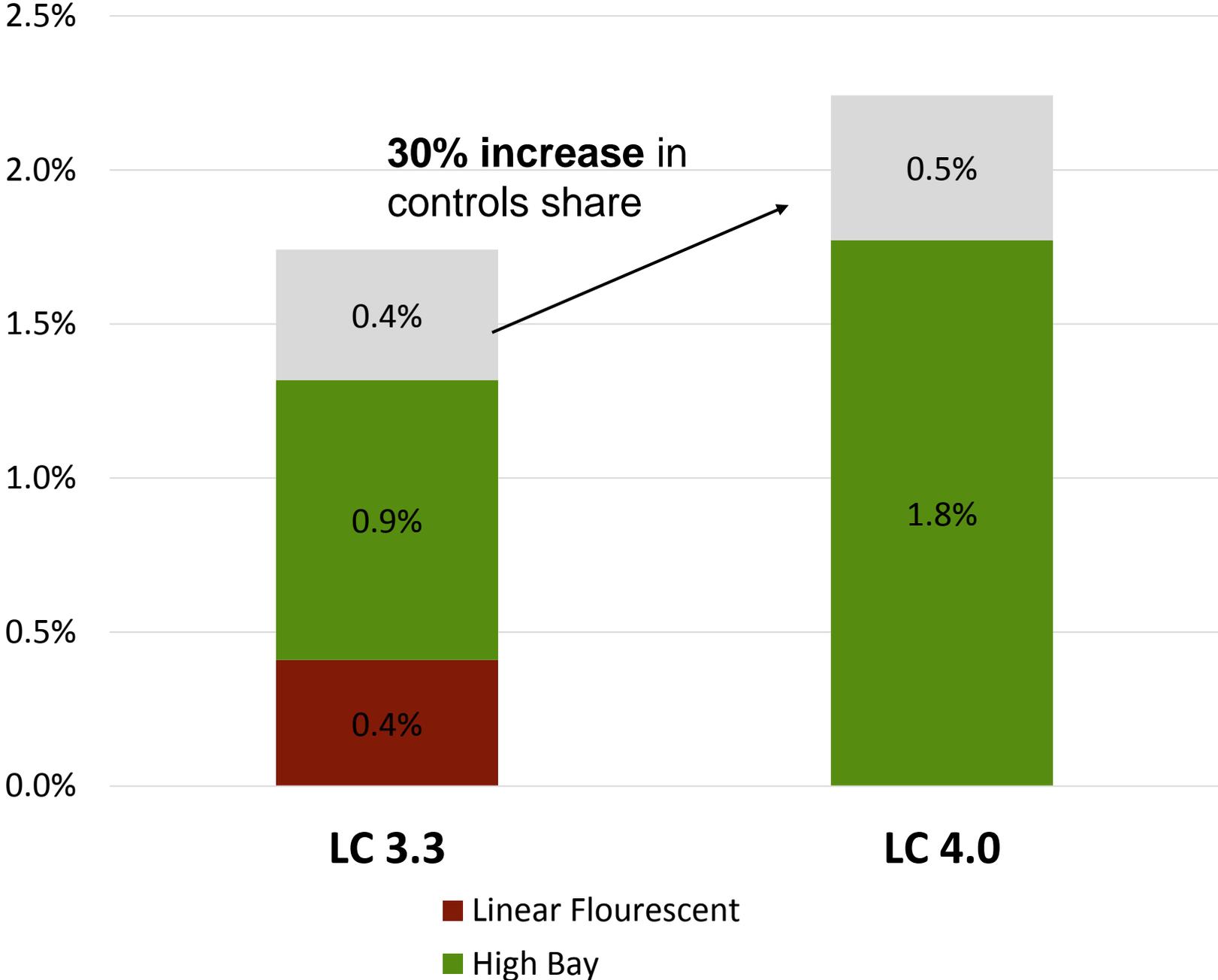
Control Savings 30% Higher in LC 4.0, Shift to High Bay

Controls only account for about **2%** of total lighting savings

LC 4.0: **LED High Bay** accounts for **80%** of control savings



Controls as Percent of Total Savings

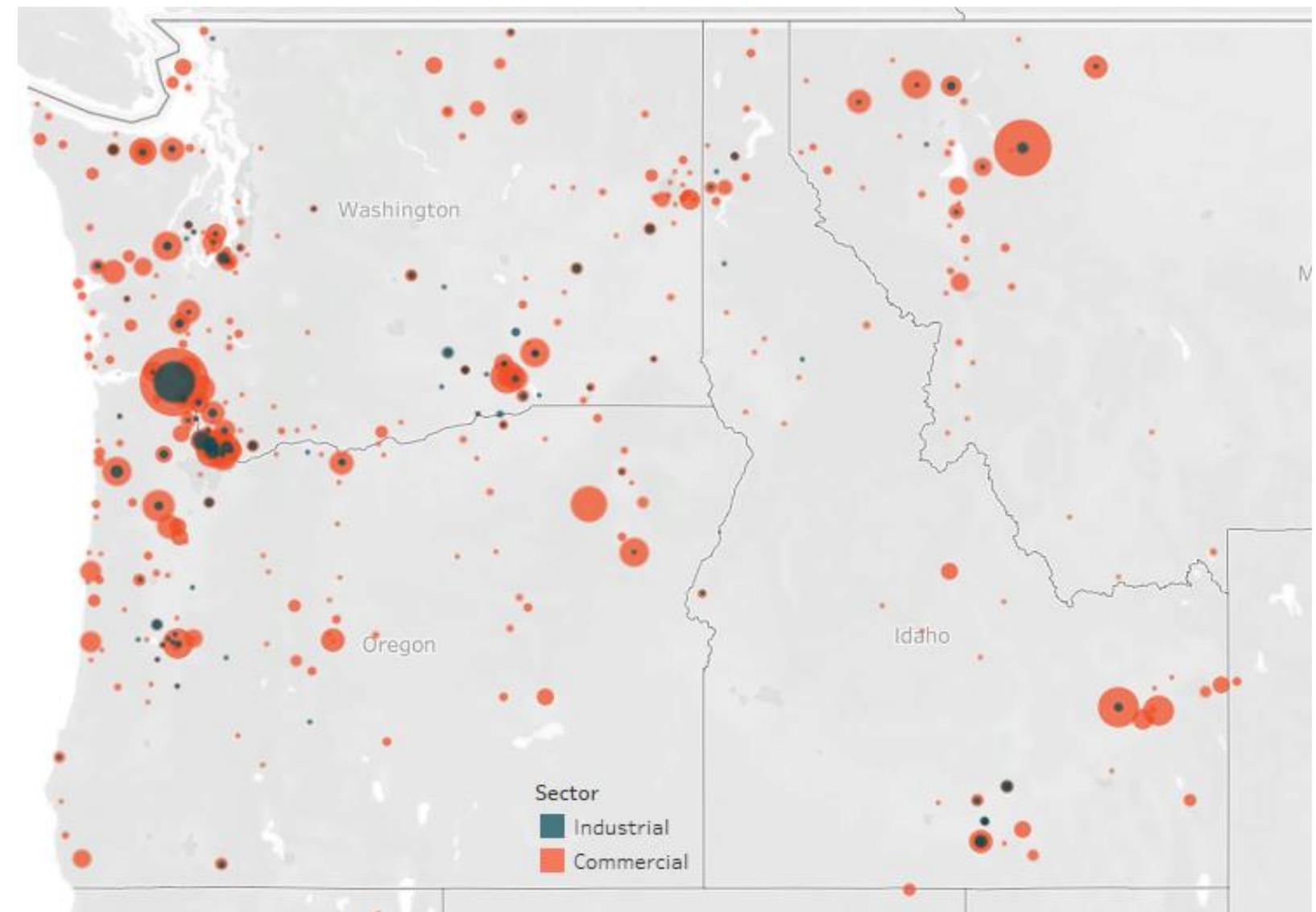


Programs Reached Customers Across the Region

LC Projects by BPA Sector: 2018-2019 Rate Period to Date

Map shows LC projects since October 2017 by sector (LC 3.3, 3.35 and 4.0)

- **Commercial projects** represent more than **85%** of all projects.
- **Industrial projects** concentrated along I-5 corridor



How to interpret this map?

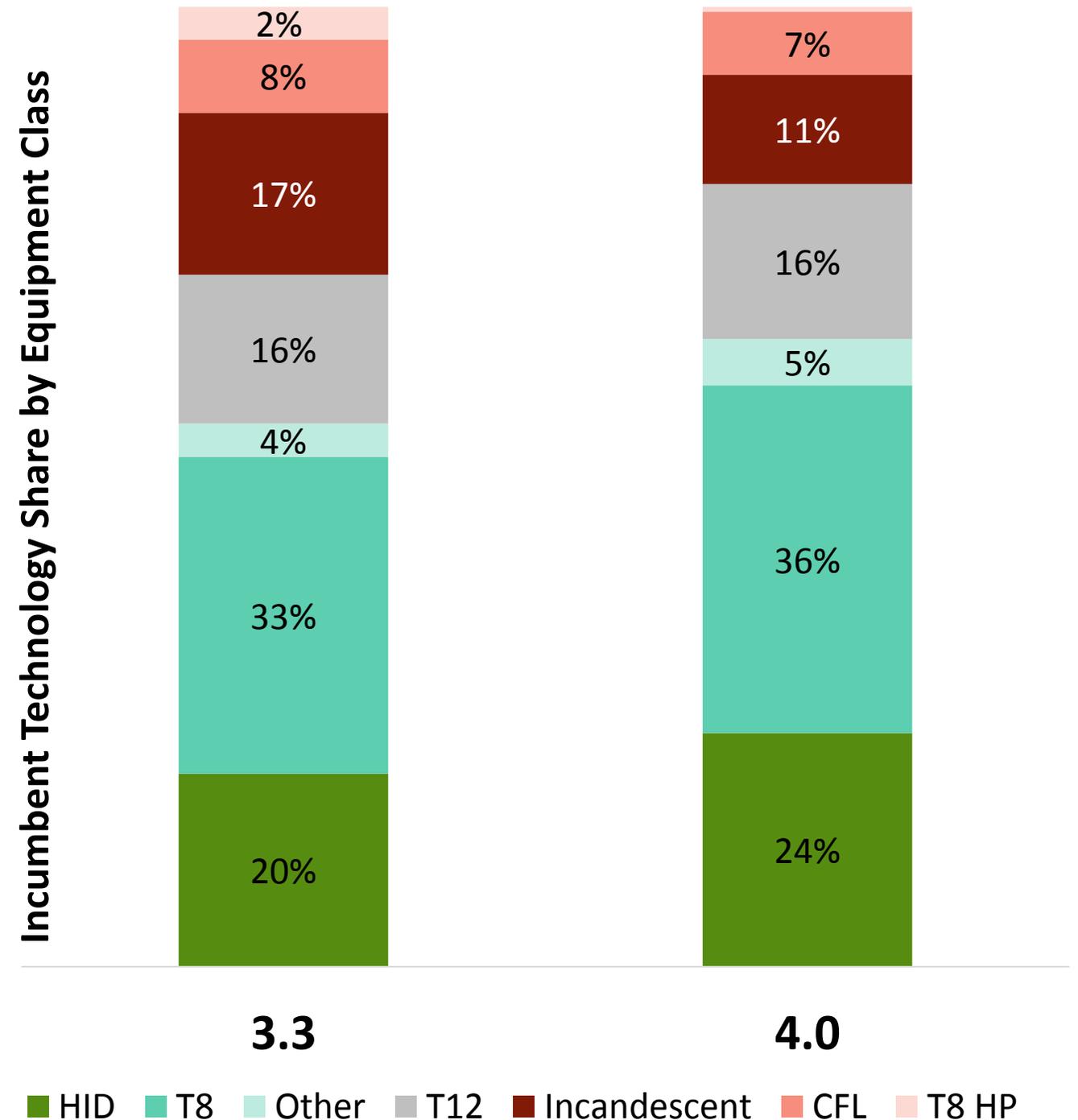
- **Color of bubble** = sub-region
- **Size of bubble** = number of projects

**Agricultural sector is less than 1%, and therefore does not appear on the map.*

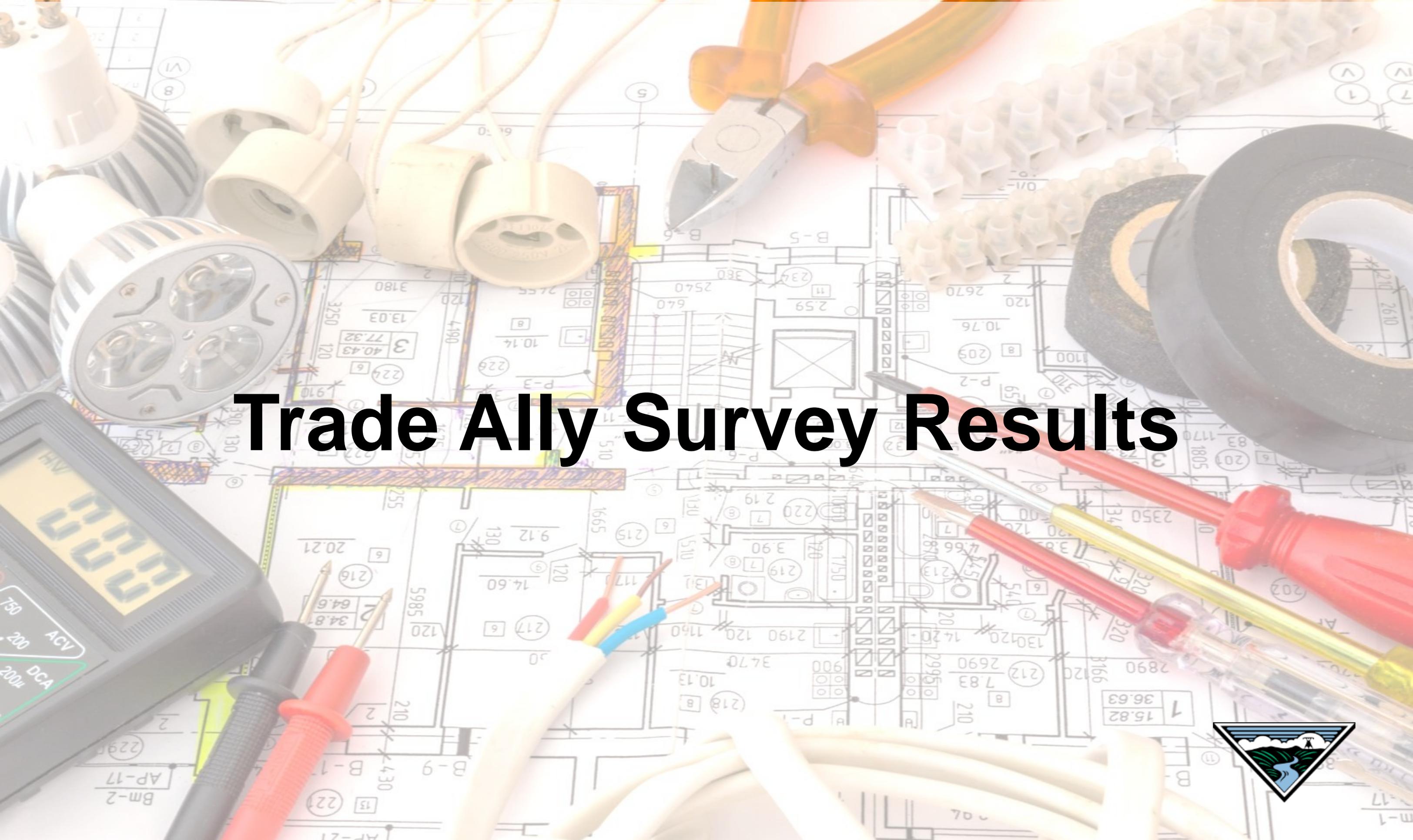
Incumbent Technologies Reflect Ongoing Market Transformation

The lighting technologies being replaced are getting more efficient:

- Greater share of **T8** LFLs
- Large **HID** share
- Smaller **Incandescent** share

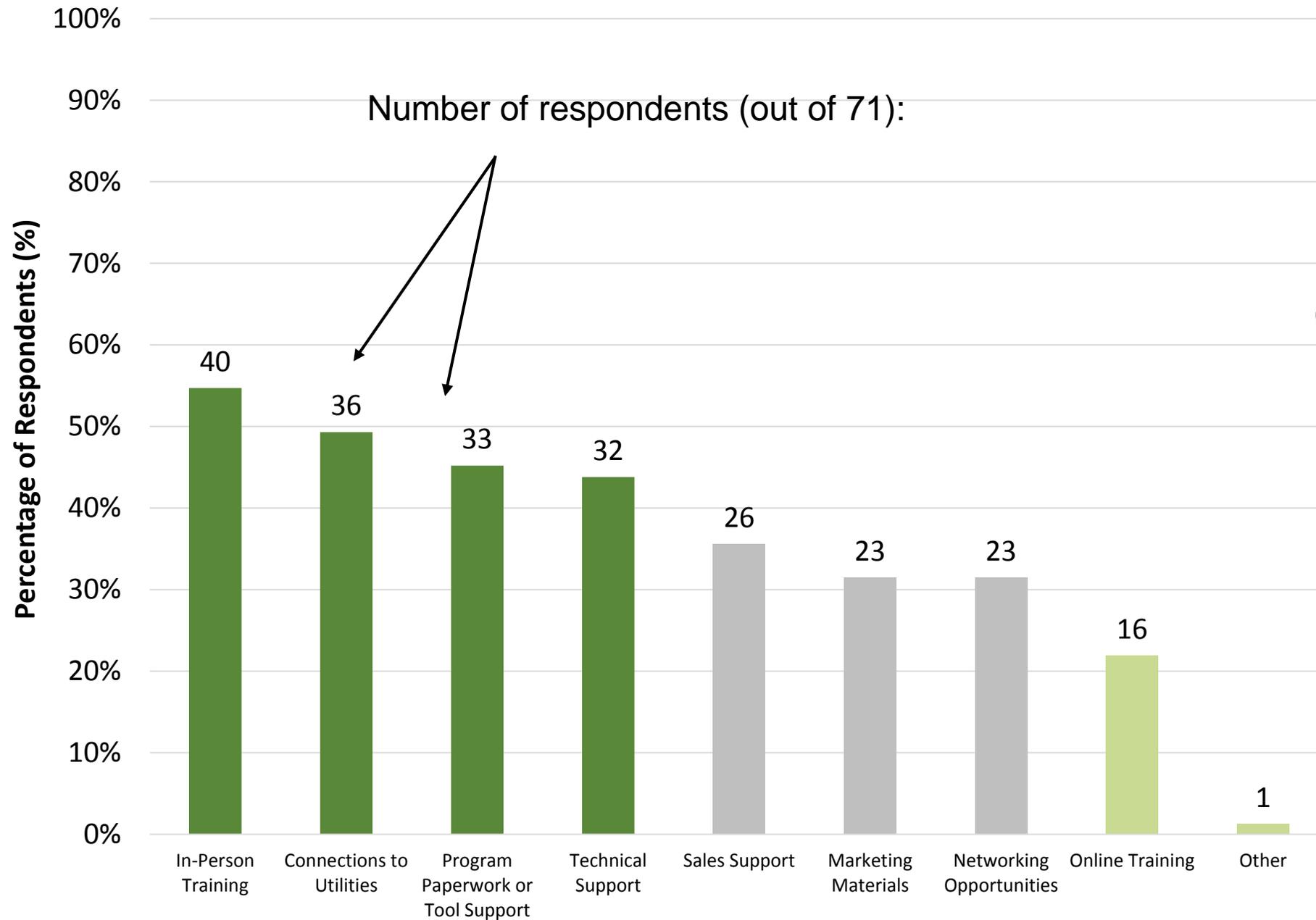


Trade Ally Survey Results



55%

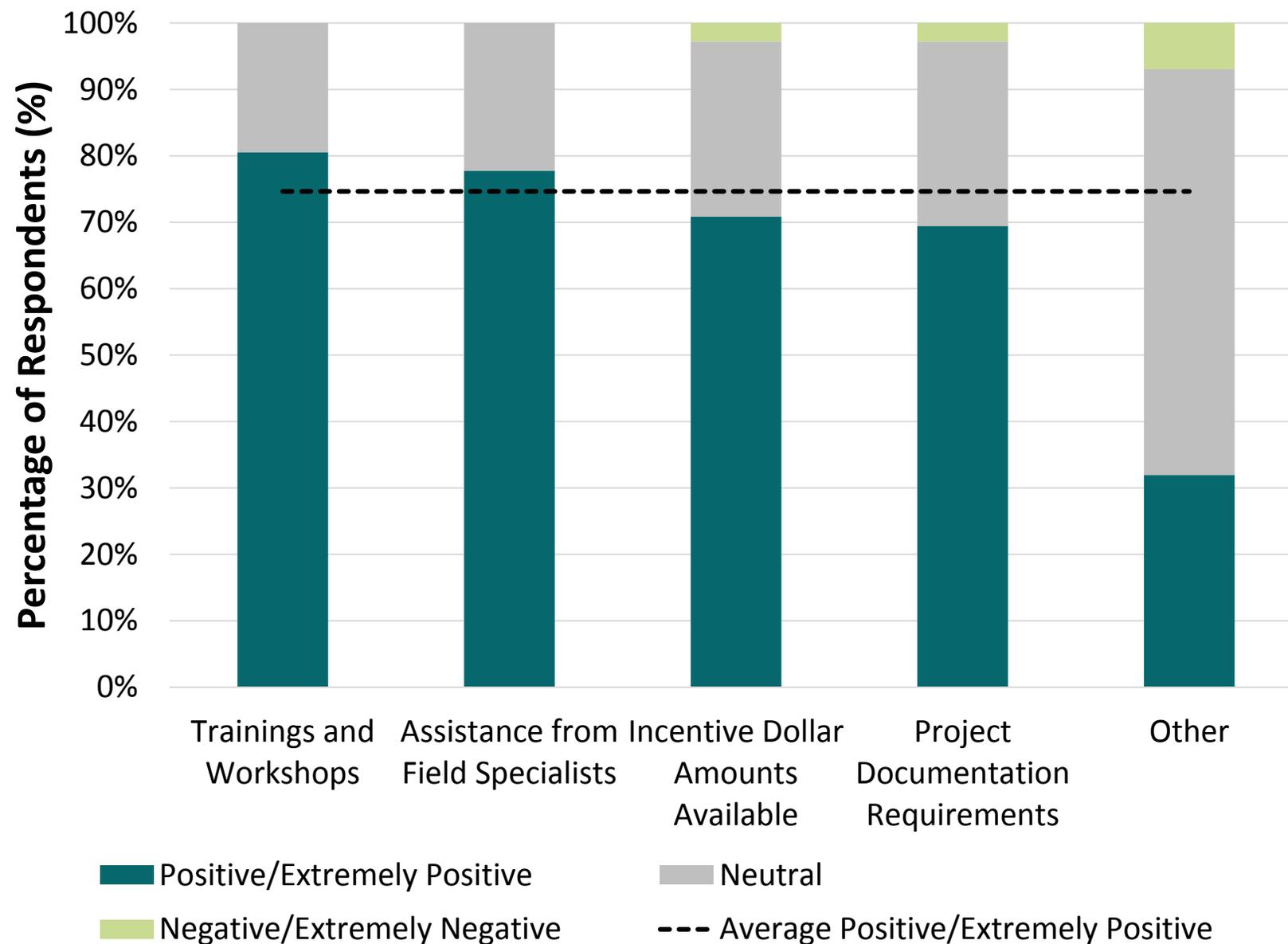
Of respondents reported that in-person trainings were one of Trade Ally Network NW's most valuable services...



Respondents also appreciated Connections to Utilities, and Program and Technical Support

...but online training still has room for growth.

75% Of respondents reported that they had a positive experience with local public utility incentive programs



Less than **1%** of respondents had a negative experience. Out of eight comments:

“Field assistance was very positive.”
 Two participants gave shout-outs or had positive customer service experiences.

Three participants shared negative comments focusing on processing time, incentive amounts and incentive options.

National Lighting Trends



Connectivity

Tunable White/Color

Controls



**TRADE ALLY
NETWORK**^{NW}
Building Success Together



Human Health and Lighting

Standardization and Integration

Wrap-up & Reminders

BPA Trade Ally Network NW spring workshops:
Register now at www.tradeallynetworknw.com!

Implementation Manual April 2020 updates coming soon



Thank you!

For more information, contact:

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