



AGENDA – March 1st
HVAC Intel from AHR
Outdoor Lighting Market
Preview: Momentum @ EFX



ETHAN

MANTHEY

HELLO

my name is



BONNIE

WATSON

2017 AHR Expo

UPDATE

Bonneville
POWER ADMINISTRATION





→ NORTH HALL EXHIBITS
(N7000 - N12143)
ASHRAE COURSE REGISTRATION

STRAIGHT AHEAD TO:
SHUTTLE BUSES
TAXIS

AHR EXPO
REGISTRATION
ASHRAE COURSE REGISTRATION



Health, Safety & Environment
Energy Efficiency, Global Warming, Global Climate Change
Sustainable Buildings, Green Buildings

who we
spoke to

Daikin

Trane

Carrier

AHRI

BSRIA

TPI

Chemours

Johnson
Controls

Metasys

Ventacity

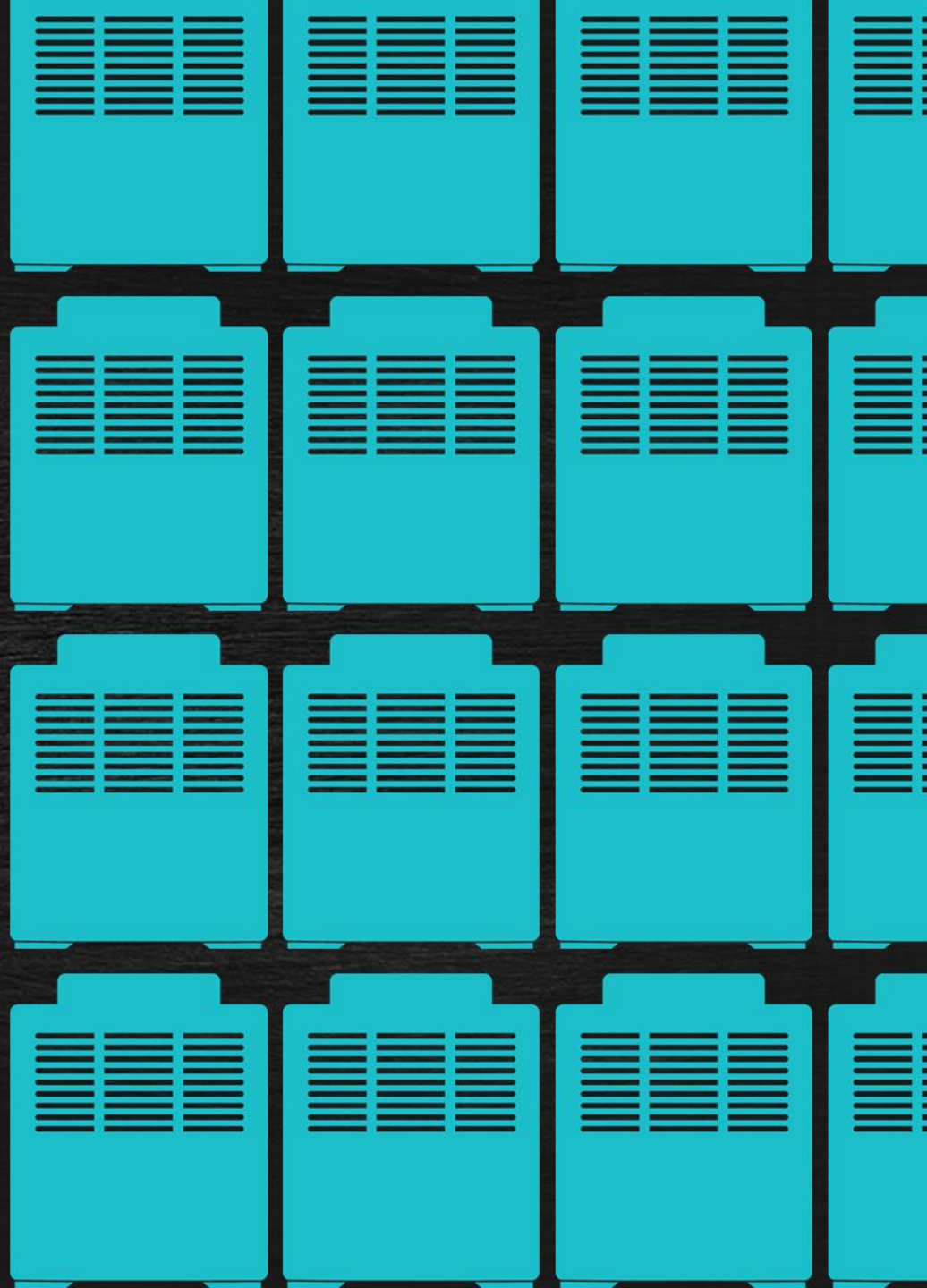


GLOBAL MARKET TRENDS

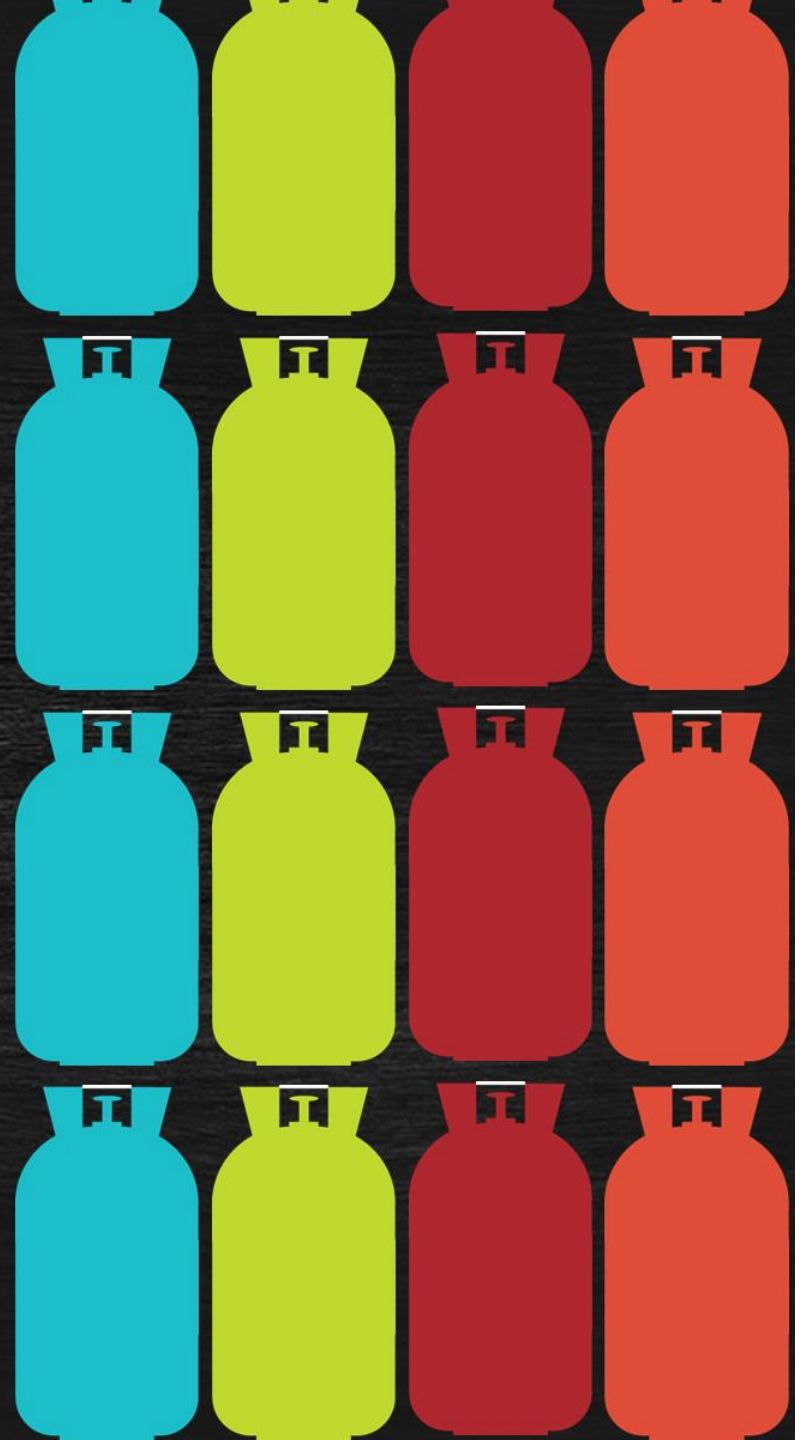
Building Automation/ Controls



Variable Refrigerant Flow (VRF)



Refrigerants





Ventilation

Source: BSRIA

**Climate
Commitment**



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JESSICA

AIONA

OUTDOOR LIGHTING

**WHAT
DO
WE
KNOW?**

**WHAT
SHOULD
WE
KNOW?**

~ 370

aMW

WHAT'S IN THE OUTDOOR MARKET?

Building Exterior, 234 aMW

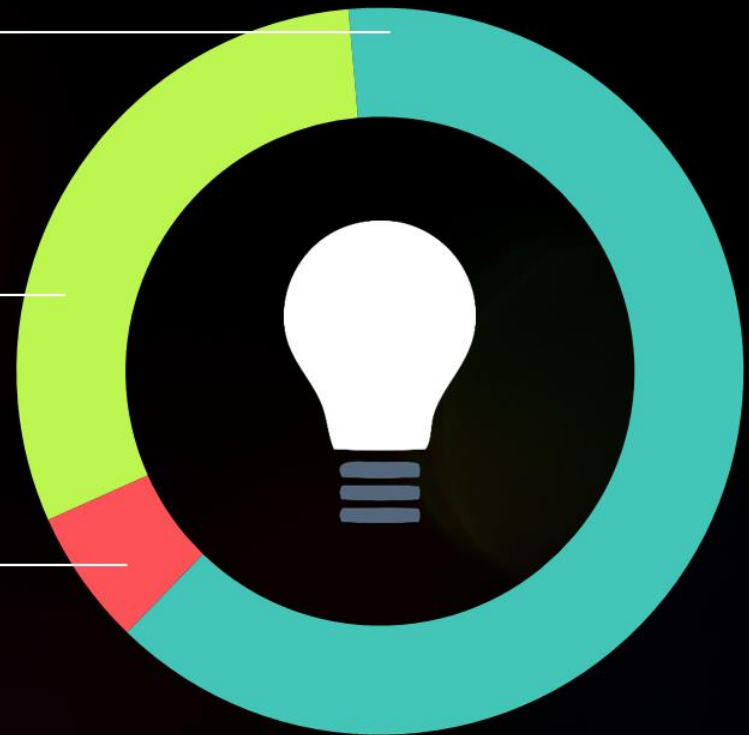
63%

Street & Roadway Lighting, 113 aMW

31%

Covered Parking Garages, 23 aMW

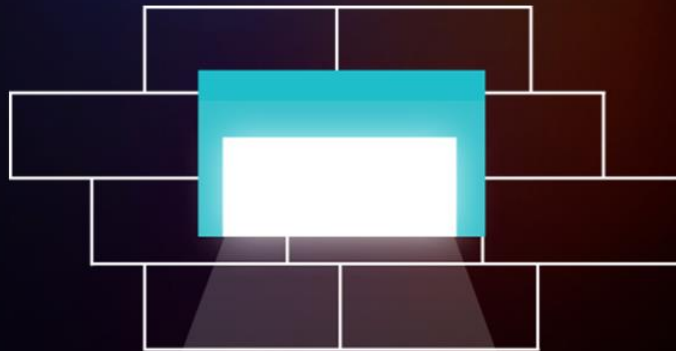
6%





BUILDING EXTERIOR

FRAGMENTED MARKET



APPLICATION	Northwest aMW
Parking Lot	107
Building Facade	55
Walkway/Area	43
Other	12
Exterior Sales	9
Sporting Field	6
Signage	2
Total	234

Source: 7th Plan estimates, based on 2014 CBSA

GAS STATIONS

Among first to adopt LED
due to long operating hours



SPORTS FIELDS

Often municipal-owned; LED retrofits driven by desire for highly visible improvement



BUILDING EXTERIOR DATA GAPS



Sign Lighting



Area Lighting



Parking Lots



Industrial Outdoor

(CBSA did not sample directly)

STREET LIGHTING





KEY FACTS

113 aMW in NW,
31% of outdoor

High wattage lamps*:

- 15% - 400 W
 - 40% - 250 W
 - 45% - 150 W
-

Stock dominated
by HID; rapid
transition to LEDs

Natural controls
opportunity

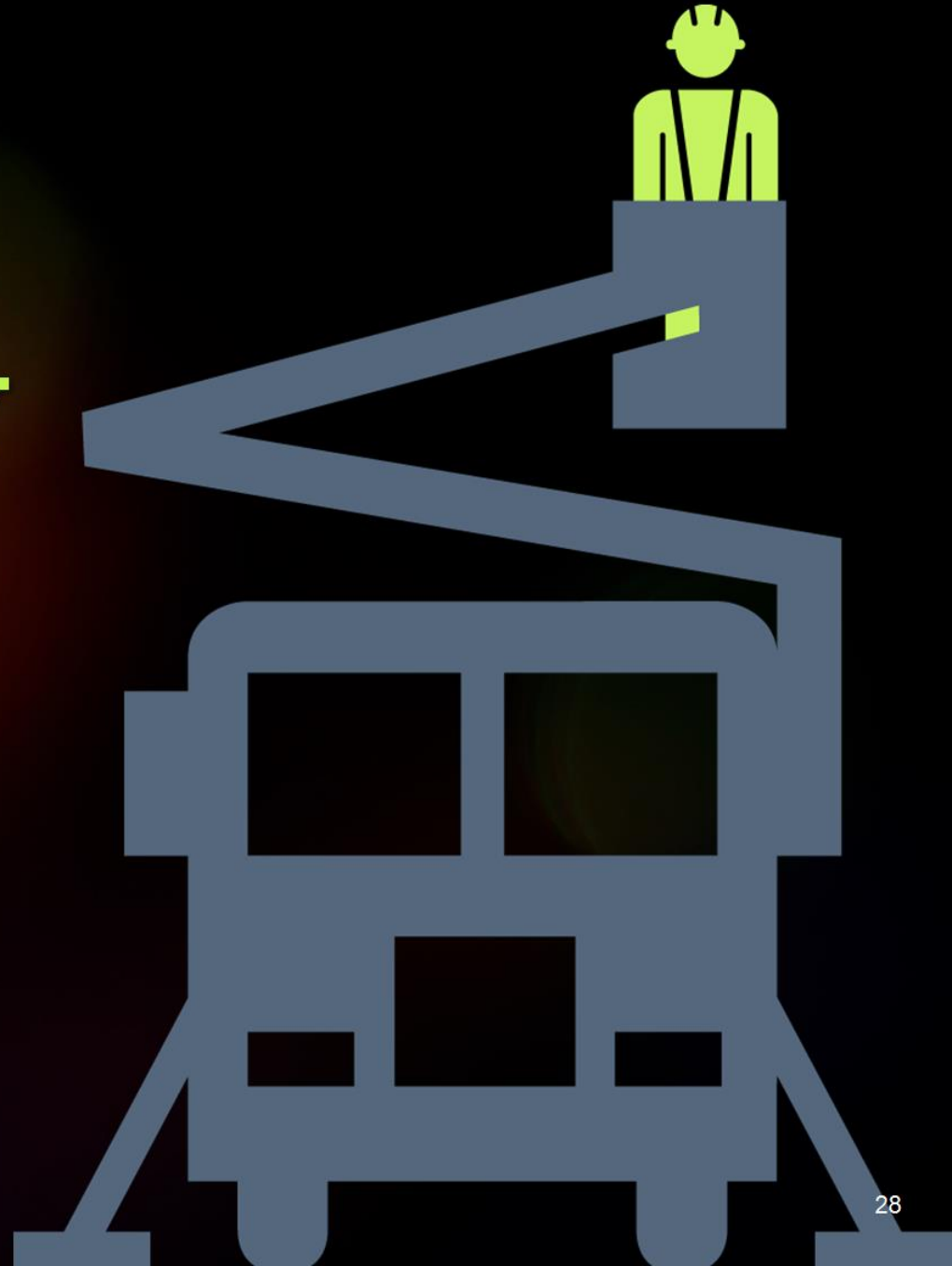
* Source: Manufacturer estimate at Lightfair (national)

UNIQUE OWNERSHIP STRUCTURE



Cities, towns, and utilities makes decisions... slowly.

**SAVING
ENERGY IS
SECONDARY**



DATA GAPS

Not captured
in the CBSA.

No comprehensive data
on market size and mix.





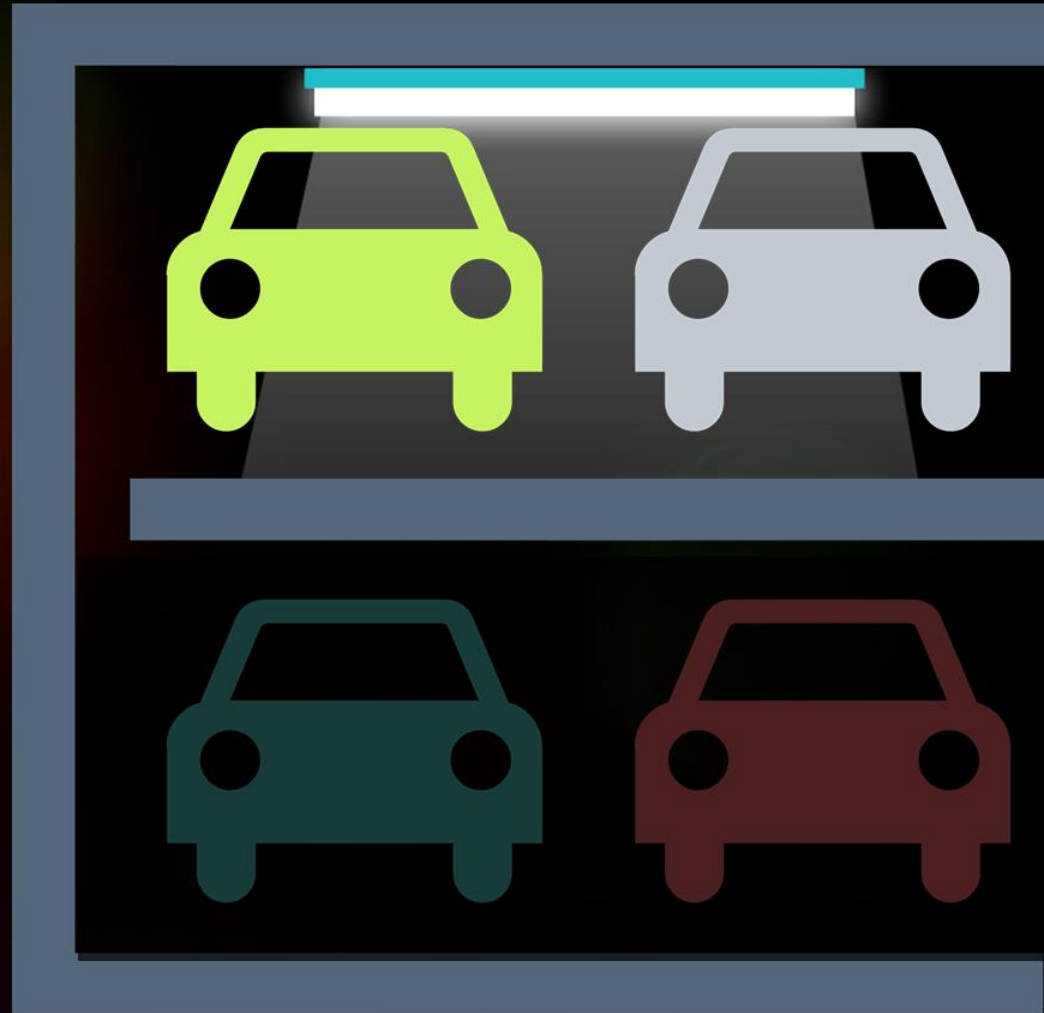
COVERED PARKING LOTS

KEY FACTS

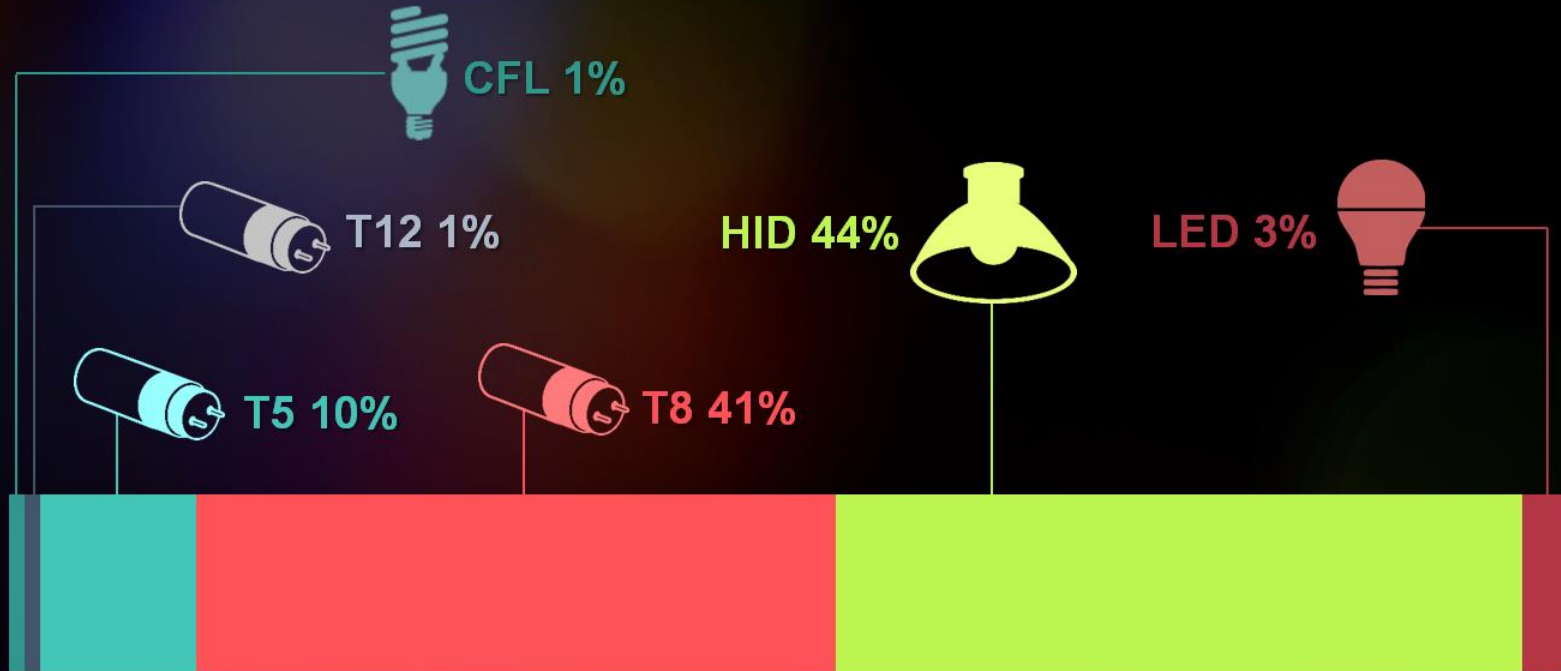
23 aMW in NW
(6% of outdoor)

“Only need to be
on 15% of the time”

Natural controls fit:
GE fixtures come
standard with
occupancy sensors



INSTALLED TECH MIX

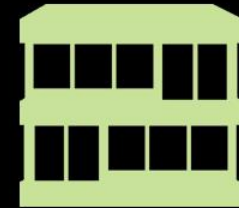


7th Plan assumes 20% baseline LED penetration

DATA GAPS



Not sampled directly in the CBSA.



Spotty data: No data for universities or hospitals. Only one retail building in sample.

KEY TAKEAWAYS

The background of the slide is a vibrant, out-of-focus photograph of a city at night. The sky is a deep, clear blue. Below the horizon, there are numerous colorful bokeh lights in shades of yellow, orange, red, and white, suggesting a busy urban environment with streetlights and buildings. The overall aesthetic is modern and energetic.

1 Outdoor lighting is, by itself, a large end-use

2 Building exterior, streetlighting, and covered parking lots are the main market segments

3 Streetlighting is rapidly moving to LED—
nearly every retrofit is LED

4 Market niches exist, each with its own set of concerns with respect to lighting needs

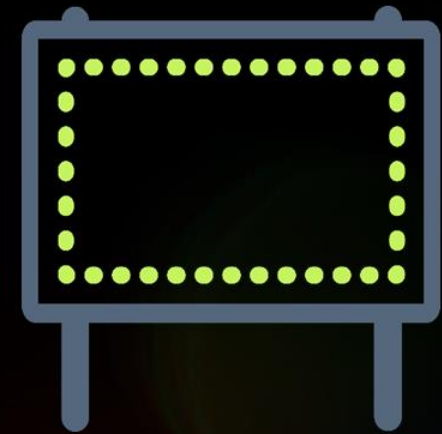
KEY REMAINING DATA GAPS



Streetlighting market
size and mix



Parking garage and
parking lot market size



Sign lighting market
size and mix

OUTDOOR LIGHTING STOCK ASSESSMENT

- 1 Define research scope and boundaries, develop sampling plan, develop data collection protocols. Review with RTF Market Analysis Subcommittee.



- 2 Field a data collection pilot, collect all data, develop database and final report.





BONNIE

WATSON



JESSICA

AIONA

&

EFFX

Efficiency Exchange May 9-10

EFX

Adapting Lighting Programs in a Changing Market

DAY 1 - 5/9 Afternoon

EFX

Making it to the Big Leagues: How National Accounts Influence Efficiency

DAY 2 - 5/10 Afternoon



THX!

Thanks for coming!

Join us next month – April 5th