



April 20, 2022

ComEd Lighting Controls

Jim Fay, Ashley Harrington & Hameed Yusuf

Agenda

1. Introduction
2. ComEd EE Plan 6 Lighting Control Goals
3. ComEd EE Program Design
 - Lighting Controls Measures
 - Historical Participation & Progress to Goal
 - Tactics/Initiatives
4. Future Plan/Outlook

1

Introduction

Introduction

Lighting Controls Presentation Team

1. Jim Fay (ComEd)
2. Ashley Harrington (ComEd)
3. Hameed Yusuf (Resource Innovations)

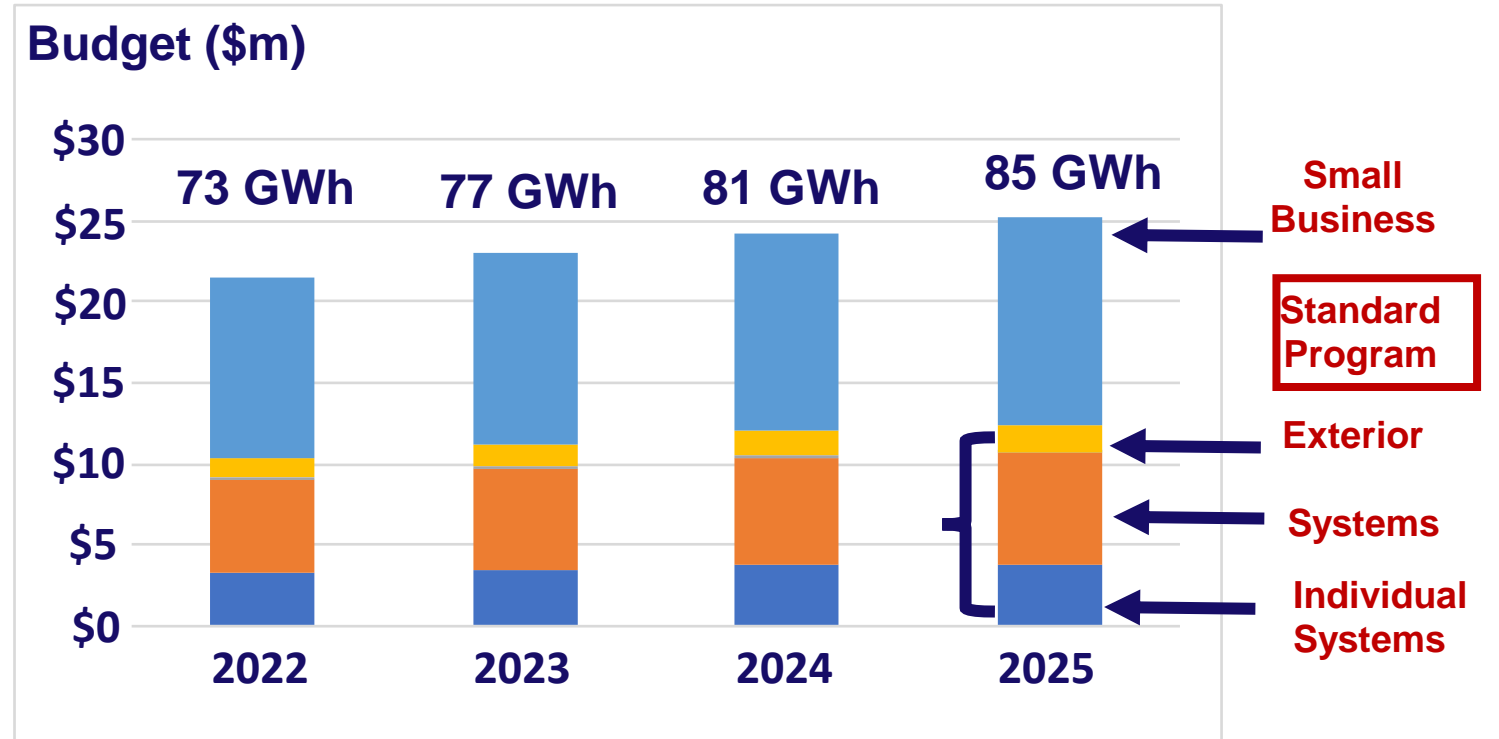


2

ComEd EE Plan 6 Lighting Control Goals

ComEd EE Plan 6 Lighting Control Goals

- ComEd's current lighting controls program draws from the industry's best
- Portfolio Commercial Lighting Controls Grows to nearly 7% of Portfolio Spend
- This is optimistic, but achievable given the significant barriers to adoption of fully integrated lighting controls



ComEd EE Plan 6 Lighting Control Goals

Commercial NLC Market: Barriers Persist and Market Growth is Elusive

- **Incremental economics of controls investment are a stretch for most commercial customers (the contrast is growing as LED prices come down)**
 - “To **most** customers, controls are complicated, expensive, and unnecessary to their daily operation.” – Lighting Vendor, 2021 Lightfair Roundtable
- **NLC solutions have been slow to converge on simple and easy**
 - OEM role in project commissioning a short-term fix to get projects operational
 - OEM specs are changing too frequently – it’s hard for contractors to stay on top of the latest solutions
 - No standardization of network communications protocols
- **Industry assessments and projections of NLC accelerated growth**

3

ComEd EE Program Design

ComEd EE Program Design

Lighting Controls Measures

- ComEd provides lighting control incentives through two main programs:
 - Standard Offering – Geared towards mid-size and large customers
 - Small Business Offering – Increased incentives for customers with peak demand below 200 kW (private) and 400 kW (public)
- Lighting Control Measures
 - Networked Lighting Controls
 - Remote/Fixture mounted Occupancy Sensors and Vacancy Sensors
 - Daylighting Controls
 - Occupancy Sensors + Daylighting Controls
 - Dimming Controls
 - Photocells
 - Timeclocks
 - Photocells + Timeclocks

ComEd EE Program Design

Lighting Controls Measures Continued

- **Networked Lighting Controls**

- High efficiency fixtures controlled via a centralized control system
- Variety of implemented controls
- Graphical interface
- Network interoperability

- **Occupancy/Vacancy Sensors**

- Fixtures controlled to turn off when a space is unoccupied
- Installed on previously uncontrolled lighting

- **Daylighting Controls**

- Fixtures which dim or turn off when sunlight exposure is great enough
- Installed on previously uncontrolled lighting

- **Occupancy Sensors plus Daylighting Controls**

- Controls lights to both turn off during unoccupied periods and dims or turns off lights given enough sunlight exposure
- Must meet specifications of both occupancy sensor and daylighting controls measures

ComEd EE Program Design

Lighting Controls Measures Continued

- **Dimming Controls**

- Controls to adjust light levels through commissioning and technology or manual change by occupants
- PIR or Ultrasonic sensors required

- **Photocells**

- Photocells sense daylight, and turn on fixtures when an insufficient amount of daylight is present
- Built-in or stand-alone photocells that switch lights on at dusk and off at dawn

- **Time Clocks**

- Controls allow lighting to be scheduled
- Installed on previously uncontrolled lighting
- Must have three-hour back-up system and astronomical controls

- **Photocells plus Timeclocks**

- Controls lights both on a schedule and based on daylight
- Must meet specifications of both photocells and time clock measures
- Time clock must turn lighting off at least 3 hours per night

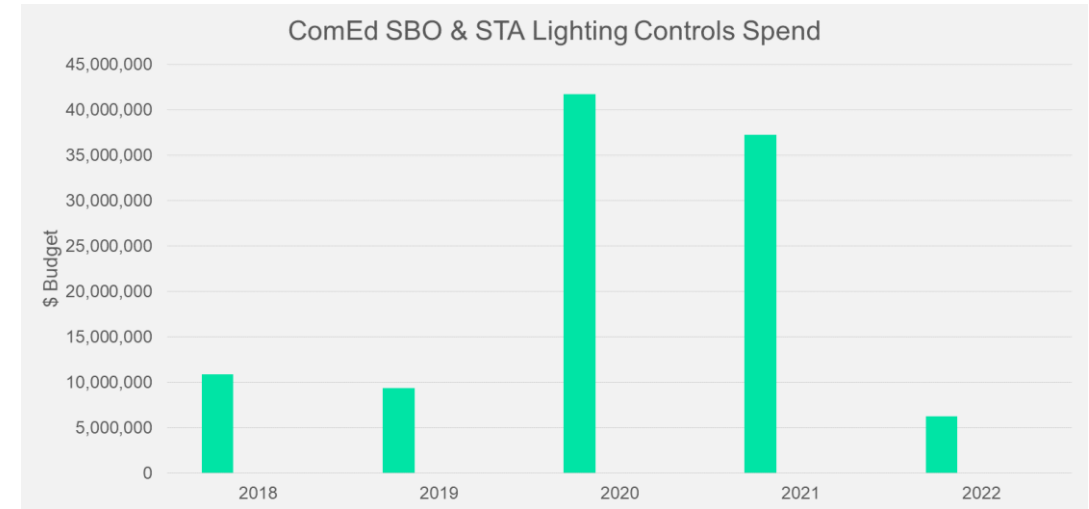
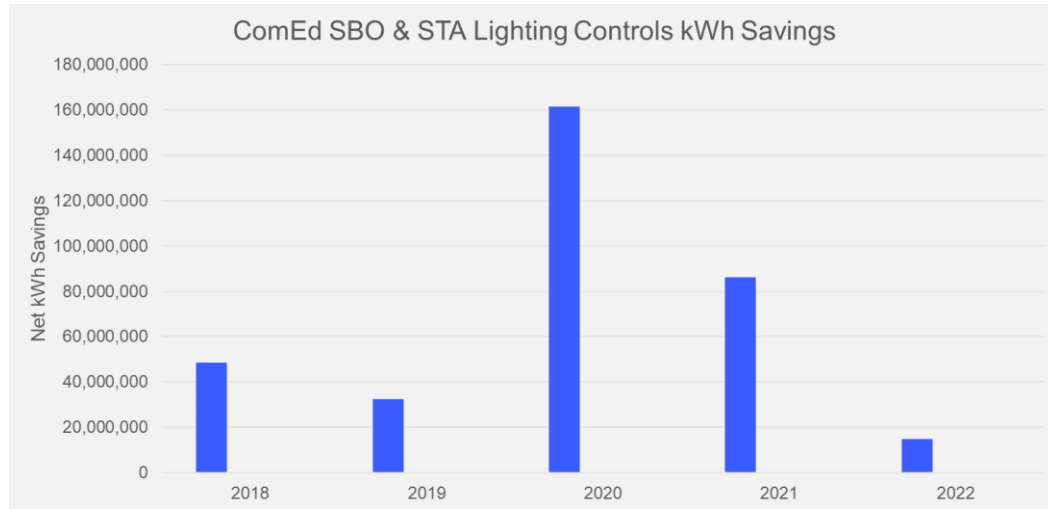
ComEd EE Program Design

Lighting Controls Measures - Continued

- Standard Offering (STA) 2022 Measure Incentives
 - Networked Lighting Controls
 - \$0.45/Watt Controlled
 - Additional \$0.10/Watt Reduced if new lighting
 - Occupancy Sensors, Vacancy Sensors, Daylighting Controls
 - \$0.12/Watt Controlled
 - Occupancy Sensors plus Daylighting Controls
 - \$0.20/Watt Controlled
 - Time Clocks for Lighting
 - \$0.03/Watt Controlled
 - Photocells
 - \$0.08/Watt Controlled
 - Photocells plus Time Clock
 - \$0.09/Watt Controlled
- Small Business Offering (SBO) 2022 Measure Incentives
 - Networked Lighting Controls
 - Indoor: \$1.25/Watt Controlled
 - Outdoor: \$1.00/Watt Controlled
 - Occupancy Sensors, Daylighting Controls, Dimming Controls
 - \$20 - \$35/Unit
 - Occupancy Sensors plus Daylighting Controls, Occupancy Sensors with Dimming Controls
 - \$20 - \$25/Unit
 - Time Clocks for Lighting
 - \$0.25/Watt Controlled
 - Photocells
 - \$0.20/Watt Controlled
 - Photocells plus Time Clock
 - \$0.35/Watt Controlled

ComEd EE Program Design

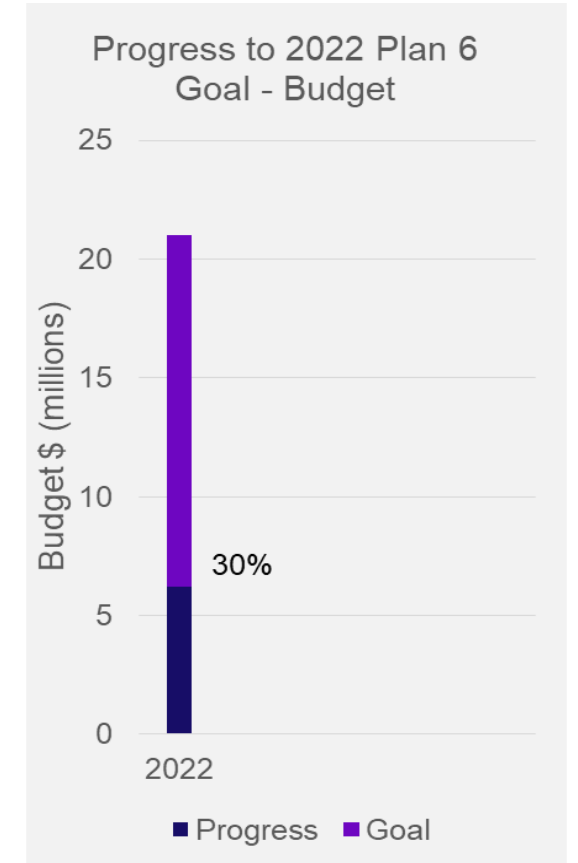
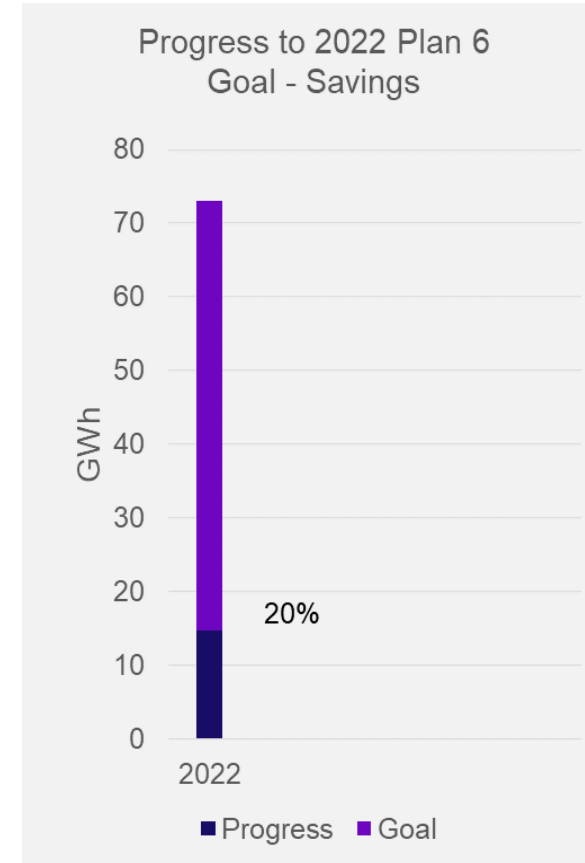
Historical Participation



- **Insights:**
 - Lighting controls participation has continued to increase.
 - Various tactics and initiatives have been employed to further promote controls measures.
 - 2020 to 2021 savings significantly dropped due to changes in measure savings calculations.

ComEd EE Program Design Progress to Goal

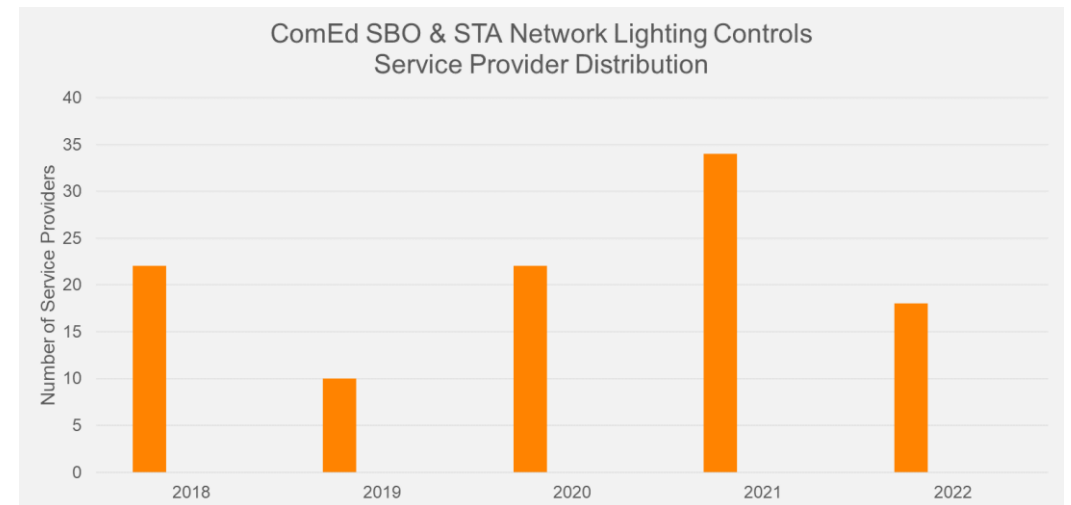
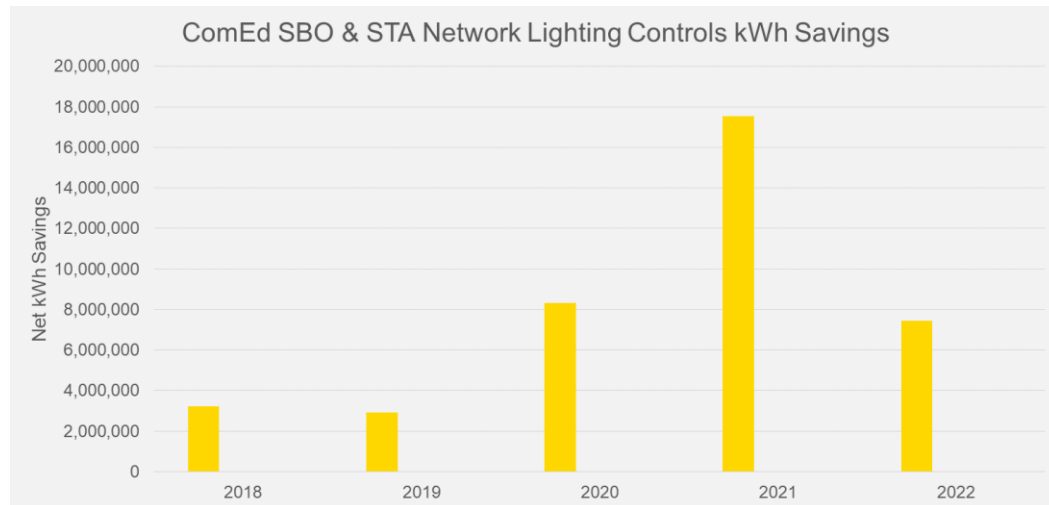
- 2022 Plan 6 Goals:
 - 73 GWh
 - ~\$21 Million
- Q1 Progress:
 - 14.7 GWh
 - \$6.2 Million
- Insights:
 - Increased Incentives
 - Campaigns and Promotions



ComEd EE Program Design

Historical Participation – NLC

Year	Net kWh Savings	Incentives	Projects	Energy Efficiency Service Providers (EESPs)
2018	3,234,710	\$684,495.34	45	22
2019	2,919,716	\$683,937.44	65	10
2020	8,315,627	\$1,749,284.28	132	22
2021	17,521,633	\$8,491,198.64	370	34
2022	7,443,511	\$4,012,944.26	127	18



ComEd EE Program Design Tactics/Initiatives - NLC

- **Measure Updates**
 - Simplifying Specifications
 - Increased Incentives
- **Marketing**
 - Newsletter Spotlight
 - Customer Webinars
 - Fact Sheets
 - Case Studies
 - Email Campaigns
 - Website Promo Boxes
- **EESP**
 - EESP Webinars
 - Technical Trainings
 - Program Support including Roundtables

The graphic is a fact sheet titled "Advanced Lighting Controls" from the ComEd Energy Efficiency Program. It features a photo of a man in a shop and a photo of a gas station at night. The text includes a headline "Ditch the sw... lightin...", a list of questions to ask about lighting, a list of benefits (Monitoring, Daylight Harvesting, Accessibility, Improve Lamp Life), and a key statistic: "Advanced Lighting Controls can reduce the energy consumed by illumination by up to 49%".

ComEd Energy Efficiency Program

FACT SHEET

Advanced Lighting Controls

Opportunities for Small Businesses and Facilities

BENEFITS

Save money and energy by taking control of your lighting system. After a thorough assessment of your facility, an authorized ComEd Energy Efficiency Program Service Provider will help you develop and implement a plan that will optimize your energy use. Plus, ComEd offers incentives that can cover as much as 75% of your project cost.

Consider these energy efficiency opportunities:

- » **Monitoring**
Understand your facility's energy usage, ensuring maximum efficiency and savings.
- » **Daylight Harvesting**
Make the most of natural light by controlling lighting system output and intensity.
- » **Accessibility**
Interact with your lighting system remotely to ensure you're always in control.
- » **Improve Lamp Life**
Reduce total hours that lights are on, thereby extending the life of your lighting equipment.

Advanced Lighting Controls can reduce the energy consumed by illumination by up to 49%.

Ditch the sw... lightin...

IS AN ADVANCED LIGHTING CONT...

- » Wasting money by lighting up
- » Want to monitor and control
- » Want to create unique lightin
- » Want to extend the life of you
- » Modernizing your facility and

If you answered 'yes' to one or today and ComEd can help you. Then, we'll take care of install

FOR MORE INFORMATION

The ComEd Energy Efficiency solutions to help businesses an at ComEd.com/SmallBiz.

Terms and conditions apply. Offers are subject to change. Actual savings will vary by customer's energy usage and rate. © ComEd/Small Biz, Edison Company, 2022. The ComEd Energy Efficiency Program is funded in compliance with 605/19-01.

*Wan, Y., Kuhnert, E., Kueh, T., Springfield, A., Lantz, B., and Pivo, M. (2020, September 24). Energy Savings from Networked Lighting Controls (NLC) Systems with and without LLLC. The Northeast Energy Efficiency Alliance and DesignLight Consortium. www.designlight.org/lighting-control-report-2020. <https://www.northeastenergy-savings.com/networked-lighting-control-with-without-LLL/Report>

Advanced Lighting Control Fact Sheet
[Advanced Lighting Controls | ComEd - An Exelon Company](#)

ComEd EE Program Design

Tactics/Initiatives - NLC Continued



[Level Up With Networked Lighting - YouTube](#)

ComEd EE Program Design Tactics/Initiatives - Continued

- EESP Roundtable Discussions

- Continuous Feedback from the Network

- “Advanced lighting controls are great for high bays and exterior fixtures (more watts to control = more incentive). Indoor is tougher, many SPs are still looking for the right system at the right price. Advanced Lighting Controls are also becoming a standard option offered by many manufacturers.”

- » February 28th Roundtable

- “Appreciative of the incentives. Public customers are requesting more and more lighting controls”

- » March 18th Roundtable




ComEd EE Program Design

Tactics/Initiatives - NLC Market Research (ILLUME Study)

- **Interviews with ComEd Lighting Controls Customers & Program Providers**

- Research conducted by Illume Advising (early 2020)

- **Key Takeaways**

- Customers largely satisfied with lighting systems with controls
- Contractor and customer knowledge of controls-based solutions can be improved but... 
- Most customers (especially small businesses) trust and defer to contractors but... 
- Controls projects more cost-effective are easier if controls are bundled with other upgrades, but... 
- Lighting Cost (LEDs) and OEM control specs and capabilities are changing quickly
- OEM role in project commissioning is a sign of market immaturity
- Most customer see NLC as a incremental investment beyond LED (good/better/best proposal is typical). Commercial paybacks need to be 2-5 years for mass market acceptance

4

Future Plan/Outlook

Future Plan/Outlook

Next Steps

- Streamlining Offerings for Easier Participation
 - Measure Specifications and Incentives
- Continued Market Education
 - Customer Awareness
 - Promotion of NLC Measures
- Lessons Learned & Keys to Success
 - Continuous EESP Engagement
 - Trainings
 - Feedback





comedSM

AN EXELON COMPANY

Thank you





comedSM

AN EXELON COMPANY