

# Illinois EE Stakeholder Advisory Group Network Lighting Controls Subcommittee

**Wednesday, April 24, 2024**  
10:00 – 11:30 am  
**Teleconference**

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**Meeting Materials**

Materials are posted on the [April 24 meeting page](#):

- [Wednesday, April 24 Network Lighting Controls Subcommittee Agenda](#)
- [Ameren Illinois Network Lighting Controls Update](#)
- [ComEd Network Lighting Controls Update](#)

**Attendees**

Name	Company or Organization
Celia Johnson	SAG Facilitator (Celia Johnson Consulting)
Jorge Medina Zambrano	SAG Meeting Support (Inova Energy Group)
Amelia Sisk Magdaleno	Resource Innovations
Andrey Gribovich	DNV
Andy Vaughn	Leidos
Ashley Harrington	ComEd
Brent Nakayama	Leidos
Carl Nelson	Center for Energy & Environment
Catherine Allen	ComEd
Chris Wolgamott	NEEA
Clayton Schroeder	Resource Innovations
Dan Mellinger	Energy Futures Group, representing NRDC
Dheeraj Kodi	Resource Innovations
Elder Calderon	ComEd
Elizabeth Horne	ICC Staff
Jaleesa Scott	ComEd
Jason Jeunnette	Design Lights Consortium
Jeff Harris	NEEA
Jim Fay	ComEd

<b>Name</b>	<b>Company or Organization</b>
John Lavallee	Ameren Illinois
Josh Sharon	ComEd
Katie Wilson	Center for Energy & Environment
Kim Swan	ComEd
Leyah Williams	ICC
Matt Armstrong	Ameren Illinois
Nicholas Crowder	Ameren Illinois
Nick Warnecke	Ameren Illinois
Patrick Burns	Brightline Group
Peter Brown	Electrical Transitions
Philip Mosenthal	Optimal Energy, representing IL AG and NCLC
Sanjyot Varade	Resource Innovations
Shane Perry	Ameren Illinois
Sheila Gates	Ameren Illinois
Shonda Biddle	Center for Energy & Environment
Sid Daller	Ameren Illinois
Sri Paruchuri	Resource Innovations
Taylor Weyenberg	Resource Innovations
Tina Grebner	Ameren Illinois
Victoria Browning	ICF
Will Wilson	Ameren Illinois

**Meeting Notes**

Follow-up indicated in red.

**Opening and Introductions**

**Purpose of the meeting:**

1. For Ameren Illinois and ComEd to update Subcommittee participants on the progress of network lighting control measures and report-out on 2023; and
2. To request feedback from Subcommittee participants on network

**Ameren Illinois Network Lighting Controls Presentation**

*Nic Crowder, Ameren Illinois*

**Networked Lighting Controls Project Growth**

- Engaged with program allied installers and distributors.
- Focused on luminaire level control and network lighting controls.
- Modified incentives, training, and education initiatives by the end of 2021
- Observed changes in market participation as a result of these modifications.
- In 2022 there were 15 projects amassing 439,000 kWh of growth. In 2023 there were 261 projects amassing 5,546,304 kWh and so far in 2024 there have been 47 with 1,348,149 kWh.

### Participation Pathways and Incentives 2022

- Introduced new incentive specifically for program allied installers focusing on luminaire level controls.
- Added pilot incentive alongside existing standard lighting NLC incentives.
- Pilot incentive: Targeted at program allied installers for luminaire level controls.
- Standard lighting NLC incentives: Remained at 75 cents and 40 cents per watt control, regardless of whether controls were functional or not.
- Emphasized differentiation with new blue font highlighting changes from previous year.
- Control Technologies Incentives:
  - Standard Lighting: NLC
    - \$0.75 per watt controlled – no existing controls
    - \$0.40 per watt controlled – existing occupancy or daylight only controls.
- Program Ally LLLC Pilot
  - Up to \$0.50 per watt controlled.

### Participation Pathways and Incentives 2023

- Added a new pathway through small business direct install.
- Updated incentive levels for network lighting controls, modifying the approach.
- Revised incentive structure:
  - Increased incentive for luminaire level controls to \$1.50 per watt.
  - Introduced a blend of incentives for any control installed through the small business direct install program.
- Noted high uptake at these levels, resulting in capping the incentive at \$100 per fixture in 2023.
- Mentioned imbalanced budget due to higher payouts compared to generated savings from technology adoption and participation.
- This outlines the adjustments made in 2023 regarding pathways, incentive levels, and the need to cap incentives due to budget constraints.

### Control Technologies Incentives:

- NLC standard lighting incentives:
  - \$0.50 per watt controlled for NLC.
  - \$1.50 per watt controlled for LLLC Updated
- SBDI: NLC (includes LLLC) – \$1.25 per watt controlled.
- Introduced a cap mid-year at \$100 per fixture.

### Participation Pathways and Incentives 2024

- Maintained participation pathways to allow for all customers to participate.
- Programmatic installers can leverage network lighting controls through standard or small business direct install pathways.
- Updated SPI (Savings Performance Incentive) incentive levels to align with standard lighting:
  - 50 cents per watt for lighting control.
  - \$1 for luminaire level controls.
- Reduced cap on fixtures to \$75 to balance against budget and savings due to higher participation.
- Continued pairing incentives for controls with fixture replacement, seen as an opportunity for installers and customers during lighting retrofits, especially in spaces considering updates.

- Introduced exterior fixtures for network controls as a new addition in 2024.
- This summarizes the adjustments made in 2024, focusing on maintaining participation pathways, updating incentive levels, and adding exterior fixtures for network controls while managing budget constraints.

#### Control Technologies Incentives:

- Standard Lighting and SBDI
  - \$0.50 per watt controlled – NLC.
  - \$1.50 per watt controlled – LLLC.
- All incentives capped at \$75 per fixture for NLC/LLLC in both Standard and SBDI
- Can still be paired with LED fixture upgrades and watt reduced incentives.
- Includes exterior fixtures.

*Phil Mosenthal – Curious about the \$100 to \$75 fixture cap change. Are you limiting controls to only LED fixtures?*

*Nicholas Crowder – The cap is being hit and it is on LED fixtures.*

*Phil Mosenthal – Is it a requirement that new LED fixtures be implemented?*

*Nicholas Crowder – Yes. Luminaire level would probably be unattainable.*

*Dan Mellinger – Are these incentives applied to all luminaire categories? High bay would probably hit that cap.*

*Nicholas Crowder – It does apply for all fixtures. There hasn't been any pushback for high bay network controls where the incentive isn't covering enough for the entire project. Anticipating potential cost adjustments in the future, allowing for flexibility in aligning offerings with market needs. Considering the potential for tailoring offerings based on high savings opportunities across different facility space types. Prioritizing streamlining and simplifying processes. The aim to simplify applications and participation for installers and distributors and raising awareness before making any considerations or adjustments.*

#### Training & Education 2022

- Offered three 2-day Free Program Ally trainings on LLLC in three different cities across the territory
- Offered a Webinar for Customers and Program Allies on how LLLCs help with meeting emergency lighting egress requirements
- Offered an NLC session at the Ameren IL Business Symposium and at a seminar with Illinois Society of Professional Engineers

#### Marketing:

- Included NLC as topic for both the Customer and Program Ally monthly newsletter throughout the year
- Sent NLC incentives email promotion to Customers and Program Allies
- Power Lunch Webinar on NLC incentives and benefits offered to Customers and Program Allies

### Training & Education 2023

- Offered six 1-day Free Program Ally training on NLC/LLLC in six different cities across the territory
- Offered two 2-part Webinars for Distributors and Installers on how to bid, sell, procure, and install NLC/LLLC systems
- Offered NLC session at Ameren IL Business Symposium and at an EBMI Conference

### Marketing Energy and Non-Energy Benefits:

- Worked with NEEA to brand BetterBricks marketing collateral highlighting NEBs for use with Program Allies and Customers
- Promote NLC savings and non-energy benefits in Monthly newsletters for both Customers and Program Allies
- Developed bidding guide for NLC/LLLC projects for Program Allies

### Training & Education 2024

- Planning to offer continuous NLC/LLLC learning courses through an asynchronous online platform
- Expanding Program Ally engagement with product demo kits and on-site lighting controls commissioning exercises

### Marketing Energy and Non-Energy Benefits:

- Promote NLC savings and non-energy benefits in newsletters for both Customers and Program Allies
- Planning to include an NLC session at Ameren IL Business Symposium along with interactive commissioning exercises
- Further developing NLC savings and non-energy benefits marketing collateral for Installation Contractors, Distributors, and Customers

*Dan Mellinger – Are there benefits for trade allies for participating in these trainings?*

*Nicholas Crowder – Yes, there are. Some of those are bundled with the consulting partners which will be revealed at the time of contracting finalization. Also mentions that incentives will not necessarily be monetary but also with targeted media or marketing.*

*Dan Mellinger – Is it Ameren and ComEd or Ameren only?*

*Nicholas Crowder – Ameren only.*

### Considerations for 2026 – 2029 Plan Cycle

#### Participation Pathways:

- Continue inclusion of incentives in Standard and Direct Install to ensure access across customer segments. Monitor incentive levels to meet increasing demand of NLCs
- Continue training as well as technical and marketing support through the LLLC Market Transformation Initiative
- Shifting focus from solely in-person training to contracting with a consultant to develop asynchronous training on a platform.
- Asynchronous training allows users to log in and complete sections at their convenience.

- Exploring different levels of training to cater to varying skill levels.
- Collaborating with providers of demo kits for network lighting control packages to aid installers and distributors in understanding component pieces and system commissioning.
- Finalizing contracts to launch field engagements, starting in Canada, with plans to expand marketing efforts emphasizing energy benefits.
- Recognizing the critical role of energy benefits in customer decision-making and resource allocation for projects.
- Committing to providing comprehensive collateral and expanding educational opportunities, including training, education on incentives, and understanding energy benefits.
- Training & Education:
  - Expanding NLC/LLLC training and education access to an online asynchronous platform with certifications
  - Expanding Program Ally engagement with product demo kits and on-site commissioning exercises
- Marketing Energy and Non-Energy Benefits:
  - Expand NLC/LLLC Marketing Collateral free through the EE Portal illustrating savings and non-energy benefits
  - These plans outline a shift towards more flexible training methods, hands-on learning experiences, and targeted marketing efforts focusing on energy benefits to drive customer engagement and adoption of lighting control projects.

*Jeff Harris – The program is closely coordinated with resource acquisition initiatives, leveraging synergies between the two to maximize impact. However, attributing outcomes to each initiative individually may pose challenges due to their intertwined nature, highlighting the synergistic effect of their combined efforts on market advancement.*

*Nicholas Crowder – The focus includes continuing online training, complemented by in-person engagements with demo kits and on-site commissioning exercises. Incorporating installer feedback, such as providing software-enabled tablets for commissioning exercises, is deemed highly beneficial and will be continued. Budget considerations remain a factor in planning moving forward.*

*Dan Mellinger – Is there a contemplation of putting more weight on shifting incentives away from uncontrolled luminaries (given the Illinois legislative ban taking effect in 2027)?*

*Nicholas Crowder – I believe we shouldn't solely focus on control incentives over fixture incentives. Many small businesses may benefit from fixture upgrades alone. Regarding the legislation on linear fluorescents, while the aim to remove Mercury-containing products is commendable, we must ensure incentives support upgrades to LED technologies. Incentives help address capital barriers and facilitate lighting upgrades across building stock.*

*Dan Mellinger – Not all customers or applications are suitable for controls; it's not a one-size-fits-all solution. The relevant question is whether customers would opt for a non-controlled LED project and to what extent their behavior might change. For those unable to invest in controls, decisions can be made to*

*facilitate future control integration. Existing initiatives and information are already in place to support these efforts.*

*Dheeraj Kodi (via chat) – Curious on the Incentive cap for 2024, How did they come up with the 0.75 per fixture for NLC, was there market research behind it?*

*Nicholas Crowder – We assessed pricing and project costs, finding the fixture cost per unit to be sufficiently low to justify purchasing. However, we're cautious not to decrease incentives and risk halting momentum in program participation. Any adjustments to incentives or caps will be based on thorough analysis to ensure continued project viability. Additionally, we aim to expand services beyond cancer facilities to encompass alternative needs.*

*Jeff Harris (via chat) – Also: New federal standards for general service lighting just passed that requires LEDs for all GSL lighting including what used to be traditional 2 and 4 foot fluorescent Takes effect in 2028.*

*Jeff Harris – General service lighting has been recategorized.*

*Dan Mellinger – Previously linear lamps were exempted.*

*Philip Mosenthal – Stakeholders in the next proposal session have suggested eliminating T-LED promotion for the next planned cycle.*

*Jeff Harris (via chat) – U.S. Dept. of Energy Final Rule:  
[https://www.energy.gov/sites/default/files/2024-04/gsl-fr-newd.pdf?utm\\_medium=email&utm\\_source=govdelivery](https://www.energy.gov/sites/default/files/2024-04/gsl-fr-newd.pdf?utm_medium=email&utm_source=govdelivery)*

### **ComEd Network Lighting Controls Presentation**

*Jim Fay, ComEd and Sanjyot Varade, Resource Innovations*

#### Plan 6 Lighting Control Goals

- A couple of years ago the plan 6 included the mentioned estimates. Showing a growth in the savings from lighting control.
- The anticipated spend grew to over 5% of total portfolio.
- Since then, there has been significant investment in lighting control.
- Have been having discussions between Ameren and ComEd to coordinate via the SAG about these updates.
- There are still some market barriers to lighting controls, especially large more complex systems.
- LED fixture conversions yield more cost-effective savings compared to lighting controls.
- Current projects often involve both LED fixture conversions and lighting controls.
- There's a saturation in opportunities for future projects, with most involving a combination of LED fixture conversions and lighting controls.

#### Commercial Lighting Controls Looking Backward to Plan 6 (2022-2025) and Forward to Plan 7 (2026-30)

- Since Plan 6 (December, 2020):
  - ComEd has invested in lighting controls market development.
  - Experimented with increased controls incentives.
  - Kept SAG informed through NLC-targeted calls.

- Observations & NLC Experience
  - Barriers remain to NLC.
- NLC savings are not as cost-effective as LED Lighting
- As LED fixtures approach saturation, fewer opportunities to add controls.
- The better cost-effective projects that have lighting controls will be fewer and fewer due to the market saturation.
- The implication for network lighting controls is that cost-effective projects combining lighting controls with LED fixture conversions will become increasingly scarce.
- As saturation of LED fixtures nears completion, the focus will shift towards optimizing existing installations rather than widespread replacements.

#### 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 400 kW (private and public) Note: For 2023, SBO customer eligibility was increased from 200 kW to 400 kW (private)
- Lighting Control Measures
  - Networked Lighting Controls, baseline with controls
  - Network Lighting Controls, baseline without 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 – 2024 Incentive Levels

##### Standard Offering (STA) 2024 Measure Incentives

- Networked Lighting Controls
  - Baseline Without Controls: \$0.50/Watt Controlled
  - Baseline With Controls: \$0.40/Watt Controlled
  - Additional \$0.35/Watt Reduced if new lighting.
- Occupancy Sensors, Vacancy Sensors, Daylighting Controls
  - \$0.15 - \$0.25/Watt Controlled
- Occupancy Sensors plus Daylighting Controls
  - \$0.30/Watt Controlled
- Time Clocks for Lighting
  - \$0.03/Watt Controlled
- Photocells
  - \$0.08/Watt Controlled
- Photocells plus Time Clock
  - \$0.09/Watt Controlled
- NSC (National Standard and Small Business) program incentives were significantly reduced from 2023, nearly by 50%, with the decrease including a 34% reduction.
- The primary aim of lowering NSC incentives was to ensure donor per kWh remained cost-effective.



- Individual measures for controls have maintained the same incentive levels as in 2023, provided here for reference.

#### Historical Participation – All Lighting Controls

- Lighting controls participation has continued to increase.
  - Note: 2021 savings decrease was largely due to changes in measure savings calculations and a decrease in non-NLC lighting control participation
- Additional campaigns and incentives employed in 2023 to further promote Networked Lighting Controls measures.
  - Overall lighting controls participation increased by almost 45% from 2022 to 2023.
  - Overall lighting controls spend increased by nearly 70% from 2022 to 2023
  - There was a 70% increase compared to the previous year, largely due to revenue incentives and promotional efforts.
  - Despite not meeting the goal of 77 kilowatt hours in Plan Six, achieving 66 kilowatt hours represents an 85% achievement rate.
  - This increase in savings is a significant budget consideration and reflects ongoing efforts to improve program performance.
  - There's been a continued shift towards NLCS (Network Lighting Control Systems) and away from genuine measures.
  - Measures and penalties have remained expensive for the programs.
  - Steps are being taken to mitigate spending, with the introduction of start incentives being one such measure.

#### Progress to Goal – All Lighting Controls

- ~45% increase in savings from 2022 to 2023
- 2023 Plan 6 Goals:
  - 77 GWh
  - \$23 Million
- 2023 Results:
  - ~66 GWh
  - ~\$32 million
- Insights: Achieved 85% of the savings goal. Exceeded the spend goal by \$8.9M 2023 and the shift to NLCs continues and away from generalized lighting control measures

*Dan Mellinger – Does ComEd differentiate savings value from offerings in network lighting controls?*

*Sanjyot Varade – ComEd does not differentiate between NLC and DNLCs. Simplified requirement for efficiency. Over 90% of projects and products are using LLLC projects.*

#### Historical Participation – Network Lighting Controls (NLC)

- NLC project participation has continued to increase year over year, with a significant surge in savings observed.
- In 2023, savings from NLC measures alone increased by 43% to 89% compared to previous years, with a notable rise in the number of projects received.
- There was a substantial increase in projects from small and medium-sized businesses, with the number of service providers participating in NLC measures rising from 66 to 260.

- Awareness and interest in NLC measures have been driven by standard offerings and excellent security settings, with a notable shift towards network controls in 2023.
- The percentage of lighting projects incorporating lighting control measures has increased steadily, with lighting control savings representing 20% of total savings in 2023 alone.
- Overall, the growth in lighting control savings over the past five years demonstrates significant progress and meets cost-effectiveness targets.

#### Historical Participation – Lighting Control Type

- Non-NLC lighting controls were higher until 2021. Since 2022 NLC have been increasing.
- Insights:
  - Shift in market from non-NLC controls to NLCs.
  - Steady increase in NLCs until 2023, where there was a large increase in participation.
  - This illustrates NLCs drove 89% of all lighting controls savings in 2023.

#### Historical Participation Lighting vs. Lighting Controls

- Year over year increase in savings achieved from lighting controls.
- Larger percentage of lighting projects also included controls.
- In 2023, savings from lighting controls represented 20% of all lighting and lighting controls project savings.

#### ComEd EE Program Design Historical Participation – Projects

- Project volume increased significantly in 2023, with a 60% rise in the number of projects, driven mainly by small and medium-sized businesses.
- Examples of customer types include public schools and those interested in upgrading existing individual controls to network lighting controls.
- Tactics and initiatives for 2024 include updating measure requirements to version 5.1 for both offerings to ensure readiness for future integration.
- The COVID standard offering has allowed upgrades since 2023, particularly for customers lacking advanced control capabilities.  
Service provider support has increased substantially by 142% in 2023, with continued provision of roundtables, marketing materials, and other support.
- Warehouse, Manufacturing, and Schools/Outdoor Sports Facilities are the top three participating facility types.
- Disadvantaged Community Public School (SBO):
  - \$140,000 project to implement LED upgrades (TLED, indoor/outdoor new fixtures) with Networked Lighting Controls
  - 322,395 kWh of savings, 55,333 kWh from NLCs. This project highlights how public facilities are increasingly interested in NLCs in addition to lighting upgrades.
- Disadvantaged Community Warehouse - WP Carey Dart Container
  - \$617,800 project to upgrade interior and exterior lighting to LED's. In addition to fixture upgrades existing standalone interior lighting controls were also upgraded to Networked Lighting Controls
  - 1,673,437 kWh of savings, 474,272 kWh from NLCs
  - Occupancy, dimming, zone control and scheduling strategies implemented.

## ComEd EE Program Design Tactics in 2024 – Lighting & Lighting Controls

- Measure and Incentive Updates
  - Updated lighting product eligibility to the latest version of DLC (DLC V5.1) for both programs
  - Scaled back our incentive and campaign promotions to align better with Plan 6 spend goals
  - ComEd Standard offering allows LED to LED replacements since 2023; this in turn allows customers to upgrade older LEDs with limited control capabilities with newer LEDs and incorporate NLCs.

## Energy Efficiency Service Provider (EESP) Updates

- Number of Service Providers participating in NLC measures increased by 142% in 2023
- Both offerings continue to provide:
  - Technical Trainings
  - Program Support including Roundtables.
  - Fact sheets and case studies
  - Newsletter Spotlight
  - Customer Webinars

## ComEd EE Program Design EESP/Market Feedback

- Networked Lighting Controls incentives were one of the primary drivers for a significant budget impact in 2023
- While elevated incentives made selling projects easier, EESPs were not opposed to lowering incentives to preserve budget over the full program year
- Both offerings reduced NLC incentives mid-year in 2023 and later into 2024
- EESPs anticipate LED saturation and continue to pivot towards NLCs, other lighting controls, and LED to LED upgrades

## Future Plan/Outlook Next Steps

- Continued Market Education Increase in awareness
- Promotion of NLC Measures
- Lessons Learned & Keys to Success
  - Continuous EESP Engagement
  - Incentive design
  - Trainings
  - Feedback

*Dan Mellinger – Future plans and considerations of shifting towards controlled LEDs. What is ComEd's reaction to this?*

*Jim Fay – ComEd doesn't see a zero-sum game and how lighting controls is affected by LED fixtures implementation. Concerned about cost-effectiveness because adding lighting controls is a significant project given there is a limited customer base. Very interested in Ameren market transformation. Its not reducing investment on lighting products to tackle these initiatives.*

*Dan Mellinger – Speaking about project cost management?*

*Jim Fay – Not PRC value but dollar investment per acquired kWh savings.*

*Jeff Harris – Is ComEd thinking about implementing a market transformation program as your resource acquisition program for controls?*

*Jim Fay – ComEd is considering integrating the market transformation program into the resource acquisition program for controls. Have seen success with this approach in the past, particularly with retail products. As the market transformation program proves to be more effective and cost-efficient, we're confident in operating both programs in parallel.*

*Dan Mellinger – Has the market saturation analysis been completed? Could you provide the chart showing the percentage of installed inventory? Additionally, did the analysis include the percentage adoption or installation rate of controls in any form?*

*Jim Fay – Currently, our analysis has focused solely on fixtures, specifically the breakdown between linear fluorescent and baseline fixtures. However, we are conducting a potential study to gain insights into the market status of controls, with hopes of obtaining valuable insights in the near future.*

*Question – Could you clarify the difference between the proportion of lighting controls projects that are LLCs in our program compared to Ameren's program? If I understood correctly, Ameren mentioned that the majority of their projects involve traditional LLCs.*

*Sanjyot Varade – One possible reason for the difference in lighting control project proportions between our program and Nick's program could be related to the requirements in our program's portfolio. Our program may require DLC listing for products, which often includes relevant capabilities such as LLCs.*

### **Closing and Next Steps**

- Additional written feedback for Ameren Illinois and ComEd on network lighting controls for the 2026-2029 EE Plans is due **by Friday, May 17**
  - Send Ameren Illinois feedback to Nic Crowder and CC [Celia@CeliaJohnsonConsulting.com](mailto:Celia@CeliaJohnsonConsulting.com)
  - Send ComEd feedback to Jim Fay and CC [Celia@CeliaJohnsonConsulting.com](mailto:Celia@CeliaJohnsonConsulting.com)
- Subcommittee participants suggested a meeting be scheduled for Ameren Illinois and ComEd to share an update on network lighting controls for the 2026-2029 EE Plans – date TBD.