

How Ameren Illinois is Leveraging Market Transformation to Accelerate Adoption of Luminaire Level Lighting Controls

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ABSTRACT

In 2020/2021, Ameren Illinois Company (AIC), recognizing the savings potential of Luminaire Level Lighting Controls (LLLCs), launched a market transformation pilot initiative to accelerate adoption of this promising technology within her service territory.

This paper shares the boldness, agility, creativity, and important learnings of AIC, as a single utility with relatively limited resources, in facing the challenges and identifying solutions to designing and implementing an effective market transformation pilot to remove market barriers for lasting change.

Introduction

LLLC systems are a subset of networked lighting controls (NLCs) and have been available for about a decade. LLLC systems have the unique characteristic of sensors embedded in every fixture, which enables usage flexibility across a variety of space types including warehouses, offices, hospitals and healthcare facilities and schools (NEEA 2022).

A recent study showed significant 50 – 74% annual energy savings from 1:1 replacement of luminaire level lighting controls (LLLCs) compared to 59% savings of a full redesign, and at about one-third to half of the cost (NEEA 2020a). LLLCs are easy to install, offer non-energy benefits and enable business owners to remotely address security and maintenance issues, as well as manage energy usage. Yet, LLLC adoption is low, with connected lighting comprising less than 1% of all luminaires in the US (Wolgammott and Kisch 2021).

This paper documents the process, decisions made, and actions taken by AIC, supported by Resource Innovations (RI), and Leidos (“the Team”), to develop:

- A market intervention strategy for LLLCs.
- A logic model reflecting the program theory of change.
- An evaluation plan to measure progress per market progress indicators in the logic model.
- A plan for, and implementation of positioning and marketing concepts to support the pilot.
- A plan for, and implementation of program ally training.
- A plan for, and implementation of LLLC pilots.

Leverage Past Market Characterization Findings to Develop a Market Intervention Strategy

Market transformation initiatives typically begin with market characterization, which seeks to understand market dynamics, market barriers and opportunities. Market characterization combines secondary and primary research. Secondary research includes a review of relevant literature and studies assessing the market and technology, and primary research is commonly

conducted via in-depth interviews with relevant upstream, midstream, and downstream market actors.

In 2021, RI conducted an extensive literature review on LLLCs. The Northwest Energy Efficiency Alliance (NEEA) has a library of LLC market research and evaluation reports on their website, and through their interviews with market actors, have thoroughly identified the key barriers as upfront costs, lack of skilled trade (or program) allies, product readiness and lack of product awareness (NEEA 2016).

AIC and RI made the decision to not conduct in-depth interviews with upstream, mid-stream and downstream market actors during the market characterization phase, reasons being:

1. NEEA has documented the key barriers, which the Team considers to also exist in AIC's service territory.
2. Relevant market actors are prime targets for market research companies representing marketers and other energy efficiency organizations and are likely to be at risk of respondent fatigue.
3. AIC's evaluation vendor, Opinion Dynamics Corporation (ODC), will be conducting interviews/surveys with especially the mid-stream and downstream market actors as part of program evaluation, and the plan is to leverage those interviews/surveys for insights on market dynamics, attitudes, and behavior specific to market actors in AIC's service territory.

Recognizing the key role of program allies, Leidos conducted program ally interviews to determine barriers to recommending and installing LLLCs. The interviews confirmed NEEA's findings of lack of awareness, misperceptions related to installation and commissioning, as well as a lack of customer awareness and therefore, demand.

AIC's LLC Logic Model

RI and AIC developed LLC's logic model based on findings from secondary research and from program ally interviews. The Team then localized the logic model to AIC's service territory and Illinois, based on the Team's experience with market actors in the service territory. AIC's and Leidos' familiarity with AIC's service territory contributed program elements unique to the service territory, e.g., ensuring that AIC staff interfacing with program allies and small business customers ("business customers" or "business owners") are familiar with LLC.

NEEA identified product readiness as one of the market barriers. NEEA's LLC logic model includes interventions (specifically through Design Labs Consortium (DLC) engagement), with one of the results being the LLC qualified products list (QPL), which utilities could reference for their incentives (NEEA 2016).

A utility-level MTI has limited resources for removing barriers to adoption. AIC had to be strategic in prioritizing the allocation of resources to removing barriers to adoption (which are market actors' lack of awareness and familiarity, lack of skilled program allies, and upfront costs). AIC has savings targets for each year, indicating the importance of pilot installations on an annual basis. AIC decided to focus on training program allies and pilot incentives in 2022, as both are necessary to ensure installation of pilot projects to meet its savings goal.

AIC will build case studies from these pilot installations as marketing collateral for subsequent years for removing the barrier of market actors' lack of awareness and familiarity. In 2022, AIC will offer webinars to targeted market actors (particularly to distributors, as they are a

key component of the supply chain). This resulted in the decision to focus on the barriers and tactics identified in Table 1 below.

AIC plans on engaging with NEEA to support NEEA in removing the product readiness barrier once AIC has established a solid foundation for removing the barriers in Table 1. AIC plans on adding this element to the logic model at a future time, possibly as early as end-2022, as this would require dialogue and engagement with NEEA.

Table 1. Key LLLC Adoption Barriers and Tactics for Removing Barriers

Barriers by Priority	Description of Barriers	Tactics
1. Lack of skilled program allies	AIC's interviews with program allies revealed the perception that LLLCs are complicated to install and that they have no experience in installing the systems	Design and offer training on fundamentals and commissioning of LLLC
2. Upfront costs	Incremental cost per fixture ranges from \$49 to \$90 (NEEA 2021a).	Incentives for pilot installations for 2022 to 2025
3. Market actors' lack of awareness and familiarity	AIC's interviews with program allies revealed that both program allies and their customers have little awareness and familiarity with LLLC	Webinars on the fundamentals of LLLC and its benefits.

ODC has reviewed the logic model for evaluability and representativeness of the initiative's strategy and has developed an evaluation plan based on the logic model. ODC will be conducting surveys to establish baselines for the market progress indicators, to track progress in subsequent years.

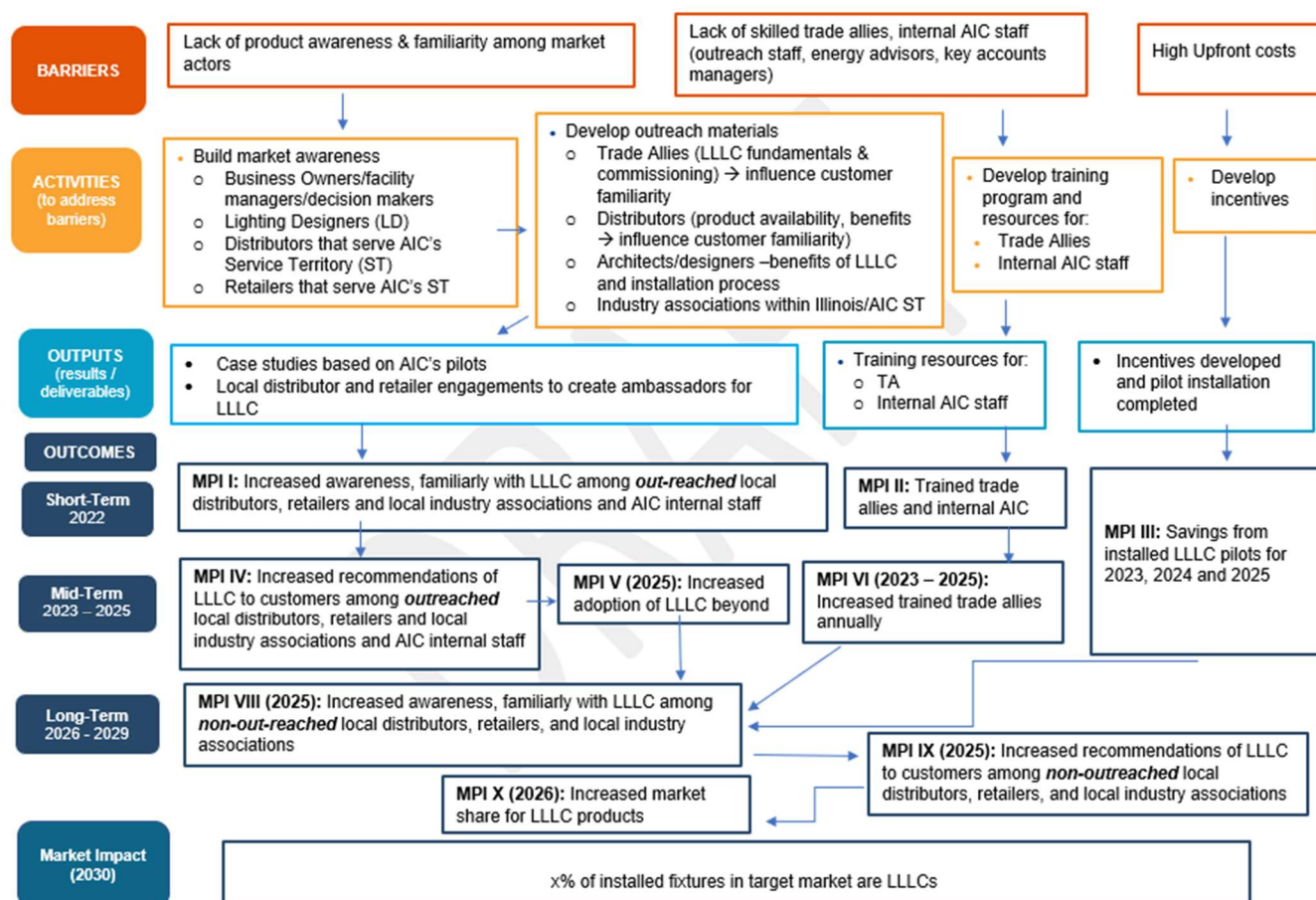


Figure 1. AIC'S LLLC Logic Model

Soft Launch, Dare to Fail, and Nimbleness for Success

AIC has had an NLC resource acquisition program since 2018. In 2020, AIC decided to pursue LLLCs as an MTI.

In quarter four of 2021, AIC did a soft, experimental launch of the pilot installation. In a synergistic effort, the LLLC program ally incentives were added to AIC's regular communications about the NLC resource acquisition program. Importantly, AIC wanted to avoid over-messaging to the program allies.

By the end of 2021, there was still no response to LLLC's soft launch. This situation changed quite by chance due to AIC's outreach to program allies for the NLC resource acquisition program.

AIC's NLC resource acquisition program requires their energy advisors to conduct regular outreach to the program allies and customers. In early 2022, as part of that outreach, Leidos initiated direct communications about the LLLC incentives to individual program allies and customers. This resulted in an approved LLLC pilot installation project for a warehouse, with savings estimated to be 171,000 kWh annually, which is 64% of the 2022 savings target of 268,980 kWh.

Positioning and Marketing Concepts

The Team did a candid retrospective review of the soft launch, and identified four key learnings

1. The need to differentiate between LLLC and NLC.
2. The need to separate LLLC communications from NLC communications.
3. The importance of energy advisors following up with program allies.
4. The need to develop a positioning for marketing LLLCs.
5. The importance of applying marketing concepts to the implementation of the initiative.

ODC will capture these learnings, and more, when ODC conducts progress evaluation by end-2022.

Recognizing that the drivers for business owners may be different from program allies', the Team, utilizing insights from secondary research (NEEA 2016), developed two similar, yet separate positioning statements for AIC's business customers and program allies. The Team will fine-tune the positioning statements based on evaluation findings of the Initiative's progress in 2022.

Table 1. Positioning Statements for Business Owners and Program Allies

Target Audience	Positioning Statement
Business Owners	For Ameren Illinois business customers who wish to lower lighting costs while leveraging valuable control strategies, LLLC technology, combining LEDs with integrated controls and sensors, offers deep energy savings with simple installation and a short payback on the investment. Unlike other lighting technologies, Ameren's LLLC's scalable wireless capabilities enable business customers to effortlessly manage their lighting needs, flexibly tailor lighting to space use, increase occupant comfort, streamline maintenance, and unleash specialized non-energy benefits.
Program Allies	For Ameren Illinois Energy Efficiency program allies who wish to increase profits while offering commercial and industrial customers practical, effective control of their lighting systems, LLLC technology, combining LEDs with integrated controls and sensors, offers simplified, and therefore, lower cost installation and commissioning. Unlike other lighting technologies, Ameren's LLLC's scalable wireless capabilities enable your customers to effortlessly manage their lighting needs, flexibly tailor lighting to space use, increase occupant comfort, streamline maintenance, and unleash specialized non-energy benefits, all while realizing deep energy savings.

From these positioning statements, the Team developed messaging for AIC’s business customers and program allies with the following parameters:

- Simple one-pager.
- Key messages = incentives and deep energy savings. All other attributes reinforce these two key messages.
- Educational elements.
- Urgency. Limited availability of incentives.

To reinforce branding, the Team developed a tagline for the initiative that plays on the word “lighting” and that highlights the benefit of LLLCs (i.e., competitive edge) to the target audience:



Lighting up your competitive edge with luminaire level lighting controls

Figure 2. Tagline for AIC’s LLLC Initiative

The Team further coordinated with AIC’s corporate communications and branding team to ensure that the LLLC messaging is on-brand with corporate direction.

Program Ally Training

AIC’s LLLC initiative offers three two-day training sessions in 2022 to address the lack of program ally skillsets for LLLC. Day 1 training is on the fundamentals of LLLCs, and Day 2 is on the commissioning of LLLCs. Planning for the first training session, scheduled for April 2022, commenced in end-January 2022.

The issue of who to invite for the first training session (scheduled for April 2022) evoked discussions on a broad versus a focused marketing communications approach. The Team decided to leverage the April session for experimental purposes, and to gather input from participants for improvements of the future sessions. The Team qualitatively (via internal experience with and knowledge of program allies) identified program allies who show traits of being Innovators and Early Adopters to maximize likelihood of installing pilot projects from the training. AIC will then build case studies and other collateral from the pilot installations to message to the Early Majority. Training sessions subsequent to the April session are open to a broader base of program allies.

To ensure participation in the April training session, AIC’s invitation highlights:

- A catchy, call-to-action headline (“Are Your Business Customers Looking to do Lighting Retrofits? Sign up for Ameren Illinois’ Free Training on Luminaire Level Lighting Controls in Springfield, IL, on April 26th and 27th”).
- AIC’s commitment to putting customers first, and support for program allies’ success.
- An educational element on the benefits of LLLC for program allies and business customers (which addresses lack of product awareness).

- Incentives offered.
- Sense of urgency (limited to thirty participants; free accommodation for the first ten to sign up).

The April training session includes an AIC-sponsored lunch, which offers the opportunity for the Team to further engage with the program allies for a deeper understanding of their motivations and challenges regarding LLCs. The Team will seek to identify the upstream and mid-stream market actors that program allies are already interacting with, to feed into the initiative's efforts in raising the market actors' awareness and familiarity.

The Team dedicated more resources than budgeted to the first training session, given the importance of a strong start for the training effort, and with the intention that the attendees will create invaluable word-of-mouth buzz among their peers in AIC's service territory.

ODC will evaluate the training sessions for the desired impact of increasing program ally skills and sales penetration.

Pilot Installation & Future Directions

AIC will be installing pilots from 2022 to 2025, leveraging the learnings from 2021's soft launch. The pilots will generate understanding of the challenges and success of installation, both from the program allies' and business owners' perspectives. The Team will leverage the insights from pilot installations to improve on the roll-out of the initiative in subsequent years. The pilot installations also enable AIC to claim annual savings from direct involvement with the market, while the Team, in parallel, develops the natural market baseline and impact of the market transformation over time.

The Team's outreach strategy is to initially engage with business customers who, qualitatively, fall into the Innovators and Early Adopters category. The Team will utilize the learnings from this initial outreach to fine-tune the pilot installation roll-out strategy for subsequent years.

The Team plans on including customer analytics later in the year to develop even more targeted marketing based on customer segments.

ODC will evaluate the impact of the pilots and track the influence and impact of the initiative's efforts on business customers who did not directly engage with AIC's LLC initiative.

Conclusion

Effective market transformation initiatives are costly, messy and full of surprises. AIC embarked on her LLC market transformation initiative in 2021, and within a short four- to five-month period of a soft launch, recruited a warehouse for pilot installation with an estimated annual energy savings of 171,000 kWh, which is 64% of 2022's savings target of 268,980 kWh. AIC also offered the first program ally training within a four-month turnaround time.

AIC demonstrated that it is possible for a utility-level market transformation initiative to pave a way to success, despite the challenge of limited resources. The following elements are crucial:

- A small, creative cross-functional team, empowered to take risks and be nimble in decision-making; and to be bold enough to take the unbeaten path.
- Supportive leadership.

- Embracing failures and barriers as learning experiences for further initiative improvements.
- Identifying and leveraging existing resources.
- Incorporating marketing concepts.

AIC plans on reporting out in future conferences on progress of, and learnings from her LLLC market transformation initiative.

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