Illinois Energy Efficiency Stakeholder Advisory Group

2020 SAG Portfolio Planning Process
Proposed Energy Efficiency Ideas Template

Submitter Contact Information

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Energy Efficiency Idea Questions

Please check the boxes below to identify 1) the type of idea; 2) which Illinois utility or utilities will be impacted by the idea; and 3) which EE sector the idea impacts.

Check	Type of Energy Efficiency Idea
☒	New Measure or New Program Idea
☒	Proposed Program Approach
☒	Innovative Idea

Check	Illinois Utility Impacted by Energy Efficiency Idea
☒	Ameren Illinois
☒	ComEd
☐	Nicor Gas
☐	Peoples Gas & North Shore Gas
☐	All Illinois Utilities

Check	Energy Efficiency Sector Targeted by Energy Efficiency Idea
☐	Residential Customers – Single Family (non-income qualified/income eligible)
☐	Residential Customers – Multifamily (non-income qualified/income eligible)
☐	Residential Customers – Single Family Income Qualified/Income Eligible
☐	Residential Customers – Multifamily Income Qualified/Income Eligible
☒	Small Business Customers (commercial & industrial sector)
☒	Medium/Large Business Customers (commercial & industrial sector)
☐	Other (research & development, emerging technologies, market transformation)

Additional Questions

1. **Description of Idea:** Describe the proposed idea, including the purpose of the suggested idea and rationale. Describe whether this is an idea that could be implemented in an existing EE program, or whether the idea involves establishing a new measure or program. Please indicate whether additional research may be required before implementation.

   Questions to consider: What issue will this proposed change resolve? Will the proposed change increase participation and result in increased energy savings? Will this reduce costs? Will this increase customer satisfaction? Will this help achieve statutory goals? Will this help increase program penetration?

C&I Networked Lighting Controls

Networked lighting controls (NLC) in C&I buildings offer a huge reservoir of electricity savings potential. Indeed a recent study suggests the savings potential with aggressive utility programs could provide electric savings over the next decade that are on part with, if not greater than the savings potential from C&I indoor LED products (see: https://www.designlights.org/default/assets/File/DLC_Energy-Savings-Potential-of-DLC-Commercial-Lighting-and-Networked-Lighting-Controls.pdf). Moreover, that savings potential has been largely untapped, both nationally and in Illinois. Further, the non-energy benefits available to many businesses may be of even greater value than the energy savings. Importantly, the opportunity to capture savings from NLCs is somewhat time sensitive since every LED installation that occurs without controls can become a lost opportunity for a decade or more. Nationally, the commercial penetration of LED in the linear submarket is estimated to be 28% in 2020 and is quickly growing toward a forecasted 63% by 2025.[1] Once those products are installed without NLC, it becomes much more expensive to pursue NLC and therefore more difficult to get customers to participate. Thus, we should try to maximize the installation of controls, and specifically networked lighting controls, during the upcoming stage of rapid adoption LED lamps and fixtures.

Acquiring NLC savings is more challenging than acquiring savings from LED lamps and fixtures because (1) the technology and its benefits are not well recognized by trade allies and customers; (2) the technology is more complicated to install than lamps or fixtures, requiring important lighting design and commissioning

[1] DOE Energy Savings Forecast of Solid-State Lighting in General Illumination Applications, Table 4.23, available at https://www.energy.gov/sites/prod/files/2019/12/f69/2019_ssl-energy-savings-forecast.pdf.

expertise; (3) there are not many trade allies that have that expertise; (4) the current cost per unit of savings is greater than for fixtures and much greater than for lamps – though potentially still cost-effective and on a downward trajectory that could be accelerated by utility promotion; and (5) the measure doesn't fit well into traditional utility program mechanisms such as per-unit incentives and savings used in prescriptive and midstream.

Thus, we propose a four-part program:

- Demonstration projects. ComEd and Ameren should each fund 2 to 3 demonstration projects (free of charge to the host customers if necessary), with investment in tracking of impacts, both energy savings and non-energy benefits. These projects will provide the utilities with direct experience with the technology's costs, how to minimize such costs, the energy savings potential, and how it could address other interests/needs of customers. The demonstration project should then be turned into case studies to help market the technology to other customers in the future. Ideally, several different types of customers that have a high likelihood of significant non-energy benefits – e.g. retailers who can use it to monitor traffic patterns in their stores (to inform product placement) and hospitals[2] who can use it to trace key assets like wheelchairs – should be targeted. Ideally, these demos should start in late 2020 or early 2021 to allow the results to be used at the beginning of the next plan cycle.
- Lighting contractor training. Identify contractors that are already familiar with the technology and/or very interested and offer training on its benefits, how to design and install systems, etc. Existing training offered by the DesignLights Consortium, Lighting Design Lab, and/or other parties could be leveraged. Participation in the utility training offer should be a prerequisite for obtaining financial incentives (next point).

DLC Online NLC Training Course Overv

- Financial Incentives. Offer financial incentives, on a per square foot basis, for the installation of NLC. The Wisconsin Focus on Energy program currently does this, offering $0.25/sf; they estimate that the incremental cost was $0.68/sf (for just the NLC, excluding other lighting product costs) based on actual projects completed in 2019.[3] The IL utilities may want to start a little higher – e.g. $0.35 to $0.50/sf – until the program gains significant traction in the market. The Wisconsin TRM has deemed savings ranging from 0.93 to 1.36 kWh per sf (see embedded file below), depending on type of C&I customers, so even at $0.35/sf, the cost per unit of savings may not be much different than the utilities' current portfolio averages.

FOE_Networked_Lighting_Controls.pdf

NLC Pages from Wisconsinn TRM 2019

- Integration with other Programs. It may be important to consider reducing incentives for LED lamps and fixtures without controls, and promoting integration of controls when other lighting retrofits are taking place (so that the incremental incentive for controls is enough to drive the market). It may also be important to consider how to integrate at least offers of NLC, as an upsell, into small business DI programs.

2. **Implementation:** How will this idea be delivered to the target market? Describe marketing strategies used to reach the target market and minimize market confusion.

[2] The Covid-19 pandemic may make a hospital demo infeasible; if so, a different kind of facility could be considered.

[3] Note that the embedded info from the Wisconsin TRM suggests an incremental cost of $1.68/sf, but that was based on 2016 manufacturer interviews. Costs have come down since then.

Through trained lighting contractors (see above). Possibly also through energy-as-a-service companies.

3. **Background:** Describe where the idea originated from, including whether this idea has been successfully implemented in other jurisdictions. Provide specific background information that will help utilities and SAG participants understand the proposed idea.

   Questions to consider: In what jurisdiction has this idea been successfully implemented? Do you have information on eligible customers, participation achieved, and/or savings achieved? Do you have access to reports describing the successful idea / program approach?

See discussion above.

4. **Idea Impact:** Provide additional information on the customer segment that will be targeted with the program idea, including how and why this idea will have a positive impact on customers participating in Illinois EE programs.

   Questions to consider: What level of impact will this idea have on current EE programs? How much additional market share do you estimate this change will impact?

Impact will likely be modest initially because of the work necessary to ready the market for it. However, as noted above, the savings potential is enormous and costs are coming down, so it could play a very substantial role in providing savings by the second half of the next plan cycle (if not sooner).

5. **Duration:** Is this idea intended to be offered for the duration of the 4-year EE Plan or as a pilot measure or program?

Start as pilot in late 2020 and into 2021, then full-scale through next two plan cycles.

6. **Estimated Budget:** Provide the total estimated budget for each program year (2022 – 2025).

At an incremental cost of $0.68/sf, the equipment and installation costs for demos targeted to one or two 75,000 sf retail space(s) (e.g. large grocery store) and another targeted to a 150,000 sf small hospital or hospital "wing" would cost about $150-200k. Add on costs of customer recruitment, data monitoring and analysis, customer engagement, development of case studies, etc. and the pilot demo projects could cost $300-500k per utility (assuming host customers had already installed LED fixtures).

The budget for a full-scale program is difficult to estimate at this time. Would require effort to forecast participation. However, the cost would likely grow non-trivially over the next five years.

7. **Estimated Participation:** Provide participation totals for each program year (i.e. number of measures installed, number of customer participants, etc.)

Not able to estimate at this time (see above).

Sources

If any sources will be useful to Illinois utilities in reviewing ideas, please either provide links within this template or send attachment(s) to the SAG Facilitator with the Energy Efficiency Idea submittal.

See above.