

SSL Postings

U.S. DEPARTMENT OF ENERGY

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Earlier this year, the Next Generation Luminaires™ (NGL) design competition took a quantum leap forward and transitioned its focus from luminaires to [Next Generation Lighting Systems](#) (NGLS). The new NGLS features multiple competitions, an exclusive focus on connected lighting systems, and an expanded evaluation process that involves installations in real-world settings and greater interaction among entrants, judges, and host sites. The response has been extremely positive, and the first competition is well underway. We'll be sharing regular updates throughout the multiphase evaluation process, highlighting key findings and lessons learned.



How Easy Is Easy?



For the **first NGLS indoor competition**, seven connected lighting systems were installed in accessible working spaces at The New School, Parsons School of Design in New York City, where they'll remain for at least two years, providing manufacturers with a "living lab" to facilitate improvements in the way such systems are designed, installed, and used. Manufacturers were allowed to have a

representative present to observe work involving their systems. Although the systems were promoted as easy to install and configure, more than half didn't live up to either claim during installation in July. Those that fell short were heavy on external components, which made things more complicated and caused confusion. And with connected lighting still very new, manufacturers are each taking their own approaches.

The systems were configured by three different methods, depending on the manufacturer: a phone app, a handheld remote, or remote Internet access. While each method had its pros and cons, many of the systems had problems with accessibility and ease of use – e.g., the installer didn't have the right kind of cell phone, or the instructions were too complex or hadn't been updated with the latest app. What's clearly needed are instructions that are simple, clear, diagrammatic, and easy to find (e.g., without having to carry out an additional step of downloading the manual from a website). While the contractors ignored the instructions if the installation looked like it was something they already knew how to do, when they did refer to the instructions they focused more on the drawings and diagrams than on written descriptions. Some said they had difficulty understanding the instructions, which should be written clearly and without IT jargon, and should be comprehensive rather than split up into separate documents that can easily get lost in the messiness of an installation.



Command Performance



The performance evaluations, which took place in September, focused on lighting and controls. The overall performance fell short of expectations. One area that was of special concern was the wall controls. Each manufacturer seemed to do things differently, to the point where the evaluators – who were all experienced lighting professionals – had a hard time figuring out how to use the systems. This was often exacerbated by the system's complexity.

In some instances the sensors didn't work, and in other cases the system wasn't programmed to meet specified performance criteria. Most of the systems appeared to be capable of performing well but simply weren't set up properly. Still to come in the first indoor NGLS are long-term evaluations that focus on system performance, user satisfaction, and reliability. NGLS will also evaluate the specification process, including design and performance parameters. As each phase is completed, the findings – successes as well as challenges – will be published on the [NGLS website](#).

Indoor Competition Two – and Beyond

The **second indoor competition**, which opened last month, focuses on controls that are integrated into easily installed and configured retrofit kits for recessed luminaires. The deadline for Intents to Submit is October 20; visit the [NGLS website](#) to view the Entrant Guide. The third and fourth competitions will follow next year, which is also when the first NGLS **outdoor competition** begins, with a focus on parking-lot connected lighting.



Ways to get
involved in
the NGLS
Competition

- **Participate in site visits** to the living lab at Parsons
- **Share your own** connected lighting experience to inform continuing educational materials
- **Submit systems** for future competitions

Contact us at ngl@pnnl.gov