



**ANNUAL
REPORT
2023**

LETTER FROM THE **EXECUTIVE DIRECTOR**



Christina Halfpenny

As 2023 ended, the National Oceanic and Atmospheric Administration reported it was the hottest year on record – capping a decade of the ten warmest years since global recordkeeping began in 1850. The Earth is in the thick of climate change and its impacts aren't subtle.

Decarbonizing the built environment is central to reducing atmospheric carbon and reining in climate change, and that goal was at the forefront of the DLC's work in 2023.

For the DLC, a net zero future requires scalable and accessible solutions. Our work to advance the interconnection and integration of energy-saving technologies – namely networked lighting controls (NLC) – has the potential to save energy, carbon, and mitigate the rapidly growing problem of light pollution. Building on the successful consortium model that brings utility members and lighting stakeholders together to accelerate the transition to controlled LED lighting, the DLC is targeting the untapped savings that NLCs can deliver. Expanding upon previous research illustrating that NLCs can increase the energy-saving potential of LED lighting projects by [almost 50 percent](#), the DLC published a study in August 2023 showing it is possible to save even more – up to [30 percent of a building's total energy usage](#) – by integrating NLC occupancy controls with HVAC systems.

Those findings sparked fruitful conversations about unlocking the savings potential of NLCs during our Controls Summit in Detroit in September. The Summit highlighted the need for disparate stakeholders to collaborate to increase NLC installations, and participants previewed our new “NLC-Local” initiative, dedicated to boosting installation of lighting controls in the 94 percent of US commercial buildings under 50,000 square feet – a sector with huge untapped potential.

The DLC's new "**NLC-Local**" initiative is dedicated to boosting installation of lighting controls in the **94 percent** of US commercial buildings under **50,000 square feet** – a sector with huge untapped potential.

We've also steered the DLC's Horticultural Lighting Program toward the benefits of controls. In late 2023, we convened a new Horticultural Lighting Controls Technical Working Group to advise and assist the DLC as we look to expand the role of connected and integrated lighting solutions to enhance energy use and crop production in controlled environment agriculture.

The DLC's continued efforts to mitigate harm caused to the environment and human communities by wasted nighttime lighting included a focus on controls, as well. We created an online toolkit for local governments to choose and install outdoor lighting that mitigates light pollution through measures that include proper installation of dimmable, controllable LEDs like those on our LUNA Qualified Products List. Our outreach included a panel discussion on "Impacts of Outdoor Lighting: Considerations to Reduce Energy, Save Money and Minimize Light Pollution for People and the Environment," co-sponsored by the DLC, the Illuminating Engineering Society, and Hawaii Energy, and we engaged with multiple agencies in Hawaii on best practices for outdoor lighting in critical seabird and turtle habitats.

Highlighting the need to reduce light pollution's unequal impacts on underrepresented neighborhoods is part of the DLC's commitment to ensure equity and a voice for all lighting end users. The DLC's Respect, Equity, Diversity and Inclusion (REDI) Committee completed its first full year of work in 2023, meeting bi-weekly to incorporate representation, inclusion, and equitable impact in our culture so it remains a cornerstone in our work.

Through these and other efforts, the DLC's work in 2023 was informed by the advice and counsel of our Efficiency Forward board members and industry stakeholders, who share our resolve to leverage high quality, efficient LED lighting in pursuit of solutions that make our buildings and outdoor spaces more sustainable, to reduce confusion and optimize decision making to expedite savings on energy and move us toward a decarbonized world. Together, each day, we are taking steps that make a difference toward achieving these essential goals. ♦

DLC MISSION STATEMENT

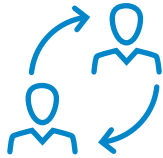
As an independent non-profit organization, the DLC provides decision makers with data and resources on quality lighting, controls, and integrated building systems to reduce energy, carbon, and light pollution.

We envision a net zero future where lighting, controls, and integrated building systems enable energy savings, decarbonization, and sustainability for all people and the environment. The DesignLights Consortium is an Efficiency Forward organization.

OUR VALUES



INTEGRITY: We are dedicated to the work we do and are committed to honesty, transparency, and environmental stewardship.



COLLABORATION: The input of our colleagues and stakeholders is paramount. We diligently pursue opportunities for cooperation and comprehensive feedback on our work.



DIVERSITY: We are committed to inclusion, representation, and a voice for all those affected by our work.



IMPACT: We hold ourselves responsible and accountable for the outcomes of our work and actively pursue opportunities that best support our environmental mission.

GUIDEPOSTS TO INNOVATION



ENERGY: Optimize energy use through efficacy, controls, and system integration to reduce and manage electricity loads in buildings.



QUALITY: Research, promote and enable standards for quality lighting.



CONTROLLABILITY: Drive connectivity of the built environment to optimize quality and energy benefits.

BOARD OF DIRECTORS



Alecia Ward
*Leader of Program
and Business
Development*
Lawrence Berkeley
National Lab



Regina Durga
Sales Leader
Centrica



Carlos Nouel
*VP, New Energy
Solutions*
National Grid



Pat Lo
*Executive - Power and
Utilities Americas*
Microsoft



Scott Johnstone
General Manager
Morrisville Water
& Light



Larissa Paredes Muse
Consultant
Quanta Technology



INTERNAL COMMITTEES

The DLC relies on the input of our numerous stakeholders to make informed decisions that benefit the needs of as many people as possible. We are grateful to the following committee members for their valuable guidance.



Industry Advisory Committee

Distributors

- Marc Hodges, Sonepar USA
- Bernie Erickson, Facilities Solutions Group

Lighting Controls Manufacturers

- Michael Davidson, Synapse Wireless
- Stephen Irving, Lutron Electronics
- Eric Miller, Avi-on Labs

Small Manufacturers

- Daniel Katz, LC, Eiko Global
- Daniel Kroenke, Illuminus
- Corinne Wilder, Fluence by OSRAM

Medium Manufacturers

- Dan Wang-Munson, RAB Lighting

Top 5 Manufacturers by QPL

- Michael S. O'Boyle, Signify
- Tanya Hernandez, Acuity Brands
- Bob Smith, Cooper Lighting
- Jon Vollers, Cree Lighting
- Jeremy Yon, Current by GE

EXTERNAL COMMITTEES

The DLC is proud to participate on the following industry-wide committees:

- IES Testing Procedures Committee
- IES Lighting Control Systems Committee
- IES Horticultural Lighting Committee
- IES Color Committee
- IES Computer Committee
- IES Illumination Awards Committee
- ASABE Energy Systems 310 Ag Lighting Group
- ANSI/NEMA C137 Lighting Systems Committee
- ANSI/NEMA C136 Committee
- ANSI/NEMA C78 Standards Committee on Electric Lamps
- RII Technical Advisory Council
- RII CEA Accelerator Technical Advisory Council
- Smart EPD Luminaires PCR Committee





WORKING GROUPS

The DLC also facilitates multiple specialized committees and working groups made up of experts in specific areas of technology:

Technical Committee

- Made up of DLC Member representatives, the Technical Committee advises on the development of DLC Technical Requirements, supporting policies, and resources for LED lighting and networked lighting controls.

External Systems Integration Working Group

- The External Systems Integration Working Group brings together controls manufacturers, energy efficiency professionals, researchers, and systems integrators to form a multi-year plan to address barriers to widespread NLC-HVAC interoperability.

Hort Working Group

- The Hort Working Group supports the DLC's mission and strategic direction for controlled environment agriculture spaces through education, collaboration, and expertise.

Hort Lighting Controls Working Group

- The Industry Hort Lighting Controls Technical Working Group helps the DLC accelerate the transition of the horticultural lighting industry to optimized energy and production practices via connected and integrated lighting solutions.

LUNA Advisory Group

- The LUNA Advisory Group provides perspectives and recommendations for better criteria related to light at night on the DLC QPL.

STAKEHOLDER ENGAGEMENT

Collaboration and Partnerships

Advances in energy efficiency, equity, and decarbonization are truly a cooperative effort. The DLC is proud to partner with and collaborate with the following organizations:

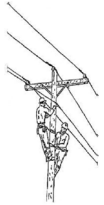
- Browning the Green Space
- US Department of Energy
- Integrated Lighting Campaign
- California Lighting Technology Center
- Resource Innovation Institute
- ElectroFed Canada
- National Council on Qualification of Lighting Professionals
- US Fish and Wildlife Service



THANK YOU TO OUR MEMBERS



BERESFORD



ELECTRIC DEPT.



Big Stone City
Home of Big Stone Lake



2023 IMPACT

We prioritized bringing stakeholders together to develop new solutions for energy, carbon, and the environment:

- Co-hosted the “Impacts of Outdoor Lighting: Considerations to Reduce Energy, Save Money and Minimize Light Pollution for People and the Environment” in-person/virtual hybrid event in partnership with Hawaii Energy and the IES Honolulu Section.
- Hosted an in-person Controls Summit, bringing utility members, manufacturers, distributors, ESCOs, and more together to ideate and collaborate on strategies to maximize energy savings from integrated lighting controls.

We focused on making our tools and resources more accessible:

- Added images to the Hort and SSL QPLs, making it easier to search and verify qualified products.
- Conducted an in-depth user survey of our stakeholders, the results of which will inform future improvements to the technical requirements and QPLs.

We set the stage to focus on integrated system solutions for energy savings and decarbonization in 2024 and beyond:

- Published “Future-Proofing Energy Efficiency with Networked Lighting Controls,” a research study indicating that aggressive utility promotion of NLCs could double their expected energy savings by 2035, especially when NLCs are integrated with HVAC systems.
- Published “Evaluating the Non-Energy Benefits of Advanced Networked Lighting Controls,” which assigned quantitative values to the numerous benefits of NLCs beyond energy savings.
- Launched pilot programs for our NLC-Local initiative, which will provide key tools that help get NLCs installed in small and medium-sized buildings – unlocking their huge potential for energy savings.



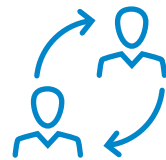
EMBODYING OUR VALUES



INTEGRITY

The DLC is dedicated to the work we do, and we are committed to honesty, transparency, and environmental stewardship. We hold ourselves to the highest standard of quality and impact for the information we share and the tools we create. In 2023, we:

- Added additional cybersecurity options to the NLC Technical Requirements.
- Began accepting and publishing product images on the Hort QPL, making product validation and selection easier and clearer for utilities and growers.
- Co-authored “Specifying non-white light sources in outdoor applications to reduce light pollution,” an article for LEUKOS journal that proposes a specification structure and unified terminology for non-white light sources. Industry consensus is critical for progress, and would facilitate qualification of non-white LEDs on the LUNA QPL if adopted.



COLLABORATION

We hold the input of our colleagues and stakeholders paramount and always pursue opportunities for cooperation and comprehensive feedback on our work. The DLC spent 2023 in conversation with our stakeholders while building the framework for strategies that will future-proof investments in energy efficient lighting. In 2023, we also:

- Released “Future-Proofing Energy Efficiency with Networked Lighting Controls,” highlighting the importance of collaboration between stakeholders with different end goals in creating strategies for NLCs to be integrated with HVAC systems for increased savings, especially in large, high energy use buildings.
- Launched the Hort Lighting Controls Working Group, which meets quarterly to explore the incorporation of lighting controls into the DLC horticultural lighting program.
- Co-hosted an “Impacts of Outdoor Lighting” hybrid in-person/virtual event in Hawaii in partnership with Hawaii Energy and the IES Honolulu Section.
- Published multiple resources about outdoor lighting targeted toward local governments, including an interactive map of lighting ordinances in the US and Canada and a recap of a previous DLC webinar with Lauren Dandridge about integrating equity into public lighting projects.



DIVERSITY

The DLC is committed to inclusion, representation, and a voice for all those affected by our work. We strive for continuous improvement in our workplace and in the industry as a whole. In 2023:

- Our REDI committee met bi-weekly to discuss issues related to diversity, equity, inclusion, and respect internally at the DLC and more broadly in the lighting and energy efficiency industries.
- We published five bi-monthly internal newsletters highlighting cultural celebrations and spotlighting days of recognition for underrepresented communities.
- We hosted multiple team-wide online celebrations and discussions around events such as Pride Month, Juneteenth, and Holi.
- We participated in a team training on having difficult conversations to encourage open and courageous dialogue at the DLC.



IMPACT

We hold ourselves responsible and accountable for the outcomes of our work and actively pursue opportunities that best support our environmental mission. The DLC uses a system of pilot programs and continuous evaluation to ensure that our resources are going toward the projects with the most impact potential. In 2023, we:

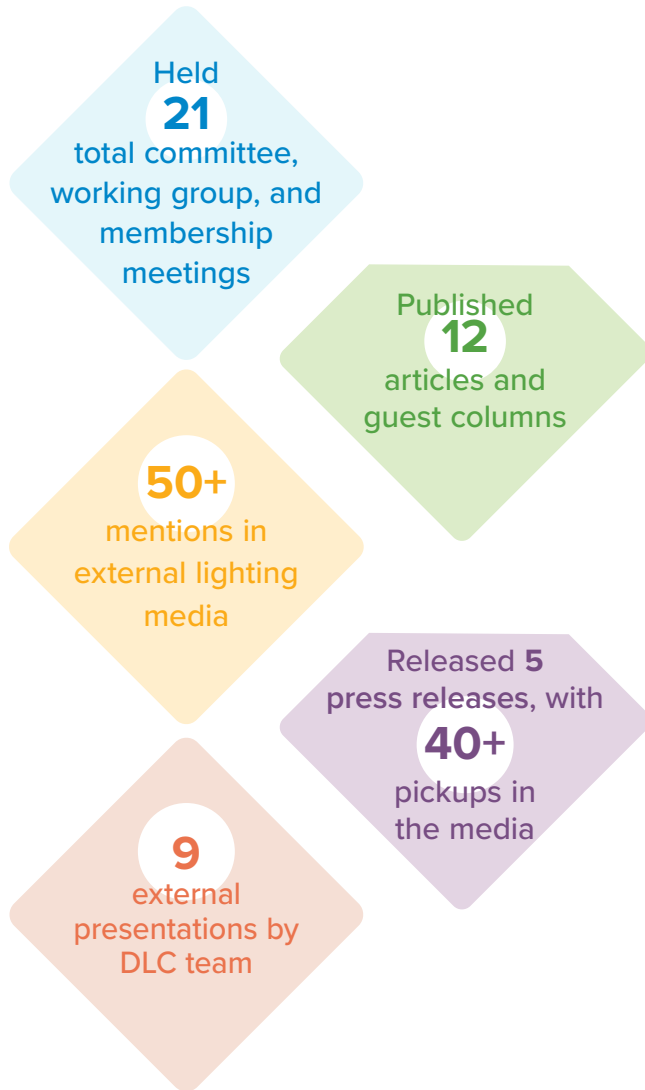
- Piloted key tools for our NLC-Local initiative, the goal of which is to get controls installed in small and medium sized buildings.
- Published a summary of research on the non-energy benefits of advanced networked lighting controls, which assigned quantitative values to the numerous benefits of NLCs beyond energy savings.
- Finished an in-depth analysis of the horticultural lighting market and an opportunity assessment to determine areas that the DLC could have the most impact.
- Began accepting product applications for Hort V3.0, the first Horticultural Technical Requirements version that included an efficacy increase.
- Completed a research study on the energy savings potential of LUNA-qualified outdoor lighting at two sample locations in Colorado.
- Added 288 new products to our list of available lighting to choose from for energy efficiency programs and municipalities that prioritize light pollution mitigation.
- Prioritized projects that will capitalize on DLC research that clearly shows that aggressive utility promotion of NLCs could nearly double previous projections of energy savings over the next 10 years, and that installations will be even more impactful when integrated with HVAC systems.



EXPANDING

OUR REACH

By the Numbers



Impacts of Outdoor Lighting — Considerations to Reduce Energy, Save Money and Minimize Light Pollution for People and the Environment Hybrid Event:

Over 200 in-person and virtual attendees came together in-person and virtually for this unique event co-hosted by the DLC, IES Honolulu Section, and Hawaii Energy. Attendees learned about the negative impacts of light pollution on dark skies, wildlife, habitats, and people, and discussed strategies to reduce energy use and minimize negative impacts of outdoor light at night. They also learned about Hawaii Energy’s work to reduce energy and the incentives available in Hawaii for outdoor lighting.

DLC Controls Summit 2023:

In September 2023, the DLC hosted a one-day summit that brought together over 75 professionals representing utilities, implementers, lighting manufacturers, lighting designers, ESCOs, distributors, and more to strategize on how to increase adoption of controls and future proof energy savings in the built environment.

In addition to learning, and building relationships with industry peers, attendees entered a DLC-built “escape room” as teams attempted to configure an NLC system using available documentation under a strict time limit. The activity highlighted the challenges that contractors and installers face when commissioning systems in the real world.

Attendees agreed that the summit highlighted the importance of integrated controls to increase building-wide energy savings, and that it will be impossible to make significant progress toward achieving these energy savings unless stakeholders set aside their disparate priorities and work together to find solutions. The energy and financial payoff will not be immediate, but it will be well worth it.

FINANCIALS 2023



Revenue: \$9,324,175



DLC QPLs: **\$8,235,369**



MEMBERSHIP FEES: **\$608,152**



OTHER: **\$458,565**



TRAINING & EVENTS: **\$21,680**

Expenses: \$9,219,067



APPLICATION REVIEW AND QPLS: **\$5,369,852**



GENERAL & ADMINISTRATIVE: **\$1,373,655**



INFORMATION TECHNOLOGY: **\$1,298,924**



OUTREACH & ENGAGEMENT: **\$647,318**



OTHER PROGRAMS: **\$373,595**



SURVEILLANCE TESTING: **\$155,724**



LOOKING AHEAD

There's a key word embedded in the DLC's name: **consortium**. As we look ahead, we know the collaboration that is a key value to us must permeate all the DLC's work. We know the changes needed to accelerate decarbonization in the commercial lighting sector aren't possible with the DLC's resources alone. To accomplish this transformation fast enough, we look forward to more and continued collaboration with organizations, industries, municipalities, and stakeholders who may have disparate interests and goals but all stand to benefit from the energy-saving, carbon-cutting and smart building-enabling characteristics of lighting controls. Expanding the installation and optimal use of controls is the DLC's number one decarbonization strategy, and we will work with a diverse set of stakeholders as we double down on these efforts in the year ahead.

Following up our 2020 research showing how networked lighting controls (NLC) can increase the energy savings of commercial LED projects by an average of almost 50 percent, our 2023 "Future-Proofing Energy Efficiency with Networked Lighting Controls" study indicated that integrating NLCs with HVAC systems has the potential to reduce whole building energy consumption by 30 percent. Despite this, the savings potential of NLCs remains largely untapped. While installations have inched up over the past few years, unfamiliarity and wariness about the ROI and interoperability of this transformative technology has kept US installations at just five to ten percent of commercial lighting.

The DLC is determined to change that narrative. As first-generation LEDs have begun to be replaced, owners and operators of commercial and industrial facilities have a rare opportunity to future-proof the energy efficiency of their buildings by making sure the long-lived LED lighting systems installed today include NLCs.

The year ahead will see the DLC utilize findings of the 2023 study to raise awareness of the NLC-HVAC potential with an intention to make tangible progress toward the integration of building systems and lighting controls. We'll also be looking to boost the number of NLC installations in the small- to medium-sized building sector, which comprises 90 percent of

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DLC’s name: **consortium**.”

“an agreement, combination, or
group...formed to undertake an
enterprise beyond the resources
of any one member.”

the country’s commercial space but has been notably reluctant to embrace lighting controls. We look to gain traction in the coming months for implementing lighting control strategies in buildings under 50,000 square feet served by the retrofit market, providing all the tools and information needed for energy efficiency programs and installers to better support lighting control projects.

Meanwhile, we will continue to grow the number of products on our LUNA QPL, all of which include controls as a top-tier strategy for protecting the integrity of the night sky for people and the environment by ensuring that only the right amount of light shines only when and where it’s needed. In addition to enhancing the LUNA program itself, the DLC will invest time and resources for the much need work on non-white, amber lighting, often a solution in environmentally sensitive areas.

Finally, we will celebrate our Respect, Equity, Diversity and Inclusion (REDI) Committee and work to be a valued partner with communities and key stakeholders to advance these goals in 2023 and beyond.

In these and other efforts, the DLC remains mindful that we are a consortium. Although we can and do intend to lead in ways that reflect a commitment to energy savings, decarbonization, environmental protection, and equity progress doesn’t occur in a vacuum. We rely on DLC members and lighting industry stakeholders and end-users to help us ensure an impact for all.



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