



LED Lighting Solutions

Focus on Targeted Industries

Table of Contents

Executive Summary	4
Introduction & Methodology	5
Respondent Profile	
Primary Job Title	7
Facility Type	8
Key Findings	
Conditions Experienced in the Facility Environment	10
System Powering Facility's Lighting Equipment	11
Lighting Control Equipment Utilized	12
Percent of Facility Leveraging LED Lighting Solutions	13
Deterrants to Using LED Replacement Lamps/Luminaries	14
Problems/Failures with LED Lighting	15
Non-Heat Related LED Lighting Problems/Failures	16
LED Lighting Problems Currently Impacting Facilities	17
Single Biggest Lighting Concern/Failure	18
Biggest Issues/Problems Experienced With Legacy Luminaries	20
Single Factor in Achieving Budget Approval to Retrofit Lighting	21

Table of Contents

Key Findings (Continued...)

Most Difficult Applications to Retrofit	22
Training Preferences for New Technology and Work Practices	23
Interest in Various Lighting Topics	24
Preferred Brand of Hazardous Location Lighting	25

About Informa Engage

Executive Summary

Advancements in LED technology have driven change in nearly all market segments — from residential and hospitality spaces to commercial and industrial facilities. In turn, rapid innovation on the LED product development front has forced electrical designers and maintenance professionals to rethink traditional lighting designs and lamp/luminaire replacement strategies. This report summarizes key findings from a survey of business professionals working in energy/utility, paper/pulp mills, chemical, oil & gas and refining facilities on the topic of traditional and LED lighting systems.

Lighting systems in these types of facilities are powered from a variety of voltage levels, with most wiring configurations being solidly or high-resistance grounded. If these systems are outfitted with lighting control equipment, hard-wired, photo-control, occupancy, and time-based controls are the most popular options in place. The most common problems noted with legacy luminaires are short ballast/lamp lifespan and high maintenance costs, followed by low quality of light output and difficult maintenance. This is understandable as industrial facilities typically deal with dust and dirt, flammable gases, and vapors.

As facility professionals seek out solutions to address these problems, LED-based lighting products look to meet this need. This explains why the penetration rate of LED lighting products in these types of facilities is rising. The typical respondent reports an estimated mean xx% of their facilities now leverage LED lighting solutions. Some might wonder why this number isn't higher. Respondents cite several reasons for not adopting LED lamp/luminaire replacement strategies including xx. In addition, some applications were noted as xx. This includes xx installations, xx areas and xx spaces.

For those in the group that have installed LED lighting, xx% have experienced some type of problem/failure related to heat issues. Other concerns that have cropped up include luminaires that are xx, luminaires with xx, xx, failures due to xx, poor xx, and xx.

Despite these challenges, it's clear that the future of lighting will be based on LED technology. The benefits of lower energy costs, reduced maintenance costs, and long product life will drive the adoption rate of LED-based luminaires well into the future.



Mike Eby, Senior Director of Content, EC&M

Introduction & Methodology

OVERVIEW

Methodology, data collection and analysis by EC&M, on behalf of Emerson.

Data collected May 15, through May 29, 20xx.

Methodology conforms to accepted marketing research methods, practices and procedures.

PRIMARY OBJECTIVE

Assess trends in the use of LED lighting in industrial, commercial and other facilities.

METHODOLOGY

On May 15, 20xx, EC&M emailed invitations to participate in an online survey to a net 25,601 subscribers of EC&M.

By May 29, 20xx, EC&M had received 210 completed surveys, for an overall response rate of 0.8%.

Of those, 86 respondents indicated involvement in the following industries:

- Energy/Utilities
- Metals
- Mining
- Paper/Pulp Mills
- Oil & Gas – Upstream
- Oil & Gas – Midstream
- Petrochemical/Chemical
- Refining
- Water/Wastewater

The following analyses are based on those 86 respondents.

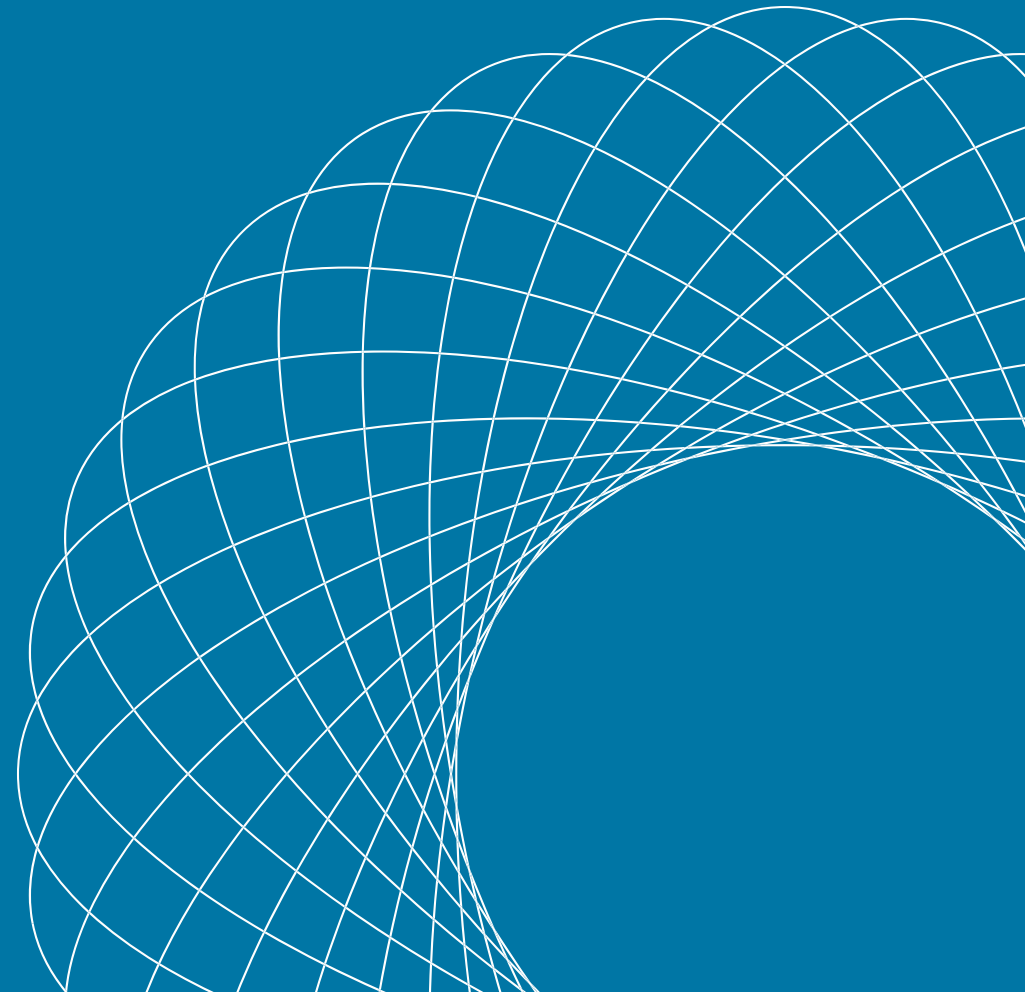
RESPONSIVE MOTIVATION

To encourage prompt response and increase the response rate overall, a live link to the survey was included in the email invitation to route respondents directly to the online survey.

The invitations and survey were branded with the EC&M name and logo, in an effort to capitalize on user affinity for this valued brand.

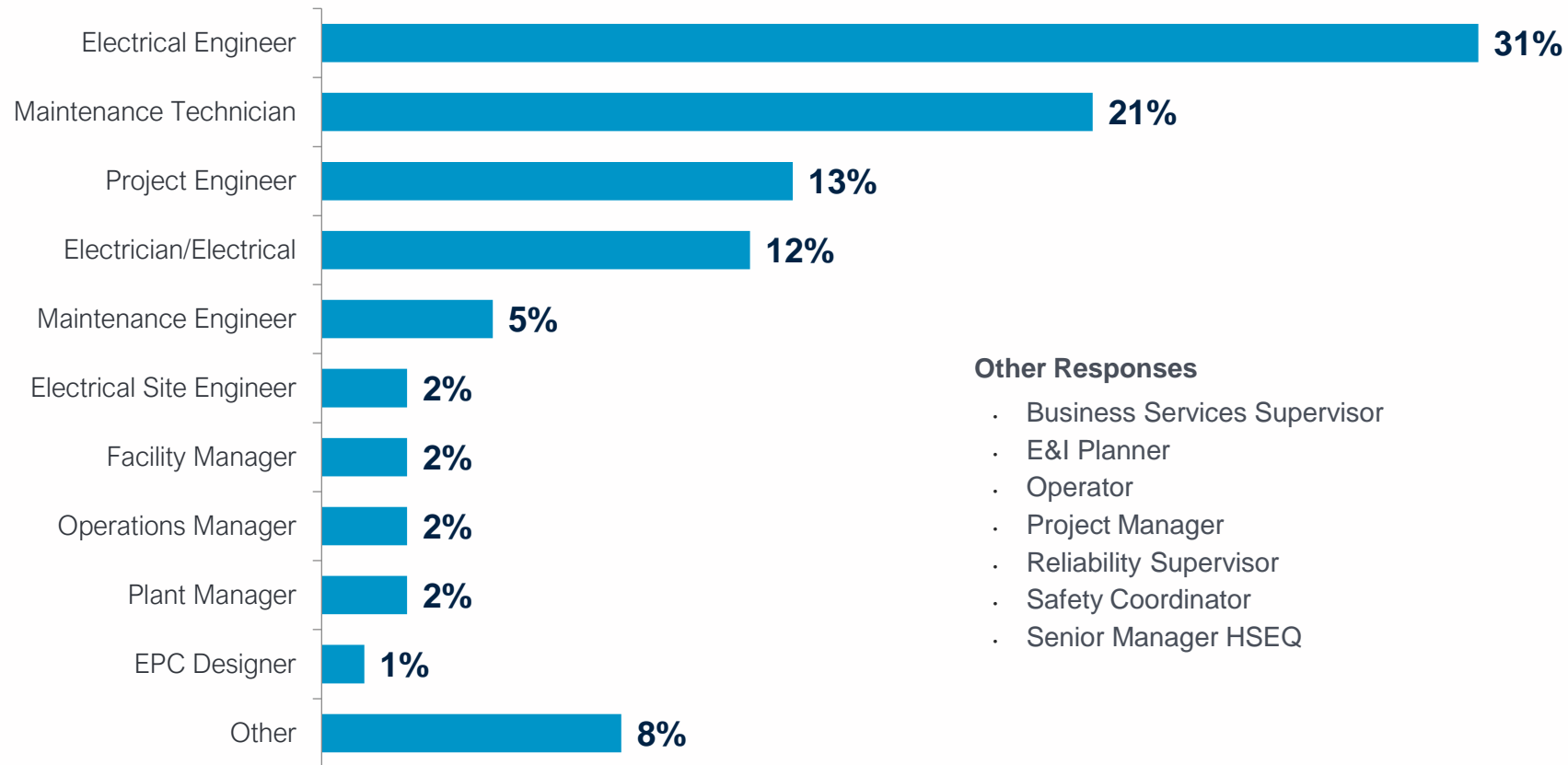
Each respondent was afforded the opportunity to enter a drawing for one of four \$50 Starbucks gift cards.

Respondent Profile



Primary Job Title

A variety of job titles are represented in the sample, most commonly Electrical Engineers (31%) and Maintenance Technicians (21%).

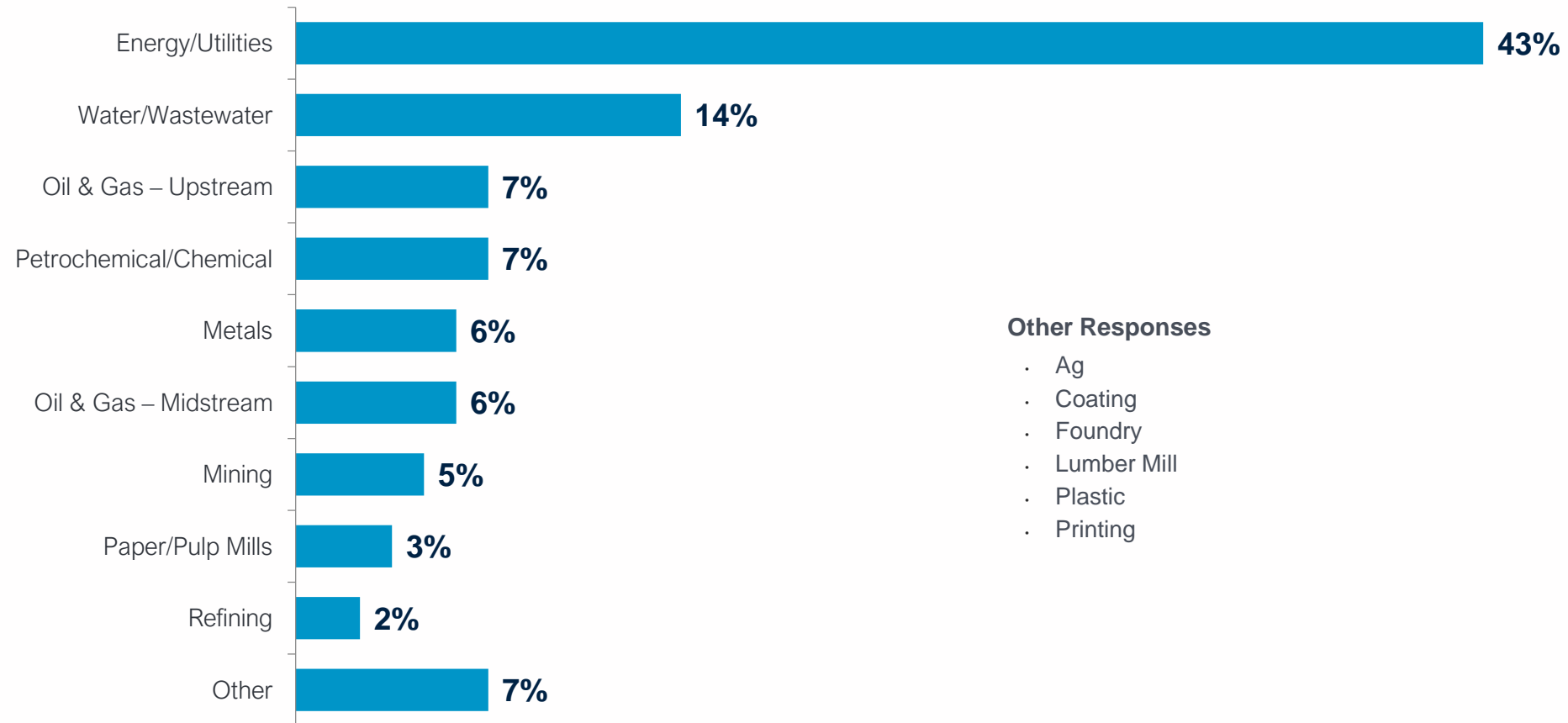


Question: What is your title?

Base: All respondents (n=86).

Facility Type

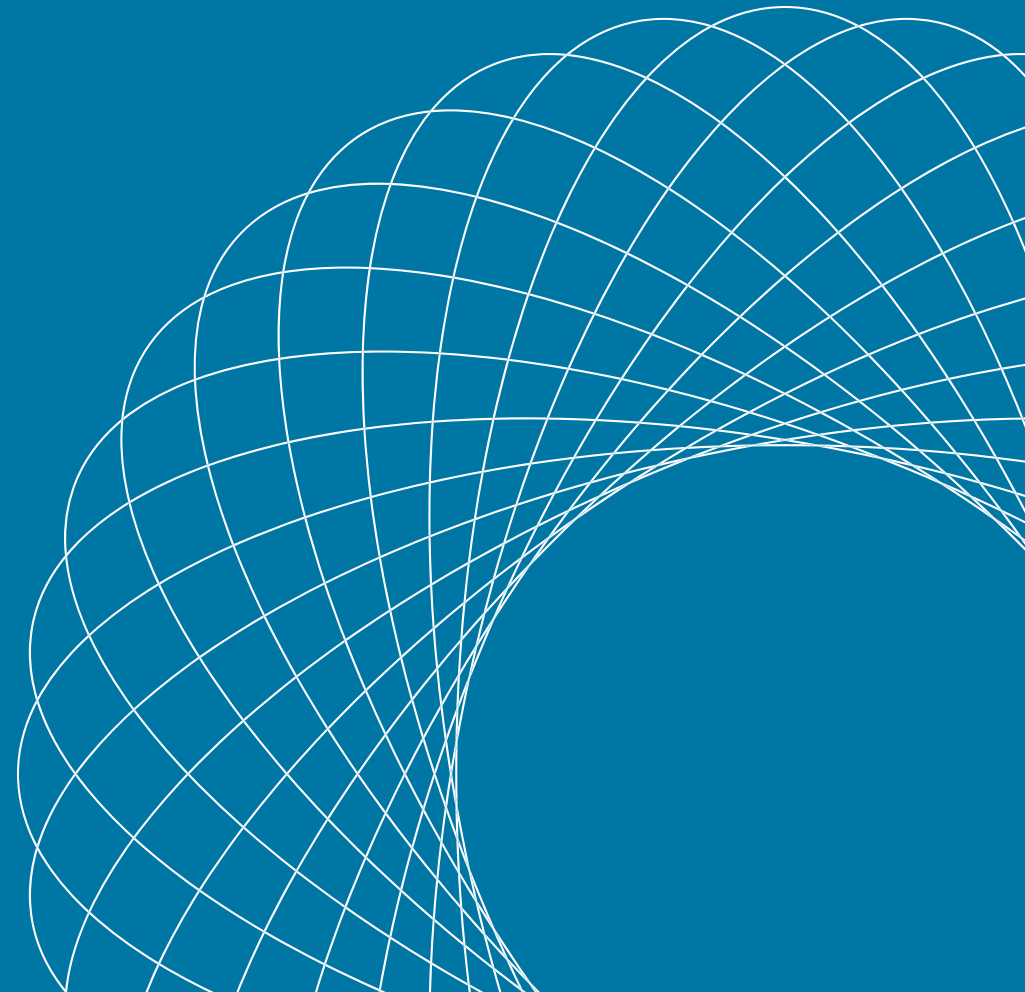
Respondents represent a variety of facility types, most commonly Energy/Utilities (43%).



Question: In what type of facility do you work?

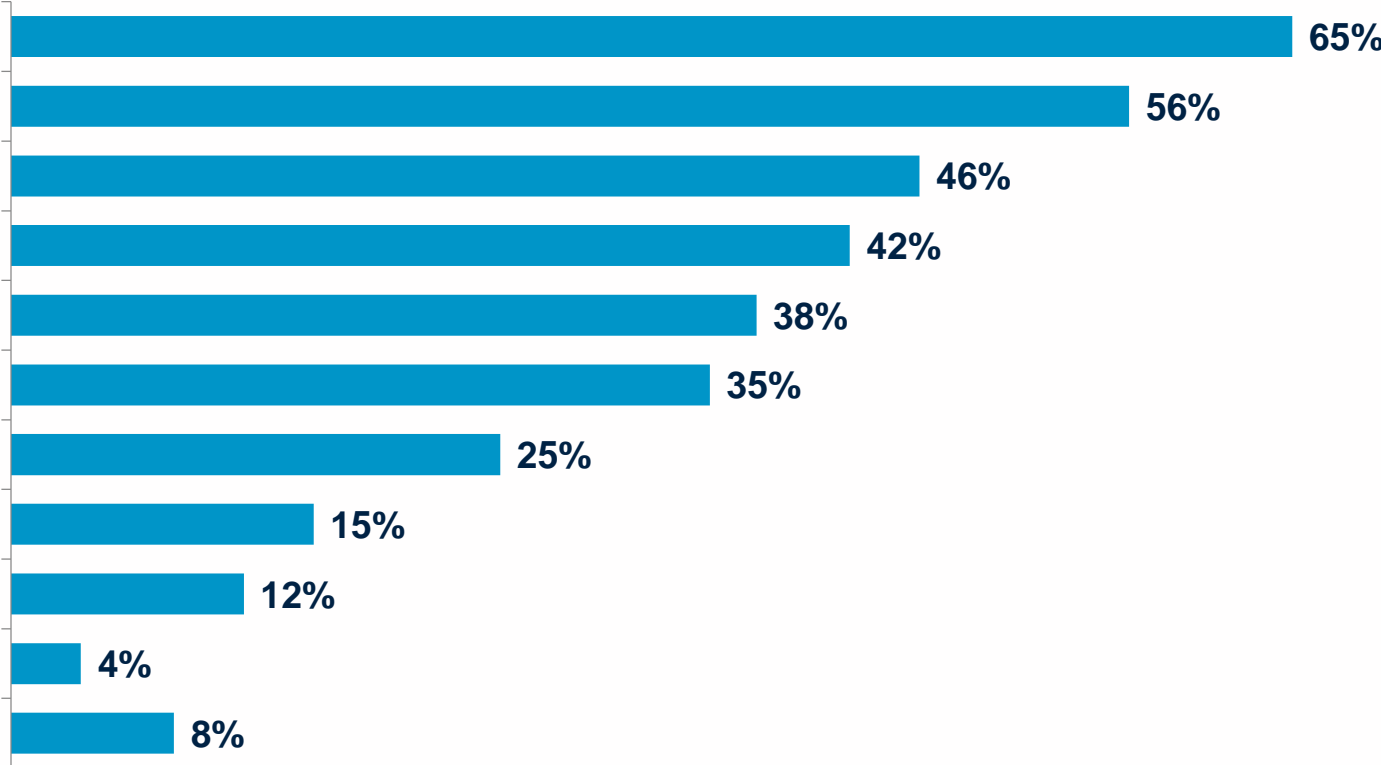
Base: All respondents (n=86).

Key Findings



Conditions Experienced in the Facility Environment

With regard to their facility environments, respondents were most likely to report xx (65%), followed by xx (56%), xx (46%), and xx (42%). Just over a third report dealing with xx (38%) and xx (35%).



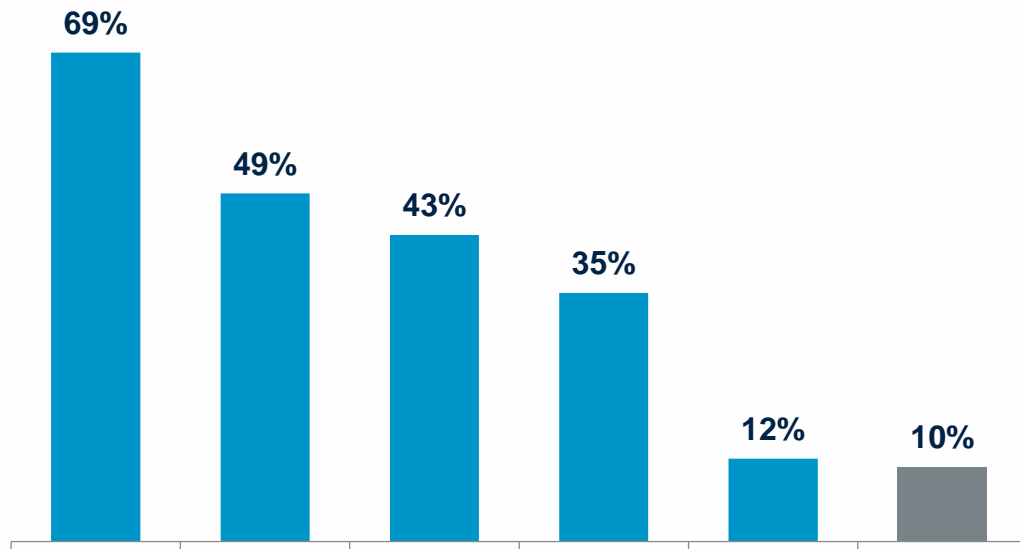
Question: Which of the following conditions are applicable to your facility environment?

Base : All respondents; multiple answers permitted (n=86).

System Powering Facility's Lighting Equipment

Respondents report their facility's lighting equipment is most commonly powered by xx (69%), followed by xx (49%) and xx (43%). All of those using an "other" or non-standard system report those systems are grounded.

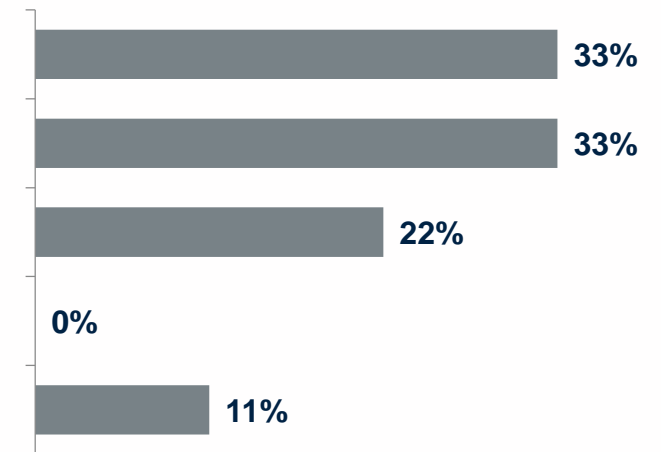
What type of system powers your facility's lighting equipment?



Question: What type of system powers your facility's lighting equipment?

Base : All respondents; multiple answers permitted (n=86).

What type of grounding system is your facility's lighting equipment connected to?



Question: What type of grounding system is your facility's lighting equipment connected to?

Base: Respondents who use "other" systems (n=9).

*Note: Due to prohibitively small sample size, this data should be used with extreme caution.