



NALMCO[®]

THE STANDARD FOR LIGHTING MANAGEMENT QUALITY SINCE 1953

SPRING SEMINAR

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Benefits of Networked Lighting
Beyond Energy Savings



March 2020



Goals



Show how Networked Lighting Controls can provide additional Value



Show use cases for diverse applications



Discuss DLC requirements for Version 4 Networked Lighting Control



A look into the future



What is ROI?

- ROI is a financial equation.
- $ROI = (M-C)/C$
- It is the amount of money you made (let's use M), minus the amount of money you spent (C), divided by the amount of money you spent (C).
- The resulting number will be a number with some decimals.





Payback Period

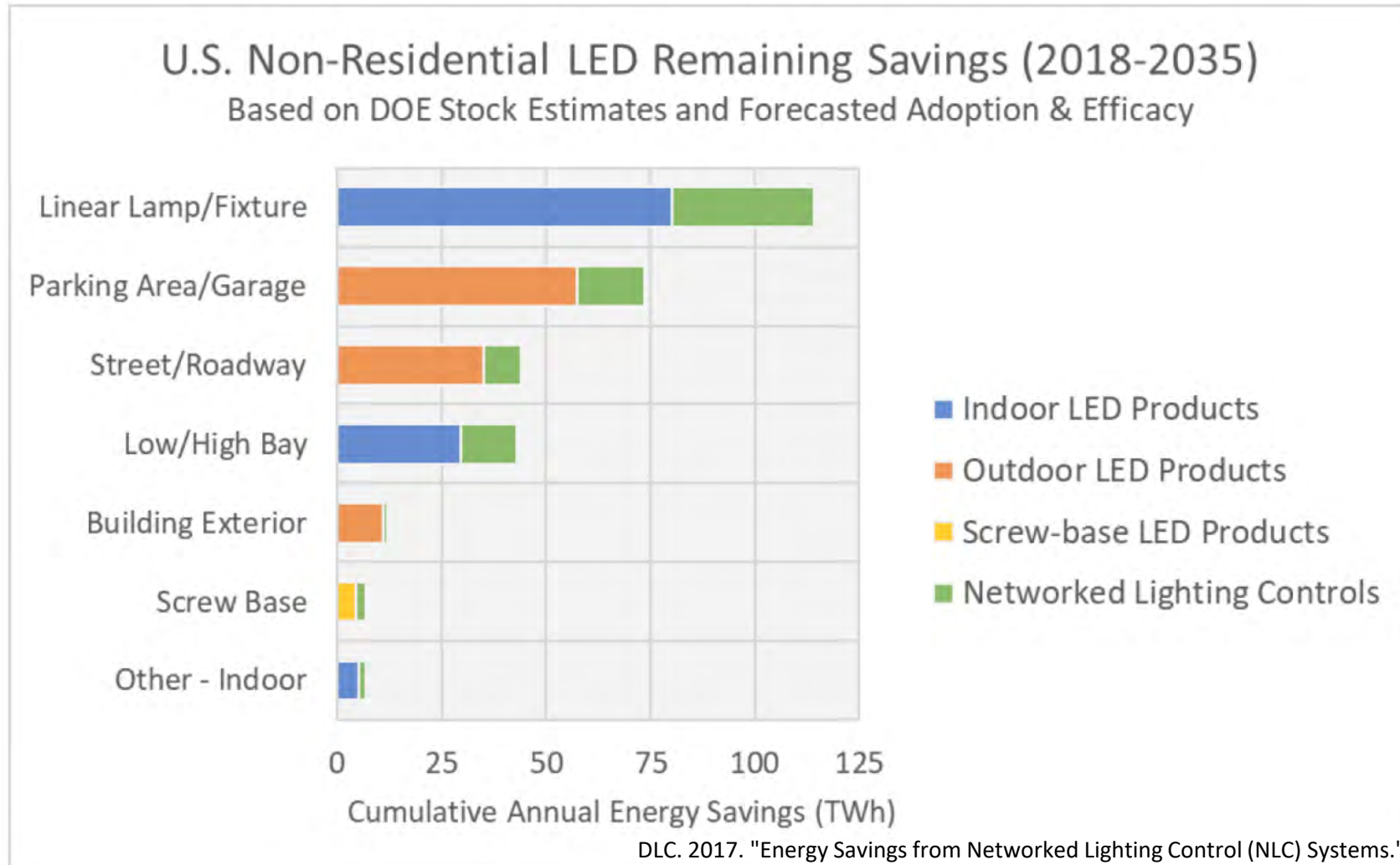
- The **payback period** is expressed in years and fractions of years.
- For example
 - A company invests \$300,000 in a new production line
 - The production line then produces positive cash flow of \$100,000 per year
 - Then the **payback period** is 3.0 years ($\$300,000$ initial investment \div $\$100,000$ annual **payback**).

Lighting Systems

- Good ROI
- Replacing older lighting technology with LED fixtures
 - Lower energy use
 - Lowers utility bill
 - Longer lifespan
- Adding Controls
 - Incentives and rebates
 - Further reduce energy use



Additional Savings



Performance

- Sports Cars typically do not have a great ROI
- They also do not typically have a payback period
- But they have way more capabilities



Lighting Control Systems

- ROI is hard to measure in some cases
- Payback is hard to quantify as a part of a project
- But.....the changes in Performance and Capabilities of the lighting system are HUGE



Additional Value

- Task Tuning- efficient and safer workspace
- Power Monitoring- compare differences
- Turtle Reproduction
- Make customers feel safer
- Reduce crimes and vandalism
- Motion sensors – activity reports for retail and office spaces
- Other sensors- industrial and manufacturing spaces
- Utility programs- Demand Response
- Speed up site commissioning- software diagnostic tools
- Flexibility – Zones
- Automation- set it and forget it
- And 100s more



Interior Lighting Systems



'Required' Interior System Capabilities	'Reported' Interior System Capabilities
<ul style="list-style-type: none">•Networking of Luminaires and Devices•Occupancy Sensing•Daylight Harvesting / Photocell Control•High-End Trim•Zoning•Individual Addressability•Continuous Dimming•Energy Monitoring	<ul style="list-style-type: none">•Control Persistence•Scheduling•Device Monitoring / Remote Diagnostics•Type of User Interface•Luminaire Level Lighting Control (LLLC, integrated)•Personal Control•Load Shedding (DR)•Plug Load Control•External Systems Integration•Emergency Lighting•Cybersecurity•Color Changing / Tuning•Ease of Implementation•Scene Control



Exterior Lighting Systems



'Required' Exterior System Capabilities	'Reported' Exterior System Capabilities
<ul style="list-style-type: none">•Networking of Luminaires and Devices•Occupancy Sensing AND/OR Traffic Sensing•Daylight Harvesting / Photocell Control•High-End Trim•Zoning•Individual Addressability•Continuous Dimming•Scheduling•Energy Monitoring	<ul style="list-style-type: none">•Control Persistence•Device Monitoring / Remote Diagnostics•Type of User Interface•Load Shedding (DR)•External Systems Integration•Emergency Lighting•Cybersecurity•Color Changing / Tuning•Ease of Implementation•Scene Control



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