

ANNUAL LIGHTING SURVEY OF
NORTHWEST ELECTRICAL DISTRIBUTORS
2021

SEPTEMBER 2022

Bonneville Power Administration
Northwest Energy Efficiency Alliance

PREPARED BY:
Cadeo Group

● Report Highlights

39%

Total unit sales increased by 39% from 2020 to 2021

2.5 million

In 2021, LED sales were 2.5 million units higher than in 2020

68%

68% of all unit sales in 2021 were LEDs

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● Report Overview

TOTAL DISTRIBUTORS

48

2021 PARTICIPANTS

24

2021 NEW PARTICIPANTS

+1

MARKET SHARE REPRESENTATION

40%

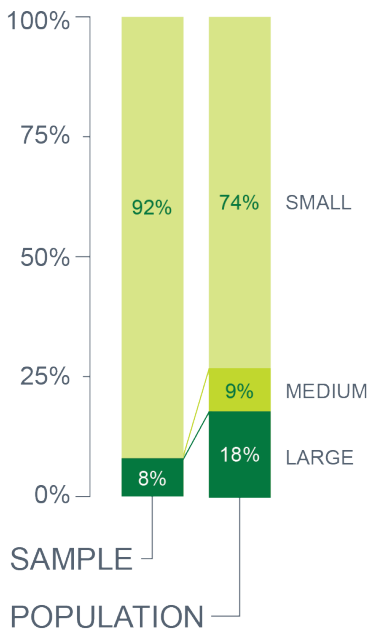
YEARS COVERED

2017 – 2021

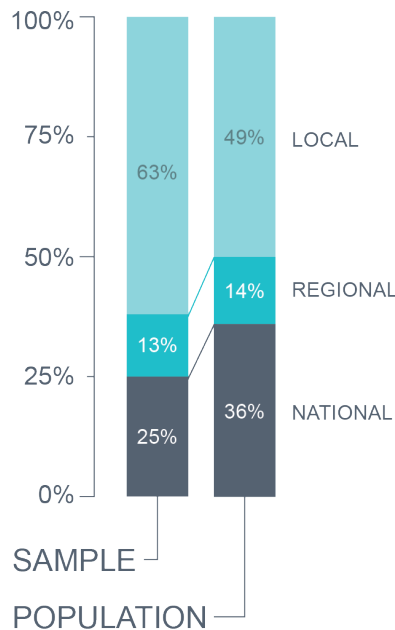
This report presents the results of the ninth annual Northwest Energy Efficiency Alliance (NEEA) and Bonneville Power Administration (BPA) Northwest Electrical Distributor Lighting Survey (lighting survey). This year, 24 Northwest distributors, including one new participant, submitted sales data for 2021. Combining

these data submissions with past participants' data, the Cadeo team's (research team) analysis included data from 48 total distributors. The total sales of these distributors represent roughly 40% of the total Northwest non-residential market.

Relative Size



Distribution Area



Business Model

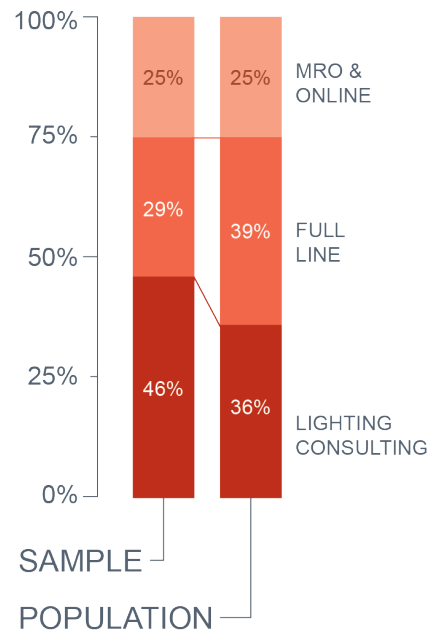


FIGURE 1

Mix of Distributors Submitting Data Compared to the Northwest Distributor Population

The research team worked with NEEA program staff and Evergreen Consulting to recruit participants, successfully engaging 24 distributors in the 2021 sales data collection effort. **Figure 1** shows the mix of participating distributors by relative size, distribution area, and business model, compared to the mix of the population of distributors in the Northwest.

Figure 1 Definitions

Large - more than 10 branches in the Northwest.

Medium - between 5 and 10 branches in the Northwest.

Small - fewer than 5 branches in the Northwest.

Maintenance, repair and operations (MRO) and online distributors may sell lighting products only or a mix of lighting and other products with a focus on maintenance sales.

Full line distributors sell a variety of electrical products including lighting.

Lighting consulting distributors focus on energy efficiency products and project-based work. This project-based work includes new construction, renovation, and retrofit sales, and tends to focus on LEDs and lighting control products.

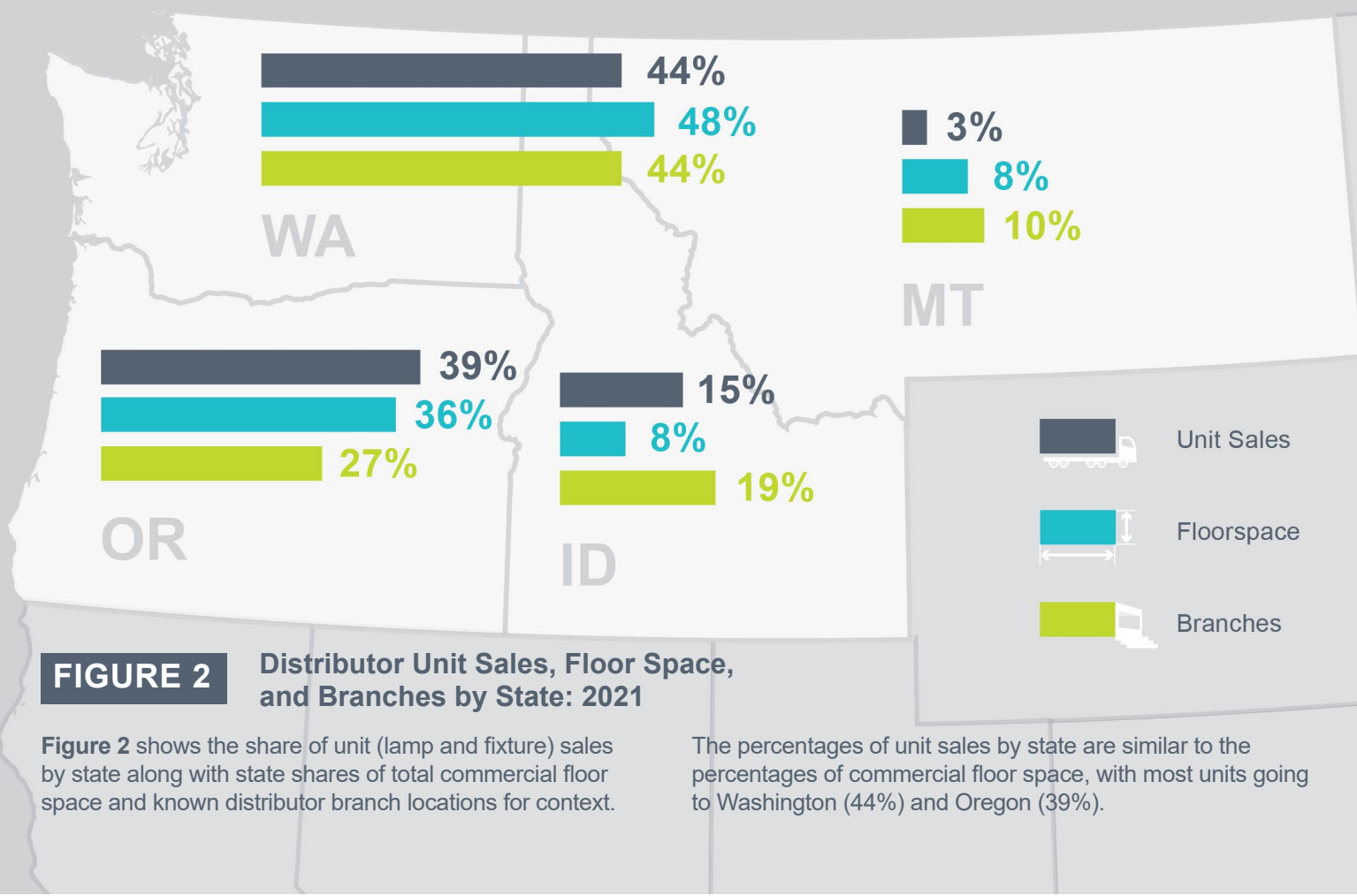


FIGURE 2 Distributor Unit Sales, Floor Space, and Branches by State: 2021

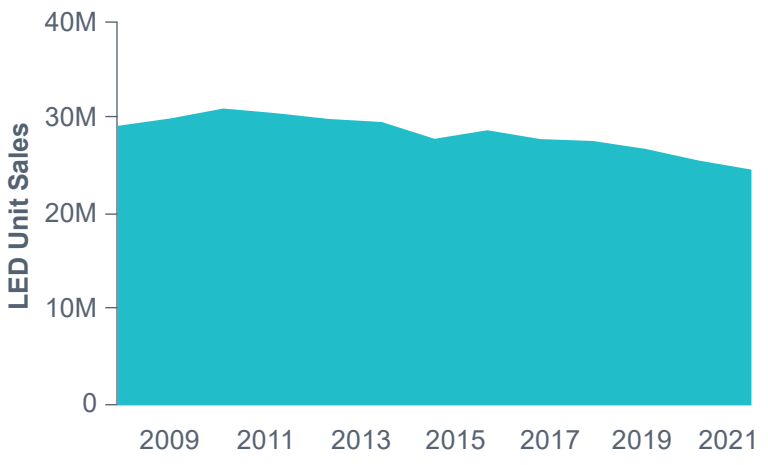
Figure 2 shows the share of unit (lamp and fixture) sales by state along with state shares of total commercial floor space and known distributor branch locations for context.

The percentages of unit sales by state are similar to the percentages of commercial floor space, with most units going to Washington (44%) and Oregon (39%).

FIGURE 3
Northwest Region LED Unit Sales by Year

Through nine years of conducting the lighting survey, the research team has gathered nearly a decade’s worth of Northwest lighting sales data. The data collected in this annual lighting survey informs the BPA non-residential lighting market model and allows for forecasting of market trends in the Northwest through extrapolation of the sales data to the broader market. BPA began a market model update in 2020 that concluded in late 2021.

Figure 3 shows total market sales from 2009 to 2021 from the non-residential lighting market model. This graph shows that growth in total lamp sales was expected to peak in 2011 before beginning to steadily decline through 2021. However, this year’s data collection showed a significant increase in total lamp sales for 2021, representing a stronger-than-expected resurgence in the non-residential lighting market as the nation recovers from the impacts of the COVID-19 pandemic.



● Survey Results

FIGURE 4 Percent of Unit Sales by Technology Type, 2017–2021

LEDs not only remained the largest technology segment of Northwest total unit sales after surpassing linear fluorescent lamps in 2018 but surged from 58% of total unit sales in 2020

to 68% in 2021. Linear fluorescents also saw a significant drop in market share from 30% in 2020 to 24% in 2021.

Total volume of unit sales across all lighting technologies rose 39% between 2020 and 2021 and LED unit sales grew 64% between 2020 and 2021. While both total unit sales and LED unit sales are projected to decrease over time due to the extended lifetime of LEDs, the remarkable recovery in lighting projects following the first year of COVID-19 caused sales to increase.

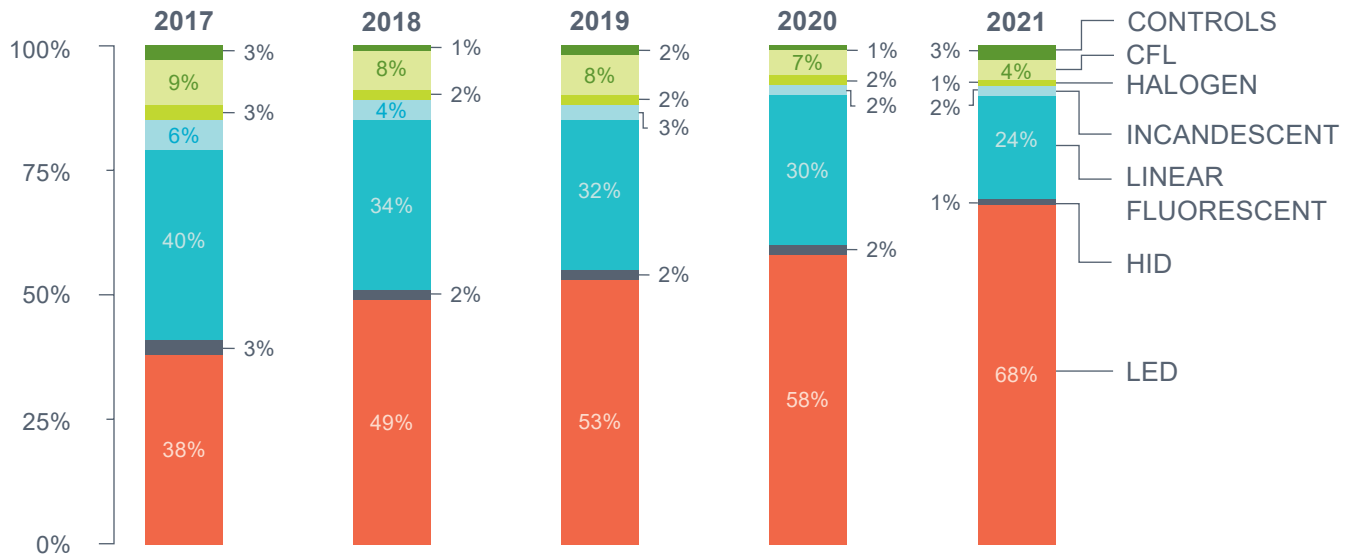


FIGURE 5 Percent of Unit Sales by Technology Type Across Business Models, 2017–2021

The technology sales mixes in 2021 for full line and for MRO and online look similar and have become increasingly alike over time. LEDs have gained market share in these distributor types, making up 67% of sales in full line and 57%

of sales in MRO and online in 2021. The sales mix of lighting consultant distributors is distinct, with 89% of unit sales coming from LED technologies. Lighting consulting distributors tend to focus on energy efficient projects, so these distributors moved toward LED technologies more quickly. Lighting consulting was the only business model where controls made up a sizable portion of sales—10% in 2021.

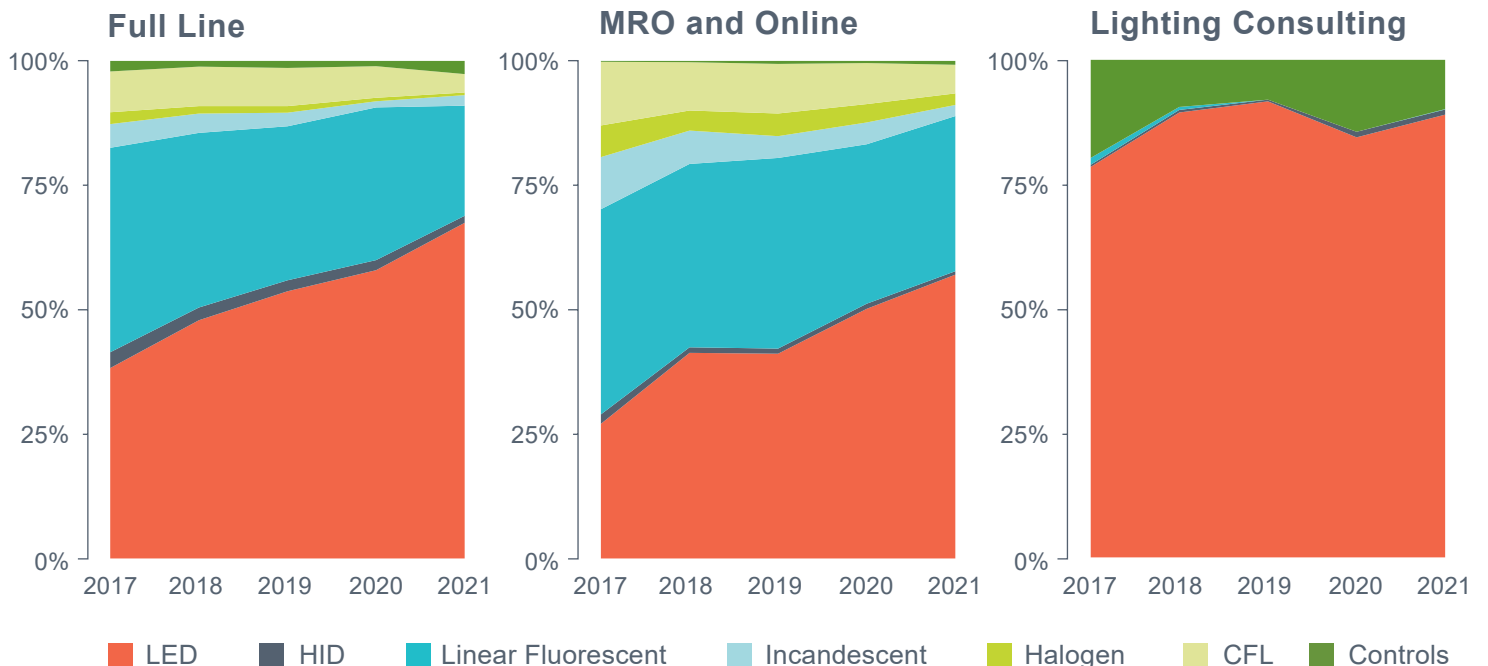


FIGURE 6

Estimated LED Percent Unit Sales, 2017–2021

The sales mix of LED technologies changed between 2020 and 2021, particularly in market share of tubular LEDs (TLEDs) and reflectors and downlights. While reflectors and downlights increased 11% (from 28% in 2020 to 39% in 2021), TLEDs decreased by 16% (46% in 2020 to 30% in 2021). TLEDs, along with all LED technology types, increased in total unit sales from 2020 to 2021, but unit sales increases were particularly large for reflectors, downlights, and decorative lamps. All other LED products saw a slight uptick in sales mix between 2020 and 2021.

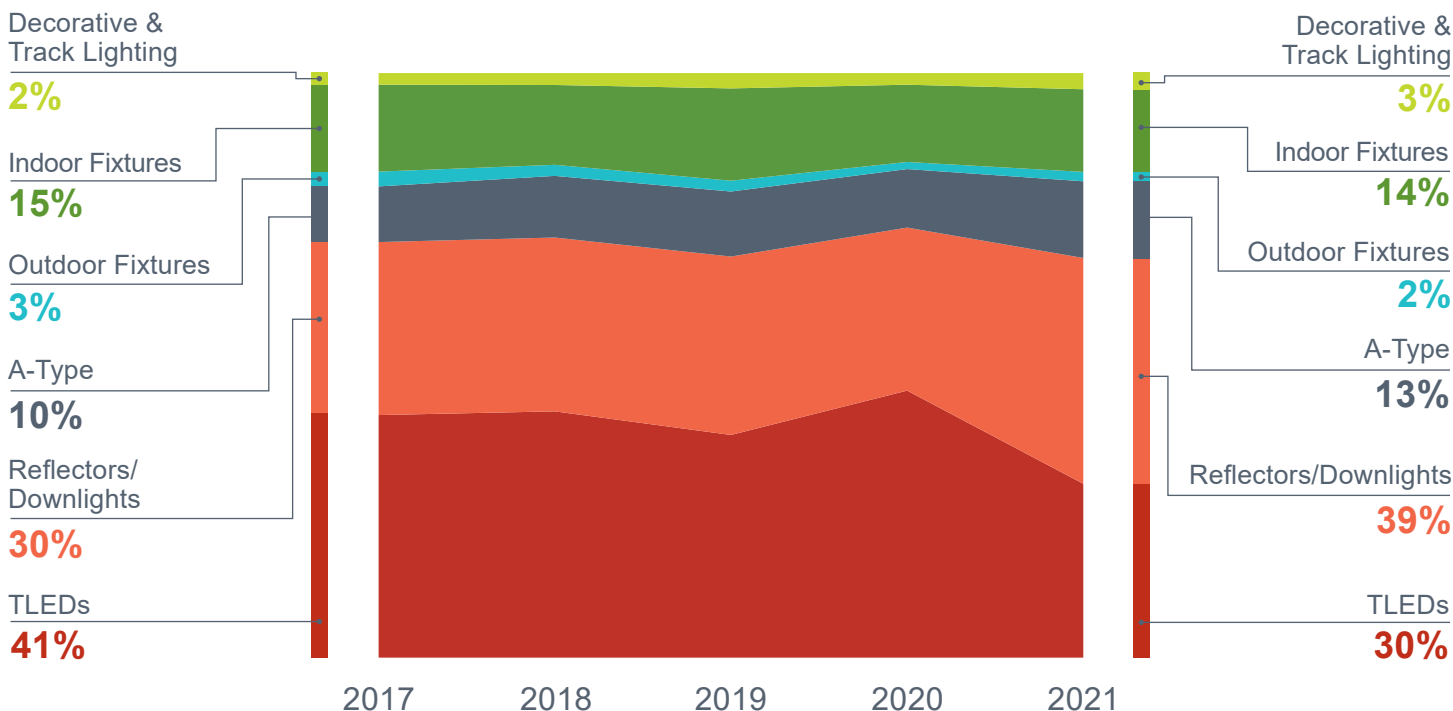


FIGURE 7

LED Penetration by Application, 2017–2021

Across all technology types, LED penetration continued to grow in 2021. Reflectors and A-type lamps showed the highest market penetration for LEDs in 2021 at 90% penetration for reflectors and 72% penetration for A-type lamps. Overall LED penetration in decorative and linear lamps was lower than in other categories, although decorative LED lamp sales showed a substantive increase from 53% penetration in 2020 to 66% in 2021. Linear LED lamp penetration only increased by 2% between 2020 and 2021, its smallest growth since 2017.

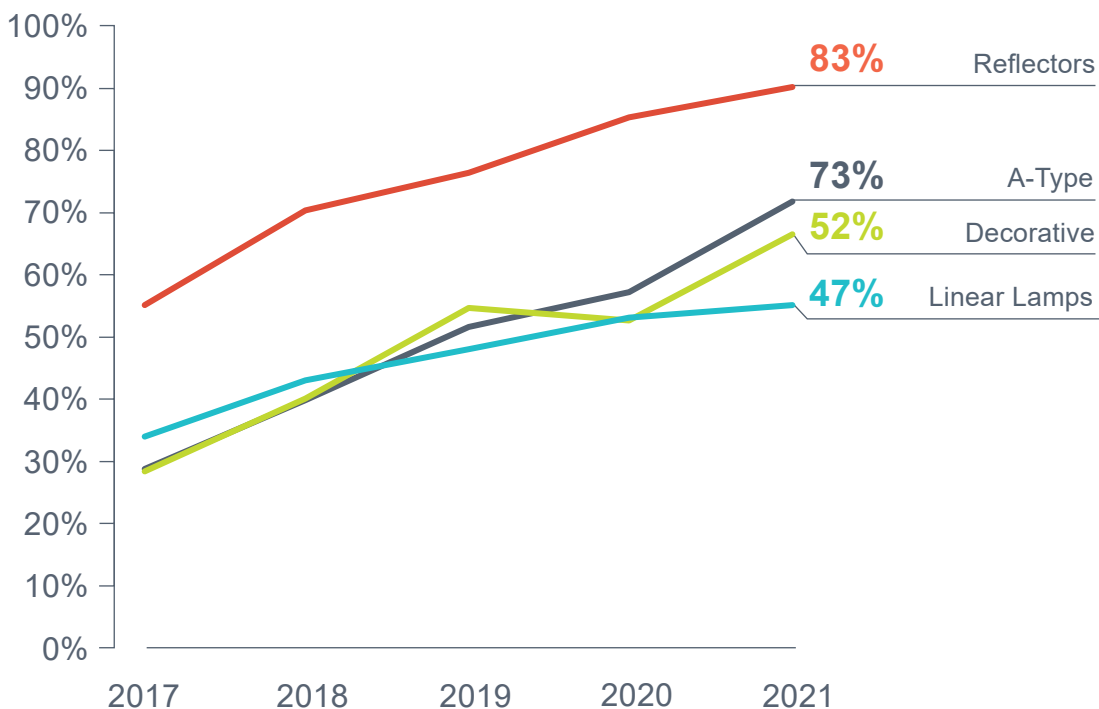


FIGURE 8

Downlight Sales by Technology Type, 2017–2021

For the four downlight products shown, the sales mix continued to shift from compact fluorescent lamp (CFL) pin-based lamps to LED lamp and fixture alternatives in 2021. LED downlight fixtures and retrofit kits continued to steal market share from all lamps. Fixture sales dramatically increased in market share last year, rising from 50% in 2020 to 75% in 2021. LED technologies made up 83% of downlight applications in 2021—a large increase from 60% in 2020. CFLs represented less than one-quarter of downlight sales, declining from 40% in 2020 to 17% in 2021.

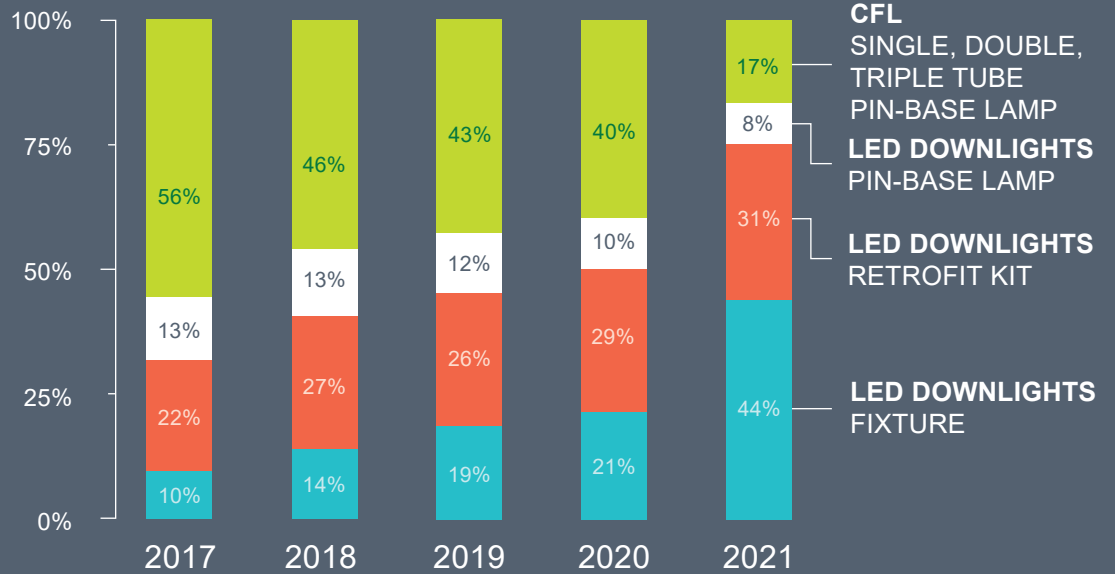


FIGURE 9

Percent Linear Lamp Sales by Type, 2017–2021

Among linear lamps, the sales mix between 4-foot T8 linear fluorescent lamps and TLEDs became nearly equivalent in 2020 and then remained consistent in 2021, with 4-foot T8 linear fluorescent lamps at 52% and TLEDs at 48% in both years. Reduced wattage linear fluorescent lamp sales remained high in 2021 at 21% of linear lamps. Among TLEDs, UL Type B sales continues to increase year over year since 2017 and saw a 10% jump from 2020 (23%) to 2021 (33%). The gap between UL Type B sales (33%) and UL Type A sales (10%) significantly widened in 2021. UL Type A+B represented 4% of the linear lamp category in 2021 for the third consecutive year, and UL Type C decreased from 1% in 2020 to 0% in 2021.

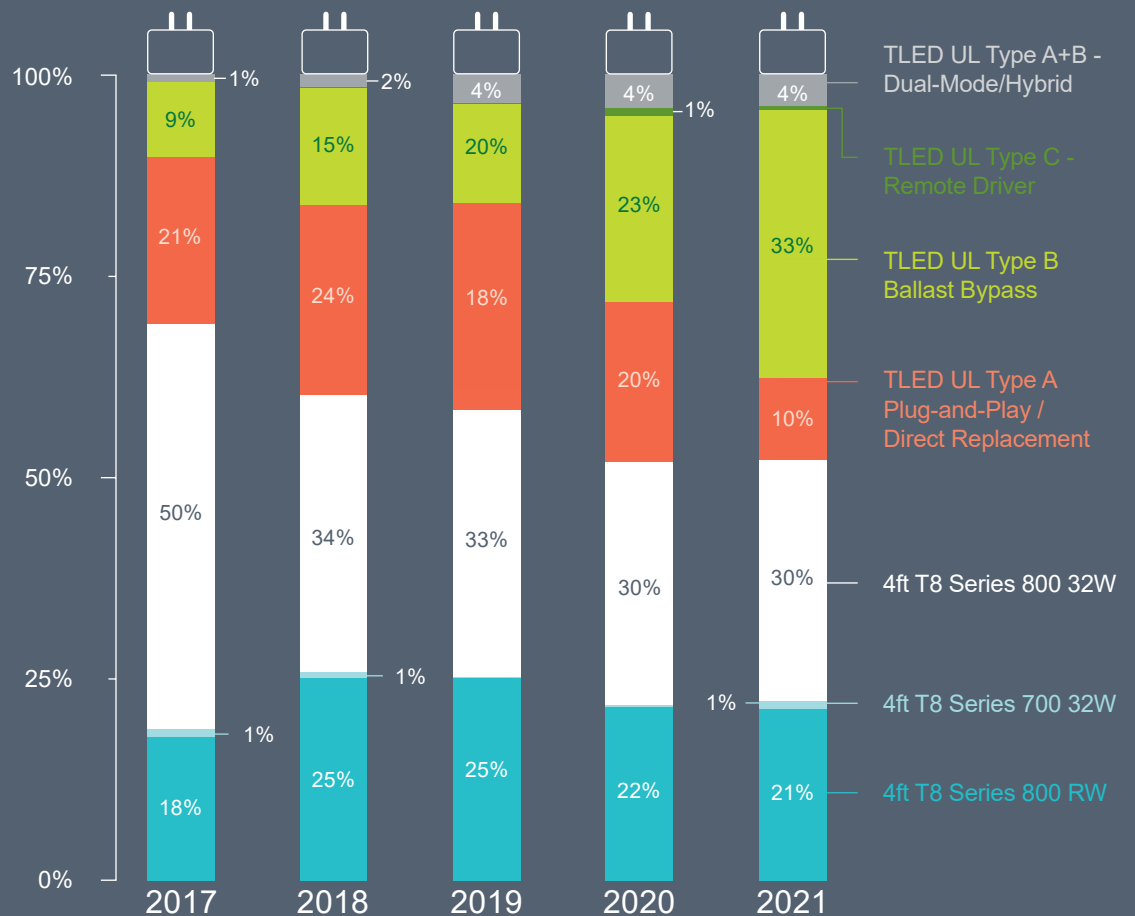


FIGURE 10

Percent of Ambient Linear Lamp and Fixture Sales by Type, 2017–2021

In the ambient linear application, LED products continued to replace linear fluorescent products through 2020 but stagnated in 2021. LED products made up over half (51%) of sales in this application for the first time in 2020 and remained consistent (51%) in 2021. While the sales mix for most integrated LED fixtures has trended upward since 2017 (with a small dip in 2020), 4-foot TLEDs decreased slightly in sales mix compared to other ambient linear products for the first time since 2017, despite total TLED unit sales increasing between 2020 and 2021.

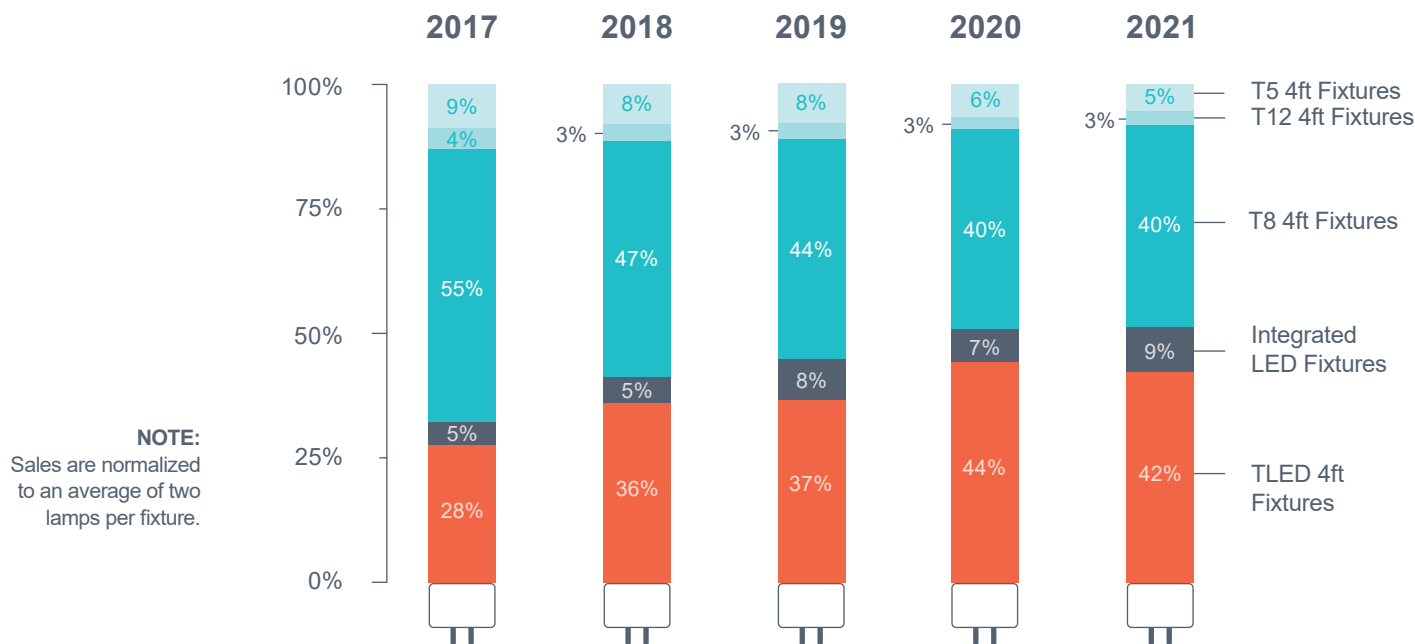
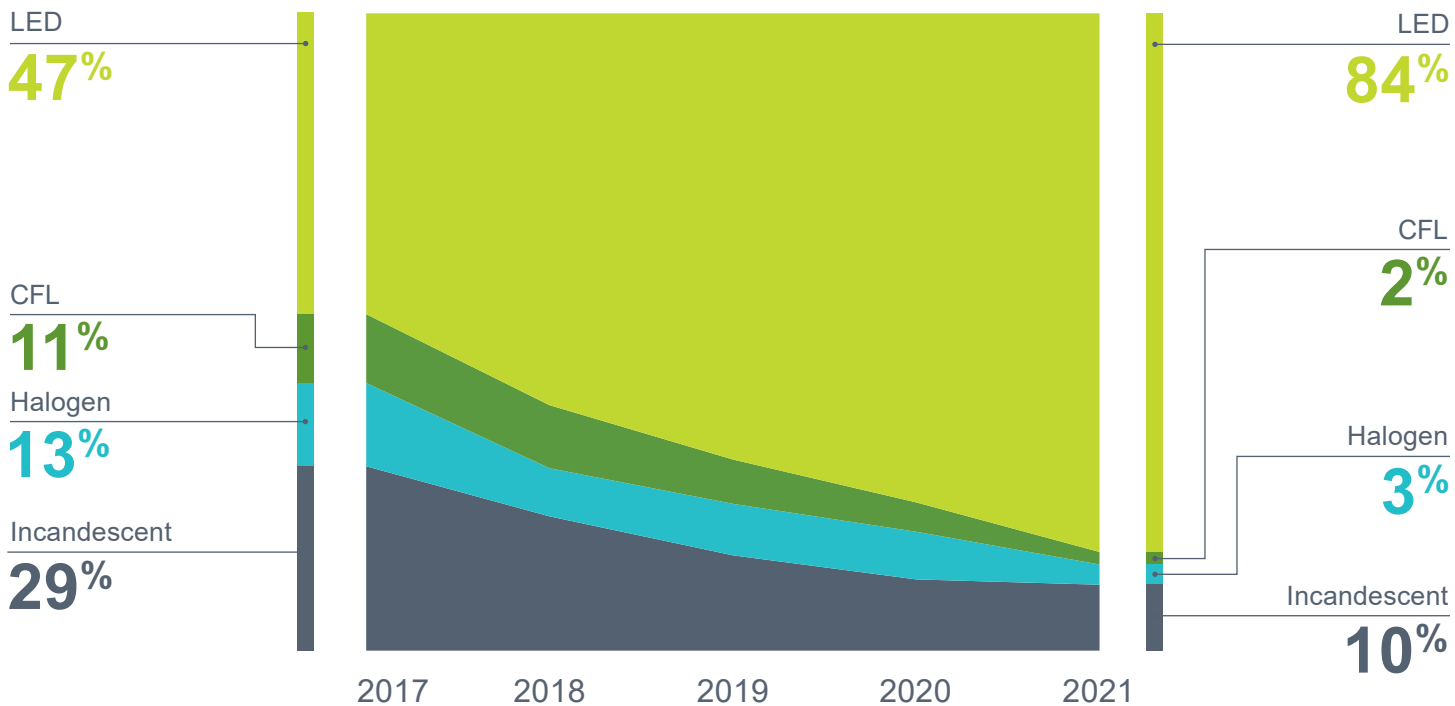


FIGURE 11

Screw-In Lamp Sales by Type, 2017–2021

Among screw-in products, LED products have consistently grown in market share since 2017 and held 84% market share in 2021. CFLs and halogens continued to lose market share and account for a smaller portion of the sales mix each year. Incandescent products held 10% market share in 2021, but this will dwindle down to zero soon due to the US Department of Energy’s backstop requirement for general service lamps (GSLs). This regulation requires 45 lumens per watt for GSLs, effectively pushing all non-LED products from the market for screw-in lamp sales by January 1, 2023.



Bonneville
POWER ADMINISTRATION



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