

## Energy optimization key to carrier-neutral sector success

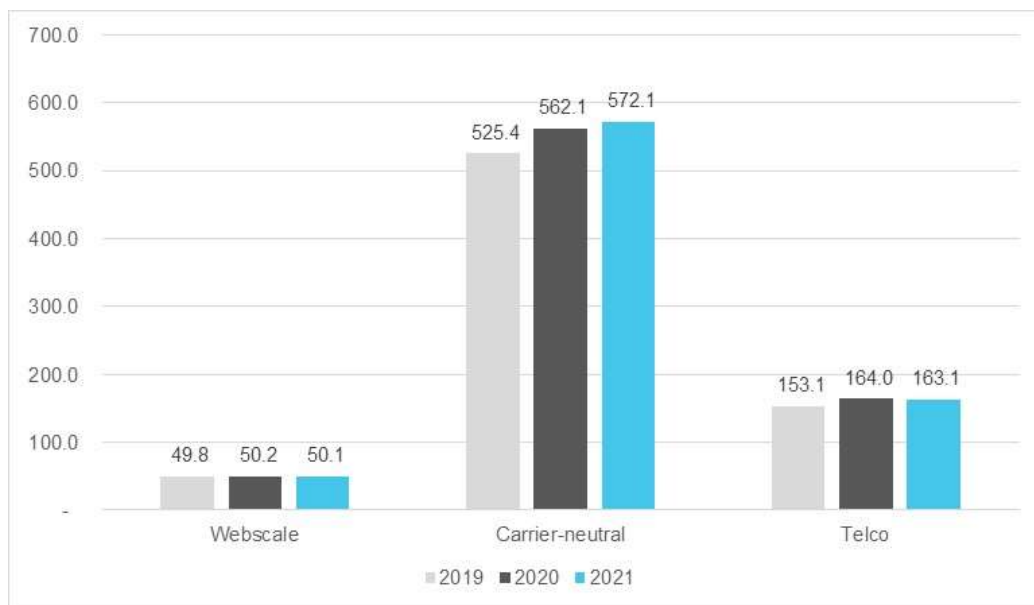
### Summary

This brief presents data on energy spending by operators of cell towers, data centers, and fiber networks, and discusses the implications of the data and likely future directions. Utilities represent a large portion of operating expenses for these infrastructure-focused companies, which we track as “carrier-neutral network operators” (CNNOs).

### CNNOs are more energy-intensive than other operator types

In late 2022, MTN Consulting published a report on energy consumption by network operators – telcos, webscalers, and CNNOs. That report confirmed that CNNOs are by far the most “power-intensive” of the three, meaning they consume the most electricity per unit of revenue. In 2021, CNNO power consumption averaged out to 572 MWh per US\$1 million (M) of revenue, versus 163 for telcos and 50 for webscalers; Figure 1, below.

**Figure 1: Power intensity by operator type (MWh consumed per US\$1M in revenue)**



Source: MTN Consulting

While CNNOs are the smallest of the three groups revenue-wise, they manage a lot of physical infrastructure, and these assets require power to operate. Data centers are notorious power hogs; in 2021, for instance, Digital Realty consumed 2,094 MWh of power per US\$1M of revenue, versus 83 for AT&T, a telco. Cell towers also require huge amounts of power to run reliably. Some tower CNNOs consume less power than the average telco, but some far more; Crown Castle’s energy intensity in 2021 was 28MWH per \$1M in revenue, a low figure, but European tower giant Cellnex consumed 410MWH per \$1M in revenue.

In line with their heavy power consumption, CNNOs also spend more than other types of operators. Webscale spending on power is miniscule relative to their size, less than 1% of opex (ex-D&A). Telcos