

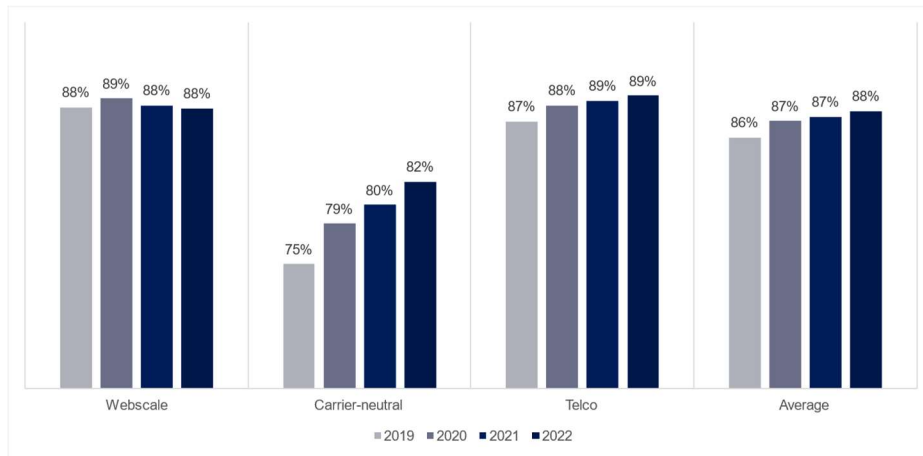
Operators fail to break energy addiction in 2022

Energy consumption includes more than electricity

In November 2022, we published our first study of energy consumption in the network operator industry. This report is a significant expansion of that first study, in two ways. First, it includes companies accounting for nearly 90% of the global market, based on revenues, from 60-70% in the earlier study. Second, the first study considered only electricity consumption. For the average operator, electric is 90% or more of total energy consumption, as measured in megawatt-hours (MWh). For AT&T and Vodafone, as examples, electricity accounted for 83% and 93% of total energy consumption in 2022, respectively. But there are exceptions. IHS Towers is the most extreme case, as electric use accounted for just 6% of its 2022 energy consumption; diesel generators at cell sites accounted for most of the remainder. This disparity is especially significant as the carbon footprint for diesel fuel is high on a per-MWh basis; many operators are deploying green site solutions (e.g. solar cells and batteries for storage) to help lower diesel-related emissions.

Figure 1 below shows electricity consumption as a percentage of total energy consumption for each of the three operator types we cover, and the group average, for the 2019-22 timeframe.

Figure 1: Electricity as a % of total energy consumption by operator type



Sources: MTN Consulting; company filings.

As shown, electric's share of total has increased slightly since 2019, largely due to shifts in the carrier-neutral segment. Tower-focused CNNOs in particular are seeing electric rise as a share of total, as they hook up more towers to the grid. Electric to energy ratios for the webscale and telco sectors are more stable, at just under 90%.

Operator energy consumption grows 7% YoY in 2022

Energy consumption is closely connected to an operator's carbon footprint and its level of energy spending. As such, operators pay a lot of attention to energy issues when they make technology purchasing decisions. In general, they expect that technology investments come with improvements in energy efficiency. Given that [traffic is always rising](#) for most operators, it is sometimes a challenge to see such investments actually deliver reductions in energy consumption. MTN Consulting data bear this point out. In 2020 to 2022, the total energy consumption of network operators grew at YoY rates of 9%, 9%, and 7%, in sequence. The figure below shows total energy consumption for each network operator group, for 2019-22.