UTILITIES GROWTH IN THE AGE OF AI

July 2024

KEY POINTS

- Utilities growth will likely be modestly affected by the energy demands associated with the AI transition.
- While some individual Utility companies could see a boost at the margin from AI demand, we believe Utilities' defensive traits will not change.

Investor excitement about AI growth has some claiming it will benefit Utilities. This optimism is likely the result of a misconception that increased electricity demand from AI development will lead to Utilities' outperformance. While there may be some increase in power demand, we expect it to have minimal impact on the growth of the Utilities sector. An increase in electricity demand does not automatically mean increased profits for the sector, as costs may also increase.

Historically, rising data centre usage did not lead to a meaningful uptick in energy demand. Since 1973, the median annual growth in electricity consumption is 1.6%. The birth of new technology such as the internet didn't lead to a surge in electricity demand. Sell-side analysts, in aggregate, expect total demand growth to accelerate by 2.7% through 2030.[1] This represents a modest increase. One would assume that the relationship is linear, but in reality, the productivity gains from technological advancements can offset energy demands.

Similarly, we expect electricity demand growth associated with increased AI-related data centre workload to be substantially offset by data centre efficiency gains, cloud data centre utilisation, and electricity generated from renewable resources. While we are sceptical of forecasts for electricity demand growth driven by data centre expansion, experts predict data centre demand is expected to grow quickly but remains a small part of power demand. AI & data centres currently represent 1-2% of global electricity demand and 3% of US demand. This is projected to grow to 3-4% and 8% respectively by 2030.[2]

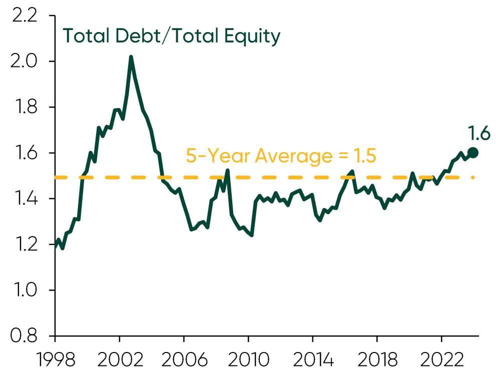
A sudden spike in electricity generation do not correlate automatically to rising shares, in our view, because of the Utilities sector's high costs and low margins. Furthermore, the sector is fairly inelastic and it takes significant investment to bring new power sources online. Yet data from S&P 500 Utilities companies suggests total capital expenditure (CAPEX) will be relatively flat, only expected to grow by 10% in 2024. (Exhibit 1) Most of this is largely funded by debt as Utilities' balance sheet leverage is increasing. (Exhibit 2) This wouldn't be true if power generation were set to spike because companies would have had to invest heavily to expand capacity.

Exhibit 1: CAPEX by Utilities Sub Industry

% Of Utilities	Utilities Sub Industry	CAPEX Y/Y%
66%	Electric Utilities	+12%
26%	Multi Utilities	+5%
4%	Independent Power Producers & Energy Traders	-45%
2%	Water Utilities	+15%
2%	Gas Utilities	+3%
Total Weighted Average		+10%

Source: FactSet. S&P 500 Utilities as of June 2024; Sub industry rows show simple average CAPEX change from calendar year 2023 (reported) to 2024 (planned/estimated); Independent Power Producers, Water, and Gas Subindustries each include one constituent in CAPEX figure.

Exhibit 2: S&P 500 Utilities Balance Sheet Leverage is Increasing



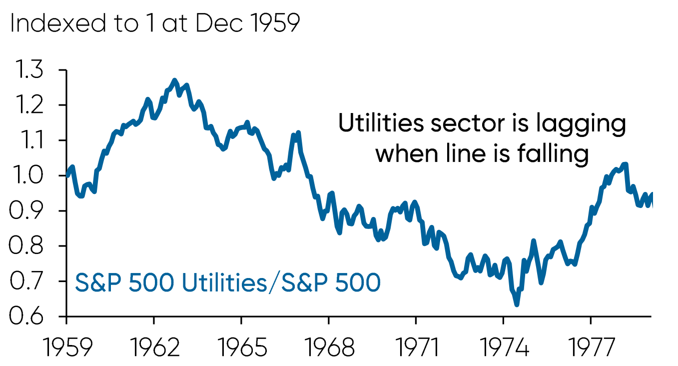
Source: FactSet, quarterly, Q1 1998 – Q1 2024.

[1] *Source: BofA Global Research & US Energy Information Administration, as of June 2024.*
[2] *Source: The Register and International Energy Agency, April and May 2023.*

There are also no material signs that Utilities are allocating a significantly greater share of CAPEX to power generation. Power generation's share of Utilities' CAPEX has hovered around 25% since 2016.[3] Instead, the distribution network's share of capex is what has been rising in recent years which takes electricity to the end user. This is consistent with the idea that the US power grid needs investment to modernise it for increased renewable use.

Also, electricity generation does not mean positive equity performance. Some coverage cites the air conditioning boom in the 1960s and 70s as an apt parallel, likening data centres' need to the rapid expansion in electricity use, as suburbia sprawled then. But Exhibit 3 shows Utilities mostly underperformed in this period. Despite occasional bursts of leadership during the early 1960s bull market and mid-1970s energy crisis, Utilities lagged cumulatively in those two decades.

Exhibit 3: Increasing Electricity Demand Not Automatically Bullish for Utilities



Source: Global Financial Data, Inc. S&P 500 and Utilities sector total return index levels, USD, monthly, December 1959 – December 1979. Indexed to 1 at December 1959.

Typically, Utilities normally lead during bear markets and lag in bull markets. Like the old Telecom sector, electricity demand is inelastic and costs are high. That limits growth opportunities during bull markets but keeps revenues firm during recessions. As bear markets pre-price recessions, they weigh Utilities' relative resilience. This doesn't hold every time. As Exhibit 4 shows, Utilities lagged modestly during the COVID bear market. They also led during the 2002 – 2007 bull market, when rising natural gas prices enabled the highly regulated sector to raise electricity rates. But more often than not, Utilities exhibits stereotypical defensive characteristics.

Exhibit 4: Utilities' Relative Returns in Bull & Bear Markets

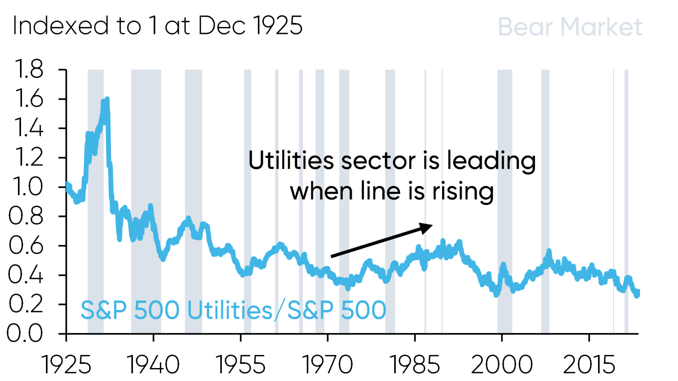
Bull Markets	S&P 500	Utilities
11/10/1990 – 24/3/2000	546.2%	174.0%
9/10/2002 – 9/10/2007	120.7%	227.5%
9/3/2009 – 19/2/2020	528.9%	377.2%
23/3/2020 – 3/1/2022	120.4%	67.6%
12/10/2022 - ?	57.0%*	22.8%*

Bear Markets	S&P 500	Utilities
16/7/1990 – 11/10/1990	-19.2%	-1.3%
24/3/2000 – 9/10/2002	-47.4%	-43.0%
9/10/2007 – 9/3/2009	-55.3%	-42.9%
19/2/2020 – 23/3/2020	-33.8%	-35.6%
3/1/2022 – 12/10/2022	-24.5%	-11.3%

*Source: FactSet, *as of 26/7/2024. Total returns during the periods referenced.*

Daily sector total return data begins in 1990, limiting Exhibit 4's scope. But monthly data enables a broader historical look. Exhibit 5 does so. Here, too, there are exceptions. In the 1942 – 1949 bull market, low rates helped Utilities lead. So did the unleashing of pent-up demand after WWII, which Utilities couldn't respond to immediately as labour strikes blocked power plant construction (which perversely helped margins). Utilities also led in the 1957 – 1962 bull market, again helped by low rates as well as regulatory reforms and increased productivity. And in the 1980s, falling rates and slow growth helped. But these are outliers.

Exhibit 5: A Long History of Utilities' Relative Returns

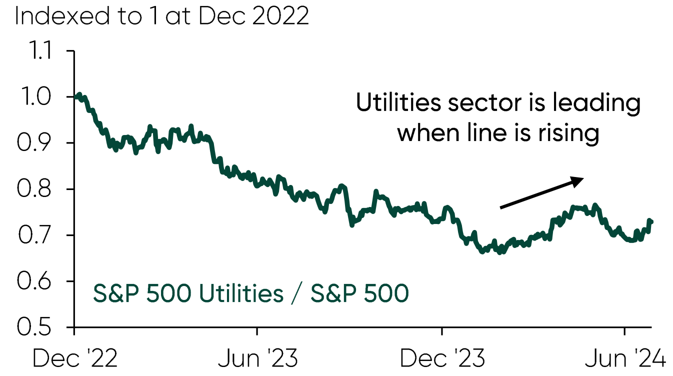


Source: Global Financial Data, Inc. S&P 500 and Utilities sector total return index levels, USD, monthly, December 1925 – July 2024. Indexed to 1 at December 1925.

[3] *Source: Edison Electric Institute, as of July 2023.*

Utilities lagged badly in 2023—typifying defensive behaviour in a strong year for markets. That lag continued during the market's early 2024 rise, before April's sharp change in leadership. This flipped the sector from lagging to leading markets by late May, with several firms dotting lists of top performers this year. (Exhibit 6)

Exhibit 6: Recent Utilities' Relative Performance



Source: FactSet. S&P 500 and Utilities sector total returns index levels, USD, monthly, December 2022 – July 2024. Indexed to 1 at December 2022.

As you might expect, financial media pumped explanatory stories. From mid-April through May, scores of articles touted Utilities' potential as an AI play on data-centre power demand. Most major US outlets covered it. Of course, this theory got some press, like the New York Times' coverage of a peer-reviewed study on rising data-centre power demand.[4] But the frequency and ties to equity returns gained steam amid the rally, hitting a crescendo as outperformance rolled over. That seemed to price hope into Utilities quickly—which may have faded already.

In conclusion, despite AI chatter and data centre's increasing use, we still regard Utilities as a defensive sector and is mostly driven by market direction, rates, and regulation. While we agree developing and deploying AI across various industries will require additional energy demand, we expect this transition will likely have minimal impact on electricity consumption growth and Utilities' performance.

[4] *Source: New York Times, "A.I.'s Insatiable Appetite for Energy", as of July 2024.*

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