



# INVESTMENT UPDATE

You may have noticed that there has been a good deal of discussion in the media recently about the potential for an increase in electric power demand in the US. More electric vehicles, a growing population, and (in particular) the need for electricity to power new data centers and a boom in artificial intelligence (AI) are cited as the reasons why we could see a renewed build-out of power plants in the US.

As the chart on this page shows, an increase in electric demand would be a real change in the landscape here in the US, as power generation has barely budged since the turn of the century. It's shocking, really, that even with US GDP growing by an inflation-adjusted 68% over the past 25 years, power demand only rose by 13%. And since 2005, US energy demand is only up 5%, despite the increase in all things electronic in our daily lives. We've clearly become far more efficient in our use of electricity over the past couple of decades.

But more recently energy demand has been rising, due entirely to commercial users. According to research from the Federal Reserve Bank of Kansas City, that demand has been concentrated in three states—South Dakota, Virginia, and Texas (more about Texas below)—all of which have seen outsized growth in data centers and other electricity-heavy computer-related investments. So far, much of this has been attributable to the movement away from localized, in-office, data processing/storage and into “cloud-based” data warehouses. Even smaller firms like Agincourt have moved to this model, as uploading and accessing data from a remote location is a far more secure and stable way of protecting the valuable data that we use every day than having an extra server in a closet buzzing away. And even if cloud-based demand levels out in the next few years, the growth of electricity-heavy AI applications means that demand for electricity in the US may be on an upward trend that could continue over the next couple of decades.

We say “could,” because there is no real consensus, even among those in the industry, that AI will continue to require a renewed build-out of electric capacity in the years ahead; the recent

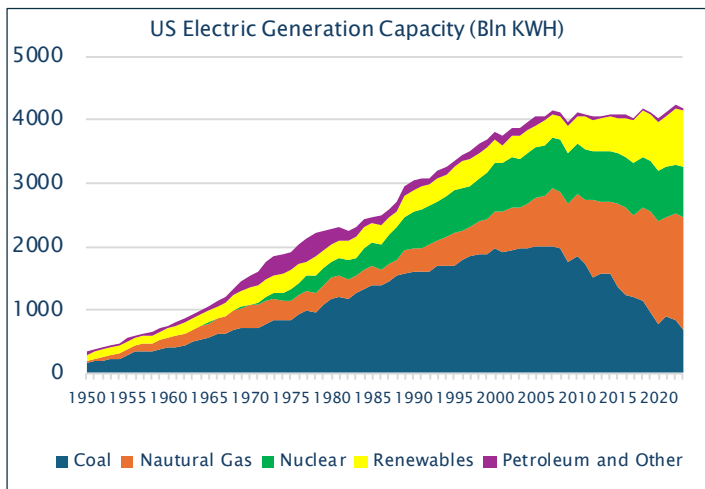
rollout of China's Deepseek AI platform uses technology that's reported to be far more energy efficient than existing AI platforms. If we've learned anything from the tech boom, it's that innovation will continue to provide efficiencies going forward. Nvidia, for one, is already working on a new generation of highly efficient computer chips, while other tech companies are likewise making massive investments in AI-related processors and infrastructure.

Potential growth in demand for electricity is important for bond investors because when electric utility companies decide to increase capacity, those capital expenditures are financed

largely by issuing bonds. The slow growth in the industry relative to the overall US economy over the past couple of decades has coincided with a significant decline in electric utilities' share of the high-grade US bond market—from nearly 1/3 of the US (high-grade) Bloomberg Corporate Bond Index in 1990 to less than 7% today. Renewed buildout of electric utility capacity, if necessary, would lead to increased supply of utility bonds, and more opportunities for diversification for fixed income investors.

Yet electric utility companies have built very few gigantic (and gigantically expensive) power plants since the boom period of 1970–2000. In 2023 and 2024 Atlanta-based Southern Company's new Vogtle #3 and #4 nuclear plants came “on line”—the first all-new nuclear plants in the US since 1996. The cost for the two facilities? An estimated \$35 billion. A quick check on the US Nuclear Regulatory Commission website shows that there are seven sites (for a total of 12 nuclear plants), all approved and ready to go. Plans for each of these projects were submitted between 2007 and 2009, and each received a regulatory green light more than a decade ago. Yet none have begun construction.

The staggering construction cost isn't the only impediment standing in the way of new nuclear power plants being built. Despite their relatively “clean” (or at least carbon-free) energy profile, the nuclear materials used to create the power for



these plants have finite lives, and must be carefully handled when disposed of (e.g., encased in concrete and buried). And, as we are already seeing, older existing nuclear plants must be either decommissioned or re-engineered and put back into use; neither option is inexpensive. And all this comes only after regulators approve the construction/recommissioning plans, inspections, and rate impacts on consumers; there are few, if any, places in the US where all those factors can come together and still make economic sense to build a full-scale nuclear reactor—exactly why we haven’t seen any others constructed in almost 30 years. There are tentative plans for mothballed plants to be recommissioned and put back into use, including Pennsylvania’s Three Mile Island Unit One. If recommissioned, Unit One’s power is reportedly for the exclusive use of Microsoft Corporation to power a future high tech facility, presumably for AI.

Despite all these issues, as shown on the chart on this page, nuclear power’s share of US power generation has remained very steady, ranging between 18% to 20% since 1987. The same cannot be said for coal-powered plants, which have seen a steady erosion of market share, from more than 55% of US output in the mid-1980s to just 16% in 2023. Coal-fired plants are, as a group, the least environmentally-friendly, and are some of the oldest plants still in operation. Most of the remaining coal plants in the US are planned to be put out of service, although again, a resurgence of demand (especially in mid-America, where most of the coal plants are located) has led to a few requests to delay those retirements.

Natural gas-fired power plants, including those converted from coal to natural gas, have taken up most of the slack from the closing of coal plants over the past three decades. US natural gas production has more than doubled since 2000, with advances in efficiencies and the expansion of shale extraction. While prices have been volatile at times, the price of natural gas hasn’t changed much in 25 years; when combined with improvements in transmission facilities, gas has become the most affordable source of non-renewable fuel, helping to accelerate the decline of coal in the US.

The other—and perhaps most interesting—source of energy that’s been gaining market share are renewables. We think of these as new technologies, but, in the form of hydroelectric, biomass, and geothermal sources, they are among the oldest

sources of energy on earth. Nevertheless, advances in both solar and wind technology over the past 15 years has moved renewable energy sources into second place among major components of US power generation, having surpassed nuclear power at more than 20% of energy production in the US. And that rate of growth, should it continue, is expected to be sufficient to meet the future growth in demand for power in the US going forward.

According to the Institute for Energy Economics, a pro-sustainable energy policy group, renewable energy sources are hitting an inflection point. Wind and solar energy technology has advanced to the point where their costs, including tax incentives (so-called “levelized cost of electricity,” or LCOE), are now competitive with natural gas. Further investments in this technology, and economies of scale, will continue to bring costs down for wind and solar. And it must be said, these plants have a much smaller carbon footprint. And while not everyone is

happy with Federal tax incentives for wind and solar power, the technology is nevertheless advancing, even in states which produce fossil fuels, such as Texas. In fact, The Energy Reliability Council of Texas (ERCOT, which supplies 90% of the energy in the state) reported that 35% of the state’s energy in 2024 came from wind and solar power—second only to California’s 40%. Further, it now appears that these renewable sources of energy, in conjunction with battery storage,

will move ahead of natural gas in 2026 to be the largest source of power in Texas. In short, renewables have been able to meet 100% of the increase in power demand in Texas, which has bucked the national trend by growing more than 20% over the past five years.

Clearly, there are both long-term and short-term considerations at work here. Longer-term, it’s essential for our national security to have diverse sources of energy feeding into the US power grid; there are serious risks (as we’ve seen in Europe) to being overly dependent on a single source of power. At the same time, technology marches on, compelling us to both plan for a possible upturn in demand from AI and other tech-related applications, and to use technology to meet that demand. Renewables have demonstrated that they have the capacity (no pun intended) to help provide enough power to meet the future growth that we may need in the decades ahead, and do so while also providing a cleaner alternative to fossil fuels. You don’t have to be a staunch environmentalist to see the value in that.

