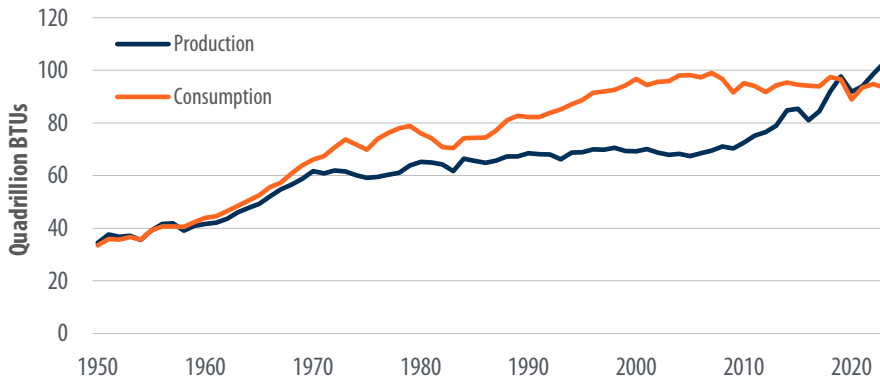


In this week's edition of "Three on Thursday," we take a look at the overall energy picture in the United States. Historically, the U.S. has been a net consumer of energy, consistently using more energy than it produced for several decades. However, this dynamic has shifted dramatically in recent years. The fracking revolution, along with a slight drop in energy consumption, has transformed the U.S. into a net energy producer. In 2023, the country achieved a historic milestone, with energy production surpassing consumption by a record margin. To provide a comprehensive understanding of this shift, we have included three insightful charts below, illustrating key trends and data points.

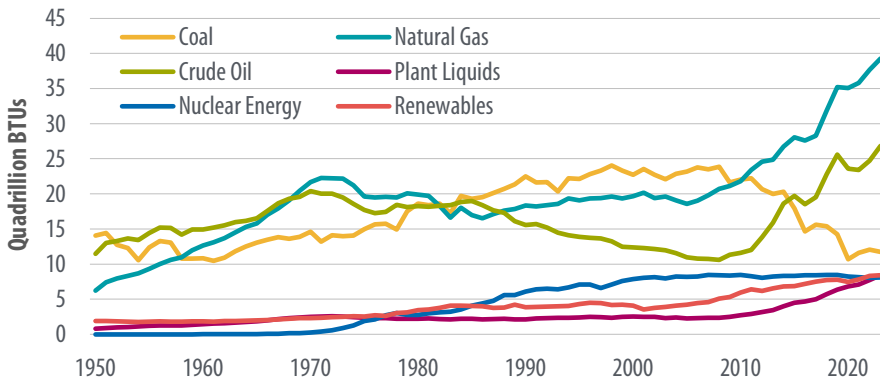
### U.S. Primary Energy Production vs. Consumption



Source: U.S. Energy Information Administration, First Trust Advisors. Annual data 1950-2023.

In 2023, energy production exceeded energy consumption by a record margin of 9.2 quadrillion British Thermal Units (BTUs), marking the fifth consecutive year of net energy production. The last time the U.S. was a net energy producer before this period was in 1957. This remarkable comeback was once considered unlikely. Energy consumption has remained largely unchanged over the past few decades. Since 1999, energy consumption has decreased by 0.7%, while production has surged by 48.1%.

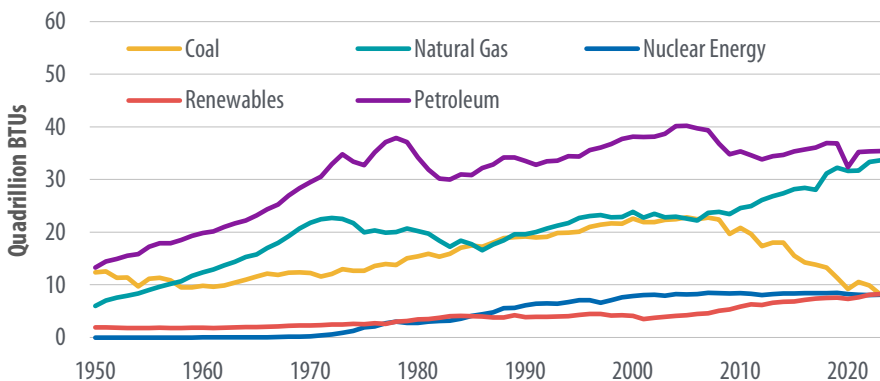
### U.S. Primary Energy Production by Source



Source: U.S. Energy Information Administration, First Trust Advisors. Annual data 1950-2023.

Energy production in the U.S. reached unprecedented levels in 2023, with natural gas continuing to play a dominant role. Natural gas now accounts for 38.2% of the total energy production, maintaining the record high share seen over the past four years. In contrast, coal production has declined significantly, representing only 11.4% of the overall energy production, the lowest share recorded since at least 1950. Renewables, which consist of wind, solar, hydro, geothermal, and biomass energy, account for 8.2% of overall production, down from their peak of 8.9% in 2017. Notably, most of this came from biomass energy, which accounted for 5.0% of total production. Wind (1.4%) and solar (0.9%) accounted for just 2.3% of production despite heavy government investment in recent years.

### U.S. Primary Energy Consumption by Source



Source: U.S. Energy Information Administration, First Trust Advisors. Annual data 1950-2023.

Even though energy consumption has remained essentially flat over the past few decades, two major shifts have occurred. Natural gas consumption has surged, reaching a record high in 2023. In contrast, coal consumption has plummeted to its lowest level since at least 1950, now approximately equal to the consumption of nuclear and renewable energy sources. Renewables account for 8.8% of total consumption, a record high going back to 1950. Similar to the trends seen in production, renewable consumption was led by biomass (5.3%), followed by wind (1.6%), solar (0.9%), and geothermal (0.1%).

This report was prepared by First Trust Advisors L. P., and reflects the current opinion of the authors. It is based upon sources and data believed to be accurate and reliable. Opinions and forward looking statements expressed are subject to change without notice. This information does not constitute a solicitation or an offer to buy or sell any security.