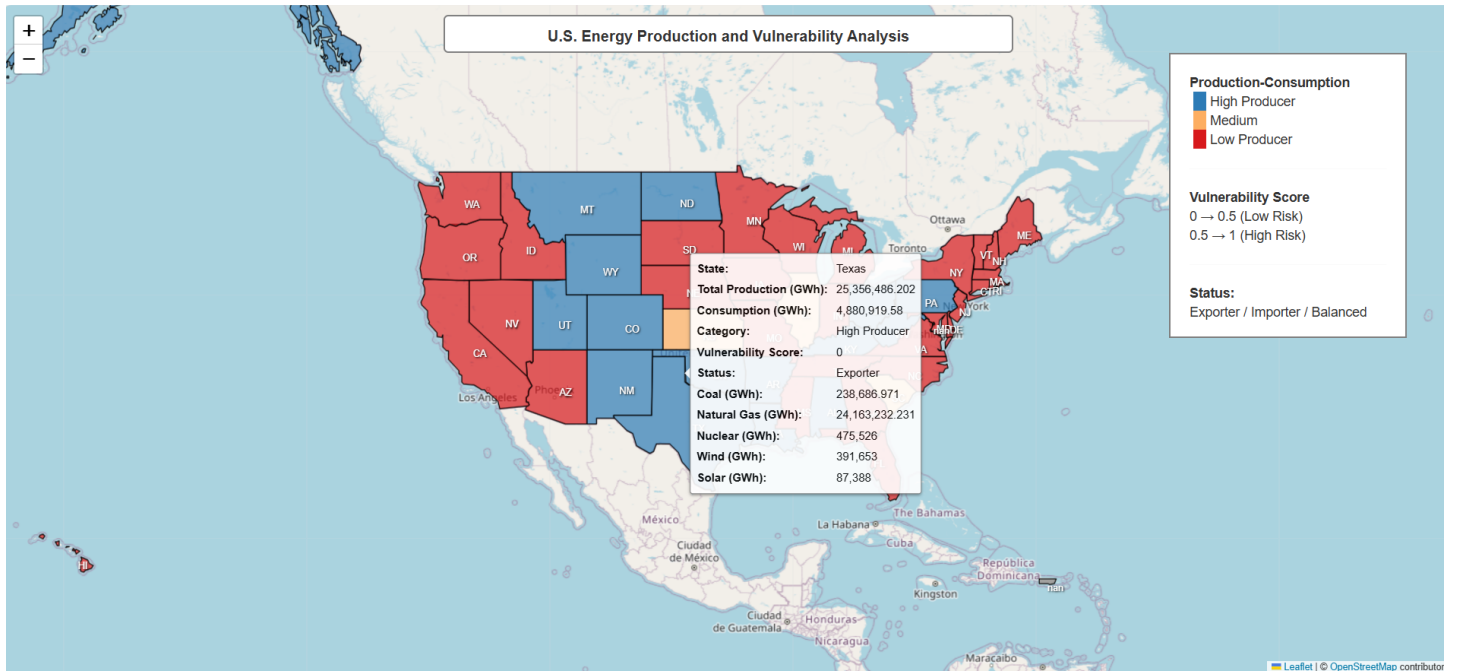


# **Story 7: U.S. Energy Production Analysis**

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# Interactive Map Screenshot



View the interactive map here:

[https://umais.github.io/DATA\\_608/energy\\_production\\_map.html](https://umais.github.io/DATA_608/energy_production_map.html)

## Insights & Observations

The U.S. energy production map reveals distinct regional patterns that highlight the nation's energy landscape. The central and western states, particularly Texas, Wyoming, and North Dakota, emerge as high energy producers (shown in blue), functioning as net exporters with robust production capabilities across multiple energy sources. Texas stands out with its massive production of 25.3 trillion GWh, primarily from natural gas and wind. In contrast, coastal states including California, New York, and most of New England (shown in red) demonstrate lower production levels relative to their consumption, making them dependent on energy imports from other regions.

The energy mix varies significantly by region, reflecting each area's natural resources and policy priorities. Coal remains dominant in Wyoming and West Virginia, while natural gas leads in Texas and Pennsylvania. Nuclear energy provides significant baseload power in states like Illinois and Pennsylvania, while wind energy has gained prominence in the Great Plains states. The vulnerability scores indicate each state's exposure to potential energy disruptions, with higher scores (closer to 1.0) suggesting greater dependency on external sources and less diversified energy portfolios.

The vulnerability score (ranging from 0.0 to 1.0) serves as a critical indicator of energy security, with lower values representing stronger resilience. States like Texas and Wyoming show minimal vulnerability (scores near 0), indicating self-sufficiency and export capacity. Meanwhile, states with higher scores face greater exposure to supply disruptions, price volatility, and transmission constraints. These regional disparities highlight the need for robust interstate transmission infrastructure and strategic energy policy to enhance national energy security while supporting the ongoing transition to cleaner energy sources.

*Data Source: U.S. Energy Information Administration (EIA) State Energy Data System (SEDS), which provides comprehensive state energy statistics. The data includes production and consumption figures for all energy sources, allowing for detailed analysis of energy flows and dependencies between states. More information available at:*

<https://www.eia.gov/state/seds/>

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