

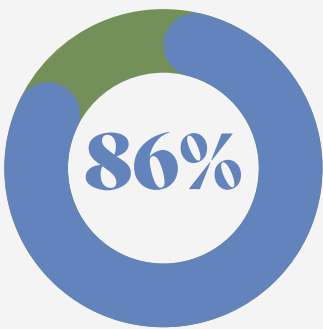
FAST FACTS

# Grid Infrastructure

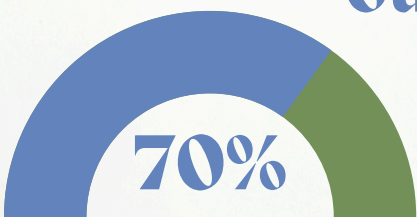
Infrastructure considerations for the shift from fossil fuels to renewable energy

## RENEWABLE RESILIENCE

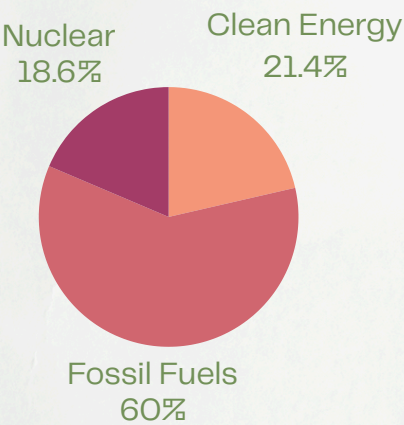
A case study from winter storm Elliot reveals that fossil fuel plants caused 86% of outages during extreme weather, while renewables remain resilient<sup>1</sup>.



## OUTDATED INFRASTRUCTURE

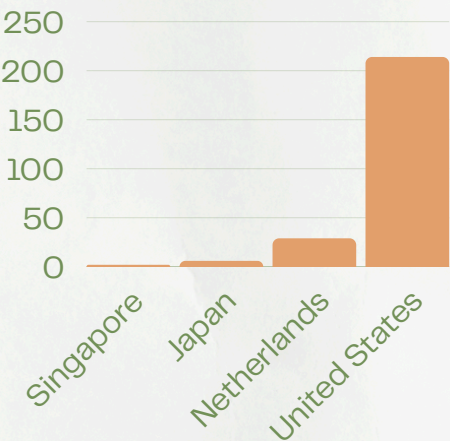


Over 70% of the U.S. power grid is more than 25 years old, leading to frequent outages<sup>2</sup>.



### Behind in Clean Energy

Only 21.4% of U.S. energy is clean, far behind nations like Norway and Paraguay (~100% clean energy)<sup>3</sup>.



### Power Outages

U.S. customers lose power for an average of 214 minutes annually—much longer than other developed countries<sup>4</sup>.

### Grid Structure

The U.S. power grid is divided into three major sections: Eastern Interconnection, Western Interconnection, and ERCOT (Texas). This presents grid flexibility issues<sup>5</sup>.

## TRANSMISSION

New transmission lines are needed to accomadate renewables<sup>6</sup>. Their construction will take

10–15  
YEARS

## SMART GRIDS

Smart grids present a key solution, using digital tech to detect disruptions, boosting reliability and efficiency<sup>7</sup>.



### References

- 1 (Ammann, Winter Storm Elliott Report highlights the risk of natural gas failures 2023)

2 (United States Joint Economic Committee, 2024)

3 (Frequently Asked Questions – U.S. Energy Information Administration (EIA), 2024)
- 4 (Apt et al, 2022)

5 (U.S. Grid Regions | US EPA, 2024)

6 (Clifford, 2023)

7 (Smart Grids – IEA, 2024)