



Understanding infrastructure

Powering the future: investing in grid infrastructure

Capital at risk. This blog piece does not constitute investment advice. Past performance is not a reliable indicator of future returns.

1. What is “the grid”?

Electrical grids are the invisible engine of modern life. They are the vast, interconnected systems that deliver electricity from where it’s generated to where it’s consumed, powering homes, businesses, data centres, and transport networks. But behind the flick of a switch lies a complex web of infrastructure that is increasingly under strain.

At its core, the grid comprises three main components: generation, transmission, and distribution. Generation includes traditional power plants and renewable sources like wind and solar. Transmission involves high-voltage lines and substations that move electricity across long distances. Distribution brings power to end users via transformers and lower-voltage lines.

Investors have multiple entry points into this ecosystem. Utilities own and operate the grid, often under regulated frameworks that are intended to help manage return variability. Industrial manufacturers supply the “picks and shovels” used to build out the grid. These include transformers, cables, and switchgear, as well as an increasing number of components for decentralised generation – such as batteries. Software and technology firms are also a growing part of this ecosystem, enabling smart grid functionality, predictive maintenance, and cybersecurity.

2. The opportunity

The investment case for grid infrastructure appears to be supported by several long-term structural trends.

Firstly, demand is soaring. Global electricity consumption is expected to double by 2050,¹ fuelled by the electrification of transport, heating, and industry. As economies grow and digitalisation accelerates, the grid must expand and become more flexible.

Secondly, ageing infrastructure is reaching breaking point. In the US, the average power transformer is over 40 years old.² These assets are operating beyond their intended lifespan, increasing the risk of outages and inefficiencies. Replacement and upgrade cycles are no longer optional - they’re critical.

¹U.S. Energy Information Administration: International Energy Outlook

²U.S. Department of Energy: Distribution Transformer Types and Demand Drivers

Thirdly, climate resilience is becoming non-negotiable, with governments spending accordingly regardless of their view on the topic. Extreme weather events like heatwaves, storms, and floods are testing the reliability of electricity grids just as energy demand surges, especially for cooling and heating. For instance, air conditioning alone can drive electricity use up by more than 30%.³ Recognising this urgency, political support for grid modernisation is strong and bipartisan. In the US, the Infrastructure Investment and Jobs Act has earmarked \$28 billion for grid enhancement,⁴ while Europe is directing over €500 billion toward upgrading electricity networks.⁵ These are multi-decade commitments to energy security, climate resilience, and decarbonisation.

From a financial perspective, grid infrastructure may present opportunities for both resilience and growth. Regulated utilities can offer inflation-linked revenue models, while equipment suppliers and digital enablers are positioned to benefit from margin expansion and scalable business models. As logistical, economic, and climate-related pressures evolve, interest in investment appears to be increasing.

3. Stock Example: NextEra Energy

The specific securities identified and described are for informational purposes only and do not represent recommendations.

NextEra Energy, headquartered in Florida and listed on the New York Stock Exchange, is the largest clean energy company in the United States, with a market capitalisation exceeding \$150 billion.⁶

The company operates through two primary businesses: Florida Power & Light (FPL), a regulated utility serving approximately 12 million people, and NextEra Energy Resources (NEER), which develops renewable energy projects, battery storage, and smart grid solutions across North America.⁷

This structure combines a regulated utility with a renewables developer, resulting in a diversified asset base. NextEra has set a target of achieving net zero emissions by 2045 for scope 1 and 2, supported by detailed implementation plans.⁸ NEER accounts for nearly 20% of all renewable energy development in the US.⁹

The company's growth is supported by regulatory frameworks, project economics, and increasing electricity demand from sectors such as AI and data centres. Over the past two decades, NextEra has reported annual earnings growth and dividend increases in the 6–10% range.¹⁰

For investors, this may offer exposure to:

- A regulated asset base with potential for more predictable revenue streams
- A growing pipeline of renewable energy projects that could present future opportunities

³ IEA: Air conditioning use emerges as one of the key drivers of global electricity-demand growth

⁴ S&P Global: The Opportunity for U.S. Infrastructure

⁵ European Commission: In focus—EU investing in energy infrastructure

⁶ CompaniesMarketCap: NextEra Energy Market Cap, October 2025

⁷ NextEra Energy: Company Overview

⁸ NextEra Energy: Zero Carbon Blueprint Update (PDF)

⁹ S&P Global: NextEra tops leaderboard of renewable projects planned in energy communities

¹⁰ The Motley Fool: This Magnificent Dividend Stock Continues to Deliver Powerful Growth

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