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The Rise of AI:

A Reality Check on Energy and Economic Impacts

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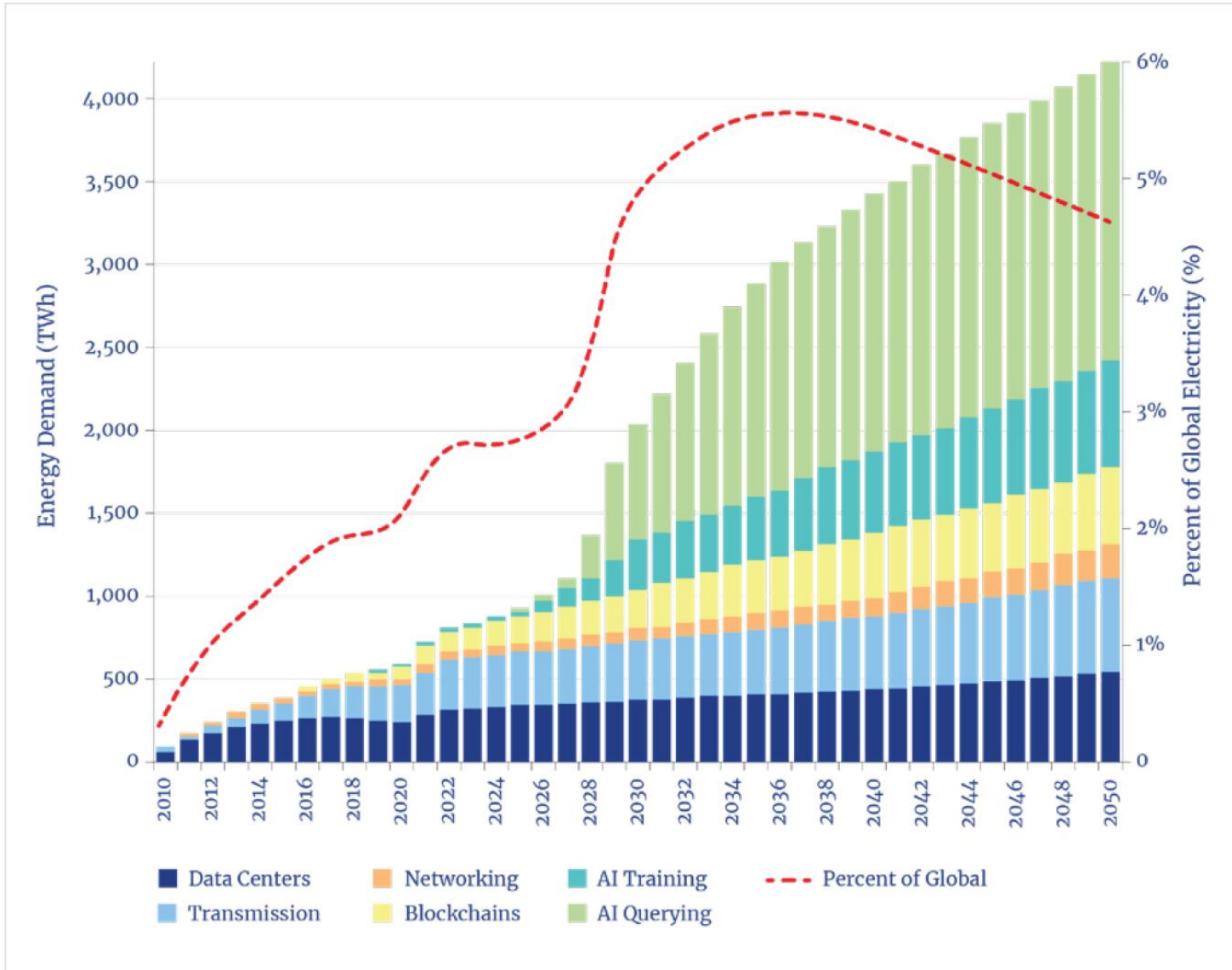
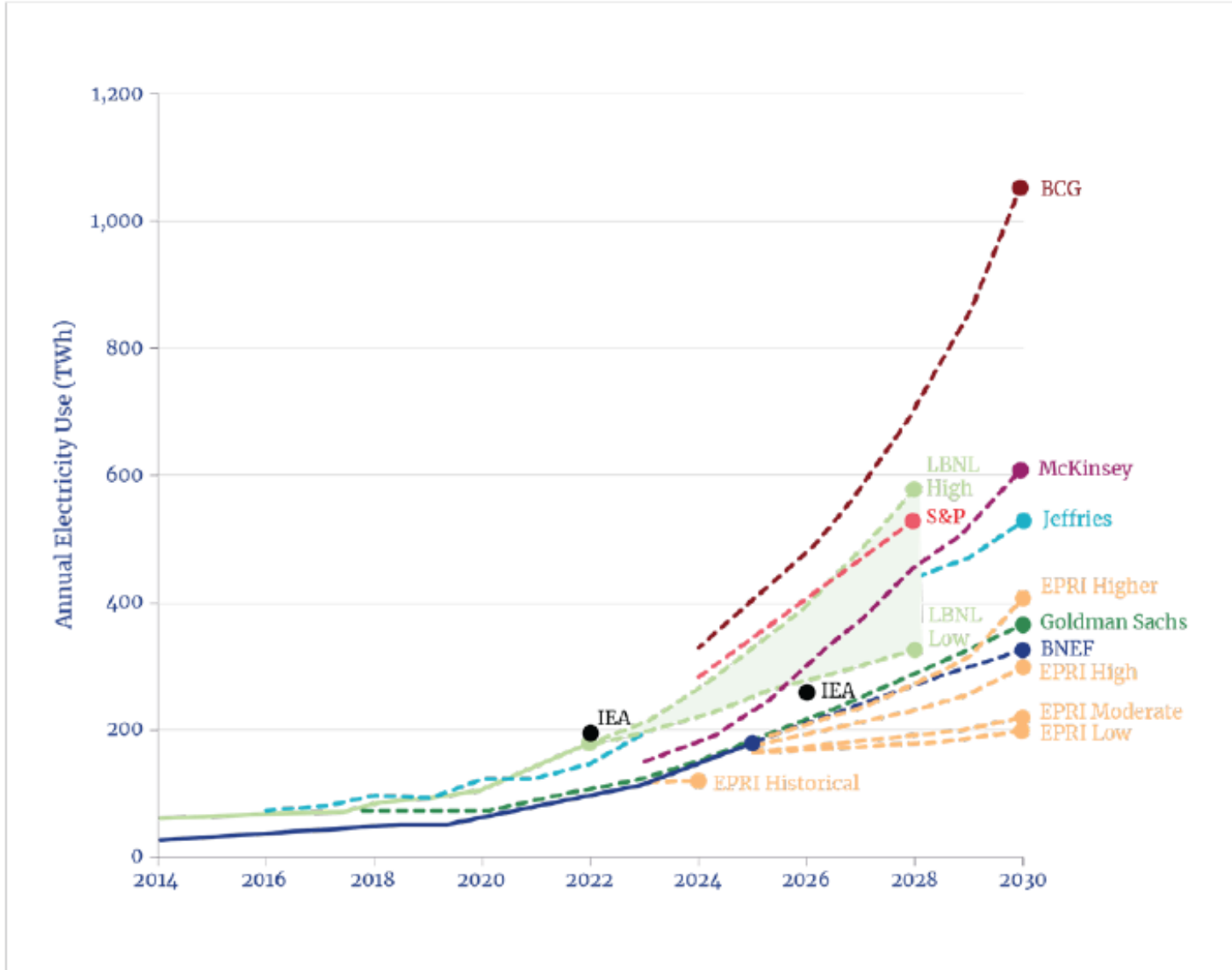
Total Energy Demands in the Digital Universe



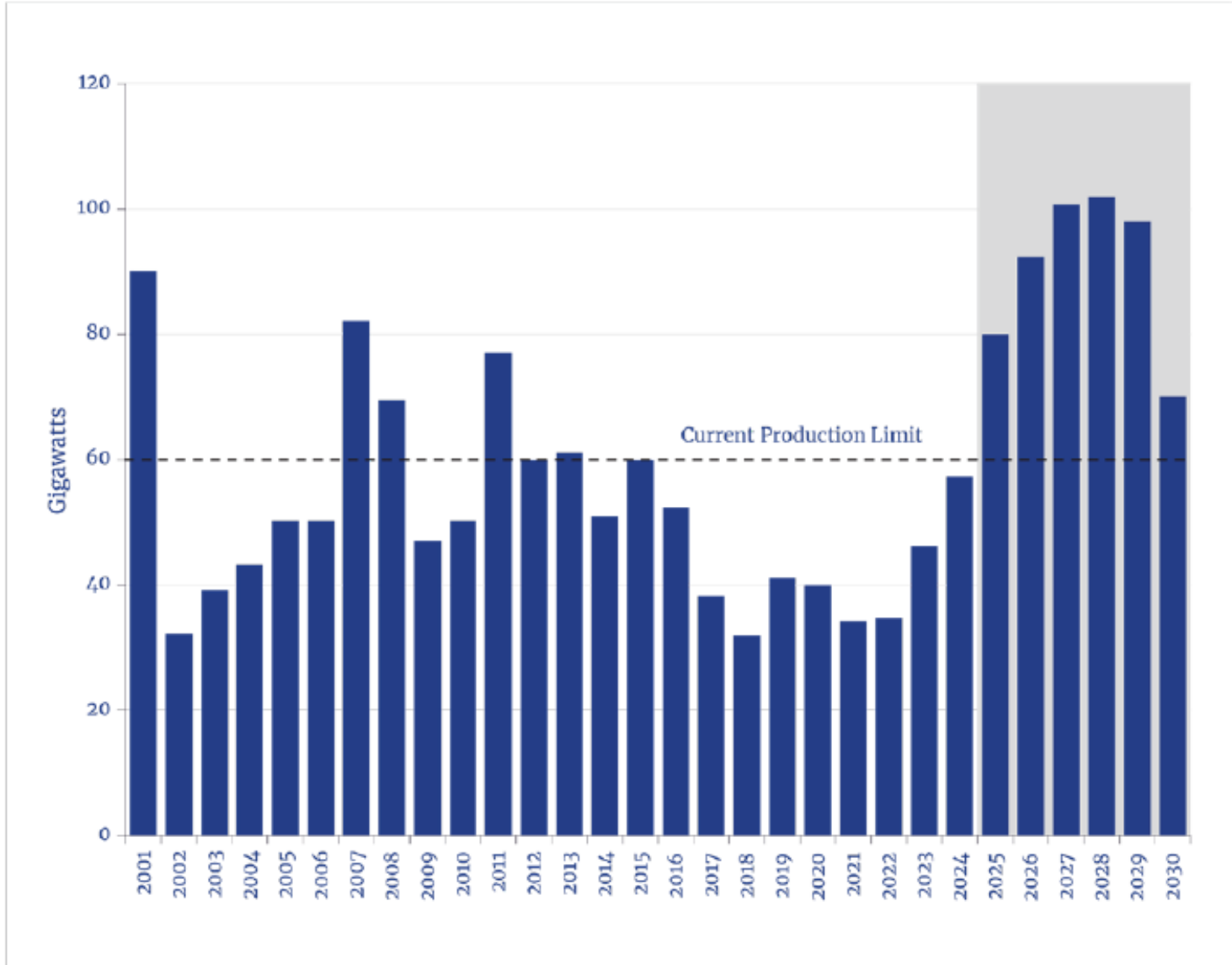
Source: Thunder Said Energy, AI Energy Demand: Breaking the Power Laws, October 13, 2025.

Various Forecasts for U.S. Data Center Electricity Demand



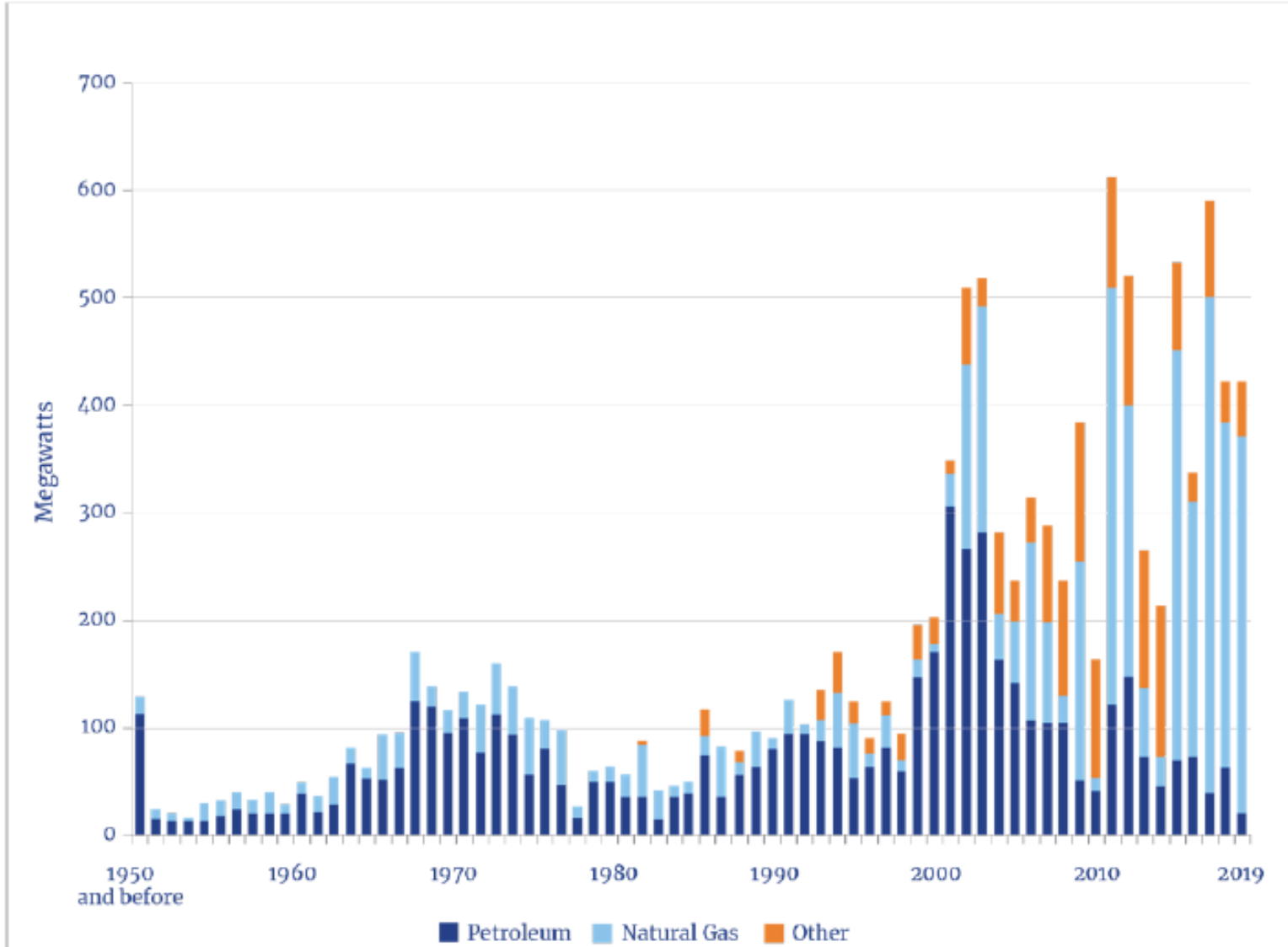
Source: Ian Goldsmith and Zach Byrum, “Powering the US Data Center Boom: Why Forecasting Can Be So Tricky,” World Resources Institute, September 17, 2025.

Orders for Utility-Scale Natural Gas Turbines



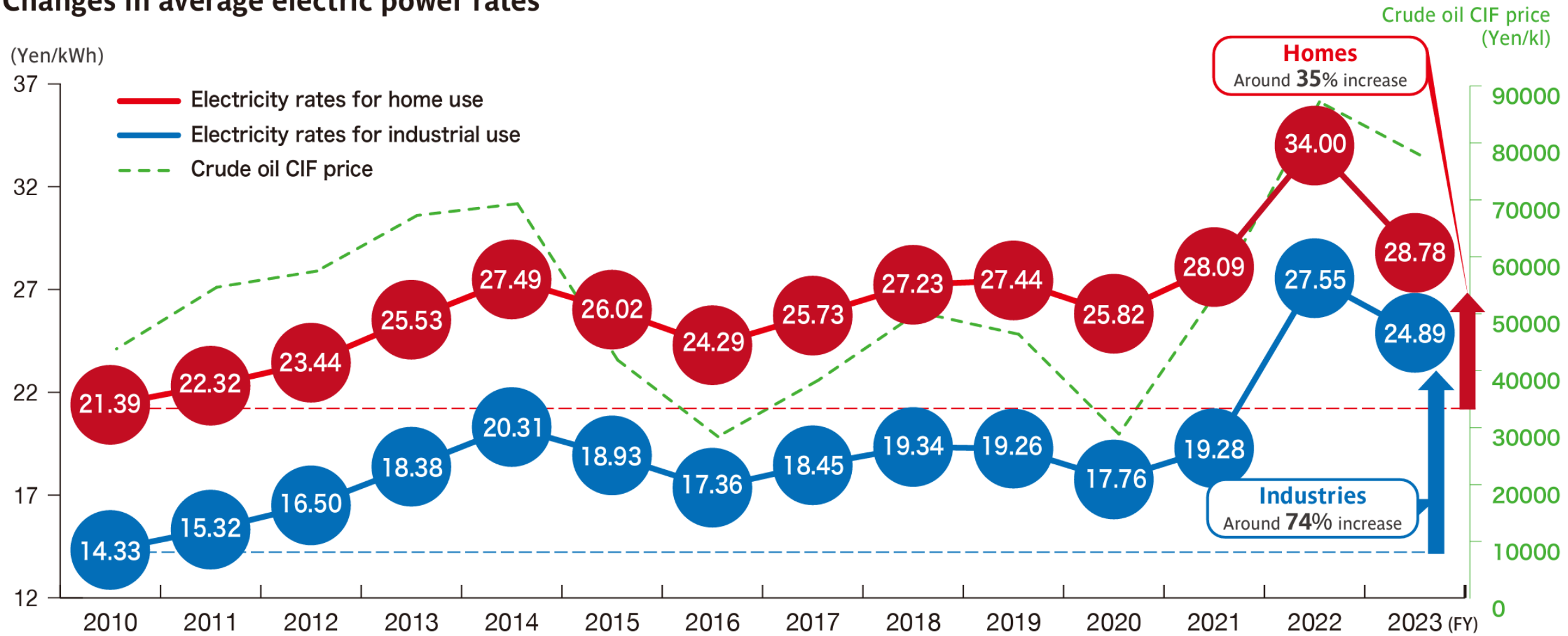
Source: Stephen Stapczynski, Akshat Rathi, and Josh Saul, "AI-Driven Demand for Gas Turbines Risks a New Energy Crunch," Bloomberg Green, October 1, 2025

Additions of U.S. Grid-Scale Reciprocating Engines



Source: Natural Gas-Fired Reciprocating Engines Are Being Deployed More to Balance Renewables, Today in Energy, EIA, February 19, 2019.

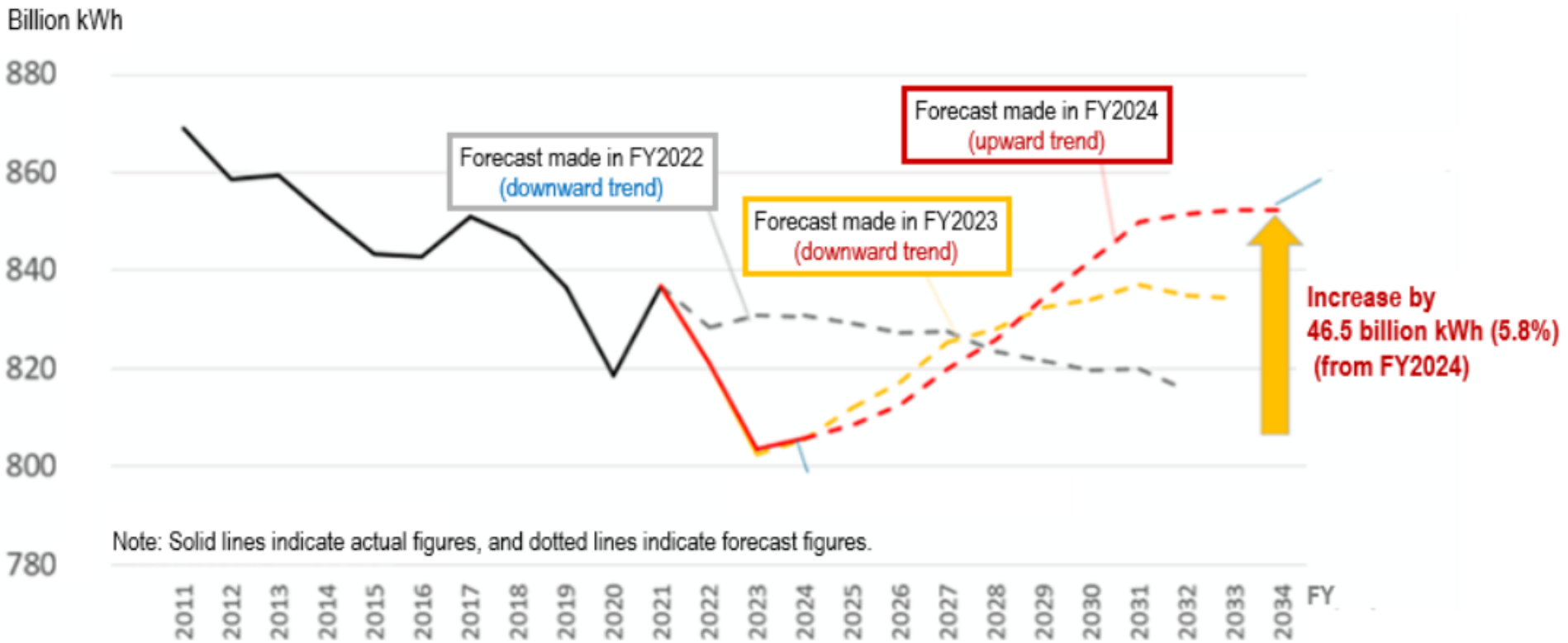
Changes in average electric power rates



Source: Created based on monthly reports of generated and received electric power, financial materials of electric power companies, and power trading reports
Crude oil CIF price : Transaction price consisting of the import price plus related costs, such as transport cost and insurance cost.

https://www.enecho.meti.go.jp/en/category/brochures/pdf/japan_energy_2024.pdf

National electricity demand outlook



(Source) Created by ANRE based on the Outlook for National and Regional Electricity Demand published by the OCCTO

https://www.enecho.meti.go.jp/en/category/special/article/detail_209.html