

Beyond Aggregate Failure Rates: Macroeconomic and Institutional Drivers of U.S. Nuclear Cancellations in the 1970s

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Extended Abstract

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Abstract Summary

In recent years, "technology failure rates" were introduced in feasibility studies to assess how fast new energy technologies can realistically be deployed near term (5-10 years) (Brutschin et al. 2021; Vinichenko et al. 2023; Kazlou et al. 2024). One key reference is the case of US nuclear power plant cancellations between 1972 and 1982, from which Kazlou et al. (2024) report a failure rate of 45%. However, this aggregate figure does not capture the internal dynamics of the cancellation wave, including its turning point, the structure of stated reasons, or the economic conditions shaping utility decisions. Analyzing cancellation dynamics is important because it helps to illuminate reasons for failures, which can be a sign of a deeper shift that can determine technological trajectories for several decades. This study addresses that gap through a bottom-up, reactor-level analysis of U.S. nuclear power plant cancellations in the 1970s, combining project-level data with macroeconomic context to contextualize the failure-rate framework.