

Nuclear Economics in 2025



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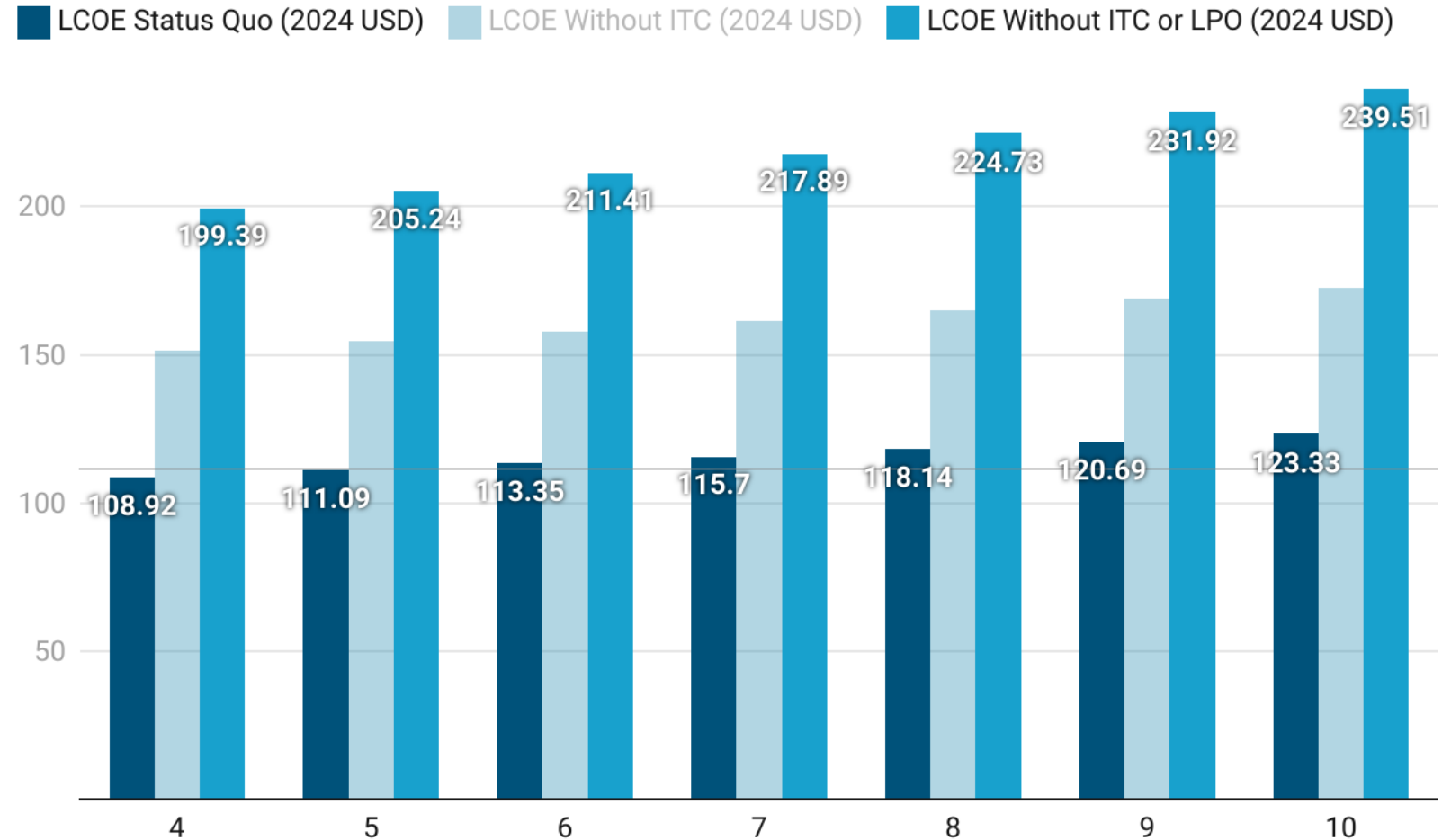
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National Academies of Sciences, Engineering, and Medicine

New Nuclear is
Economical Today, But
Dependent on Policy
Support

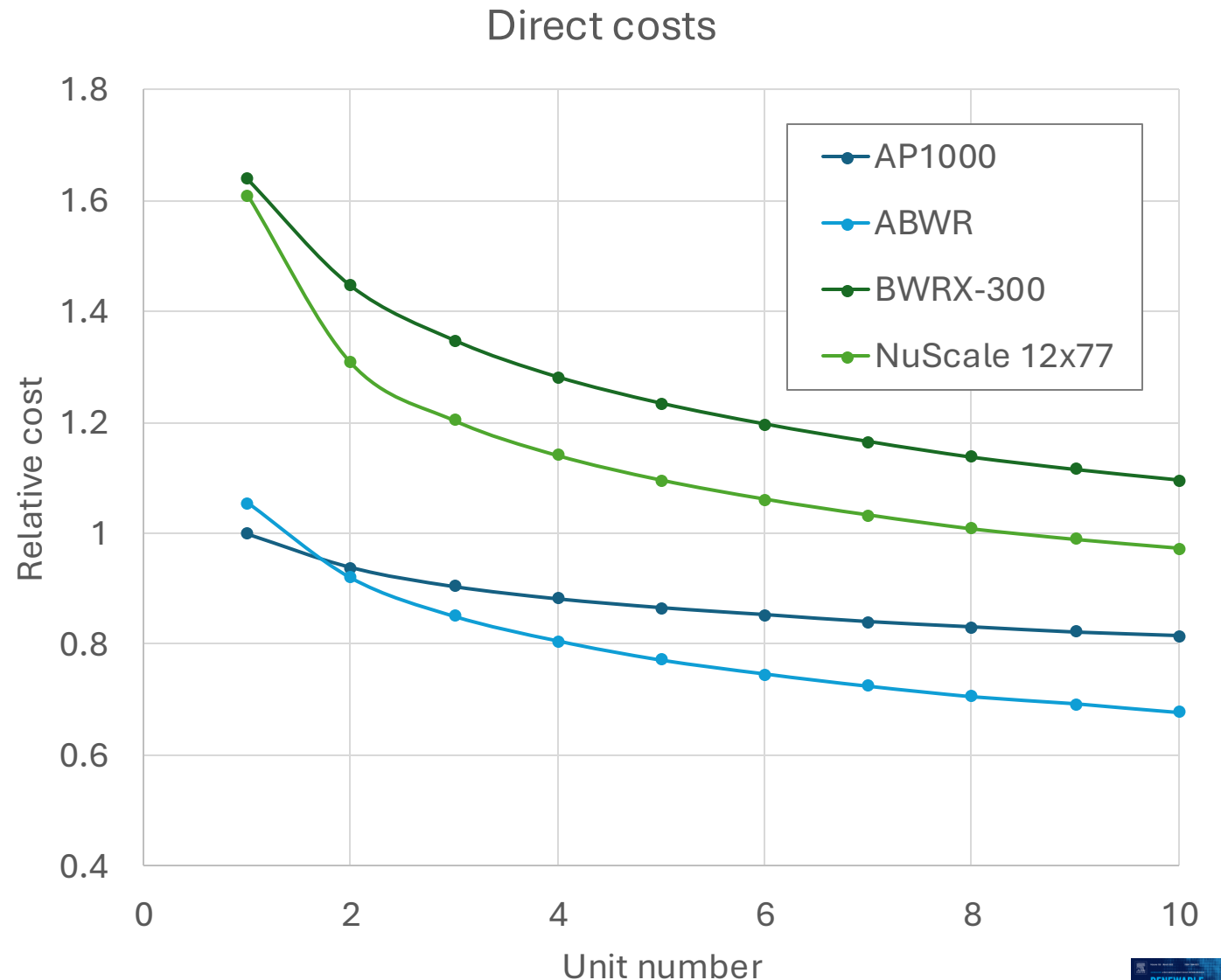
LCOE of New AP1000 (Vogtle 3 & 4 OCC)

LCOE (2024 USD per MWh) versus Construction Duration (Years)

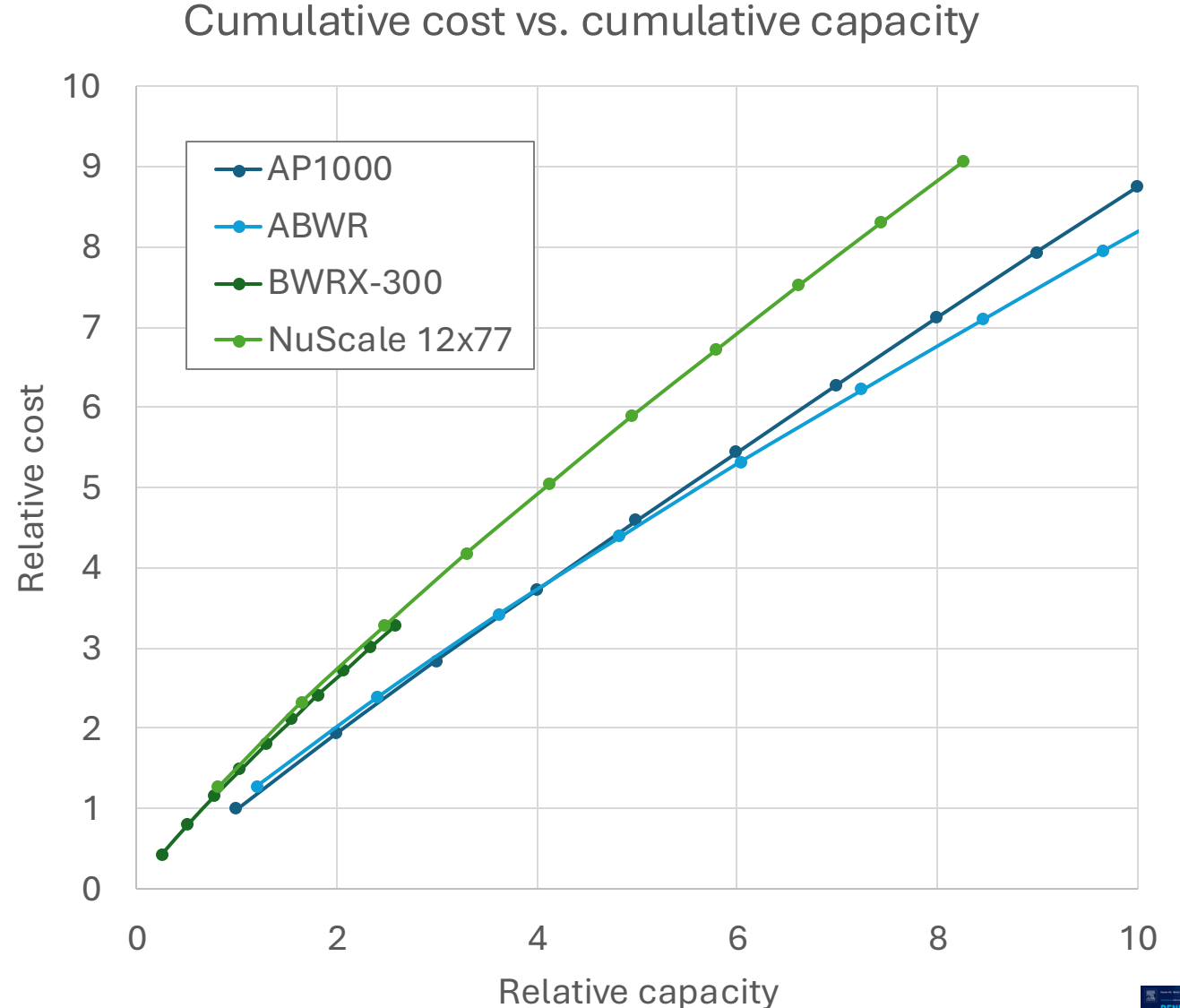


Source: Alva LCOE calculator (v1.1)
Model input available on request

Learning does not
compensate for lost
economies of scale



Accumulated costs over sequential SMR deployments are higher than larger builds

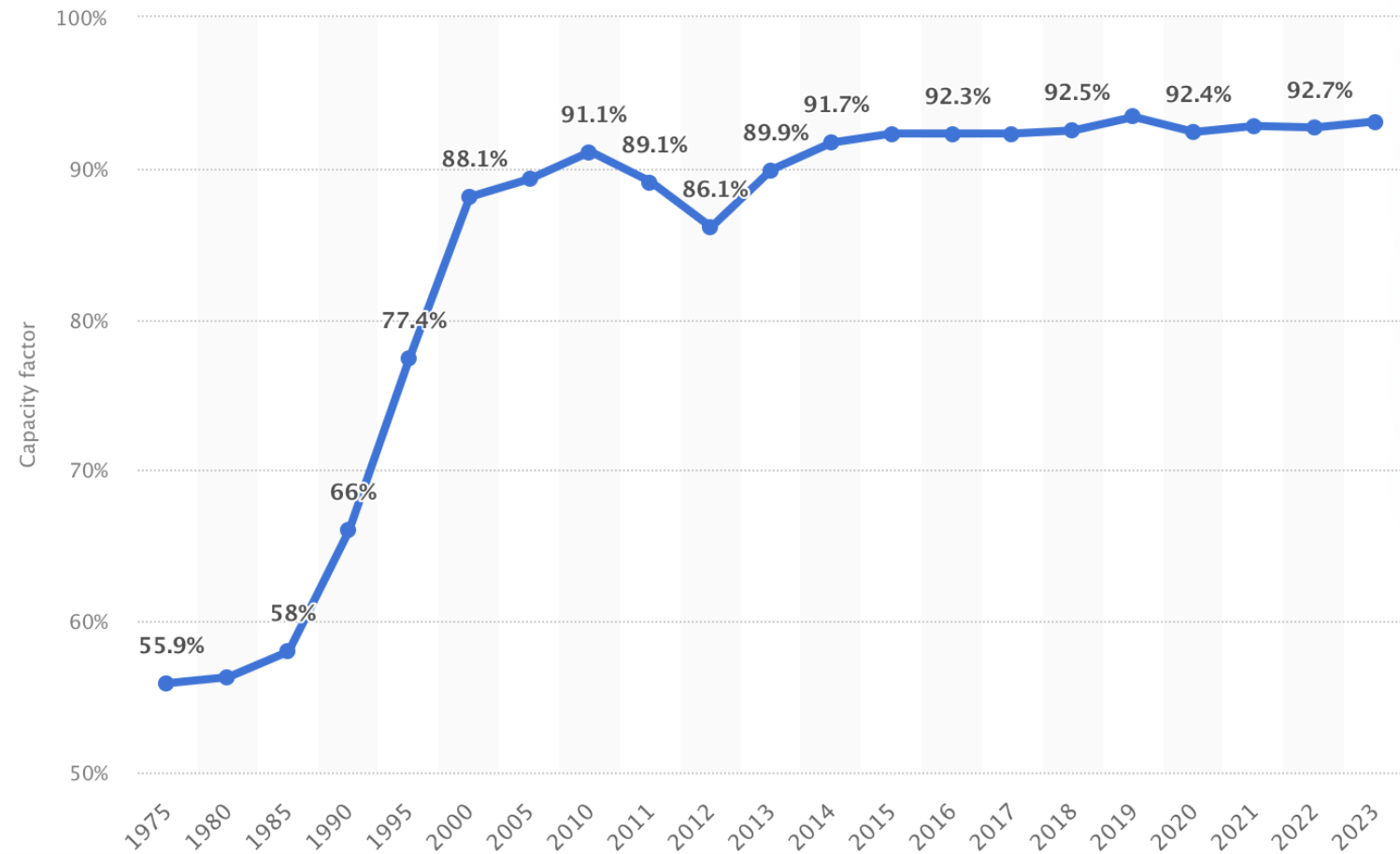


Nuclear Power's High Capacity Factor is not Guaranteed

The 90%+ capacity factor in the US LWR fleet was the products of *thousands* of reactor-**years** of real world operational experience

Non-LWR technology should not be assumed to automatically have a 90%+ capacity factor

US Fleet Wide Capacity Factor (1975-2023)

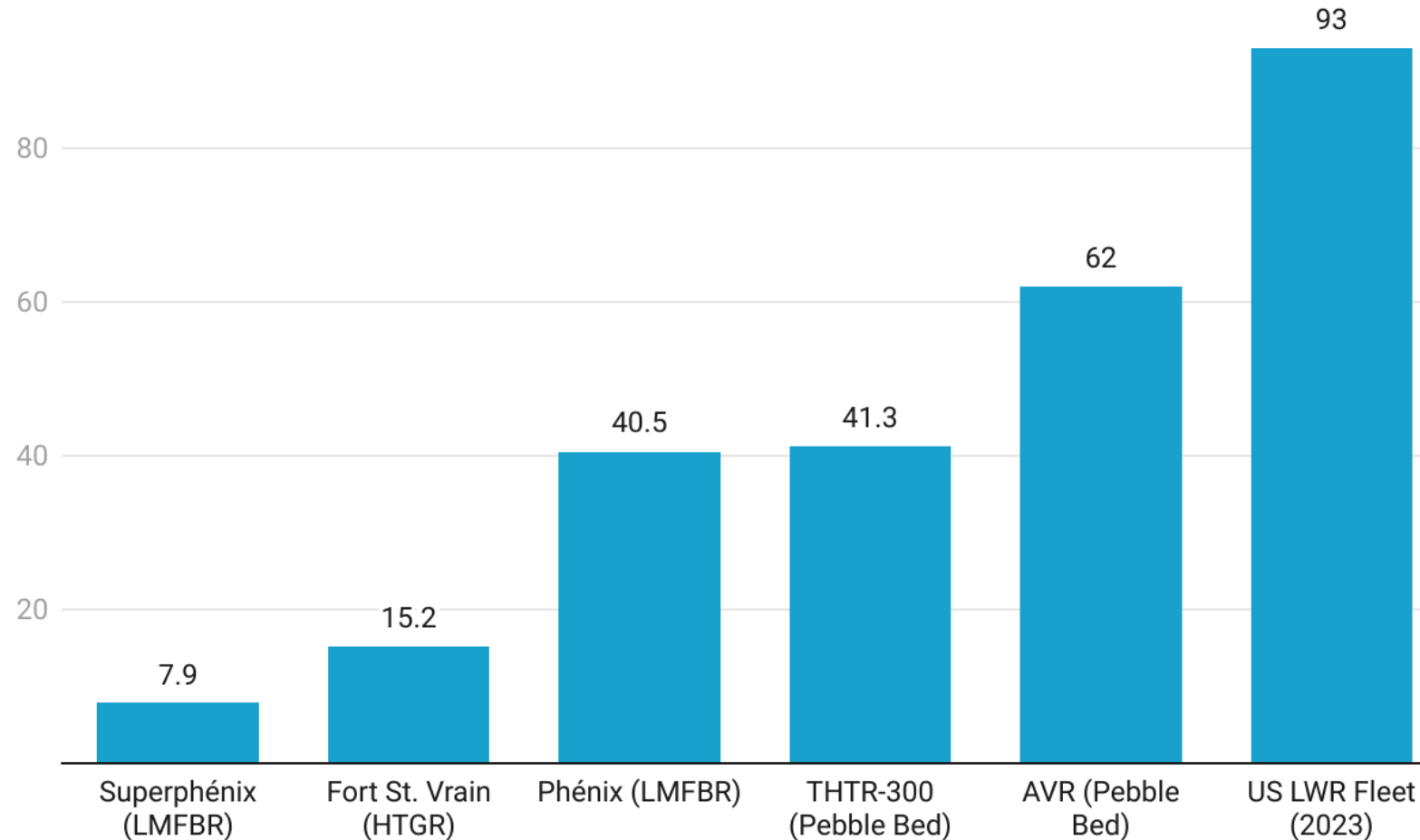


Non-LWR Technology Will Initially Struggle With Capacity Factor

Historical experience is clear: initial deployment of reactor technology faces significant operational challenge

Given the relative lack of experience with non-LWR technology, especially recently, one should not assume that non-LWRs will immediately reach LWR like capacity factor

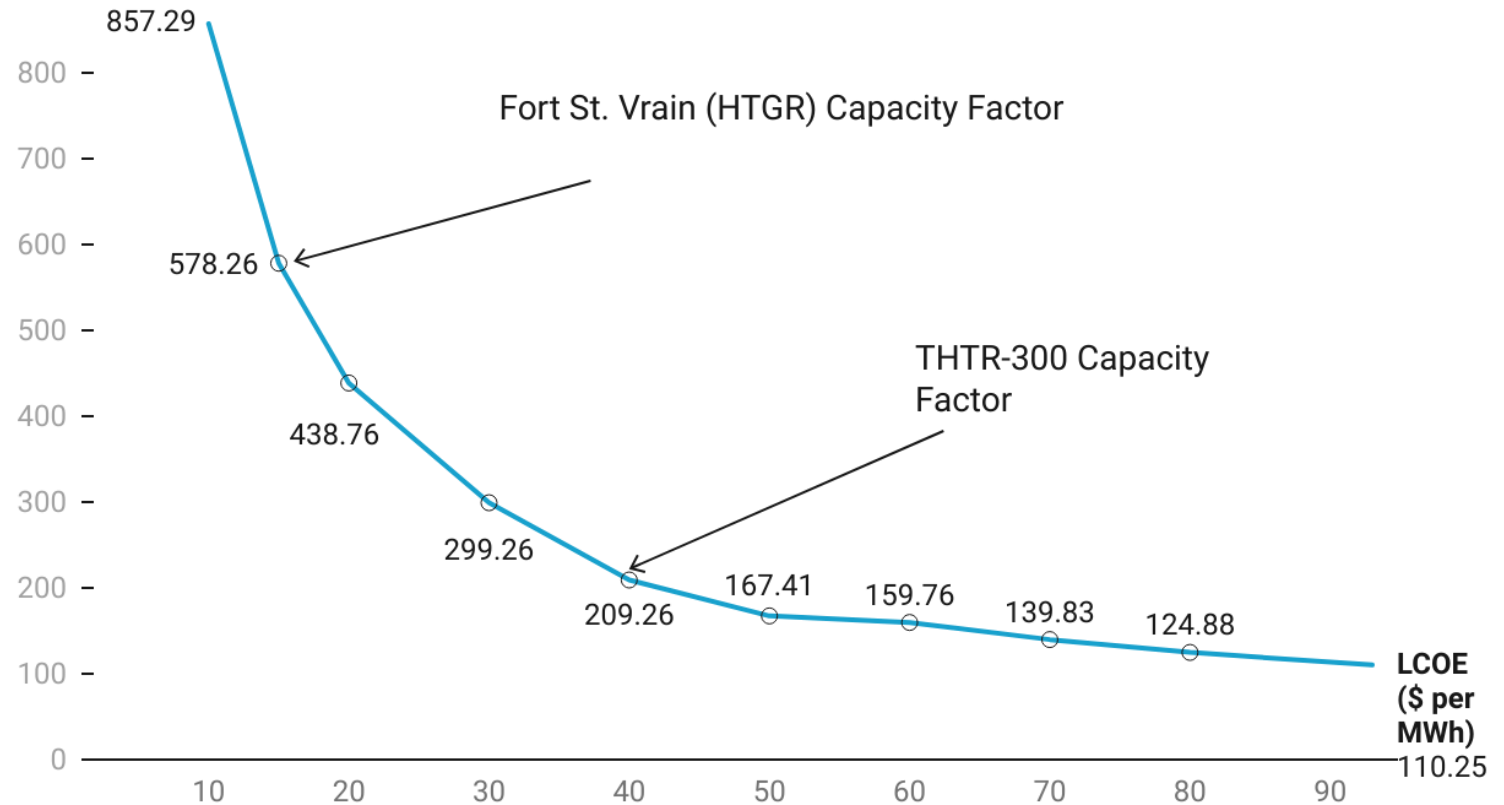
Historical Capacity Factor (%) of Select "Advanced" (non-LWR) Reactors



Nuclear power's economic viability is dependent on high capacity factors

Capacity Factor Profoundly Impacts Project Economics

LCOE (2024 USD per MWh) vs Capacity Factors



Assumes \$15,000 per kWe OCC, 30% ITC and LPO Loan Guarantee