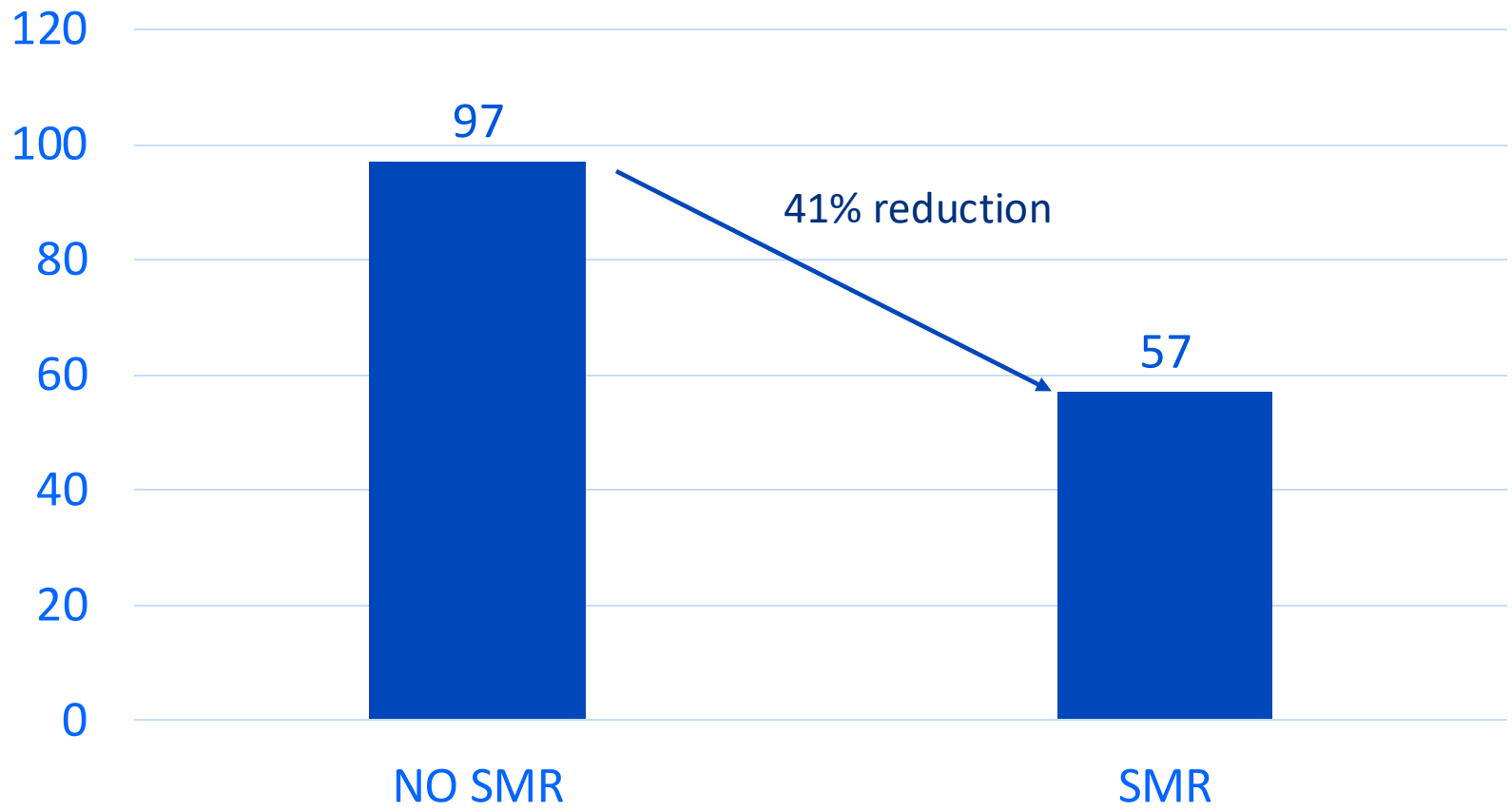
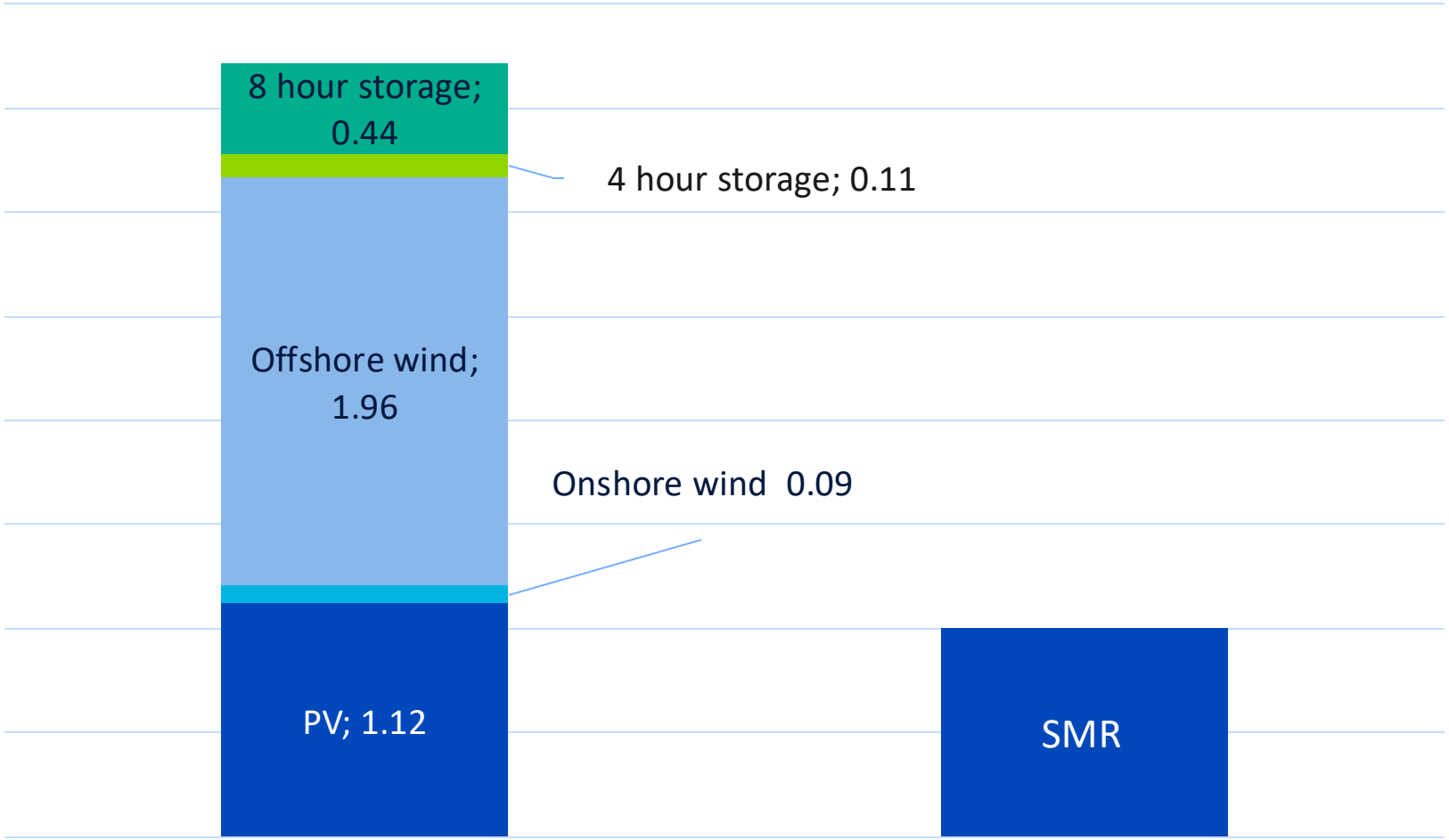
New Nuclear for New England?: Why and What Needs to be True?

Capacity buildout requirement significantly smaller with SMR (GW)



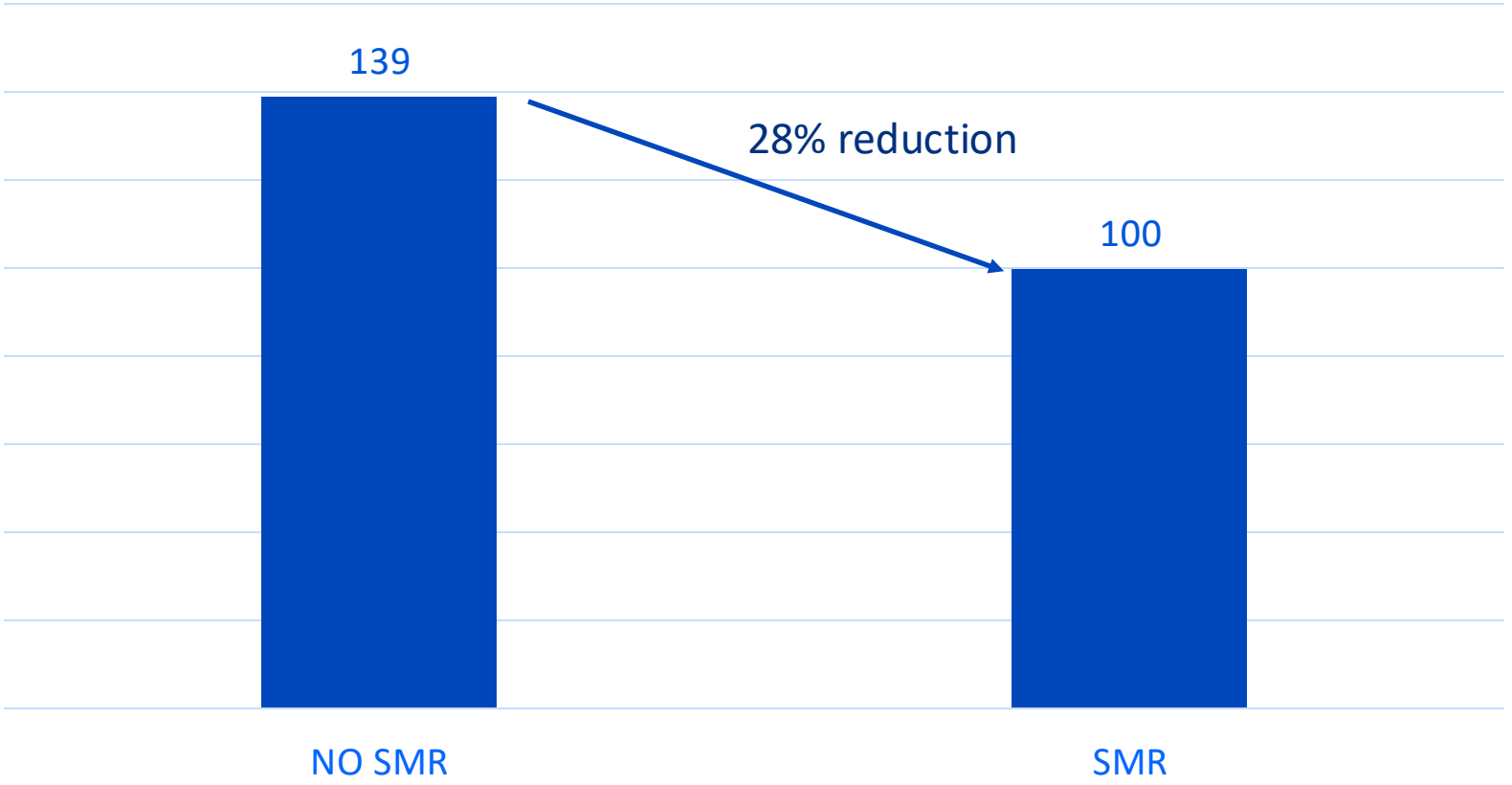
Source: ISO-NE ISO EPCET

Resources displaced by 1 GW SMR (GW)



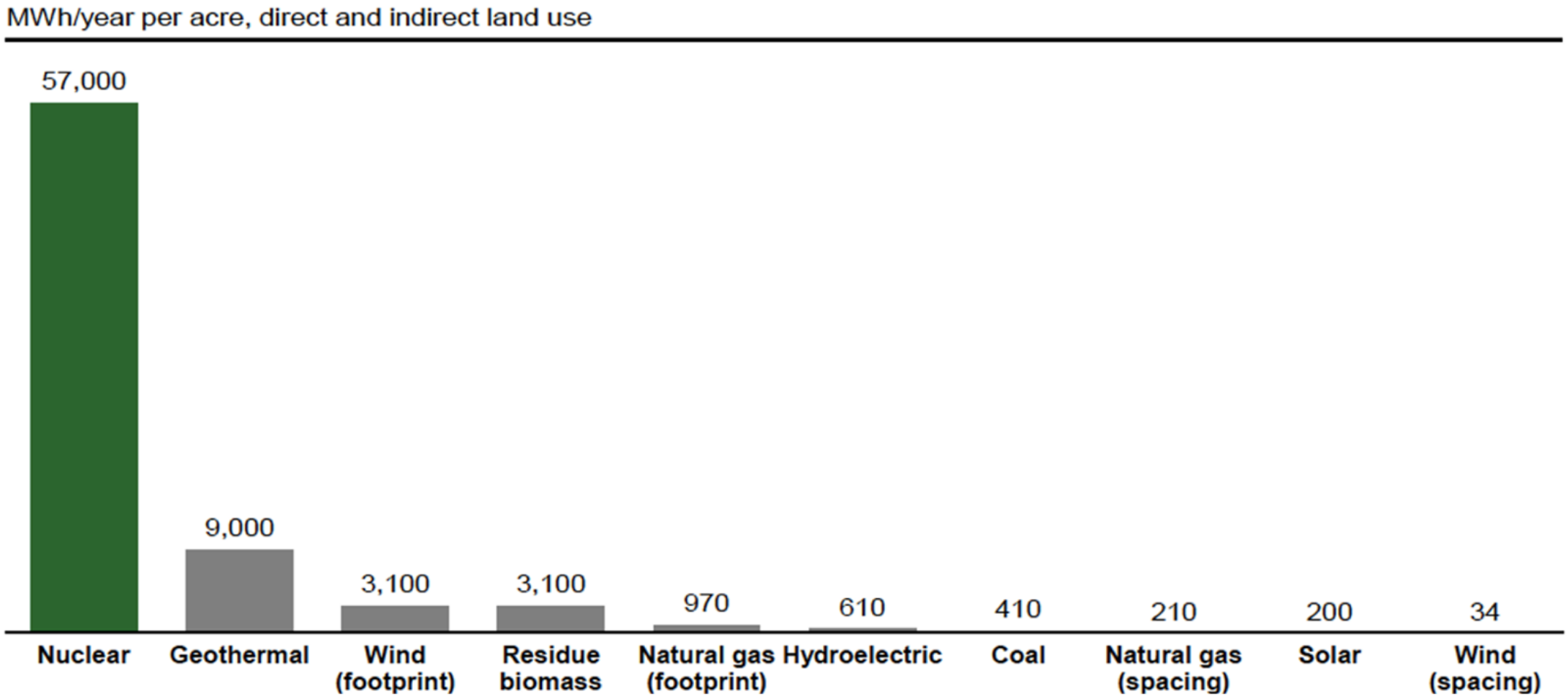
Source: Clean Air Task Force derived from ISO-NE ISO EPCET 15 GW SMR scenario prorated to 1 GW

System costs are lower with 15 GW SMR ($/MWH)



Source: ISO-NE ISO EPCET

Nuclear significantly reduces land-use per MWh



Source: Lovering et al., 2022.

Dense footprint

300 MW x 4 (GE Hitachi/Ontario)

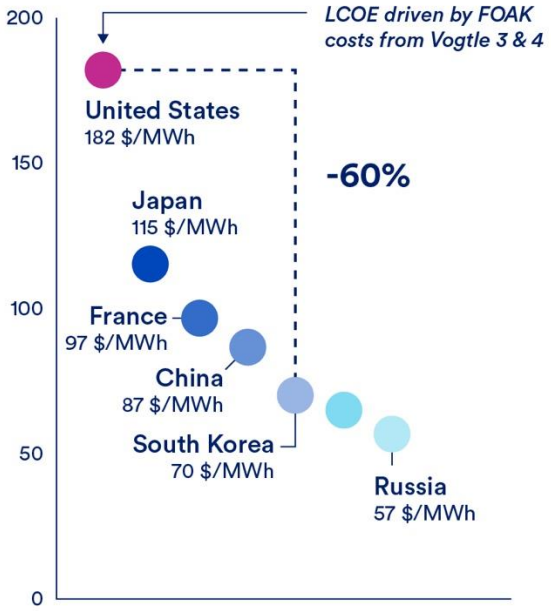
5.6 GW (Barakah, UAE)

What has to be true to achieve the EPCET $8500-> $5,500/kw target with on time delivery in the 2030s?

- **Completed, constructible designs**, ideally already built
- A **large orderbook** of 1-2 **standardized designs in each size class** at national scale
- **Unified, experienced delivery** team with cost-conscious project management and aligned incentives
- A **robust supply chain**, including skilled labor force
- **Recent experience shows these factors can reduce cost substantially!**
- **Community and political support/acceptance**

It can be done!

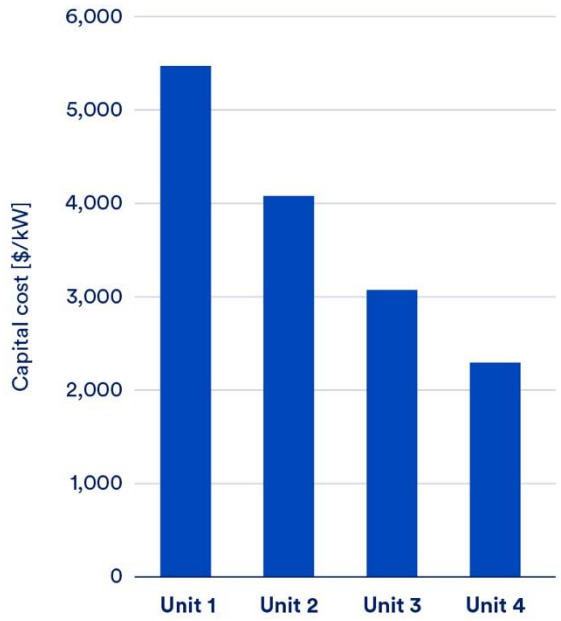
LCOE of new nuclear builds ($/MWh)



Note: LCOE calculations assume an 8% discount rate; Non-US nuclear LCOEs scaled from 2020 to 2024 dollars

Source: Lazard; Bloomberg NEF; International Energy Agency; Nuclear Energy Agency; Japan Renewable Energy Institute; Bureau of Labor Statistics

CAPEX Unit 1 – 4 at Barakah ($/kW)



Sources: Energy Technologies Institute; McKinsey; CATF; ENEC

Schedule compression: Vogtle 3 - 4

Days between major milestones	Unit 3	Unit 4	Δ (%)
Cold Hydro to Hot Functional Test Start	191	103	-46%
Hot Functional Test Duration	94	42	-55%
Hot Functional Test Complete to 103(g)	371	88	-76%
103(g) to Fuel Load	71	20	-72%
Fuel Load to Mode 4	56	35	-38%
Mode 4 to Mode 2 (startup)	88	146	+66%
Mode 2 to Synch to Grid	26	16	-38%
Mode 2 to 100% Power	84	48	-43%
Synch to Grid to Substantial Completion	121	59	-51%
Fuel Load to Substantial Complete	291	256	-12%
Overall	**1,018**	**509**	**-50%**

Source: Southern Company

Generations of Nuclear

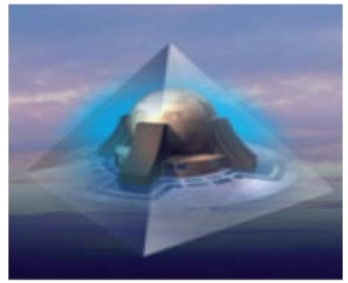
Generation I
Early prototype reactors

Generation II
Commercial power reactors

Generation III
Advanced LWRs

Generation III+
Evolutionary designs

Generation IV
Revolutionary designs



Gen I | **Gen II** | **Gen III** | **Gen III+** | **Gen IV**

1950 1960 1970 1980 1990 2000 2010 2020 2030

Potential Advanced Nuclear Characteristics

- ”Inherently safe”
- Higher temperatures
- Flexible output
- Simpler modular construction
- Smaller unit size / incremental deployment
- Fuel recycling & accident resistant fuels
- Black start capability

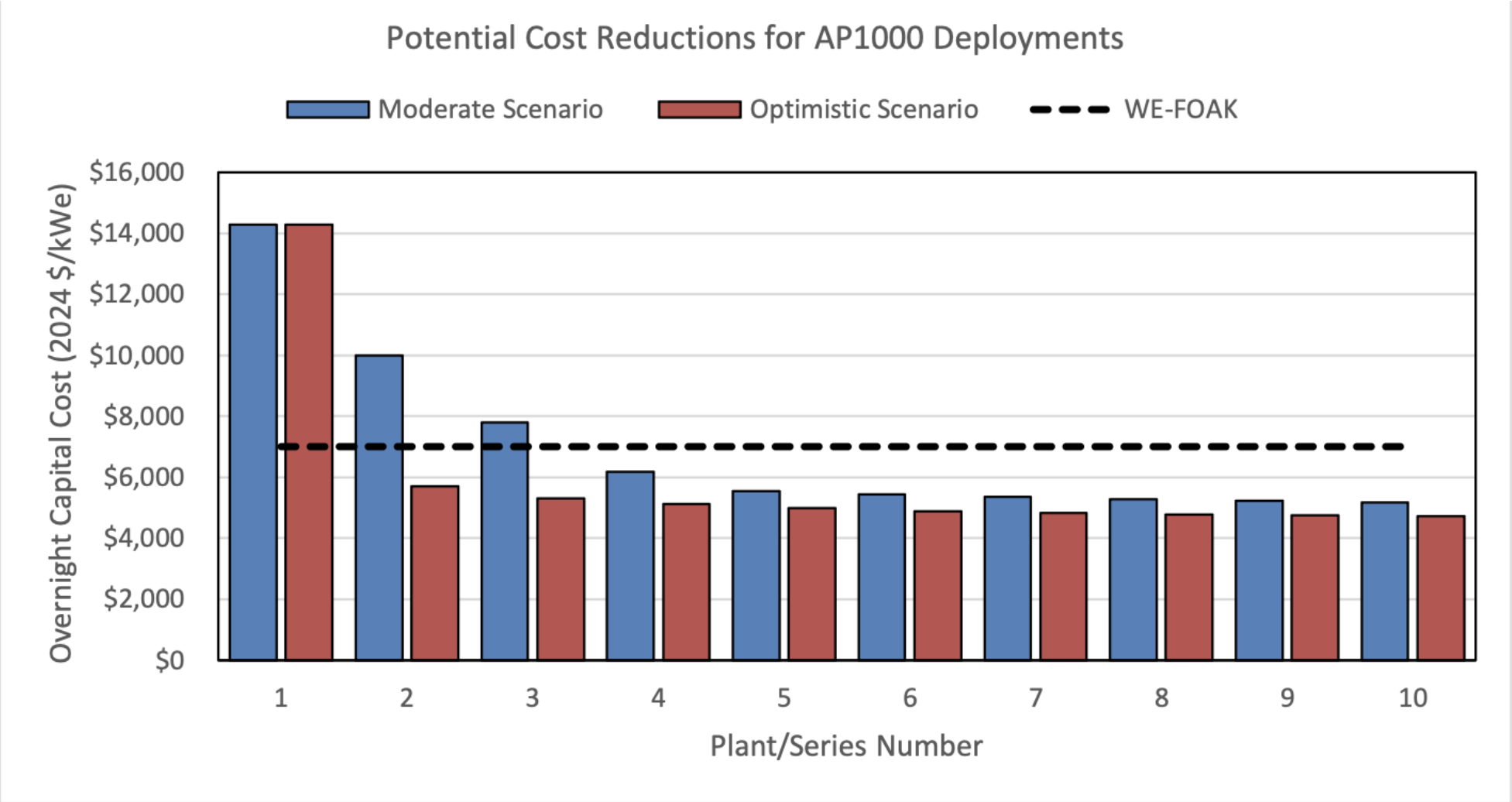
Value
according to vendors

Cheaper power &/or Easier to finance

More markets & Greater acceptance

Wider suite of applications

TBD… meanwhile we have proven options that could come down in cost



Source: Idaho National Lab(2025)