



Preserving the Nuclear Option

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Who is NuStart?

- NuStart Energy Development, LLC
 - Constellation
 - Duke
 - EDF, INA
 - Entergy
 - Exelon
 - Florida Power & Light
 - Progress
 - Southern
- Tennessee Valley Authority
- Westinghouse
- General Electric

Background

- Established in April 2004
- Founded on principles of:
 - Vision
 - Responsibility
- Consortium approach
 - Unified industry voice
 - Addressing generic, one-time issues

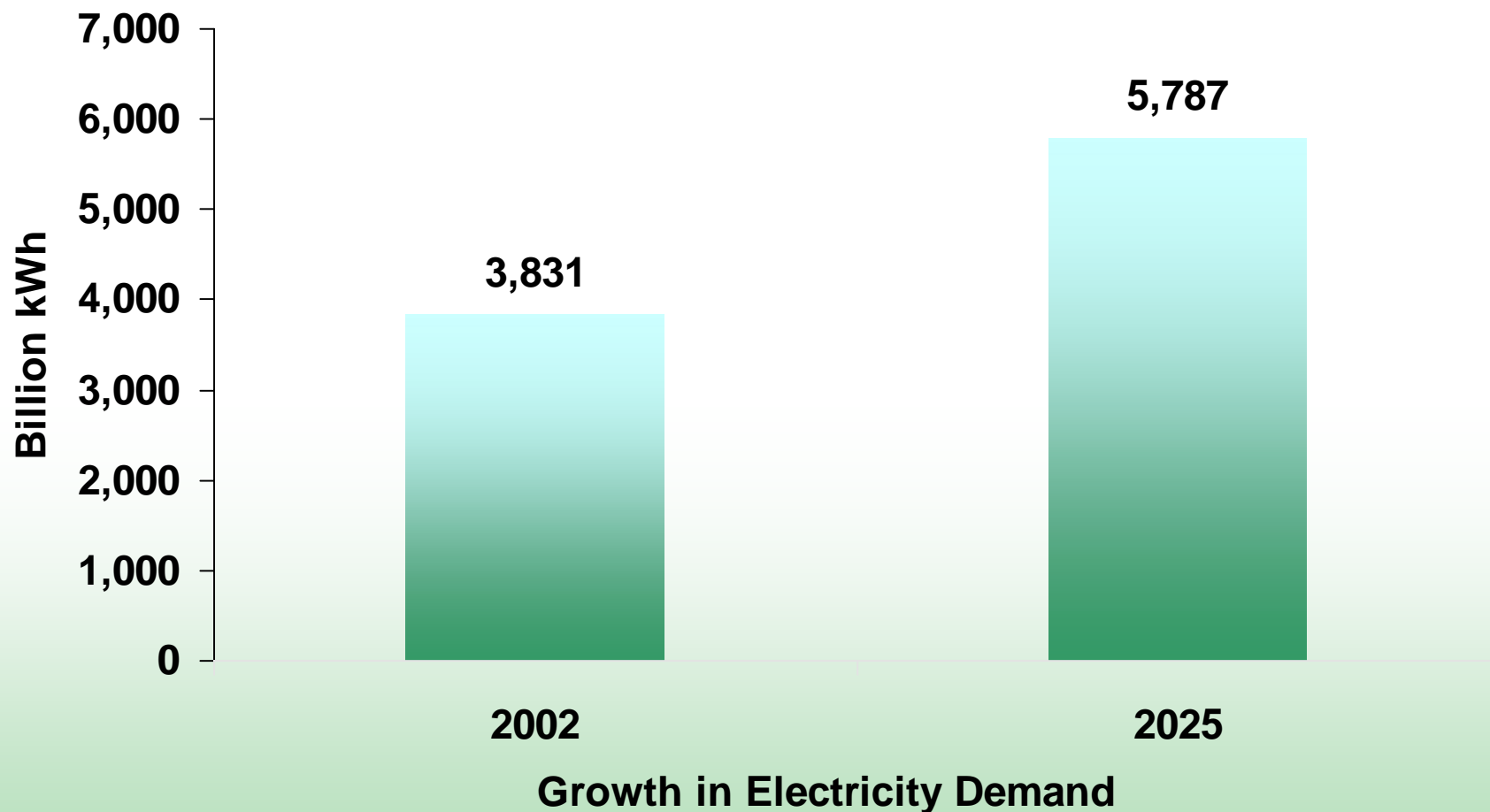
NuStart Vision

- Nuclear energy is viewed by power companies, investors and other stakeholders as a safe and economically-viable alternative to meeting our country's future electricity needs, and that the nuclear industry is poised to meet new demands for generation.

Basis for NuStart Vision

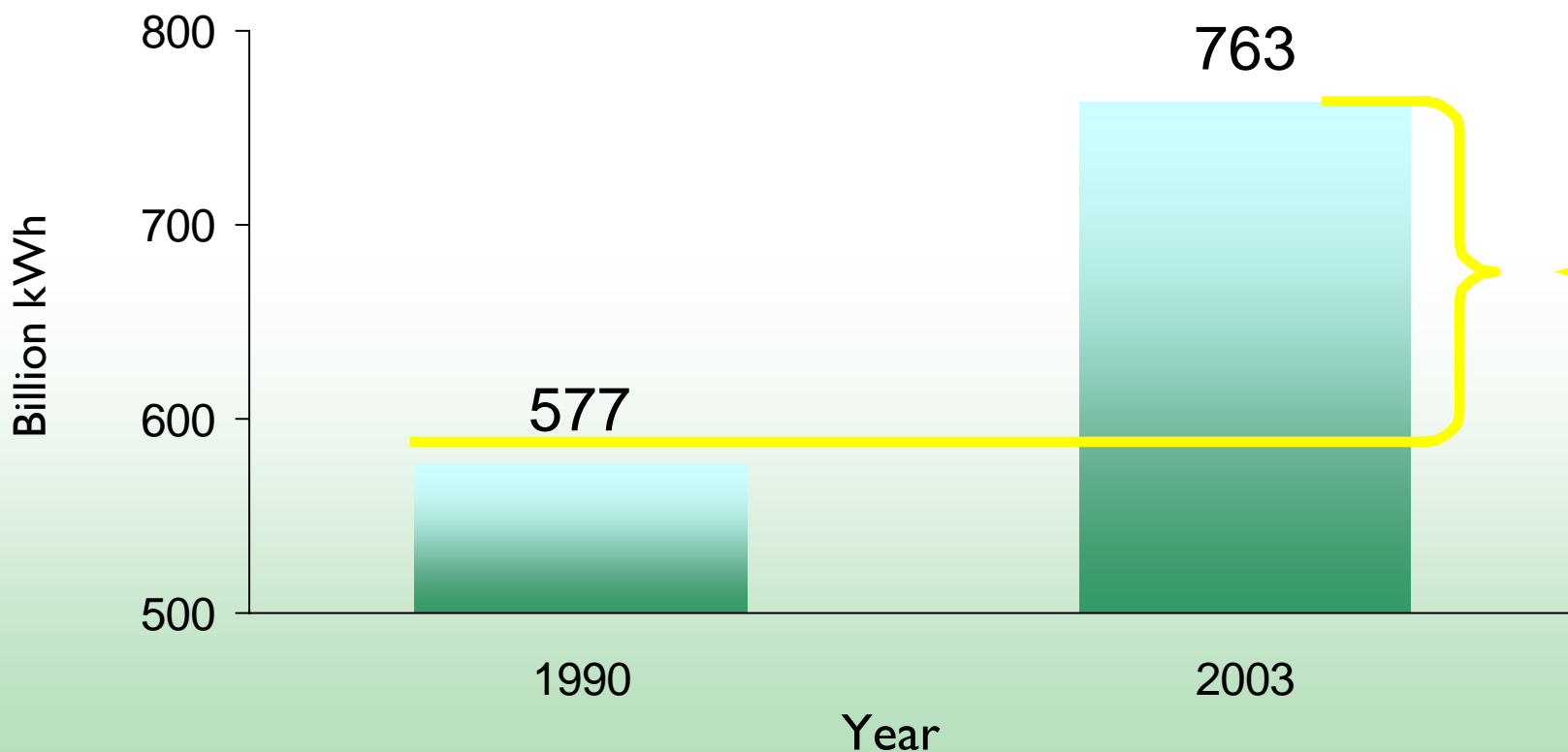
- Excellent performance of current nuclear fleet
- Recognized need for fuel diversity
- Heightened concern with environment
- Increasing demand for electricity
- Rising price and demand for natural gas

U.S. Needs 50 Percent More Electricity By 2025

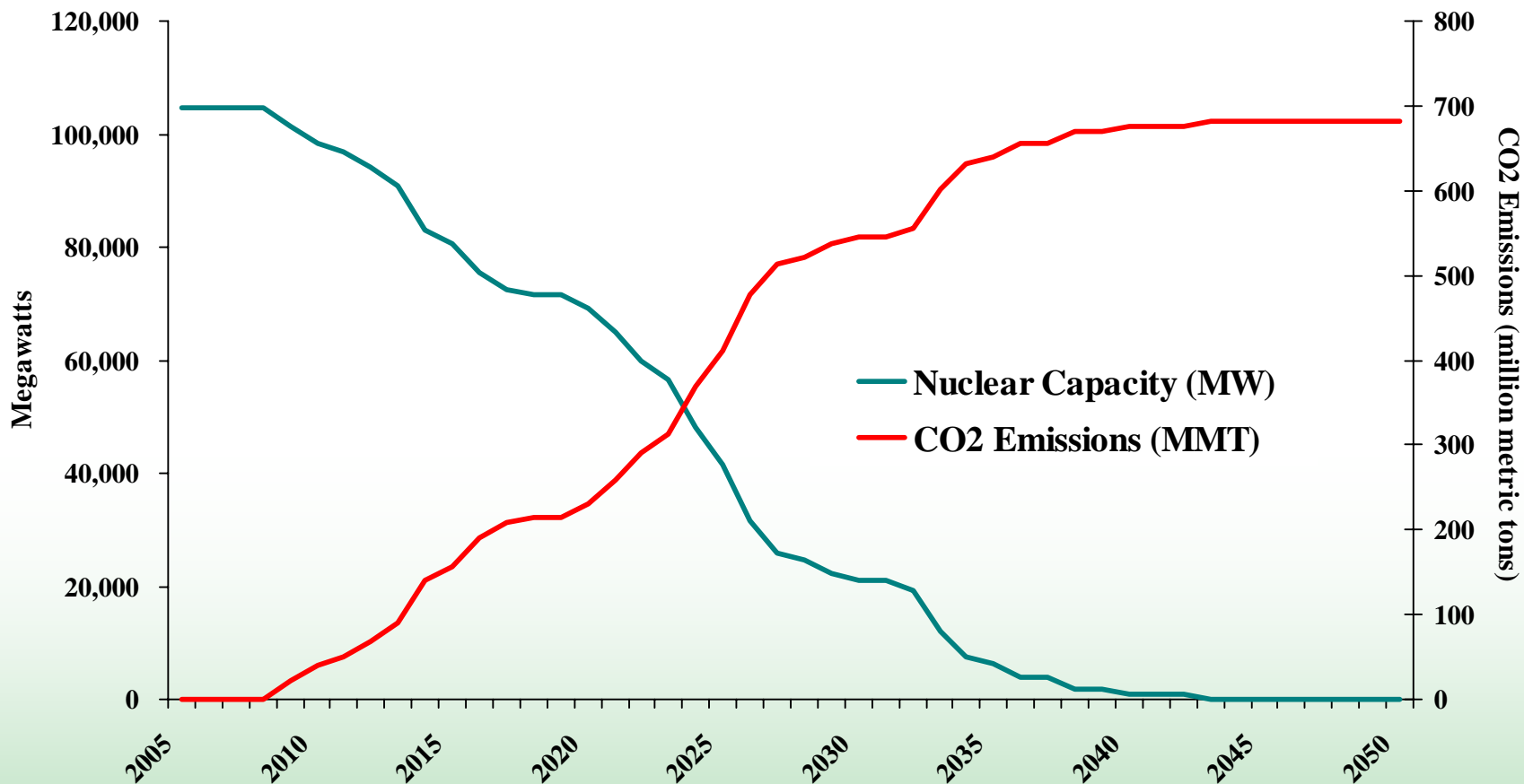


Nuclear Plant Output: Growth During the Last Decade

Equivalent to 23 new 1,000-megawatt power plants



CO₂ Emissions Resulting from Nuclear Plant License Expirations (Assuming 2003 License Renewal Status)



Sources: Capacity data—RDI; license expiration data—NRC; emission rates—EPA CEMS.

Assumptions: For every 100 MW of retired nuclear capacity, fossil generation replaces 95 MW and non-emitting generation replaces 5 MW. 2003 is reference year for fossil-fired emissions rate. Includes license extensions approved as of 2003. Average capacity factor for fleet is 90%.

Assessment

- All supply components to electricity portfolio are critical
- Nuclear component unique given lead time associated with specific issues
- Action needed now in order to preserve the nuclear option for the future

Challenges Facing New Nuclear Plants

- Demonstrated need for base load power
- Resolution of spent fuel disposal issue
- Regulatory uncertainty
- Lack of completed advanced designs
- Public confidence
- Reestablishment of nuclear infrastructure
- Acceptable financial returns

DOE Solicitation for COL

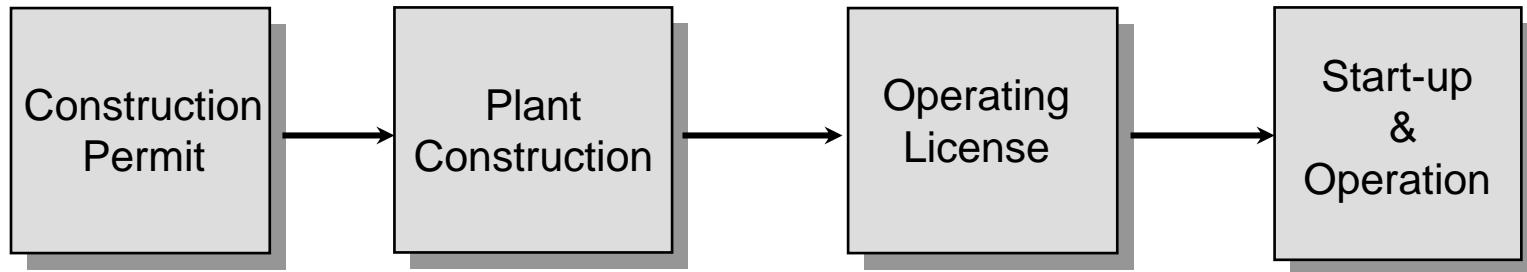
- Issued November 2003
- Part of Nuclear Power 2010 Initiative
- 50% minimum industry cost share
- Project results in NRC granting COL
- Proposals must be submitted by power generation companies or teams led by power generation companies

NuStart Project Objectives

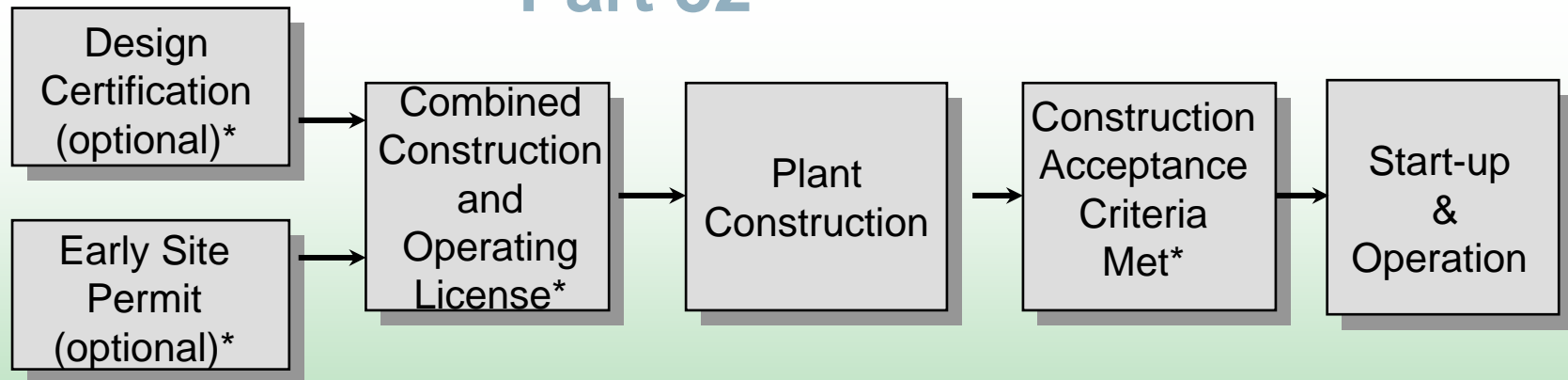
- Complete the design engineering for selected technologies:
Westinghouse Advanced Passive (AP) 1000 and General Electric
Economic Simplified Boiling Water Reactor (ESBWR)
 - Design Certification
 - COL input
 - Design Finalization
- Demonstrate “new” NRC licensing process by submitting a COL
applications
- Validate assumptions for construction cost and schedule and
ongoing operating costs
- Position industry for investment decisions

Comparison of Licensing Processes

Part 50



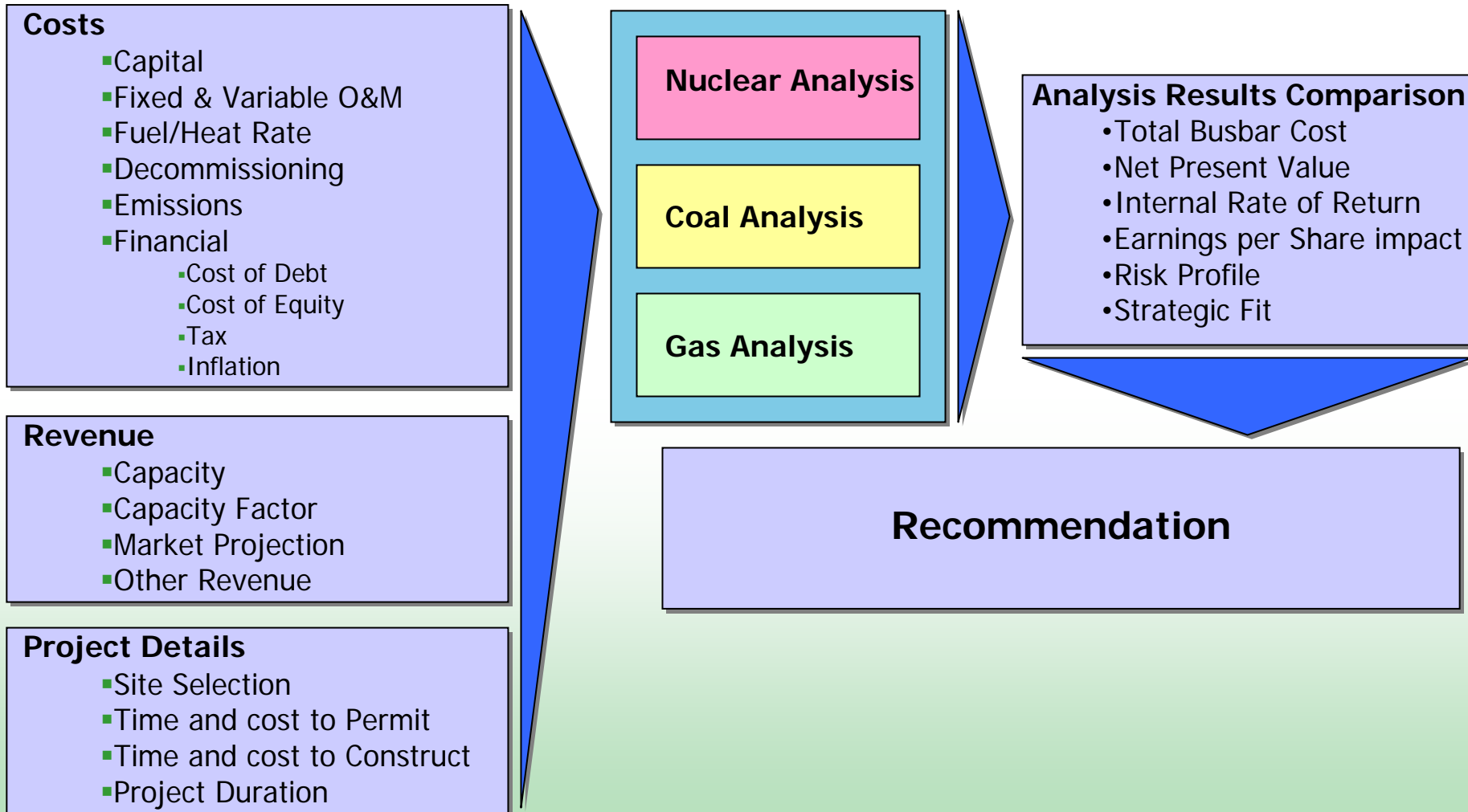
Part 52



Acceptable Financial Returns

- Relative comparison to other base load alternatives
 - Clean coal
 - Combined cycle natural gas
- Decommissioning costs
- Capital cost targets
- Incentives for “first movers”
 - Production tax credits
 - Investment tax credits
 - Government loan guarantees
 - Regulatory risk protection

Fuel Alternative Comparisons



University of Chicago Study

NEW NUCLEAR POWER PLANTS—CLEARLY COMPETITIVE			
	Nuclear	Coal	Gas
No policy assistance	\$47-\$71 per MWh	\$33-\$41 per MWh	\$35-\$45 per MWh
After engineering costs are paid; no policy assistance	\$31-\$46 per MWh	\$33-\$41 per MWh	\$35-\$45 per MWh
Limited production and investment tax credit for nuclear	\$25-\$45 per MWh	\$33-\$41 per MWh	\$35-\$45 per MWh

Note: Under a greenhouse gas reduction policy, the capital cost of new fossil-fuel plants would increase significantly, according to the University of Chicago study. Coal-fired plants would cost \$83 to \$91 per MWh and gas-fired plants would cost \$58 to \$68 per MWh.

SOURCE: UNIVERSITY OF CHICAGO STUDY; MWH=MEGAWATT-HOUR

Summary

- Projected electricity demand increases coupled with environmental concerns suggest need for additional nuclear production
- Current fleet of reactors cannot uphold 20% contribution of electricity supply given projected demand increases
- Coordinated government and industry action needed now to reduce the time to market for new nuclear investments
- Preserving nuclear option is not to the exclusion of other electricity sources.
- Despite obstacles, no better time than now.