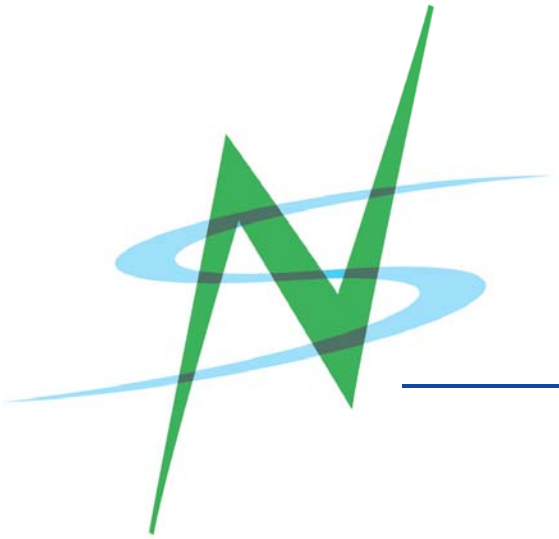


NuStart Energy℠

Marilyn C. Kray
Vice President, Exelon Generation
President, NuStart Energy Development

NRC 2005 Regulatory Information Conference
Session A2 – New Reactor Licensing Issues
March 8, 2005

Who is NuStart?

- NuStart Energy Development, LLC

Constellation	Exelon
Duke	Florida Power & Light
EDF, INA	Progress
Entergy	Southern

- Tennessee Valley Authority
- Westinghouse
- General Electric

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
- Sensitivity to grid stability
- Recognized need for fuel diversity
- Heightened concern with environment
- Increasing demand for electricity
- Rising price and demand for natural gas

Assessment

- All supply components to electricity portfolio are critical
- Nuclear component unique given specific challenges to new investment
- Action needed now in order to preserve the nuclear option for the future

Challenges Facing New Nuclear Plants

1. Demonstrated need for base load power
2. Resolution of spent fuel disposal issue
3. Regulatory unpredictability
4. Lack of completed advanced designs
5. Public confidence
6. Reestablishment of nuclear infrastructure
7. Acceptable financial returns

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

Need for Acceptable Financial Returns

- Must be favorable to shareholders on an individual project basis
- Must be superior to other fuel alternative investments
  - Clean coal
  - Combined cycle natural gas

Fuel Alternative Comparisons

Costs
- Capital
- Fixed & Variable O&M
- Fuel/Heat Rate
- Decommissioning
- Emissions
- Financial
  - Cost of Debt
  - Cost of Equity
  - Tax
  - Inflation

Revenue
- Capacity
- Capacity Factor
- Market Projection
- Other Revenue

Project Details
- Site Selection
- Time and cost to Permit
- Time and cost to Construct
- Project Duration

Nuclear Analysis

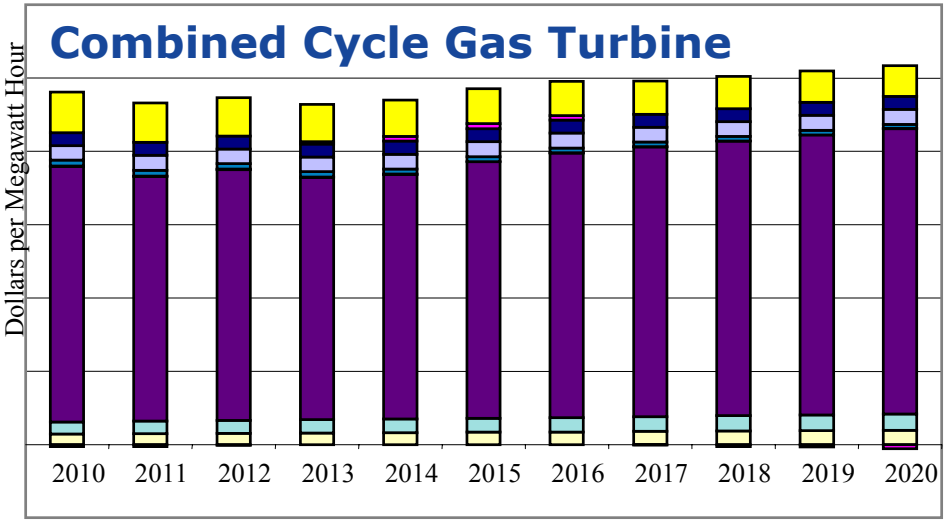
Coal Analysis

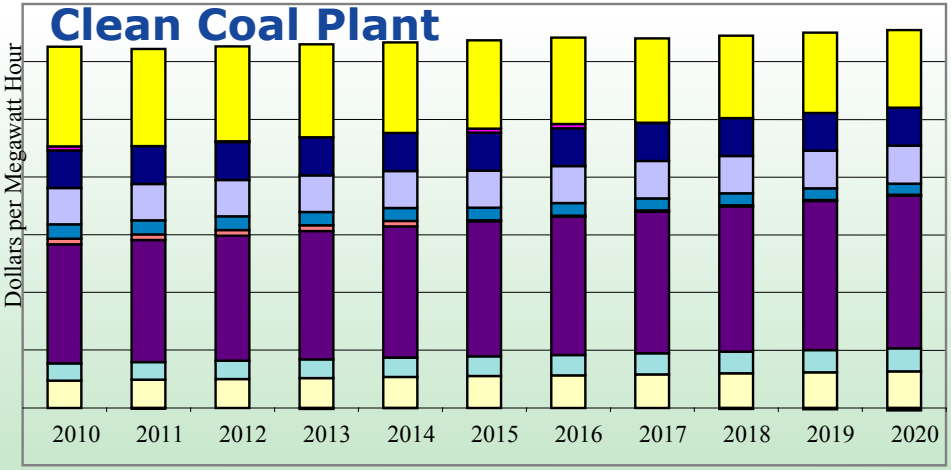
Gas Analysis

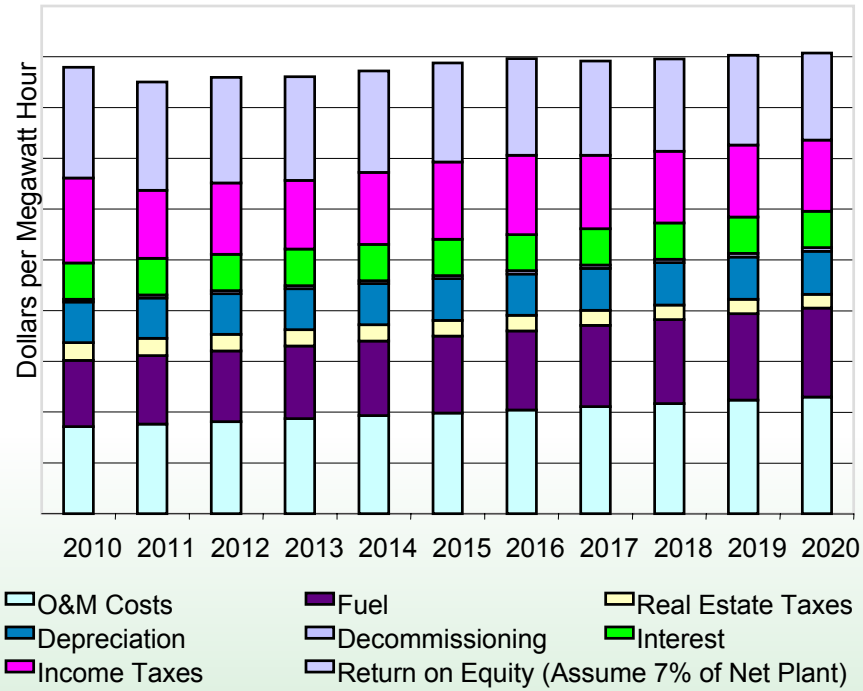
Analysis Results Comparison
- Total Busbar Cost
- Net Present Value
- Internal Rate of Return
- Earnings per Share impact
- Risk Profile
- Strategic Fit

Recommendation

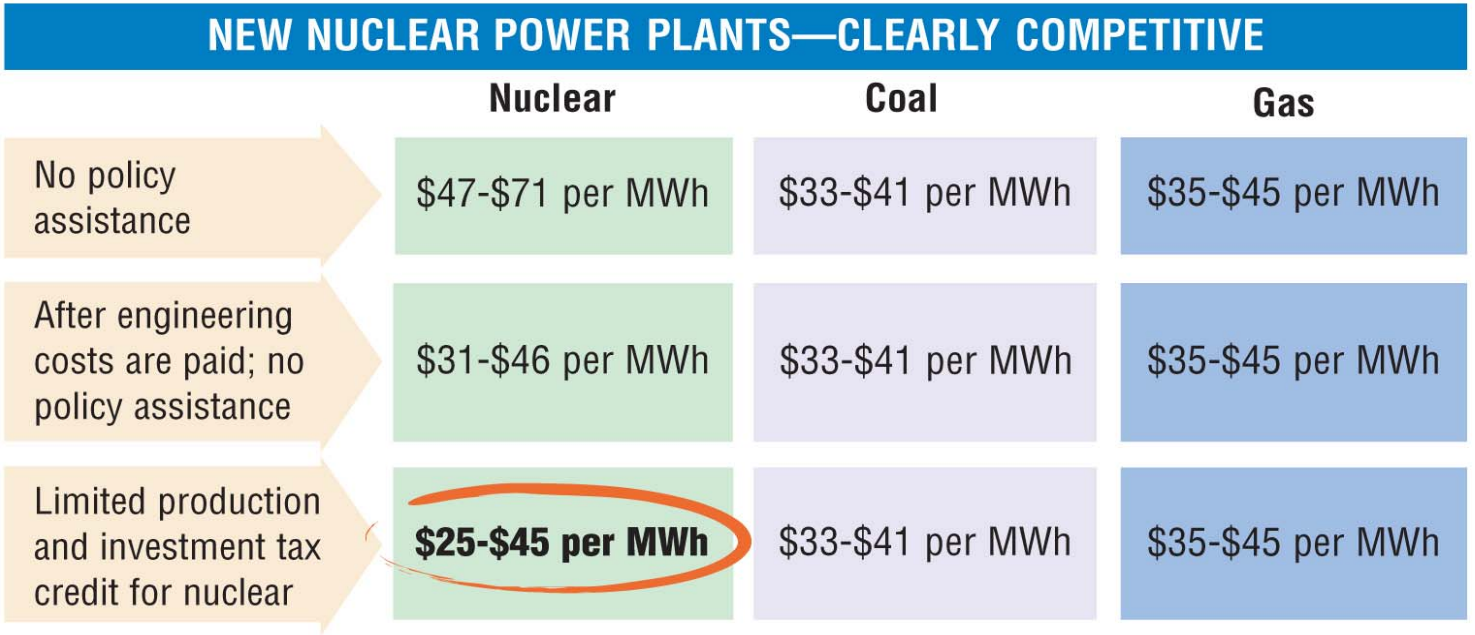
Total Cost Curves







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

- Investment decisions based on economics
- Regulatory process directly impacts the financial and risk analysis of a nuclear investment
  - Time and cost of licensing
  - Finality of decisions
- Coordinated government and industry action needed now to reduce the time to market for new nuclear investments
- Financial incentives needed for “first movers”