

New Nuclear Build in the US: Opportunities, Risks, Actions

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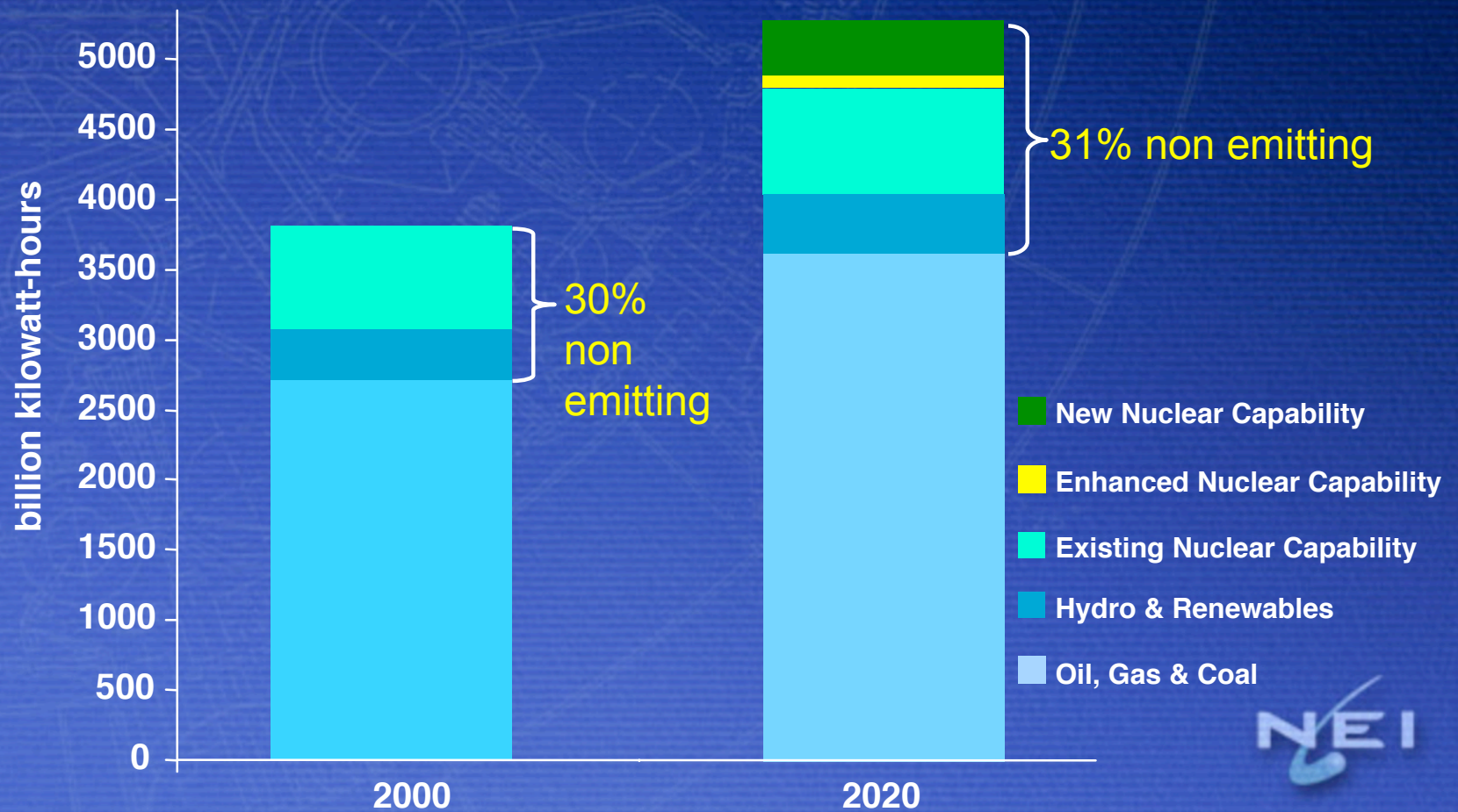


N U C L E A R
E N E R G Y
I N S T I T U T E

The Opportunities ...

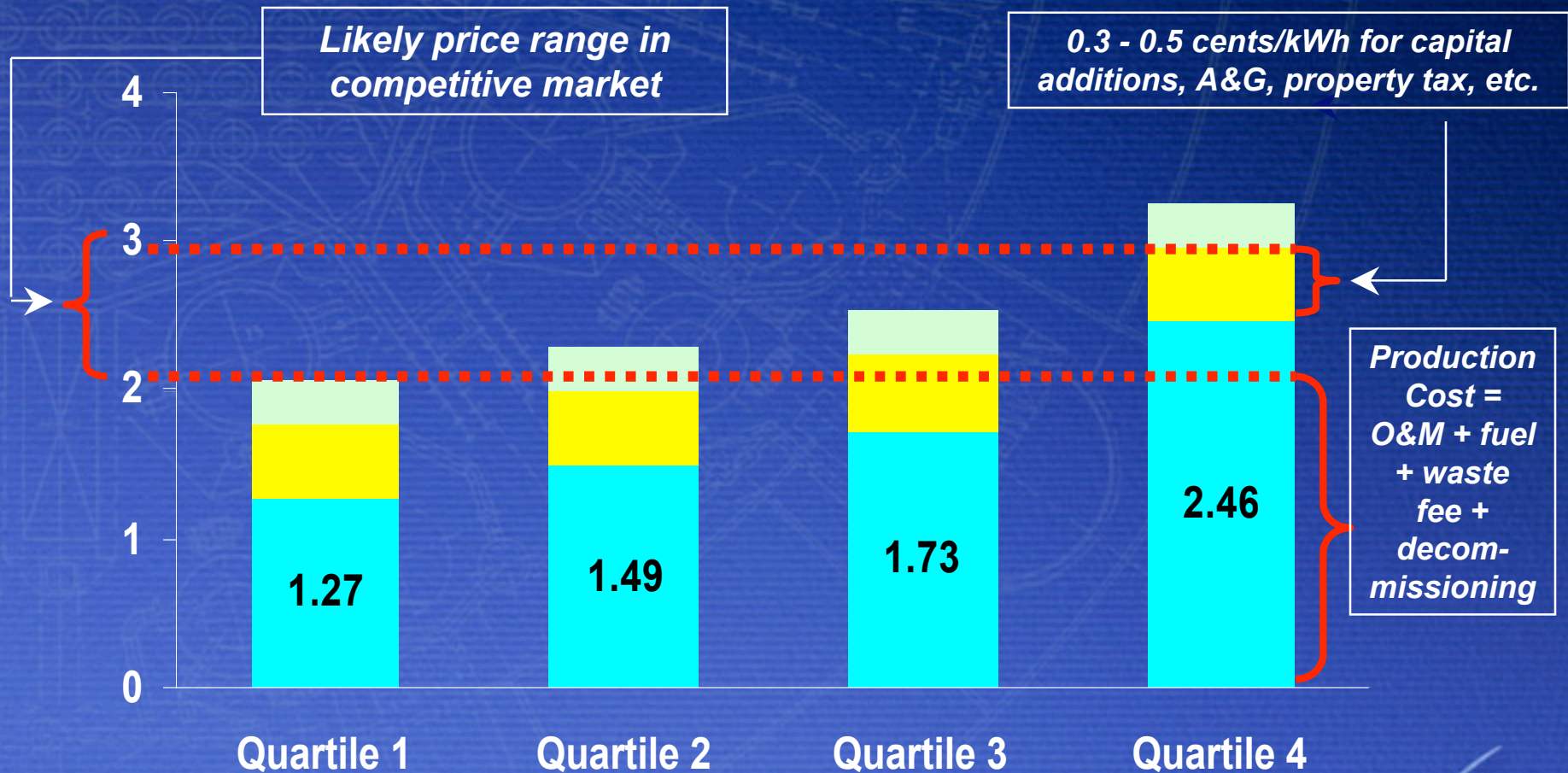
- **Energy policy and the business case are aligning.**
- **Need for power in 2010 to 2015 timeframe**
 - **Stability of supply**
 - **Clean air concerns**
 - **Volatility of gas prices**
- **Strong support exists within the Administration and Congress to implement an energy policy with a robust nuclear component.**
- **The industry is working aggressively to establish the business case.**

Meeting the Need for More Electricity While Maintaining the Percentage of Non-emitting Generation



Most U.S. Nuclear Units Are Well-Positioned for Competition

1998-2000 3-Year Rolling Average Production Cost



Data source: EUCG



New Nuclear Power Plants: Competitive Position @ \$1,000/kWe

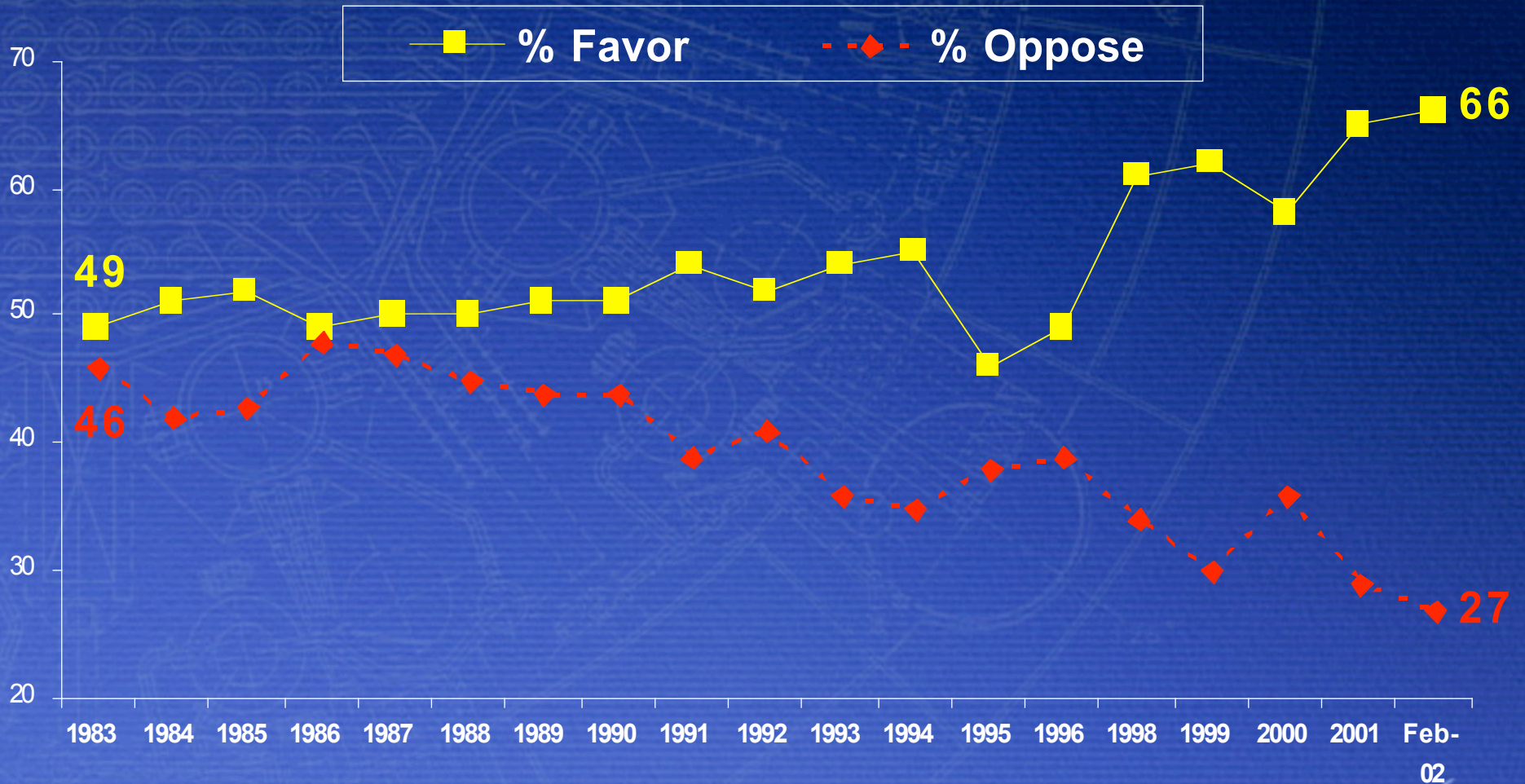
(First Year Electricity Cost in 2006 \$)



Combined-cycle plant at \$600/kWe



Public Support for Nuclear Energy is Growing



Source: Bisconti Research



The Business Risks ...

- **Nuclear (and advanced clean coal) plants are high capital, long lead time projects**
 - **Capital investment exposed for an extended period**
 - **Significant earnings per share dilution**
 - **Operational risks well understood; construction risks uncertain**
 - **Time-to-market longer, less predictable than the alternative (combined cycle gas plants)**

The Business Risks (cont.) ...

- **The technology is mature; the business environment is new, e.g.,**
 - **Existing plants built in cost-of-service environment**
 - **Current tax treatment (depreciation) more suitable for investments with stable and predictable cash flows through a rate base**
- **Advanced designs are attractive; the licensing process holds promise, but is untested**

Government Actions to Enable the Business Decisions ...

- **Bringing new plants to market in the 2010-2015 timeframe means business decisions must be made in the 2005-2010 timeframe.**
- **Within the Administration, Nuclear Power 2010 addresses technology development, licensing process demonstrations.**
- **Within Congress, nuclear provisions in the energy bill included financial incentives to help address the business risks.**

Industry Actions to Enable the Business Decisions ...

- **NEI and the industry are three years into The Plan to Enable New Plant Business Decisions. Current focus is on enabling those decisions through**
 - **Resolving investment and financing issues**
 - **Achieving cost and schedule certainty**
 - **Validating the new licensing process**



Resolving Investment and Financing Issues

- **NEI is working with the industry, Congress and the Administration on policy and legislative changes to**
 - **Reduce earnings dilution, enhance rates of return**
 - **Mitigate project completion risks**
 - **Offset advanced design first time engineering costs**
- **Industry supported energy bill provisions to mitigate investment risks in first few plants (e.g., production tax credits)**
- **Sustained investment in new plants will require tax code changes (e.g., more appropriate depreciation schedules, investment tax credits, other tax incentives)**



Achieving Cost and Schedule Certainty

- **DOE (under Nuclear Power 2010 program) and industry are sharing costs of several projects to demonstrate the new NRC licensing process, prepare applications, firm cost and schedule estimates**
- **Vendors are working toward overnight capital costs in the range \$1,000 to \$1,200 per kilowatt and three year construction schedules**
- **Dominion, TVA, Entergy, Bechtel are working with DOE on study of advanced construction techniques to confirm these schedules are achievable.**
- **The overarching objective is to be able to bring new nuclear plants to market in six years or less.**

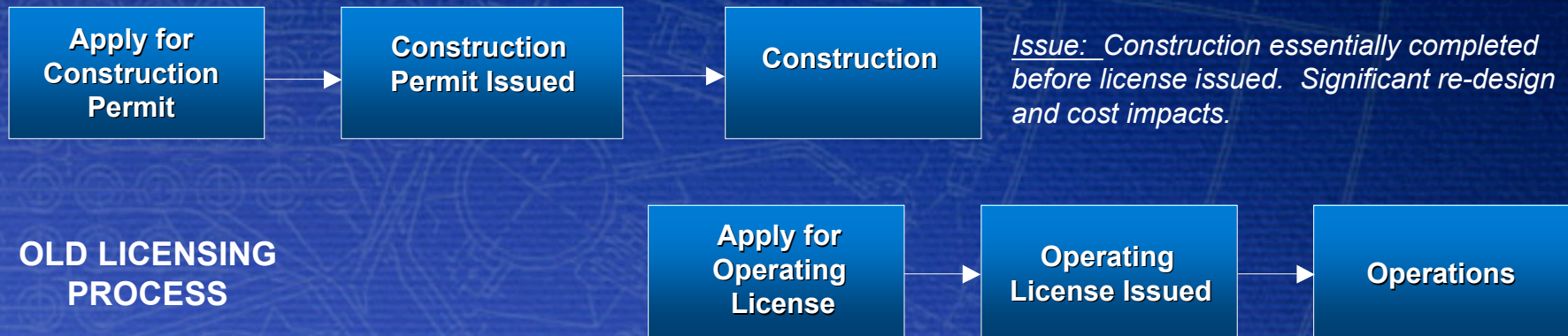


Validating the New Licensing Process

- **10 CFR Part 52 resolves site suitability and design safety issues before significant commitment of capital; introduces new threshold for post construction hearings that might delay startup.**
- **The early site permitting process is being demonstrated now with ESP applications from Entergy, Exelon, Dominion.**
- **Three designs have been certified by NRC, five more are in the process**
- **NEI and NRC have begun to engage on policy and process implementation issues for a combined construction permit and operating license.**



Validating the New Licensing Process



Summary ...

- **Political support for nuclear energy has not been this high since the 1960's.**
- **Power company interest in new build is returning.**
- **The business case for new build (or not) in the 2010-2015 timeframe will be largely made in the next two to three years.**
- **Industry and the Federal government are acting to identify and mitigate the business risks.**

The Result ...

Renewed and sustained U.S. nuclear
plant construction within ten years

