



Nuclear Energy Summit:

Panel on Financing of Nuclear Power Plants

INTRODUCTORY REMARKS



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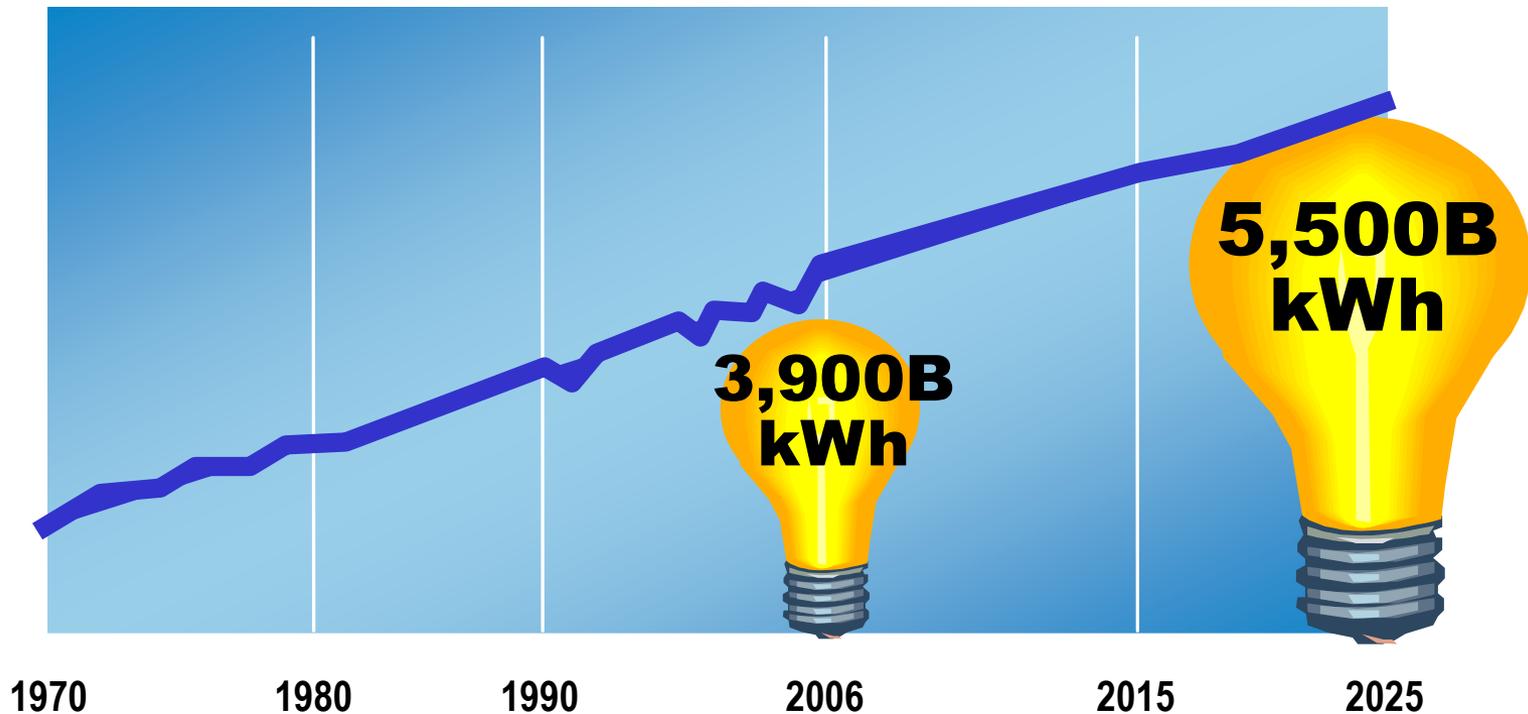
Projected Energy Demand

■ Year 2025

- ▶ 25% more energy
- ▶ 40% more electricity

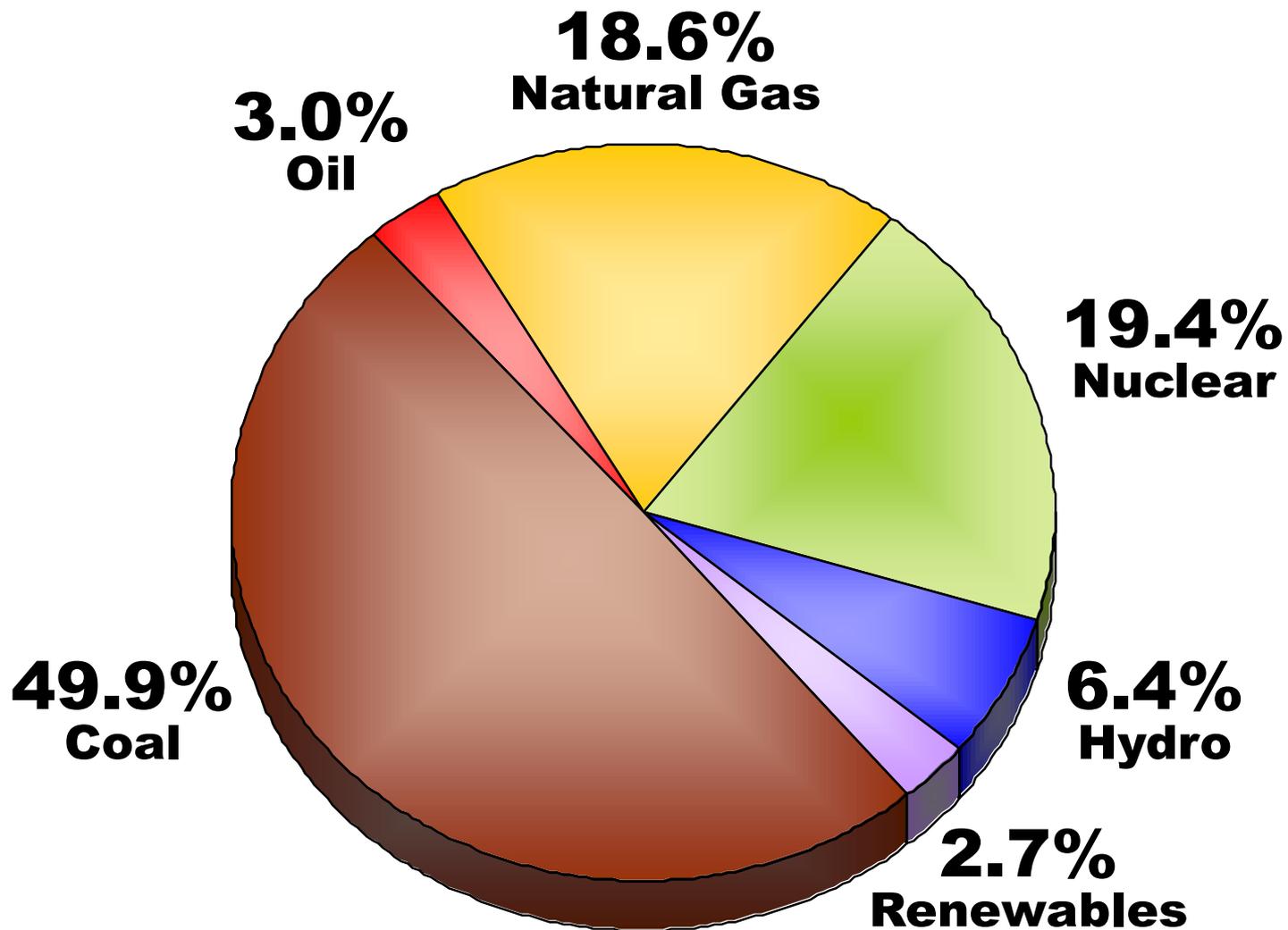
■ 1.5% electricity growth/yr

- ▶ 18,000 MW/yr new capacity to sustain growth



Source: U.S. Department of Energy

Current Portfolio Mix



Source: Global Energy Decisions/Energy Information Administration

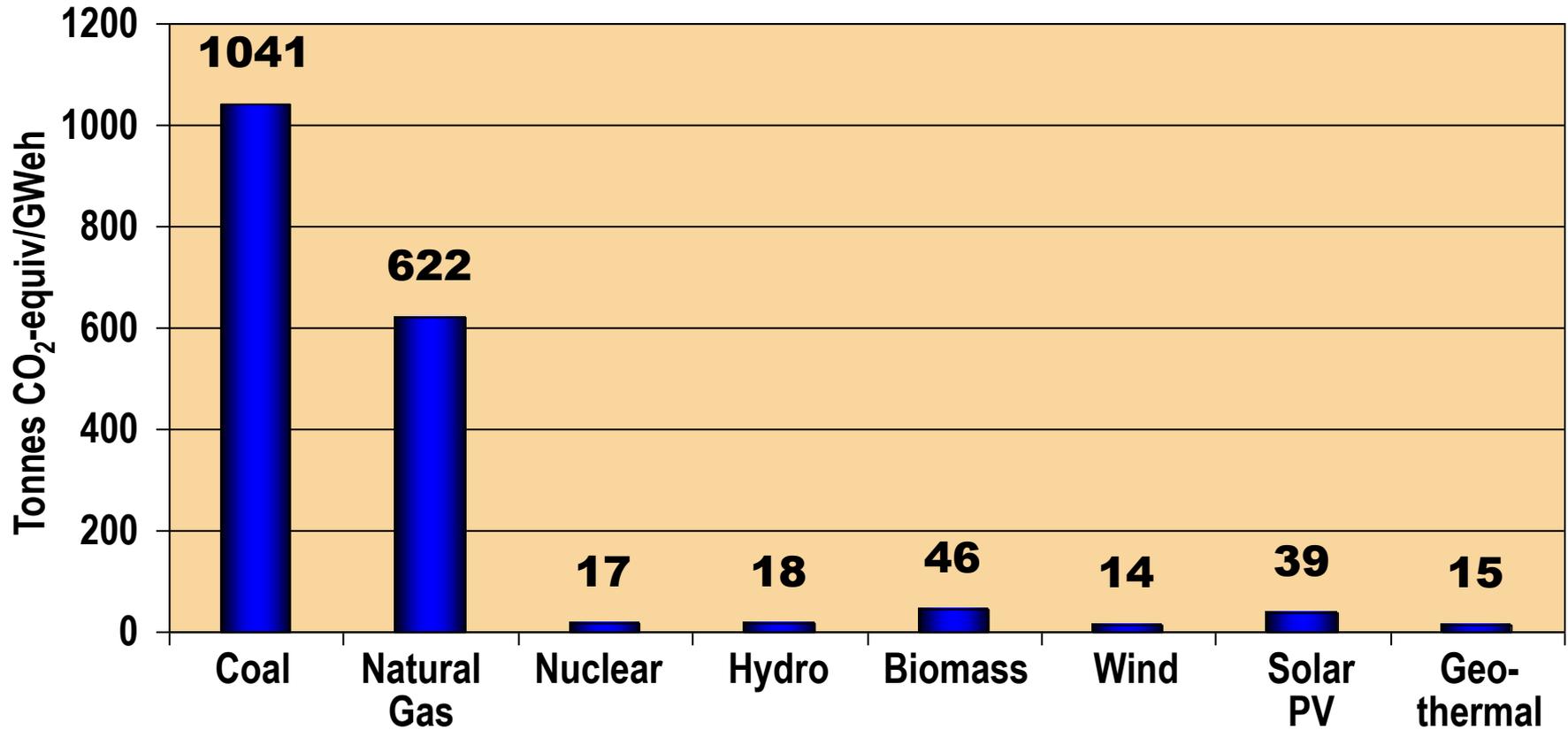
Maintaining Current Energy Portfolio Mix

- Electricity demand in 2025 to increase 40%
- To maintain current energy portfolio in 2025, mix would mean building:

50	Nuclear reactors (1,000 MW)
261	Coal-fired plants (600 MW)
279	Natural gas plants (400 MW)
93	Renewables (100 MW)

Source: 2006 Annual Energy Outlook, Energy Information Administration

Life Cycle CO₂ Emissions Analyses



Evidence of U.S. Nuclear Revival

Congress

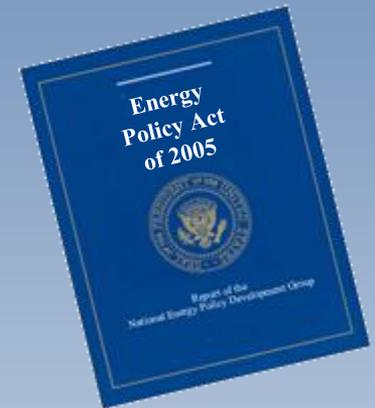
- **Energy Policy Act of 2005**
 - ▶ Supports nuclear energy as a major component of national energy policy

DOE

- **Nuclear Power 2010 program**
 - ▶ Cost sharing initiative between industry and government for new deployment

Utilities

- **Several utilities developing ESPs and COL applications for new reactors**



The Energy Policy Act of 2005



New Nuclear Plant Construction

<i>Provisions</i>	<i>EPACT No.</i>	<i>Key Attribute</i>	<i>Comments</i>
Loan guarantees	1703	80% of project cost	<ul style="list-style-type: none">■ Allows nuclear plant developer to:<ul style="list-style-type: none">▶ Increase leverage▶ Reduce financing costs
Production tax credits	1306	\$18/MW hr	<ul style="list-style-type: none">■ 6,000 MW eligible■ \$125M/1000 MW per year
Risk insurance (Standby Support)	638	Delay protection from licensing or litigation	<ul style="list-style-type: none">■ Protection up to 6 reactors■ \$500M for 1st 2 plants■ \$250M for next 4 plants
Price-Anderson	602	Nuclear liability insurance	<ul style="list-style-type: none">■ Extension to 2025

The Licensing Process



Old Process—Two-step licensing process (10 CFR 50)



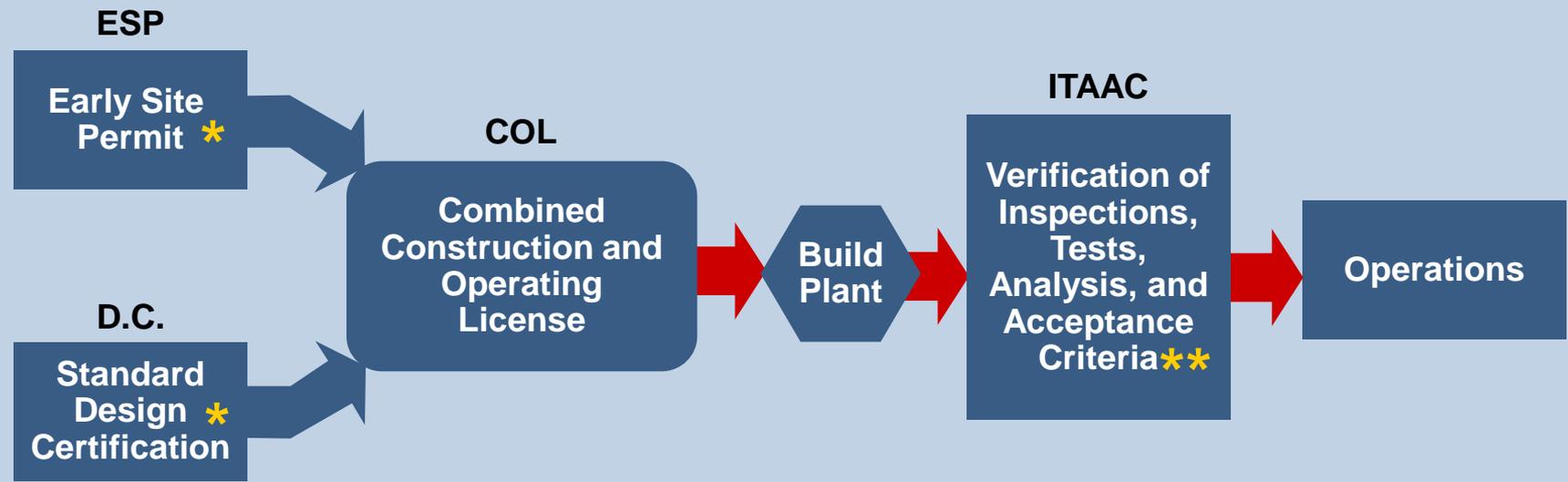
* Opportunity for intervention, hearings, and delay

15 Years

New Process—Combined licensing process (10 CFR 52)

New Process

Combined licensing process (10 CFR 52)



- * Opportunity for public comment
- ** Opportunity for hearing

9 Years



Recent News

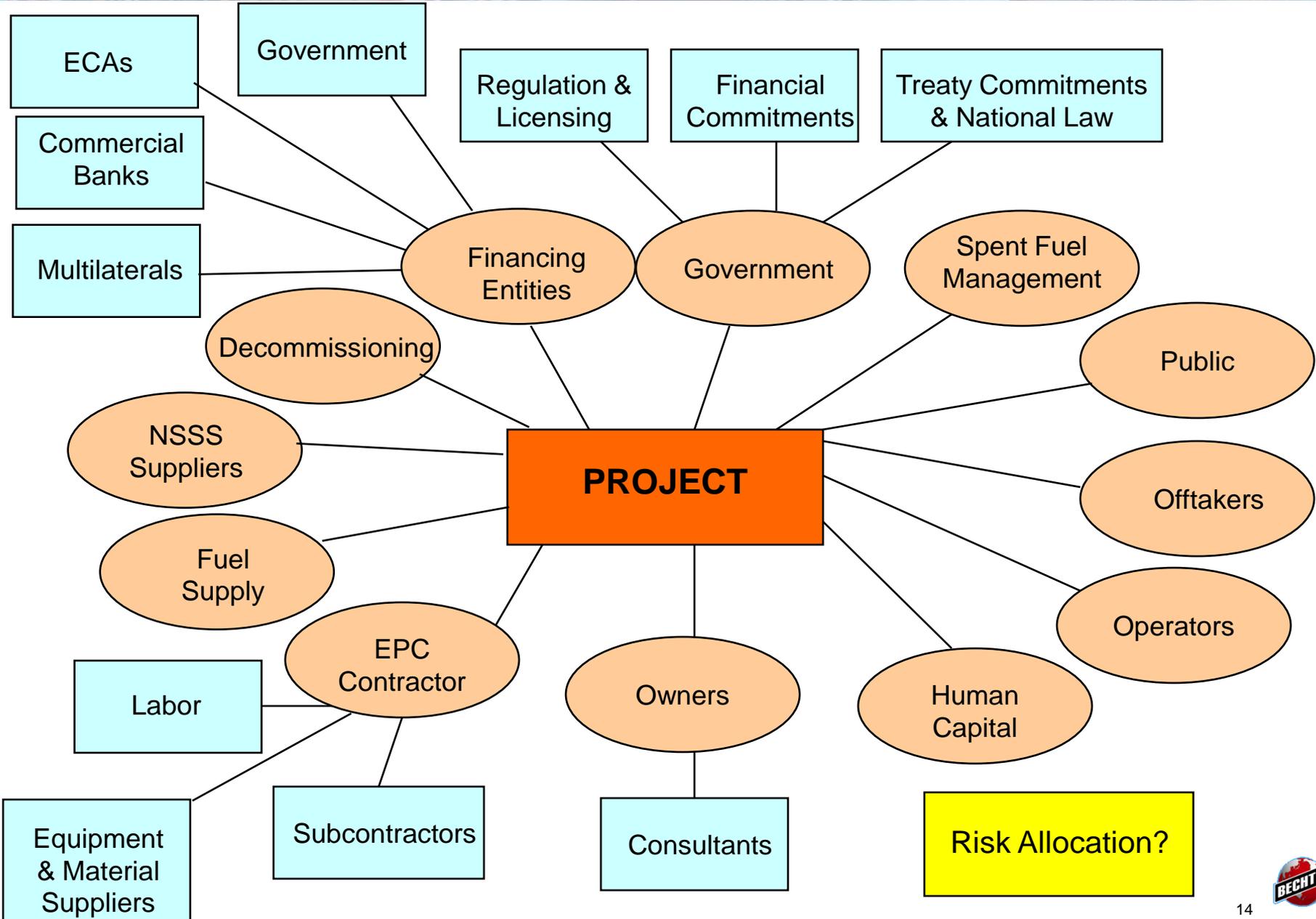
- **Last Week: 19 applications were submitted from power companies seeking federal loan guarantees to build nuclear power plants -- a number much higher than current funding could support.**
- **The applications are for construction of 21 new reactors at 14 different U.S. power plants. The estimated total construction costs for all of the projects is \$188 billion and the plants would add 28,800 megawatts of generating capacity, according to DOE.**
 - ▶ **\$6500/kW = \$188B / 28,800MW**
- **The number of projects the \$18.5 billion can support is also dwindling as input costs continue to escalate, David Frantz, director of DOE's loan program office, said in a teleconference last week. He said loan guarantees could probably accommodate only about two power plants.**
- **Loan Guarantees and Nuclear Power 2010 are "temporary" programs, Democratic Representative Peter Visclosky of Indiana told an industry conference. The chairman of the House Energy and Water Development Appropriations Subcommittee said he supported programs to expand nuclear power in the US but cautioned that the industry should view the government's \$18.5 billion in loan guarantees for new reactors and the Nuclear Power 2010 program for demonstrating the NRC's licensing process as "finite" resources.**

Improving the Prospects for Financing Nuclear Power Projects

- **Primary Concerns for Financiers:**
 - ▶ High capital costs
 - ▶ Long construction periods
 - ▶ Fuel cycle concerns
 - ▶ Regulatory uncertainty
 - ▶ First-of-a-kind risk
 - ▶ Human Resources and Supply Chain
 - ▶ Sustainability of government commitment
 - ▶ Safety culture
 - ▶ Operational Success

- **NOTE: *There has never been a project financed nuclear power plant.***

Parties Involved In a Nuclear Power Project



Nuclear Energy Summit

- Thank you very much

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