

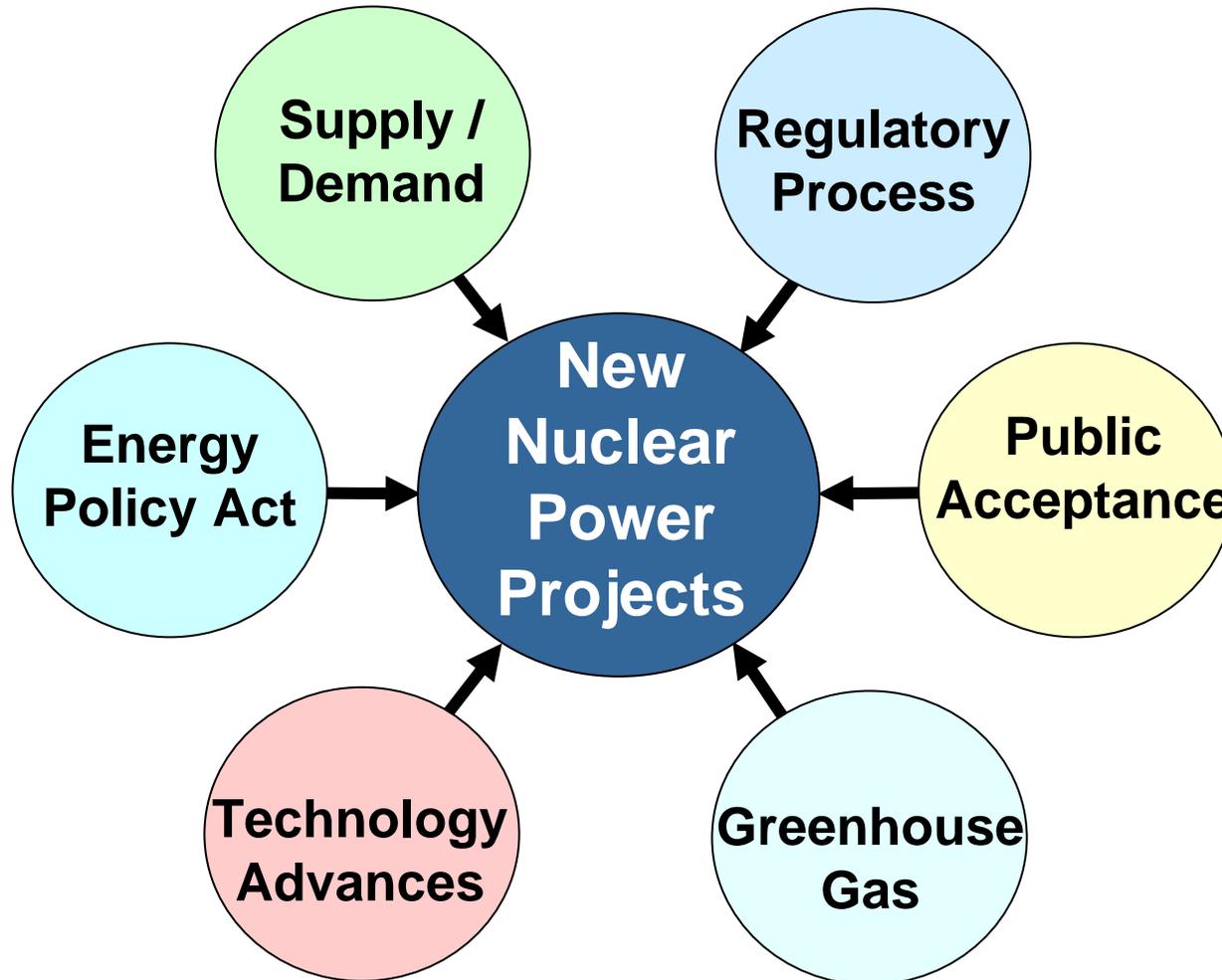


New Nuclear Development: Part of the Path Toward a Lower Carbon Energy Future

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Forces Driving New Nuclear Power Projects



**Supply /
Demand**

Driver #1 – Supply / Demand Fundamentals

- **Tremendous growth of electricity demand in the 21st century**
 - China will surpass the U.S. as largest energy consumer by 2030¹
 - Global electricity demand will double between 2004 - 2030²
 - By 2030, the electricity demand in the developing world will exceed that of developed countries by 30%²
- **In the U.S.:** Several regions projecting needs for new base load electric capacity over the next decade
 - DOE forecasts that 81,000 MW of new nuclear construction will need to be in place by 2035 to maintain nuclear generation's market share of 20%
 - 85% of electric industry executives surveyed by CERA last year felt that there would not be adequate generation within the next 5 years³
 - New nuclear plants being seriously considered by a growing number of electric power producers -- Constellation Energy, Dominion, Duke, Entergy, Exelon, Progress, SCANA, Southern, TVA, NRG, Amarillo Power, TXU, DTE, Northwest Energy and Ameren

1 – Source: International Institute of Applied Systems Analysis

2 – Source: Global Electricity Outlook (IEA)

3 – CERA North American Power Executive Survey 2006: The Reality of Perceptions

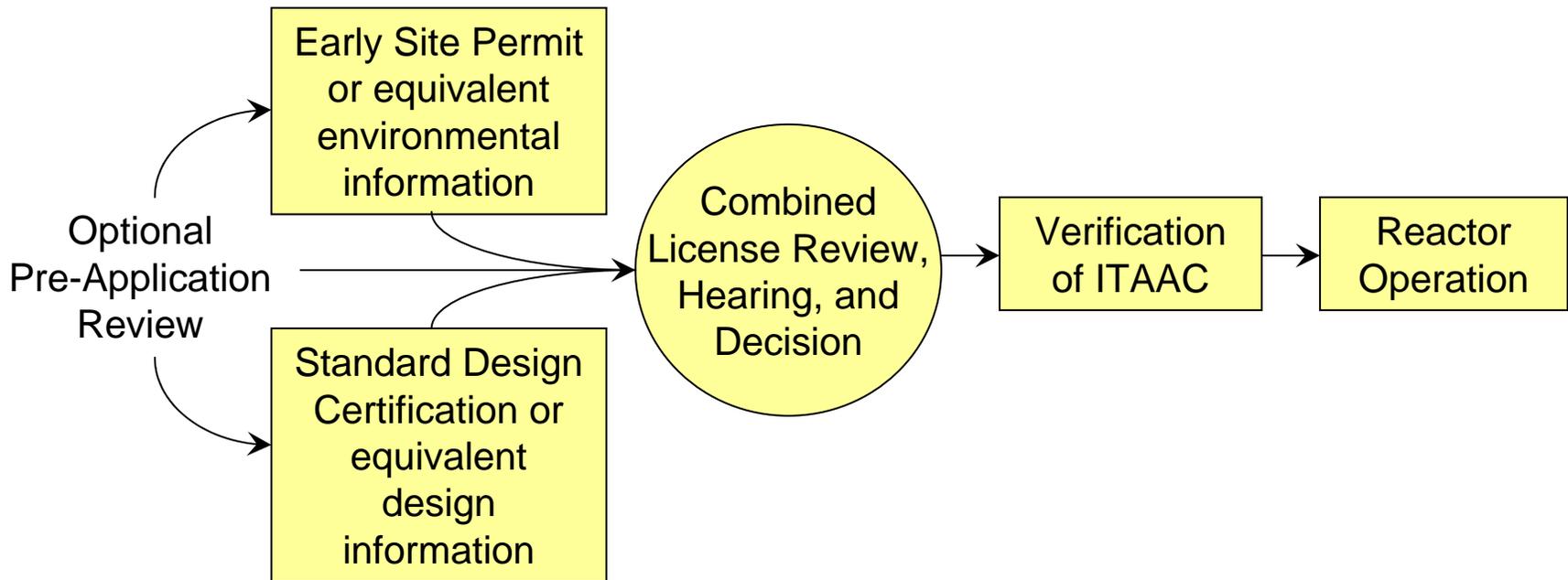
Supply /
Demand

Driver #1 – Supply / Demand Fundamentals

- **OIL:** Rising demand will require another Saudi Arabia every 10 years to keep up with increased demand²
- **GAS:** Transport constraints will limit availability of natural gas
 - Many analysts predict spot prices ten years from now in the \$5-6/MMbtu range
- **COAL:** Abundant, but with serious (and expensive) pollution control issues
- **NUCLEAR:** ~440 reactors supply 16% of world electricity. ~30 more under construction

Regulatory Process

Driver #2 – Changes in Regulatory Process



New licensing regulations create a combined construction and operating license, more streamlined process.

Public Acceptance

Driver #3 – Major Shift in Public Acceptance



~70% favorability among general public -- even higher in communities near nuclear power plants:

- 83% of residents near nuclear plants favor nuclear energy
- 87% have a favorable impression of the local plant

Source: NEI Website

Some States are Moving Aggressively to Promote New Nuclear Development

Issue	Florida	Georgia	South Carolina	Louisiana	Virginia
Allows recovery of Pre-construction Investments Prior to commercial operation	Yes	No	No	Yes	Yes
Allows recovery of cancelled plants	Yes	Yes	Yes	Yes	Yes
Cash earnings on CWIP	Yes	No	Yes	Yes	Yes
Cost Subject to Prudence Review	Yes	Yes	Yes	Yes	Yes
Annual or Periodic Prudence Review	Annual	Periodic	Annual	Annual	Annual

Greenhouse
Gas

Driver #4 – Global Warming Concerns

- **A political issue whose time has come**
 - Prominent environmentalists are rethinking nuclear opportunities
 - Drove wide bipartisan support of the Energy Policy Act of 2005
- **“Zero Emissions” Generating Source Gains new Allies**
 - Acceptance of new nuclear based not only on increased political and societal acceptance, but also because of its impact on the bottom line. Gross profit of nuclear generation could rise by 1/3¹
 - Nuclear players are “well positioned to take advantage of the fixed cost characteristics of nuclear generation during boom phases of environmental investment”²

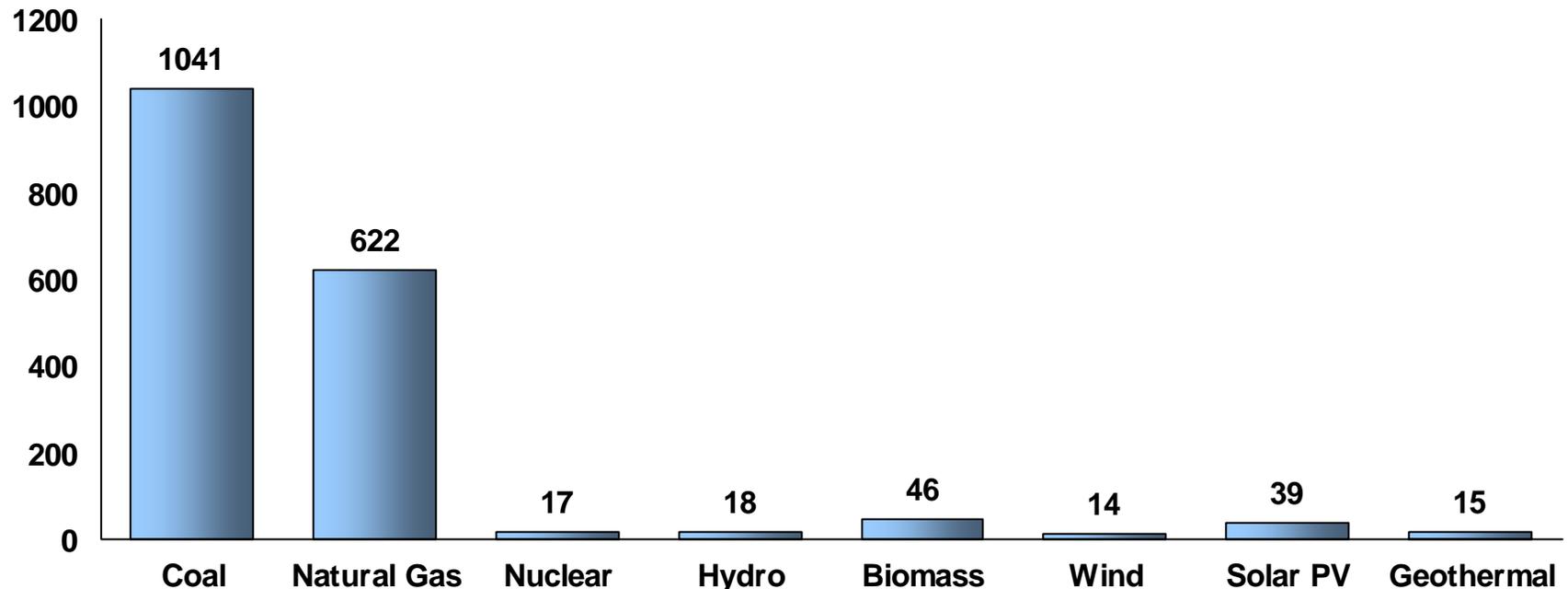
1 – Source: Bernstein Report, September 2001

2 – Source: Lehman Brothers Report, September 2004

Nuclear: Toward a Lower Carbon Energy Future

Life Cycle CO₂ Emissions Analyses

Tonnes CO₂-equiv/GW_eh



"Life-Cycle Assessment of Electricity Generation Systems and Applications for Climate Change Policy Analysis," Paul J. Meier, University of Wisconsin-Madison, August, 2002

Nuclear energy is on par with renewables

Nuclear: “A Clean Green Generating Machine”

“Nuclear energy is the only non-greenhouse gas-emitting power source that can effectively replace fossil fuels and satisfy global demand.”

*Patrick Moore, Founder Of Greenpeace,
Chair and Chief Scientist of Greenspirit*

“If we NIMBY anywhere and anytime, we should not expect the utility industry to provide electricity to everyone, everywhere, all of the time. If we believe that global warming is a real threat to our planet, then the very best way to provide baseload electricity is through emission-free nuclear power.”

*Norris McDonald, President
African American Environmental Assoc.*

“Nuclear energy is the only green solution.”

*James Lovelock, London geophysicist who developed
the Gaia Theory on which the Greenhouse Effect is based*

**Adding Twice Today's
Nuclear Output to
Displace Coal**

=

- Increasing solar power 700 fold to displace coal
- Increasing wind power 40 fold to displace coal
- Driving 2 billion cars on ethanol, using 1/6 of world cropland
- Increasing fuel economy of 2 billion cars from 30 to 60 mpg
- Installing CCS at 800 large coal-fired power plants
- Cutting electricity use in homes, offices and stores by 25%

We would need all of these initiatives just to maintain current carbon emission rates over the next 50 years

Source: "A plan to keep carbon in check," Socolow and Pacala, Scientific American, Sept. 2006

**Energy
Policy
Act****Driver #5 – Energy Policy Act of 2005****Jump starts the nuclear industry
by providing:**

- Loan Guarantees
- Production Tax Credits
- Standby Default Coverage
- Potential for Research and Development Credits
- Qualified Decommissioning Costs
- Price Anderson Indemnification

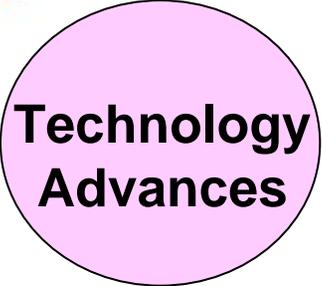
EPAct Incentives

	Standby Support	Production Tax Credits	Loan Guarantees
Function	<ul style="list-style-type: none"> Limited financial protection against licensing/litigation delays 	<ul style="list-style-type: none"> Provide tax-based incentive to construct own and operate new nuclear plants 	<ul style="list-style-type: none"> Provides credit enhancement for debt-financing that should facilitate nuclear plant construction
Availability	<ul style="list-style-type: none"> \$500 M – first 2 units \$250 M – next 4 units 	<ul style="list-style-type: none"> \$18/MW hr – first 8 yrs of operation 6,000 MW eligible \$125 M per 1,000 MW installed 	<ul style="list-style-type: none"> Available to all plants
Proposed Conditional Queue	<ul style="list-style-type: none"> COL docketed by NRC 	<ul style="list-style-type: none"> COL docketed by NRC on or before Dec 31, 2008 	N/A
Proposed Firm Queue	<ul style="list-style-type: none"> COL issued by NRC Construction commencement 	<ul style="list-style-type: none"> COL issued by NRC Construction commencement on or before Jan 1, 2014 Facility expected to be placed in service prior to Jan 1, 2021 	N/A
Rulemaking Timeline	<ul style="list-style-type: none"> Interim Rule Published May 8, 2006 (30 day comment period) Final Rule – Aug 2006 	<ul style="list-style-type: none"> Interim guidance published May 1, 2006 	<ul style="list-style-type: none"> Final rule published in October Allows Loan Guarantees for up to 100% of debt Targets technologies not “in general use” (general use = installed in 3 or more commercial projects and operated for at least 5 years)

Government incentives reward early movers; rulemaking process still in progress

Bottom Line About Loan Guarantees

1. Federal Loan Guarantees are a more efficient investment incentive than production tax credits.
2. Although Loan Guarantees are helpful in dealing with new technology risk, their fundamental benefit is in creating access to capital at attractive rates and in creating opportunities to leverage equity. Absent this leverage, capital requirements for a program of substantial new nuclear builds will strain the balance sheets of the largest nuclear power generating companies (both regulated and merchant).
3. There are significant public policy benefits which drove the Energy Policy Act, including those associated with electricity generation at attractive prices. We should not forget, however, that the fundamental drivers of energy security and concerns over global warming require that this policy be applied effectively, in a sustained fashion, over a long period of time.



Driver #6 – Enhanced Safety



Nuclear Island

- Proven Four-Loop Reactor Cooling System Design
- Four-Train Safety Systems
- Double Containment
- In-Containment Borated Water Storage
- Severe Accident Mitigation
- Separate Safety Buildings
- Advanced ‘Cockpit’ Control Room
- Radiation Release to Public undetectable from background under any accident scenario

Electrical

- Full Load Rejection 100%-3% w/o plant trip
- Four Emergency diesel generators
- Two Smaller, Diverse SBO D/Gs

Site Characteristics

- Airplane Crash Protection
- Explosion Pressure Wave

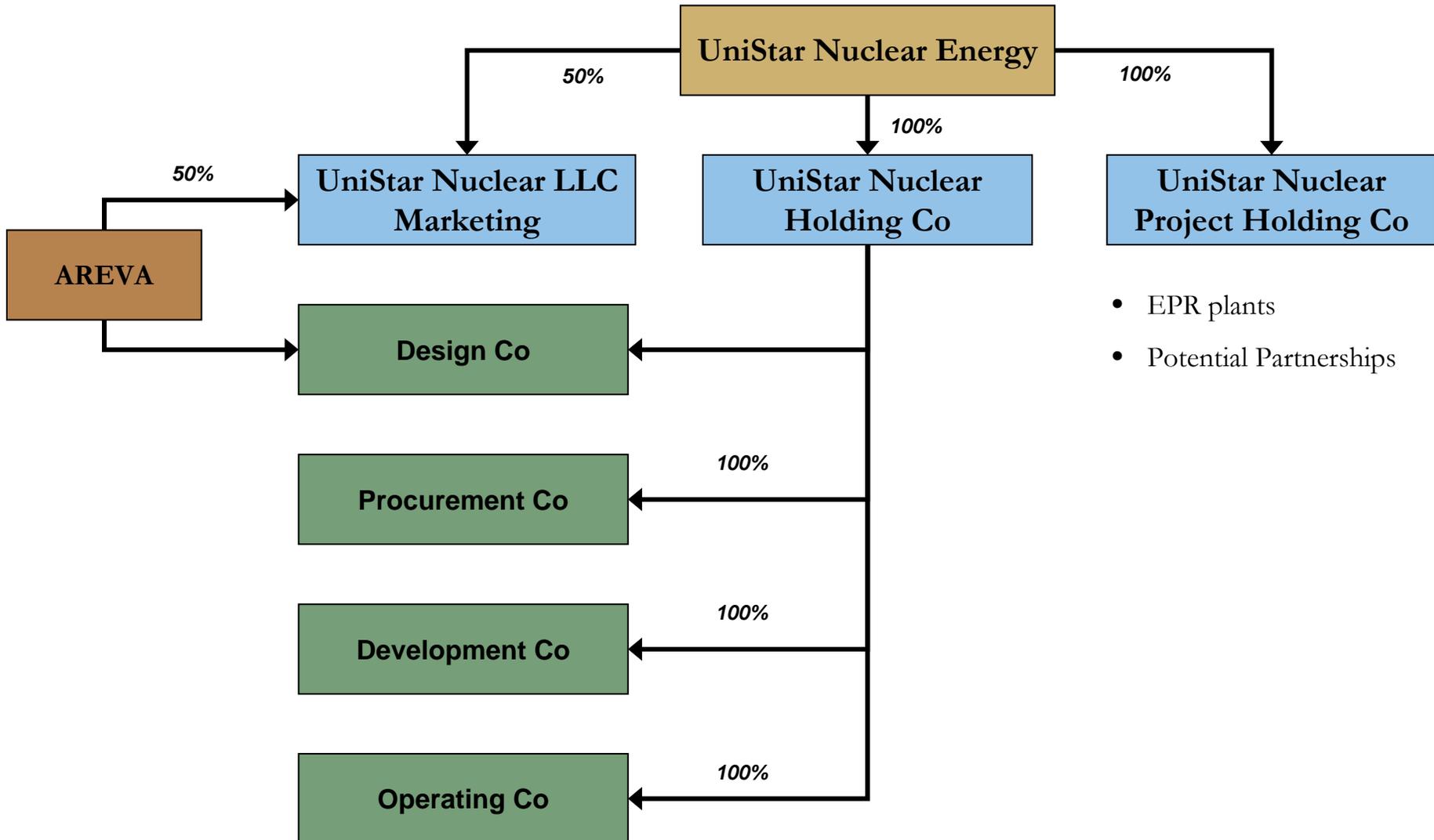
Fuel Efficiency

- 35% plant efficiency (typical U.S. plant at 33%)
- Uses 8% less uranium to generate a MW of electricity

Driving Forces Create Opportunity -- Constellation Energy is aggressively pursuing

- **Constellation Energy and Electricité de France have formed UniStar Nuclear Energy**
 - Maintains joint venture with AREVA (UniStar Nuclear Marketing) facilitating the deployment of U.S. EPRs
 - Teamed with Bechtel as the architect, engineer and constructor of the fleet
- **Objective: Deploy a fleet of at least four identical U.S. EPRs through project companies**
 - Standardization of fleet yields efficiencies in project cost, licensing, and operations
 - Projects jointly developed and potentially owned with Constellation Energy
 - Constellation Energy and its partners will form and staff a single operating company to act as licensee and operator for the fleet
 - Project partners in project companies will participate in ESP/COL, Development and construction, ownership and O&M
 - AREVA is supplier of the Nuclear Steam Supply System

Structure of the Joint Venture



Driven by public policy issues surrounding global warming and energy security, UniStar also represents a compelling investment opportunity

The Investment Opportunity

Base Case: Overnight Cost - \$2,650/kW

Items Included in Base Case Overnight Cost:

- Design Certification
- Home Office Overhead
- Nuclear Island
- Turbine Island
- Balance of Plant
- Owner's Costs

Items Not Included in Base Case Overnight Cost But Included in Base Case Proforma:

- Initial Nuclear Fuel Load
- COLA
- Transmission Upgrades
- Contingency
- Financing Costs

Base Case Proforma: Assumptions

- EPR – 1600 MWe (2016 COD)
- Assumes 30 Year Financing with 80% Debt and 20% Equity
- Market Closing Price of \$60/MWh (2007)
- 4.725% Interest on Debt
- 1.0% Subsidy Cost (2010)
- 0.5% Administrative Cost (2010)
- 0% Receipt of PTCs (California)
- 95.3% Average Capacity Factor
- 40.0% Effective Tax Rate

Base Case Proforma Returns and Sensitivities

Scenario	Capital Cost (\$/kW)	STAND ALONE		CUMULATIVE	
		IRR (Levered)	Levered IRR	Basis Point Delta from Base Case (Levered)	
Generic US EPR (Base Case)	\$2,650	18.1%	18.1%	-	
DOWNSIDE CASES					
Stress Case	\$3,500	15.3%	15.3%	(280)	
1-Year COD Delay	Base	16.7%	14.2%	(390)	
20% Higher O&M Cost	Base	17.6%	13.8%	(430)	
20% Higher Fuel Cost	Base	17.8%	13.6%	(450)	
LT Power Price -\$10/MW hr	Base	16.3%	12.1%	(600)	
5.0% Subsidy & Administrative Fees vs. 1.5%	Base	16.7%	11.2%	(690)	
No Federal Loan Guarantee: Debt 50 (12% Interest Rate) & Equity 50	Base	11.1%	7.0%	(1,110)	
UPSIDE CASES					
Greater than 10% Savings	\$2,300	19.4%	19.4%	130	
20% Lower O&M Cost	Base	18.5%	19.8%	170	
20% Lower Fuel Cost	Base	18.3%	20.0%	190	
11 RFO Days vs. 15 Days	Base	18.2%	20.1%	200	
LT Power Price +\$10/MW hr	Base	19.7%	21.7%	360	
LT Power Price + CO ₂ Credits (+\$15/MW hr)	Base	20.4%	23.8%	570	

Impact of Carbon Cap-and-Trade Proposals (CO₂ equivalent S/T)¹

Note: \$15/MWh CO₂ Impact (in PJM) would imply about \$34/T CO₂ Equivalent in 2015

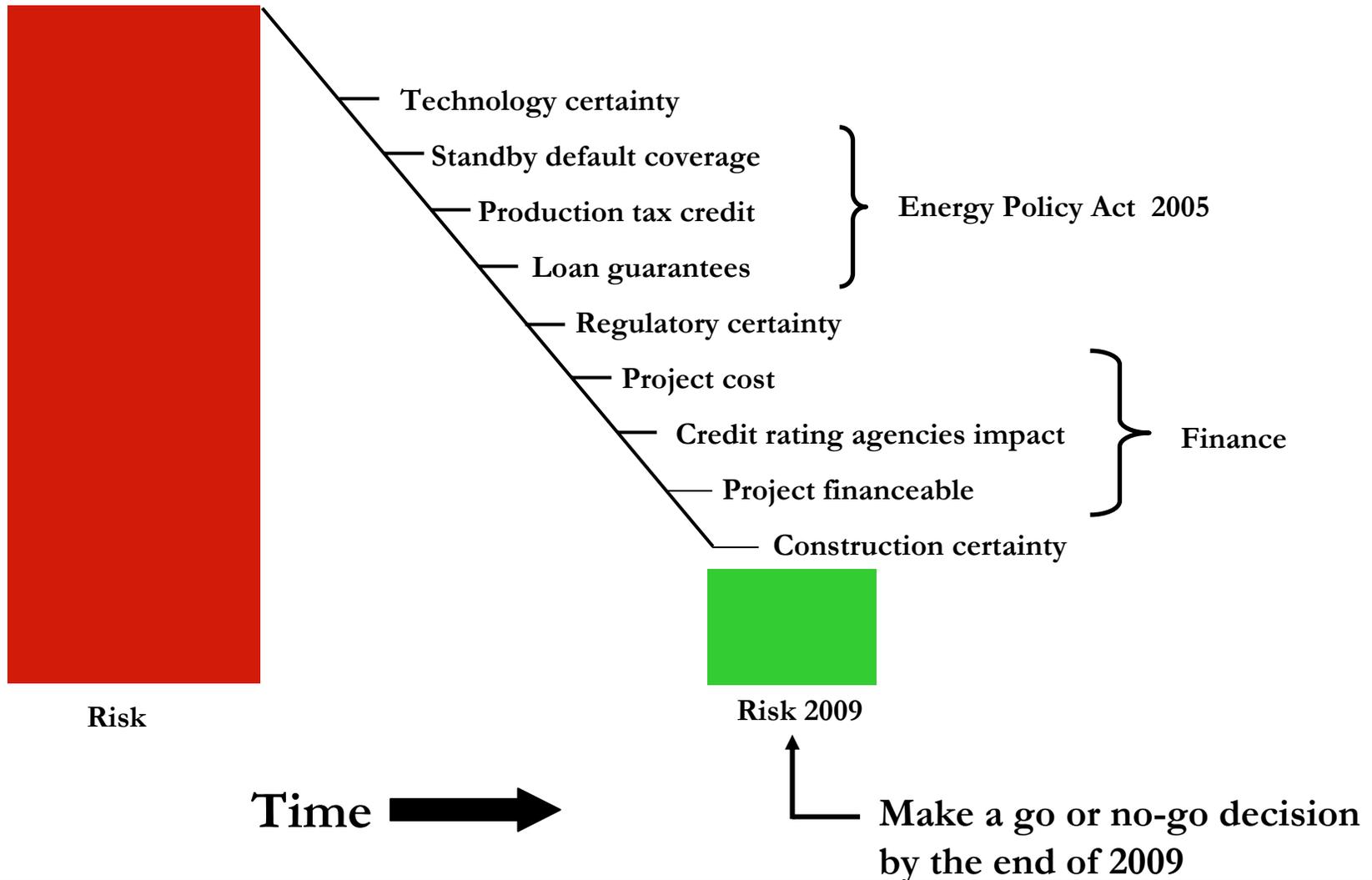
	<u>2015</u>	<u>2050</u>
Lieberman-McCain ('07)	31	121
Bingaman-Specter ('07)	7	39
Kerry-Snowe ('07)	~47	~141
Feinstein ('06)	41	161
Sanders-Boxer ('07)	53	210

1 – “Assessment of U.S. Cap-and-Trade Proposals; Pattsey, Reilly, Jacoby, Gungel, Metcalf, Sokolov & Holak; April 2007: MIT Center for Energy and Environmental Policy Research

Challenges

- Authorization cap
- Subsidy cost calculation
- Public perceptions (only 1 micron deep?)
- Infrastructure (components from a globally sourced supply chain)
- Qualified labor pool (must pay attention now)
- Issues with the back end of the fuel cycle (including implications for public perception)
- Construction and capital cost uncertainty

Driving down the level of uncertainty

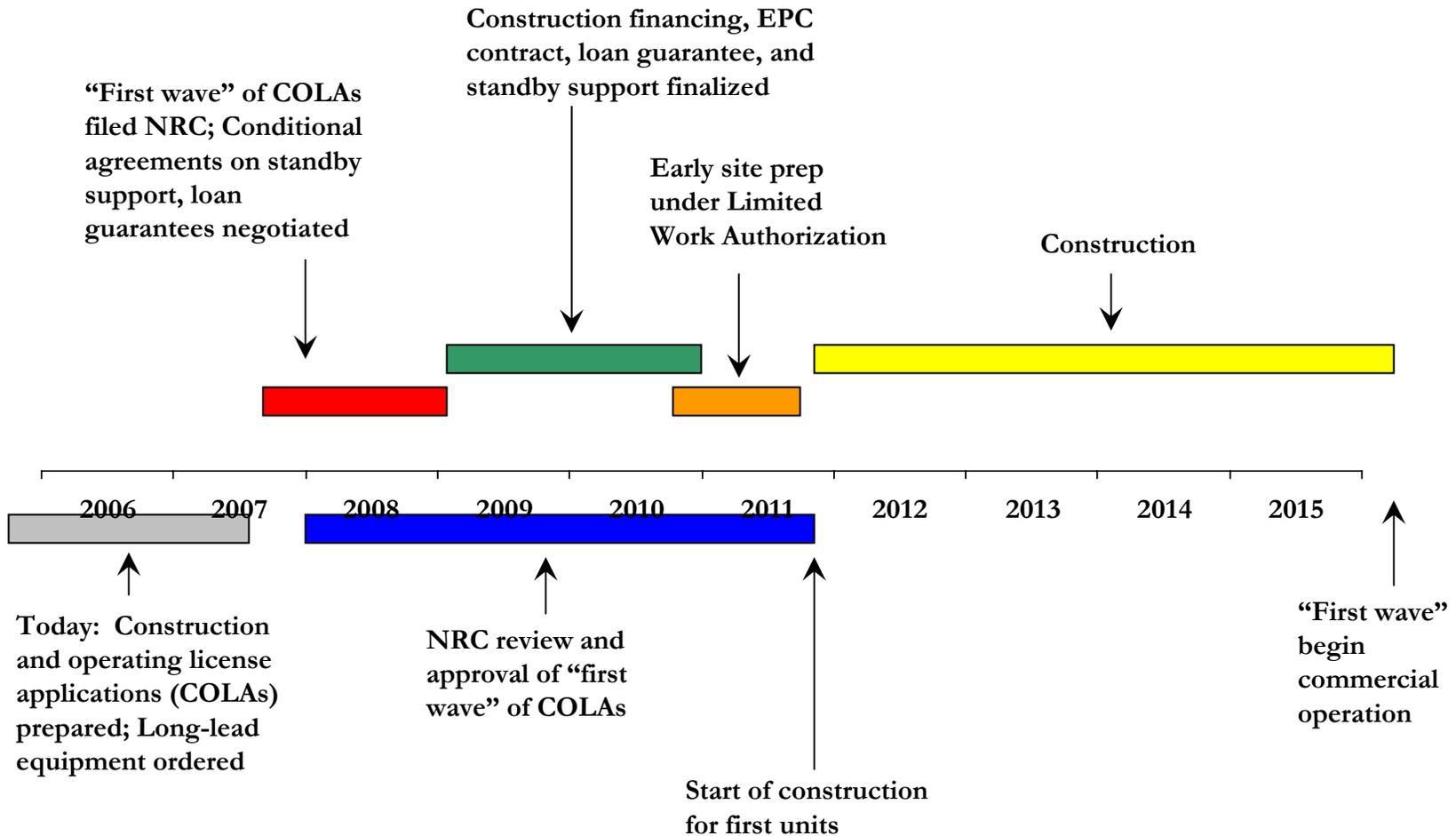


New Nuclear Risks



- Current risks that are effectively managed or mitigated
- Risks with emergent issues requiring elevated attention
- Risks that require the highest level of vigilance

Timing of New Nuclear Plant Deployment across the Country



The Disposition of Spent Fuel¹

Components of Spent Reactor Fuel

Component	Fission Fragments	Uranium	Long-Live Component
Per Cent Of Total	4	95	1*
Radioactivity	Intense	Negligible	Medium
Untreated Required isolation time (years)	200	0	300,000

* There are two ways to protect the public: isolation from the biosphere for hundreds of thousands of years, or transmutation by reactor bombardment to change these components into more benign fission fragments

“Nuclear Power Joint Fact-Finding” June 2007

The Keystone Center*

- “On balance, commercial nuclear power plants in the U.S. are safer today than they were before the 1979 accident at Three Mile Island”
- “There is wide agreement among the NJFF group participants that transport spent fuel and other high-level radioactive waste is highly regulated, and that it has been safely shipped in the past.”
- “With regard to older spent fuel that must be stored on an interim basis until an operating repository is available, the NJFF participants believe that this spent fuel can be stored safely and securely in either spent fuel pools on dry casks, on-site. The NJFF group also agrees that centralized interim storage is a reasonable alternative for managing waste from decommissioned plant sites and could become cost-effective for operating reactors in the future.”

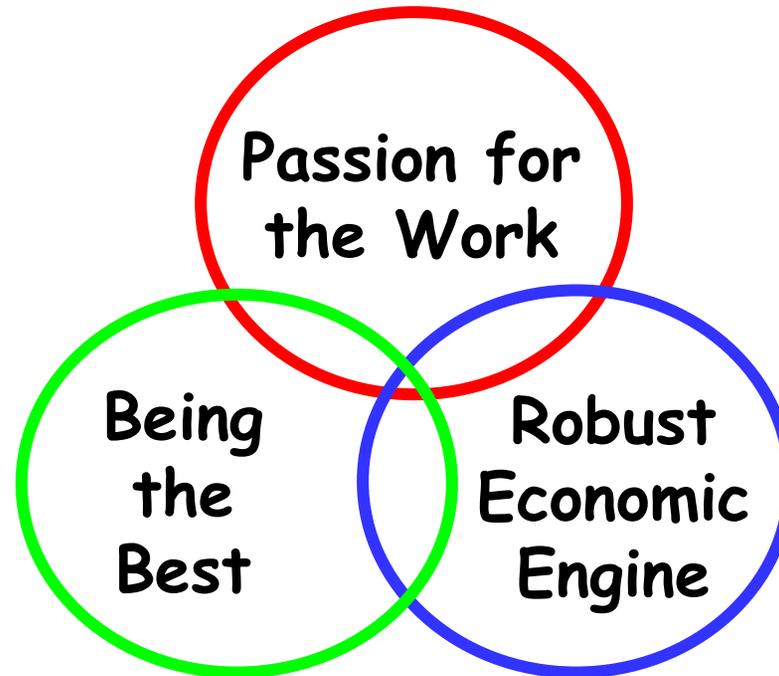
* Steering Committee: Peter Bradford (Union of Concerned Scientists); Thomas Cochran (Natural Resources Defense Council); Armond Cohen (Clean Air Task Force); Ted Marston (Marston Consulting); Patrick Mazza (Climate Solutions); Brian Moline (Kansas Corporation Commission); Mano Nazair (American Electric Power); Sonny Popowsky (Pennsylvania Office of Consumer Advocate)

We endorse the Policy Recommendation of the National Commission on Energy Policy (a bipartisan Commission of 21 members, including John Holdren (Professor of Environmental Policy – Harvard), John Bryson (CEO – Edison International), Ralph Cavanah (Co-Director Energy Program – NRDC), and Richard Meserve (President of the Carnegie Institution – former Chairman of the U.S. NRC):

Take action to address the current impasse on nuclear waste disposal, while reaffirming the ultimate objective of siting and developing one or more secure geologic disposal facilities, by amending the Nuclear Waste Policy Act (NWPA) to:

- Align its requirements with human engineering and scientific capabilities, while adequately protecting public health and safety and the environment
- Require DOE to site and operate consolidated national or regional interim storage options.
- Undertake R&D to explore technological alternatives to the direct geologic disposal of waste from a once-through cycle that meet commercial requirements and non-proliferation objectives, reduce the challenge of waste disposal, ensure adequate protection of public health and safety, and extend fuel supply
- Codify that interim storage and federal responsibility for disposal of nuclear waste is sufficient to satisfy the Nuclear Regulatory Commission’s waste confidence requirement
- Require the Secretary of Energy to take possession of and/or remove fuel from reactor sites that have been, or are in the process of being fully decommissioned

In Spite of the Challenges, the Opportunity is Real¹



It's an exciting time to be in the nuclear industry – from any perspective!