The Center for Strategic and International Studies Energy and National Security Program

Exploring the Future Role of Commercial Nuclear Power in the U.S.

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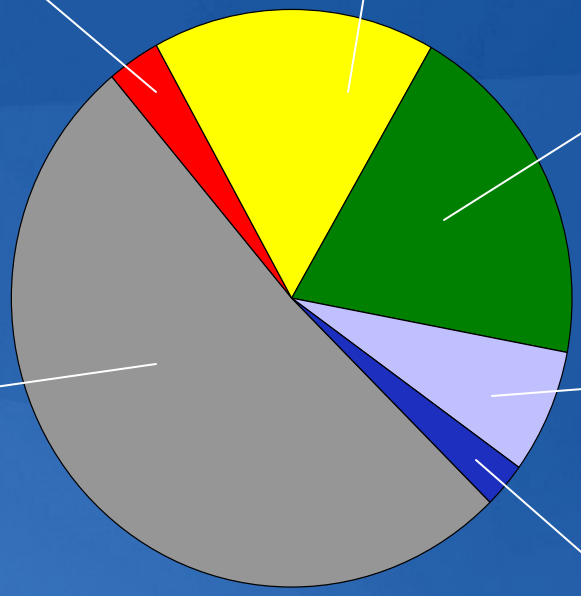
NUCLEAR ENERGY INSTITUTE

Sources of U.S. Electricity (2006)



19.9% Natural Gas
Low construction cost
Volatile fuel cost
Combined cycle capacity factor: 37.7%
Steam plant capacity factor: 15.6%
Emissions: NOx, CO_2

1.6% Oil
Volatile fuel cost
Capacity factor: 29.8%
Emissions: SO_2, NOx, CO_2

19.4% Nuclear
High construction cost
Stable fuel cost
Capacity factor: 89.6%
Emissions: None

6.9% Hydro
Large-scale opportunities gone
No fuel cost
Capacity factor: 29.3%
Emissions: None

49% Coal
High construction cost
Capacity factor: 72.6%
Emissions: SO_2, NOx, CO_2, particulates, mercury, toxic metals

3.1% Renewables (and Other)
Very high construction cost
No fuel cost
Capacity factor: 26.8%
Emissions: None

Source: Global Energy Decisions / Energy Information Administration

Nuclear Energy Today

	Operating Units	% Generation	Planned Units
US	104	20%	>30
World*	438	16%	320

- Base-load 24/7 power
- No emission of greenhouse gas or air pollutants

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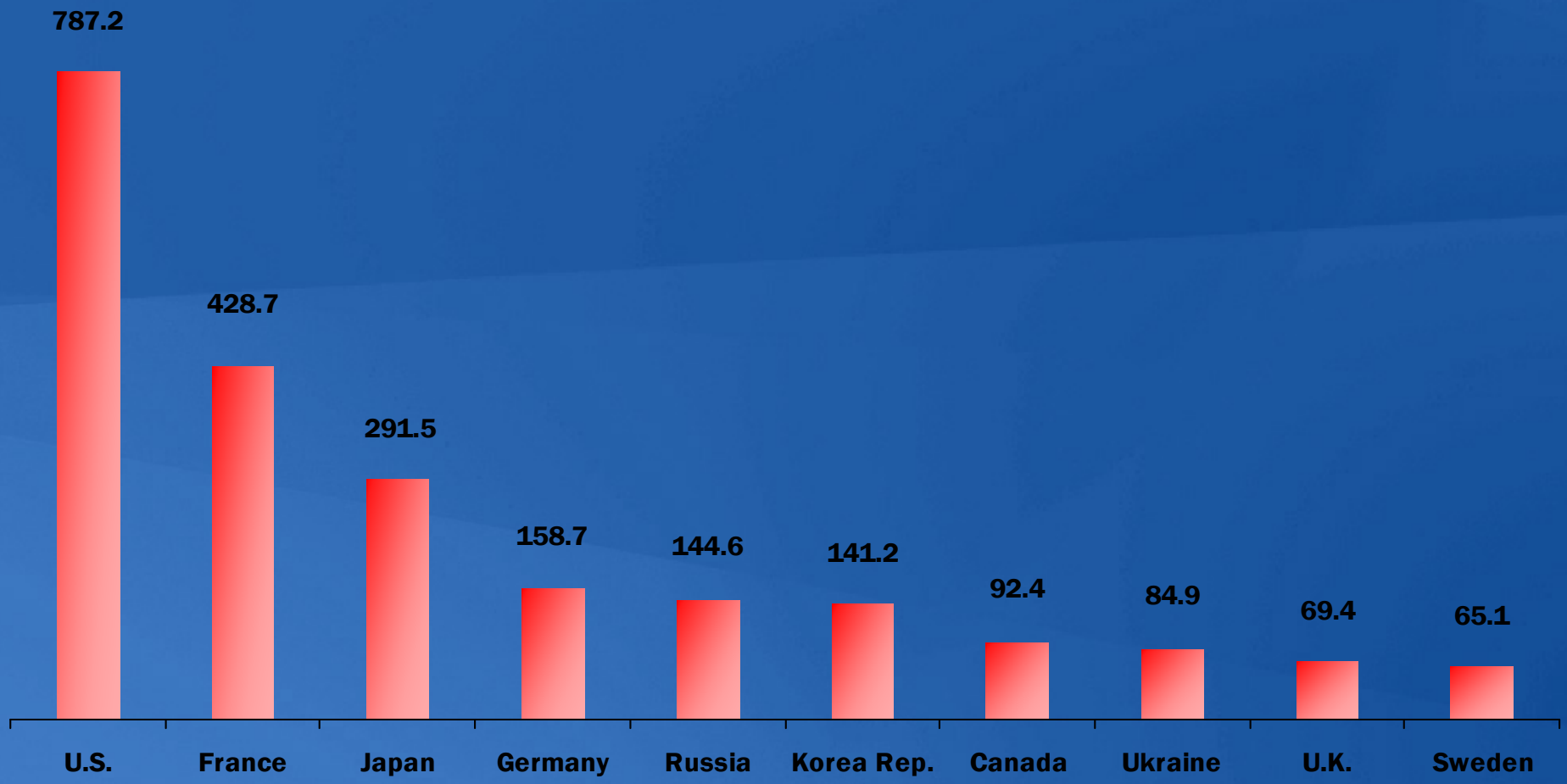
** Includes U.S. Numbers*

Top 10 Nuclear Generating Countries

2006, Billion kWh

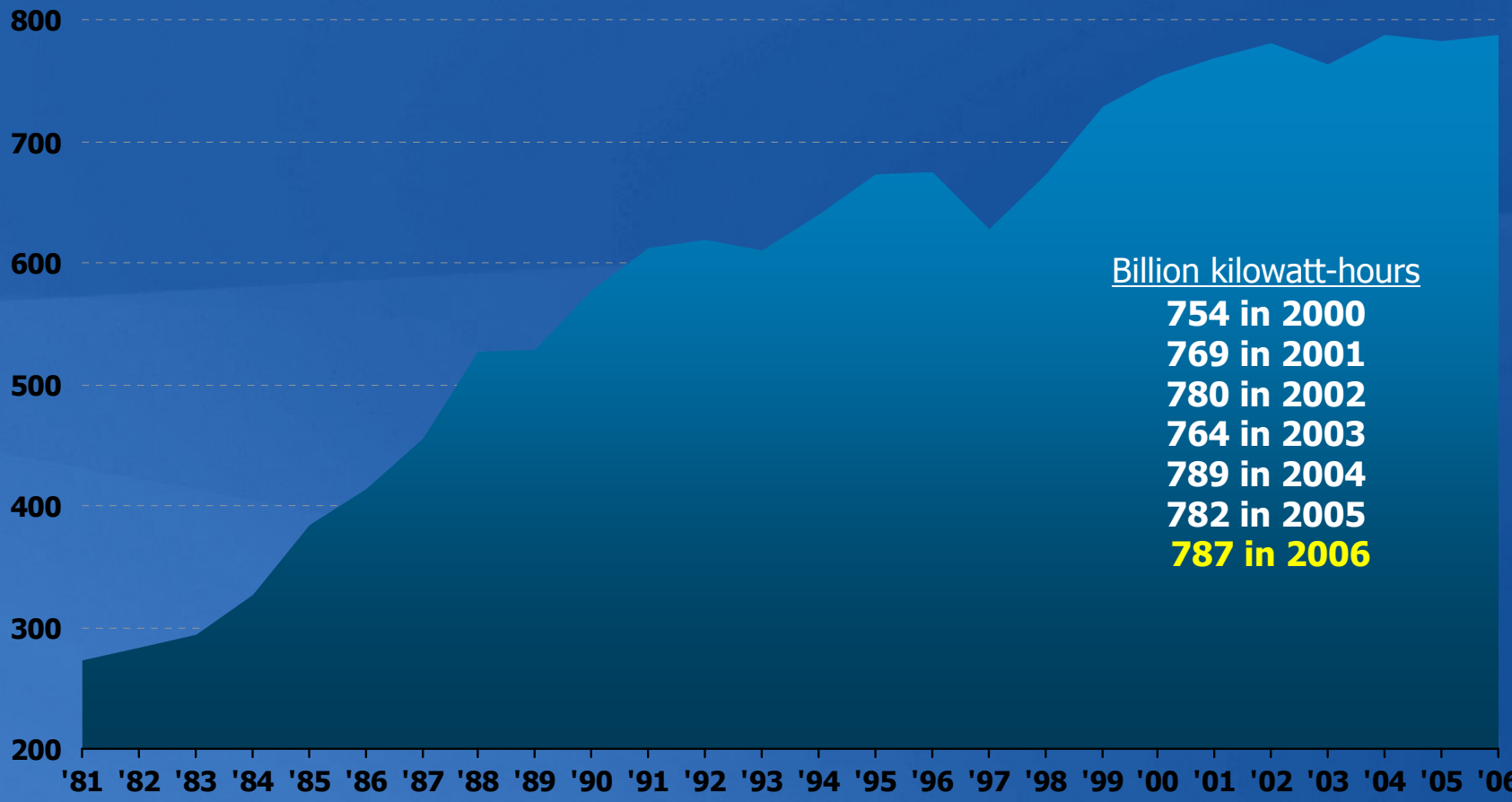


Source: International Atomic Energy Agency, U.S. is from Energy Information Administration

Updated: 11/07

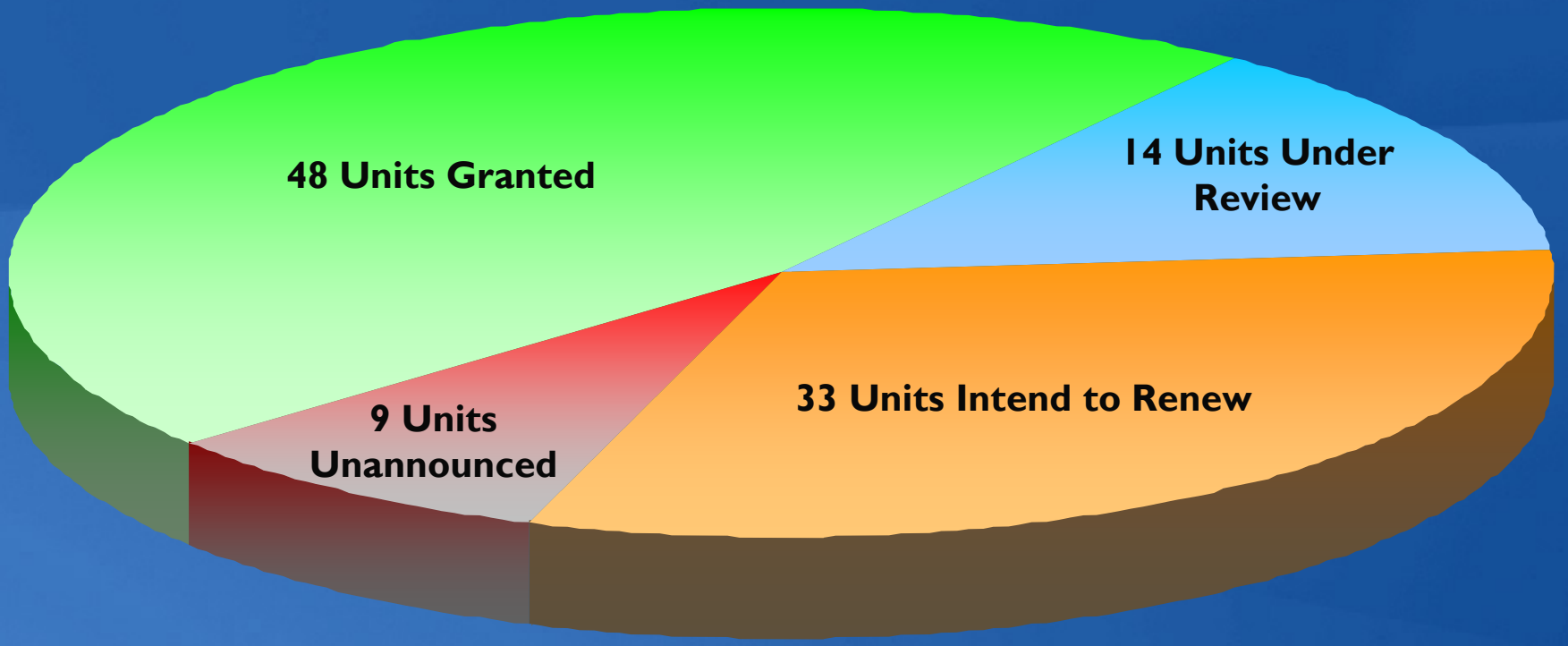
Output Remains Near Record Levels

U.S. Nuclear Generation, BkWh



Source: Global Energy Decisions / Energy Information Administration

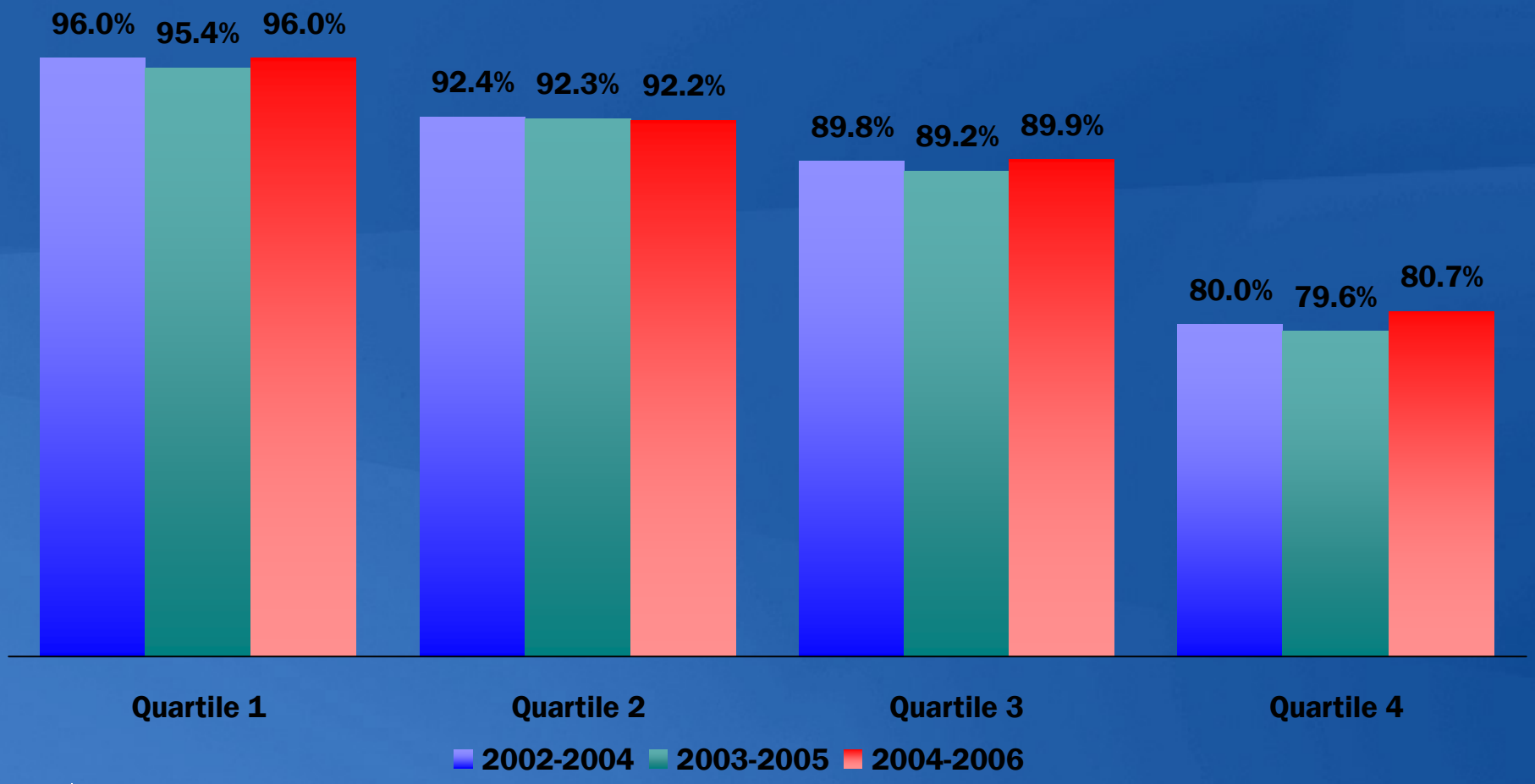
Applications for License Renewal



Source: Nuclear Regulatory Commission

Updated: 9/07

U.S. Nuclear Industry Capacity Factors by Quartile 3-year rolling average



Source: Global Energy Decisions / Energy Information Administration and Nuclear Regulatory Commission

Updated: 10/07

Investment in Electric Infrastructure Since 1992

- Massive build of gas-fired capacity: Lowest investment risk
- Investment in new coal and nuclear generating capacity all but disappeared,
  - Nuclear and coal are 70 percent of U.S. electricity supply
  - Greatest forward price stability

New Generating Capacity: 1992-2005	
Coal	8,044 MW
Gas	288,576 MW
Nuclear	2,485 MW
Oil	4,933 MW
Renewables	9,983 MW
Hydro	2,629 MW
Other	223 MW

Data source: Energy Information Administration

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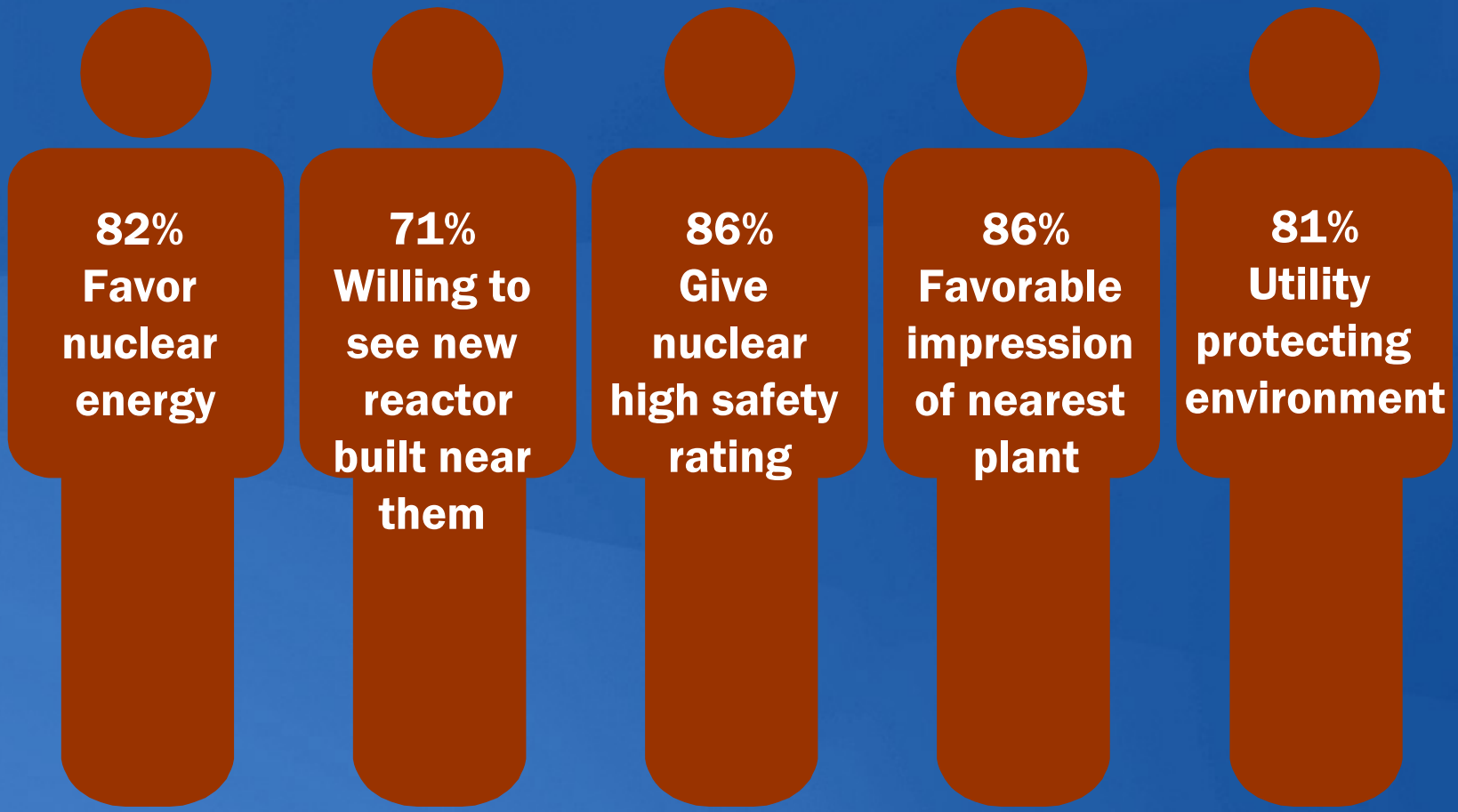
What Is Driving the Interest in New Nuclear?

- Growing need for baseload generation
  - Near-term need for new generating capacity
- Increasing environmental constraints and compliance costs
- Volatility in natural gas prices
- Increasing support from the public and policymakers

Strong Public Support
Near Existing Plants



Source: Bisconti Research Inc.

August 2007 poll of 1,152 U.S. adults; margin of error is +/- 3%

New Plants Current Situation

- New regulatory process
- 4 NRC certified designs; 1 design being reviewed; 2 designs being submitted
- 3 early site permits issued; 1 ESP being reviewed
- 3 COLA filed; 1 partial application filed; 18 additional applications being prepared

New Plants – Key Factors

- Competitive electricity costs
- Implementation of the EPACT provisions
- Effective and predictable regulatory process
- Maintaining standardization
- Assuring adequate infrastructure
- Confidence in waste management approach
- Continued safe/reliable performance of the operating plants