U.S. Approach to Financing: Role of the Export-Import Bank of the United States

Reducing Risk, Unleashing Opportunity
Outline

• Role of Nuclear Energy in the United States & Globally
• U.S. Government Support for Nuclear Energy
• Ex-Im Bank
  • Mission
  • Products
  • Experience
  • Financing Guidelines
  • Financing Terms
• Importance of Nuclear Energy to Reduce Global Carbon Emissions
Nuclear Energy Plays an Important Role in U.S. Energy Supply and Clean Energy Solution

- 99 operating U.S. reactors
  - 34 boiling water reactors (BWRs); 65 pressurized reactors (PWRs)
- Provides roughly 19.4 percent of nation’s electricity
- Largest source of U.S. base-load electricity that does not emit greenhouse gases (GHGs) = meeting low carbon electricity goals
- Provides significant economic benefit
- Nuclear energy capabilities support
  - Fuel diversity
  - Reliability of the electric grid
  - Security of fuel supply
  - Price stability
  - Nonproliferation/national security

Source: Energy Information Administration

**Electricity Production, 2014**

- Nuclear 19%
- Total: 4,093,00 GWh

**Net Non-Carbon Emitting Sources of Electricity, 2014**

- Conven. Hydro 19%
- Solar 1%
- Wind 14%
- Biomass 5%
- Nuclear 60%
- Geo-thermal 1%

Source: Energy Information Administration
U.S. Operating Commercial Nuclear Power Reactors

Source: U.S. Nuclear Regulatory Commission
Global Landscape: Nuclear Share of Global Electricity Generation in 2014

- 438 Operating Reactors in 30 Countries
- 11% of global electricity generated
- 40% of clean electricity
- 66 reactors currently under construction in 15 countries (26 in China)
  - ~166 reactors planned in +30 countries, worth as much as $740 billion.
  - ~322 reactors proposed in 35 countries, worth as much as $1.6 trillion.

Source: IAEA PRIS Information as of February 12, 2016

Number of Reactors

10+ 1-9
## Countries Planning or Considering Initiating Nuclear Power Programs

<table>
<thead>
<tr>
<th>Country/market</th>
<th>Reactors</th>
<th>Grid (installed capacity)</th>
<th>Deployment Target (Operational)</th>
<th>Note</th>
</tr>
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<tbody>
<tr>
<td>UAE</td>
<td>4-14</td>
<td>54.4 Gwe</td>
<td>2017</td>
<td>Construction</td>
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<tr>
<td>Vietnam</td>
<td>8</td>
<td>24.5 Gwe</td>
<td>2028</td>
<td>Contracts</td>
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<tr>
<td>Turkey</td>
<td>12</td>
<td>57.1 Gwe</td>
<td>2023</td>
<td>Contracts</td>
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<tr>
<td>Jordan</td>
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<td>3.2 Gwe</td>
<td>2024+</td>
<td>Contracts</td>
</tr>
<tr>
<td>Bangladesh</td>
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<td>6.4 Gwe</td>
<td>2022+</td>
<td>Contracts</td>
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<tr>
<td>Lithuania</td>
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<td>3.7 Gwe</td>
<td>TBD</td>
<td>Investigating</td>
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<td>Poland</td>
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<td>2029</td>
<td>Target</td>
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<td>Kenya</td>
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<td>Morocco</td>
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<tr>
<td>Nigeria</td>
<td>4</td>
<td>6.1 Gwe</td>
<td>TBD</td>
<td>Target</td>
</tr>
<tr>
<td>Egypt</td>
<td>2-4</td>
<td>27.0 Gwe</td>
<td>TBD</td>
<td>Target</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>16+</td>
<td>53.6 Gwe</td>
<td>2022</td>
<td>Investigating</td>
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<td>Algeria</td>
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<td>2025+</td>
<td>Investigating</td>
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<tr>
<td>Indonesia</td>
<td>TBD</td>
<td>47.8 Gwe</td>
<td>TBD</td>
<td>Investigating</td>
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</tbody>
</table>

*Source: U.S. Department of Energy and U.S. Department of Commerce estimates based on publically available information*
Coordinated U.S. Government Efforts to Support Nuclear Power

- **Financing Policy**
  - Financing for:
    - Feasibility Studies
    - Reverse trade missions

- **Export Credit Financing**

- **Standards**
  - Licensing
  - Bilateral cooperation

- **RD&D**
  - Infrastructure
  - Fuel Cycle
  - Licensing
  - Nonproliferation
  - International Cooperation

- **Foreign Policy**
  - Nonproliferation
  - 123 Agreements
  - Infrastructure

- **Industry Analysis**
  - Commercial Liaisons
  - Advocacy
  - Dual-Use Licensing

- **Industry Advisory Committee (CINTAC)**

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U.S. Department of Commerce | International Trade Administration
7
Criteria for Financing Quality Nuclear Projects

- Technology has a proven safety record
- Stable host country government with a sustainable commitment to developing nuclear energy
- Independent, transparent, and effective regulator
- Well-trained human resource base
- Environmental risks are responsibly managed
- Commitment to international treaties and standards
- Sufficient grid size and stability
- The economics make sense
Global Nuclear Energy Financing Workshop
March 11, 2016 in Washington, DC

• Organized by the U.S. Department of Commerce’s International Trade Administration

• Brought together 100+ members of industry, the U.S. Government, and the financial community to discuss the challenges associated with financing nuclear power plants and to explore innovative solutions

• The workshop was a recommendation of the Commerce Department’s Civil Nuclear Trade Advisory Committee (CINTAC)

• Workshop outcome: A CINTAC white paper that summarizes the lessons learned and next steps regarding how industry and Government can better work together to finance nuclear power projects
• Mission
• Products
• Experience
• Financing Guidelines
• Financing Terms
Mission

- Ex-Im Bank supports U.S. exports and jobs by
  - Leveling the playing field
    - Where Export credit agency (ECA) competition exists, or
  - Filling the gaps where private financing is unavailable
- Ex-Im Bank supports a broad range of goods/services
  - Including nuclear plants
Ex-Im Bank Products

• Short and Medium-Term (U.S. Supplier Financing)
  o Insurance
  o Working Capital Guarantee
  o Supply Chain Finance Guarantee

• Long-Term (Buyer Financing)
  o Loan Guarantee of private bank loans – interest rates set by private commercial banks.
  o Direct Loan
    o Funds from U.S. Treasury
    o Rates based on Commercial Interest Reference Rate (10 year Treasury Bill rate + term spread)
  o Can provide advantages in nuclear:
    o Large amounts of funds needed and
    o Debt cost is important.
Ex-Im Bank Nuclear Sector Experience

Morocco financing was for a Nuclear Research Reactor
Ex-Im Bank Nuclear Sector Financing Guidelines

- OECD Arrangement governs officially supported export credits
  - 2009 Sector Understanding on Nuclear Power Plants
  - Exporters compete on price/quality, not finance terms

- Congressional mandates and other U.S. government policy

- Ex-Im Bank internal policy
  - Environmental & Social Due Diligence Procedures and Guidelines
  - Project meets IAEA safety standards and guides for regulatory regime, siting, design, construction, commissioning and operations
  - Project meets IFC Performance Standards
  - All aspects of the project and parties comply with exporter country, host country and Internationally accepted safety and Performance Standards
Advantages of OECD Nuclear Package

• Long repayment schedule
• Flexible disbursement period that is tied to length of construction
• Interest is capitalized during construction
• Financing of local cost of up to 30% of export contract
• Dollar denominated loan
• Levels playing field and decision on project cost and technical characteristics and not on financing terms
Ex-Im Bank Nuclear Sector Financing Terms

• Repayment terms
  o New build or modernization: 18 years (after construction)
  o Fuel loads: 4 years (initial); 2 years (subsequent reloads)
  o Spent fuel disposal: 2 years
  o Spent-fuel management: 5 years

• Amortization style
  o Equal principal
  o Equal payment (“mortgage-style”)

• Interest rate: CIRR (10-year Treasury + 130 bp for 18 year term)
  o Indicative CIRR for a nuclear power plant with an 18 year repayment term is currently 3.19% (April 15, 2016 through May 14, 2016)
  o Fixed Interest Rate

• Risk premium (“exposure fee”): based on country, transaction risk, repayment and drawdown term, how fee is paid (e.g., financed or not financed)
Ex-Im Bank Nuclear Sector Financing Terms

- Financing components
  - U.S. content (up to 85% of export contract)
  - Local costs (up to 30% of export contract)
  - Capitalized interest during construction
  - Risk premium (“Exposure Fee”)
“The United States will continue to promote the safe and secure use of nuclear power worldwide through a variety of bilateral and multilateral engagements...Going forward, we will expand these efforts to promote nuclear energy generation consistent with maximizing safety and nonproliferation goals.”

*Climate Action Plan, Georgetown University, June 2013*
“To meet our emissions reduction targets and avoid the worst effects of climate change, we need to dramatically reduce power sector emissions. Switching from coal to natural gas is already reducing the U.S. carbon footprint, but it’s not enough to get the deep CO₂ cuts envisioned in the President’s Climate Action Plan. Reducing emissions by 80% will likely require the complete decarbonization of the power sector."

We know **nuclear can provide 24-hour baseload power**, because it already does. Worldwide, nuclear power produces more energy than hydro, solar, wind, and geothermal power combined.

The bottom line is that to achieve the pace and scale of worldwide carbon reductions needed to avoid climate change, **nuclear must play a role.**”
Conclusion

• Nuclear energy opportunities
• Job intensive
• High technology, high value exports
• World-class safety standards
• Low carbon power generation
• Diversified energy sources
Helpful Links

• Country Limitation Schedule
  http://www.exim.gov/tools-for-exporters/country-limitation-schedule

• Exposure Fee Calculator
  http://www.exim.gov/tools-for-exporters/exposure-fees

• Current Lending Rates (CIRR)

• General Ex-Im Bank financing policies
  http://www.exim.gov/policies

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