

March 11, 2016 Global Civil Nuclear Energy Financing Workshop: Summary & Next Steps
White Paper
August 11, 2016

On March 11, 2016, the U.S. Department of Commerce's International Trade Administration (ITA) organized a Global Civil Nuclear Energy Financing Workshop. The Workshop brought together industry, U.S. Government (both Executive and Legislative branches), 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), a federal advisory committee that provides guidance to the Secretary of Commerce on civil nuclear trade policy issues. The workshop was a follow-on effort to an initial financing workshop that ITA organized in April 2012.

Workshop Summary

- Stakeholder Panel: Views from the Civil Nuclear Industry:
 - The industry-led panel emphasized the importance of a healthy domestic market for nuclear energy to the prospects for U.S. civil nuclear exports.
 - In their view, the lack of a level playing field for clean forms of power generation is particularly harmful to the U.S. civil nuclear industry. This is a problem that could be remedied by equitable policy support (through, perhaps, an investment tax credit like those currently available to wind and solar projects) for all low-carbon generators, and not just for renewables. In addition, state-imposed renewable portfolio standards could become carbon-free portfolio standards, thus recognizing nuclear energy's ability to provide clean and reliable power on a utility scale.
- Panel: Views from the Financial Community:
 - The deregulation of most U.S. power markets has put nuclear in a difficult position, as developers of nuclear projects in these markets are no longer able to secure long-term offtake guarantees and thus cannot present prospective investors with a predictable and attractive stream of revenue. Existing nuclear power plants (NPPs) in these markets often find themselves competing against cheap natural gas and cheap—or even negatively-priced—wind, possibly due both to government subsidies that encourage wind producers to sell into the market and the nondispatchability of wind (i.e. wind producers can neither control when the wind blows, nor can they store the energy it provides for later use at peak demand).
 - The lengthy construction period required to build a NPP using Generations I-III designs, combined with those projects' proclivity for cost overruns, makes nuclear less attractive to potential financiers. Advanced reactors and Small Modular Reactors (SMRs) could help eradicate some of these barriers to investment by reducing construction time and cost.
 - An uncertain regulatory environment gives investors pause. If an investor is going to fund a project, they want to understand the rules that govern that project, and they want to know that those rules will not change to their detriment. To this concern, the EPA Act provides "Regulatory Delay Insurance", though this method of hedging remains seldom used.
 - USG should consider incentivizing new NPP builds and buying—likely at very low cost—NPPs that are in danger of early closure. Through its possession of these plants, it could maintain a "Baseload Power Reserve" similar to its existing Strategic Petroleum Reserve and thus prevent the loss of well-functioning sources of carbon-free power
 - Project financing techniques could be effectively applied to certain NPP projects (SMRs, for example) in the future, and could, given their non/limited-recourse nature, de-risk investments in new builds to a level deemed acceptable by prospective investors

Recommended Next Steps

- DOC/ITA should organize a Civil Nuclear Financing Workshop on an annual basis. In addition to industry, greater USG involvement should be solicited, as should greater participation from the financial community. To secure the latter, DOC/ITA should consider holding the next workshop in New York City. One option to secure more Congressional staff participation would be to organize a one-hour “Hill Briefing”. Public participation should also be welcomed.
- By fall 2016, industry leadership should convene to discuss and agree upon 3-4 broad goals aimed at reinvigorating the nuclear generation option in the United States. Then, a Washington DC-based working group of economists, lawyers and experienced public policy experts should be formed, preferably in late 2016, to translate these goals into specific actions— legislative or administrative — including the establishment of a project finance academy to begin operation in 2017.
- The USG needs to re-state emphatically that civil nuclear energy is a “strategic imperative” for the United States. This is often said within government, but is not always evident to those on the outside, including both prospective investors and foreign governments weighing bids (often accompanied by state-backed financing packages) for new NPP builds within their countries.
- U.S. technology and equipment needs the credibility that can only be provided by continued domestic deployment of U.S. civil nuclear products and services. A robust incentive structure is needed to support this deployment, leveling the playing field for carbon-free electricity generators and projecting internationally the continued strength of the U.S. civil nuclear industry.
- The USG should assume more construction risk in support of its civil nuclear companies (through, for example, the issuance of loan guarantees). U.S. firms often face competition from sovereign-backed firms in the international marketplace, and this state-backed financing helps those companies compete for international tenders and maintain a healthy and growing civil nuclear sector in those governments’ home countries.
- As an industry, civil nuclear needs to recognize that, as important as optimizing the operational facets of nuclear-based power generation is, so is effectively addressing problems within the market. With the deregulated wholesale power market likely to remain the dispatch paradigm for most states, nuclear energy’s focus should be on better shaping itself for the mechanics of that marketplace, with an eye toward potential solutions like project financing, risk mitigation strategies, long-term baseload power purchase agreements (guaranteed by the government), credit enhancement, and the establishment of a national infrastructure bank.
- The civil nuclear industry, seen as an important part of America’s energy past but not often as an important part of its energy future, needs a new public relations image emphasizes its vast potential to play a key role in America’s (and most of the rest of the world’s) transition to a carbon-free energy system. It is imperative that this new messaging contain specific policy proposals, because while the benefits of nuclear energy, like its ability to generate cheap baseload power over long periods of time, are often promoted by industry, specific proposals to reward nuclear for such benefits are not as forthcoming. Such proposals would educate lawmakers on the issues facing civil nuclear energy and provide them with specific, actionable proposals aimed at addressing these issues.
- Industry should advocate for a regulatory tradition that respects the time value of customer investment. It took a great deal of time and effort to pass the 1992 Nuclear Licensing Reform law, and yet this legislation has essentially been ignored. A legal task force should be established to explore the lack of effective implementation of this law.
- Financial incentives for the completion of nuclear waste repositories are needed to spur innovation on the back-end of the fuel cycle.

APPENDIX 1: Agenda for Global Nuclear Energy Financing Workshop

Friday March 11, 2016, 9:00am – 3:00pm
U.S. Department of Commerce Auditorium

- 905-910am** **Welcome Remarks**
Speaker: Michael Wautlet, Director for Nuclear Energy Policy, National Security Council
- Discussion about the policy issues and strategic imperatives associated with U.S. nuclear exports
- 910-920am** **Introductory Remarks**
Speaker: Bruce Andrews, Deputy Secretary of Commerce,
U.S. Department of Commerce
- Overview of the Commerce Department’s role in promoting U.S nuclear exports
- 920-1000am** **Market Status: Global & Domestic**
Speaker: Walter Howes, Managing Partner, Verdigris Capital
- Assessment of international developments in the nuclear industry, including opportunities and challenges faced by U.S. companies
 - Importance of financing and the challenges of state-sponsored export initiatives
 - How developments in the U.S. domestic market inform U.S. export efforts
- 1000-1100am** **Stakeholder Panel: Views from the Civil Nuclear Industry**
Moderator: Gary Wolski, Vice President, Curtiss-Wright
Panelists:
Graham Cable, Vice President, Westinghouse Electric Company
John Hopkins, CEO, NuScale
Arthur Lembo, President, Power, AECOM
David Sledzik, Senior Vice President, GE-Hitachi Nuclear Energy
Ty Troutman, President, Bechtel Power
- Panelists will address the view of the U.S. nuclear export community, taking stock of current trends, challenges, and opportunities. With a cross-section of the export community, a variety of perspectives will be offered as panelists assess current and future conditions, while considering how U.S. Government support can increase the chances for American exporters to compete successfully against state-owned enterprises.
- 1100-1115am** **Break**
- 1115-1200pm** **Nuclear Financing**
Speaker: Paul Murphy, Managing Director, Gowlings WLG
- Why financing is important/needed for NPP development
 - Why nuclear financing is challenging
 - Types of financing techniques / trends in NPP development
 - Is there really “fair & open” competition for NPPs?
 - How are deals being done?
 - Financing as competitive edge of foreign suppliers
 - The impact of markets (regulated vs. deregulated) in NPP development and financing
- 1200-100pm** **Networking Lunch**
HCHB Lobby
- 100-130pm** **U.S. Government Role in Nuclear Financing**
Speaker: Michael Whalen, Vice President, Structured Finance Division,
U.S. Export-Import Bank of the United States
- Overview of U.S. financing tools to support NPP development and U.S. civil nuclear exports.

Global Nuclear Energy Financing Workshop – Agenda – cont.

- 130-145pm** **U.S. Government Advocacy for U.S. Civil Nuclear Industry**
Speaker: Jennifer Pilat, Director, ITA Advocacy Center
- Overview of U.S. Government advocacy for the U.S. civil nuclear industry
- 145-245pm** **Panel: Views from the Financial Community**
Moderator: David Blee, Executive Director, Nuclear Infrastructure Council
Panelists:
Kevin Plunkett, Executive Director, J.P. Morgan Securities LLC
Carl Cho, Director, Corporate Banking, Citi
Edward Kee, President, Nuclear Economics Consulting Group
Walter Howes, Managing Partner, Verdigris Capital
Paul Murphy, Managing Director, Gowlings WLG
- Panel will discuss financing challenges and opportunities for creative solutions to such challenges. Considering both market conditions and industry track records, panelists will assess the role financing can play in overall project development and export promotion.
- 245-300pm** **Concluding Remarks**
Speaker: Chris Tye, President, Fluor Power
- Summary of the day’s discussions, and outline of next steps to be taken by the Department of Commerce to further the discussions and ideas from the Workshop.