

## MEMORANDUM

**To:** Members of the Committee on Financial Services

**From:** FSC Majority Staff

**Date:** January 11, 2024

**Subject:** January 17, 2024, Subcommittee Hearing entitled “International Financing of Nuclear Energy”

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The Subcommittee on National Security, Illicit Finance, and International Financial Institutions will hold a hearing entitled “International Financing of Nuclear Energy” at 10:00 a.m. on Wednesday, January 17, in Room 2128 of the Rayburn House Office Building. The panel will include the following witness:

- Nicholas McMurray, Managing Director for Nuclear and International Policy, ClearPath
- Dr. Ben Reinke, Vice President, Global Business Development, X-energy
- Maria Korsnick, President and Chief Executive Officer, Nuclear Energy Institute
- Timothy L. Judson, Executive Director, Nuclear Information and Resource Service

### ***Background***

This hearing will examine the potential for expanded financing of nuclear energy abroad. Nuclear power is an emissions-free energy source that produces around 30 percent of the world’s low-carbon electricity. In 2021, 33 countries operated nuclear power plants, which are often responsible for significant shares of total electricity generation (e.g. 20 percent in the U.S., and a global high of 68 percent in France).<sup>1</sup>

The People’s Republic of China and the Russian Federation have sought to export nuclear reactors to Europe, Eurasia, Latin America, Africa, and South Asia.<sup>2</sup> According to a 2017 study by Columbia University’s Center on Global Energy Policy, Chinese and Russian reactors are associated with higher safety risk than American and Japanese technologies.<sup>3</sup> In addition, financial and operational support for nuclear power can extend over decades, allowing Beijing and Moscow to secure long-term influence in both advanced and developing economies.

In a 2019 letter to congressional leaders, 38 national security experts emphasized the importance of nuclear energy finance to counter Chinese and Russian ambitions, writing:

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<sup>1</sup> <https://www.eia.gov/energyexplained/nuclear/nuclear-power-plants.php#:~:text=Nuclear%20power%20plants%20have%20generated,power%20plants%20in%2028%20states>.

<sup>2</sup> [https://www.atlanticcouncil.org/wp-content/uploads/2019/05/US\\_Nuclear\\_Energy\\_Leadership-.pdf](https://www.atlanticcouncil.org/wp-content/uploads/2019/05/US_Nuclear_Energy_Leadership-.pdf)

<sup>3</sup> <https://energypolicy.columbia.edu/sites/default/files/A%20Comparison%20of%20Nuclear%20Technologies%20033017.pdf>

In the nuclear energy sector, the initial supply of a reactor typically leads to the supplier's involvement throughout the hundred-year life of the nuclear program, enabling long-term influence on nuclear safety, security and nonproliferation, as well as the ability to advance energy security and broader foreign policy interests.<sup>4</sup>

Today, Russia is building 21 reactors outside its borders, and China is assembling more than a third of reactors under construction globally.<sup>5</sup>

Nuclear energy not only qualifies as a low-carbon source of electricity, it also possesses certain advantages over solar and wind. As the Department of Energy notes, nuclear is a key source of baseload power that can compensate for the intermittent nature of renewables. In addition, nuclear plants are able to run at maximum power more reliably than other energy sources, and their typical output (one gigawatt) means that they can produce as much as four renewable energy plants.<sup>6</sup>

### ***Nuclear Safety***

Nuclear is one of the safest of all energy sources, even compared to other low-carbon options. One analysis has estimated that the death rate from accidents and air pollution associated with nuclear energy is lower than that for wind and hydropower, even after taking the 1986 Chernobyl disaster into account.<sup>7</sup>

Indeed, high-profile nuclear accidents have only underscored the safety of nuclear power generation. For instance, the Nuclear Regulatory Commission has noted that the 1979 accident at Three Mile Island had “negligible effects on the physical health of individuals or the environment.”<sup>8</sup> The Chernobyl accident in Ukraine resulted from Soviet-era design flaws that were subsequently rectified.<sup>9</sup> *Abandoning* nuclear energy, however, does pose risks. After a 2011 tsunami hit Japan's Fukushima reactor, leading the country to temporarily take its nuclear power plants offline. As a result, fossil fuel usage and electricity prices surged, resulting in more deaths for the country than from the disaster itself.<sup>10</sup> Researchers have also shown that Germany overreacted to Fukushima, shutting down some of its reactors and incurring \$12 billion in social costs each year, mostly through increased mortality from higher levels of air pollution.<sup>11</sup>

Finally, innovations in nuclear reactor design hold out the possibility for additional safety advances. Small nuclear reactors (SMRs), for instance, may further lower proliferation risk by

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<sup>4</sup> <https://www.americansecurityproject.org/wp-content/uploads/2019/11/Ex-Im-National-Security-Letter-Final.3.pdf>

<sup>5</sup> <https://www.wsj.com/politics/national-security/washington-heats-up-nuclear-energy-competition-with-russia-china-f2f18e75>

<sup>6</sup> <https://www.energy.gov/ne/articles/nuclear-power-most-reliable-energy-source-and-its-not-even-close>

<sup>7</sup> <https://ourworldindata.org/safest-sources-of-energy>

<sup>8</sup> <https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html#effects>

<sup>9</sup> <https://www.iaea.org/newscenter/focus/chernobyl/faqs>

<sup>10</sup> <https://www.nber.org/papers/w26395>

<sup>11</sup> <https://www.nber.org/papers/w26598>

reducing the handling of nuclear material.<sup>12</sup> Through their more limited electricity generation and prefabricated construction, SMRs' output and capital requirements would be lower than traditional light water reactors, potentially making them more suitable for less developed economies that do not require, or cannot easily finance, typical nuclear plants. SMRs remain an early-stage technology, however, and have yet to be deployed in the United States.

### ***U.S. Financing***

The Biden Administration has voiced its support for nuclear energy broadly, including a commitment to triple renewable and nuclear energy financing globally.<sup>13</sup> However, an expansion of nuclear financing will require significant political and institutional support. In 2019, Financial Services Republicans created the China and Transformational Exports Program at the Export-Import Bank, which allows the Bank to offer fully competitive financing terms to counteract Chinese financing of nuclear technologies abroad. Since that time, Ex-Im appears to have increased its nuclear-related activities, even if the financing of U.S. nuclear exports remains a lengthy process. Last year, for example, Ex-Im leadership announced efforts in Africa, Romania, and Japan to potentially support nuclear cooperation. The Bank also signed a \$3 billion letter of interest with Poland for the sale of U.S.-made SMRs. Additional talks have been held by the Bank with potential buyers in Latin America and India.

### ***Legislation***

#### **1. H.R. 806, the *International Nuclear Energy Financing Act of 2023* (McHenry)**

H.R. 806 requires the U.S. Executive Director at the International Bank for Reconstruction and Development (and the U.S. Executive Director at any other international financial institution deemed appropriate) to support financial assistance for the generation and distribution of nuclear energy, consistent with U.S. national security interests.

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<sup>12</sup> <https://www.energy.gov/ne/benefits-small-modular-reactors-smrs>

<sup>13</sup> <https://www.whitehouse.gov/briefing-room/statements-releases/2023/12/02/fact-sheet-biden-harris-administration-leverages-historic-u-s-climate-leadership-at-home-and-abroad-to-urge-countries-to-accelerate-global-climate-action-at-u-n-climate-conference-cop28/>