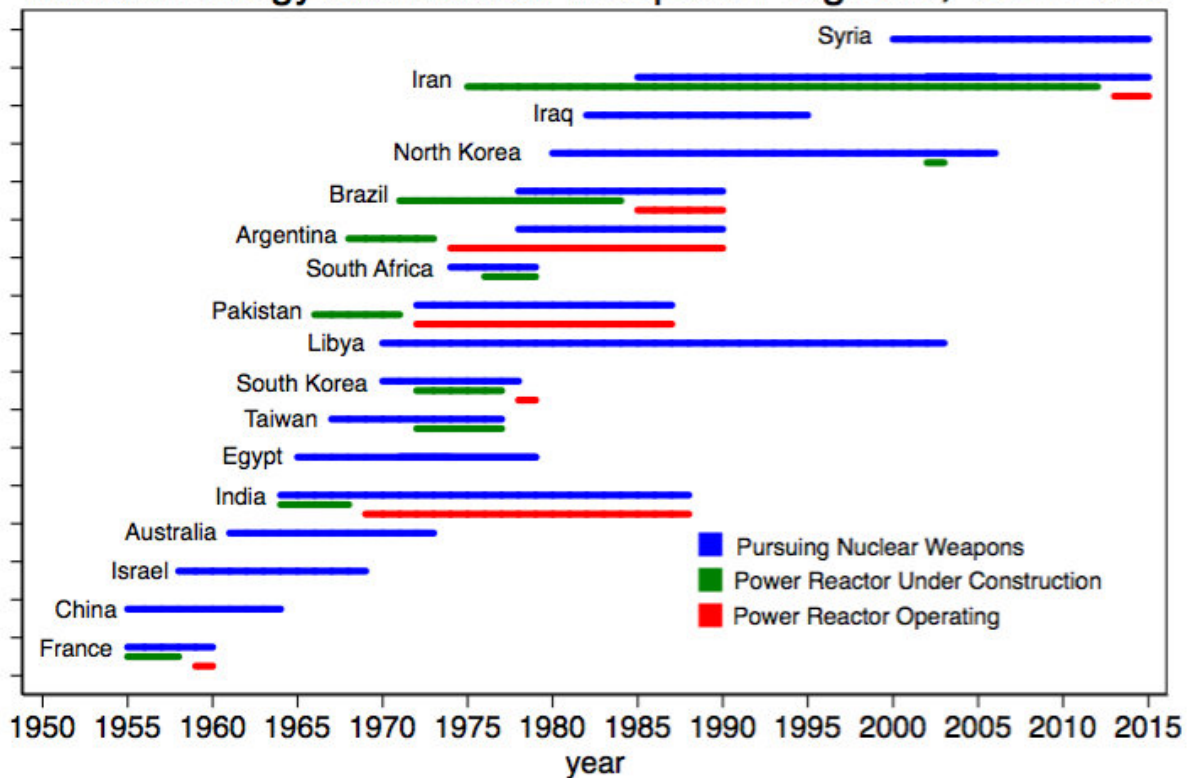


Nuclear energy programs do not increase likelihood of proliferation, study finds

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Nuclear Energy and Nuclear Weapons Programs, 1954-2015



The Nuclear energy & nuclear weapons programs, 1954-2015. Credit: Figure provided by Nicholas L. Miller.

Contrary to popular thought, nuclear proliferation is not more likely to

occur among countries with nuclear energy programs, according to research published in *International Security*.

In a historical analysis of the relationship between nuclear [energy](#) programs and proliferation from 1954 to 2000, the study finds that the link between the two has been overstated. Out of more than 15 countries that have pursued [nuclear weapons](#) since the first [nuclear power reactor](#) came online in the 1950s, only five—Argentina, Brazil, India, Iran and Pakistan—began pursuing nuclear weapons after a nuclear energy program had already been initiated. Most countries either pursued nuclear weapons following a more covert approach or had already begun seeking nuclear weapons before they had started nuclear energy programs. Moreover, countries that pursued nuclear weapons under the cover of an energy program have not been significantly more likely to acquire nuclear weapons, when compared to countries that seek nuclear weapons without an energy program.

As the study points out, nuclear energy programs do provide an increased technical ability to develop nuclear weapons. However, countries with nuclear energy programs face political obstacles that help counter this proliferation risk, including improved intelligence by outside actors, and the prospect of costly nonproliferation sanctions, which jeopardize the international trade and supplies required for most energy programs to operate. When a country announces plans to develop nuclear energy, this provides an open signal for foreign intelligence agencies to pay closer attention. As nuclear energy programs become operational, the procurement of technology and materials from foreign firms provide these same agencies with opportunities for surveillance, increasing the likelihood that suspicious activities are detected in a timely fashion. Furthermore, given that the nuclear power plant industry relies on a small number of global suppliers, nearly all of whom require International Atomic Energy Agency safeguards and the peaceful use of exported materials, countries with energy programs are generally wary of

risking disruptions in supply by seeking to develop nuclear weapons.

"The findings suggest that international efforts to manage the proliferation risks of nuclear energy programs have been quite effective," says author Nicholas L. Miller, assistant professor of government at Dartmouth. "Even when countries become more technically capable of developing nuclear weapons due to an energy program, they can often be restrained by timely intelligence and the prospect of sanctions."

In the past, the U.S. has helped advance and enforce nonproliferation by leveraging its role as a major supplier of [nuclear power](#) plants and enriched uranium fuel. This leverage has diminished in recent years, as the U.S. is now only a marginal supplier in a nuclear export market dominated by Russia, with China also aiming to increase its share. To restore this important leverage, Miller proposes that the U.S. work to revive its role as a major nuclear supplier.

For nuclear cooperation agreements, Miller calls on the U.S. to forego a demand for the "gold standard" in which recipient countries must pledge not to pursue enrichment or reprocessing. This stringent requirement may scare off potential buyers, who then take their business elsewhere, which in turn reduces the United States' potential for leverage. While the U.S. should continue to oppose the spread of enrichment or reprocessing technology, it can pursue this objective via more effective strategies, such as consultations with other nuclear suppliers and quiet but forceful diplomacy with [countries](#) attempting to acquire this sensitive technology.

More information: *International Security*,
www.mitpressjournals.org/toc/isec/42/2

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