EXECUTIVE SUMMARY

Risky Returns

Nuclear weapon producers and their financiers

PAX Peace. Are you in?

ICAN International Campaign to Abolish Nuclear Weapons

Utrecht, December 2022

There remains a marked lack of official information available in the public domain about the use, production, transfer and stockpiling of nuclear weapons. We strived to achieve the highest level of accuracy in reporting. The information in this report reflects official information available in the public domain.
We welcome comments, clarifications, and corrections from governments, companies, financial institutions and others, in the spirit of dialogue, and in the common search for accurate and reliable information on this important subject. If you believe you have found an inaccuracy in our report, or if you can provide additional information, please contact: nukes@paxforpeace.nl.

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And all those who work tirelessly to stigmatize, outlaw, and eliminate nuclear weapons.

Notes:
Certain figures in this report may not tally exactly due to rounding. All figures are presented in United States Dollars (USD) (unless otherwise indicated). Commas (,) are used as thousands separators.

This document, as well as any data and any map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

About PAX

PAX means peace. Together with people in conflict areas and concerned citizens worldwide, PAX works to build just and peaceful societies across the globe. PAX brings together people who have the courage to stand for peace. Everyone who believes in peace can contribute. We believe that all these steps, whether small or large, truly matter and will contribute to a just and peaceful world. PAX is an ICAN partner. More information about PAX can be found at: www.paxforpeace.nl.

About ICAN

ICAN is a global campaign coalition promoting adherence to and implementation of the United Nations Treaty on the Prohibition of Nuclear Weapons. ICAN is comprised of more than 650 partner organisations in over 100 countries. More information about ICAN can be found at: www.ICANw.org.

About Profundo

Profundo is an economic research consultancy analysing commodity chains, financial institutions and corporate social responsibility issues. It works predominantly for environmental, human rights and development organisations in the Netherlands and abroad. www.profundo.nl.

Key findings

$747 billion invested in 24 nuclear weapon producing companies.

$746,677 million was made available to the nuclear weapons producing companies between January 2020 and July 2022, a $61.5 billion increase from the previous year. The increase can be attributed to an increase in shareholding in 2022 compared to 2021. Bondholding values dropped by $1 billion. Loans and underwriting also decreased with $31.2 billion and $14.7 billion respectively.

306 financial institutions invest

306 institutions have financing or investment relationships with the 24 nuclear weapon producing companies.

24 companies producing nuclear weapons

Companies from China, France, India, Italy, the Netherlands, the Russian Federation, the United Kingdom and the United States are significantly involved in the production of nuclear weapons. Many of the companies involved have multi-year contracts, totalling at least $280 billion and continuing for decades.

Northrop Grumman is the biggest single nuclear weapons profiteer, with at least $24.3 billion in contracts, not including consortium and joint venture revenues. Aerojet Rocketdyne, BAE Systems, Boeing, Lockheed Martin and Raytheon Technologies also hold multi-billion-dollar contracts for nuclear weapon production and/or stockpiling.

The list of companies profiled in this report and the arsenals to which they contribute are:

1. Aerojet Rocketdyne (United Kingdom, United States);
2. Airbus (France);
3. BAE Systems (France, United Kingdom, United States);
4. Bechtel (United States);
5. Bharat Dynamics (India);
6. Boeing (United Kingdom, United States);
7. China Aerospace Science and Technology (China);
8. Constructions Industrielles de la Méditerranée (CNIM Systèmes Industriels has now been acquired by Groupe REEL[1]) (France);
9. Fluor (United States);
10. General Dynamics (United Kingdom, United States);
11. Honeywell International (United States);
12. Huntington Ingalls Industries (United States);
13. Jacobs Engineering (United States);
14. L3 Harris Technologies (United States);
15. Leidos (United States);
16. Leonardo (France);
17. Lockheed Martin (United Kingdom, United States);
18. Northrop Grumman (United Kingdom, United States);
19. Raytheon Technologies (United States);
20. Rostec (Russian Federation);
21. Safran (France);
22. Textron (United States);
23. Thales (France), and;
24. Walchandnagar Industries Limited (India

The Russian invasion of Ukraine and the explicit threats to use nuclear weapons that followed have sparked global unrest and fears of nuclear escalation, unprecedented since the 1962 Cuban Missile Crisis. In this context, the need to immediately prioritize the prevention of escalation and its potentially catastrophic humanitarian consequences should be self-evident. Yet, some states' responses, including allowing nuclear exercises to proceed, have further contributed to already heightened tensions.

All nuclear threats are unacceptable. Nuclear weapons remain the most destructive, inhumane and indiscriminate weapons ever created. No state or agency would be able to address the immediate or long-term consequences of the detonation of a nuclear weapon. The Russian invasion in Ukraine has illustrated that these weapons of mass destruction do not preserve peace and stability but are rather used as a tool to blackmail and facilitate a campaign of aggression against another country.

The Treaty on the Prohibition of Nuclear Weapons (TPNW), which entered into force in January 2021, is the only international legally-binding instrument under which nuclear threats are explicitly prohibited.[2] In June 2022, the Treaty's first Meeting of States Parties was held in Vienna, where states parties unequivocally condemned "any and all nuclear threats, whether they be explicit or implicit and irrespective of the circumstances". The Treaty also prohibits the manufacture, production and development of nuclear weapons, as well as assistance with those acts.

The need for nuclear disarmament has never been so urgent. Yet, all nine nuclear-armed states continue to modernize their nuclear arsenals. In 2021, an estimated $82.4 billion was spent on these weapons.[3] This report includes information about the nuclear weapon systems of six of the nine nuclear armed countries which contract the private sector to produce key components necessary for their nuclear arsenals: the United States, the United Kingdom, France, China, Russia and India. New nuclear weapons systems, including the US LGM-35A Sentinel, formerly known as the Ground Based Strategic Deterrent, and Long Range Standoff weapons, the French ASMPA-successor the ASN4G, and the Indian efforts to expand to submarine launched ballistic missiles are also presented in this report.

Nuclear weapon producing companies

The biggest nuclear weapon profiteer remains Northrop Grumman, with at least $24.3 billion in outstanding contracts, not including the consortium and joint venture revenues. Aerojet Rocketdyne, BAE Systems, Boeing, Lockheed Martin and Raytheon Technologies also hold multi-billion-dollar contracts for nuclear weapon production and/or sustainment. All 24 companies profiled in this report build key components or otherwise contribute to nuclear weapon development, testing, production, manufacture, possession, stockpiling or use, now prohibited under international law.

For some nuclear arsenals, the availability of information on companies involved is relatively straightforward. For other arsenals, including those of China, Russia, North Korea and Pakistan, it is very difficult to obtain reliable information on these companies. In the case of China, however, the increased monitoring of construction activity, including through open-source satellite investigation, provides information on locations that can help track down company involvement in key facilities. Chinese industries are also reaching out more externally to finance debt. Combined with the request for more transparency by investors from companies engaged in the Silk Road initiative, there is scope to include more Chinese companies in future reporting. China Aerospace Science and Technology (CASC), at the group level, is included in this report because of this increase in available information.

Major nuclear weapon systems

Most of the nuclear armed countries have several major systems in place to use their nuclear weapons. The United Kingdom is an exception, as it uses the same basic Trident missile delivery system as the United States, and only intends to fire these missiles from submarines. Others have air- launched or ground-launched systems as well. Some ground-launched systems are designed to also be mobile, including some Chinese systems.

The following is a snapshot of the various systems, and the companies involved. Not all systems are included, only those for which a clear connection to specific companies was found. Additional information can be found in the full report.

Agni series (India)

India has three different ranged Agni nuclear capable ballistic missiles in its arsenal, the Agni I (700 km), Agni II (2000 km) and Agni III (3200 km). It is currently developing Agni IV (>3500 km), Agni V (>5000 km) and Agni-P (1000-2000 km).[4] Bharat Dynamics Limited manufactures key components for the Agni weapons.[5] Walchandnagar Industries produces the launch systems for the Agni series.[6]

AGM-86 Air-Launched Cruise Missile (US)

The Air-Launched Cruise Missile (ALCM) is a long-range missile that is part of the US strategic bomber force. The B-52 airplane is able to carry 20 200 kT missiles.[7] The US plans to keep the existing design in place until deploying its replacement, the Long Range Standoff, around 2030.[8] Boeing builds these missiles.[9]

ASMPA (France)

The ASMPA is a medium-range air-to ground nuclear armed missile that has been operational since 2009.[10] In 2016, MBDA France commenced work on design and development of the mid-life upgrade of the ASMPA, to extend life through 2035. In the 2023 budget of the French Ministry of Defence, the delivery of upgraded ASMPAs is planned , and financing was set aside to ensure the ASMPA is viable beyond 2030.[11] It is built by MBDA, a joint venture between BAE Systems (37.5%), Airbus (37.5%) and Leonardo (25%).[12] Thales also builds key components for the missile.[13] A Safran subsidiary, Herakles, is also part of an MBDA joint venture called Roxel[14], which is involved in design, development, manufacture and sale of solid propulsion systems for the ASMPA.[15]

ASN4G (France)

MBDA ((a joint venture between BAE Systems (37.5%), Airbus (37.5%) and Leonardo (25%)) is also contracted by the French government for airborne component work related to development of the ASMPA-successor ASN4G.[16] The new weapon, with range exceeding 1,000km, double that of the ASMPA, is scheduled to enter service in 2035. The French Directorate General for Armaments indicated that the ASN4G will be a hypersonic missile.[17] Like the ASMPA, the missiles will be developed with the capacity for submarine launch, for which the manufacturers concerned are mainly ArianeGroup, Naval Group, Safran, TechnicAtome and Thales.[18]

B61 (United States)

The B61 is a nuclear gravity bomb, dropped from airplanes and currently deployed at US and NATO bases.[19] There are an estimated 100 B61 bombs stationed in five European countries (Kleine Brogel AB in Belgium, Büchel AB in Germany, Aviano AB and Ghedi AB in Italy, Volkel AB in the Netherlands, and Incirlik AB in Turkey).[20] The B61-12 will consolidate and replace earlier B61 weapon designs. Full-scale production thereof started in 2020.[21] This modernisation is expected to cost around $8.25 billion, not including the modification of nuclear capable aircraft.[22] Boeing is producing the guided tail-kit assembly.[23] Northrop Grumman produced the fixed wing.[24]
Most of the US nuclear complex is involved in producing the weapons. Design and engineering take place at the Los Alamos and Sandia national laboratories. High explosives and the final assembly of the B61-12 is done at Pantex. The Y-12 complex is where uranium (and other) components are manufactured, and the firing, safing and use control components are produced at the Kansas City National Security Campus.[25] Honeywell International operates the Kansas City facility.[26]

DF- 26 (China)

The DF-26 is an intercontinental ballistic missile in China's nuclear arsenal. It has a range of approximately 4,000km, and is one of the most widely deployed in China.[27] China Aerospace Science and Technology Corporation (CASC) is the only manufacturer of Chinese ICBMs.[28]

LGM-35A Sentinel (United States)

The LGM-35A Sentinel, formerly known as the Ground-based Strategic Deterrent (GBSD), will be produced by Northrop Grumman for the United States as a replacement to the Minuteman III ICBM around 2030.[29] The US Air Force will also replace the current warheads with the new W87-1 variant.[30] The US government is also planning to produce new plutonium pits for these warheads at the Los Alamos National Laboratory and Savannah River Site.[31] The Sentinel programme is estimated to cost $85 billion over a 30 year period, with 400 missiles going on alert by 2036.[32] The Northrop Grumman 'Sentinel (GBSD) nationwide team' includes Aerojet Rocketdyne, which expanded its Advanced Manufacturing Facility (AMF) in Huntsville, Alabama to produce solid rocket motors for these weapons.[33] Aerojet Rocketdyne will develop the large solid rocket motor and the post-boost propulsion system and will also be responsible for the testing of post-boost system components.[34] Bechtel will provide launch

system design, construction, and integration during the next development phase for this new nuclear weapon.[35] General Dynamics is working on command and launch capabilities. [36] Honeywell International will develop guidance and missile electronics.[37] L3 Harris will design the training systems. [38] Lockheed Martin is handling missile payload integration.[39] Collins Aerospace, a unit of Raytheon Technologies, will also build components for command and control systems.[40] Textron will develop missile payload integrations.[41]

Iskander (Russian Federation)

The Iskander is a short range ballistic missile with a range of at least 350km. It is deployed in several locations around Russia.[42] Rostec produces this missile.[43]

Long Range Standoff (United States)

The US Air Force is planning on replacing the current stockpile of Air Launched Cruise Missiles with a new Long Range Standoff (LRSO) cruise missile. According to the US Congressional Research Services, the US Air Force plans to buy up to 1,100 LRSO missiles at a cost of around $10.8 billion.[44] The new missiles will be armed with the W80-4 warhead.[45] Lawrence Livermore National Laboratory and Sandia National Laboratories are the primary facilities responsible for the new warhead design, and the new weapon is expected to be completed by 2031.46 Boeing is contracted to make sure the LRSO can be dropped by B-52H bombers.[47] National Technology and Engineering Solutions of Sandia (NTESS), a wholly owned subsidiary of Honeywell operates Sandia National Laboratory, where the warheads will be integrated to the missiles.[48] Raytheon was contracted in 2021 for development and manufacture of the LRSO.[49]

M51 (France)

The M51 is a submarine launched ballistic missile, currently available in two versions: the M51.1 and M51.2.[50] Preliminary work on the third version began in 2014, and the French Ministry of Defence 2023 budget states that the M51.3 entered production in 2019.[51] The M51.3 version is due to enter service around 2025.[52] Under the 2019-2025 defence budget law, the government earmarked €25 billion ($29 billion) for work on all nuclear weapons systems, including seaborne and airborne weapons.[53] A fourth version of the missile, M51.4, is expected to enter service around 2035.[54] According to the French 2023 Defense budget, 2023 funding is mainly reserved for the continuation of the development and production work of M51.3, as well as preparatory work for M51.4, with ArianeGroup, a joint venture between Airbus and Safran, as the prime contractor.[55] Naval Group is the main contractor for submarines maintenance, with the M51 integration contracted to CNIM.[56]

Minuteman III (United States)

There are 400 Minuteman III Intercontinental Ballistic Missiles (ICBMs) currently deployed in the US arsenal, and they are expected to stay active until 2030.[57] These missiles can carry the W78 and W87 warheads.[58] BAE Systems is the prime contractor for the ICBM system engineering/technical assistance support, training, and development.[59] Aerojet Rocketdyne is contracted to provide solid boost technology and strategic propulsion through 2023.[60] Boeing is contracted for engineering and other services through 2024.[61] Honeywell International builds the internal guidance instruments.[62]Textron builds the multiprobe antenna and Mod5F midsections for the missiles[63] Lockheed Martin builds re-entry systems, and the new Airborne Launch Control System Replacement.[64] Northrop Grumman provides sustainment support.[65] Raytheon is contracted to build the Minimum Essential Emergency Communication Network for the Missile System.[66]

Prithvi II (India)

The Prithvi-II is a short range (350 km) ballistic missile used as a nuclear delivery vehicle in the Indian nuclear arsenal.[67] Bharat Dynamics Limited is the main contractor for this system.[68]

Trident II (D5) (United States & United Kingdom)

The submarine-launched Trident II (D5) ballistic missile is currently aboard US Ohio-class and British Vanguard-class submarines.[69] In 1963, the UK and US agreed to share procurement for key components for their nuclear missiles.[70] The US has more than 530 D5 missiles and it plans to spend around $1 billion per year to keep them available for the future Columbia class submarines.[71] The UK is also engaged in a project for new nuclear warheads for their arsenal.[72] The UK announcement to parliament came several days after the agreement to work closely with the US in developing these weapons was published in major media outlets.[73]

Aerojet Rocketdyne manufactures Post Boost Control System Gas Generator Units for the Trident II D5 program.[74] BAE Systems is contracted by the US

government for technical engineering services on the US and UK Trident II D5 strategic weapon systems.[75] Boeing is contracted for maintenance, repair and rebuilding of the Trident system.[76] General Dynamics is responsible for integrating Trident nuclear weapons in the US Columbia-class program and the UK Dreadnought-class submarines.[77] L3 Harris is responsible for flight test instrumentation and support.[78] Lockheed Martin provides engineering and technical support services and related materials.[79]

Warhead assembly, plutonium and tritium production (United States)

At Pantex and the Oak Ridge Y-12 facility US nuclear weapons are assembled or disassembled.[80] Pantex stores thousands of plutonium pits, the heart of thermonuclear weapons, and is responsible for refurbishing existing warheads.[81] The Y-12 site manufactures nuclear weapon components from uranium and lithium, and it is the only source for enriched uranium components for nuclear weapons. [82] The facilities are managed and operated by Consolidated Nuclear Security).[83] CNS comprises member companies Bechtel National; Leidos; ATK Launch Systems (a subsidiary of Northrop Grumman); and SOC, with Booz Allen Hamilton as a teaming subcontractor.[84]

The Savannah River Site is the only site in the US nuclear weapon complex with capability to extract, recycle, purify and reload tritium, which must be periodically replaced in nuclear weapons.[85] Plutonium pit production capabilities are also being developed at the site. [86] Fluor is the lead partner in Savannah River Nuclear Solutions (SRNS) a joint venture with Honeywell and Newport News Nuclear (part of Huntington Ingalls) that operates the facility.[87]

Honeywell Federal Manufacturing & Technologies manages and operates the National Security Campus (NSC) (formerly Kansas City Plant), the National Nuclear Security Administration (NNSA) facility responsible for producing an estimated 85% of the non-nuclear components for US nuclear weapons.[88]

W78/88 and W80 warheads (United States)

The W78/88-1 warhead, used in both US air force and navy nuclear weapons systems, and the W80 warhead, used on the Long Range Stand Off Missile, are the responsibility of the Lawrence Livermore National Laboratory and Sandia National Laboratories.[89] The Lawrence Livermore lab is operated by Lawrence Livermore National Security[90], which is comprised of Bechtel, the University of California, BWX Technologies and Amentum[91] Sandia National Laboratories is operated by National Technology and Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International.[92]

Los Alamos is responsible for the nuclear design and engineering of warheads. It also manages the life extension and alteration programs affecting the W88 warhead and the B61-12 bomb.[93] Los Alamos is managed and operated by Triad National Security, made up of Battelle Memorial Institute, the Texas A&M University System and the University of California.[94] Among its subcontractors are Fluor and Huntington Ingalls Industries.

W88 Alt 370 warheads (United States)

Los Alamos National Laboratory and Sandia National Laboratory (operated by Honeywell) are "[t]he design and engineering labs for the W88 Alt 370".[95] The W88 is the nuclear warhead deployed on the Trident II (D5) missiles.[96] The conventional high explosives and final assembly of the complete warhead takes place at the Pantex Plant[97] ((operated by Bechtel National, Inc., Leidos, ATK Launch Systems (a subsidiary of Northrop Grumman) and SOC LLC)).[98] The gas transfer and the arming, fuzing, and firing subsystem is produced at the National Security Campus (NSC) (formerly Kansas City Plant), operated by Honeywell International.[99] The NNSA estimates that the costs for this system will be around $2.7 billion.[100]

Investments

There are a total of 306 investors with financial relationships to at least one of the 24 nuclear weapon producing companies profiled in this report. Financial institutions that back nuclear weapon producing companies enable them to continue their involvement in the development and production of these weapons of mass destruction, adding to the heightened risk of nuclear escalation that the world is witnessing today.

Over the past decade, most investors have implemented policies to manage risks in the Environmental, Social and Governance (ESG) areas. The Environmental and Social risks involved in the production of nuclear weapons are quite clear. They have been the reason why over 100 financial institutions currently exclude nuclear weapon producers from investments. Concerns around governance may further add to the already existing environmental and social risks attached to the nuclear weapon industry. In several countries as well as at the European Union level, legislation is now in place or being developed that requires arms producers and financial institutions to disclose if and how possible negative ESG effects of their investments are taken into account in their decision-making.

Investors can and should undertake efforts to influence a company's direction. From action to end apartheid to supply chain analyses that help understand a company's impact on human rights and the environment, the financial sector's role in society is more prominent than ever before. When an investor chooses to end its relationship with a company because of the latter's involvement in the production of nuclear weapons, it sends a clear signal to the world that weapons of mass destruction are never acceptable.

The role of financial institutions in furthering efforts to reduce the role of nuclear weapons in society was exemplified by the engagement of the sector in the first Meeting of States Parties to the TPNW in June 2022. At that meeting, Italian asset manager Etica funds delivered a joint statement on behalf of a group of 37 investors, that called upon states to apply the prohibition on assistance to prohibited acts under the Treaty to all forms of financial assistance, including those made by the private sector operating within their jurisdiction. As put forward in the statement, "[i]t would be illogical to prohibit the production of nuclear weapons without prohibiting the financing that enables the production to proceed".[101]

Nuclear weapon producing companies included in this financial analysis present a significant, but not exhaustive review of the nuclear weapon industry. The 24 companies included are all publicly traded and have multi-year contracts for key components or services that contribute to activities prohibited under the Treaty on the Prohibition of Nuclear Weapons, including development, testing, production, manufacture, possession, stockpiling or use

Global investments

There are a total of 306 investors with financial relationships to the nuclear weapon producing companies profiled in this report, from 28 countries. Most of these investments come from countries that either possess nuclear weapons of their own or otherwise endorse the use of nuclear weapons. With the exception of three financial institutions (from South Africa and Chile), none of the investors come from countries that have joined the TPNW.

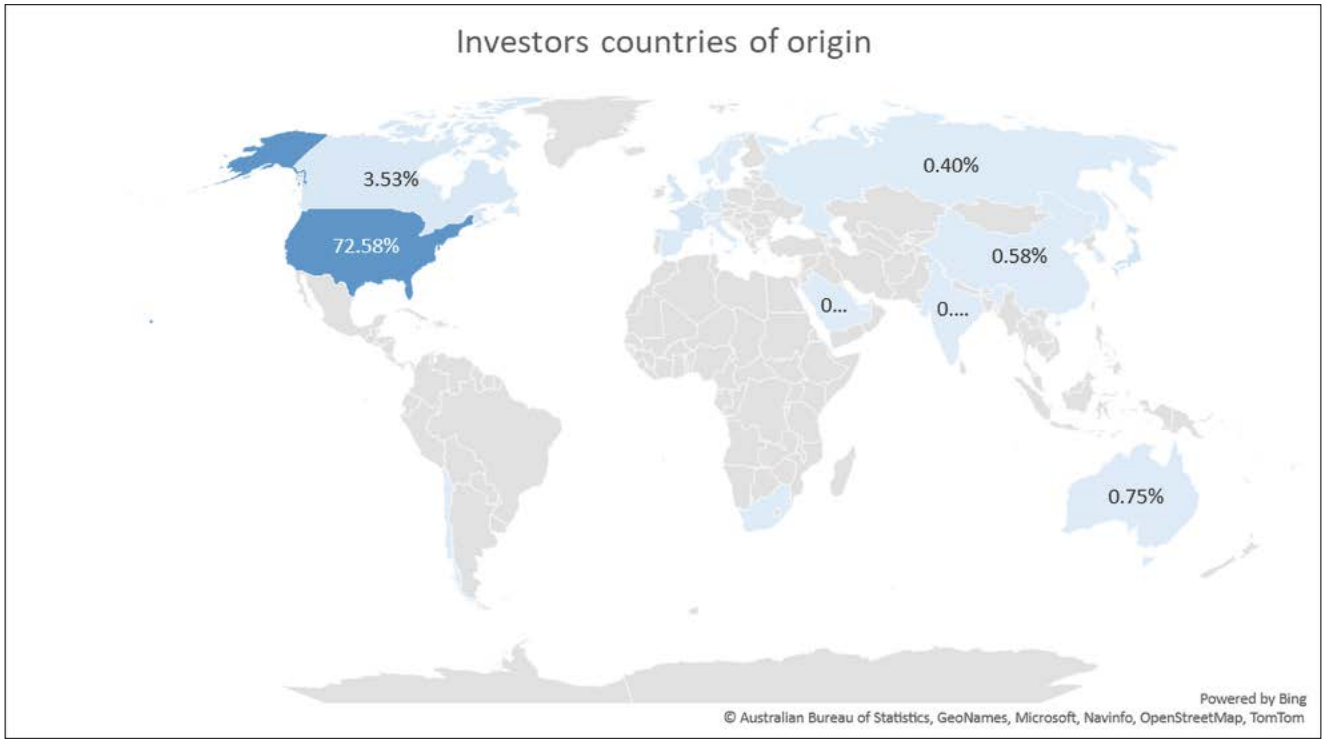

FIGURE 1: MAP OF INVESTORS GLOBALLY

Taken together, share-and bondholding represent the majority of total investments, with a smaller portion in loans and underwriting. The top 10 investors are all based in the United States. Their combined investments in the 24 nuclear weapon producing companies totals $386,602 million, representing more than half of all outstanding investments.

Top 10 investors compared (all figures in USD millions)

INVESTOR	COUNTRY	2022	2021	CHANGE
Vanguard	United States	$68.180	$50.971	$17.209
State Street	United States	$57.012	$45.564	$11.448
Capital Group	United States	$51.292	$41.773	$9.519
BlackRock	United States	$48.052	$40.711	$7.341
Bank of America	United States	$41.339	$38.405	$2.934
JPMorgan Chase	United States	$29.428	$30.407	-$979
Citigroup	United States	$27.251	$33.343	-$6.092
Wells Fargo	United States	$22.582	$22.604	-$22
Wellington Management	United States	$22.285	$16.868	$5.417
Morgan Stanley	United States	$19.181	$18.737	$444
GRAND TOTAL		**$386,602**	**$339,383**	**$47,219**

TABLE 1: TOP 10 INVESTORS IN NUCLEAR WEAPON PRODUCERS COMPARED. ALL FIGURES IN USD MILLIONS.

Overall, there are 49 new financial institutions with investment in nuclear weapon producers, whereas 55 financial institutions divested in the previous year. Overall bondholding value continued to decrease in 2022, with a drop of $1 billion compared to the previous year. The total amount of shareholding value, on the other hand, went up again in 2022 after a reducing trend since at least 2019, with an increase of $108.5 billion compared to the previous year.

The total value of loans extended dropped in 2022 with $31.2 billion compared to the previous year after a steadily growing trend since at least 2019. Total underwriting also decreased, with a $14.7 billion drop from 2021.

Types of investment compared

	2022	2021	2020	2019
Bondholding	$6,749	$7,819.7	$9,180.4	$25,552.6
Loans	$180,208	$211,398.8	$180,778.3	$142,606.5
Shareholding	$454,413	$345,919.2	$413,339.9	$544,704.6
Underwriting	$105,307	$120,045.8	$42,751.9	$35,576.7
GRAND TOTAL	**$746,677**	**$685,183.5**	**$646,050.5**	**$748,440.4**

TABLE 2: TYPES OF INVESTMENTS COMPARED 2021-2019, ALL FIGURES IN USD MILLIONS

The report does not include investments made by governments, universities, or churches, only private financial institutions. This selection of financial institutions is limited by a reporting threshold. Only share and bond holdings larger than 0.5% of the total number of outstanding shares of the nuclear weapon producing companies are listed.

Full investor list

The following list contains the names and countries of origin of the financial institutions connected to the nuclear weapon industry. For details on their financing relationships, see the full report.

INVESTOR	COUNTRY	INVESTMENTS
Abu Dhabi Investment Authority	United Arab Emirates	$18
Academy Securities	United States	$347
Adage Capital Partners	United States	$344
Aditya Birla Capital	India	$11
Aegon	Netherlands	$280
Affiliated Managers Group	United States	$1.726
Allianz	Germany	$221
Allspring Global Investments	United States	$311
Allstate	United States	$30
Ally Financial	United States	$52
American Century Investments	United States	$213
American Equity	United States	$78
American Financial Group	United States	$40
American National Insurance	United States	$14
Ameriprise Financial	United States	$5.283
Anima	Italy	$15
ANZ	Australia	$1.905
Apollo Global Management	United States	$50
Apple Financial Holdings	United States	$67
Apto Partners	United States	$38
AQR Capital Management	United States	$222
Arab Banking Corporation (Bank ABC)	Bahrain	$88
Aristotle Capital Management	United States	$2.134
Arrowstreet Capital	United States	$18
Artisan Partners	United States	$1.045
AustralianSuper	Australia	$237
Auto-Owners Insurance	United States	$15
Aviva	United Kingdom	$77
Aware Super	Australia	$1
Baird	United States	$225

INVESTOR	COUNTRY	INVESTMENTS
Balyasny Asset Management	United States	$98
Banca Monte dei Paschi di Siena	Italy	$88
Banca Passadore & C.	Italy	$88
Banca Popolare di Sondrio	Italy	$158
Banco Bilbao Vizcaya Argentaria (BBVA)	Spain	$4.752
Banco BPM	Italy	$548
Banco de Crédito e Inversiones	Chile	$20
Banco de Sabadell	Spain	$76
Bancroft Capital (PA)	United States	$18
Bancroft Group (CT)	United States	$20
Bank of America	United States	$41.339
Bank of China	China	$1.510
Bank of East Asia	Hong Kong	$26
Bank of New York Mellon	United States	$2.511
Barclays	United Kingdom	$5.255
BayernLB	Germany	$478
Beach Point Capital Management	United States	$50
Bessemer Group	United States	$400
Black Creek Investment Management	Canada	$248
BlackRock	United States	$48.052
Blaylock Beal Van	United States	$101
BMO Financial Group	Canada	$1.793
BNP Paribas	France	$12.701
Boston Private	United States	$97
BPER Banca	Italy	$279
Brown Advisory	United States	$462
Cabrera Capital	United States	$38
California Public Employees' Retirement System (CalPERS)	United States	$603
Canara Bank	India	$10
Capital Group	United States	$51.292
Capital One Financial	United States	$741
Cassa Depositi e Prestiti	Italy	$221
CastleOak Securities	United States	$63
Cathay General Bancorp	United States	$45
Causeway Capital Holdings	United States	$104
Chang Hwa Commercial Bank	Taiwan	$20
Charles Schwab	United States	$4.815
Children's Investment Fund Management	United Kingdom	$1.758
China Jianyin Investment	China	$26
China Merchants Bank	China	$1.036
China Southern Asset Management (CSAM)	China	$26
CI Financial	Canada	$96
CIBC	Canada	$668
Cincinnati Financial	United States	$15
Citadel	United States	$133
Citigroup	United States	$27.251
Citizens Financial Group	United States	$254

INVESTOR	COUNTRY	INVESTMENTS
CL King & Associates	United States	$53
Clark Capital Management Group	United States	$19
Comerica	United States	$240
Commerzbank	Germany	$3.975
Commonwealth Bank of Australia	Australia	$76
Congress Asset Management Company	United States	$93
Cooke & Bieler	United States	$267
Corsair Capital Management	United States	$470
Crédit Agricole	France	$9.141
Crédit Mutuel CIC Group	France	$1.802
Credit Suisse	Switzerland	$1.720
D.E. Shaw & Co.	United States	$22
Danske Bank	Denmark	$290
DBS	Singapore	$1.439
Deka Group	Germany	$527
Desjardins Group	Canada	$3
Deutsche Bank	Germany	$11.448
Diamond Hill Investment Group	United States	$299
Dimensional Fund Advisors	United States	$1.112
Dodge & Cox	United States	$3.786
Donghai Securities	China	$67
Drexel Hamilton	United States	$76
DZ Bank	Germany	$254
EFG International	Switzerland	$113
Elara Capital	United Kingdom	$41
Empyrean Capital Partners	United States	$153
Equitable Holdings	United States	$1.167
ETF Managers Group	United States	$77
European Investment Bank	Luxembourg	$2.256
Export-Import Bank of the United States	United States	$350
Federated Investors	United States	$187
Fidelity Investments	United States	$12.024
Fiera Capital	Canada	$12
Fifth Third Bancorp	United States	$706
Findlay Park Partners	United Kingdom	$336
First Abu Dhabi Bank	United Arab Emirates	$1.479
First Capital Securities	China	$45
First Financial Holding	Taiwan	$32
First Horizon	United States	$245
First Seafront Fund Management	China	$14
First Trust Advisors	United States	$603
Fisher Investments	United States	$799
Franklin Resources	United States	$8.786
Fullgoal Fund Management	China	$38
Fuyo General Lease	Japan	$157
Gabelli Funds	United States	$399
Gamco Investments	United States	$20

INVESTOR	COUNTRY	INVESTMENTS
Geode Capital Holdings	United States	$12.511
GF Securities	China	$26
Goldman Sachs	United States	$13.293
Government Pension Fund Global	Norway	$2.652
Government Pension Investment Fund (GPIF)	Japan	$3.880
GQG Partners	United States	$763
Granite Investment Partners	United States	$33
Grantham Mayo Van Otterloo & Co	United States	$235
Great Pacific Securities	United States	$38
Groupe BPCE	France	$5.448
Guardian Life Insurance Company of America	United States	$76
Guggenheim Capital	United States	$151
Guzman & Co	United States	$38
Hancock Whitney	United States	$193
Hankou Bank	China	$67
HDFC Bank	India	$175
Hoover Financial Advisors	United States	$58
Hotchkis & Wiley Capital Management	United States	$185
HSBC	United Kingdom	$3.945
Hua Nan Financial	Taiwan	$13
Hubei Bank	China	$67
Hubei Juyuan Technology Investment	China	$64
Iberia Bank	United States	$20
ICICI Bank	India	$278
IDBI Bank	India	$41
IFS Group	United States	$19
Industrial and Commercial Bank of China	China	$1.151
ING Group	Netherlands	$545
Intesa Sanpaolo	Italy	$1.585
Invesco	United States	$5.781
Jacobs Levy Equity Management	United States	$51
Janus Henderson	United Kingdom	$2.158
Japan Mutual Aid Association of Public School Teachers	Japan	$5.528
JPMorgan Chase	United States	$29.428
Jupiter Fund Management	United Kingdom	$357
KeyCorp	United States	$91
KfW	Germany	$254
KKR Group	United States	$272
Knights of Columbus	United States	$10
Kotak Mahindra Bank	India	$44
La Caixa Group	Spain	$111
Lalitabai Lalchand Charity	India	$0
Landesbank Baden-Württemberg (LBBW)	Germany	$76
Landesbank Hessen-Thüringen	Germany	$76
Länsförsäkringar	Sweden	$5
Lazard	Bermuda	$966
Legal & General	United Kingdom	$3.507

INVESTOR	COUNTRY	INVESTMENTS
Life Insurance Corporation of India	India	$83
Lloyds Banking Group	United Kingdom	$2.276
Lone Star Funds	United States	$163
Loop Capital	United States	$190
Lord, Abbett & Co	United States	$165
LSV Asset Management	United States	$582
M&G	United Kingdom	$13
Macquarie Group	Australia	$1.739
Madison Investments	United States	$89
Mahindra Finance	India	$4
Manulife Financial	Canada	$167
MassMutual Holdings	United States	$123
Masters Capital Management	United States	$29
MBS	United States	$38
Mediobanca Banca di Credito Finanziario	Italy	$138
Mega Financial	Taiwan	$27
Melqart Asset Management	United Kingdom	$27
MetLife	United States	$192
MFR	United States	$50
Millennium Management	United States	$206
Mirae Asset Financial Group	South Korea	$99
Mischler Financial Group	United States	$71
Mitsubishi UFJ Financial	Japan	$11.452
Mizuho Financial	Japan	$12.900
Modern Woodmen of America	United States	$20
Morgan Stanley	United States	$19.181
National Pension Service	South Korea	$259
National Western Life Group	United States	$19
Nationwide Mutual Insurance	United States	$91
NatWest	United Kingdom	$2.033
Neuberger Berman	United States	$754
New York Life Insurance	United States	$42
Newport Group	United States	$15.683
Nierenberg Investment Management	United States	$22
Ninety One	South Africa	$341
Nippon Life Insurance	Japan	$9
Northern Trust	United States	$7.613
Northill Capital	United Kingdom	$725
Northwestern Mutual	United States	$387
Novikombank	Russia	$10
Nuance Investments	United States	$93
OneAmerica Asset Management	United States	$75
Opus Corporate Finance LLP	United Kingdom	$37
Orix Corporation	Japan	$1.475
Owl Creek Asset Management	United States	$27
Pacific Century Group	Hong Kong	$317
Pacific Mutual	United States	$45

INVESTOR	COUNTRY	INVESTMENTS
Pendal Group	Australia	$67
Penserra Capital Management	United States	$41
People's Insurance Company	China	$98
People's United Financial	United States	$40
Perpetual	Australia	$239
PNC Financial Services	United States	$2.824
Power Financial Corporation	Canada	$1.018
Primecap Management	United States	$2.270
Principal Financial Group	United States	$78
Prudential Financial (US)	United States	$362
Prudential Plc	United Kingdom	$36
Pzena Investment Management	United States	$148
Quaero Capital	Switzerland	$1
R. Seelaus & Co	United States	$71
Raven's Wing Asset Management	United States	$7.246
Raymond James Financial	United States	$28
Regions Financial	United States	$960
Reinhart Partners	United States	$55
Renaissance Technologies	United States	$31
Riyad Bank	Saudi Arabia	$1.155
Rothschild Group	France	$92
Royal Bank of Canada	Canada	$7.989
Ruane, Cunniff & Goldfarb	United States	$400
Rubric Capital Management	United States	$93
Sanders Capital	United States	$1.487
Santander	Spain	$4.843
SAR Holdings	United States	$38
Sather Financial	United States	$35
Schweizerische Nationalbank	Switzerland	$463
Scotiabank	Canada	$2.906
Securian	United States	$14
Select Equity Partners	United States	$801
Shank Williams Cisneros & Co	United States	$159
Shenwan Hongyuan Group	China	$67
Silchester International Investors	United Kingdom	$920
Skandinaviska Enskilda Banken	Sweden	$344
SMBC Group	Japan	$10.308
Sociedad Estatal de Participaciones Industriales	Spain	$4.130
Société Générale	France	$6.736
Southern Farm Bureau Life Insurance	United States	$4
Sovcombank	Russia	$10
Standard Bank	South Africa	$50
Standard Chartered	United Kingdom	$1.719
State Bank of India	India	$369
State Farm	United States	$449
State Street	United States	$57.012
Steel Partners Holdings	United States	$164

INVESTOR	COUNTRY	INVESTMENTS
Stern Brothers & Co	United States	$38
Stifel Financial	United States	$334
Sumitomo Mitsui Trust	Japan	$197
Sun Life Financial	Canada	$8.630
Sundarm Finance Group	India	$30
T. Rowe Price	United States	$9.820
Tata Group	India	$13
TCW Group	United States	$45
Telsey Advisory Group	United States	$38
The Hartford	United States	$48
Thornburg Investment Management	United States	$18
Thrivent Financial	United States	$5
TIAA	United States	$4.403
Toronto-Dominion Bank	Canada	$2.852
Travelers	United States	$15
Tribal Capital Markets	United States	$38
Trinity Street Asset Management	United Kingdom	$179
Truist Financial	United States	$989
Two Sigma Investments	United States	$141
UBS	Switzerland	$3.340
UniCredit	Italy	$4.212
Union Bankshares	United States	$7
Unum Group	United States	$50
US Bancorp	United States	$4.851
Van Eck Associates Corporation	United States	$30
Vanguard	United States	$68.180
Veritas Capital Fund Management	United States	$111
Victory Capital	United States	$905
Virtus Investment Partners	United States	$17
Voya Financial	United States	$18
VTB Group	Russia	$3.000
Water Island Capital	United States	$29
Wedge Capital Management	United States	$46
Wellington Management	United States	$22.285
Wells Fargo	United States	$22.582
Westchester	United States	$63
Westpac	Australia	$1.316
White Mountains Insurance	Bermuda	$256
Woodforest National Bank	United States	$33
Yes Bank	India	$41
Zions Bancorporation	United States	$46
GRAND TOTAL		**$746,677**

TABLE 3: FULL INVESTOR LIST

Conclusion

Nuclear weapons remain the most destructive, inhumane and indiscriminate weapons ever created. As we find ourselves amid rising global tensions and unprecedented risks of nuclear escalation since the Cuban Missile crisis, the need for disarmament has never been so urgent.

The strong condemnations of nuclear threats and firm commitments made at the First Meeting of States Parties to the Treaty on the Prohibition of Nuclear Weapons in June this year, are reflective of a new global alliance, ready to take concrete steps towards a nuclear weapons free world.

Financial institutions can and should play a role in bringing about positive change. Through divestment, nuclear weapon producers can be pressured to cut the production of these weapons of mass destruction from their business strategies and, in turn, will make it more difficult for nuclear armed states to maintain their arsenals.

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