

Japan

8 Financial Institutions
made an estimated USD\$ 19,997 million (JPY 2,273 billion^a)
available to 27 nuclear weapon producing companies since January 2013.

Introduction

This document contains country specific information from the 2016 Don't Bank on the Bomb update. Hall of Fame and Runners-up include financial institutions with headquarters in the country that have published policies banning or limiting investment in nuclear weapons producers. Hall of Shame are the financial institutions that have significant financing relationships with one or more of the nuclear weapons producers identified in the report. There is also a brief summary of the nuclear weapons related work of each of the identified producers. For more detail, see the full report or go to the www.DontBankOnTheBomb.com website.

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The financial institutions identified include banks, pension funds, sovereign wealth funds, insurance companies and asset managers. They have provided various types of financial services to nuclear weapon companies including loans, investment banking and asset management.

All sources of financing provided since 1 January 2013 to the companies listed were analysed from annual reports, financial databases and other sources. The financial institutions which are most significantly involved in the financing of one or more nuclear weapon companies are shown here. See the full report for both a summary and full description of all financial institutions which are found to have the most significant financing relationships with one or more of the selected nuclear weapon companies, by means of participating in bank loans, by underwriting share or bond issues and/or by share- or bondholdings (above a threshold of 0.5% of all outstanding shares or bonds).

Figures presented are rounded up/down to the nearest dollar at the filing date. Commas (,) indicate thousands separators while periods (.) used as decimal points.

For more information on loans, investment banking, and asset management, please refer to the website.

^a Exchange rate: 1 USD = 113,669 JPY, 30 November 2016.

Hall of Shame

This section contains the results of our research into which financial institutions are financially involved with the nuclear weapon producing companies identified in the report. [For the full methodology, see the website](#). Each section provides the following information for each financial institution:

- The types of financial relations which the financial institution has with one or more nuclear weapon companies (loans, investment banking and asset management).

<i>Financial institution</i>	<i>Amount in USD millions</i>	<i>Amount in JPY millions^b</i>
Chiba Bank	20	2,273
Mitsubishi UFJ Financial	8,620	979,827
Mizuho Financial	4,597	522,536
Nomura	5	568
Orix Corporation	2,122	241,206
Sumitomo Mitsui Financial	4,453	506,168
Sumitomo Mitsui Trust	41	4,660
The Dai-ichi Life Insurance Company	138	15,686

Chiba Bank (Japan)

Chiba Bank (Japan) has made an estimated US\$ 20 million available to the nuclear weapons companies selected for this research project since January 2013.

Chiba Bank (Japan) provided loans for an estimated amount of US\$ 20 million to the nuclear weapon companies (see table below). The table shows all loans closed since January 2013 or maturing after August 2016.

Table 1 Loans provided by Chiba Bank

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
Aecom	750	20	7-6-2013	7-6-2018

Source: Thomson Reuters Eikon, "Loans", viewed in July/August 2016; Bloomberg, "Loans", viewed in July/August 2016.

Mitsubishi UFJ Financial (Japan)

Mitsubishi UFJ Financial (Japan) has made an estimated US\$ 8,620 million available to the nuclear weapons companies selected for this research project since January 2013.

Mitsubishi UFJ Financial (Japan) provided loans for an estimated amount of US\$ 7,315 million to the nuclear weapon companies (see table below). The table shows all loans closed since January 2013 or maturing after August 2016.

^b Exchange rate: 1 USD = 113,669 JPY, 30 November 2016.

Table 2 Loans provided by Mitsubishi UFJ Financial

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
Aecom	600	120	23-9-2011	30-9-2016
Aecom	700	35	14-10-2011	19-10-2016
Aecom	1,000	50	14-10-2011	19-10-2016
Aecom	750	150	7-6-2013	7-6-2018
Aecom	39	2	16-12-2013	19-12-2018
Aecom	655	39	16-12-2013	19-12-2018
Aecom	961	58	16-12-2013	19-12-2018
Aecom	1,050	105	29-1-2014	29-1-2019
Aecom	500	40	11-8-2014	17-10-2019
Aecom	1,188	95	11-8-2014	17-10-2021
Aecom	1,050	105	11-8-2014	17-10-2019
Aecom	1,050	105	11-8-2014	17-10-2019
Aecom	1,925	154	11-8-2014	17-10-2019
Aerojet Rocketdyne	100	8	30-5-2014	30-5-2019
Aerojet Rocketdyne	200	15	30-5-2014	30-5-2019
Aerojet Rocketdyne	350	35	17-6-2016	17-6-2021
Aerojet Rocketdyne	400	40	17-6-2016	17-6-2021
Airbus Group	3,797	134	14-10-2014	14-10-2019
BAE Systems	3,269	131	12-12-2013	12-12-2018
Bechtel	1,000	100	14-6-2013	14-6-2018
Bechtel	2,000	200	14-6-2013	14-6-2018
Bechtel	1,000	100	19-9-2014	17-10-2019
Bechtel	2,000	200	19-9-2014	17-10-2019
Bechtel	1,000	42	7-6-2016	7-6-2021
Bechtel	1,500	63	7-6-2016	7-6-2021
Boeing	2,300	42	5-11-2011	10-11-2016
Boeing	2,473	90	23-9-2014	15-10-2015
Boeing	2,473	90	23-9-2014	16-10-2019
Boeing	2,465	90	4-11-2015	3-11-2016
Boeing	2,365	90	4-11-2015	3-11-2020
BWX Technologies	700	32	22-5-2012	8-6-2017
BWX Technologies	600	36	11-5-2015	11-5-2020
CH2M Hill	900	135	19-4-2012	19-4-2017
CH2M Hill	1,100	220	22-3-2014	30-1-2019
Fluor	1,800	270	7-11-2012	9-11-2017
Fluor	1,700	255	28-5-2014	28-5-2019
Fluor	1,800	270	28-5-2014	28-5-2019
Fluor	1,700	121	25-2-2016	25-2-2021
Fluor	1,800	163	25-2-2016	25-2-2021

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
General Dynamics	1,000	46	10-11-2015	10-11-2020
Honeywell International	4,000	73	18-11-2013	10-12-2018
Honeywell International	4,000	114	10-7-2015	10-7-2020
Huntington Ingalls Industries	489	27	23-9-2013	6-11-2018
Huntington Ingalls Industries	650	35	23-9-2013	6-11-2018
Huntington Ingalls Industries	1,250	71	13-7-2015	13-7-2020
Jacobs Engineering	1,160	139	23-3-2012	23-3-2017
Jacobs Engineering	460	39	7-2-2014	7-2-2019
Jacobs Engineering	1,140	62	7-2-2014	7-2-2019
Jacobs Engineering	460	55	5-3-2015	5-3-2020
Jacobs Engineering	1,140	137	5-3-2015	5-3-2020
Larsen & Toubro	47	5	27-8-2013	1-6-2018
Larsen & Toubro	59	7	27-8-2013	1-8-2017
Larsen & Toubro	64	7	27-8-2013	1-6-2018
Larsen & Toubro	100	11	27-8-2013	1-6-2018
Larsen & Toubro	100	11	27-8-2013	1-6-2018
Leonardo-Finmeccanica	3,001	150	9-7-2014	9-7-2019
Leonardo-Finmeccanica	2,212	153	6-7-2015	6-7-2020
Lockheed Martin	1,500	85	14-8-2014	14-8-2019
Lockheed Martin	2,500	75	9-10-2015	9-10-2020
Lockheed Martin	7,000	440	9-10-2015	7-10-2016
Moog	900	70	28-3-2013	28-3-2018
Moog	1,100	110	22-5-2014	22-5-2019
Moog	1,100	63	28-6-2016	28-6-2021
Northrop Grumman	575	22	31-3-2011	24-1-2017
Northrop Grumman	1,600	64	8-7-2015	8-7-2020
Orbital ATK	200	13	3-9-2012	3-9-2017
Orbital ATK	250	25	8-10-2013	1-11-2020
Orbital ATK	700	47	8-10-2013	1-11-2018
Orbital ATK	1,010	67	8-10-2013	1-11-2018
Orbital ATK	150	15	24-6-2014	24-12-2018
Orbital ATK	800	46	29-9-2015	29-9-2020
Orbital ATK	1,000	57	29-9-2015	29-9-2020
Raytheon	1,400	76	13-12-2011	13-12-2016
Raytheon	1,250	44	13-11-2015	13-11-2020
Safran	1,320	198	21-10-2011	21-10-2016
Safran	2,744	235	4-12-2015	4-12-2020
Serco	1,159	72	21-2-2012	28-3-2017
Serco	714	45	12-3-2015	12-3-2019
Textron	1,000	100	30-9-2013	4-10-2018

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
Textron	500	50	23-1-2014	23-1-2019
Thales	1,835	122	19-12-2014	19-12-2019

Source: Thomson Reuters Eikon, "Loans", viewed in July/August 2016; Bloomberg, "Loans", viewed in July/August 2016.

Mitsubishi UFJ Financial (Japan) underwrote bond issuances for an estimated amount of US\$ 1,306 million to the nuclear weapon companies since January 2013 (see table below).

Table 3 Underwriting of bond issuances by Mitsubishi UFJ Financial

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Issue date	Maturity date
Aecom	800	80	17-9-2014	15-10-2022
Aecom	800	80	17-9-2014	15-10-2024
Aecom	800	80	30-10-2015	15-10-2022
Aecom	800	80	30-10-2015	15-10-2024
Airbus Group	640	64	20-10-2014	29-10-2029
Airbus Group	679	75	13-5-2016	13-5-2026
Airbus Group	1,018	113	13-5-2016	13-5-2031
Boeing	350	10	30-4-2013	15-11-2018
Boeing	250	9	28-10-2014	30-10-2017
Boeing	300	9	28-10-2014	30-10-2024
Boeing	300	15	28-10-2014	30-10-2021
Boeing	250	6	18-2-2015	1-3-2025
Boeing	250	8	18-2-2015	1-3-2035
Boeing	250	12	18-2-2015	1-3-2045
Boeing	250	8	27-10-2015	30-10-2022
Boeing	300	9	27-10-2015	30-10-2025
Boeing	350	16	27-10-2015	30-10-2020
Boeing	400	10	16-5-2016	15-6-2023
Boeing	400	12	16-5-2016	15-6-2026
Boeing	400	19	16-5-2016	15-6-2046
Fluor	500	34	18-11-2014	15-12-2024
Fluor	555	9	14-3-2016	21-3-2023
Huntington Ingalls Industries	600	34	17-11-2014	15-12-2021
Huntington Ingalls Industries	600	25	2-11-2015	15-11-2025
Lockheed Martin	500	9	12-2-2015	1-3-2035
Lockheed Martin	750	14	12-2-2015	1-3-2025
Lockheed Martin	1,000	18	12-2-2015	1-3-2045
Moog	300	23	18-11-2014	1-12-2022
Northrop Grumman	850	26	28-5-2013	1-6-2018

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Issue date	Maturity date
Northrop Grumman	950	29	28-5-2013	1-6-2043
Northrop Grumman	1,050	32	28-5-2013	1-8-2023
Northrop Grumman	600	60	3-2-2015	15-4-2045
Orbital ATK	300	50	22-10-2013	1-10-2021
Orbital ATK	400	43	22-9-2015	1-10-2023
Textron	250	25	23-1-2014	1-3-2021
Textron	350	35	23-1-2014	1-3-2024
Textron	350	19	23-10-2014	1-3-2025
Textron	350	27	4-3-2016	15-3-2026
Thales	668	83	31-5-2016	7-6-2023

Source: *Thomson Reuters Eikon*, "Bond and share issue underwritings", viewed in July/August 2016; *Bloomberg*, "Bond and share issue underwritings", viewed in August 2016.

Mizuho Financial (Japan)

Mizuho Financial (Japan) has made an estimated US\$ 4,597 million available to the nuclear weapons companies selected for this research project since January 2013.

Mizuho Financial (Japan) provided loans for an estimated amount of US\$ 3,394 million to the nuclear weapon companies (see table below). The table shows all loans closed since January 2013 or maturing after August 2016.

Table 4 Loans provided by Mizuho Financial

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
Aecom	700	35	14-10-2011	19-10-2016
Aecom	1,000	50	14-10-2011	19-10-2016
Aecom	39	2	16-12-2013	19-12-2018
Aecom	655	39	16-12-2013	19-12-2018
Aecom	961	58	16-12-2013	19-12-2018
Aecom	500	20	11-8-2014	17-10-2019
Aecom	1,050	47	11-8-2014	17-10-2019
Aecom	1,188	59	11-8-2014	17-10-2021
Aecom	1,925	77	11-8-2014	17-10-2019
Airbus Group	3,797	134	14-10-2014	14-10-2019
BAE Systems	3,269	131	12-12-2013	12-12-2018
Bechtel	1,000	28	7-6-2016	7-6-2021
Bechtel	1,500	42	7-6-2016	7-6-2021
Boeing	2,300	42	5-11-2011	10-11-2016
Boeing	2,473	90	23-9-2014	15-10-2015

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
Boeing	2,473	90	23-9-2014	16-10-2019
Boeing	2,465	125	4-11-2015	3-11-2016
Boeing	2,365	125	4-11-2015	3-11-2020
Engility	50	10	23-4-2014	9-5-2019
Engility	250	50	23-4-2014	9-5-2021
Engility	393	79	23-4-2014	9-5-2020
Fluor	1,700	70	25-2-2016	25-2-2021
General Dynamics	1,000	46	10-11-2015	10-11-2020
Honeywell International	3,000	129	30-3-2012	2-4-2017
Honeywell International	4,000	73	18-11-2013	10-12-2018
Honeywell International	4,000	120	10-7-2015	10-7-2020
Honeywell International	1,500	45	29-4-2016	28-4-2017
Huntington Ingalls Industries	1,250	125	13-7-2015	13-7-2020
Larsen & Toubro	200	100	17-12-2012	17-12-2019
Larsen & Toubro	47	5	27-8-2013	1-6-2018
Larsen & Toubro	59	7	27-8-2013	1-8-2017
Larsen & Toubro	64	7	27-8-2013	1-6-2018
Larsen & Toubro	100	11	27-8-2013	1-6-2018
Larsen & Toubro	100	11	27-8-2013	1-6-2018
Lockheed Martin	1,500	120	14-8-2014	14-8-2019
Lockheed Martin	2,500	230	9-10-2015	9-10-2020
Lockheed Martin	7,000	530	9-10-2015	7-10-2016
Northrop Grumman	1,775	355	29-8-2013	29-8-2018
Northrop Grumman	1,600	64	8-7-2015	8-7-2020
Orbital ATK	200	13	3-9-2012	3-9-2017

Source: *Thomson Reuters Eikon*, "Loans", viewed in July/August 2016; *Bloomberg*, "Loans", viewed in July/August 2016.

Mizuho Financial (Japan) underwrote bond issuances for an estimated amount of US\$ 1,198 million to the nuclear weapon companies since January 2013 (see table below).

Table 5 Underwriting of bond issuances by Mizuho Financial

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Issue date	Maturity date
BAE Systems	250	21	3-12-2015	7-10-2044
BAE Systems	500	42	3-12-2015	15-12-2020
BAE Systems	750	63	3-12-2015	15-12-2025
Boeing	350	10	30-4-2013	15-11-2018
Boeing	250	9	28-10-2014	30-10-2017

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Issue date	Maturity date
Boeing	300	9	28-10-2014	30-10-2021
Boeing	300	15	28-10-2014	30-10-2024
Boeing	250	8	18-2-2015	1-3-2035
Boeing	250	8	18-2-2015	1-3-2045
Boeing	250	14	18-2-2015	1-3-2025
Boeing	250	8	27-10-2015	30-10-2022
Boeing	350	11	27-10-2015	30-10-2020
Boeing	300	21	27-10-2015	30-10-2025
Boeing	400	10	16-5-2016	15-6-2023
Boeing	400	12	16-5-2016	15-6-2026
Boeing	400	19	16-5-2016	15-6-2046
Fluor	500	5	18-11-2014	15-12-2024
Fluor	555	9	14-3-2016	21-3-2023
Honeywell International	300	10	18-11-2013	1-12-2023
Honeywell International	700	23	18-11-2013	17-11-2015
Honeywell International	837	17	15-2-2016	22-2-2028
Honeywell International	1,116	22	15-2-2016	22-2-2018
Honeywell International	1,116	22	15-2-2016	21-2-2020
Honeywell International	1,395	28	15-2-2016	22-2-2023
Huntington Ingalls Industries	600	75	2-11-2015	15-11-2025
Lockheed Martin	500	9	12-2-2015	1-3-2035
Lockheed Martin	750	14	12-2-2015	1-3-2025
Lockheed Martin	1,000	18	12-2-2015	1-3-2045
Lockheed Martin	500	38	16-11-2015	15-1-2023
Lockheed Martin	500	38	16-11-2015	15-5-2036
Lockheed Martin	750	56	16-11-2015	23-11-2018
Lockheed Martin	1,250	94	16-11-2015	23-11-2020
Lockheed Martin	2,000	150	16-11-2015	15-1-2026
Lockheed Martin	2,000	150	16-11-2015	15-5-2046
Northrop Grumman	850	26	28-5-2013	1-6-2018
Northrop Grumman	950	29	28-5-2013	1-6-2043
Northrop Grumman	1,050	32	28-5-2013	1-8-2023
Northrop Grumman	600	60	3-2-2015	15-4-2045

Source: *Thomson Reuters Eikon*, "Bond and share issue underwritings", viewed in July/August 2016; *Bloomberg*, "Bond and share issue underwritings", viewed in August 2016.

Mizuho Financial (Japan) owns or manages bonds of the nuclear weapon companies for an amount of US\$ 5 million (see table below). Only holdings of 0.50% or more of the outstanding bonds at the most recent available filing date are included.

Table 6 Bondholdings managed by Mizuho Financial

Company	Country	Total value (US\$ mln)	% Outstanding	Filing date
Aerojet Rocketdyne	United States	3	0.83	30-6-2015
Moog	United States	2	0.73	30-6-2015

Source: Thomson Reuters Eikon, "Bond ownership: most recent filings", viewed in August 2016.

Nomura (Japan)

Nomura (Japan) has made an estimated US\$ 5 million available to the nuclear weapons companies selected for this research project since January 2013.

Nomura (Japan) owns or manages bonds of the nuclear weapon companies for an amount of US\$ 5 million (see table below). Only holdings of 0.50% or more of the outstanding bonds at the most recent available filing date are included.

Table 7 Bondholdings managed by Nomura

Company	Country	Total value (US\$ mln)	% Outstanding	Filing date
Aerojet Rocketdyne	United States	5	1.41	31-12-2015

Source: Thomson Reuters Eikon, "Bond ownership: most recent filings", viewed in August 2016.

Orix Corporation (Japan)

Orix Corporation (Japan) has made an estimated US\$ 2,122 million available to the nuclear weapons companies selected for this research project since January 2013.

Orix Corporation (Japan) owns or manages shares of the nuclear weapon companies for an amount of US\$ 2,108 million (see table below). Only holdings of 0.50% or more of the outstanding shares at the most recent available filing date are included.

Table 8 Shareholdings managed by Orix Corporation

Company	Country	Total value (US\$ mln)	% Outstanding	Filing date
Engility	United States	4	0.59	31-3-2016
Fluor	United States	92	1.23	31-3-2016
General Dynamics	United States	454	1.13	31-3-2016
Huntington Ingalls Industries	United States	268	4.17	31-3-2016
Lockheed Martin	United States	380	0.56	31-3-2016
Raytheon	United States	610	1.68	31-3-2016
Textron	United States	299	3.05	31-3-2016

Source: Thomson Reuters Eikon, "Share ownership: most recent filings", viewed in July 2016.

Orix Corporation (Japan) owns or manages bonds of the nuclear weapon companies for an amount of US\$ 15 million (see table below). Only holdings of 0.50% or more of the outstanding bonds at the most recent available filing date are included.

Table 9 Bondholdings managed by Orix Corporation

Company	Country	Total value (US\$ mln)	% Outstanding	Filing date
Huntington Ingalls Industries	United States	9	0.71	31-5-2016
Moog	United States	6	2.00	31-5-2016

Source: Thomson Reuters Eikon, "Bond ownership: most recent filings", viewed in August 2016.

Sumitomo Mitsui Financial (Japan)

Sumitomo Mitsui Financial (Japan) has made an estimated US\$ 4,453 million available to the nuclear weapons companies selected for this research project since January 2013.

Sumitomo Mitsui Financial (Japan) provided loans for an estimated amount of US\$ 3,539 million to the nuclear weapon companies (see table below). The table shows all loans closed since January 2013 or maturing after August 2016.

Table 10 Loans provided by Sumitomo Mitsui Financial

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
Aecom	600	40	23-9-2011	30-9-2016
Aecom	700	35	14-10-2011	19-10-2016
Aecom	1,000	50	14-10-2011	19-10-2016
Aecom	750	20	7-6-2013	7-6-2018
Aecom	39	2	16-12-2013	19-12-2018
Aecom	655	39	16-12-2013	19-12-2018
Aecom	961	58	16-12-2013	19-12-2018
Aecom	1,050	39	29-1-2014	29-1-2019
Aecom	500	20	11-8-2014	17-10-2019
Aecom	1,050	47	11-8-2014	17-10-2019
Aecom	1,188	59	11-8-2014	17-10-2021
Aecom	1,925	77	11-8-2014	17-10-2019
Aerojet Rocketdyne	400	15	17-6-2016	17-6-2021
Airbus Group	3,797	134	14-10-2014	14-10-2019
BAE Systems	3,269	131	12-12-2013	12-12-2018
Bechtel	1,000	120	19-9-2014	17-10-2019
Bechtel	1,000	43	7-6-2016	7-6-2021
Bechtel	1,500	65	7-6-2016	7-6-2021
Boeing	2,300	42	5-11-2011	10-11-2016
Boeing	2,473	90	23-9-2014	15-10-2015
Boeing	2,473	90	23-9-2014	16-10-2019
Boeing	2,465	90	4-11-2015	3-11-2016
Boeing	2,365	90	4-11-2015	3-11-2020

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
BWX Technologies	700	32	22-5-2012	8-6-2017
Fluor	1,700	85	25-2-2016	25-2-2021
Fluor	1,800	100	25-2-2016	25-2-2021
General Dynamics	1,000	46	10-11-2015	10-11-2020
Honeywell International	4,000	73	18-11-2013	10-12-2018
Honeywell International	4,000	120	10-7-2015	10-7-2020
Honeywell International	1,500	45	29-4-2016	28-4-2017
Huntington Ingalls Industries	489	27	23-9-2013	6-11-2018
Huntington Ingalls Industries	650	35	23-9-2013	6-11-2018
Jacobs Engineering	460	39	7-2-2014	7-2-2019
Larsen & Toubro	200	100	17-12-2012	17-12-2019
Larsen & Toubro	47	5	27-8-2013	1-6-2018
Larsen & Toubro	59	7	27-8-2013	1-8-2017
Larsen & Toubro	64	7	27-8-2013	1-6-2018
Larsen & Toubro	100	11	27-8-2013	1-6-2018
Larsen & Toubro	100	11	27-8-2013	1-6-2018
Leonardo-Finmeccanica	3,001	100	9-7-2014	9-7-2019
Leonardo-Finmeccanica	2,212	90	6-7-2015	6-7-2020
Lockheed Martin	1,500	35	14-8-2014	14-8-2019
Lockheed Martin	2,500	50	9-10-2015	9-10-2020
Lockheed Martin	7,000	110	9-10-2015	7-10-2016
Northrop Grumman	575	22	31-3-2011	24-1-2017
Northrop Grumman	1,500	129	8-9-2011	8-9-2016
Northrop Grumman	1,600	64	8-7-2015	8-7-2020
Orbital ATK	700	12	8-10-2013	1-11-2018
Orbital ATK	700	12	8-10-2013	1-11-2018
Orbital ATK	250	14	8-10-2013	1-11-2020
Orbital ATK	1,010	17	8-10-2013	1-11-2018
Orbital ATK	1,010	17	8-10-2013	1-11-2018
Orbital ATK	150	7	24-6-2014	24-12-2018
Orbital ATK	800	34	29-9-2015	29-9-2020
Orbital ATK	1,000	43	29-9-2015	29-9-2020
Raytheon	1,400	76	13-12-2011	13-12-2016
Raytheon	1,250	44	13-11-2015	13-11-2020
Safran	2,744	183	4-12-2015	4-12-2020
Serco	1,159	72	21-2-2012	28-3-2017
Serco	714	45	12-3-2015	12-3-2019
Textron	1,000	75	30-9-2013	4-10-2018
Textron	500	25	23-1-2014	23-1-2019

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
Thales	1,835	122	19-12-2014	19-12-2019

Source: *Thomson Reuters Eikon*, "Loans", viewed in July/August 2016; *Bloomberg*, "Loans", viewed in July/August 2016.

Sumitomo Mitsui Financial (Japan) underwrote bond issuances for an estimated amount of US\$ 914 million to the nuclear weapon companies since January 2013 (see table below).

Table 11 Underwriting of bond issuances by Sumitomo Mitsui Financial

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Issue date	Maturity date
Aecom	800	80	17-9-2014	15-10-2022
Aecom	800	80	17-9-2014	15-10-2024
Aecom	800	80	30-10-2015	15-10-2022
Aecom	800	80	30-10-2015	15-10-2024
Boeing	350	10	30-4-2013	15-11-2018
Boeing	300	9	28-10-2014	30-10-2021
Boeing	300	9	28-10-2014	30-10-2024
Boeing	250	18	28-10-2014	30-10-2017
Boeing	250	6	18-2-2015	1-3-2025
Boeing	250	8	18-2-2015	1-3-2045
Boeing	250	13	18-2-2015	1-3-2035
Boeing	250	8	27-10-2015	30-10-2022
Boeing	350	11	27-10-2015	30-10-2020
Boeing	300	14	27-10-2015	30-10-2025
Boeing	400	10	16-5-2016	15-6-2023
Boeing	400	12	16-5-2016	15-6-2026
Boeing	400	19	16-5-2016	15-6-2046
Fluor	500	18	18-11-2014	15-12-2024
Fluor	555	9	14-3-2016	21-3-2023
Honeywell International	300	10	18-11-2013	1-12-2023
Honeywell International	700	23	18-11-2013	17-11-2015
Honeywell International	837	4	15-2-2016	22-2-2028
Honeywell International	1,116	6	15-2-2016	22-2-2018
Honeywell International	1,116	6	15-2-2016	21-2-2020
Honeywell International	1,395	7	15-2-2016	22-2-2023
Huntington Ingalls Industries	600	34	17-11-2014	15-12-2021
Lockheed Martin	500	9	12-2-2015	1-3-2035
Lockheed Martin	750	14	12-2-2015	1-3-2025
Lockheed Martin	1,000	18	12-2-2015	1-3-2045

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Issue date	Maturity date
Lockheed Martin	500	8	16-11-2015	15-1-2023
Lockheed Martin	500	8	16-11-2015	15-5-2036
Lockheed Martin	750	11	16-11-2015	23-11-2018
Lockheed Martin	1,250	19	16-11-2015	23-11-2020
Lockheed Martin	2,000	30	16-11-2015	15-1-2026
Lockheed Martin	2,000	30	16-11-2015	15-5-2046
Northrop Grumman	850	26	28-5-2013	1-6-2018
Northrop Grumman	950	29	28-5-2013	1-6-2043
Northrop Grumman	1,050	32	28-5-2013	1-8-2023
Orbital ATK	400	20	22-9-2015	1-10-2023
Textron	250	19	23-1-2014	1-3-2021
Textron	350	26	23-1-2014	1-3-2024
Textron	350	19	23-10-2014	1-3-2025
Textron	350	19	4-3-2016	15-3-2026

Source: *Thomson Reuters Eikon*, "Bond and share issue underwritings", viewed in July/August 2016; *Bloomberg*, "Bond and share issue underwritings", viewed in August 2016.

Sumitomo Mitsui Trust (Japan)

Sumitomo Mitsui Trust (Japan) has made an estimated US\$ 41 million available to the nuclear weapons companies selected for this research project since January 2013.

Sumitomo Mitsui Trust (Japan) provided loans for an estimated amount of US\$ 41 million to the nuclear weapon companies (see table below). The table shows all loans closed since January 2013 or maturing after August 2016.

Table 12 Loans provided by Sumitomo Mitsui Trust

Company	Total value (US\$ mln)	Est. participation of this bank (US\$ mln)	Closing date	Maturity date
Larsen & Toubro	47	5	27-8-2013	1-6-2018
Larsen & Toubro	59	7	27-8-2013	1-8-2017
Larsen & Toubro	64	7	27-8-2013	1-6-2018
Larsen & Toubro	100	11	27-8-2013	1-6-2018
Larsen & Toubro	100	11	27-8-2013	1-6-2018

Source: *Thomson Reuters Eikon*, "Loans", viewed in July/August 2016; *Bloomberg*, "Loans", viewed in July/August 2016.

The Dai-Ichi Life Insurance Company (Japan)

The Dai-Ichi Life Insurance Company (Japan) has made an estimated US\$ 138 million available to the nuclear weapons companies selected for this research project since January 2013.

The Dai-Ichi Life Insurance Company (Japan) owns or manages bonds of the nuclear weapon companies for an amount of US\$ 138 million (see table below). Only holdings of 0.50% or more of the outstanding bonds at the most recent available filing date are included.

Table 13 Bondholdings managed by The Dai-Ichi Life Insurance Company

Company	Country	Total value (US\$ mln)	% Outstanding	Filing date
Northrop Grumman	United States	42	0.65	31-3-2016
Raytheon	United States	56	1.04	31-3-2016
Textron	United States	40	1.37	31-3-2016

Source: *Thomson Reuters Eikon*, "Bond ownership: most recent filings", viewed in August 2016.

Nuclear weapon producing Companies

This report identifies 27 companies operating in France, India, Italy, the Netherlands, the United Kingdom and the United States that are significantly involved in maintaining and modernising the nuclear arsenals of France, India, the United Kingdom and the United States. **This is not an exhaustive list.** These companies are providing necessary components and infrastructure to develop, test, maintain and modernise nuclear weapons. The contracts these companies have with nuclear armed countries are for materials and services to keep nuclear weapons in their arsenals. In other nuclear-armed countries –Russia, China, Pakistan and North Korea – the maintenance and modernization of nuclear forces is carried out primarily or exclusively by government agencies.

Aecom (USA)

Aecom provides professional technical and management support services and is part of joint ventures that manages the Nevada National Security Site (NNSS), previously known as the Nevada Test Site, as well as Lawrence Livermore (LLNL) and Los Alamos National Laboratories (LANL), key fixtures in the US nuclear weapons infrastructure.

Aerojet Rocketdyne (USA)

Aerojet Rocketdyne, formerly known as GenCorp is involved in the design, development and production of land- and sea-based nuclear ballistic missile systems for the United States. It is currently producing propulsion systems for Minuteman III and D5 Trident nuclear missiles.

Airbus Group (The Netherlands)

Airbus is a Dutch company that produces and maintains the M51.2 submarine-launched nuclear missiles for the French navy, it is also developing the M51.3. Through joint venture MBDA-Systems, Airbus is also providing medium-range air-to-surface missiles to the French air force.

BAE Systems (United Kingdom)

BAE Systems is involved in the US and UK Trident II (D5) strategic weapons system programmes. It is also the prime contractor for the US Minuteman III Intercontinental Ballistic Missile (ICBM) system. BAE Systems is also part of the joint venture providing medium-range air-to-surface missiles for France.

Bechtel (USA)

Bechtel manages the Los Alamos and Lawrence Livermore national laboratories in the US, which play an important role in the research, design, development and production of nuclear weapons. It also leads the joint venture for management and operation of the Y-12 National Security Complex in Tennessee and the Pantex Plant in Texas.

Boeing (USA)

Boeing is involved in the Minuteman III nuclear intercontinental ballistic missiles in the US arsenal. It also provides the US and UK Trident II (D5) with maintenance, repair, and rebuilding and technical services.

BWX Technologies (USA)

BWX Technologies ("BWXT") formerly known as Babcock & Wilcox Company Babcock & Wilcox manages and through joint ventures operates several US nuclear weapons facilities including the Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Nevada National Security Site (NNSS), previously known as the Nevada Test Site, each of which are engaged in various aspects of nuclear warhead modernisation.

Charles Stark Draper Laboratory (USA)

Charles Stark Draper Laboratory ("Draper") is the prime contractor for the Trident Life Extension (LE) boost guidance and is manufacturing the guidance system for the Trident missile system in use by the UK and the US.

CH2M Hill (USA)

CH2M Hill is one of the joint venture partners in National Security Technologies (NSTec) that manages the Nevada National Security Site (NNSS), previously known as the Nevada Test Site, a key fixture in the US nuclear weapons infrastructure.

Engility Holdings (USA)

In February 2015, Engility acquired US-based TASC. It is involved in the research and development for the Solid Rocket Motor Modernization Study of the Minuteman III system for the US arsenal.

Fluor (USA)

Fluor is the lead partner responsible for the management and operation of the US Department of Energy's Savannah River Site and Savannah River National Laboratory, the only source of new tritium for the US nuclear arsenal.

General Dynamics (USA)

General Dynamics provides a range of engineering, development, and production activities to support to US and UK Trident II Strategic Weapons Systems. It is also involved in the guidance systems of the Trident II (D5) nuclear missiles of the US Navy.

Honeywell International (USA)

Honeywell International manages and operates the National Security Campus where an estimated 85% of the non-nuclear components for US nuclear weapons are produced. It produced components for integrated circuits for the Trident II (D5) nuclear missiles which comprise part of the UK and US arsenals.

Huntington Ingalls Industries (USA)

Huntington Ingalls Industries is involved in management of the US nuclear arsenal, and tritium production at the Savannah River Site, the only source of new tritium for the US nuclear arsenal.

Jacobs Engineering (USA)

Jacobs Engineering Group is involved in the joint venture AWE-ML, which manages the UK Atomic Weapons Establishment, that designs, manufactures and maintains nuclear warheads for the UK.

Larsen & Toubro (India)

Larsen & Toubro is also responsible for developing the launcher system for the nuclear-capable short-range surface-to-air Akash missile system for the Indian nuclear arsenal.

Leonardo - Finmeccanica (Italy)

Leonardo - Finmeccanica (previously "Finmeccanica") is involved in the design, development and delivery of two Transporter Erector Replacement Vehicles to support the US Intercontinental Ballistic Missile (ICBM) Minuteman III-fleet. It is also involved in the joint venture that supplies medium-range air-to-surface missiles for the French arsenal.

Lockheed Martin (USA)

Lockheed Martin is responsible for the construction of the Trident II (D5) nuclear missiles for the US and UK. It is also involved in the production and maintenance of the Minuteman III nuclear intercontinental ballistic missiles for the US. It is part of the joint venture AWE-ML, which manages the UK Atomic Weapons Establishment, that designs, manufactures and maintains nuclear warheads for the UK.

MOOG (USA)

Moog develops launch vehicle and strategic missile controls for the Minuteman III and Trident (D5) missiles for the US nuclear arsenal.

Northrop Grumman (USA)

Northrop Grumman is involved with production and maintenance of the Minuteman III nuclear Intercontinental Ballistic Missiles (ICBM) for the US nuclear arsenal. It also provides support for the Trident II (D5) system for the US and the UK. It is also part of the joint venture that manages the Nevada National Security Site (NNSS), previously known as the Nevada Test Site, a key fixture in the US nuclear weapons infrastructure.

Orbital ATK (USA)

Orbital ATK (formerly known as ATK or Alliant Techsystems) produces rocket propulsion systems for Trident II submarine launched ballistic missiles. Orbital ATK is also responsible for refurbishing all three solid propellant stages of the Minuteman III Intercontinental Ballistic Missile (ICBM) for the US. It is also involved in the joint venture for management and operation of the Y-12 National Security Complex in Tennessee and the Pantex Plant in Texas.

Raytheon (USA)

Raytheon is involved in a project to stretch the lifecycle of the guidance systems of the Trident II (D5) nuclear missiles of the US Navy. It is also involved in studies in support of the new W80-4 Long-Range Standoff missile for the US arsenal.

Safran (France)

Safran is part of a joint venture to build M51 submarine-launched nuclear missiles for the French navy, which each deliver multiple warheads. Its subsidiaries Snecma and Sagem provide the propulsion and navigation systems for these missiles.

Serco (United Kingdom)

Serco owns a one-third share in the joint venture AWE-ML, which runs the UK Atomic Weapons Establishment. It is responsible for manufacturing and maintaining the nuclear warheads for UK arsenal.

Textron (USA)

Textron designs and builds re-entry vehicles for the US Minuteman III inter-continental ballistic missile (ICBM).

Thales (France)

Thales is part of a joint venture to build the M51 submarine-launched nuclear missiles for the French navy

Walchandnagar Industries (India)

Walchandnagar Industries Limited supplies infrastructure and facilities for the production of the surface-to-air short-range Akash missile and the launching systems for Agni and Akash missiles for the Indian arsenal. It also manufactures the main thrust motor casing segment for the intercontinental ballistic Agni-V missile.