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AUKUS submarine (SSN-A) programme

1	Summary	2
2	What is AUKUS?	3
3	What does the SSN-AUKUS programme entail?	3
4	How does SSN-AUKUS fit with the UK's other nuclear submarine programmes?	6
4.1	How much will it cost?	7
4.2	What does it mean for UK industry?	8
5	Progress and issues	9
5.1	Detailed Design and Long Lead Contracts signed	9
5.2	Australian personnel embedded in the UK	10
5.3	Establishment of an Advance Verification Team	10
5.4	Challenges in Congress	11
6	Concerns over non-proliferation	13
6.1	Australia's non-nuclear weapon status	13
6.2	The AUKUS agreement	14

1

Summary

AUKUS is a defence and security partnership between Australia, the United Kingdom and the United States, announced in September 2021.

A major part of the agreement (pillar 1) is to support Australia in acquiring its first conventionally armed, nuclear-powered submarine fleet. It does not involve the transfer of nuclear weapons to Australia.

In [a Joint Statement](#) on 13 March 2023 the AUKUS nations set out how pillar 1 of the agreement would be achieved:

- SSN-AUKUS (also [recently referred to as SSN-A in the UK](#)) will be based on the UK's next-generation submarine design. That design will incorporate technologies from all three nations, including cutting edge US submarine technologies.
- The submarines will be built in the UK and Australia and work will begin by 2030, with a view to entering service toward the end of the 2030s (UK) and the early 2040s (Australia). In the interim, the US, pending Congressional approval, will sell Australia three Virginia-class SSN, with potential for the sale of a further two.
- The UK and Australia will both operate the SSN-AUKUS as their conventionally armed attack submarine, equipped for intelligence, surveillance, undersea warfare and strike missions.

The UK currently has two submarine programmes underway: the Astute class SSN and the Dreadnought class SSBN, which will provide the platform for the UK's strategic nuclear deterrent from the early 2030s. The last of the Astute class SSN is expected into service by 2026; while construction on the Dreadnought class is expected to continue well into the 2030s.

[SSN-AUKUS will be the next generation successor to the current Astute-class SSN](#). A decision on how many submarines the UK will require is expected to be made in the coming years and based on the strategic threat assessment at the time. As such, an estimated cost of the programme has not been provided by the government.

However, [the government has announced significant new funding \(£3 billion\) to underpin the SSN-AUKUS programme](#), and the wider Defence Nuclear Enterprise (DNE), over the next two years.

The programme is [expected to create thousands of jobs in the UK](#).

2

What is AUKUS?

AUKUS is a defence and security partnership between Australia, the United Kingdom and the United States announced in September 2021.

The [UK Government described it as a “landmark” agreement](#) which will “help sustain peace and stability in the Indo-Pacific region”.¹ The agreement reflects the UK’s tilt to the Indo-Pacific, first articulated in the Government’s [2021 Integrated Review of defence, foreign and security policy](#) and reaffirmed in the [2023 refresh of the review](#).

A major part of the agreement is to support Australia in acquiring its first conventionally armed, nuclear-powered submarine fleet. This is known as pillar 1 of AUKUS.²

Pillar 2 of the agreement focuses on the development of a range of advanced capabilities, including artificial intelligence, hypersonic missiles, and quantum technologies, and to share technology and increase interoperability between the UK, US and Australian armed forces.³

This paper focuses on pillar 1, the AUKUS submarine programme. Library research briefing, [AUKUS pillar 2: Advanced capabilities](#) discusses the development of pillar 2, in more detail.

Library research briefing [the AUKUS agreement](#) (CBP 9335) examined the initial announcement and regional reaction in October 2021.

3

What does the SSN-AUKUS programme entail?

After the AUKUS agreement was announced in September 2021, an 18-month consultation period began to determine the “optimal pathway” for delivering a conventionally armed, nuclear-powered submarine (SSN) capability for Australia, while at the same time ensuring responsible nuclear stewardship and the highest standards of nuclear non-proliferation (see below).⁴

¹ Downing Street, [Joint Leaders statement on AUKUS](#), 21 September 2021

² Ministry of Defence, [The AUKUS nuclear powered submarine pathway: a partnership for the future](#), 14 March 2023, para 2.4

³ Prime Minister’s Office (PMO), [UK, US and Australia launch new security partnership](#), 15 September 2021

⁴ Downing Street, [Joint leader’s statement to mark one year of AUKUS \(PDF\)](#), September 2022. Nuclear stewardship is the ability to responsibly plan, operate, apply and manage nuclear

A Joint Steering Group, comprised of senior officials from each nation, was established to examine the full range of options and that scoping period ended in March 2023.⁵ In [a Joint Statement](#) on 13 March 2023 the AUKUS nations set out how pillar 1 of the agreement, the SSN programme, would be achieved:

- SSN-AUKUS (also [recently referred to as SSN-A in the UK](#)) will be based on the UK's next-generation submarine design.
- That design will incorporate technologies from all three nations, including cutting edge US submarine technologies.
- The submarines will be built in the UK and Australia and work will begin by 2030, with a view to entering service toward the end of the 2030s (UK) and the early 2040s (Australia). In the interim, the US will sell Australia three Virginia-class SSN, with potential for the sale of a further two.
- The UK and Australia will both operate the SSN-AUKUS as their conventionally armed attack submarine, equipped for intelligence, surveillance, undersea warfare and strike missions.⁶

Based on a UK design

The SSN-AUKUS submarine will be based on the UK's next generation nuclear powered submarine design and incorporate cutting edge [US submarine technology](#), largely from the Virginia-class SSN, including propulsion technologies and components, a common vertical launch system and weapons. The AUKUS partners will also develop a joint combat system for the submarine.⁷ Incorporating advanced, and proven, US technologies is intended to “optimise the capability, commonality and interoperability of all three nations’ SSN platforms”.⁸

Design work on the UK's next generation submarine was already underway as part of the Submersible Ship Nuclear Replacement (SSN-R) programme. In September 2021 BAE Systems and Rolls Royce were both awarded £85 million

material, technology and facilities. In the case of Australia, which is a non-nuclear state under the Nuclear Non-Proliferation Treaty, it also includes the implementation of appropriate safeguards agreements with the International Atomic Energy Agency (IAEA). For further detail, see [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), p.9

⁵ [A progress report on the implementation of AUKUS](#) was provided in April 2022. That report set out the steps taken to ensure the sharing of information, nuclear stewardship, construction and basing in Australia and the provision of a workforce with the requisite skills, training and qualifications to build, operate and sustain a nuclear-powered submarine fleet.

⁶ Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023, p.23

⁷ Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023, p.23

⁸ Downing Street, [Fact sheet: Trilateral Australia-UK-US Partnership on Nuclear-Powered Submarines](#), 13 March 2023

contracts to consider the design and capabilities of any successor to the current Astute class SSN.⁹

Announcing the shift to SSN-AUKUS, Secretary of State Ben Wallace said:

For the UK, the logic of evolving our current SSN replacement programme to SSN-AUKUS is clear. Our design, combined with US technology, will create a truly world-leading platform that the Royal Navy will use to build our capacity in the Atlantic and further the UK's objectives around the world.¹⁰

A phased approach to delivery

“Australia’s acquisition of SSN capabilities will be a complex, multi-decade undertaking”.

[The AUKUS Nuclear-powered Submarine Pathway \(PDF\)](#), p.7

To deliver this capability at the earliest opportunity, including the necessary Australian infrastructure, technical capabilities, human resource and experience required to operate and support it (what the partners refer to as “sovereign ready”), the programme will adopt a phased approach:

- From 2023, Australian military and civilian personnel will be embedded with the US Navy, the Royal Navy and within the US and UK submarine industrial base. The US will increase its number of SSN port visits to Australia where Australian naval personnel will join US crews for training and development. The UK will increase its SSN visits to Australia from 2026.
- From 2027, and once Australia has developed the necessary infrastructure and stewardship capabilities, the US and UK will begin forward rotations of SSN to Australia to accelerate the development of a sovereign SSN capability. One UK Astute class submarine and up to four US Virginia class SSN will establish a rotational presence at naval base [HMAS Stirling](#), in Western Australia (codenamed Submarine Rotational Force – West (SRF-West)). Ballistic missile submarines (SSBN), which carry nuclear-armed missiles, will not form part of the rotational force, in keeping with Australia’s international legal obligations.¹¹ UK participation in SRF-West will require a bilateral status of forces agreement.¹²

This rotational presence will meet Australia’s longstanding policy of having no foreign bases on its territory. Australia will retain ownership and access to all facilities and all activities will be transparently communicated and mutually determined.¹³

⁹ Royal Navy, [Press release](#), 17 September 2021

¹⁰ Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023, para.1.5

¹¹ Under the Nuclear Non-Proliferation Treaty and the [South Pacific Nuclear Free Zone Treaty](#). Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023, p.29

¹² Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023, p.29

¹³ As above, p.27

- In the early 2030s, and pending US Congressional approval (see Challenges in Congress below), the US will sell three Virginia-class SSN to Australia to help grow its sovereign SSN capability and to address the potential gap between the retirement from service of Australia's current diesel-electric powered [Collins class submarine fleet](#) and the entry into service of SSN-AUKUS. The potential exists for a further two Virginia class submarines to be sold to Australia if required.
- Work on the construction of the first SSN will start in the UK in the early 2030s. Knowledge and expertise will be shared with Australian engineers in the early years of construction to allow the subsequent domestic manufacture of their own fleet. Some components for the Australian SSN, including all the nuclear propulsion reactors, will be manufactured in the UK.
- In the late 2030s, the UK will deliver its first SSN-AUKUS (SSN-A) class submarine to the Royal Navy. Australia will deliver the first domestically built submarine to the Royal Australian Navy in the early 2040s.
- While in service with the Royal Navy and the Royal Australian Navy, submarine crews will train and patrol together and undertake joint maintenance and support. Components and parts will be shared with the US.¹⁴

4 How does SSN-AUKUS fit with the UK's other nuclear submarine programmes?

The UK currently has two submarine programmes underway: the Astute class SSN and the Dreadnought class SSBN, which will provide the platform for the UK's strategic nuclear deterrent from the early 2030s.¹⁵ In October 2023 BAE Systems confirmed that the last two boats of the Astute class are at an advanced stage of construction, while work is underway on three of the four Dreadnought class SSBN.¹⁶ The last of the Astute class SSN is expected into service by 2026; while construction on the Dreadnought class is expected to continue well into the 2030s.

¹⁴ Downing Street, [Joint Leaders Statement on AUKUS](#), 13 March 2023, [PM statement at AUKUS trilateral press conference](#), 13 March 2023, [Press release](#), 13 March 2023, [Fact sheet: Trilateral Australia-UK-US Partnership on Nuclear-Powered Submarines](#), 13 March 2023 and Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023

¹⁵ The replacement of the UK's nuclear deterrent is examined in a series of Library research briefings: [Replacing the UK's nuclear deterrent: Progress of the Dreadnought class](#); [Replacing the UK's nuclear deterrent: The warhead programme](#) and [The cost of the UK's strategic nuclear deterrent](#)

¹⁶ BAE Systems, [Press release](#), 1 October 2023

SSN-AUKUS will be the next generation successor to the current Astute-class SSN.¹⁷ A decision on how many submarines the UK will require is expected to be made “in the coming years” and based on the strategic threat assessment at the time.¹⁸ As outlined above, construction on the first UK SSN-AUKUS submarine is expected to begin before the end of the decade.

The Ministry of Defence has acknowledged that delivery of the SSN-AUKUS within the timeframe envisaged will require an increase in the capacity and capability of all three nations’ submarine industrial infrastructure.¹⁹ SSN-AUKUS will also overlap with the Dreadnought programme in its early years.

Significant investment will therefore be made in the UK’s defence nuclear enterprise in order to support submarine delivery (see below: How much will it cost?).

4.1 How much will it cost?

A decision on the number of submarines has yet to be taken and, therefore, an estimated cost of the programme has not been provided by the government.²⁰ In a debate in the House of Lords in March 2023, Baroness Goldie said:

On the cost, I will not stand here uttering figures which I have no foundation to justify, however much the noble Lord might want to tempt me into doing that. We cannot put a precise figure on the cost of building one SSN-AUKUS submarine. It is a decades-long programme. The final figure will depend on a number of factors, and it will include the final design, how many we build and when we build them. We recognise in terms of cost that this is a hugely important commitment, but we also have no hesitation in saying that, for the security of the country and our ability to contribute with Australia and the United States to a more globally secure world, it is absolutely the right decision to take.²¹

However, the government has announced significant new funding to underpin the SSN-AUKUS programme, and the wider Defence Nuclear Enterprise (DNE) going forward.²²

¹⁷ Downing Street, [Joint Leaders Statement on AUKUS](#), 13 March 2023 and [Press release](#), 13 March 2023

¹⁸ Downing Street, [Press release](#), 13 March 2023

¹⁹ Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023

²⁰ PQ186966, AUKUS, 7 June 2023

²¹ [HC Deb 16 March 2023](#), c1448

²² The Defence Nuclear Enterprise includes all the organisations, programmes and people within government that sustain the UK’s nuclear deterrent and nuclear-powered submarine forces including the Trafalgar and Astute class. It will also include SSN-AUKUS as the programme moves forward.

Spending on the UK nuclear enterprise

In March 2023, in conjunction with the refresh of the integrated review and the announcement of the AUKUS pathway, the Prime Minister confirmed that a further £5 billion would be provided to the MOD over the next two years. £3 billion of that funding has been earmarked specifically for the defence nuclear enterprise and to fund the next phase of SSN-AUKUS programme.²³

That additional spending was confirmed in the [2023 Spring Budget](#), which saw an overall increase to the defence budget of £11 billion (£5 billion over the next two years and an additional £2 billion per year in subsequent years to 2027/28).

Further, sustained, funding will be provided to the SSN-AUKUS programme over the next decade.²⁴ Australia will also make “a proportionate financial investment in the United Kingdom submarine industrial base” to accelerate production and accommodate the manufacture of the nuclear propulsion plants for the Australian SSN-AUKUS submarines, in the UK.²⁵ No further detail on that financial contribution has been provided, although the government has confirmed that plans are underway to expand the Rolls Royce site in Derby, with the expectation of creating 1,170 skilled jobs.²⁶

4.2

What does it mean for UK industry?

As with the current Astute and Dreadnought programmes, the UK’s SSN-AUKUS submarines will be built by BAE Systems at Barrow-in-Furness and the nuclear propulsion units at Rolls Royce in Derby. As outlined above, Rolls Royce will also build all the nuclear reactors for Australia’s submarines.

The programme is expected to create thousands of jobs in the UK.²⁷

Given the expected pressures from overlap in construction between the Dreadnought and SSN-AUKUS, and the extra capacity required in the US Virginia class SSN programme, specific opportunities will be identified for Australian industry to participate in the SSN-AUKUS supply chain. In doing so, “this will help ease pressure on the supply chains of the UK and the US, leverage the existing strengths of Australian suppliers and boost their capacity ahead of the commencement of Australia’s build program”. Such opportunities are expected to focus on key components where Australia has

²³ Downing Street, [Press release](#), 13 March 2023

²⁴ Downing Street, [Press release](#), 13 March 2023

²⁵ Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023

²⁶ [HL Deb 3 July 2023](#), c988

²⁷ Downing Street, [Press release](#), 13 March 2023

demonstrated industrial capability, including pressure hull steel, valves, pumps, batteries, switchboards, lighting and additive manufacture.²⁸

There are currently no UK suppliers of the specialised steel required in the manufacture of submarine pressure hulls.²⁹ The specialised steel required for the Dreadnought SSBN is, for example, currently being procured from a French supplier.³⁰

In its report on [UK Defence and the Indo-Pacific](#), published in October 2023, the Defence Select Committee called the “continuing lack of clarity about how many submarines will ultimately be built, the cost, and the availability of a skilled workforce” a fundamental challenge for AUKUS nations.³¹

5 Progress and issues

In September 2023, the AUKUS nations issued [a joint statement to mark the 2nd anniversary of the agreement \(PDF\)](#). While welcoming the progress made so far, the statement also noted the outstanding legislative action required to make AUKUS a success, namely in enabling submarine cooperation and defence trade between the AUKUS nations.

5.1 Detailed Design and Long Lead Contracts signed

In October 2023, contracts worth £4 billion were awarded to BAE Systems, Rolls Royce and Babcock to progress the design and procure long lead items for the first UK submarines.³²

The MOD said such an approach was necessary for “allowing construction to commence in the coming years and ensure the stability and resilience of our domestic supply chain”.³³

As part of those contracts, the MOD also indicated that infrastructure at Barrow in Furness and Raynesway would be “developed and expanded where

²⁸ Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023, p.45

²⁹ PQ33690, [Warships: Iron and steel](#), 19 July 2022

³⁰ Department for Business, Energy and Industrial Strategy, [Steel public procurement 2020 \(PDF\)](#), October 2020

³¹ Defence Committee, [UK Defence and the Indo-Pacific](#), HC183, 24 October 2023, p.25-26

³² Long lead items are those which take time to manufacture such as specialised steel for the submarines and elements of the propulsion system. [Replacing the UK's 'Trident' nuclear deterrent](#), July 2016 for further detail.

³³ Ministry of Defence, [Press release](#), 1 October 2023. The Initial Gate business case for the current Dreadnought SSBN programme also adopted a similar approach. See Library research briefing,

needed to meet the requirement of the future submarine build programme” (see above).³⁴

Of the £4 billion, £3.95 billion was awarded to BAE Systems and will cover development work to 2028, “significant infrastructure investment” at Barrow in Furness, investment in its supply chain and the recruitment of more than 5,000 people.³⁵

5.2 Australian personnel embedded in the UK

Embedding Australian military and civilian personnel within the UK and US military and each country’s submarine industrial base, is a key part of the AUKUs agreement (see above).

In early September 2023, the MOD confirmed that there are currently five Australian military personnel embedded in the UK military: three with the Royal Navy, within the Submarine Officer Nuclear Training pipeline, and two within the MOD’s Submarine Delivery Agency and the Defence Nuclear Organisation.³⁶

Australian defence industry personnel are also embedded within the UK’s submarine industrial base to gain an understanding of how the SSN-AUKUS will be constructed and to form the basis of future collaboration. In November 2023, 13 Australian personnel began a seven-week training and familiarisation programme that will include work with Rolls Royce, BAE Systems and Babcock.³⁷

5.3 Establishment of an Advance Verification Team

Military and civilian personnel from all three AUKUS nations have also come together to form an Advance Verification Team (AVT) that will work with shipyard personnel to understand the maintenance and industrial skills required to establish, and maintain, a submarine rotational force (SRF-West) in Australia from 2027.

The AVT is specifically working to “build a detailed understanding of the types of specialized skills and trades require to establish the SRF-W repair

³⁴ Ministry of Defence, [Press release](#), 1 October 2023

³⁵ BAE Systems, [Press release](#), 1 October 2023

³⁶ PQ197669, [Australia: Navy](#), 13 September 2023

³⁷ Ministry of Defence, [Press release](#), 3 November 2023

workforce”.³⁸ Once the skill set and number of personnel required to undertake intermediate-level maintenance of an SSN force has been determined, the AVT will establish an “embedding plan to upskill and train Australian personnel”.³⁹

The first visit of AVT personnel to the UK took place in October 2023.⁴⁰

5.4 Challenges in Congress

Despite these first steps at collaboration, full implementation of the AUKUS agreement still requires Congress to pass enabling legislation that will approve the transfer of Virginia-class SSN to Australia, allow the US to accept \$3 billion in funding from Australia to strengthen the US submarine industrial base and allow for the training of private sector Australian personnel in US shipyards and naval facilities.

In May 2023, [the Pentagon presented AUKUS-related legislative proposals](#) (PDF) to be included in the [National Defense Authorization Act for Fiscal Year 2024](#) (NDAA). At the time of writing, the NDAA is still before Congress.⁴¹

Investment in the US submarine industrial base

Concerns have been raised in Congress over the ability of the US submarine industrial base to address its own challenges in Virginia class SSN production, which is currently two-years behind schedule,⁴² while meeting its new commitments under AUKUS.⁴³

Following delays in the programme, the Navy estimates that the domestic goal of constructing two Virginia class SSN, in addition to one Columbia class SSBN, per year will not be achieved on current schedules until 2028.⁴⁴ Accounting for AUKUS commitments, the production of the Virginia class SSN will need to rise to 2.33 vessels per year.⁴⁵ The Navy acknowledges that “the recapitalization of the US Submarine Force, plus the investment in AUKUS, requires continued and significant investments in US facilities, infrastructure, and workforce”.

³⁸ US Naval Sea Systems Command, [Press release](#), 15 August 2023

³⁹ As above

⁴⁰ Ministry of Defence, [Press release](#), 6 October 2023.

⁴¹ A conference committee to resolve the differences between the [Senate](#) (PDF) and [House](#) (PDF) versions of the bill, including the amendments on AUKUS, was appointed on 15 November 2023. Information on the passage of the bill is available at: [Congress.gov](#)

⁴² US Government Accountability Office, [Weapon systems annual assessment](#) (PDF), June 2023

⁴³ [“US Senators urge Biden not to sell ‘scarce’ nuclear submarines to Australia”](#), The Guardian, 6 January 2023 and

⁴⁴ House Armed Services Committee, [US Navy Joint Statement](#) (PDF), 25 October 2023

⁴⁵ As above

Calls for additional investment

During the Senate's consideration of the NDAA in July 2023, leading Republican on the Senate Armed Services Committee, Senator Roger Wicker, blocked two provisions authorising the transfer of two Virginia class SSN to Australia and to allow Australian investment in the US submarine industrial base. Citing industrial base concerns, he reportedly called for their approval to be contingent on the allocation of extra funding for the submarine industry, beyond what is already set down in the NDAA.⁴⁶

In October 2023, a bipartisan group of US Senators, led by Senator Wicker, called on the US Department of Defense to publish its estimates of the level of investment required in the US submarine industrial base to sustain both US domestic submarine requirements and the commitments to Australia set down in the AUKUS agreement.⁴⁷ [The October 2023 letter](#) (PDF) said that “understanding the scope of the generational investment required [...] is critical for development of AUKUS-authorizing legislation this year”.⁴⁸

On 20 October 2023 the US administration issued a supplemental funding request to Congress asking for, among other things, an additional \$3.4 billion for the submarine industrial base, specifically with a view to the supporting the implementation of AUKUS.⁴⁹

At a hearing of the House Armed Services Committee on 25 October 2023, US Navy officials said that AUKUS is a “[generational opportunity](#)”, and that Congress is a “critical AUKUS partner” if the initiative is to succeed.

Modification of US defence trade export controls

The US International Traffic in Arms Regulations (ITAR) regime establishes rigorous restrictions on sensitive defence exports. The UK and Australia have certain ITAR waivers, established in 2013 and 2012 respectively,⁵⁰ but [the only country currently with a blanket exemption from ITAR is Canada](#).

The modification of US International Traffic in Arms Regulations (ITAR) to allow for technology transfers between the AUKUS nations, will be required. While primarily intended to enable advanced capability collaboration under

⁴⁶ [“AUKUS standoff: Australia, UK wait on Congress to approve pact”](#), Defense News, 5 September 2023

⁴⁷ Senate Committee on Armed Services, [Letter to President Joe Biden \(PDF\)](#), 12 October 2023 and [“Senators push Biden to release submarine costs for AUKUS”](#), Defense News, 17 October 2023

⁴⁸ [“Senators push Biden to release submarine costs for AUKUS”](#), Defense News, 17 October 2023

⁴⁹ White House, [Fact sheet: White House calls on Congress to advance critical national security priorities](#), 20 October 2023

⁵⁰ Foreign and Commonwealth Office, [UK/USA: Treaty concerning Defense Trade Cooperation \(TS No.26/2103\)](#)

Pillar 2 of AUKUS, the Department of Defense has indicated that it will also expedite elements of submarine cooperation.⁵¹

The debate over ITAR reform is examined in greater detail in Library research briefing: [AUKUS pillar 2: Advanced capabilities programmes](#).

1 Further reading

- Congressional Research Service, [Navy Virginia-class submarine program and AUKUS submarine proposal: Background and issues for Congress \(PDF\)](#), 13 November 2023
- Congressional Research Service, [AUKUS nuclear cooperation](#) (PDF), 15 November 2023
- Congressional Research Service, [US arms transfer restrictions and AUKUS cooperation \(PDF\)](#), 15 November 2023
- Atlantic Council, [AUKUS is hamstrung by outdated US export control rules](#), 15 November 2023
- US Department of State, [AUKUS: A generational opportunity. Testimony of the Assistant Secretary, Bureau of Political-Military Affairs](#), 6 September 2023

6 Concerns over non-proliferation

6.1 Australia's non-nuclear weapon status

Australia is a non-nuclear weapon state under the Nuclear Non-Proliferation Treaty and as a State Party to the [South Pacific Nuclear Free Zone Treaty](#), it is also committed to maintain the South Pacific as a nuclear weapons free zone. [Australia has also signed a Comprehensive Safeguards Agreement and Additional Protocol](#) with the International Atomic Energy Agency (IAEA) regarding the monitoring of nuclear material and ensuring it is not diverted for weapons purposes.

⁵¹ House Armed Services Committee, [Statement by Dr Mara Karlin performing the duties of the Deputy under Secretary of Defense for Policy](#) (PDF), 25 October 2023

6.2 The AUKUS agreement

The AUKUS submarine deal is concerned solely with naval nuclear propulsion. It does not involve the transfer of nuclear weapons to Australia.

As such, AUKUS does not contravene the Nuclear Non-Proliferation Treaty (NPT). Nor does it contravene the or the [South Pacific Nuclear Free Zone Treaty](#). New Zealand, which is a signatory to that treaty and has a long-standing anti-nuclear stance, has already stated that Australia's new nuclear-powered submarines would not be permitted in its territorial waters.

Under its Comprehensive Safeguards Agreement with the IAEA, Australia is permitted to remove nuclear material from a safeguarded peaceful programme for military purposes that do not involve the development of nuclear weapons. Naval propulsion is one such purpose.

While the AUKUS deal does not contravene any of Australia's international legal obligations, there are concerns that the deal sets a bad precedent for nuclear non-proliferation efforts more broadly, although opinions among experts differ.⁵²

Non-proliferation commitments

To address non-proliferation concerns, the AUKUS pathway sets out a number of commitments by the three nations, that will allow the IAEA to "meet its three 'technical objectives' of verifying no diversion of nuclear material, no misuse of nuclear facilities and no undeclared nuclear material or activity in Australia", and to set a strong precedent for those countries seeking to acquire naval nuclear propulsion in the future:⁵³

- Australia will commence negotiation of an agreement with the IAEA which will establish a package of robust verification measures to be applied to the SSN-AUKUS programme throughout its lifetime.
- Australia will declare all nuclear materials and activity associated with the SSN programme to the IAEA, as required by its Comprehensive Safeguards Agreement and the Additional Protocol.
- Australia will not enrich or reprocess spent fuel as part of the SSN programme.
- Australia will not produce nuclear fuel for its SSN. The UK and US will provide complete, welded nuclear propulsion units for Australia's

⁵² See for example "[The new Australia, UK and US nuclear submarine announcement: a terrible decision for the non-proliferation regime](#)", Bulletin of the Atomic Scientists, September 2021 and "[AUKUS as a non-proliferation standard?](#)", Arms Control Today, July/August 2023

⁵³ Ministry of Defence, [The AUKUS nuclear-powered submarine pathway \(PDF\)](#), March 2023, p.33

submarines that will not require refuelling during their lifetime. As outline above, the nuclear propulsion units for the SSN-AUKUS will be manufactured in the UK.⁵⁴

Several commentators argue, however, that these non-proliferation commitments fall short of “of the stated aspiration to achieve the highest standards for nonproliferation” and argue that cost and convenience have outweighed any non-proliferation considerations. Specifically, the commitments are considered “inherently reversible”, and do not preclude a future Australian government from entering into nuclear burden sharing agreements with the US, akin to those which exist with several NATO countries.⁵⁵

In June 2023, the Director General of the IAEA, Rafael Grossi, submitted [a progress report on Australia’s naval nuclear propulsion programme](#) (PDF) to the IAEA Board of Governors. He confirmed that the discussions on safeguards arrangements remained ongoing and would take some time.⁵⁶

⁵⁴ As above, p.35

⁵⁵ [“AUKUS as a nonproliferation standard?”](#), Arms Control Today, July/August 2023. The US nuclear footprint in Europe is examined in greater detail in Library research briefing, [Nuclear weapons at a glance: United States](#). Russia’s recent decision to deploy tactical nuclear weapons to Belarus is also examined in [Russia’s use of nuclear threats during the Ukraine conflict](#)

⁵⁶ International Atomic Energy Agency, [IAEA Director General’s Introductory Statement to the Board of Governors](#), 5 June 2023

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