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AUKUS submarine (SSN-A) programme

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 will transfer three Virginia-class SSN to Australia, 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

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

Australia, while at the same time ensuring responsible nuclear stewardship and the highest standards of nuclear non-proliferation (see below).[4]

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 transfer 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

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 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 and PQ4789, AUKUS: Submarines, 11 December 2023

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

Announcing the shift to SSN-AUKUS, then 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

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

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

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]

- In the early 2030s, the US will sell transfer 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]

In February 2024, the MOD confirmed that delivery of the AUKUS-SSN will remain a trilateral venture between the UK, Australia and the US. Extending the work of AUKUS pillar 2 to allies and close partners such as Canada or Japan remains a possibility, however.[15]

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

13 As above, p.27

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 HL Deb 29 February 2024, C181GC and HL Deb 13 February 2024, c143-144

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.[16] 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.[17] 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.[18] 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.[19] 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.[20] SSN-AUKUS will also overlap with the Dreadnought programme in in its early years.

Significant investment will therefore be made in the UK's defence nuclear enterprise in order to support submarine delivery (see 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.[21] 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.

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16 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

17 BAE Systems, Press release, 1 October 2023

18 Downing Street, Joint Leaders Statement on AUKUS, 13 March 2023 and Press release, 13 March 2023

19 Downing Street, Press release, 13 March 2023. This was reiterated in the Government's response to the Defence Committee's report on the UK defence and the Indo-Pacific in January 2024.

20 Ministry of Defence, The AUKUS nuclear-powered submarine pathway (PDF), March 2023

21 PQ186966, AUKUS, 7 June 2023

> 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.[22]

However, the government has announced significant new funding to underpin the SSN-AUKUS programme, and the wider Defence Nuclear Enterprise (DNE) going forward.[23]

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.[24]

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.[25] 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.[26] 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.[27]

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

22 HC Deb 16 March 2023, c1448

23 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.

24 Downing Street, Press release, 13 March 2023

25 Downing Street, Press release, 13 March 2023

26 Ministry of Defence, The AUKUS nuclear-powered submarine pathway (PDF), March 2023

27 HL Deb 3 July 2023, c988

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, including an additional 1,700 jobs at Rolls Royce in Derby.[28]

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 demonstrated industrial capability, including pressure hull steel, valves, pumps, batteries, switchboards, lighting and additive manufacture.[29]

There are currently no UK suppliers of the specialised steel required in the manufacture of submarine pressure hulls.[30] The specialised steel required for the Dreadnought SSBN is, for example, currently being procured from a French supplier.[31]

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.[32] In response, the Government said that the Nuclear Skills Taskforce, established in August 2023, will "directly support AUKUS activity within the wider nuclear sector, bringing together government, private sector employers and academia to meet nuclear skills growth opportunities, and unleash a new generation of nuclear technology".[33]

5 Progress and issues

The latest statement on the progress of AUKUS came after a meeting of AUKUS defence ministers in the US in December 2023. On the progress of the submarine programme, the statement noted the "exceptional progress that has been made since March 2023" and said:

28 Downing Street, Press release, 13 March 2023 and HC Deb 8 January 2024, c13
29 Ministry of Defence, The AUKUS nuclear-powered submarine pathway (PDF), March 2023, p.45
30 PQ33690, Warships: Iron and steel, 19 July 2022
31 Department for Business, Energy and Industrial Strategy, Steel public procurement 2020 (PDF), October 2020
32 Defence Committee, UK Defence and the Indo-Pacific, HC183, 24 October 2023, p.25-26
33 Defence Committee, UK Defence and the Indo-Pacific: Government response, HC465, 11 January 2024, p.8

> For Australia's acquisition of conventionally armed, nuclear-powered submarines (Pillar I), AUKUS partners are collaborating to deliver this capability at the earliest possible date while upholding the highest nuclear non-proliferation standard.[34]

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.[35]

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".[36]

As part of those contracts, the MOD also indicated that infrastructure at Barrow in Furness and Raynesway would be "developed and expanded where needed to meet the requirement of the future submarine build programme" (see above).[37]

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.[38]

5.2 Training of Australian personnel

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.

In early September 2023, the MOD confirmed that there are currently five Australian military personnel embedded in the UK military: three with the

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34 AUKUS Defense Ministers Meeting Joint Statement, 1 December 2023

35 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.

36 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,

37 Ministry of Defence, Press release, 1 October 2023

38 BAE Systems, Press release, 1 October 2023

Royal Navy, within the Submarine Officer Nuclear Training pipeline, and two within the MOD's Submarine Delivery Agency and the Defence Nuclear Organisation.[39]

In January 2024 the MOD confirmed that, in the early years of the programme, more Australian personnel will be trained in the US than in the UK as the first phase of the project envisages the Royal Australian Navy transitioning to the US Virginia-class SSN. The number of personnel trained in the UK is expected to increase in later years as Australia prepares to take receipt of the first AUKUS-SSN in the early 2040s.[40]

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.[41]

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 workforce".[42] 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 "embedment plan to upskill and train Australian personnel".[43]

The first visit of AVT personnel to the UK took place in October 2023.[44]

39 PQ197669, Australia: Navy, 13 September 2023 and PQ9169, Australia: Navy, 16 January 2024
40 PQ9168, Australia: Navy, 16 January 2024
41 Ministry of Defence, Press release, 3 November 2023
42 US Naval Sea Systems Command, Press release, 15 August 2023
43 As above
44 Ministry of Defence, Press release, 6 October 2023.

5.4 Challenges in the US

Congress passes enabling legislation

In December 2023, the US Congress passed the National Defense Authorization Act for Fiscal Year 2024 (NDAA) (PDF) after several months of political disagreement over the broader contents of the bill.[45]

For the AUKUS SSN programme specifically, that legislation (Sections 1331-1353) establishes an AUKUS Task Force within the US administration, approves the transfer of Virginia-class SSN to Australia, authorises the maintenance of US submarines in the UK and Australia, allows the US to accept funding from Australia to strengthen the US submarine industrial base and allows for the training of private sector Australian personnel in US shipyards and naval facilities.

More broadly, the legislation also establishes a national exemption for the UK and Australia from US defence export licensing criteria (Sections 1341- 1345) and adds both countries to the US Defense Production Act (Section 1080).[46] While the modification of ITAR regulations to allow for technology transfers between AUKUS nations will primarily enable advanced capability collaboration under Pillar 2 of AUKUS, the Department of Defense has indicated that it will also expedite elements of submarine cooperation.[47]

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

Ongoing challenges for 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,[48] while meeting its new commitments under AUKUS.[49]

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45 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).

46 The US International Traffic in Arms Regulations (ITAR) regime establishes rigorous restrictions on sensitive defence exports. The UK and Australia already had certain ITAR waivers, established in 2013 and 2012 respectively (Foreign and Commonwealth Office, UK/USA: Treaty concerning Defense Trade Cooperation (TS No.26/2103)). The only country with a blanket exemption from ITAR up until this point was Canada.

47 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

48 US Government Accountability Office, Weapon systems annual assessment (PDF), June 2023

49 "US Senators urge Biden not to sell 'scarce' nuclear submarines to Australia", The Guardian, 6 January 2023 and

Following delays in the programme, the Navy estimates that the domestic goal of constructing two Virginia class SSN, in addition to one Colombia class SSBN, per year will not be achieved on current schedules until 2028.[50] Accounting for AUKUS commitments, the production of the Virginia class SSN will need to rise to 2.33 vessels per year.[51] 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".

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 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.[52]

In October 2023, a bipartisan group of US Senators, led by Senator Wicker, published a letter (PDF) calling 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.[53]

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.[54]

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

50 House Armed Services Committee, US Navy Joint Statement (PDF), 25 October 2023

51 As above

52 "AUKUS standoff: Australia, UK wait on Congress to approve pact", Defense News, 5 September 2023

53 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

54 White House, Fact sheet: White House calls on Congress to advance critical national security priorities, 20 October 2023

Additional Protocol with the International Atomic Energy Agency (IAEA) regarding the monitoring of nuclear material and ensuring it is not diverted for weapons purposes.

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.[55]

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:[56]

- 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.

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55 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

56 Ministry of Defence, The AUKUS nuclear-powered submarine pathway (PDF), March 2023, p.33

- 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 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.[57]

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.[58]

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.[59]

1 Further reading

- Congressional Research Service, Navy Virginia-class submarine program and AUKUS submarine proposal: Background and issues for Congress (PDF), 16 February 2024
- Congressional Research Service, US arms transfer restrictions and AUKUS cooperation (PDF), 4 January 2024
- "Opportunities and challenges of AUKUS", Georgetown Journal of International Affairs, 7 February 2024
- Congressional Research Service, AUKUS nuclear cooperation (PDF), 15 November 2023

57 Ministry of Defence, The AUKUS nuclear-powered submarine pathway (PDF), March 2023, p.35

58 "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

59 International Atomic Energy Agency, IAEA Director General's Introductory Statement to the Board of Governors, 5 June 2023

- US Department of State, AUKUS: A generational opportunity. Testimony of the Assistant Secretary, Bureau of Political-Military Affairs, 6 September 2023
- Chatham House, The AUKUS nuclear submarine deal is a challenge for the IAEA, June 2023

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