

Australian Government Australian Submarine Agency

AUSTRALIA'S AUKUS SUBMARINE INDUSTRY STRATEGY

BUILDING A STRONG AND RESILIENT INDUSTRIAL BASE FOR AUSTRALIAN SUBMARINES



Defence acknowledges the Traditional Custodians of Country throughout Australia. Defence recognises their continuing connection to traditional lands and waters and would like to pay respect to their Elders both past and present.

Defence would also like to pay respect to the Aboriginal and Torres Strait Islander people who have contributed to the defence of Australia in times of peace and war.

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Ministerial foreword

Australia's acquisition of a conventionally-armed, nuclear-powered submarine capability is one of the most consequential endeavours undertaken in our nation's history. It will represent a step change in the Australian Defence Force's capability at a time when our nation faces the most challenging strategic circumstances since the Second World War.

Developing the ability to build, sustain and operate conventionally-armed, nuclear-powered submarines is also one of the most significant industrial undertakings in Australia's history. We plan to achieve an ambitious uplift of Australia's military and industrial capability, which has never been done under the timeframes of the Optimal Pathway announced in March 2023. It will require unparalleled coordination and cooperation between Government, industry, unions and academia – and between Australia and our AUKUS partners, the United Kingdom and the United States.

The opportunities presented by AUKUS are immense. The conventionally-armed, nuclear-powered submarine program will see around 20,000 jobs created across Australia over the next 30 years, with unprecedented opportunities for Australian industry as we develop the sovereign capacity to operate, build and sustain conventionally-armed, nuclear-powered submarines here in Australia. It will also provide Australian industry with new and unique opportunities abroad, working with our AUKUS partners to develop a resilient trilateral submarine industrial base.

Australia's AUKUS Submarine Industry Strategy sets out the Albanese Government's vision for the future of Australia's submarine industrial base. The Industry Strategy identifies the conditions to develop the sovereign industrial capability needed to deliver, operate and sustain our future conventionally-armed, nuclear-powered submarines, while also ensuring our existing *Collins* class submarines are sustained and upgraded until their eventual withdrawal from service.

Australia's AUKUS Submarine Industry Strategy provides a framework to prioritise critical sovereign industrial capabilities and enable Australian industry to have the confidence to invest in its own capability, personnel and supply chains. Given the scale and pace of the industrial uplift required, the Albanese Government will continue to implement targeted initiatives and programs to support, guide and grow priority industry sectors, alongside our AUKUS partners. As a multi-decade, multi-generational undertaking, we expect this Industry Strategy to evolve as our industry develops and the nuclear-powered submarine program progresses.

This is an opportunity to build a Future Made in Australia, by Australians, delivering world-leading maritime capability, advanced manufacturing, industry growth, high paid, high skilled jobs, and infrastructure for decades to come.



The Hon. Richard Marles MP Deputy Prime Minister Minister for Defence



The Hon. Pat Conroy MP Minister for Defence Industry and Capability Delivery Minister for International Development and the Pacific

Executive summary

Australia's AUKUS Submarine Industry Strategy is intended to:

- 1. Guide the development of an Australian Submarine Industrial Base capable of building and sustaining a persistent, potent and sovereign multi-class submarine capability in support of Australia's *National Defence* (Chapter 1);
- 2. Prioritise work using a framework to define target states for Australian industrial capability, capacity and resilience (Chapter 2);
- 3. Highlight the significant opportunities for the Australian Submarine Industrial Base, giving Australian suppliers the confidence to invest in uplift and create long-term, stable job opportunities (Chapter 2);
- 4. Acknowledge hurdles to be overcome, and lay out effective, targeted and scalable measures and investment across five lines of effort (Chapters 3 and 4); and
- 5. Provide a foundation for future work and continuous refinement, in light of industry progress and program requirements (Chapter 6).

Australia is facing its most challenging strategic environment since the Second World

War. Our future security requires the Australian Defence Force to be more integrated and focused, capable of delivering effects that achieve a Strategy of Denial. The acquisition of conventionally-armed, nuclear-powered submarines is a critical element of this approach.

AUKUS partners have identified the pathway to deliver a conventionally-armed, nuclear-powered submarine capability for Australia. This requires a rapid uplift of Australia's submarine industrial capability within the next decade – while also upgrading and sustaining our existing *Collins* class fleet.

AUKUS Pillar I is more than the acquisition of a new submarine platform: it will be one of the **most complex and consequential industrial transformations in Australian history**. It requires a uniquely close partnership between the Australian Government and industry to **enhance the capability, capacity, and resilience** of the Australian Submarine Industrial Base so it can build and sustain a persistent, potent and sovereign multi-class submarine capability.

This uplift is also critical for Australia's continuous naval shipbuilding and sustainment ecosystem. It will transform Australia's two principal shipyards at Osborne and Henderson and create unprecedented commercial and career opportunities in industry.

The Government is using a prioritisation framework to guide investments and initiatives to build sovereign Australian industrial capability.

Government action will focus on overcoming hurdles to industry participation, **leveraging a range of existing programs** to support Defence industry, as well as introducing targeted, additional measures. These will focus on five lines of effort:

- Creating demand clarity through proactive and progressive communication as requirements mature;
- Increasing investment attractiveness for industry in critical areas;
- Simplifying industrial regulation and processes impacting Australian participation;
- Growing our skilled workforce in partnership with employers, unions, state governments and training providers; and
- Integrating into United Kingdom and United States supply chains through qualification of Australian suppliers.

The nuclear-powered submarine program will support thousands of jobs and underpin \$30 billion in investment in industry uplift, including shipyard infrastructure, workforce uplift and other enablers. An **initial wave of uplift activity** over the next two years will support over 125 Australian suppliers to invest in their own capabilities to meet the high standards of nuclear-powered submarine build and sustainment activities in Australia and our AUKUS partners.

This **Industry Strategy lays the foundation for growth and will evolve over time** to reflect key developments. It has been developed in consultation with state governments, defence industry, unions and academia – all of whom will be critical to its implementation. The Government will revisit and refine this Industry Strategy regularly to reflect industry progress and program requirements. Initiatives under each line of effort will be continuously reviewed and assessed to ensure they support industry to maximise the opportunities AUKUS presents.

Information for industry

What are the opportunities for industry?

Achieving the Optimal Pathway to a sovereign, conventionally-armed, nuclear-powered submarine (NPS) capability will present significant opportunities for Australian industry. These will evolve over time, and include:

- > Ongoing sustainment of Australia's six Collins class submarines;
- > Participation in United Kingdom and United States submarine supply chains;
- Support for sustainment of United Kingdom and United States submarines rotating through Australia as part of Submarine Rotational Force-West;
- Support for sustainment of Australian Virginia class submarines; and
- > The build and sustainment of SSN-AUKUS submarines.

How is the Government implementing the five lines of effort?

Creating demand clarity (Section 3.2)

Communicating strategic priorities and requirements



Communicating priority product/service categories, industrial capability requirements, and system and product requirements to equip industry with sufficient information and lead times needed to develop the required capability.

Providing demand forecasts

https://npsprogram.icn.org.au

Providing forecasted demand volumes for prioritised product/service categories over time to provide industry with information needed to invest in capability uplift.

Increasing investment attractiveness (Section 3.3)

Expanding the Defence Industry Development Grants (DIDG) Program



https://business.gov.au/grants-and-programs/defence-industrydevelopment-grants-program

Providing additional funds to the DIDG Program to extend financial support to applicants that can manufacture priority products for the NPS supply chain.

Providing non-grant financing

https://www.nrf.gov.au/what-we-do/our-priority-areas/defence-capability

Providing access to debt and equity finance and guarantees to support the capability uplift of Australian suppliers within the NPS supply chain.

Providing innovation support

 https://www.asca.gov.au

 https://business.gov.au/grants-and-programs/industry-growth-program

 https://www.dst.defence.gov.au/partner-with-us/university/adsun

Providing financial and advisory support to Australian SMEs within the NPS supply chain to drive innovation and commercialisation.

Simplifying industrial regulation (Section 3.4)

Creating an Industry Front Door

https://www.asa.gov.au/industry-front-door

Providing a centralised support service for industry to assist with navigation of various Defence requirements and identifying relevant points of contact for Government programs.

Accelerating pre-qualification

https://www.defence.gov.au/business-industry/industry-governance/industryregulators/defence-industry-security-program/resources/disp-member-portal

https://www.agsva.gov.au

Streamlining the pre-qualification process for suppliers through the Defence Industry Security Program (DISP) and the Australian Government Security Vetting Agency (AGSVA) requirements to reduce industry barriers in supplying products/services to Defence.

Harmonising trilateral regulation and requirements



https://www.defence.gov.au/business-industry/exporting/applications-andpre-notification/my-australian-defence-exports-portal

Streamlining the flow of international defence sector trade through trilateral agreements to reduce regulatory impediments for defence suppliers across Australia, the United Kingdom and the United States.

Growing our skilled and experienced workforce (Section 3.5)

Upskilling the NPS workforce

Q T

https://www.education.gov.au/higher-education-funding/commonwealthgrant-scheme-cgs/nuclearpowered-submarine-student-pathways

Providing formal education programs to develop a pipeline of highly-skilled graduates with the skills and knowledge required for the NPS workforce.

Attracting local talent

 https://diip.com.au

 https://www.southmetrotafe.wa.edu.au/defence-industry-pathwaysprogram

 https://statedevelopment.sa.gov.au/defence-industry/vet

 https://peer.com.au/exciting-career-opportunities-in-defence-andshipbuilding

 https://www.asc.com.au/careers

 https://www.asa.gov.au/jobs-careers/nuclear-graduate-program

Attracting talent and providing pathways to upskill the industrial workforce through on-the-job experience and additional NPS-specific skill development programs.

Integrating into United Kingdom and United States supply chains (chapter 4)

Accelerating the Defence Industry Vendor Qualification (DIVQ) Program

 https://npsprogram.icn.org.au

 https://www.asa.gov.au/business-industry/industry-workforce

Streamlining and accelerating the qualification of Australian suppliers into trilateral supply chains to reduce barriers for industry as they seek to provide products into the United Kingdom and United States.

Launching Australian Submarine Supplier Qualification (AUSSQ) Pilot Program



Qualifying Australian suppliers and their products into Huntington Ingalls Industries' supply chain in the United States.

Expanding the Global Supply Chain (GSC) Program



https://www.defence.gov.au/business-industry/industry-capabilityprograms/global-supply-chain-program

Providing additional funds to the GSC Program enables Australian NPS suppliers to secure export opportunities.

Supporting Australian suppliers to be export-ready

 https://www.austrade.gov.au/en/how-we-can-help-you/grants/exportmarket-development-grants
 https://www.exportfinance.gov.au/defence
 https://gateway.icn.org.au/projects/4553

Providing financial and advisory support to suppliers within the NPS supply chain to secure export opportunities.



Chapter 1 Strategic rationale

1.1 The importance of industry to National Defence

The 2024 National Defence Strategy makes clear that Australia is facing its most challenging strategic environment since the Second World War, demanding a new approach to defending Australia and its national interests. This new approach is based on the concept of National Defence – a coordinated, whole of-government and whole-of-nation approach to meeting the strategic challenges Australia faces, including the threat of conflict and the prospect of coercion. At the centre of this approach is the Strategy of Denial to deter a potential adversary from taking actions against Australia's interests and regional stability.

Enhancing Australia's military capability by transitioning to a conventionally-armed, nuclear-powered submarine (NPS) fleet is central to *National Defence*. Nuclear-powered submarines are harder to detect than conventionally-powered submarines, have longer range and endurance, and provide a more versatile platform for weapon systems and sensors. These submarines will complicate potential adversaries' planning, enabling Australia to hold assets at risk at the greatest possible distance from our shores, ensuring we remain a highly capable security partner in the region.

The calibre of Australia's sovereign submarine industrial base has a direct relationship to the availability and preparedness of submarines our nation is able to field. An Australian Submarine Industrial Base capable of **delivering a persistent, potent and sovereign multi-class submarine capability** is vital to the defence of Australia.

1.2 Acquiring a conventionally-armed, nuclear-powered submarine capability

AUKUS is strengthening the ability of Australia, the United Kingdom and the United States to support security and defence interests, building on longstanding bilateral ties between the three partners.

The Optimal Pathway is an ambitious plan to provide Australia with a sovereign NPS capability from the early 2030s. Australia's conventionally-armed, nuclear-powered submarines will be owned, operated, maintained, and regulated by Australia, and will sail under Australian command. In summary:

From as early as 2027, the United Kingdom and the United States plan to commence rotations of conventionally-armed, nuclear-powered submarines to Australia to accelerate the development of the Royal Australian Navy (RAN) and industry workforce, infrastructure, and regulatory systems necessary to establish a sovereign nuclear-powered submarine capability.

- Starting in the early 2030s, the United States intends to sell Australia three Virginia class submarines (VCS), with the potential to sell up to two more if needed.
- In the late 2030s, the United Kingdom will deliver its first SSN-AUKUS submarine, also known as the SSN-A; the first Australian-built SSN-AUKUS will be delivered at the Submarine Construction Yard in Osborne, South Australia, in the early 2040s, with the build program to commence before the end of the 2020s.

The Optimal Pathway will proceed concurrently with the operation of Australia's *Collins* class submarines, and their Life-of-Type-Extension (LOTE).

1.3 The Australian Submarine Industrial Base

The current Australian Submarine Industrial Base, and the wider defence industrial base, must expand in capability and capacity to deliver an Australian NPS capability while upgrading and sustaining Australia's *Collins* class submarines. This will present opportunities for growth for existing and new defence businesses. It will also require prioritisation of Australian sovereign industrial capability in areas critical to the build and sustainment of submarine platforms, in order to maximise Australian submarine availability. The scale, complexity and technology requirements of the program also mean the Australian Submarine Industrial Base will need to work with trusted United Kingdom and United States partners to deliver products and services across the life of the program.

Australia already has many submarine-related industrial capabilities and strengths due to the *Collins* class program. *Collins* class sustainment and upgrade activities make up the core of current Australian Submarine Industrial Base capability. Australia's broader defence and civilian industrial bases similarly possess a number of relevant industrial capabilities, such as engine re-manufacturing and sustainment in support of mining operations.

The increased requirements from the Optimal Pathway occur at a time when the industrial needs of Australia's surface fleet are also growing in complexity and scale. To optimise Australia's industrial, workforce and infrastructure capacity, the uplift of the Australian Submarine Industrial Base will take place in the broader context of delivering continuous naval shipbuilding and sustainment, as set out in the 2024 Naval Shipbuilding and Sustainment Plan.

This Industry Strategy applies lessons learned from the historic successes and challenges of the Australian Submarine Industrial Base:

'Through life' focus from the beginning – The construction of six Collins class submarines from a brownfield site in less than two decades was a significant national industrial achievement. However, a consequence of the singular focus on build was an inadequate focus on industrial capability to support sustainment requirements. This Industry Strategy incorporates both build and sustainment considerations to ensure a more balanced view across the life-cycle of Australia's conventionally-armed, nuclear-powered submarines.

- Importance of sovereign technical capability Australia invested heavily in developing sovereign technical capability over the course of the *Collins* class build. In recognition of the importance of sovereign technical capability, a technical authority has been established within ASA, supported by industry, to assure the ongoing safety and technical integrity of Australia's conventionally-armed, nuclear-powered submarines.
- Root causes of poor performance This Industry Strategy embeds the lessons of the 2012 Study into the Business of Sustaining Australia's Strategic Collins Class Submarine Capability. Known as the 'Coles Review', it identified five root causes for the poor availability of the Collins class submarine, including poor planning and unclear lines of responsibility – these lessons learned have guided the Industry Strategy's development.

1.4 Partnering to deliver Australia's future submarine capability

AUKUS Pillar I is more than the acquisition of a new submarine platform: it will be will be one of the **most complex and consequential industrial transformations in Australian history**, requiring a uniquely close partnership between the Government and industry.

In March 2024, the Government announced the selection of ASC and BAE Systems to operate under a joint venture to deliver the SSN-AUKUS build, and ASC to sustain Australia's nuclear-powered submarine fleet, building on its existing role in *Collins* class submarine sustainment. These Sovereign Submarine Partners (SSPs), supported by other suppliers across Australia, the United Kingdom and the United States, will have responsibility for the design, build, and sustainment of Australia's NPS fleet.

This will require the development of industrial operations and a resilient supply chain to reduce the risk of Australia being unable to access essential products and services in a timely manner. In some cases, it may also be cost effective to increase resilience through strategic stockpiles.

Increasing trilateral resilience is an express objective of the AUKUS partnership. United Kingdom and United States primes will play an important role supporting Australia's SSPs and facilitating engagement of the broader submarine industrial base into trilateral supply chains, creating immediate economic opportunities for Australian industry and strengthening the submarine industrial bases of all three nations.

The Australian Submarine Industrial Base also requires a diverse community of businesses and research organisations working together. With world-class universities and strong R&D investments in sectors like healthcare, environment, agriculture, and resources, Australia is well-positioned to innovate advanced manufacturing techniques and develop intellectual property in submarine product categories. There will also be opportunities for Australia to introduce these innovations into United Kingdom and United States supply chains.

1.5 Roles and responsibilities

- The Australian Government (through the ASA, in partnership with Defence) is responsible for:
 - Communicating clear strategic priorities so that industry has an early indication of which products and categories are priorities for Australian supply (as opposed to any suitable source);
 - Coordinating uplift activities, delivering initiatives in partnership with other stakeholders to overcome hurdles to industry uplift and participation in the Trilateral Submarine Industrial Base;
 - Determining specific requirements of the SSPs, and any other primes that the Government may contract with (for example, the Combat System Integrator), within which they must operate (for example, Australian Industry Capability (AIC) requirements);
 - Monitoring the health of the Australian Submarine Industrial Base, to inform development of new initiatives under each of the five lines of effort; and
 - Funding the NPS program and uplift initiatives that remove (or reduce) hurdles to private sector investment in the Australian Submarine Industrial Base.
- **SSPs** have primary responsibility for:
 - Translating Government's strategic priorities into clear forecasts of demand and requirements of industry for each Australian submarine program;
 - Developing and managing their supply chains, and monitoring and maintaining their health over time;
 - Coordinating and contracting with Australian suppliers seeking to supply into Australian submarine programs; and
 - **Developing AIC plans** detailing how Government's strategic priorities for the Australian Submarine Industrial Base will be satisfied.
- Australian suppliers are responsible for planning and investing in their own capability, and demonstrating that they meet the qualification, nuclear stewardship, safety and security requirements for participation in NPS programs.
- United Kingdom and United States primes are responsible for providing experience and specialised 'know how' and products, augmenting the capability of Australia's SSPs and leveraging Australian suppliers, especially where Australian suppliers may relieve trilateral constraints or increase resilience.
- AUKUS partners are responsible for supporting coordination and collaboration on the trilateral supply chain to increase resilience for all three nations, including through harmonisation or mutual recognition of qualification regimes, and facilitation of export approvals to streamline trade.
- State governments are responsible for playing an important role in workforce education and training, transport infrastructure planning and development, establishment of innovation precincts, and in clearly communicating the benefits of major projects to local communities to help build social licence.

- **Regulators** at the Commonwealth and state levels are responsible for establishing and sustaining relevant safety, stewardship, environmental and other regulatory regimes for the protection of people, communities and the environment.
- **Unions** are responsible for representing the interests of Australia's industrial workforce and collaborating with Government and industry to grow and train the industrial workforce.
- **Industry Associations** are responsible for advocating for Australian businesses and providing a collective voice for individual businesses within industry.
- Skills and training providers and academia are responsible for playing a critical role in growing our skilled and experienced workforce.

Stakeholder		Primary role in the ASIB
Australian Government		Set the requirements and conditions for the industrial base to grow (together with Defence) and coordinate interventions with Commonwealth and state governments to unlock barriers to industry uplift.
Sovereign Submarine Partners	Sustainment (ASC) Build (ASC & BAE Systems)	Coordinate and contract with suppliers, directly developing, growing, shaping and maintaining the health of their respective program supply chains.
Other Australian suppliers	OEMs and other suppliers	Partner with the SSPs to build their own capability to supply into Australian submarine programs and demonstrate they meet qualification, nuclear stewardship, safety and security requirements.
UK and US primes		Bring specialised know-how/-why and products, augmenting the SSPs and leveraging Australian suppliers (especially where there are trilateral constraints or opportunities to increase trilateral resilience).
AUKUS trilateral partners		Coordinate and collaborate on the trilateral supply chain to increase all three nations' resilience.
State governments		Play a key role in workforce education and training, transport infrastructure planning and development, establishing innovation precincts and securing social licence.
Regulators (at the Commonwealth and state levels)	E	Manage compliance regimes relevant to, for example, workplace safety, planning and approvals, nuclear stewardship, and environmental management.
Unions		Represent the interests of the workers engaged by the SSPs and other Australian suppliers, and participate in tripartite collaboration with Government and industry to grow and train the industrial workforce.
Industry Associations		Provide business development and networking opportunities for Australian industry.
Skills and training providers and academia		Play a critical role in growing Australia's skilled and experienced workforce.

Figure 1: Roles and responsibilities

Figure 2: Preparatory work already undertaken

Industry and SSPs

- ASC and BAE Systems announced as the Sovereign Submarine Partner for build, and ASC for sustainment
- **DIVQ** established to support Australian suppliers to enter the US submarine supply chain
- 2,200+ participants attended industry engagement events
- · Initial investment of \$262 million to support local defence industry uplift

Workforce

- \$128m invested to create more than 4,000 new Commonwealth-supported places in STEM courses
- Early career programs established including Defence Industry Pathway and Nuclear Graduate Program
- Skills and Training Academy being developed in partnership with the South Australian Government
- Australian workers deployed to Pearl Harbor Naval Shipyard for training in Virginia class sustainment

Infrastructure



- Commitment to invest up to \$8 billion to expand and upgrade HMAS Stirling in Western Australia
- Commitment to establish a consolidated Defence Precinct at Henderson, Western Australia
- Site mobilisation and early works commenced at the Submarine Construction Yard in Osborne, South Australia

Stewardship and Security

- Independent Australian Naval Nuclear Power Safety Regulator enabling legislation passed
 - Preparation licences underway for site facilities by the Australian Radiation Protection and Nuclear Safety Agency
 - Nuclear Mindset Training delivered to Sovereign Shipbuilding Talent Pool personnel

Trilateral Partnerships

- AUKUS trilateral agreement to cooperate on naval nuclear propulsion technologies signed
- Export licence-free environment established, boosting defence trade and innovation
- · First RAN sailors graduated from US Navy Nuclear Power School





Chapter 2 Sovereign priorities

This Industry Strategy sets out objectives and priorities to uplift the Australian Submarine Industrial Base so that it is able to build and sustain our future fleet of conventionally-armed, nuclear-powered submarines. Additional detail will be made available to industry as design and planning work progresses over time.

2.1 Vision and objectives

The effort to uplift the Australian Submarine Industrial Base has a **single overarching objective**:

Develop an industrial base in Australia that enables a persistent, potent and sovereign multi-class Australian submarine capability.

This requires sustaining the *Collins* class submarine capability while building and sustaining a sovereign NPS capability.

Achieving the overarching objective will also see the Australian Submarine Industrial Base contribute to the following broader outcomes:

- Trilateral (AUKUS) submarine capability Supporting United Kingdom and United States' submarine programs through a more resilient and capable Trilateral Submarine Industrial Base;
- Australian Defence industrial capability Strengthening the sovereign defence industrial base to support broader Australian military capabilities as envisaged by the 2024 Defence Industry Development Strategy; and
- Economic opportunity Serving broader Australian Government priorities, including promoting economic development, exports, a future-ready workforce, and an enhanced reputation for Australian industry.

To support the delivery and sustainment of our military capabilities, the Australian Submarine Industrial Base must uplift the breadth and sophistication of its **capabilities**, its **capacity** to deliver the volume required, as well as its **resilience** to potential threats and shocks. This Industry Strategy establishes clear objectives for target state capability, capacity, and resilience at each point in time.

2.2 Priorities for sovereign capabilities, capacity, resilience and security

Consistent with the *Defence Industry Development Strategy*, Australia must grow and sustain submarine industrial base capabilities in critical product categories. The requirement for sovereign industrial capability is assessed using a prioritisation framework that has three major criteria:

1. The potential **impact** a lack of supply of the product category would have on Australian submarine availability;

2. The potential **vulnerability** to supply disruptions from outside Australia for the product category if not manufactured domestically; and

3. The **linkages or interdependencies** between a product category and the Sovereign Defence Industrial Priorities identified in the *Defence Industry Development Strategy*.¹

This prioritisation framework also considers the impact on secondary outcomes such as trilateral supply chain contributions, contributions to wider Australian defence capabilities (such as Sea Systems Priorities for the *Collins* class submarine program and the wider surface fleet), and potential economic opportunity for Australia. The framework includes a feasibility screen to de-prioritise products that Australia will not produce (for example, nuclear reactors for SSN-AUKUS). The results of this analysis represent product categories that, to varying degrees, are likely to be prioritised for Australian capability.

Australian industry capability, and opportunities for Australian suppliers, will necessarily evolve over time. For example, Australian industry capability, and associated opportunities, is expected to progressively increase over the build phase of SSN-AUKUS, such that things that are not feasible for Boat 1 may be feasible for a later boat, or for sustainment.

The output of the prioritisation framework is a defined target state for each product category in terms of:

- Australian industrial **capability** the scope of build and sustainment activities to be delivered by suppliers in the Australian Submarine Industrial Base.
- The required level of capacity the proportion of aggregate demand from Australian submarine programs to be met domestically by the Australian Submarine Industrial Base.
- The desired level of supply chain resilience the ability of the Australian Submarine Industrial Base to recover from shocks or disruptions.

Figure 3: Target state characteristics

CAPABILITY

The scope of build and sustainment activities to be delivered by suppliers in the ASIB.

- Sustainment: Servicing and refurbishment
- Sustainment: Manufacturing and assembly
- Build: Component manufacture, assembly, integration, testing and evaluation, etc.
- Product development: Design, prototyping

CAPACITY

The **proportion of aggregate demand** from Australian submarine programs to be met domestically by the ASIB.

- All (100%+)
- Most (>50%)
- Some (>0%)
- None

RESILIENCE

The ability of the ASIB to recover from shocks or disruptions.

- Supplier diversity
- Customer diversity
- Financial viability
- Supplier agility
- Security protocols

2.2.1 Capability

There are a number of aspects of industry capability required to deliver the Optimal Pathway that occur over the full life cycle of a submarine. These include:

- Design and development;
- Integration and program management;
- Manufacture and assembly;
- Sustainment and support;
- Testing, evaluation, and commissioning;
- Enabling services; and
- Decommissioning and disposal.

For the Australian Submarine Industrial Base to effectively support the Optimal Pathway, each aspect of industrial capability must be secured. Industry – like Government – will be held to exacting technical standards, requiring high levels of capability and demonstrable compliance. The Australian Submarine Industrial Base will need to sustain submarines with differing designs and technical specifications, meet requirements to build the SSN-AUKUS submarines, and manufacture many input components required for both build and sustainment.

2.2.2 Capacity

In addition to new or evolving industrial capabilities, the Australian Submarine Industrial Base must uplift capacity while meeting the strict quality standards necessary for submarine sustainment and build programs. Where the Australian Submarine Industrial Base currently has the capacity to sustain six *Collins* class submarines, it will need to grow to support concurrent sustainment of both Australian submarines and the rotational presence of conventionally-armed, nuclear-powered submarines of our AUKUS partners at Submarine Rotational Force-West (SRF-West). Much of this capacity will come from Australia, with support from United States and United Kingdom supply chains for specific components.

2.2.3 Resilience

A resilient Australian Submarine Industrial Base will feature multiple suppliers with the collective ability to withstand shocks or disruptions, and with the necessary diversity, agility, and security characteristics to ensure uninterrupted supply across the sources of Australian demand.

Figure 4: Desired resilience characteristics

The Australian Submarine Industrial Base must be resilient, where resilience is defined as the sustained confidence in its ability to enable a persistent, potent and sovereign multi-class submarine capability, with the appropriate degree of both sovereignty and trilateral confidence.

A resilient Australian Submarine Industrial Base will show the following characteristics:

- A robust industry ecosystem
 - Supplier diversity within both the Australian Submarine Industrial Base and the Trilateral Submarine Industrial Base
- Adaptable and secure suppliers
 - **Financial resilience**, with sufficient financial strength to withstand shocks
 - Supplier agility, with sufficient operational resilience to meet market needs at appropriate lead times and costs
 - Robust security, with high standards of physical, personnel and cyber security
 - Customer diversity, where Defence is a major buyer, but suppliers also supply into other meaningful markets

2.3 Opportunities for Australian industry

The Government's commitment to achieving the necessary levels of capability, capacity, and resilience in the Australian Submarine Industrial Base represents a significant opportunity for Australian industry. These opportunities will grow over time as the scale, complexity, and breadth of Australia's submarine programs evolve. The most immediate opportunities for Australian industry are in:

- Collins class sustainment (including upgrades and LOTE);
- The development of fit-for-purpose infrastructure and increasing demand for base support services; and
- > Qualification and support to United Kingdom and United States submarine supply chains.

Over time, Australian industry will also have the opportunity to support:

- Trilateral partner conventionally-armed, nuclear-powered submarine sustainment at SRF-West;
- Australian Virginia class sustainment;
- SSN-AUKUS build and sustainment;
- Combat system integration;
- > Submarine retirement and disposal; and
- Cross-program enablers such as infrastructure, testing and commissioning, physical security services, and other ancillary services.

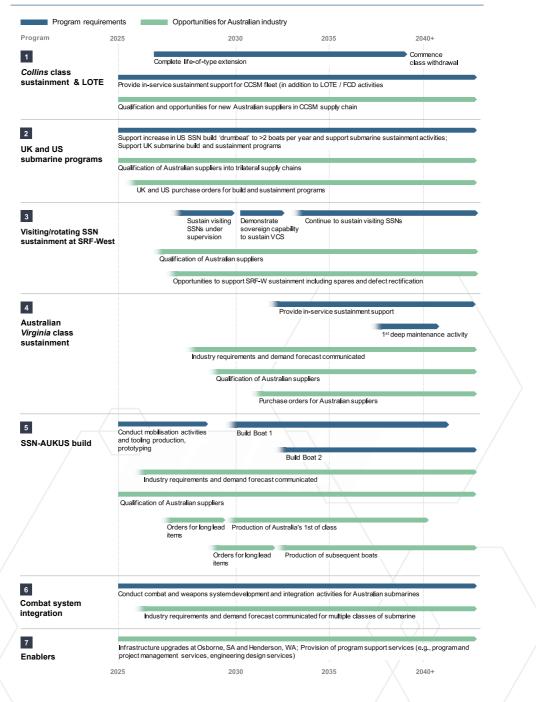
These opportunities are continuous, and layered over time to progressively increase Australia's capacity to build and sustain multiple classes of submarine. For example, Australian suppliers qualifying into *Virginia* class submarine supply chains may be well positioned to cross-qualify into SSN-AUKUS build and sustainment.

Figure 5 provides an indicative view of submarine program demand over time and opportunities for Australian industry, noting these are subject to change and that industry opportunity often commences earlier than program-level milestones. Additional detail will be made available to industry as design and planning work evolves across all Australian submarine programs in the coming months and years.

These demands are a subset of the broader opportunities for Australian industry in the maritime domain (for more information, refer to the Naval Shipbuilding and Sustainment Forecast², including an estimated forecast of overall vessel tonnage and workforce demand).

2 Commonwealth of Australia, Naval Shipbuilding and Sustainment Plan (Annex A).

Figure 5: Demand over time and opportunities for Australian industry



Note: Graph is not to scale. Timings are approximate only and subject to change.

2.3.1 Opportunities supporting the Collins class submarine program

Australian industry is already deeply engaged in the *Collins* class submarine through-life support program, including Full-cycle, Mid-cycle, and short-term maintenance across Osborne and Henderson shipyards. The *Collins* class LOTE program – which will provide the nation with a potent, conventional submarine capability until withdrawal from service – presents Australian industry with near term opportunity to contribute to the replacement, refurbishment or ongoing upgrade and development of:

- Propulsion systems;
- Diesel engines;
- Generators;
- > Power conversion and distribution systems; and
- Combat systems.

As the primary sustainment partner for Australia's *Collins* class submarines, ASC continues to release work packages and engage with new Australian suppliers. Opportunities and industry points of contact are accessible through the Industry Capability Network gateway.

2.3.2 Opportunities in United Kingdom and United States submarine programs

Qualification of Australian suppliers into trilateral partner submarine supply chains has already begun. The Optimal Pathway is designed to create a stronger, more resilient Trilateral Submarine Industrial Base, supporting submarine production and maintenance in all three countries. These opportunities are not limited to component manufacturing, but may also include Australian innovation in the form of services or intellectual property.

Both the United Kingdom and the United States have critical areas where demand exceeds the current capacity of their respective domestic industrial bases, creating opportunities for Australian suppliers under the AUKUS partnership. Chapter 4 of this Industry Strategy outlines the approach for Australian suppliers to contribute to priority areas of United Kingdom and United States submarine program demand.

2.3.3 Opportunities supporting Submarine Rotational Force-West

The decision by the United Kingdom and the United States to increase submarine visits and, from 2027, to rotate submarines through HMAS *Stirling* as part of Submarine Rotational Force-West (or SRF-West) presents a significant opportunity for Australian industry. SRF-West will require Australian industry to support maintenance on trilateral partner submarines through ASC as Australia's SSP for sustainment. Specific opportunities may include:

- Infrastructure and security upgrades to HMAS Stirling, including wharf upgrades and new operational maintenance, training and logistics facilities;
- Delivery of spares packages as part of planned sustainment activities for visiting trilateral partner submarines (via qualification into United Kingdom and United States supply chains);

- Unplanned repairs and parts manufacturing to support operational readiness requirements for visiting trilateral partner submarines; and
- Increased base support services requirements relating to increased volume of activity and personnel at HMAS *Stirling* (for example, catering, cleaning and security services).

Australian sustainment support for SRF-West will increase trilateral resilience through increased regional maintenance capacity supporting both Australian and trilateral submarines, similar to the F-35 Joint Strike Fighter program's Regional Maintenance, Repair, Overhaul, and Upgrade concept.

2.3.4 Opportunities supporting Australian Virginia class submarines

Australia's intention to purchase at least three – and up to five – Virginia class submarines from the United States presents opportunities for Australian industry involvement in maintenance and repair across a range of submarine combat and propulsion systems. These opportunities will increase as Australia prepares for depot-level maintenance for its own conventionally-armed, nuclear-powered submarines, and is expected to include:

- Contributions to necessary spares packages;
- > Planned maintenance as part of intermediate and depot-level maintenance;
- Inspection services following maintenance packages; and
- Service contracting for urgent system repairs.

2.3.5 Opportunities as part of SSN-AUKUS build and sustainment

The most significant opportunities for Australian industry will come from the build of SSN-AUKUS submarines at Osborne in South Australia, and their subsequent sustainment. The build program is expected to commence and ramp up in activity by the end of this decade. The industrial requirements for SSN-AUKUS will be finalised as the design matures. However, preliminary analysis has identified a range of submarine product categories which may be prioritised for build and/or sustainment, and others that may not be feasible for Australian industry within relevant timeframes (refer to the prioritisation framework earlier in Section 2.2).

Procurement decisions will be staggered over the next decade in line with build requirements. By way of illustration, there may be opportunities for Australian industry to contribute to or supply long lead time items such as:

- Electrical systems;
- Large machining and fabrication;
- Control and instrumentation;
- Combat system components;
- Secondary propulsion system components; and
- Safety equipment.



2.3.6 Opportunities in combat system integration

Australia has a long history of innovation in combat systems in cooperation with the United States. Driven by rapid technological advances, combat system updates are typically installed at a pace greater than the general upgrade of the submarine platform systems. There will be an opportunity for a sovereign Combat System Integrator to install and commission combat system upgrades that have been collaboratively developed through the cooperative program with the United States.

2.3.7 Opportunities supporting enablers

The aggregate increase in activity, investment and complexity of the Australian submarine enterprise will raise demand for enabling functions. Over the course of the Optimal Pathway, Australian industry will have the opportunity to contribute to:

- Shipyard enhancements (for example, graving dock surveys and upgrades);
- Australian test and evaluation infrastructure and capabilities;
- Cross-cutting naval infrastructure upgrades (including HMAS Stirling, Osborne Naval Shipyard, and Henderson Defence Precinct);
- > Program and project management, and engineering design services; and
- > Specialist engineering services, including research and development.



Chapter 3 Industrial uplift lines of effort

Given the national significance, pace and scale of the required industrial uplift, the Australian Government is taking active measures to guide and grow priority industry sectors, alongside Australia's AUKUS partners. Australian industry will be provided with a range of opportunities and support to build capability, capacity, and resilience through existing and new initiatives.

The Government has consulted with industry and identified four major hurdles to uplifting the Australian Submarine Industrial Base:

- Uncertainty of demand A lack of clarity on the scope, scale and timing of future demand for goods and services to be supplied by Australian vendors.
- Investment attractiveness Economic characteristics of particular submarine product categories that undermine private sector appetite to invest in uplift.
- Regulatory complexity The variety and complexity of legal and regulatory requirements to supplying defence-related goods and services, which increase the cost and risk of participation in the Australian Submarine Industrial Base.
- Workforce availability Labour and skills shortages that cannot feasibly be overcome by companies working in isolation.

This Industry Strategy outlines five lines of effort that seek to overcome these hurdles, leveraging the experience, insight and resources of Government, industry, unions and academia. The five lines of effort are:

- **1.** Creating demand clarity through proactive and progressive communication as requirements mature (Section 3.2);
- **2.** Increasing investment attractiveness for industry in areas critical to sovereign capability (Section 3.3);
- **3.** Simplifying industrial regulation and processes impacting Australian participation (Section 3.4);
- **4. Growing our skilled and experienced workforce** in partnership with state governments and training providers (Section 3.5); and
- **5.** Integrating into United Kingdom and United States supply chains through qualification of Australian suppliers (Chapter 4).

To deliver this Industry Strategy, the Australian Government is funding a number of new initiatives across the lines of effort. Most recently, in January 2025 **the Government announced an additional \$262 million to support industry uplift and develop Australia's NPS supply chain**. This will support industry uplift via the Defence Industry Development Grants Program, an expanded Global Supply Chain Program, and qualification of Australian products into United States submarine programs via the Defence Industry Vendor Qualification (DIVQ) program. The Government has also committed \$28 million to implement reforms under the Defence Trade Controls Amendment Act 2024, including to support industry engagement and accelerate trade between AUKUS partners.

3.1 Principles for Government investment

In order to effectively uplift the Australian Submarine Industrial Base while achieving value for money, four principles guide the design of specific initiatives:

- 1. Catalyse private sector investment to uplift Australian industrial capability;
- Coordinate with SSPs, trilateral partners and primes, and state governments to address the full range of barriers to uplift and secure assistance in seeding and growing capabilities;
- 3. Be targeted and proportionate, seeking to manage risks that cannot be addressed by the private sector alone³; and
- 4. **Leverage existing programs** where possible, to enhance value for money and speed-to-impact while avoiding duplication.

3.2 Creating demand clarity

Demand signals are an essential pre-requisite to industrial uplift. Clarity of demand provides suppliers with confidence that there will be returns on the investments they make to meet current and future requirements.

The Australian NPS program is a multi-decade endeavour, with evolving demands and requirements becoming clearer over time. As such, demand information will be released progressively, up to and including in the contracting phase. Access to requirements may be subject to pre-qualification or non-disclosure agreements being in place.

Figure 6: Creating demand clarity



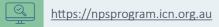
Note: Access to requirements may be subject to pre-qualification or non-disclosure agreements being in place. While SSPs have primary responsibility for demand forecasting and contracting and procurement, other primes (for example, the Combat System Integrator, or Rolls-Royce for the reactor) may perform demand forecasting and/or contracting and procurement in relation to their contracted areas of responsibility.

A. Strategic priorities and requirements

https://www.asa.gov.au/industry-front-door

The Australian Government (primarily via ASA and Defence's Naval Shipbuilding and Sustainment Group (NSSG)) will communicate clear strategic priorities to industry. In particular, this will articulate **which products and categories are priorities for Australian supply**.

B. Demand forecasts



Australia's SSPs (or other primes in relation to their contracted area of responsibility) will forecast product and service requirements. The Government intends these forecasts to encourage suppliers to prepare and invest in their own uplift. Given the program will mature over time, demand forecasts will need to be updated regularly. Demand forecasts will likely comprise:

- Industrial capability requirements Demand forecasts will reference the need for common underlying manufacturing techniques required across multiple priority product and service categories.
- System or product requirements Translation of strategic priorities into specific requirements to support suppliers' assessment of the likely uplift required to deliver against requirements.

Volume forecasts over time – Australia's SSPs will forecast demand volumes and timing from individual programs, focussing on product categories prioritised for Australian production. The ASA may aggregate program-level forecasts for industry to provide a holistic forecast. Having clarity on demand volumes is particularly important for suppliers whose products have long lead times and for those who have less mature Australian manufacturing capability.

C. Contracting and procurement – The strongest form of demand clarity is through early and long-term legal and commercial arrangements that formalise a supplier's engagement. As set out in the *Defence Industry Development Strategy*, Defence procurement must change to meet the strategic circumstances outlined in the *Defence Strategic Review*; delivering capability faster and making it easier for industry to do business with Defence. These procurement reforms will be critical to the success of the NPS program. Depending on supplier characteristics and the level of demand certainty within each product category, SSPs may **tailor sourcing approaches**. For example:

- Standard procurement and sourcing processes and contracts For suppliers with sufficient capability and capacity, with minimal to no investment required, an early and regularly updated view of requirements and demand may be sufficient to enable them to respond to standard procurement and sourcing processes (for example, requests for information, quotations or proposals). This may be relevant, for example, to existing *Collins* class submarine sustainment suppliers.
- Varied contract scopes Where longer-term demands are unclear or evolving, the scope of contracts may vary; ranging from covering only the procurement of product design data to investment in supplier capability uplift or production capacity.



Tailored contracting mechanisms – Where suppliers are required to make large capital investments to meet demand requirements, tailored contracting mechanisms may be used to assist in reducing supplier uncertainty, for example through sunk cost break clauses or contingent purchase orders. For suppliers, these mechanisms de-risk investment in uplift, while maintaining competitive tension.

3.3 Increasing investment attractiveness

The Government recognises that demand clarity alone may not be sufficient to enable industry to invest in its own uplift across all priority product categories, particularly where Australian industry faces insufficient economies of scale to deliver a commercial rate of return on investment.

For this reason, the Government is providing access to a range of financial support mechanisms for industry, including additional funding to the Defence Industry Development Grants Program, access to non-grant financing, and enabling industry to leverage innovation programs.

An expanded Defence Industry Development Grants (DIDG) Program

https://business.gov.au/grants-and-programs/defence-industrydevelopment-grants-program

The Government announced the Defence Industry Development (DIDG) Program as part of the *Defence Industry Development Strategy* and provided more than \$180 million of funding over 2024-2028 to support Australian small and medium sized businesses in the defence sector.

The DIDG program provides matched funding across four dedicated streams supporting Australian businesses to invest in their own uplift in plant, skills, and security. This program seeks to assist with capability uplift and qualification costs, noting that these costs are often at risk given uncertainty of a purchase order.

- Sovereign Industrial Priorities Stream Assists eligible businesses with up to \$1 million of 50 per cent matched funding to purchase manufacturing plant and equipment which is used directly to develop and deliver programs in priority areas.
- Skilling Stream Assists eligible businesses with up to \$250,000 of 50 per cent matched funding to upskill and train in priority trade, technical and professional skillsets to develop a workforce to meet Defence requirements in priority areas.
- Exports Stream Assists eligible businesses with up to \$250,000 of 50 per cent matched funding to purchase manufacturing plant and equipment, or to achieve international certifications or accreditations, which are needed to develop and deliver Defence export opportunities in priority areas.
- Security Stream Assists eligible businesses with up to \$100,000 of 50 per cent matched funding to uplift and maintain security controls and accreditations aligned to the Defence Security Principles Framework.

The Government has provided additional dedicated NPS-specific funding through the DIDG, to ensure support for SMEs with a demonstrated potential to manufacture priority products for NPS supply chains, such as participants in the Defence Industry Vendor Qualification program (as detailed in Chapter 4).

Non-grant financing

https://www.nrf.gov.au/what-we-do/our-priority-areas/defence-capability

Government-funded debt and equity investments will provide additional capital for capability uplift of Australian suppliers. One existing fund accessible to Defence suppliers, including those part of the NPS supply chain, is the **National Reconstruction Fund** (NRF). The NRF is a \$15 billion fund established to provide loans, guarantees and equity to support projects that diversify and transform Australia's industry and economy. Seven priority areas have been identified, including Defence capability.

Innovation programs

https://www.asca.gov.au

https://business.gov.au/grants-and-programs/industry-growth-program https://www.dst.defence.gov.au/partner-with-us/university/adsun

There are several innovation programs that encourage the scaling and commercialisation of defence capabilities. These include the Advanced Strategic Capabilities Accelerator (ASCA), Industry Growth Program, and Australian Defence Science and Universities Network and innovation precincts.

- ASCA's Innovation Incubation Program Identifies opportunities to partner with industry and universities to rapidly adapt, test, and acquire new or commercial technology for military purposes.
- Industry Growth Program Provides advisory services and grants for SMEs undertaking innovative commercialisation and/or growth projects within one of the NRF priority areas and helps build Australia's manufacturing capability for the future. Early stage commercialisation projects or grants may be eligible for \$50,000 \$250,000 of grant funding, and commercialisation and growth projects may be eligible for \$100,000 \$5 million of grant funding.
- Australian Defence Science and Universities Network Connects Defence with researchers from universities, industry, and the broader research community, providing Defence with the best research and development capabilities in Australia and researchers with the opportunity to apply their research to real-world problems.
- State Government led innovation precincts Lot Fourteen and Tonsley Innovation District in South Australia, and the Australian Marine Complex at Henderson in Western Australia, provide opportunities to develop long-term partnerships between innovators, scientists, and entrepreneurs, positively shaping Australia's defence innovation ecosystem.

3.4 Simplifying regulation

AUKUS cooperation is streamlining and enabling deeper industrial base integration. Additionally, the Government is taking steps to unlock industrial capacity within Australia by reducing regulatory impediments. These measures include:

A new Industry Front Door

https://www.asa.gov.au/industry-front-door

To help potential suppliers navigate 'Defence ready' requirements, Government programs and supply chain opportunities, the Industry Front Door will include a centralised email service and webpage to help suppliers identify key points of contact for various Government programs, Australia's SSPs and overseas primes. The Office of Defence Industry Support (ODIS) will remain the primary point of contact for all general defence industry inquiries.

Reduced pre-qualification time

https://www.defence.gov.au/business-industry/industry-governance/ industry-regulators/defence-industry-security-program/resources/dispmember-portal

https://www.agsva.gov.au

The Government is committed to reducing qualification times and administrative burdens, and to easing the path for new entrants into the Australian Submarine Industrial Base. Suppliers that register as AUKUS Authorised Users (certified by Australia) can also benefit from streamlined arrangements under Australia's export control laws, and those who register as Australian Authorized Users (certified by the United States) access additional benefits, namely exemptions under ITAR 126.7.

Harmonisation and mutual recognition of trilateral regulation and requirements



https://www.defence.gov.au/business-industry/exporting/applications-and-pre-notification/my-australian-defence-exports-portal

Australia, the United Kingdom, and the United States are working together to reduce regulatory impediments to harness the joint capacity of trilateral supply chains. The goal is to harmonise or ensure mutual recognition of the qualification requirements for NPS suppliers across all three countries.

A critical step towards this was agreement between Australia, the United Kingdom and the United States to work towards creating a licence-free environment, streamlining flow of Defence sector trade.

From 1 September 2024, the changes to Australia's export control mechanisms enable:

- Licence-free trade for over 70 per cent of defence exports from the United States to Australia that are subject to International Traffic in Arms Regulations;
- Licence-free trade for over 80 per cent of defence exports from the United States to Australia that are subject to Export Administration Regulations;
- The elimination of around 900 export permits required under the previous export controls from Australia to the United States and United Kingdom, valued at \$5 billion per year; and
- The removal of approximately 200 export permits required for defence exports from the United Kingdom to Australia, valued at over \$129 million per year.

3.5 Growing our workforce

Developing an Australian NPS capability will be a whole-of-nation undertaking, creating around 20,000 direct jobs over the next 30 years. The Government will invest up to \$8 billion over the decade to upgrade HMAS Stirling in Western Australia, creating up to 3,000 direct jobs. Maintenance activities at SRF-West are expected to create around 500 jobs, and contingency and depot-level maintenance of Australian *Virginia* class submarines will create a further 3,000 jobs in Western Australia.

At Osborne in South Australia, up to 4,000 workers will be employed to design and build the infrastructure for the Submarine Construction Yard. A further 4,000-5,500 direct jobs are expected to be created to build nuclear-powered submarines in South Australia when the program reaches its peak – almost double the workforce forecast for the Attack class program.

Over the period to 2027-28, the Government expects to invest more than \$6 billion in Australian industry and workforce across the NPS enterprise, including at least \$2 billion in infrastructure in South Australia and at least \$1.5 billion in infrastructure in Western Australia.

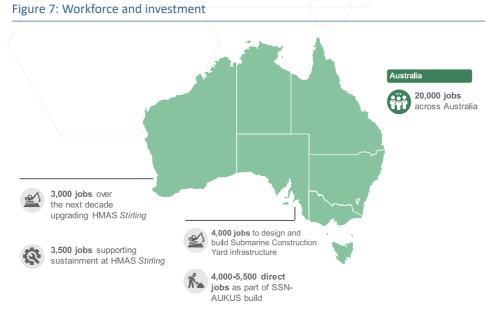
State governments, informed by regional needs⁴, are responsible for tailoring higher education, TAFE and relevant university programs to ensure they are fit-for-purpose and meet local demand. The federal and state governments are already working together on a range of joint initiatives that offer upskilling and training opportunities.

Initiatives like the SA Degree Apprenticeship pilots, SA Defence Industry Connection Program and South Metropolitan TAFE in Western Australia are examples.

See the South Australian Defence Industry Workforce and Skills Report and Western Australian Defence Industry Workforce Development Plan.

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CHAPTER 3 INDUSTRIAL UPLIFT LINES OF EFFORT



To ensure the NPS industry workforce grows over time, the Government is implementing three initiatives:

NPS workforce upskilling

<u>https://www.education.gov.au/higher-education-funding/commonwealth-</u> grant-scheme-cgs/nuclearpowered-submarine-student-pathways

Key university and vocational, education, and training (VET) programs will provide pathways for students to develop critical skills needed to enter and support the Australian Submarine Industrial Base.

- Skills and Training Academy The Academy will deliver tailored training and skilling needed to develop the NPS workforce. Co-designed by the Commonwealth and South Australian Governments, the Adelaide-based campus will train 800-1,000 people each year.
- NPS Student Pathways Program The Government has committed more than \$128 million towards over 4,000 Commonwealth-supported places at higher-education institutions over the next four years to develop a pipeline of highly-skilled STEM graduates that can strengthen Australia's NPS capability.
- NPS technical scholarships The Australian Government has committed \$15 million towards scholarships for 3,000 students undertaking undergraduate STEM degrees at eligible Australian universities.

Local talent attraction

Q	https://diip.com.au
_ <u> </u>	https://www.southmetrotafe.wa.edu.au/defence-industry-pathways-program
	https://statedevelopment.sa.gov.au/defence-industry/vet
	https://www.asa.gov.au/jobs-careers/nuclear-graduate-program
	https://peer.com.au/shipbuilding-employment-pathways-sep/
	https://www.ansto.gov.au/careers/early-careers
	https://www.asc.com.au/careers/

To proactively address the need to attract talent, the Government continues to invest in key existing entry pathways, establishing new NPS-focused employment programs to grow the entry-level workforce.

- Shipbuilding and Employment Pathways Program This four-year program commences in early 2025 and supports South Australian apprenticeships for high demand roles including fabrication, mechanical, and electrical qualifications. This program is available in South Australia and placement of apprentices will prioritise providers of critical technologies for the future NPS supply chain.
- Defence Industry Pathways Program The expansion of the program now includes NPS-related skill modules, supporting an additional 150 participants over three years in engineering, production, and project management. This program is available in South Australia and Western Australia.
- Defence Industry Internship Program (DIIP) The DIIP sponsors internships for engineering and technology students with defence industry SMEs, particularly focusing on engineering streams in critical supply, including nuclear engineering and related fields. This program enhances future NPS workforce capability, whilst financially supporting existing industry through reimbursement of intern wages and connecting SMEs with motivated university students nearing degree completion.
- ASA Nuclear Graduate Program This ASA-led initiative is an 18-month program for graduates to undertake rotations with the ASA, Australian Nuclear Science and Technology Organisation, and Australian Radiation Protection and Nuclear Safety Agency, supporting university graduates to develop their skills across multidisciplinary teams. Fifty nuclear engineering and nuclear science students have already been qualified for the program.
- Jobs for Subs Program This Government-funded initiative supports a recruitment and upskilling program for around 200 graduates, apprentices, and trainees within ASC over the next two years. This program provides learning opportunities across core NPS roles such as fabrication and machining, engineering and project management, and supply chain and operations.
- Early Career Program (ANSTO) This ANSTO-led program includes a two-year rotation for graduates leading to permanent ongoing employment, as well as an emerging engineers initiative which is a fixed two-year term for entry level engineers focused on developing technical expertise, including decommissioning and waste management.

 Early Careers Program (ASC) – This ASC-led program supports apprentices, undergrads and graduates to access hands-on training in designing, building and maintaining submarines.

Trilateral talent exchanges

To harness international experience and best-in-class expertise, the Government is providing international opportunities for the NPS workforce in collaboration with trilateral partners.

- International Placement Program The Government is supporting industry personnel from Australia's SSPs to participate in UK and US placements. International placements are integral to developing a suitably qualified and experienced workforce and are essential until Australia has the required domestic training capability for the NPS program.
- 'Train the trainer' pilot The Government is providing short-term placements for Australia's VET teacher workforce to enable them to build an understanding of AUKUS trilateral training requirements and methods, and support students with understanding NPS career pathways.

3.6 Embedding nuclear stewardship, safety, and security

Australia will be a responsible steward of nuclear propulsion technology, setting the highest non proliferation standards and protecting classified and controlled information. The journey to responsible stewardship of an Australian NPS capability will require uplift in physical and cyber security protections, including infrastructure upgrades and new procedures, and regulatory frameworks governing naval nuclear propulsion.

To enter the NPS supply chain, the Australian Submarine Industrial Base will be required to do more than demonstrate superior standards of product quality. Suppliers will be required to assure compliance with a very high standard of physical and cyber security⁵, including through membership of the Defence Industry Security Program (DISP)⁶ and new business practices that have regard for the Defence Security Principles Framework. Compliance with the DISP reduces the risk of security impacts or supply chain disruptions to key projects, improving resilience⁷.

Australia has a proud record of leadership in international nuclear non-proliferation. Under the *Treaty on the Non-Proliferation of Nuclear Weapons*, Australia has committed to not receive, manufacture or otherwise acquire nuclear weapons. The AUKUS partnership will not change this. Australia has long championed nuclear weapon-free zones and was a founding member of the *South Pacific Nuclear Free Zone Treaty (Treaty of Rarotonga)*. Australia remains a driving force in support of the *Comprehensive Nuclear Test Ban Treaty*.

⁵ Security is one of the key enablers of continuous naval shipbuilding and sustainment, as set out in the Naval Shipbuilding and Sustainment Plan (p 8).

⁶ Defence has reformed the DISP to reduce red-tape and other barriers to entry. Suppliers can now apply for DISP membership without an existing Defence contract to avoid the 'too late' problem of cumulative barriers to entry.

⁷ Additional information on the security of the NSSE as a whole is available in the Naval Shipbuilding and Sustainment Plan (Chapter 6).

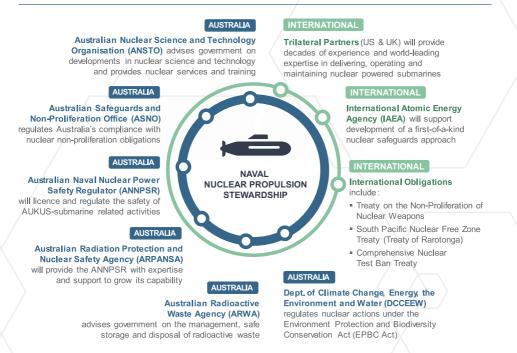
Under AUKUS, the naval nuclear reactors for SSN-AUKUS will be manufactured in the United Kingdom and incorporated in Australian-built submarines as permanently sealed units. These units will remain sealed for their operational life.

Australia has outstanding non-proliferation credentials underpinned by two safeguards agreements with the International Atomic Energy Agency (IAEA). These are a Comprehensive Safeguards Agreement (CSA) and an Additional Protocol (AP). Australia has robust reporting and access obligations to the IAEA under both instruments.

As a responsible nuclear steward, Australia will manage all radioactive waste generated by its own submarines, including radioactive waste generated through operations, maintenance and decommissioning. All waste, including spent fuel, will be managed safely, informed by international best practice, and in accordance with Australia's international and domestic legal obligations and commitments.

The United Kingdom and the United States will support Australia's stewardship efforts, leveraging their decades of experience in safely and securely managing radioactive waste. For over 60 years, the United Kingdom and the United States have operated more than 500 naval nuclear reactors that have collectively travelled more than 240 million kilometres without a single radiological incident. United Kingdom and United States nuclear-powered submarines have never experienced a reactor accident, or release of radioactive material, that has had an adverse effect on human health or the quality of the environment.

Figure 8: Australian stewardship and safety architecture



A sophisticated security and safety architecture will surround Australia's NPS program, building on our 70-year unblemished track record of operating nuclear facilities and conducting nuclear science activities (see Figure 8).

The **Australian Safeguards and Non-Proliferation Office** (ASNO), an independent statutory office, will continue to regulate Australia's compliance with its nuclear non-proliferation obligations in accordance with the *Nuclear Non-Proliferation* (*Safeguards*) Act 1987. ASNO is working with the International Atomic Energy Agency and trilateral partners to develop a first-of-kind nuclear safeguards approach, within the framework of Australia's Comprehensive Safeguard Agreement and Additional Protocol, to deliver on our commitment to the setting the highest non-proliferation standard.

The **Australian Naval Nuclear Power Safety Regulator** (ANNPSR) will be an independent statutory regulator responsible for licensing and regulating the safety of AUKUS-submarine related activities in accordance with the *Australian Naval Nuclear Power Safety Act 2024*.

Australia's established civil nuclear regulator, the **Australian Radiation Protection and Nuclear Safety Agency** (ARPANSA), is supporting the regulation of site preparation and construction of facilities ahead of the establishment of ANNPSR. ARPANSA will provide the ANNPSR expertise and support to grow its capability. ARPANSA will continue to licence nuclear safety capabilities for the program that are not directly for naval nuclear propulsion purposes.

The **Australian Radioactive Waste Agency** (ARWA) will provide advice for future Government consideration regarding the approach to the management and safe storage and disposal of the Commonwealth's radioactive waste. The ASA will work together with ARWA and Defence in the management of waste generated through the operations, maintenance and decommissioning of conventionally-armed, nuclear powered submarines.

The **Australian Nuclear Science and Technology Organisation** will continue to advise Government on developments in nuclear science and technology, provide nuclear services and technical expertise to the program, and provide training to develop Australia's Nuclear Suitably Qualified and Experience Personnel (NSQEP) workforce.

The **Department of Climate Change, Energy, the Environment and Water** will continue to provide independent, rigorous environmental assessment and approval for relevant NPS infrastructure, facilities and sites under Australia's national environmental laws. This assessment will cover potential impacts to matters of national environmental significance, and to the environment as a whole.

Photo supplied: BAE Systems

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BAE

Chapter 4

Integrating into United Kingdom and United States supply chains

The fifth line of effort is to support Australian suppliers to participate in trilateral supply chains. While each trilateral partner requires a degree of sovereign industrial capability, trilateral supply chain coordination and collaboration will increase resilience.

This collaboration will provide export opportunities for Australian vendors while allowing Australian submarine programs to benefit from the expertise and capabilities of partner shipbuilders in the United Kingdom and the United States. The partnership will go beyond Government coordination, tapping into the advanced industrial knowledge of United Kingdom and United States supply chains.

The Government has established trilateral forums to coordinate industrial uplift efforts, and to leverage trilateral experience to help inform sovereign industrial capability planning. Supported by the United Kingdom's Submarine Delivery Agency (SDA) and the AUKUS Integration and Acquisition (I&A) Office of the United States Navy's Naval Sea Systems Command (NAVSEA), the forums include shipbuilders from all three AUKUS nations, and seek to deepen ties and strengthen the trilateral industrial base.

4.1 Opportunities for Australian industry in trilateral supply chains

Once qualified into United Kingdom and United States supply chains, Australian suppliers will have access to commercial opportunities with a much larger source of potential demand than that offered by Australia alone.

The requirements for qualification into existing NPS supply chains are complex, but have the added benefit of preparing Australian industry for roles in *Virginia* class submarine sustainment and Australia's SSN-AUKUS build.

As part of a broader submarine fleet, the Unites States Navy currently operates around 50 conventionally-armed, nuclear-powered submarines, including more than 20 *Virginia* class submarines. The United States is investing significantly in its own submarine industrial base uplift to meet output requirements across all platforms.

The United Kingdom is similarly investing to uplift the United Kingdom sovereign industrial base and progress the design of SSN-AUKUS. BAE Systems plans to grow its United Kingdom workforce from 13,500 to 17,000. Like the United States, the demand

on the United Kingdom's sovereign industrial base is increasing, which creates an opportunity for Australian suppliers to contribute to the United Kingdom's industrial base resilience and capacity.

4.2 Expediting industry qualifications

Qualification is an essential prerequisite to participation in United Kingdom and United States submarine supply chains. To accelerate entry, suppliers can be certified as an AUKUS Authorised User, enabling a supplier to export goods and technology data licence-free from Australia to the United Kingdom and the United States, and import from the United Kingdom and the United States back into Australia. To further support Australian suppliers in securing commercial opportunities in the United Kingdom and the United States, the Australian Government is undertaking two immediate actions.

Defence Industry Vendor Qualification (DIVQ) Program

The Government launched the Defence Industry Vendor Qualification (DIVQ) program in January 2024, to streamline and accelerate the qualification of Australian companies to provide components and services into trilateral supply chains. DIVQ supports Australian suppliers to understand, navigate and execute to the necessary quality, security, and resilience standards of our trilateral partners.

DIVQ is initially targeting qualification of Australian suppliers into the United States' submarine supply chain across five waves of product families, using a Government-to-Government (G2G) model for waves one and two, and then a US shipbuilder-led business-to-business (B2B) model for wave three onwards. Leveraging new ITAR exemptions, the B2B model is expected to support a more efficient qualification process by enabling more direct engagement between Australian industry and US shipbuilders.

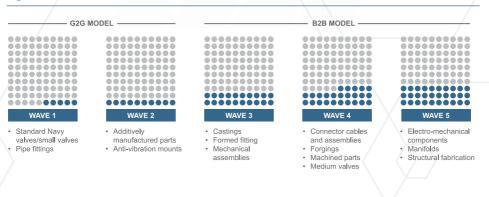


Figure 9: DIVQ waves

The Australian Government has established an In-Country Qualification Team (ICQT) consisting of United States shipbuilder personnel who will work in Australia to support Australian businesses in their qualification efforts through DIVQ. The ICQT is sharing specific know-how on NPS qualification with ASC and the Australian shipbuilding enterprise to grow this capability in Australia.

Planning is underway for a similar program of work to qualify vendors for the United Kingdom's supply chain. The first phase of United Kingdom qualification is expected to focus on Australian electrical components, battery suppliers, and other components where demonstrated Australian industrial capability can alleviate constraints in the United Kingdom supply chain. Subsequent phases will transition to the anticipated needs of the SSN-AUKUS build program in the United Kingdom and Australia.

Australian Submarine Supplier Qualification (AUSSQ) Pilot Program

 Anttps://npsprogram.icn.org.au

 https://www.asa.gov.au/industry-front-door

In order to increase the overall pace and quantity of Australian supplier qualification, the Australian Government is piloting a program which will see HII Australia deliver supplier and product qualification services for HII's United States supply chain. The program will use a B2B model, enabling HII Australia to work directly with Australian businesses to qualify both the businesses and their products, and subsequently assist them to tender for supply into the US programs. This activity will complement the DIVQ program, providing additional opportunities for Australian industry to access US supply chains.

Expand the Global Supply Chain (GSC) Program

https://www.defence.gov.au/business-industry/industry-capabilityprograms/global-supply-chain-program

The Government is also supporting Australian supplier qualification into United Kingdom and United States submarine supply chains through the Global Supply Chain Program. This program supports Australian suppliers to secure export opportunities within the global supply chains of major defence primes, including the United Kingdom and United States primes building and sustaining nuclear-powered submarines.

Dedicated NPS funding will support primes to uplift Australian vendor capability. Primes will assist Australian suppliers to expand into international markets by identifying commercial opportunities and helping them to secure orders.

4.3 Getting Australian suppliers export-ready

Many of the industrial uplift initiatives outlined in Chapter 3 support suppliers to be export-ready, including the Exports Stream of the Defence Industry Development Grants Program (see Section 3.3). The Government also provides the following dedicated export-related support to industry:

- Export Market Development Grants (EMDG) Program The EMDG program helps small and medium businesses start and grow exports in international markets by providing grants to market and promote their goods and services and undertake export training. Alongside grants, Austrade provides advice to export ready defence and dual-use companies and connects them to customers, contacts and partners, using the agency's network of experts based in key markets around the world.
- Export Finance Australia (EFA) EFA provides financial expertise and solutions to support Australian defence exports across a range of sectors including advanced manufacturing, engineering, and software. EFA also administers the US\$3 billion Defence Export Facility established as part of the Defence Export Strategy.
- Team Defence Australia (TDA) Program TDA is the premier national platform for export-capable Australian defence and dual-use companies to showcase their goods, services, and technologies at international trade events. Exhibiting with TDA is free, with successful companies responsible for their individual expenses. Attending an international trade events show with TDA is a cost-effective option for eligible companies looking to export their products and services, benchmark themselves internationally or research their competitors. Austrade supports participating companies at TDA trade events with business matching services and assistance to develop commercial opportunities in international markets.

https://www.austrade.gov.au/en/how-we-can-help-you/grants/exportmarket-development-grants https://www.exportfinance.gov.au/defence

https://gateway.icn.org.au/projects/4553



Photo supplied: BAE Systems

OTS MS

Chapter 5 Government investment

In recognition of the uniquely close partnership with industry required to deliver the Optimal Pathway, the Australian Government is funding a range of existing and new initiatives to deliver this Industry Strategy. The Government estimates \$30 billion will be invested into Australia's industrial base by the mid-2050s, including up to \$18 billion of infrastructure expansion and upgrades.

In January 2025, the Government announced an additional \$262 million to support industry uplift and develop Australia's NPS supply chain. This will support over 125 businesses across Australia to invest in their own capabilities to meet the high standards of submarine build and sustainment activities required by AUKUS nations. This includes new initiatives and boosted support for existing programs. The first tranche of funding will support industry through:

- The Defence Industry Development Grants Program Further investment into eligible Australian businesses intending to participate in the trilateral submarine supply chain to receive timely uplift funding for security, skills, international accreditations and manufacturing capital equipment for defence domestic or export supply chains.
- The Global Supply Chain Program Expanding the program to support major United Kingdom and United States submarine industry suppliers to provide commercial opportunities for Australian suppliers and increase Australian participation in trilateral supply chains.
- The Defence Industry Vendor Qualification Program Expanding and accelerating the qualification of Australian products into United States submarine supply chains. This includes working with AUKUS partners to streamline processes and reduce regulatory friction for Australian business.

In November 2024, the Government announced the execution of a mobilisation agreement with ASC and BAE Systems to support the build of SSN-AUKUS. The mobilisation agreement is an essential prerequisite to:

- Finalising planning and scheduling activities for the mobilisation of the SSN-AUKUS build program;
- Sovereign Submarine Partner-led investment in the development and growth of the submarine workforce;
- Procurement of long lead time items; and
- Commencement of risk-reduction activities, including validation of infrastructure requirements, prototyping activities, configuring production strategies, and test and evaluation processes.

The Government has also commenced a substantial program of infrastructure expansion and upgrades:

- Up to \$8 billion to upgrade HMAS Stirling, with construction starting on a \$200 million Training Centre for Australia's submariner workforce, a further \$83 million of near term investment across 32 separate minor projects, and \$2 million for feasibility studies and environmental and heritage constraint mapping commencing in early 2025;
- An initial investment of \$127 million over three years to progress planning, consultations, preliminary design and feasibility studies, as well as enabling works for the Defence Precinct at Henderson; and
- The selection of Kellogg, Brown and Root and an AECOM / Aurecon Joint Venture as Australian Naval Infrastructure's design partners for the new nuclear powered Submarine Construction Yard at Osborne in South Australia, following the commencement of site mobilisation and early works in December 2023.

The Government is already taking steps to grow a skilled and experienced workforce, including through:

- \$1.5 billion to provide 500,000 free TAFE and vocational education training places;
- Over \$128 million to attract, train and retain the NPS workforce, including more than 4,000 Commonwealth supported STEM university places across Australia;
- Delivering the Defence Industry Pathways Program and the Shipbuilding Employment Pathways pilot, with the first group of trainees and apprentices to commence from March 2025;
- Investing in the new Skills and Training Academy at Osborne in South Australia;
- The creation of 200 new graduate, apprentice, and trainee places within ASC as part of the Jobs for Subs program;
- The first deployment of Australian workers to Pearl Harbor Naval Shipyard in mid-2024; and
- The implementation of the South Australia Defence Industry Workforce and Skills Report and Action Plans in partnership with the South Australian Government.

The Government has also committed \$28 million to implement reforms under the *Defence Trade Controls Amendment Act 2024*, including to support industry engagement and accelerate trade between AUKUS partners.

Taken together these investments will accelerate the uplift of the Australian Submarine Industrial Base. Further investments across the five lines of effort will be made as future needs evolve.





Chapter 6 Implementation and governance

Implementation of this Industry Strategy is key to the delivery of a sovereign NPS capability. This effort requires disciplined delivery, a deep partnership with industry, and a transparent and robust system of governance and engagement.

Like the 2024 *Naval Shipbuilding and Sustainment Plan,* the Industry Strategy cannot be 'set and forget'. It will be updated following key developments throughout the Optimal Pathway, such as finalising the build strategy for Australia's SSN-AUKUS.

Future iterations of the Industry Strategy will also need to consider capability upgrades for Australian *Virginia* class and SSN-AUKUS submarines, including developmental test and evaluation.

6.1 Roadmap for delivery

The initiatives outlined in Chapters 3 and 4 all have different timelines to impact, and will be sequenced to address immediate and pressing needs first, while building capability for future phases.

Where existing programs do not exist (or require amendment), detailed design of initiatives will be undertaken, leveraging stakeholder input, and identifying any funding, regulatory or legislative decisions required.

Further, a detailed gap analysis is being conducted to identify areas of the greatest need for Australian Submarine Industrial Base uplift using the prioritisation framework described in Section 2.2. This will rely on the expert input of Australia's SSPs, ASC and BAE Systems, as the leading experts on Australian sovereign submarine capability, and inform the prioritisation of resourcing and implementation of new and amended initiatives.

It will also require analysing and mapping our existing sovereign defence industrial base and its many supply chains. A range of information sources will be used to build this data, including the Industry Capability Network which is a key example of an industry data source that is capable of supporting this approach.

In parallel, existing programs that are currently operational will be strengthened (including the Defence Industry Vendor Qualification Program and Global Supply Chain Program) to support uplift in priority segments of the Australian Submarine Industrial Base.

6.2 Industry involvement in delivering the Industry Strategy

Developing and evolving a resilient Australian Submarine Industrial Base to deliver each phase of the Optimal Pathway cannot be done by Government alone; it will require true partnership with Australian industry.

- An Industry Council will be established as a consultative forum to review overall uplift progress, identify challenges and emerging risks, and explore opportunities for further expansion of industry capability. It will be chaired by the Minister for Defence Industry and Capability Delivery, with representation from industry, unions, and state and territory bodies, supported by a secretariat within the ASA. The Industry Council will also engage the Maritime Workforce and Skills Council on workforce and education matters.
- An ongoing program of **industry engagement** will be led by the ASA, to align with industry on industrial uplift priorities, requirements, and programs. The ASA will conduct structured industry engagement centred around specific program milestones on the Optimal Pathway.
- An **industry engagement team** has been stood up in the ASA to help suppliers navigate 'Defence ready' requirements and opportunities to participate in Australian and trilateral submarine programs.

6.3 Monitoring and evaluation

A rigorous performance management system will serve as a mechanism to provide confidence that Government is acting appropriately and effectively to uplift the Australian Submarine Industrial Base.

Performance outcomes will be reported to Government regulary intervals and will include updates on:

- The level of industry engagement in uplift programs;
- The scale of investment in suppliers and the resulting growth in output across individual companies, product categories, and the Australian Submarine Industrial Base as a whole;
- The number of suppliers qualified into United Kingdom and United States supply chains and the scale of orders into critical categories;
- Flow-on benefits to broader Australian capability, including suppliers serving other military capabilities; and
- The implementation of uplift programs and initiatives, including progress against schedule.

Reporting on these dimensions will be developed in partnership with Australia's SSPs and regularly reviewed to ensure that the Australian Submarine Industrial Base is progressing towards the target state. This monitoring will also inform the development of any further initiatives, and subsequent evolution of the Industry Strategy over time.



Australian Government Australian Submarine Agency