



**Defence Industry**  
Leadership Program

# **DILP**

# **Research**

# **Paper**

## **Growing a Sovereign Defence Industrial Sector with Grants**

AIC, AUKUS and the role of grants to further the Australian Defence Industry

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# AIC, AUKUS, and the role of grants to further the Australian Defence Industry

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November 2023

## Acronyms

Acronym	Meaning
<b>ADF</b>	Australian Defence Force
<b>AIC</b>	Australian Industry Capability
<b>APS</b>	Australian Public Service
<b>AUKUS</b>	Australia, United Kingdom, United States
<b>DISP</b>	Defence Industry Security Program
<b>DSR</b>	Defence Strategic Review
<b>FIC</b>	Fundamental Input to Capability
<b>MoD</b>	UK Ministry of Defence
<b>ODIS</b>	Office of Defence Industry Support
<b>PIC</b>	Priority Industrial Capabilities
<b>RAN</b>	Royal Australian Navy
<b>RN</b>	Royal Navy
<b>SICP</b>	Sovereign Industrial Capability Priorities
<b>SME</b>	Small to Medium Enterprise
<b>SSN</b>	Submersible Ship Nuclear
<b>UK</b>	United Kingdom
<b>US</b>	United States

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## Executive Summary

Tasked with researching grants as a way to support industry in the preparation towards AUKUS, this paper represents the voice of Defence Industry members and makes a recommendation to more effectively deliver a successful grant program.

The single principal recommendation of this report is to continue to offer an industrial grant program to Defence Industry, with a more specific focus on timeframes and scope. A number of enablers were identified that are required for a more focussed grant program to succeed in its goal of preparing Australia's Defence Industry for AUKUS.

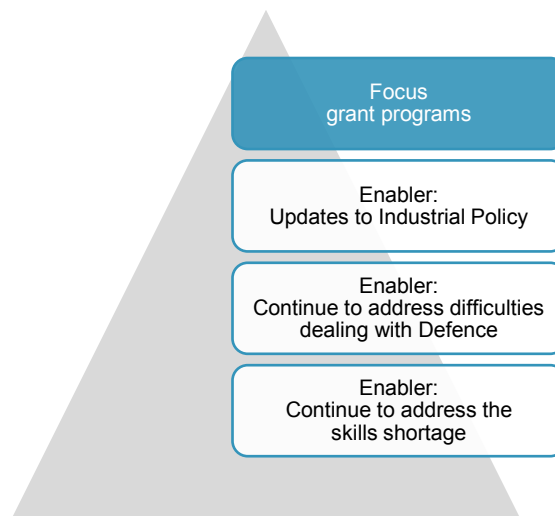


Figure 1: Recommendation

Driving the focus to a revised set of focussed grants and rework of the Industrial Participation Policy should include various Government communications. Industry requires commitments to future demand and direction on what is required from it. The current breadth and depth of Sovereign Industry Capability Priorities is inadequate. On one hand, it is too broad and too all-encompassing to allow industry to prioritise adequately. On the other hand, it is too vague and too difficult to know what compliance looks like. The lack of definition of Australian Industry Capability vs. Australian Industry Content is a good example of this.

This research paper outlines the approach taken and presents various topics for discussion, such as the value for money argument and how our allies grow their Defence Industry. Our process was as follows:

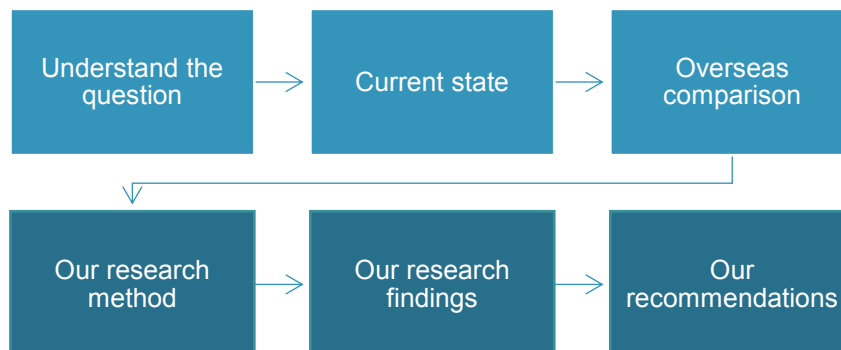


Figure 2: Process Undertaken

This research paper outlines the approach taken and presents various topics for discussion, such as the value for money argument and how our allies grow their Defence Industry.



## Context

As a result of a heightened threat environment in recent years, particularly in the Indo-Pacific region, the Australian defence landscape has changed dramatically. With Australia having to reconsider many facets of its defence strategy in the face of a threat level not seen since the Cold War, and an evolving nature of warfare where 'grey zone' activities have become the norm. This has led to a change in sub surface strategy which included the cancellation of the Attack Class Submarine Program and the announcement of AUKUS. Followed by the release of the optimal pathway for AUKUS Pillar I in March 2023 and the 2023 Defence Strategic Review (DSR) in April 2023. With the release of the Independent Analysis into Navy's Surface Combatant Fleet and an updated Defence Strategy and Defence Industry Strategy expected in 2024.

In FY24 Australia's Defence Portfolio Budget will surpass \$50b for the first time and will continue to grow to \$223.6b of the forward estimates over the next four years with the Department of Defence forecasting an average full-time workforce of 77,386 in FY24, comprising 59,673 permanent ADF (77 per cent) and 17,713 APS employees (23 per cent). This is set to grow to over 101,000, an increase of 18,500, by 2040.

This ever-growing budget and workforce are underpinned by the Australian Defence Industry which in FY22 provided \$10.6b in gross value add to the Australian economy, employing 61,600 people. It should be noted this figure only includes the direct suppliers of goods and services to the Australian Department of Defence, as a result the overall gross value add figure is likely higher.

The Australian Defence Magazine's annual rankings starkly show the makeup of the Australian Defence Industry features a dozen or so foreign multinational primes at the top of the value chain with revenues between \$500m - \$1.5b per annum who build/assemble/integrate and/or sustain defence assets. With assets ranging from a class of ship, a tank, an airframe, a building, or an IT network.

At the other end of the spectrum Australian Defence Industry has access to thousands of small companies, often responsible for the manufacture/assembly/sustainment of one or a few components for these defence assets. These companies often have revenues of less than \$10m with a mix of defence and commercial clients who have little incentive to move up the value chain.

In the middle, Australia only has a few medium size companies that break clear of the \$50m revenue barrier. These medium size companies can serve as a potential sovereign hedge against the risks of foreign multinational primes, who are attempting to juggle competing interests and are effectively able to diversify to increase business resilience and invest and innovate in conjunction with evolving needs and requirements.

Given the current make-up of the Australian Defence Industry and the massive industrialisation required to uplift Australian Defensive capability to the level required in the current heightened threat environment the question remains of how Australia will deliver on these large-scale projects such as those under AUKUS.

## Scope

The question posed to the group as part of the Defence Industry Leadership Program is outlined below:

'One approach to growing and supporting Australia's defence industry has been through government grants which help offset the hundreds of thousands of dollars businesses typically invested in getting ready for defence work. However, with no work flowing and delays to defence programs, the question remains, 'what is the value for money of these grants to the Australian taxpayer?'

Explore the role of grants in growing a sovereign defence industrial sector and how does Australia's approach compare to other countries such as Canada, UK or US?

Following the recent announcement of AUKUS and the massive industrialisation required to support this, what support/programs should be established to ensure Australian industry is prepared?'

The group focused their research on what support/programs in the form of grants would support Australian Industry Capability (AIC) as part of the Australian Defence Industry in preparing for AUKUS Pillar I, specifically the onshore construction of the SSN-AUKUS for the RAN at Osborne Naval Shipyard in South Australia. The group decided to focus on Pillar I, as AUKUS Pillar I and II require as the Optimal Pathway for AUKUS Pillar I has already been determined and very little is known about how capability will be developed under AUKUS Pillar II. Both pillars also require increasingly different support in the form of grants and policy to develop Australian Industry Capability.

For the purpose this paper the terms are regarded as having the following definitions:

- **Australian Defence Industry** - The industry sector involved in the design, development, manufacture, maintenance and support of defence products and platforms.
- **Australian Industry Capability** - The capability and capacity of Australian businesses to undertake and deliver goods, services, and technology for both local Australian requirements and international markets.
- **AUKUS** - Pillar I of the trilateral security agreement between Australia, the UK and the US focused on the delivery of a nuclear-powered conventionally armed submarine capability to Australia.
- **Grants** - Per the Commonwealth Grants Rules and Guideline 2017 a grant is any form of financial assistance provided by the Commonwealth or on behalf of the Commonwealth, except loans, paid to a grantee other than the Commonwealth to help address one or more of the Australian Government's policy outcomes while assisting the grantee achieve its objectives.



## The Challenge: AUKUS Pillar I

On the 16th of September 2021, Australia, the United Kingdom (UK), and the United States (US) announced a landmark trilateral security agreement known as AUKUS. With Pillar I of this partnership centring around the delivery of a nuclear-powered conventionally armed submarine capability to Australia, leveraging decades of experience from the US and UK. Representing the first time the US will share its sensitive nuclear-propulsion technology with an ally since the 1958 Mutual Defence Agreement with the UK. This would provide Australia the superior stealth, speed, manoeuvrability, survivability, and endurance of an SSN when compared to diesel-electric powered submarines.

On the 14th of March 2023 the optimal pathway for Australia's acquisition of a nuclear-powered attack class submarine capability was announced. Starting in the early 2030s, pending Congressional approval, the United States intends to sell Australia three Virginia class submarines, with the potential to sell up to two more if needed. The partners will then work to trilaterally develop a submarine, to be known as the SSN-AUKUS, based on the UK's next-generation design that incorporates technology from all three nations. This will include cutting edge US submarine technologies such as propulsion plant systems and components, a common vertical launch system and weapons. The AUKUS partners will also develop a joint combat system as an expansion of the US-Australia combat system.

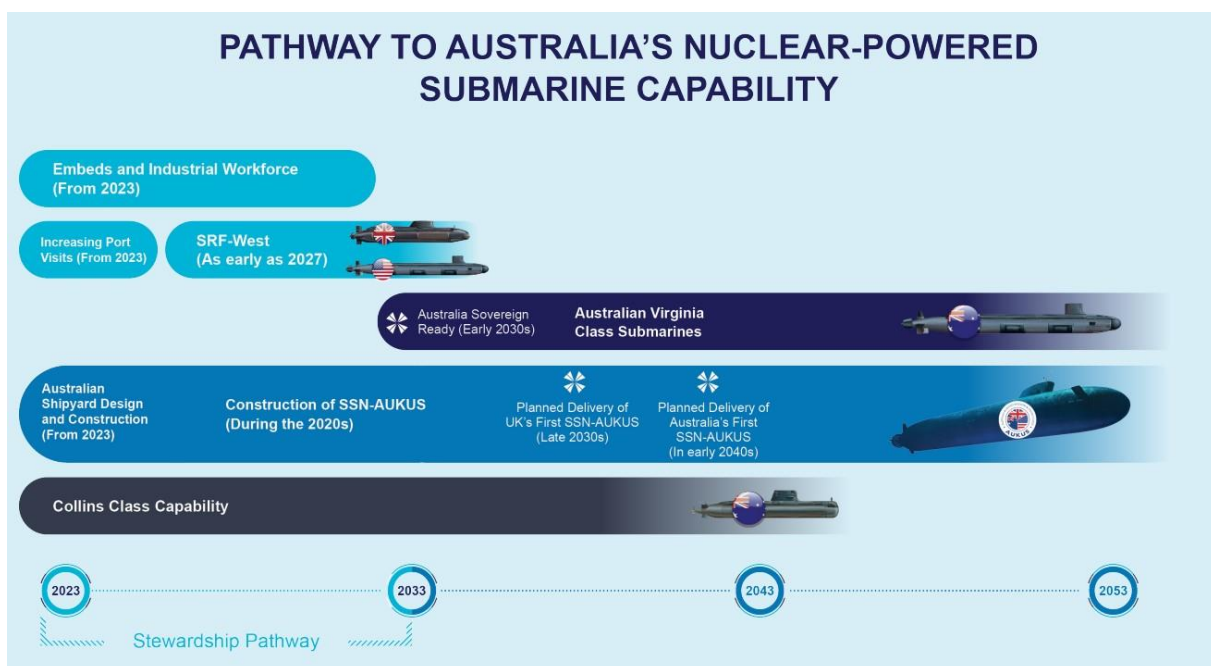


Figure 3: Pathway to Australia's Nuclear-Powered Submarine Capability

The construction of the first SSN-AUKUS for the UK Royal Navy will commence in Barrow-in-Furness, UK, as early as the late 2020s and is expected to be operational as early as the late 2030s. Knowledge and expertise will be shared with Australian engineers in the early years of construction to allow the subsequent domestic manufacture of their own fleet. Some components for the Australian SSN, including all the nuclear propulsion reactors, will be manufactured in the UK by Rolls Royce.

There is currently no publicly available roadmap to making Australia 'sovereign ready' to operate an SSN. On the 1st of October 2023 the UK Government awarded £4bn worth of contracts associated with Detailed Design and Long Leads (D2L2) Phase for SSN-AUKUS to BAE Systems, Rolls -Royce and Babcock covering the design,

prototyping and purchase of main long lead components for the first UK submarines. Australia is not a party to these contracts and is understood to not be financially contributing to the design phase at this stage.

Australia will begin constructing its first SSN-AUKUS in Osborne, South Australia, by the end of this decade and plans to deliver the first Australian-built SSN-AUKUS to the Royal Australian Navy in the early 2040s. Australia must be 'sovereign ready' before it can operate an SSN – meaning that Australia must achieve the capacity to be the sovereign owner, operator, maintainer and regulator of this game-changing capability. A series of steps will be required throughout the next decade, with the support of the United Kingdom and United States, to achieve this as early as possible.

## Current State of Australia’s Maritime Defence Industry

Australia currently operates the Collins Class Submarines which will undergo a life-of-type extension (LOTE) at Osborne Naval Shipyard in South Australia beginning in 2024. The LOTE will keep the Collins Class submarine operationally capable and available into the 2040s, supporting the transition to Australia's nuclear-powered submarines.

However, Australia has not delivered a submarine constructed at Osborne for 20 years since HMAS Rankin was delivered in 2003. This creates a capability gap, often referred to in industry as a ‘valley of death’ as vital skills and resources are lost due to a lack of continuity of work (refer to Figure 2). With the skilled shipbuilding workforce that finished the Navy’s two Adelaide-class Landing Helicopter Dock (LHD) ships and three Hobart-class destroyers a decade ago now being largely dispersed. This issue is not limited to the labour workforce, such as welders and electricians, but also for the “white collar” project managers, naval architects and engineers. Such skills cannot be quickly learnt, and it will take years to train a project manager with the skills and experience to oversee large and complex projects such as naval warships.

While the construction of the Air Warfare Destroyers and Offshore Patrol Vessels (now a project of concern) have kept the workforce busy as well as the upcoming Hunter Class Frigate program (refer to Figure 3) there have still been vital skill sets lost that are essential for the construction of a submarine.

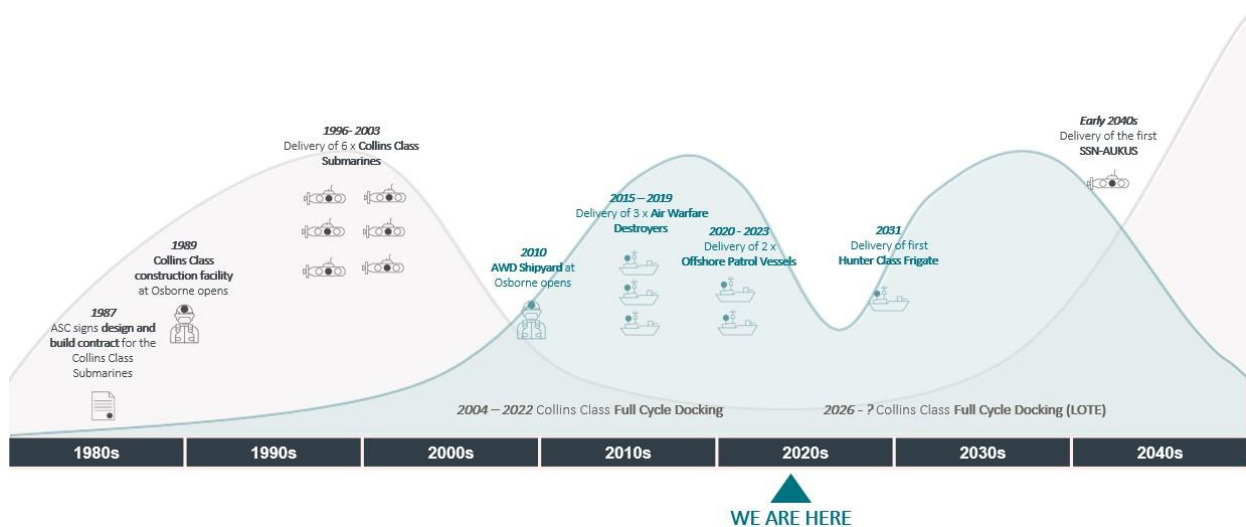


Figure 4: Construction at Osborne Naval Shipyard

Submarine construction includes a number of additional complexities compared to the construction of the aforementioned surface fleet vessels. These complexities multiply greatly when constructing a nuclear-powered submarine due to the specialised skill sets required with nuclear propulsion engineers needing the best part of a decade to become competent and experienced enough to contribute to nuclear submarine capability. Some believe its construction is more complex than building a rocket to go into space. Therefore, in order to meet the Commonwealth’s requirements for a continuous naval shipbuilding enterprise and the build of SSN-AUKUS, these skills – and more – have to be recreated, relearned and the workforce adequately motivated to remain in the industry. This is often easier said than done, given the salaries available in industries requiring similar skills, such as the mining and energy sectors.

## Mechanisms to Support Australian Industry

### Grants

Financial grants are used to support the industrial sector in order to provide sovereign outcomes to Defence customers. A balanced market model allows industry to be self-sufficient and self-aligning. This is required due to the unique capabilities Defence requires and the inconsistent nature of Defence procurement. Markets more established than Australia, such as the UK or US, also offer financial assistance to support industry to benefit Defence (refer to International Examples of Growing Sovereign Defence Industry, Page 18).

This direction of this report is to focus on financial grants designed to support growth and development of Australian Industry. We note there are other funding models available that also achieve the result of increasing capability or capacity in industry:

- Defence funding capability directly under procurement contract, e.g. Loyal Wingman
- Program-specific acquisition strategies, e.g. F-35 partner manufacturing share
- Procurement offsets, e.g. Indian Defence Offset
- Tax benefits, e.g. Research and Development Tax Incentive
- Private investment, loans from private sector

The financial grants currently available to Defence Industry through the Office of Defence Industry Support (ODIS):

Title	Grant
Skilling Australia's Defence Industry	Up to \$500,000 available to eligible businesses or Defence Industry Associations Up to 100% of the project cost  For defence sector skill development and human resource practices and training plans
Sovereign Industrial Capability Priority	Between \$50,000 and \$1 million available to support eligible businesses Up to 50% of the project cost  For building capabilities aligned with Defence's Sovereign Industrial Capability Priorities
Defence Global Competitiveness	Between \$15,000 and \$150,000 available to support eligible businesses Up to 50% of the project cost  For investment in projects that build defence export capacity
Joint Strike Fighter Industry Support Program Sustainment	Phase 1 and 2 - up to \$250,000 for Australian companies provided an assignment by the United States Government for maintenance and repair activities for existing components used in the Joint Strike Fighter Program  Phase 3 and 4 - funding to be determined by the Department of Defence under the amount outlined in your supporting business case

Joint Strike Fighter Industry Production and Modernisation	Between \$150,000 and \$1.5 million available for eligible businesses Up to 50% of the project cost For the development of new or improved capabilities that will win work in the production and modernisation phases of the Joint Strike Fighter Program
US-Australia International Multidisciplinary University Research Initiative	Up to \$1 million per year over 3 years Available to Australian universities involved in a successful submission to the US Multidisciplinary University Research Initiative (MURI) program

An overview of Defence Grant funding can be seen below with a severe reduction in both Value and Volume of issued grant since 2021.

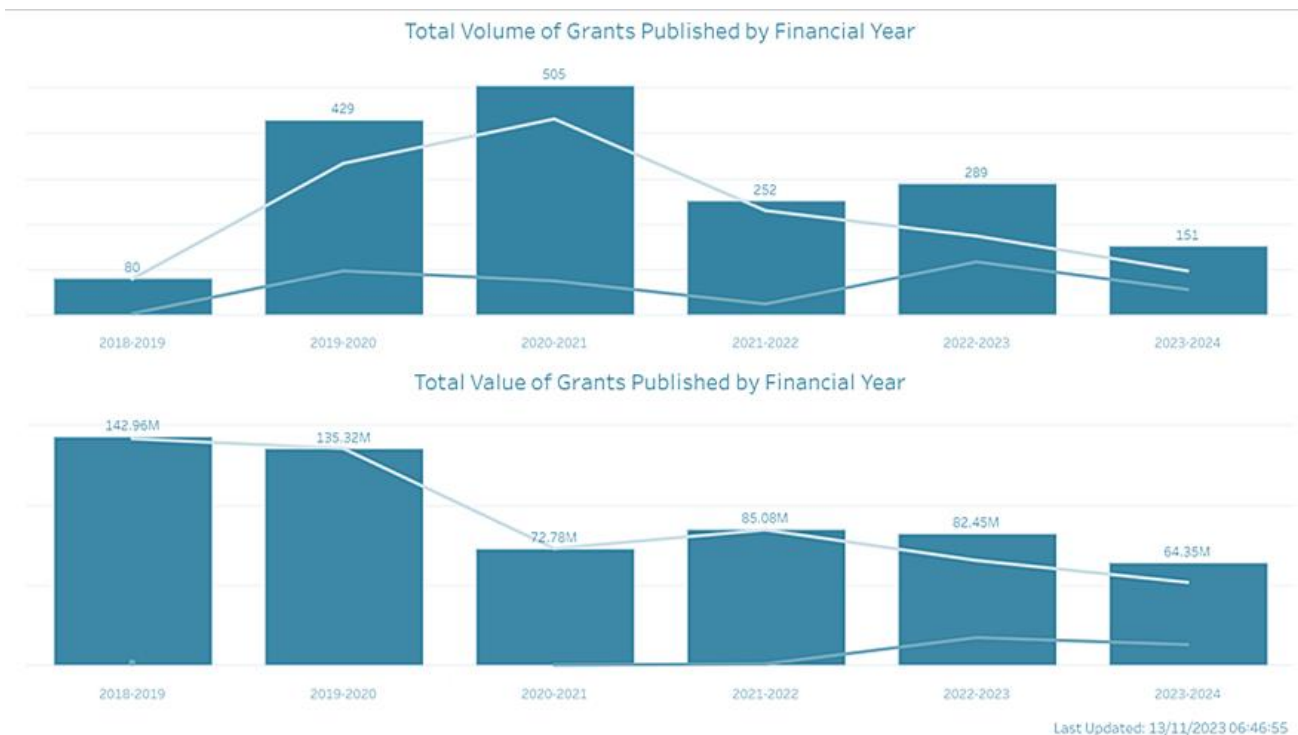


Figure 5: Total Volume and Value of Grants Published by Financial Year

The government has also announced the upcoming release of the National reconstruction fund. Providing finance to help grow commercial industries such as medical, science, transport and renewables. This will allow Defence to benefit from building local capabilities with a shared commercial sector interest.

## Sovereign Industrial Capability Priorities

In April 2018 the Government released the Defence Industrial Capability Plan which sets out a long-term plan to build and grow a robust and competitive defence industry. This plan identified a number of focus areas for industry to grow and deliver mission critical capability in known as Sovereign Industrial Capability Priorities.











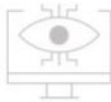
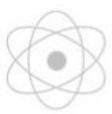


Combat clothing survivability and signature reduction technologies 	Munitions and small arms research, design, development and manufacture 	Land combat and protected vehicles and technology upgrades 	Aerospace platform deeper maintenance and structural integrity 	Collins class submarine maintenance and technology upgrade 	Continuous shipbuilding program (including rolling submarine acquisition) 	Enhanced active phased array and passive radar capability 
Advanced signal processing capability 	Surveillance and intelligence 	Test, evaluation, certification and systems assurance 	Robotics, autonomous systems, and artificial intelligence 	Precision guided munitions, hypersonic weapons, and integrated air and missile defence systems 	Space 	Information warfare and cyber capabilities 

Figure 6: Sovereign Industrial Capability Priorities

## Australian Industry Capability Program

The Australian Industry Capability (AIC) Program is an initiative of the Commonwealth Government designed to develop the Australian industrial base capability by increasing Australian industry participation in all major defence capital acquisition projects valued at \$20 million and above. Priorities include value added work and the enhancement of supply chain networks. Key objectives of the AIC program are to assist SMEs to overcome the barriers to entry to the defence industry, grow participation of SMEs in defence contracting, provide opportunities for local companies to compete on own merits, encourage investment in Australian industry and to facilitate transfer of IP and technology rights.

The push to promote Australian Defence Industry capability through government industrial policy started in 1985 with the Defence Policy Principles for Australian Industry. The 1987 Defence White Paper formalised the relationship between defence capability, defence industrial policy and defence capital procurement. The cost premium incurred with local industry involvement in the provision of ADF assets and materials, along with delays in delivery and performance concerns limited growth within the sector. In a renewed push to develop the defence industry, in 2007 priority industrial capabilities (PICs) were identified by the then government. After the PIC's failed to meet their objectives, in 2016 Fundamental Input to Capability (FIC) was announced including a detailed plan for AIC development through the use of embedded AIC plans within future ASDEFCON defence procurement contracts. In 2018, Sovereign Industrial Capability Priorities (SICP)s were released to cover 80% of production superseding the PICs (covering only 20%).



The vast number of defence policy resets demonstrate the difficulty in government achieving the defence industry growth objectives. To date delivering the desired level of AIC has proven challenging for a number of reasons including those listed above as broader industry challenges.

### Value for Money

The priority for successive governments to develop an Australian sovereign industry capability to service defence capability requirements has grown over the last four decades. There has been a seismic shift from the preference to deliver defence capability at the most economic acquisition cost, leveraging lowest cost of production from foreign manufacturers to a position in 2023 where control over systems, domestic sustainment, and less reliance on foreign suppliers are all now priorities. The cost premium for domestic manufacturing of defence assets and materials is well documented. However, successive governments have continued to advocate for the establishment of a sovereign industry capability and therefore the public benefit to achieve this outcome is deemed greater than the cost although historically governments have shown to favour overseas options when time and cost implications are at hand. The limited size of the Australian defence equipment market has led to prioritising the most critical defence capabilities for targeted financial support. (APC 2023)

Grants are a popular tool used by government to prosecute policy and have been used to finance initiatives to build the Australian defence industry. Gauging whether, or not a grant program is “value for money” is dependent on how value is defined. It also changes depending upon the lens through which you are looking, different stakeholders derive different benefits.

Defence industry grant recipients deemed the benefits of applying for the grant outweighed the cost and not surprisingly a recent review of defence grants observed approximately 80 per cent of grant recipients reported tangible benefits to their business within the first 12 months of the grant program. The same proportion of grant recipients expected to experience positive benefits to their business within one to three years (CDIC July 2020).

In order to judge whether defence grants offer value for money to the “taxpayer” a three-pillar model comprising economy, efficiency, and effectiveness was applied.

Economy is concerned with maximising the economic benefits to the public and in terms of the lowest cost metric alone, owing to economies of scale and higher input costs, the domestic defence industry is unlikely to be the lowest cost producer. However, advocates for the sector suggest there may be other economic benefits around increase in advanced manufacturing, increase jobs and spillover effects into other neighbouring sectors. Grants are often rationed through a criteria based process in which the highest value grants are selected from a pool of applicants thereby improving economic allocation of grant funds.

Efficiency refers to prioritising the most critical tasks and directing resources to achieving the stated objectives. Therefore, if developing a sovereign defence industry capability is deemed a high public priority then it is efficient. Funding SICP’s is a deliberate attempt to increase grant efficiency.

Effectiveness measures the extent to which the overall stated objectives of the program have been delivered. A Grants Management in Defence Audit Report from June 2020, prepared by Audit Branch, found that Defence Grants were poorly designed with sub optimal implementation. Overall, they found there was inadequate monitoring, measurement, and evaluation of the grants. (GMDR 2020)

Agencies tasked with allocating funds are often measured on the amount of funds allocated. Improving monitoring and measurement of grant performance, and increased transparency of grant performance will go a long way to improving public confidence in the use of grants to the industry.

## Challenges for Australian Defence Industry

In order to deliver the capabilities required under AUKUS Pillar I and II as well as support the recommendations of the 2023 Defence Strategic Review, a number of key challenges need to be addressed. Broadly those challenges can be grouped into four categories, innovation, industry support, procurement, and value for money. (1)

The Australian Defence Industry faces a number of key challenges to support and grow including inconsistent demand cycles, high business input costs, high compliance costs, complex barriers to entry, access to skilled labour, workforce retention, limited intellectual property, export barriers and export control compliance. Additional challenges for SMEs include limited access to funding, access to defence contracts, high costs associated with managing complex contracts, and cashflow burden from long lead times and contract delays.

A number of support agencies have been established to assist industry with the challenges faced when working with defence, for example: , AIDN, Defence Innovation Hub, DTC, ODIS, AI Group, Defence SA. As can be seen from Defence Industry Ecosystem diagram below, the supply of products and services into defence is a complex ecosystem with two major classes of supplier (Primes and SMEs) and multiple support entities to assist suppliers and defence engage. Government grants play a role in supporting suppliers to do business with defence and often include partnerships between the suppliers, purchasers and support entities.

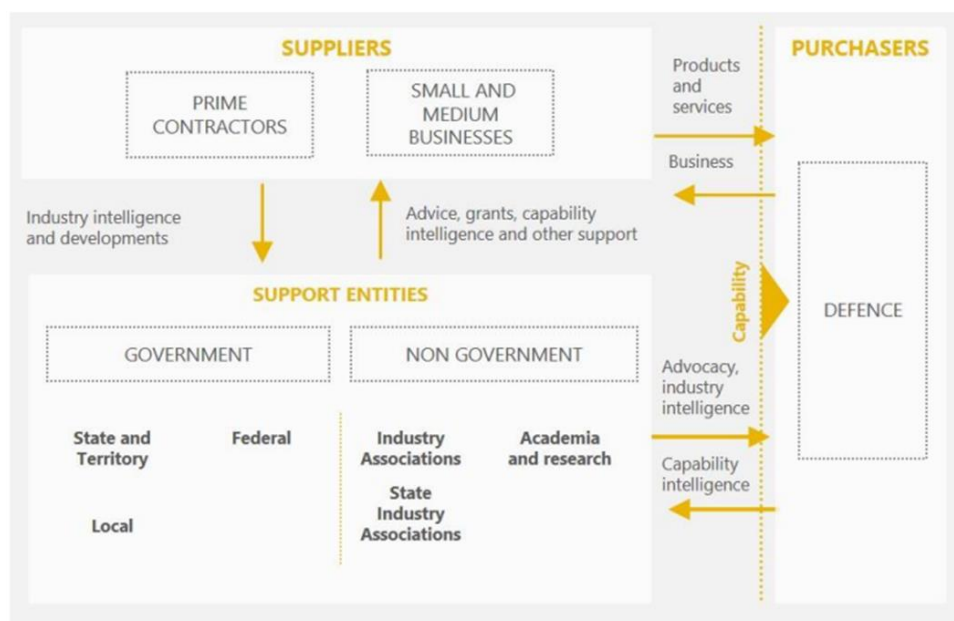


Figure 7: Defence Industry Ecosystem (extract CDIC Report 2020, p19)

Volatile defence demand, infrequent orders of large capital assets such as submarines and naval vessels combined with ad hoc upgrades and modifications create a situation whereby there are huge oscillations between peaks and troughs in demand this creates challenges for all defence industry firms as maintaining and retaining the resource is required to service this sector comes at quite a cost.

High business input costs, long tender/bid cycles with frequent delays, postponements and cancellations (for example: Land 400 Ph3 programme and Attack Class submarine contract), mean business must outlay significant resource, human and financial, and then wait out for long periods without any revenue to offset the upfront cost.

Regulatory impediments are expensive and cannot be transferred to other industry endeavours. This includes costs associated with Defence Industry Security Program (DISP) certification, security clearances, and qualifications. Many of these costs are ongoing and prerequisite to securing further contracts, therefore will always be a significant burden on the cash flows of the business as identified in the latest Australia Productivity Commission Review into the defence sector.

Access to finance is a major challenge for SMEs in the defence sector. High barrier to entry costs, high capital investment requirements for capital assets and ongoing regulatory and compliance costs all place significant pressure on the financial resources of defence industry firms. Without a regular steady income stream, securing debt finance from financial institutions can be challenging particularly for early phase firms without a high asset base in which to securitise the debt to. The high cost for small firms to access capital from capital markets prevents this mechanism from being a viable solution to the financing conundrum. Short of capital guarantees from the government the risk to financiers in such an uncertain environment is too great particularly when you add the additional complexity of the context of defence where the opportunity to exit and cash out your equity is limited.

Highly skilled labour for the building and sustainment of ADF assets including high technological competence, some of which are transferable to the broader economy however many are not in a very specific to the defence sector.

There is a high level of concentration within this market with only a few large primes with a very high level of foreign ownership this limits competition and places a high reliance on firms who ultimately report to foreign owners. To date evidence of IP transfer from foreign to sovereign industry is limited.

There are impediments to exporting Australian defence innovation, regulatory barriers concerned with national interest along with limitations to the imports from foreign allies such as export controls that place restriction on trade. Other export hurdles include high labour cost in Australian industry, high material costs, highly regulated industry sector and costs associated with physical distance. Ultimately, economies of scale are the ADI's Achilles heel. Given competing national defence, security and industrial interests Australia is unlikely to ever be the lowest cost supplier to the international defence sector. Strategic export partnerships, such as those signalled under AUKUS seem like a more realistic goal. However, it is yet to be seen whether Australia will benefit financially and industrially from the alliance.

Aside from the significant workforce shortages within the ADF, as it's situation has been deteriorating for some time, there are also shortages in the Australian defence industry, which are only set to increase with the rollout of AUKUS. The DSR identified a workforce of 20,000 workers would be required over the next 30 years to build nuclear submarines.

The current planned approach to address these workforce shortage issues within the growing defence industry include a portfolio of initiatives that will deliver highly skilled workforce to support the projects critical to the delivery of AUKUS which include additional university places of up to 4000, additional funding to develop education for stem and other areas related to naval shipbuilding, an expansion of the defence industry pathway programme for shipbuilding within WA to the value of \$11.4 million. In SA the Australian submarine agency is working with government, industry and the tertiary sector in the design on future courses to train and upskill the workforce future submarine naval shipbuilding, in particular the special skills required to maintain and build nuclear powered submarines.

## International Examples of Growing Sovereign Defence Industry

Building strong defence capabilities is a multidimensional policy objective that requires a number of agencies to work together to ensure national security. To attempt to understand how Australia can better support its own sovereign industrial base, the project team looked at how this has been done by other countries, including the UK, Canada, and the US. These countries use a mix of strategic planning, policy initiatives, financial support, research, direct acquisition, collaboration, and emerging technologies to enhance their capability. While they all spend a considerable amount on defence and emphasise the importance of partnerships and alliances as well as focusing on developing their own technology, their approach has already varied in other areas. For example, how they involve small businesses, how much they rely on their allies, and if they focus more on regional or global security. Knowing these differences helps us understand the unique challenges and successes each country faces in making their defence stronger.

The Common themes between the regions are:

- **Budget Allocation:** All countries allocate a significant portion of their budget to defence spending.
- **International Collaboration:** Collaboration with allies and partners for joint defence projects is a common trend.
- **Technology and Innovation:** Emphasis on R&D, emerging technologies, and innovation across all regions.

Key Differences between the regions are:

- **SME Engagement:** Varies significantly across countries, from significant initiatives in the US & UK to challenges in Canada due to low-frequency purchases.
- **Dependency and Consolidation:** Varies with the US experiencing sector consolidation while the UK aims to maintain operational independence.
- **Regional Focus:** Australia's strong emphasis on regional stability compared to the global influence strategies in the UK and US.

Each country has its unique challenges, successes, and strategies in growing its defence capabilities, ranging from local SME engagement, international collaborations, innovation, and budget allocation. The focus areas and strategies are tailored to their specific geopolitical contexts and national security priorities.

### Australia



*Regional Focus:* Australia's defence growth is heavily influenced by its position in the Indo-Pacific region. The country invests in naval and air capabilities to maintain regional stability.

*Collaboration:* Australia collaborates with regional allies and partners, such as the US, to enhance its defence capabilities and deter potential threats.

*Cyber and Space:* Australia places a strong emphasis on cybersecurity and space capabilities to address evolving challenges in these domains.

Australia grows its defence capabilities through a combination of strategic planning, budget allocation, research and development, procurement, international collaborations, and technological advancements. Defence budget papers show spending for 2023-24 will reach \$52.558 billion – 2.04 per cent of GDP – up from \$49.131 billion – 1.93 per cent of GDP – in 2022-23. The Government will invest more than \$19 billion to implement the immediate priorities identified in the DSR. The Australian government allocates a significant portion of its budget to defence. This funding supports the acquisition of new equipment, maintenance of existing assets, and investments in research and development.

The Government will invest \$3.4 billion over the next decade to establish the Advanced Strategic Capabilities Accelerator (ASCA). This is an additional \$591 million above current planned spending on defence innovation. The Defence Strategic Review concluded that we need more effective support for innovation, faster acquisition and better links between Defence and industry to deliver the capabilities the Australian Defence Force (ADF) needs. In 2022, the government announced its Buy Australian Plan to ‘improve the way government contracts work and build domestic industry capability through the Australian Government’s purchasing power’. The Buy Australian Plan recognises commonwealth procurement as a major Defence, ‘Australian Industry Capability Program.

## United Kingdom



*Global Influence:* The UK’s defence growth aims to maintain its global influence. It invests in technology, innovation, and modernisation to support global peacekeeping and address diverse security challenges.

*Collaboration:* The UK actively collaborates with the US and other international allies on joint defence projects, contributing to industry growth and interoperability.

*Cyber and Technology:* The UK invests in cybersecurity and emerging technologies, including artificial intelligence and space capabilities, to stay at the forefront of military innovation.

The UK aims to grow its defence capabilities through a combination of strategic planning, budget allocation, research and development, procurement, collaboration, and international partnerships. The UK is the second largest exporter of defence products. With a budget spend of \$108B, there is a large proportion (40%) going to local industry - \$40B. Although this is a large investment into local industry, this is primarily directed to larger primes, with only 5% direct SME funding. Traditionally, SMEs are incorporated into defence industry through prime engagement.

Recently, the UK Ministry of Defence (MoD) has sought to increase SME engagement through various direct initiatives as set out in the Defence and Security Industrial Strategy (DSIS). This aims to keep defence capability onshore without succumbing to the pressures of utilising a competitive overseas market.

The MoD will engage with SMEs at a far greater level than going through Primes. They will launch a new supplier development programme that recognises the importance of SMEs more generally and that enables more of them to participate in MoD projects. This encourages non-defence SMEs to engage with defence to bring greater creativity and innovation to the industry.

To engage with private investment, the government has established and promotes the NSSIF (National Security Strategic Investment Fund) to grow defence companies.

With an established defence industry, the government has implemented strategies to maintain onshore the most significant aspects of purchasing from overseas, these include systems integration, upgrades, manufacture of critical components, testing and evaluation and eventually maintenance thus becoming operational independence.

The Defence Command Paper 2023 recommended a decrease in procurement hurdles by reducing risk profiles to achieve speediness of capability such as the acceptance of the 80% readiness.

In addition, more importantly, the industry has been given surety of work as the MoD has published its future pipeline of work through the Equipment Plan, Defence Capability Framework, Acquisition Pipelines, and sector strategies such as the Land Industrial Strategy and Defence Space Strategy.

## Canada



*Strong:* Strong at home, its sovereignty well-defended by a Canadian Armed Forces also ready to assist in times of natural disaster, other emergencies, and search and rescue.

*Secure:* Secure in North America, active in a renewed defence partnerships in NORAD and with the United States.

*Engaged:* Engaged in the world, with the Canadian Armed Forces doing its part in Canada's contributions to a more stable, peaceful world, including through peace support operations and peacekeeping.

Canada strategically develops its defence capabilities by employing a combination of strategies and investments aimed at safeguarding national security and contributing to international peacekeeping initiatives. Despite being a relatively small defence market, Canada allocates 1.3% of its GDP, amounting to an annual defence expenditure of \$30 billion, with a predominant focus on defence personnel spending. The Industrial and Technological Benefits (ITB) Policy, implemented in 2014, plays a crucial role, ensuring that Canada and its industries benefit from government defence and security procurement. This policy mandates the integration of Canadian firms into the global supply chains of foreign primes winning Canadian contracts.

However, due to the infrequency and low volume of defence product purchases by the Canadian government, relying solely on local capability is deemed unrealistic and unsustainable for maintaining, let alone growing, the local industry. Despite this challenge, Canada actively modernizes its armed forces, emphasizing advancements in naval and air capabilities. Key projects involve the acquisition of new naval vessels and fighter aircraft, reflecting a commitment to technological advancement and operational efficiency.

Canadian defence companies play a proactive role by seeking export opportunities and partnerships, thereby contributing to economic growth and establishing a robust presence in the global defence market. Canada's investment in defence research and development focuses on fostering innovation in areas such as defence electronics, aerospace technology, and naval systems. This commitment ensures a competitive edge in the evolving landscape of defence technology.

Canada often collaborates with its allies, particularly the United States, on defence projects. This not only enhances the country's defence capabilities but also fosters international partnerships.

The growth of Canada's defence capabilities directly enhances national security, ensuring the country's preparedness to effectively respond to security threats and challenges. Canada's approach to expanding its



defence capabilities exemplifies a strategic balance between modernisation, innovation, and collaboration with international partners. This multifaceted strategy addresses the unique security challenges posed by Canada's vast and diverse territory, contributing not only to national security but also to economic growth and global peacekeeping efforts.

## United States



*Global Military Dominance:* The US maintains the world's largest and most influential defence industry. It invests heavily in R&D and military technology to retain its global military dominance.

*Space and Cyber:* The US places a strong emphasis on space and cyber warfare capabilities, reflecting the evolving nature of modern conflict.

*Collaboration:* The US frequently collaborates with its allies, including the UK, Canada, and Australia, on joint defence projects, enhancing industry growth and interoperability.

The US Defence market is a large established Industry with heavy government spending accounting for 3.3% of GDP, equating to over \$2T in total spend in the current year (Increases in commitments to Ukraine)

Over the past 30 years, the defence industry in the US has undergone a sector consolidation, with a reduction from 51 to just 5 primes. This has reduced competition and heightened national security risks. Such consolidation leaves the DoD increasingly reliant on a handful of companies for critical defence capabilities e.g. 90% of missiles come from only 3 sources. It also impacts taxpayers, as companies no longer feel the competitive pressure to innovate or perform at the highest level to win contracts.

To promote competition in the defence industry, the government has aimed to increase small business participation the government via the "Small Business Strategy". The strategy promotes a strong, dynamic, and robust small business industrial base by focusing on reducing barriers to entry, increasing set-aside competitions, and leveraging programs to grow the industrial base.

There is also a push to increase usage of commercial items in defence acquisitions. This has seen an increase to 30-50% of all procurements are commercial items. This helps promote local industry.

## Research Topic Methodology

The team adopted a qualitative research approach, where we investigated the challenges faced by the defence industry in the past, experiences with the AIC program and defence industry grant funding. In addition, we explored views around the capabilities required to deliver AUKUS and future funding initiatives to assist in achievement of this objective. Covering such a large complex area with so many facets required a methodology suited to canvassing such a vast array of factors hence we opted for a qualitative interview method.

This study draws upon a number of different data sources, the primary data source for our research project was face to face interviews, in addition to archival data including government reports, news articles, independent inquiries, industry reports, parliamentary documents, and defence industry research journals. Drawing from multiple data sources strengthens our findings and provides strong support for our recommendations.

Firstly, we performed a literature review of Defence Grants, Defence and government reviews and reports, and published articles. Our review encompassed a survey of the defence industries in United States, United Kingdom and Canada. Reports spanning decades discussed recurrent factors, with persistent challenges despite numerous attempts to transform the industry.

We synthesised the extensive literature with a focus on the key capabilities gaps between the current state of the Australian defence industry and the required future state of the industry in order to deliver AUKUS.

Next we prepared a series of questions, on how to best support the development of Australian Industry Capability, through the use of grants to bridge these gaps. We tested these questions on a few trial interviewees. Based on the results of the trial interviews we refined the questions to form an interview script to guide the semi structured interviews for all remaining participants. Data collected covered: Current position; Industry experience; Grant experience (International and Domestic); Industry growth challenges (Financial, Human resourcing, Systemic, Regulatory, other); Defence supply chain challenges; targeted support focus area. The 6 six target focus areas tested were:

- Tender / bid support
- Import / Export
- R&D Innovation
- Human Capital
- Capability building
- Capital investment

We targeted all areas involved with defence industry and achieved good representation from the defence industry including numerous Primes, SMEs, and advocate bodies. The five members of the team reached out to their designated contacts within this Defence sector and collectively we interviewed 20 senior executives and C-suite management from across the Australian defence industry. Including government funding agencies, defence Primes, small medium enterprises, and industry organisations.

Interviews took place over a four-week period in September and October 2023. Team members met with the interview participants either face to face or via teams and interviews averaged 45 to 60 minutes in duration. The use of semi structured interviews enabled participants to contribute to our understanding of grants to develop AIC growth and development and provided valuable insights into the best practise observed internationally including in North America and Europe. Recorded interviews were transcribed, the research team coded the interview transcripts noting key themes relating to the core question of grants and AIC development. Throughout the interview. The team regularly met to discuss their findings and calibrate they're thinking. Upon completion of coding the final interview the research team met at UniSA for the day to thematically code all the interviews. Working through each of the interviews collectively we harmonised the coding, working through any differences in coding with a thorough robust discussion, moving on only once everyone agreed.

## Findings

From the interview questions, many consistent challenges appeared from various interviewees.

Business friction, which involves time and cost of entering the market, long lead times in either procurement, design, or acceptance phases. These challenges discourage new entrants to the market, reducing competition, and reducing innovation in the defence industry which inhibits growth. Furthermore, the difficulty of maintaining and operating within the defence industry once entered was also highlighted by a few interviewees. Speaking to time and cost in dealing with defence:

*“In defence, it took us probably five or six years (to enter). It’s happening a bit quicker now. And then just the cost of doing it, cost of understanding, cost of tendering, cost of getting your systems up to scratch too to do defence.”*

Another key challenge identified was the inconsistent approach by the Government which has caused severe uncertainty and discourages new market entrants and creates hesitation when companies are looking for long term investment. The lack of government direction with low demand signals has consequences that lead to a lack of continuity in available work and long-term programs. The flow on effect of this uncertainty can cause companies to exit the market in search of consistent and profitable work in other industries.

*“Some of our competitors in subcontractors in WA especially, they’re moving away from Defence.....into resources markets”*

*“SMEs need a customer, the government is their only defence customer, so it needs to be there, present for the SME otherwise there is no demand. Understanding you are probably the SME’s only customer, then understanding what you do has a direct impact on the success and failure of the SME. Cashflow and profitability will help the SME to succeed or fail. Understanding profit is not a bad word.....we have this said to us by lots of international customers who understand that a business needs to be profitable to survive.”*

Clear government policy direction was also highlighted as a key problem by the industry interview participants. A clear direction of what is actually wanted and required from the industry in regards to capability vs content, especially moving into AUKUS and an overall push for stronger AIC enforcement with tangible outcomes. An update to the SICPs which was identified as being too broad and possibly outdated.

The next major theme that came up in most interviews was the short-term problem of human capital. The current lack of skills leads to high labour demand. One of the biggest challenges to grow local industry is to have high investment in people. Current skills grants are being utilised by industry for upskilling and retention as was evident in an interview whereby a grant was used to keep people employed, doing training when there was recent slump in defence work. From overseas experiences, the interviewees stated that due to the high demand, there was a high labour force so the industry had different problems e.g. working in the US there was a strong skilled workforce, the problem came down to a low facility capacity to undertake the high volume of works.

## Survey Results

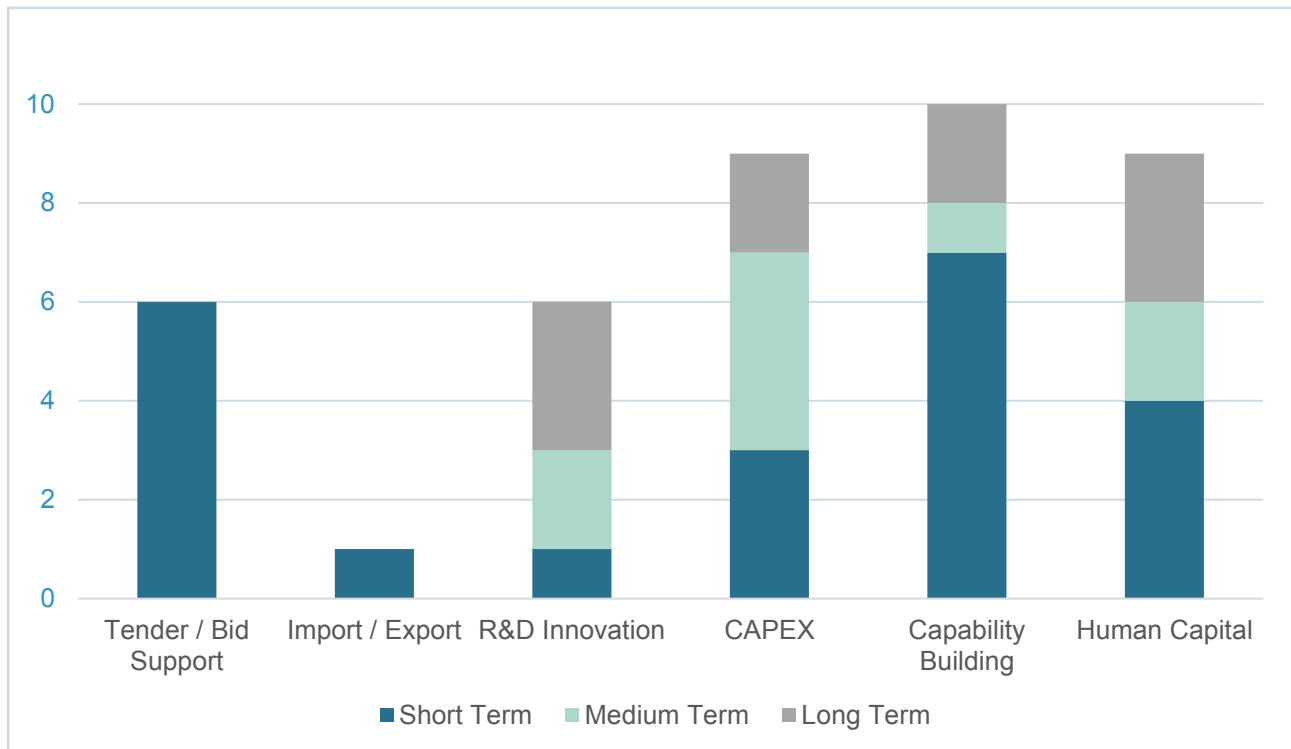


Figure 9: Grant Focus Areas by Time Period for AUKUS Pillar I Survey Results Graph

	Tender / bid support	Import / Export	R&D / Innovation	CAPEX	Capability Building	Human Capital	Totals
Short 0-2 years	6	1	1	3	7	4	<b>22</b>
Medium 2-5 years	-	-	2	4	1	2	<b>9</b>
Long 5+ years	-	-	3	2	2	3	<b>10</b>
Totals	<b>6</b>	<b>1</b>	<b>6</b>	<b>9</b>	<b>10</b>	<b>9</b>	82 data points

Figure 10: Grant Focus Areas by Time Period for AUKUS Pillar I Survey Results Table

## General Response Commentary

- *Tender / bid support* – A short term support was identified mainly for SME assistance and for new market entrants. This will help with the high cost of entry to promote competition and help increase innovation with Defence access to commercial partners.
- *Human Capital* – Very much SME focused noting current challenges with employee retention and long term employment within industry. The desired outcome involved long term strategy with multiple stages of funding starting with the early development of local people. Skills sharing and embedment with overseas partners to learn and upskill. This also requires government policy and direction for industry to engage with long term commitments and private sector investment.

*“It's easier to build a building that is to build a nuclear engineer.”*

- *Capability building* – The most focus was on this one with a very short-term focus. These include things such as DISP assistance, accessing IP, specialist software to enhance cyber security design, engineering and commissioning activities.

*“I would prefer the government funded a project or bought a product. Helping to create the demand and indirectly funding the building of the capability. Companies want a customer over a grant. This helps drive innovation, commitment and delivery.”*

- *Capital investment* – This was surveyed as high on the list with business looking to seek funding for capital investment in specialised equipment, that possibly cannot be used in a commercial aspect. Grant funding also helps share risk, as the desire isn't to get a fully subsidised item, rather than to get government commitment and co-investment.

*“I don't think in my eyes the best way to do it is not a grant for 100% of the solution, but it may be something where there's a joint investment between industry and the government in a capability so that both parties have got a buy in.”*

One interviewee has stated the below in relation to looking at an overall grant program:

*“So I guess if you look at it in chunks, it's getting the right people skilling process up and running, get the right tooling and buildings and things like that, facilities they can work from. And then the R&D piece is the refinement and make things even better with better ways of doing, working, etc.”*

## Key Themes

From the data presented and incorporating feedback from the interviews, key themes were drawn out. These were mapped to locate interdependencies and identify the critical issues the research recommendations should focus on.

1. Lack of continuity, lack of demand signals, lack of overall government direction
2. Business confidence low, record levels of uncertainty
3. Australian content vs. Australian capability, what is the requirement.
4. SICP's too broad and too open
5. Tender & bid support to become compliant and become a Defence ready supplier.
6. High cost of entry, DISP, timeframes, clearances, cyber compliance
7. Long lead times when work underway.
8. Skills shortage.
9. *Continuity of R&D funding, short sighted approach.* \*
10. *Import / Export.* \*\*

\* Although surveyed and a key theme identified, the recent mobilisation of ASCA and the nature of how it's focus lends itself to the type of funding ASCA delivers (not a grant), this key theme was discounted and determined not be part of the Project focus.

\*\* A key theme was the general lack of engagement and response to this category. There has been recent Government activity in this area by way of the release of the Defence Trade Controls Amendment Bill 2023 which will provide reduced controls in dealing with AUKUS partners. Additionally, there is the Defence Global Competitive Grants which helps business grow Defence export capability. For these reasons this key theme was discounted and determined not to be part of the Project focus as it has treatments in other areas.

The 8 remaining key themes can be distilled into 3 main collectives to form the basis of where best to make our recommendations against:

Industrial Policy area	Business friction	Human capital
<ul style="list-style-type: none"> <li>•Lack of continuity</li> <li>•Low business confidence</li> <li>•Australia content vs. capability</li> <li>•SICP focus</li> </ul>	<ul style="list-style-type: none"> <li>•Tender &amp; bid support</li> <li>•High cost of entry</li> <li>•Long lead times</li> </ul>	<ul style="list-style-type: none"> <li>•Skills shortage</li> </ul>



## Recommendations

The single principal recommendation of this report is to:

### Utilise a focused grant program within specific timeframes to support the Australian Defence Industry.

Rather, continue to offer an industrial grant program to Defence Industry with more specific focus on timeframes and scope.

Short term 0 – 2 years	Medium term 2 – 5 years	Long term 5+ years
Capability Building	Capital Investment	R&D and Innovation
<ul style="list-style-type: none"> <li>Getting SME's 'Defence Ready'</li> <li>Compliance, accreditations</li> <li>DISP, cyber-certifications</li> <li>Human capital</li> </ul>	<ul style="list-style-type: none"> <li>Equipment</li> <li>Facilities</li> </ul>	<ul style="list-style-type: none"> <li>Speculative work</li> <li>Lack strong requirements</li> </ul>

We recognise the focus areas above are actively being addressed through various initiatives, yet the data collected through interviews still brought to light a need to focus on these areas over others. The reason is not for lack of education. Our recommendation is to remain focussed in these areas or apply additional controls to increase effectiveness. An interesting observation is the definition of 'capability' that was drawn from the interview commentary. Rather than specialist engineering or design capabilities, or a series of manufacturing processes to deliver a product, the 'capability' refers to the ability for SMEs to access work in the Defence supply chain.

Below are the critical areas identified as enablers and dependencies that are required to support a revised grant program. Without these areas a refocussed grant program will not be effective.

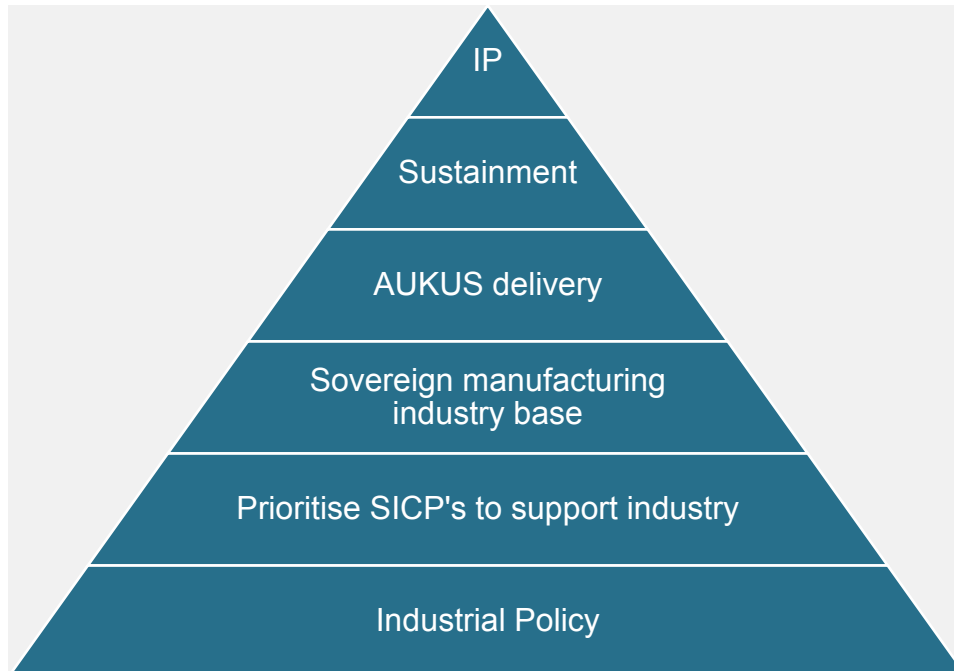
1. Industrial Policy
2. Continue to address challenges dealing with Defence customers
3. Continue to address the skills shortage

### Enabler: Industrial Policy

We recommend rework or revision to the 2019 Defence Policy for Industry Participation to contain the following:

Clear demand Clear buying signals	Encourage industry to self-align and self-heal when priorities change or a released for future periods of time. Encourages competition within industry. Attracts private investment when size of problem and size opportunity is clear.
Reprioritise SICP's	Current priorities are too broad to sufficiently focus industry.
AUKUS	When known and understood, a clear strategy for the role of Australia in AUKUS and the role of Australia's Defence Industry
AIC	Clarification on Government intentions and desires of content or capability

A hierarchy of how a revised industrial policy supports Defence Industry and AUKUS delivery is shown below.



*Figure 11: Hierarchy of Support Required for AUKUS Pillar I*

At the highest levels are areas that continue to be a priority for Defence through previous government publications and the most recent 2023 Defence Strategic Review. Projecting confidence, the ability for the Australian Defence Industry to access overseas IP is critical to allow on-shore capability upgrades. Also at the highest level is the ability for Defence Industry to maintain and operate its assets using a sovereign supply chain, important for the asset availability to Defence and the lifecycle operating cost.

The Australian manufacturing base has impressive breadth and depth and these skills can be utilised by Defence Primes to manufacture OEM platforms in Australia, giving the local supply chain valuable experience in future sustainment activities. Defence Primes need support of the manufacturing base, sharing access to IP for specific programs, and creating capability hotspots in the supply chain that self-sustains. All members of Defence industry and adjacent sectors benefits from competitive pricing and the production efficiencies that economies of scale brings. A good example is chemical special processing and non-destructive testing that was required to be uplifted to deliver to the F-35 Program, that other Defence and non-Defence customers can now access.

The foundation is an industrial policy that effectively prioritises the manufacturing and industrial sectors to enable the subsequent levels.

#### **Enabler: Dealing with the Defence Customer**

We note that examples of DISP and ASDEFCON appeared in the research key themes. Defence Procurement is unique throughout the world and has specific challenges and complexities. Requirements such as DISP and ASDEFCON are in place for good reasons and can be daunting for SME's or companies wanting to deal with Defence for the first time. This enabler also supports continued ASDEFCON and Defence procurement reviews, as was last published in 2021.

Continuing to address difficulties in understanding the Defence customer should be continued. Grants could potentially be used to raise the bar of an SME in understanding how to operate in the Defence Industry, or increase leadership or business acumen to prepare for the unique challenge Defence presents.

A key theme of the 2023 Defence Strategic Review is a desire to increase speed to capability which implies revisions to processes that may aid apparent hurdles and streamline parts of the Defence contracting model.

### **Enabler: investment in human capital**

We recognise that grants are not the answer to solving the skills shortage that Defence Industry currently has. However, we cannot ignore that a key theme of the research was identifying that a skills shortage exists. The treatment of this area could warrant a research paper dedicated exclusively to this topic.

We recognise this enabler is actively being addressed through various initiatives, yet the data collected through interviews still brought this area to attention in a number of key findings. Given the level of Defence spending in this area, it would be prudent to identify what is currently working, where the areas for development might be. Growing the workforce requires investment in the skills matched to enduring and attractive job opportunities. AUKUS presents a scenario to solve both.

The intent of presenting here is to highlight that for prioritisation of Defence Industry grants to succeed the skills shortage is a crucial enabler.

## Potential Barriers

Government	Industry
<ul style="list-style-type: none"> <li>• Short political cycles.</li> <li>• Limited bi-partisan spending support.</li> <li>• Perception around 'value for money' of grants.</li> <li>• Emphasis on speed to capability over sovereign capability.</li> <li>• Push towards sole source and foreign military sales.</li> </ul>	<ul style="list-style-type: none"> <li>• Small market size compared to other defence markets.</li> <li>• Defence is only the major revenue source for a small number of specialist businesses in Australia.</li> <li>• Risk adverse customer, over reliant on Primes.</li> <li>• Lack of mid-tier.</li> <li>• Proximity to strong adjacent industries (mining, oil &amp; gas)</li> </ul>

Throughout our research in both literature and interviews it was clear that there are a number of potential barriers to implementing our recommendation and making meaningful change in this area.

One of the dominant themes, particularly from our interviews, was the lack of continuity and long lead times for the Defence sector. This is driven partly by Australia's short 3-year political cycles and a lack of bipartisan support for large-scale defence projects leading to many Australian companies capable of performing Defence work instead choosing to spend their capture efforts on strong adjacent industries such as mining, oil and gas where work has better margins and is more consistent.

Large-scale investments in the Australian Defence Industry and Australian Industry Capability via mechanisms such as grants can also sometimes be met with scepticism by the public and may cause optics issues for Governments as Australian taxpayers question if these investments offer value for money to taxpayers. In light of factors such as rising regional geopolitical tensions, increasing manufacturing costs, supply-side challenges and supply chain security issues, leading to a push for more 'off the shelf' acquisition.

These calls have become even greater following the release of the Defence Strategic Review, in which the Government emphasised a need for speed to capability over sovereign independence. Saying that sovereign capability should only be considered when it can be delivered at speed and makes strategic sense, essentially working against the AIC Program. Leading to a push towards increased acquisition via foreign military and direct commercial sales. Acquisition via these methods limits the role of the Australian Defence Industry and puts at risk Australia's ability to maintain and upgrade its own defensive capability and increases Australia's reliance on foreign multi-national primes and our allied partners. This inability to maintain and upgrade our own defensive capability may lead to not just greater costs on the long run but also decreased time of the ADF operating the capability as well as putting at risk Australia's ability to have this capability in service should conflict arise.

This reliance has limited the Australian Defence Industry's ability to scale to support large-scale acquisitions such as those under AUKUS when required due to the lack of Tier 2 and 3 systems integrators and mid-tier defence companies that can scale to meet increased demand such as that required in order to deliver AUKUS Pillar I.

## Conclusion

Australia's Defence Industry has expressed its desire for communication and direction through this research paper. The continuous shift in priorities and lack of detail for the upcoming AUKUS Program has left Industry feeling confused at the time it matters the most, through a period scarce and meaningful work.

This research report investigated the root cause of the question posed to the group, explored how our allied partners support their Defence Industries, and generated a structured survey to poll a subset of Australian SME's, Primes, and advocate bodies.

The data presented was visually mapped to find key themes that we could critically analyse to determine the key areas our recommendations needed to address.

This resulted in a primary recommendation of a more tightly focussed grant program which require 3 key enabling dependencies in place to cause the grant program to deliver successful outcomes to industry.

At the time of publishing this paper the pathway to AUKUS remains unclear but the recommendations described here should be implemented in parallel. The timing is appropriate to address the voice of the industry to allow Defence Industry to self-align and self-prioritise before Australia's largest Defence acquisition. A common theme across all interviewees was a need for more clarity, from future buying signals, the definition and target of AIC, commitment from Government to be able to grow and retain a skilled workforce and the breadth of our Sovereign Industry Capability Priorities that everyone is trying to align to at the present day.

It is imperative that Government takes a stance and communicates now before AUKUS is fully defined. To lay the groundwork and start growing crucial skills that will one day be responsible for delivery, sustainment, and operation of future AUKUS submarines.

## Acknowledgement

We extend our sincere appreciation to all the interviewees and participants whose valuable insights have contributed to this project. Special thanks to Rowena Le Quesne from the Defence Teaming Centre (DTC) and Laura Mabikafola and Georgie Hoberg from Skills Lab for their unwavering support. We would also like to thank our Mentor Andy Semmler, whose guidance has been instrumental in our project.

## Disclaimer

This report and its conclusions are the conclusions and opinions of the authors and may not represent the official views and of the author's organisations, the contributors, the contributors' organisations, Defence Teaming Centre (DTC), the Defence Industry Leadership Program (DILP), the Australian Government and the Australian Defence Force.

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