

SHOAL

12 July 2023

Foreign Affairs, Defence and Trade Committee Department of the Senate
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Parliament House
Canberra ACT 2600

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Refer – SHOAL-LETTER-293-2023-S007

Dear Committee Secretariat,

SHOAL SUBMISSION TO THE SENATE INQUIRY INTO THE PERFORMANCE OF THE DEPARTMENT OF DEFENCE IN SUPPORTING THE CAPABILITY AND CAPACITY OF AUSTRALIA'S DEFENCE INDUSTRY

Shoal is pleased to make this submission to the Senate Foreign Affairs, Defence and Trade Legislation Committee Inquiry into the Performance of the Department of Defence in Supporting the Capability and Capacity of Australia's Defence Industry.

Defence industry in Australia is a critical enabler of military capability, but the Department of Defence approach to that industry, and support for it, needs substantial change to meet the requirements of *National Defence*, and the Defence Strategic Review's call for the development of an *Integrated Force*.

Shoal is a 100% Australian-owned small-medium complex systems digital design house with presence in Adelaide, Canberra, Sydney, Melbourne, Brisbane, and Auckland. Established in 2001, the company provides design and related services across the Defence and Space industries and beyond. The company currently employs more than 80 full-time staff. Shoal has led the early-stage design and development for some of Australia's largest and most complex systems.

I look forward to further engagement with the Committee on this important topic.

Yours sincerely,

~~Graeme Dunk~~
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Enclosures:

1. Shoal Submission to the Senate Inquiry into the Performance of the Department of Defence in Supporting the Capability and Capacity of Australia's Defence Industry

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**Submission to the Inquiry into the
Performance of the Department of
Defence in Supporting the
Capability and Capacity of
Australia's Defence Industry**

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SHOAL-REPORT-292-2023-S007



SHOAL

EXECUTIVE SUMMARY

The Australian Department of Defence has been extremely poor in both understanding the capability and capacity of the domestic defence industry, and in providing support to that industry.

Defence does not seem to have a clear view on what it wants a domestic industry **for**, and hence what it wants **from** that industry. This is manifested through an obvious preference for overseas supply, a reluctance to build industrial capability and capacity in-country, and confusion in the way that Defence addresses the separate industrial outcomes of economic contribution and industrial participation, the social contribution to national resilience, and the arguably more important contribution to strategic outcomes.

The implementation of *National Defence*, and the development of an *Integrated Force* as advocated by the Defence Strategic Review, requires a domestic defence industry where the capabilities and capacity support the development, and the sustainment, of that force. It is difficult to see that the current approach to defence industry, and the consideration of industry as a fundamental input to capability (FIC), will allow the required capability and capacity to be developed.

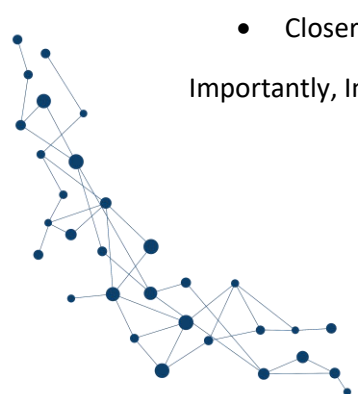
Industry as a FIC compartmentalises thinking about industry into specific capabilities, limits consideration of the domestic defence industry as a system with application across multiple capabilities, and therefore limits treatment of the domestic defence industry under a whole-of-government construct. Approaching industry as a FIC therefore inhibits the development of broader concepts such as industrial surge, mobilisation, and preparedness that will be required during periods leading up to, and including, conflict.

The consideration of the domestic defence industry needs to adopt a risk-based approach, with the focus on how various industrial capabilities contribute to the mitigation of strategic risks. The way in which the Department of Defence constructs, implements, and manages industrial support programmes can then focus on those capabilities deemed to be of most importance from considerations of risk.

The way in which industry is considered therefore needs to change from Industry as a FIC to **Industry as a Capability**. This will provide a more holistic means to align capabilities with strategic risk, and hence to the development of *National Defence*, as it also enables:

- An improved approach to innovation – both for critical military capabilities and for potential dual use applications capable of contributing to the wider economy.
- Better able to answer questions regarding the risk should industrial capability or capacity not be available.
- Better development of skilling requirements and workforce development.
- More effective and efficient development of facilities – including test facilities.
- Better access to, and utilisation of, capital and financing services.
- The development of sustainable workflow across contiguous or related capabilities.
- More efficient access to, and utilisation of, national infrastructure.
- Closer use and alignment of policy levers to address policy objectives.

Importantly, Industry as a Capability better positions Australia to deter and to defend.



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1 INTRODUCTION

1.1 Overview

On 21 June 2023, the Senate Foreign Affairs, Defence and Trade Legislation Committee resolved to inquire into the performance of the Department of Defence in supporting the capability and capacity of Australia's defence industry.

The Terms of Reference (TOR) are available on the [Parliamentary website](#).

This response is made in accordance with those TOR.

1.2 Introduction

The development and sustainment of a military force is enabled and underpinned by defence industry. Military operations would only be possible for a very short time in the absence of defence industry.

In most cases in the Western world, this development and sustainment occurs through a combination of domestic defence industry, and that based in, and controlled from, a foreign location.

The Defence Strategic Review (DSR)¹ has highlighted the important role of the domestic defence industry, including in 'lifting our capacity to rapidly translate disruptive new technologies into ADF capability'², and as a component of 'a consistent and coordinated whole-of-government approach' to the application of Australian statecraft³. Importantly, the DSR has also noted the need to 'break down barriers for Australian industry participation'⁴.

The implementation of *National Defence*, and the development of an *Integrated Force* as advocated by the DSR, therefore requires a domestic industry where the capabilities and capacity support the development, and the sustainment, of that force. It is difficult to see that the ADF would be able to 'harness effects across all five domains: maritime, land, air, space and cyber'⁵ without an appropriately constructed defence industry.

1.3 What is the defence industry for?

To determine what we might want FROM the domestic defence industry we first need to consider what we want it FOR. There are three potential reasons. These reasons might exist simultaneously but are not of equal priority.

The first is economic. This equates with the common descriptions of "Australian Industry Content", or "Australian Industry Participation". Within this area, defence industry is a generator of domestic economic activity, through goods and services for domestic consumption and those for export.

The economic reason for a defence industry therefore includes the provision of employment opportunities, increased returns to government through taxation, and it potentially fosters the development of high technology industries (including dual use technologies).

The second is for social reasons. This can be considered as "Australian Industry for Resilience", and contributes to national resilience through future-proofing supply chains, through domestic manufacturing, and the contribution of defence industry to the protection of critical infrastructure.

¹ National Defence – Defence Strategic Review. (2023). Commonwealth of Australia

² DSR; page 7

³ DSR; para 3.18

⁴ DSR; para 8.55

⁵ DSR; page 19.

The third reason is the one that equates most closely to the reason for having a defence force: strategic reasons and the pursuit of strategic objectives. As these objectives include the provision of strategic advantage, the ability to operate the military as, when, where and for the period required, and hence the protection of Australia and its citizens, the size and shape of the domestic defence industry, and the activities that it undertakes, needs to be aligned with these objectives.

In this activity, the domestic defence industry needs to be able to replace important capabilities, and/or systems that form critical components of capabilities, that have been lost in conflict, and to mitigate against the potential withholding or unavailability of stores and resupply during the period of conflict. In addition, as evident from the ongoing Ukraine example, the industry needs to be able to surge to meet increased demand for consumable stores subject to high rates of attrition.

In the circumstance where the geo-political environment is obviously deteriorating, the pre-eminent reason for the maintenance and development of defence industry must be strategic. As written by Paul Dibb in 2006:

'Defence needs to be much better at aligning industry capability with defence strategy. Australia requires a defence industry development strategy that identifies those indigenous capabilities needed for national security'⁶.

That is, the industrial capabilities supported by the Department of Defence need to be based on the management and remediation of strategic risk. This is not a new concept. The Sovereign Industrial Capability Priorities (SICPs) in the 2018 Defence Industrial Capability Plan (DICP), and the Priority Industry Capabilities (PICs) in the 2010 Defence Industrial Policy Statement (DIPS) are based on this concept. However, while Defence as an organisation recognises this point it then treats it as a sideline issue rather than as the central feature of a sensibly constructed policy.

The following answers to the Inquiry TOR are framed within this general description.

2 SUPPORT TO AUSTRALIA'S DEFENCE INDUSTRY IN MEETING THE CURRENT AND FUTURE NEEDS OF THE AUSTRALIAN DEFENCE FORCE

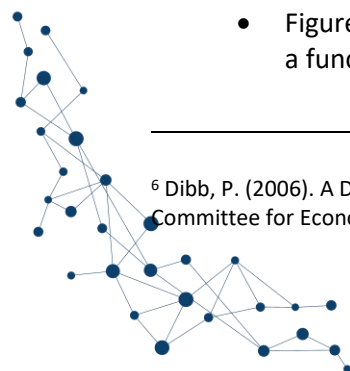
The short answer to this question is that it is largely non-existent. Defence does not seem to have a clear view on it wants a domestic industry for, and hence what it wants from that industry. This is manifested through an obvious preference for overseas supply, and a reluctance to build industrial capability and capacity in-country, other than through the foreign Primes.

2.1 Department of Defence baseline treatment of Australian defence industry

The following figures provide a baseline for how the Department of Defence engages with the domestic industry, and have been developed from analysis of [Austender](#) data covering the period 01 July 2007 to 30 June 2021. The following trends can be observed:

- Figure 1 shows the year-on-year growth in the utilisation of Foreign Military Sales (FMS) and other contracts direct to the United States Government as a percentage of all the contracts placed by the Australian Department of Defence.
- Figure 2 shows the percentage of acquisition contracts placed by the Department of Defence as a function of the location of company control. The data shows that in the financial year 2020/21

⁶ Dibb, P. (2006). A Defence Industry Development Strategy, in *Growth 57: The Business of Defence - Sustaining Capability*. The Committee for Economic Development in Australia; page 10.



less than 5% of all acquisition contracts were placed with Australian controlled companies. In stark contrast, over 60% of acquisition contracts were placed with companies controlled from the United States.

- Figure 3 shows the percentage of sustainment contracts placed by the Department of Defence as a function of the location of company control. The data shows that in the financial year 2020/21 less than 20% of all sustainment contracts were placed with Australian controlled companies.

Collectively, the graphs show a preference for contracting to foreign-controlled companies for both acquisition and sustainment. This data therefore serves as a baseline for the treatment of the Australian defence industry by the Department of Defence, and for further consideration of policy developments that might provide support to that industry.

Whilst this situation may provide the cheapest way to acquire and sustain military capability in peacetime, overseas supply does not build the domestic capability that will be required in a conflict situation.

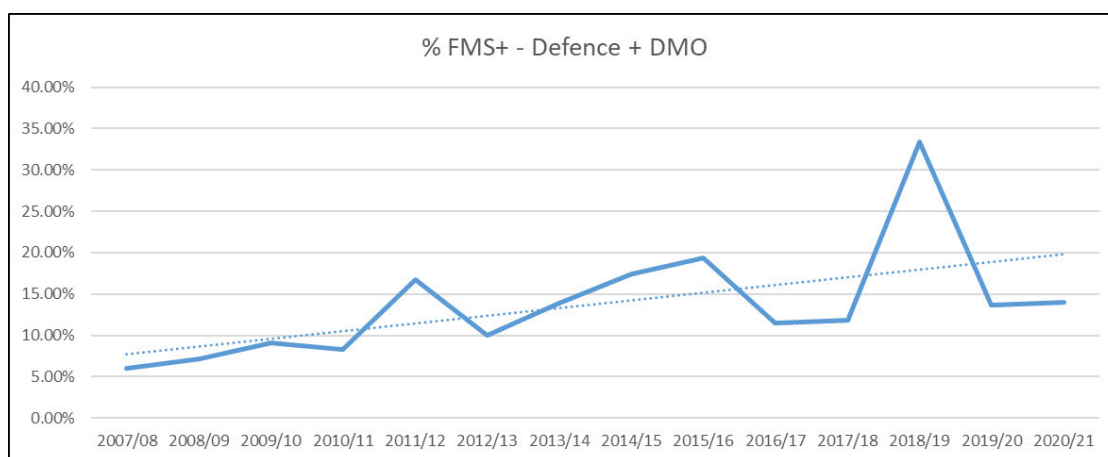


Figure 1 – Percentage defence contracting to FMS

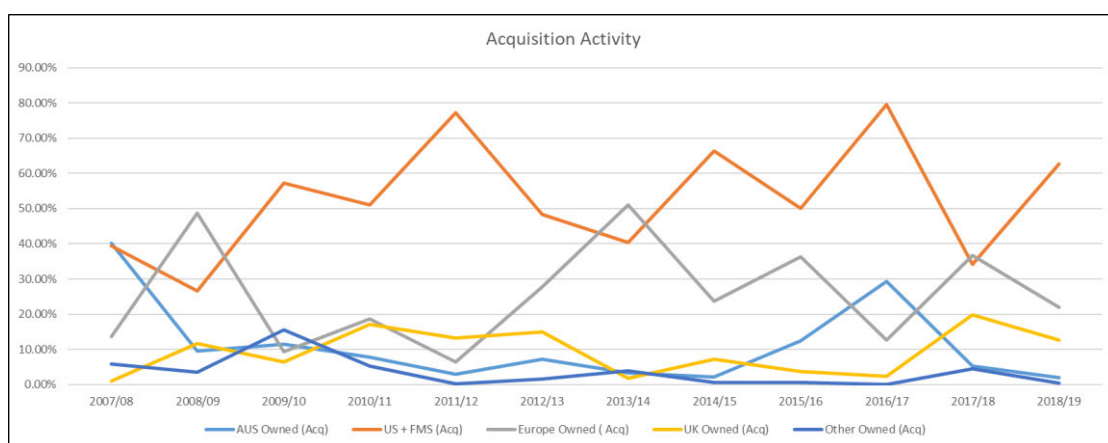
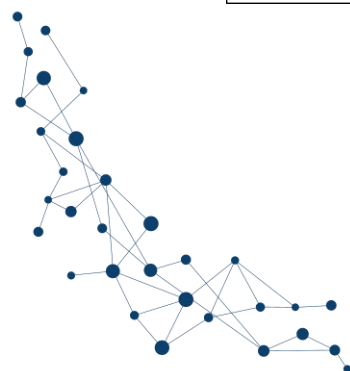


Figure 2 – Percentages of acquisition contracts by location



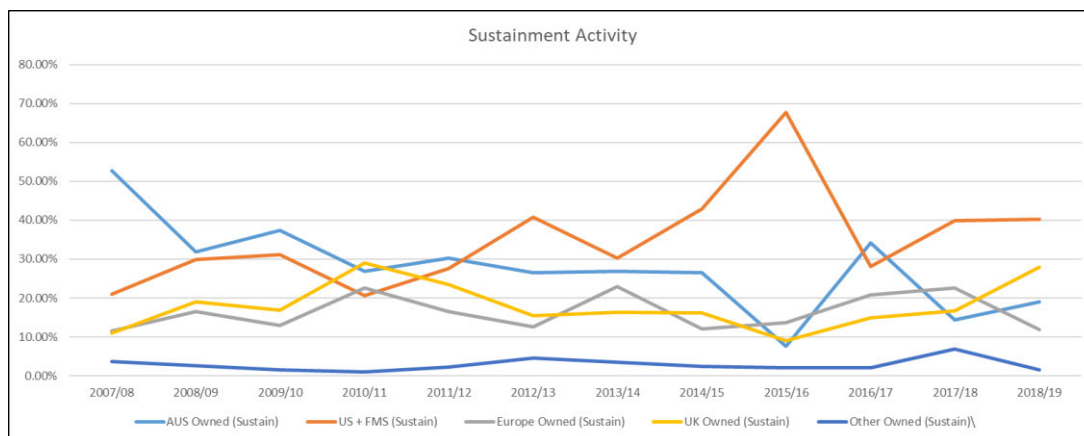


Figure 3 – Percentage sustainment contracts by location

2.2 Industry as a FIC

Defence documentation currently describes and treats the defence industry as a Fundamental Input to Capability (FIC)⁷. Whilst Industry as a FIC may be an appropriate means to consider industry during times of reduced threat, it is inconsistent with the DSR promotion of *National Defence* and an *Integrated Force* as it:

- Compartmentalises thinking about industry into specific capabilities (a maritime platform, for example).
- Limits consideration of the domestic defence industry as a system with application across multiple capabilities.
- Limits treatment of the domestic defence industry under a whole-of-government construct. Modelling developed by Shoal has shown that, for example, over 30% of Defence contracts placed in Australia will be returned to the Government through taxation⁸.
- Limits the application of defence industrial activities within the over-arching application of Australian statecraft.
- Inhibits the development of broader concepts such as industrial surge, mobilisation, and preparedness that will be required during periods leading up to, and including, conflict.

Consideration of Industry as a FIC is therefore out-dated and needs to be replaced by Industry as a Capability.

2.3 Industry as a Capability

There is an assumption in Australian Department of Defence that procurement from overseas is cheaper, easier, and more likely to meet the schedule.

⁷ Department of Defence. (2021). *Defence Capability Manual*. The nine FIC are Organisation, Command and Management, Personnel, Collective Training, Major Systems, Facilities and Training Areas, Supplies, Support, and Industry.

⁸ This finding is generally consistent with modelling undertaken in the United Kingdom that found that 34%-36% of defence contracts placed in the UK were returned to the government. See Trevor Taylor and John Louth. (2012). *The Destininations of the Defence Pound*. Royal United Services Institute. London.

If 'there is no more important and consequential ask for Government than protecting the security, interests and livelihoods of its people'⁹, it follows that there needs to be a focus on the mitigation of strategic risks.

A principal theme for defence industry policy therefore needs to focus on those capabilities that are more closely associated with industry capabilities at the higher end of the "strategic risk curve" as these capabilities have been determined as being of most importance for national security.

Consideration of Industry as a Capability provides a more holistic means to align capabilities with strategic risk, and hence to the development of National Defence, as it also enables:

- An improved approach to innovation – both for critical military capabilities and for potential dual use applications capable of contributing to the wider economy.
- Better able to answer questions regarding the risk should industrial capability or capacity not be available.
- Better development of skilling requirements and workforce development.
- More effective and efficient development of facilities – including test facilities.
- Better utilisation of intellectual property.
- Better access to, and utilisation of, capital and financing services.
- Sustainable workflow across contiguous or related capabilities.
- More efficient access to, and utilisation of, national infrastructure.
- Closer use and alignment of policy levers to address policy objectives.

A focus on the mitigation of strategic risk does not imply that activity within other areas is not important, but it does provide the Government with a logical rationale for making investment decisions that affect the local defence industry sector.

The following ramifications also develop from the acceptance of the mitigation of strategic risk as a key theme for defence industry policy, namely:

- Investment decisions and other Government industry programs need to be focussed on the higher strategic risk capabilities.
- Restricted tendering may be required to limit competition to in-country companies in some circumstances to maintain or redevelop industry health in higher risk capabilities.
- The need to regularly measure the health of those capabilities linked to higher risk, including assessment of future health.
- The need to consider the impact of acquisition and sustainment decisions on industry sector health for higher risk capabilities.
- The need to intervene should the health of higher strategic risk capabilities be deficient, marginal, or deteriorating.
- The need to regularly consider emerging technologies with disruptive potential.

- Strategic partnering may be required for higher risk capability sectors if the development of in-country competition is not realistic or achievable at a feasible price.

Recommendation #1

The consideration of Industry as a FIC to be replaced by the treatment of Industry as a Capability.

Recommendation #2

Defence to adopt a risk-based approach to the design and implementation of support programmes for Australia's defence industry.

Recommendation #3

That the risk-based approach to the provision of support to Defence industry be strictly adhered to.

2.4 The Importance of Definitions

The latest defence industry policy defines the Australian defence industry as consisting 'of businesses with an Australian Business Number and Australian-based industrial capability (such as Australian company and board presence, skills base, value-add work in Australia, infrastructure) that are providing or have the capacity to provide defence specific or dual-use goods or services in a supply chain that leads to the Australian Department of Defence or an international defence force'¹⁰.

Whilst this definition is satisfactory from a content, or participation viewpoint, it does not recognise from where corporate control is exercised, and therefore does not recognise the potential of a foreign government to restrict or otherwise inhibit the way that a subsidiary of an international company behaves in Australia.

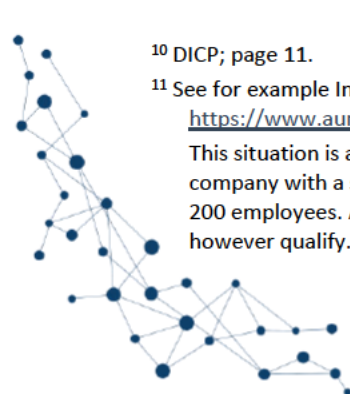
In addition, the Department of Defence seems to apply a simple definition of a Small to Medium Enterprise as being a company with up to 200 employees. This simplistic definition leads to the somewhat ridiculous situation whereby an Australian subsidiary of a global corporation can be awarded small business grants whereas an Australian subsidiary of a larger Australian group cannot¹¹.

The award of grants in this manner inhibits the ability to grow Australian companies for strategic reasons and is inconsistent with the theme of National Defence.

¹⁰ DICP; page 11.

¹¹ See for example Indra Australia, RUAG Australia, and MacTaggart Scott Australia have been awarded SME grants - <https://www.aumanufacturing.com.au/smes-awarded-over-11-m-in-defence-grants>

This situation is also at odds with that which applies to Australian companies. As an example, a wholly Australian-owned company with a small number of employees is not eligible for a small business grant if the larger business group has more than 200 employees. A company such as Indra, with approximately 56,000 employees globally and \$3.85 billion revenue, does however qualify.



Recommendation #4

That Defence adopt meaningful definitions for Australian businesses, and Australian SMEs so that grants and other support programmes can be better targeted for the development of risk-based capability within Australia, and where the control of that capability is within Australia.

3 ROLE PROVIDING AND SUPPORTING OPPORTUNITIES FOR ADJACENT INDUSTRIES TO CONTRIBUTE TO THE SUSTAINABILITY AND VIABILITY OF AUSTRALIA'S DEFENCE INDUSTRIAL CAPABILITY

The Australian defence industry cannot exist in isolation from other areas of the national economy. As examples, the defence industry requires inputs from finance, utilities, food, medical supplies, transport organisations, and national infrastructure. The way in which defence and adjacent industries interact needs to be part of the National Defence Strategy.

Treatment of Industry as a Capability, rather than narrowly defined as a FIC, will provide the mechanism for the defence industry and adjacent industries to be considered holistically, and for support mechanisms to be developed on an as-required basis.

One such consideration will be the way in which the transport and logistics industries across northern Australia can be utilised to ensure that an 'enhanced network of bases, ports and barracks across northern Australia'¹² provides a 'platform for logistics support, denial and deterrence'¹³.

One other consideration will relate to Australian innovation and leveraging the output of the academic and other research institutions, and private investment opportunities. Industry as a Capability will better support the identification and development of dual-use technologies.

4 WORK TO ADDRESS THE RELIANCE OF AUSTRALIA'S DEFENCE INDUSTRY ON INPUTS, BE THEY TANGIBLE OR INTANGIBLE, FROM ABROAD AND KEY CAPABILITIES THAT COULD FORM THE BASIS OF TARGETED EXPORTS

Consideration of Industry as a Capability, and the adoption of a risk-based approach to how capabilities are developed and supported, will highlight those capabilities where reliance on overseas supply chains is acceptable, and those where it is not.

¹² DSR; page 20.

¹³ DSR; page 19.

5 ASSESSMENT AND RESPONSE TO THE RISKS THAT INTERRUPTIONS TO SUPPLY CHAINS MAY PRESENT TO THE READY ACCESS TO SUCH INPUTS AND THE BENEFITS OF PRODUCING DEFENCE INDUSTRY OUTPUTS IN AUSTRALIA

Consideration of Industry as a Capability, and the adoption of a risk-based approach to how capabilities are developed and supported, will highlight those capabilities where interruptions to supply chains may impact on the production of defence industry outputs in Australia.

The benefits of producing in Australia, for strategic reasons, will be evident from the determination of capabilities deemed critical to the attainment of strategic outcomes.

The development of a National Defence Strategy, coupled with consideration of Industry as a Capability, will also highlight areas where production in Australia through the defence industry may have wider benefits for Australia for resilience or for economic purposes.

6 ROLE IN ENHANCING AUSTRALIA'S DEFENCE INDUSTRIAL BASE BY PURSUING GREATER ADVANCED SCIENTIFIC, TECHNOLOGICAL AND INDUSTRIAL COOPERATION THROUGH AUKUS AND OTHER DEFENCE PARTNERSHIPS

The pursuit of greater scientific, technological and industrial cooperation through AUKUS and other defence partnerships is a double-edged sword.

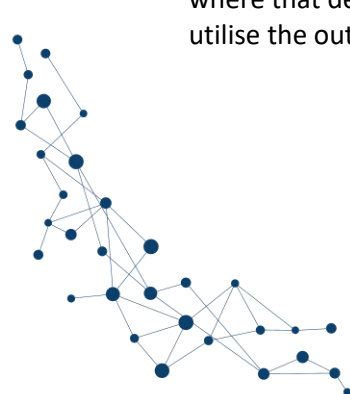
On the one hand, given the somewhat parlous state of Australian development and commercialisation of defence technology, partnerships provide a way to accelerate movement into higher Technology Readiness Levels (TRLs).

On the other hand, participation with partners can come with significant impediments regarding the future ability to maximise the benefits of research and development. The most obvious of these is capture of systems within the US International Trade in Arms Regulations (ITAR) and the ongoing involvement of the US State Department. Developments via this stream may be inhibited in exploiting future export opportunities.

Consideration of Industry as a Capability, and the adoption of a risk-based approach to how capabilities are developed and supported, will highlight those capabilities where scientific, technological and industrial cooperation with overseas partners is acceptable, and those where it is not.

In this way, scientific, technological and industrial developments can be factored into the National Defence Strategy.

What is imperative in any domestic development funded by the Australian Government, no matter where that development occurs, is that the Australian Government has ongoing rights to independently utilise the outcomes of the funded activity.



7 DESIGN AND IMPLEMENTATION OF PROGRAMMES AND INITIATIVES THAT SEEK TO IMPROVE THE AUSTRALIAN DEFENCE INDUSTRY'S CAPABILITY AND CAPACITY

Consideration of Industry as a Capability, and the adoption of a risk-based approach to how capabilities are developed and supported, will provide the foundation for the design and implementation of programmes and initiatives to improve the Australian defence industry's capability and capacity.

Given that the Government should seek to maximise the return on its investment into defence capabilities, it seems obvious that, for strategic reasons, programmes and initiatives need to be strongly weighted towards those most closely associated with risks to strategic objectives.

As noted earlier in Section 2.3, this will require both risk to be regularly reviewed and the health of related industrial sectors to be monitored and assessed.

If the Government wishes to develop the strategic, the social, and the economic aspects of the Australian defence industry simultaneously, it needs to construct programmes and initiatives specifically targeted at these outcomes.

Recommendation #5

That the Government construct programmes and initiatives specifically targeted at strategic, social and economic outcomes, rather than try to fit these separate objectives within a single programme.

8 ANY OTHER RELATED MATTERS

Other matters related to the inquiry and to the development of this response have been covered in the Introduction.

9 RECOMMENDATIONS

Recommendation #1 - The consideration of Industry as a FIC to be replaced by the treatment of Industry as a Capability.

Recommendation #2 - Defence to adopt a risk-based approach to the design and implementation of support programmes for Australia's defence industry.

Recommendation #3 - That the risk-based approach to the provision of support to Defence industry be strictly adhered to.

Recommendation #4 - That Defence adopt meaningful definitions for Australian businesses, and Australian SMEs so that grants and other support programmes can be better targeted for the development of risk-based capability within Australia, and where the control of that capability is within Australia.

Recommendation #5 - That the Government construct programmes and initiatives specifically targeted at strategic, social and economic outcomes, rather than try to fit these separate objectives within a single programme.



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