

INDUSTRY PROFILE

Defence Industries



**Public Administration and Safety
Defence Industries**

ANZSIC 7600

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Overview

- Defence is a Commonwealth Sovereign issue. The mission of the Department of Defence is to defend Australia and its national interests in order to advance Australia’s security and prosperity. The Department of Defence is accountable to the Commonwealth Parliament to carry out the Government defence policy.
- Government defence policy is articulated in the 2020 Defence Strategic Update and 2020 Force Structure Plan. The Defence Corporate Plan 2021-25 articulates the Department of Defence execution of that policy. Naturally these directions follow the strategic guidance from the Government to create Defence capability that can influence the Indo-Pacific region and support foreign policy – For example relationships with China and United States of America.
- Defence is supported by civilian Defence Industries. In Australia Defence Industries may relate to Defence Procurement of new equipment or the Defence Supply Chain that sustain existing platforms. For example purchase of new submarines is Defence Procurement. Sustainment of the cyclic submarine docking is part of the Defence Supply Chain.
- In WA there has been articulation of State policy to develop Defence Industries following expenditure under Commonwealth policy. The WA Government, through the Defence West, has a focus to develop the Defence Industries to support Commonwealth Defence expenditure that is primarily Naval following the 2017 Naval Shipbuilding Plan and the development of Fleet Base West (HMAS Stirling).
- There is crossover between Industry Sectors inside Defence Industry. For example, Defence Industries will include Warehousing and logistics, Ports & Stevedoring, Road Transport, Maritime, Rail, Offshore Oil & Gas, Aviation, Mining and the Resources Sector. In WA there has been a move from the term Warehousing and Logistics to terms like Defence Industry or Defence Industries or Defence sustainment, Defence Supply Chain or Maritime Defence Supply Chain in order to articulate the Defence Industry sector . This report should be read in conjunction with the Defence Profile.

Industry Developments and Workforce Challenges

- The West Australian Defence industries provide essential capability, services and support to the Australian Defence Force (ADF) with more than 3000 workers employed by both small and medium enterprises operating in this sector.¹
- One of the major actions already undertaken has been the establishment of the WA Defence Industry Workforce Office. Originally based at the South Metropolitan (SM) TAFE Naval Base Campus this has relocated to the State Workforce Planning with Policy, Planning and Innovation at the Department of Training and Workforce Development. Over 18 months the WA Defence Industry Workforce Office conducted extensive consultation with the key stakeholders engaged in shipbuilding and repairs for the Navy in Western Australia. The State Government has produced two major documents:
 - *Blue Collar Workforce Maritime and Anti-Submarine Warfare Defence Capability Stream 2020-2025*
 - *White and Grey Collar Workforce Maritime and Anti-Submarine Warfare Defence Capability Stream 2020-2025.*
- Actions already taken by the State Government include:
 - The establishment of the WA Defence Industries Workforce Office and the new \$2.4 million South Metropolitan TAFE Naval Base Campus the Naval Shipbuilding College strategically located adjacent to the Australian Marine Complex (AMC).
 - Engineering apprenticeships relating to shipbuilding have been funded for half price through the Skills Ready State Government initiative.
 - There have been skill sets offered in relevant Defence Industries areas such as Introduction to Cybersecurity (fee free).
- Western Australia is already heavily involved in supporting the Defence Force through contracts in the shipbuilding industries that operate out of Henderson. Projects include:
 - Build of ten new Offshore Patrol Vessels (OPV)
 - Build of 21 Guardian Class Patrol Boats (six already completed)
 - Build of 6 Cape Class Patrol Boats
 - Collins-class Submarine sustainment and upgrades (six mid-cycle docking)
 - Anzac-class frigate sustain and upgrades under the Warship Asset Management Agreement (WAMA) (approximately 205 jobs), and
 - Up to 8 Mine Hunters and Hydrographic Survey Vessels.
- 'Ship Zero' is to be established by Defence in the AMC to form a Navy capability centre or sustainment hub in Western Australia. This will consolidate system program offices for naval vessel construction, sustainment and support programs at HMAS Stirling and Henderson. Ship Zero will provide a base for naval personnel for shore-based training while vessels are undergoing maintenance in the AMC. Construction commenced in 2020.
- Other projects supporting defence include:
 - Operation and ongoing maintenance of the C-band radar and space telescope in Exmouth²
 - The delivery of fast jet flight training at RAAF Base Pearce³
 - The technical and operational support for all RAAF training aircraft and
 - Locally owned SME will be supporting and managing the operation, repair and maintenance of the AUV62-AT for Defence. This is an underwater submarine simulator used for training in anti-submarine warfare.⁴

- The Naval Shipbuilding College (NSC) is an Australian Government initiative supporting the Naval shipbuilding industry and associated supply chain in identifying, and skilling, the workforce needed to build and sustain the Royal Australian Navy's future fleet. The NSC is based in South Australia with an office operating out of SM TAFE Naval Base facility. Associated with this has been the establishment of a Naval Shipbuilding register for those looking for work or those employers looking for their future workforce. The NSC has identified three major employment streams: Supply Chain; Engineering; Operations; and Program Management.
- The State Government has made significant commitments will affect the Maritime Defence Industry Supply Chain.
 - **Westport.** Westport is the plan and build a container port in Kwinana with integrated road and rail transport networks. Port automation is a key factor.
 - **Shipping and Supply Chain Taskforce.** The strategic importance of the maritime sector is acknowledged by the McGowan Government establishment of a Shipping and Supply Chain Taskforce. The Taskforce will report back to Minister by 31 Mar 2023 on the resilience of Australia's shipping industry and vital supply chains.
 - **Defence West.** Defence West support to the National Shipbuilding Plan that includes planning and lobbying for the construction, operation and maintenance of the Nuclear-Powered Submarine Taskforce
 - **Australian Marine Complex.** The construction of the Australian Marine Complex in the Henderson region is related to growth of HMAS Stirling as a Royal Australian Navy regional maintenance hub
 - The Indian Ocean Defence & Security Conference will be in Perth on 26 and 27 July 2022

Supply and demand for skills

- Western Australia is home to Australia's largest naval base HMAS Stirling and key Royal Australian Air Force and Australian Army bases. Plans are in place to grow and establish additional defence assets and jobs.⁵
- Following the release of the *Defence White Paper*, The Australian Government is set to invest approximately \$90 billion in recapitalisation works for the defence sector through to 2025.⁶ This level of investment will require strategic partnerships with industry to deliver innovative skills, products and services that will address Defence sector capability needs to project influence into the Indo-Pacific.⁷
- In the Naval Shipbuilding Plan, the Federal Government will invest up to \$62 million in workforce growth and skilling initiatives to enable the delivery of naval ships, submarines, sustainment and modern shipyard infrastructure.⁸ The type of the work and the affiliated support services will generate a growing need for workforce with Science, Technology, Engineering, Mathematics (STEM) skills.
- Western Australia is well positioned to be providing services to the naval shipbuilding industry given the existing infrastructure and industry links to the maritime sector. There are organisations with the capacity to cater for both domestic and international markets.⁹

- The rate of technological advancement is impacting the requirements expected of contractors. Changes in manufacturing and operational practices means that there is an opportunity to enhance the skills of existing workers and to train new entrants. Streamlined processes include new design methods, automation, analytics and artificial intelligence.¹⁰
- Plans are in place to create additional Defence jobs, establish new TAFE training opportunities and boost local manufacturing that will increase demand for Defence Industries job roles within Western Australia. In particular, skilled technicians, Project Managers and Systems Engineers. Those who possess experience on defence platforms will be highly sought after i.e. aircrafts and ships.¹¹
- The construction of a South West Pacific large hull vessel in Western Australia to support Australia's Pacific Step-Up has been brought forward. This program that promotes engagement with the Indo-Pacific region is worth \$120m and creates 165 West Australian jobs.¹²
- Additional funding will be given to the Defence Innovation Hub to undertake additional targeted investments in Defence Industries for the development of innovative technology. The capacity of the Australian Cyber Collaboration Centre will be increased to provide a range of online and in-class cyber training courses to Australian industry and supply chains.¹³
- Industry consultation has identified that the concurrent roll out of METRONET and Defence projects will result in an increased demand for specialist engineers due to the sheer size and complexity of the programs.¹⁴ This has been exacerbated by the increasing demand for specialist engineers in the mining sector which is placing even greater competition for the limited numbers available.¹⁵
- Welders are going to be in high demand as all sectors of the economy especially in mining, shipbuilding, rail and other engineering sectors. This shortage is acute for high-level skilled welders (pipe fitter specialist) who are ageing at a rate far greater than they are entering the workforce. Naturally submarine hull work requires high grade welders and experienced welding supervisors.¹⁶

VET or university courses in Western Australia

- SM TAFE has been nominated as the approved/preferred training provider for Defence Industries in Western Australia.¹⁷ SM TAFE have been very proactive in identifying training needs and responding to both the Navy and shipbuilding sector.
- The State Government has invested \$2.4 million in the new Naval Base campus of South Metropolitan TAFE which will deliver a multi-skilled workforce to meet the naval shipbuilding industry requirements and boost Defence Industries capability.¹⁸
- SM TAFE has designed a new facility at Naval Base with training in shipbuilding and Defence work in mind to consolidate heavy fabrication, marine fabrication, welding and composite apprenticeship training from the old Henderson and Rockingham campuses.¹⁹
- The Certificate III in Defence Industry Pathways is an initiative of the Australian Government supported by South Metropolitan TAFE to address the need for skills in engineering, logistics and cybersecurity. The 12 month, paid traineeship in the Henderson Shipbuilding precinct of WA has been a success. The WA program will graduate 120 trainees into the maritime defence industry. The program will be deployed nationally in 2023.

- Experienced welders have been identified as a growing shortage and SM TAFE have developed more responsive training to meet sector needs.²⁰
- The shipbuilding industry has identified a looming shortfall in appropriately skilled engineers to work in the shipbuilding sector. This has been highlighted by the Federal Government who have funded a new Naval Architecture program at the University of New South Wales Canberra. This program will be open to engineering students across Australia but its location in Canberra may make it cost prohibitive for students based in Western Australia.²¹
- The WA Defence Industry Workforce Office has brought together key industry, Defence and university stakeholders to identify the future workforce to support the naval shipbuilding contracts. The Department of Jobs, Tourism, Science and Innovation now uses the categorisation of Blue, Grey and White collar workers to analyse the skills profile for a shipbuilding workforce in WA. The feedback has formed two workforce development plans: one focused on Blue Collar workers and the other on Grey and White Collar workers.²²
- Edith Cowan University and Curtin University have been endorsed by the Naval Shipbuilding College to work with the Defence Industries to align their programs i.e. cybersecurity.²³
- As of July 2020, there were 600 people registered on the NSC workforce register in WA.²⁴

International, National or State training issues

- The hard border shutdown for COVID-19 currently impacting Western Australia has meant that as new projects go online, especially naval shipbuilding, companies are struggling to find experienced workers. The training system is attempting to address this issue by offering more courses at minimal cost but the experience required is not being achieved in the short term.²⁵ The skills required for people working in Defence Industries cover a wide span of different areas and levels of expertise.
- For Naval Shipbuilding, Engineering has been identified as a skilling area that is crucial to meeting the design, construction and maintenance needs of entities that are awarded Defence contracts. With falling enrolments at university and weak focus on the Defence Industries, attracting suitably experienced engineers is only going to get more competitive, especially as national and international demand for these workers grows and WA engineer are drawn to the resources sector.²⁶
- The scale and complexity of current and upcoming scheduled work will require contractors with an adequate level of skills and experience to deliver projects. These include but are not limited to planning, scheduling and estimation i.e. Project managers.²⁷
- Other areas of expertise encompass technology such as knowledge and application of supply chains, Industry 4.0 and cybersecurity.²⁸ Some of these are iterative and therefore constantly evolving. Continual lifelong learning will become a standard practice value adding over time.
- Tradespeople with Defence experience and security clearances will be in high demand.²⁹
- There is an opportunity to value-add to existing welding training with the use of simulators that although expensive, would allow the student to experience real time real welding experiences and are compatible with live welding equipment. When used, they provide statistical feedback on weld quality, accuracy and comparative improvements in technique. This would allow both TAFE and industry to expand their exposure to more advanced techniques. Welding simulators are currently being used in other States through their VET system.³⁰

- Industry has highlighted that they are open to private/public partnerships regarding training needs.³¹

Industry Workforce and Priorities

- The Naval Shipbuilding Industry Reference Committee (IRC) has drafted Cases for Change based on Industry input that existing qualifications across several disciplines do not meet the evolving needs of the workforce for projects that are to come online over the next four years.³²
- As part of a long term strategy, The Australian Government released the Defence Industries Skilling and Science, Technology, Engineering and Mathematics (STEM) Strategy in February 2019.³³ This multipronged approach looks at the areas of engagement, attraction, retention and future workforce needs. Defence Industries skills support has been given through sponsorship of industry placements and schools pathway program grants.
- The Department of Defence is currently fast tracking the Federal Government's investment in the Defence Industries, bringing forward projects to stimulate the economy while providing for a growing Australian Defence Force.
- The Federal Government has announced an increase in funding for its Skilling Australia's Defence Industry (SADI) grants program. Companies and industry associations will be able to apply for skills grants to enable training and upskilling for the Defence Industries workforce.³⁴

References

- ¹ WA Defence and Defence Industries Strategic Plan 2018
- ² Medianet Release, Minister for Defence, Defence Supporting industry to develop world class space capability in WA, 13 July 2020
- ³ Medianet Release, Morrison Government's Defence Strategy to Deliver Jobs And Investment to Western Australia, 1 July 2020
- ⁴ Medianet Release, Morrison Government invests in new anti-submarine training capability, 7 August 2020
- ⁵ Hays Jobs Report January to June 2020, Trades and Labour.
- ⁶ 2016 Defence White Paper
- ⁷ Department of Defence (2018) accessed 11 July 2019, available at
- ⁸ Naval Shipbuilding Plan, [last accessed May 2017 via <http://www.defence.gov.au/NavalShipbuilding/Plan/Default.asp>, May 2017]
- ⁹ WA Defence and Defence Industries Strategic Plan 2018
- ¹⁰ Naval Shipbuilding Industry Skills Forecast 2019
- ¹¹ Hays Jobs Report January to June 2020, Trades and Labour.
- ¹² The West Australian, ScoMo's new battle for jobs, 26 August 2020
- ¹³ The West Australian, ScoMo's new battle for jobs, 26 August 2020
- ¹⁴ Consultation with the UEEA Training Council
- ¹⁵ Industry Consultation 2020
- ¹⁶ Consultation with the UEEA Training Council
- ¹⁷ Naval Shipbuilding College: <https://www.navalshipbuildingcollege.com.au/news/naval-shipbuilding-college-expands-to-western-australia/>
- ¹⁸ Media Statement, McGowan Government Boost Defence Shipbuilding Opportunities. [Last accessed 6 May 2020, via <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/05/McGowan-Government-boosts-defence-and-shipbuilding-opportunities.aspx>]
- ¹⁹ Media Statement, McGowan Government Boost Defence Shipbuilding Opportunities. [Last accessed 6 May 2020, via <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/05/McGowan-Government-boosts-defence-and-shipbuilding-opportunities.aspx>]
- ²⁰ Media Statement, McGowan Government Boost Defence Shipbuilding Opportunities. [Last accessed 6 May 2020, via <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/05/McGowan-Government-boosts-defence-and-shipbuilding-opportunities.aspx>]
- ²¹ Medianet Release, Minister for Defence & Minister for Defence Industry - Boosting Australia's naval shipbuilding capacity through new Naval Architecture program, 18 August 2020
- ²² Consultation with the WA Defence Industries Workforce Office

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- ²³ Australian Defence, Naval Shipbuilding College endorses courses at Edith Cowan [Last accessed 7 May 2020 via <https://www.australiandefence.com.au/defence/sea/naval-shipbuilding-college-endorses-courses-at-edith-cowan>]
- ²⁴ Consultation with the Naval Shipbuilding College
- ²⁵ Industry consultation 2020
- ²⁶ Industry Consultation 2020
- ²⁷ Industry Consultation 2020
- ²⁸ BAE Systems Newsroom, \$2.9m Industry 4.0 research to drive digital manufacturing in the Hunter Frigate Program. [Last accessed 18 February 2020, Available: <https://www.baesystems.com/en-aus/article/2-9m-research-to-drive-digital-manufacturing>]
- ²⁹ Hays Jobs Report January to June 2020 Trades and Labour.
- ³⁰ Industry Consultation
- ³¹ Industry Consultation
- ³² Australian Industry Skills Committee, August 2019, AISC Communique 13 August 2019 Meeting. <https://www.aisc.net.au/hub/aisc-communique-13-august-2019-0>
- ³³ Defence Industry Skilling and STEM Strategy: [available <http://www.defence.gov.au/SPI/Docs/IndustrySkillingSTEMstrategy.pdf>]
- ³⁴ Medianet Release, Minister for Defence & Minister for Defence Industry Major boost for skills funding for Australia's growing Defence Industry, 26 August 2020