New South Wales: Strong, smart and connected

The NSW Government Defence and Industry Strategy 2017
Over the next ten years the federal government has committed to a $195 billion investment in Australian Defence (Defence) with sustained investment earmarked for future generations.

Strong, smart and connected represents the NSW Government’s vision for Defence and defence-related industries in the state. As Australia’s largest and most diverse economy, NSW is recognised as a leader in advanced manufacturing, systems integration, cybersecurity, aerospace, information and communication technology, business services and many other areas directly relevant to the needs of Defence.

To achieve its dual objectives of supporting Defence and driving greater investment and innovation in NSW, the NSW Government will create a new organisation called Defence NSW. This organisation will be responsible for coordinating all Defence and defence industry-related activities for the NSW Government. Defence NSW will also be charged with the stewardship and delivery of the NSW Defence and Industry Strategy across NSW using a regional network. This will focus the state’s support for Defence and industry and provide whole-of-government leadership, advocacy and engagement with the sector.

NSW has been a strong supporter of national defence since before federation and is host to important Defence bases and capabilities supported by a broad range of industries and major education and training establishments. The strategy focuses on this important sector to ensure NSW is properly positioned to fully support Defence and grow jobs and industry in the state. It also provides a robust platform for focusing on new opportunities in our regional communities and boosting our local economies into the future.

NSW is home to over 80 Defence bases and facilities—more than any other state—and Defence invests $5.5 billion annually in its operational expenditure. Defence and the industry that supports it currently directly employ over 26,500 people in NSW. Defence investment is already one of the key drivers of employment and economic growth in many regional areas.

The state has the highest number of workers with skills relevant to Defence and the defence industry and these closely align with key areas of future Defence growth and investment. NSW is also home to world-class universities and other research and development institutions. The major contractors that work with Defence already operate in NSW. The NSW Government will work closely with the defence industry to attract an increased proportion of Defence investment in the state and help small and medium sized enterprises gain better access to local and global supply chain opportunities.

I thank everyone involved in the creation of this strategy for their contribution and acknowledge the expert stewardship and support provided by the NSW Defence Advocate, Air Marshal (Retd) John Harvey.

I would also like to acknowledge the significant contribution made by my colleague, The Hon Anthony Roberts MP, in supporting the Defence sector while he was the Minister for Industry.

The Hon Niall Blair MLC
Minister for Primary Industries
Minister for Regional Water and
Minister for Trade and Industry
1: Foster stronger relationships with Defence and across the NSW defence industry at a state and regional level
2: Leverage NSW’s strengths in critical capability areas to grow existing work and create new Defence and defence industry activity
3: Provide Defence and defence industry with their future workforce
4: Sustain and grow existing and new Defence and defence industry activity across regional NSW
5: Increase opportunities for innovation, commercialisation and research within Defence and the defence industry

DEFENCE NSW: A NEW MODEL FOR DEFENCE AND DEFENCE INDUSTRY LEADERSHIP

OBJECTIVES AND FUNCTIONS
- Commonwealth Government and Defence engagement
- State engagement
- Regional engagement

SUMMARY AND NEXT STEPS

APPENDIX 1: NSW’S DEFENCE INDUSTRY PROFILE
DEFENCE PERSONNEL
NSW DEFENCE BASES AND FACILITIES
SHARE OF DEFENCE BUDGET

APPENDIX 2: VALUE OF DEFENCE INVESTMENT TO NSW
JOBS AND ECONOMIC GROWTH IN NSW
DEFENCE AS A CATALYST OF FURTHER ECONOMIC DEVELOPMENT
- Defence precincts and regional centres of excellence
- Growing the education and training sector
- Developing NSW as a centre for research and development excellence

APPENDIX 3: REGIONAL DEFENCE AND DEFENCE INDUSTRY STRATEGIES
APPENDIX 3.1 NSW STATE INITIATIVES
APPENDIX 3.2 SYDNEY REGION
APPENDIX 3.3 HUNTER REGION
APPENDIX 3.4 SHOALHAVEN REGION
APPENDIX 3.5 ILLAWARRA REGION
APPENDIX 3.6 MURRAY-RIVERINA REGION
APPENDIX 3.7 CAPITAL REGION
APPENDIX 3.8 NORTHERN NSW REGION

GLOSSARY
Defence investment is already one of the drivers of employment and economic growth in many regional centres. For example, in the Hunter and Shoalhaven, the economic activity attributable to Defence is estimated to be between 8% and 12% of Gross Regional Product. The defence industry is a major employer and attractor of skilled workers in these regions and the local economy also benefits from the movement of skilled workers out of Defence and defence industries into local education and technology-dependent sectors.

NSW is home to the largest number of Defence bases and capabilities of any state or territory and is home to nearly 30% of Australia’s military and Defence civilian personnel. Defence makes a substantial contribution to the NSW economy and is critical in supporting the delivery of the Premier’s priorities in areas such as jobs growth, regional activation and industry investment. In 2014–15 Defence contributed just over 20,000 jobs to the NSW economy with a direct spend of approximately $7.9 billion, including $5.5 billion in operations and $2.4 billion in capital expenditure. In addition there are around 6,500 defence industry jobs and a further 29,500 from supporting industries whose activities make a major contribution to the wider NSW economy.

The 2016 Australian Defence White Paper detailed a plan for investing $195 billion in Defence capability over the next decade. Investment in the following decade to 2036 is expected to be similar.

Along with the Defence White Paper, the release of the Defence Industry Policy Statement (DIPS) and the Integrated Investment Program (IIP) and the appointment of a Commonwealth Minister for Defence Industry represent a fundamental shift in the relationship between Defence and Defence Industry.

Central to this change is recognition of the defence industry as a fundamental input to capability. It signals a growing acknowledgement by Defence of the importance of strong indigenous industrial capability and of the relationship between Defence’s procurement decisions and processes and the health of the defence industry. The creation of the Centre for Defence Industry Capability (CDIC) will formalise a closer relationship between Defence and defence industry, and the CDIC’s investment in innovation will provide increased opportunities for industry to develop globally competitive products.

Industry in NSW has a unique opportunity to assist Defence realise its ambitious investment agenda. To do so, it must demonstrate that it is globally competitive, innovative, diversified and export-orientated. A significant increase in local participation will strengthen and grow jobs in the NSW defence industry.

NEW SOUTH WALES: STRONG, SMART AND CONNECTED

DEFENCE IS IMPORTANT TO NSW. NSW IS IMPORTANT TO DEFENCE.

THE NATIONAL PICTURE
NSW has received a significant proportion of national Defence funding, with Defence-related operations in NSW generating in excess of $5.4 billion annually. The NSW Government recognises the significant contributions made by Defence and defence-related industries to the state in terms of attracting investment, economic growth and job creation.

Significant Defence acquisition decisions are being made now and over the next decade and NSW industry is well placed to respond to capability and capacity requirements, either within NSW or in partnership with other states and territories. A strategic and coordinated approach to developing NSW industry has potential to substantially increase direct Defence expenditure in NSW with significant flow-on benefits.

For every $1 billion recurrent Defence operational spending (non-capital) that comes into NSW, the estimated economic impact is approximately $1.4 billion in Gross State Product (GSP) and 10,000 jobs supported.

NSW is committed to significantly growing the state’s industry to support Defence and to generate jobs and economic growth in NSW. To achieve this, the NSW Government is committed to:

- working with other states and territories to ensure a national approach to helping Defence
- a whole-of-government approach to supporting and developing the state’s defence industry
- ensuring NSW industry has the required skilled workers
- leveraging Defence expenditure to support innovation and commercialisation
- developing a diverse and internationally competitive industrial capability, both in metropolitan Sydney and in regional NSW where Defence spend is more critical to local economies.

THE ECONOMIC OPPORTUNITY FOR NSW

Each $1 billion in government spending on NSW defence operations contributes:

**$1.4 BILLION GSP**
- Each $1B in government spending on NSW defence operations boosts NSW GSP by $1.4B

**$440M INVESTMENT**
- Stimulates an additional $440M in NSW defence investment

**$760M HOUSEHOLD CONSUMPTION**
- $760M higher household consumption in NSW

**$150M IN NET IMPORTS**
- $150M increase in net interstate and international imports

**10,000 JOBS FOR EVERY $1B**
- Each $1B in government spending on NSW defence operations supports 3,500 defence jobs and supports 6,500 jobs in other sectors

Source: KPMG analysis.
The NSW Defence and Industry Strategy recognises the major contribution Defence makes to NSW, and the critical role NSW has in delivering the capability Defence requires. The objectives of the strategy are to:

- support Defence in its objectives
- assist Defence in the delivery of its ambitious acquisition targets
- maximise the economic opportunities for NSW businesses and communities.

This strategy was developed by the NSW Department of Industry and included consultations with stakeholders from defence industry, regional defence networks, industry associations, local government and other departments of the NSW Government. Consultation sessions were held across NSW in important regional areas including Shoalhaven/Illawarra, the Capital region, the Hunter and metropolitan Sydney. This strategy builds on the NSW Defence Position Paper (2013).

NSW: Strong, smart and connected will be implemented by Defence NSW, the coordinating body within the NSW Department of Industry, with significant input from the Premier; the Minister for Primary Industries, Minister for Regional Water and Minister for Trade and Industry; and other ministers to deliver a whole-of-government approach that integrates service delivery and stakeholder management across the federal, state and regional levels.

NSW: Strong, smart and connected is built around sustaining and enhancing existing defence industry investment, and seeking new investment to better position NSW’s defence industries in areas with untapped capability. It aims to engage the state’s substantial research and development (R&D) capacity, focusing it on emerging areas crucial to Australia’s Defence needs, as identified in the Defence White Paper.

## ABOUT THE STRATEGY

NSW offers Australia’s largest and most diverse economy and is recognised as a leader in manufacturing, logistics, electronics, information and communication technology (ICT), business services and other areas relevant to Defence needs and global defence markets. From this strong base NSW: Strong, smart and connected sets out a roadmap enabling NSW to capitalise on its existing strength and positions the state to attract further investment by Defence and industry.

The strategy presents a coordinated, whole-of-government approach that commits NSW to working with Defence and other states and territories to achieve a truly national outcome. Importantly, the strategy prioritises opportunities for industry in the defence sector as a key driver of growth and innovation across the state, especially in regional NSW, where approximately a third of the industry employment is located. Importantly, these opportunities need to be pursued in parallel to related sectors to further leverage and diversify the industrial base, for example in advanced manufacturing, aerospace, automotive, maritime, rail, METS, and clean technologies. The strategy also aims to increase participation by NSW businesses in opportunities arising from Defence spending, for example in the development of new technologies.

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Defence industry in NSW has a strong reputation in areas critical to Defence including system integration, cybersecurity and advanced materials. NSW: Strong, smart and connected seeks to build on NSW’s strengths in complex systems integration and sustainment to enhance Defence’s ability to successfully deliver its investment program.

The strategy acknowledges that NSW has critical expertise to contribute to the development and sustainment of major platforms, including sub-system manufacturing which may be independent of the location of final assembly. NSW will support and develop, including through the provision of infrastructure, regionally specific defence industry precincts focused on locally relevant projects that build on comparative strengths.

Initiative 2A—ensure NSW remains Australia’s leader in complex systems integration and sustainment.

Initiative 2B—build on NSW’s strengths in cybersecurity and space and promote collaboration between experts in Sydney and the Capital Region, and ACT industry.

Initiative 2C—target major defence projects to take place in NSW through coordinated campaigns including Joint Strike Fighter (AIR6000), Air Force’s Future Battle Management System (AIR6500), Combat Reconnaissance Vehicles (LAND400) and Future Submarines (SEA1000), Offshore Patrol Vessels (SEA1180), and Future Frigate (SEA5000).

Initiative 2D—Explore Western Sydney Airport as a future aerospace precinct through engagement and partnership with NSW and federal governments.

STRATEGY 1

Foster stronger relationships with Defence and across the NSW defence industry at a state and regional level

The strategy recognises the importance of enhancing NSW’s relationship with Defence to provide a more collaborative, consistent and strategic approach.

The strategy recognises the importance of strengthening Defence engagement and will establish Defence NSW as a new, central body to better coordinate all defence-related activities for the NSW Government. Defence NSW’s role will be to clearly articulate and facilitate the delivery of the vision for Defence and defence industry in NSW, as detailed in this strategy.

The strategy also requires the development of strong relationships between local communities and Defence establishments to better understand the issues, develop opportunities and deliver services in a coordinated way. Defence NSW will build on existing regional centres to deliver this strategy, and in turn help deliver on the Premier’s priorities in relation to jobs growth and supporting regional infrastructure.

Initiative 1A—establish Defence NSW as the coordinating agency for all defence-related activities for the NSW Government.

Initiative 1B—support existing Defence establishments to prosper in NSW including closer engagement at regional level to build defence-supportive communities.

Initiative 1C—collaborate with the Commonwealth, state/territory and local government to provide integrated services to Defence and industry.

STRATEGY 2

Leverage NSW’s strengths in critical capability areas to grow existing work and create new Defence and defence industry activity

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Initiative 2D—Explore Western Sydney Airport as a future aerospace precinct through engagement and partnership with NSW and federal governments.

STRATEGY 3

Provide Defence and industry with their future workforce

NSW currently has the largest number of defence-related skilled workers with a skills base that strongly aligns with key areas of defence growth and investment including engineering, ICT, manufacturing and systems integration, including aerospace. NSW has a number of key training facilities that provide skills for both defence and wider industry requirements, and programs in place to promote jobs of the future.

NSW: Strong, smart and connected commits the NSW Government to promoting defence industry career pathways and encouraging and developing educational opportunities and incentives to stimulate the uptake of science, technology, engineering and mathematics (STEM) subjects at schools and the transfer of STEM-skilled employees to NSW.

Initiative 3A—promote interest and accessibility of STEM in NSW’s secondary and tertiary institutions, and promote careers paths in defence industry and technology through industry partnerships and incentive programs.

Initiative 3B—work with Defence and industry to build on the training and education strengths in the Riverina, Hunter, Sydney and Capital regions.
STRATEGY 4

Sustain and grow existing and new Defence and defence industry activity across regional NSW

NSW is home to more bases and more Defence and defence industry personnel than any other state. Systems based in NSW are some of the most complex in the Australian Defence Force (ADF). This includes a significant portion of the RAN fleet, the Joint Strike Fighter (JSF) and Naval Aviation capabilities. Regional strengths have developed as a result of base requirements, for example rotary wing expertise in the Shoalhaven, naval sustainment in Sydney and fast jet sustainment in the Hunter.

NSW defence industry, and its total supply chain, plays a major role in sustaining these complex systems. For NSW to continue to be the leader in sustaining complex systems it must continue to support Defence and defence industry and remove any barriers to future growth.

The major prime contractors already operate in NSW and the NSW Government is committed to working closely with defence industry to attract increased investment into the state. Prime contractors require a capable supply chain, and the NSW Government recognises it has a significant role in helping small to medium enterprises (SMEs) better access local and global supply chain opportunities.

NSW: Strong, smart and connected commits the NSW Government to working closely with industry networks and the CDIC to leverage federal industry support programs such as Team Defence Australia and the Global Supply Chain initiative. The strategy is the enabler for building and delivering a state industry that is diversified locally and internationally by assisting industry to increase exports. Key to this will be developing and supporting regional defence networks and creating opportunities for collaboration both across the state and with other states and territories.

Further work also needs to be done in conjunction with the CDIC to map sector capabilities and better understand the key areas of specialisation and their locations.

| Initiative 4A | assist the Navy manage its interests at a congested Fleet Base East and position NSW as a leader in maritime sustainment. |
| Initiative 4B | promote the inclusion of Port Kembla steel products in ships and vehicle procurement. |
| Initiative 4C | grow and connect regional networks to enhance collaboration and develop business opportunities. |
| Initiative 4D | assist specialist SMEs to better access local and global supply chain and export opportunities. |
| Initiative 4E | facilitate regional opportunities for the defence industry to invest and expand. |

STRATEGY 5

Increase opportunities for innovation, commercialisation and research within Defence and the defence industry

NSW is home to world class R&D institutions with significant experience in delivering on Defence priorities and attracting international funding.

The development and commercialisation of new capabilities will depend on the strength of the connections and collaborations between industry and research institutions and the involvement of the Defence and science networks in NSW.

NSW will facilitate access to Defence’s key innovation funding in CDIC’s Next Generation Technology Fund and the Defence Innovation Hub. A key step will be the mapping of research capabilities and current activities.

The specific state and regional initiatives to be implemented under each of the five strategies are detailed in the complete NSW Defence and Industry Strategy 2017, which is available for download from defence.nsw.gov.au

| Initiative 5A | enhance Defence and industry collaboration networks with universities to enable faster development and commercialisation of technologies. |
| Initiative 5B | support regional collaborations between prime contractors, SMEs and research institutions to develop defence capability. |
It also supports the sustained growth and emerging specialisation areas within the NSW defence industry. Importantly, the strategy provides a centralised platform to support more effective leadership, advocacy, and engagement with Defence and collaboration with the defence industry.

Defence NSW, the coordinating body that will be established as part of the strategy, will act to support Defence and industry by:
- being the contact point for the Defence, defence-related Commonwealth departments, defence companies, defence industry bodies, and defence-related research organisations
- being a dedicated organisation that will identify and drive opportunities to collaborate, partner and support the growth of the NSW defence sector
- being responsible for defence and industry attraction and expansion in NSW
- promoting the state’s defence industry and research capabilities
- supporting access for NSW defence-related companies to procurement and supply chain opportunities both locally and internationally
- being accountable to and inclusive of key stakeholders in the NSW defence sector.

Defence NSW will put in place mechanisms to engage regularly with its stakeholders to develop and strengthen relationships.

The below diagram illustrates the ways in which Defence NSW will interact at a federal, state and regional level in the delivery of the NSW: Strong, smart and connected strategy.

DEFENCE NSW Interactions

OBJECTIVES AND FUNCTIONS

Defence NSW will have an overarching objective to:
- coordinate relationships between the NSW Government, the Commonwealth, state governments, Defence and industry
- coordinate the implementation of the strategy in a whole-of-government approach
- coordinate defence industry development activities across metropolitan and regional NSW.

Defence NSW will meet regularly with a Defence Industry Advisory Group to ensure regular dialogue on key issues. These functions and engagement pathways are outlined below. Defence NSW will be created as a business unit within the NSW Department of Industry, with dedicated specialist staff, and will work closely with the broader Department in its industry development objectives.

Defence NSW will undertake collaborative projects with industry, and look at opportunities for direct industry inclusion through secondments and project opportunities to ensure a more integrated delivery approach.

Defence NSW will coordinate biannual forums with the Defence Industry Advisory Group to report on the implementation of the strategy and develop future directions.

COMMONWEALTH GOVERNMENT AND DEFENCE ENGAGEMENT

At the national level, the political engagement and leadership will be provided by the Premier, the Minister for Industry, other ministers and the NSW Defence Advocate. Collectively they will:
- ensure alignment with Commonwealth Government and relevant federal Ministers, and oversee joint initiatives
- manage the strategic relationship with Defence
- manage the strategic relationship with international and national prime contractors
- ensure alignment with other states and territories.

STATE ENGAGEMENT

At the state level, the focus is on a coordinated whole-of-government effort to assist Defence and industry. Defence NSW will work to ensure that for Defence and industry there is:
- coordinated access to state government services
- state-wide relationship management with key NSW-based Defence and defence industry stakeholders
- a channel for Defence and defence industry to input into decisions about future enabling services within state government (e.g. utilities, roads, planning and education) and to have international engagement and coordinated regional initiatives.

Most importantly, at a state level there will be the facilitation of statewide defence initiatives and priorities that are focused on achieving specific goals and delivering necessary enablers for Defence and the defence industry in NSW. Tasks will be coordinated through Defence NSW.
A significant proportion of Defence NSW’s service delivery will be coordinated through regional centres. Each centre will identify:

- a regional organisational sponsor
- a regional implementation plan, which outlines the local region’s strategies for sustained growth and responsiveness to emerging Defence and defence industry needs
- identify opportunities and prioritise support to initiative in terms of investment, jobs and exports
- resourcing linked to need and success measures.

Each regional centre will also be responsible for effective relationship management with local Defence establishments and defence industry stakeholders, including:

- Defence bases and units, particularly assisting with access to state services and maximising collaboration across the state
- local defence industry stakeholders in relation to accessing to state services and maximising collaboration across the state
- regional Defence industry associations
- universities and research universities
- local councils.

Regional representatives of Defence NSW will be co-located within the NSW Department of Industry.
NSW is currently home to a significant proportion of Australia’s Defence capabilities, hosting the largest number of Defence bases and facilities—more than 80—across the state. All three services—Royal Australian Air Force (RAAF), Royal Australian Navy (RAN) and Army—have significant bases throughout NSW.

NSW is also a training-intensive state for Defence, with more training facilities than the other states or territories. Seven of the bases in NSW are focused on ADF training.

NSW is also home to all four operational-level commands: Air, Maritime, Land and Joint Operations.

**NSW DEFENCE BASES AND FACILITIES**

NSW has a significant share of expenditure by Defence across the states and territories. NSW’s share of Australia’s Defence spend currently stands at $7.9 billion ($5.5 billion in operational expenditure and $2.4 billion in capital spend).

Historically, Defence has made a solid contribution to the NSW economy. However, in recent years the relative contribution has declined with the expansion of Defence activities in other states. It is envisaged the increased investment in Defence acquisitions and capabilities as highlighted in the Defence White Paper (2016) and the Integrated Investment Plan, will create further opportunities for industry in NSW.

**SHARE OF DEFENCE BUDGET**

NSW is a significant state for Defence activity, being home to the largest number of Defence bases and key platforms across maritime, land and air domains. Further, the industry in NSW underpins a number of Defence’s crucial capabilities, such as materials research, industrial design, advanced manufacturing, information and communication technology (ICT) and complex systems integration. NSW is well placed to meet the complex and evolving needs of Defence and industry’s workforce skills requirements.

Importantly, Defence investment has significant positive impacts across a wide range of industry, employment and education sectors, most notably in Western Sydney and regional NSW including the Hunter, Riverina, Illawarra and Shoalhaven regions.

**DEFENCE PERSONNEL**

NSW hosts the largest number of military and civilian Defence personnel of all Australian states and territories. Approximately 26%, or around 26,000, of the nation’s military (including ADF reserve) and civilian personnel are located or based in NSW.

APPENDIX 2:
VALUE OF DEFENCE INVESTMENT TO NSW

For NSW, a strong Defence presence, combined with an innovative, flexible and responsive defence industry, is central to the delivery of many of the NSW Premier’s priorities. These priorities include supporting initiatives and activities that will lead to the creation of 150,000 new jobs by 2019. Defence with its renewed national investment agenda will be one of the drivers in creating new job opportunities in infrastructure, acquisition and sustainment.

Defence investments and expenditure related to NSW for 2014–15 of $7.9 billion included:
- operational expenditure ($5.5 billion), made up of:
  - wages to military and civilian personnel ($2.9 billion)
  - operation and maintenance ($2.6 billion)
- capital expenditure ($2.4 billion).

NSW DEFENCE INDUSTRIES JOBS AND ECONOMIC GROWTH IN NSW

The strength of the NSW industry plays an important role in both attracting and retaining Defence investment. Precise estimates of the industry size are difficult due to the absence of an aggregated industry ANZSIC definition. In 2014–15, Defence directly employed just over 20,000 people in NSW (ADF and APS, excluding ADF Reserve). In addition, there were another 6,500 people employed directly by the defence industry, and another 29,500 indirectly in businesses supporting the sector, bringing the total employment in NSW to 56,000.

Defence and Industry Employment in NSW 2014-15

While NSW as a whole is expected to benefit from an increased Defence budget, there are significant direct and indirect benefits to other sectors. For example, a major base upgrade will require professional engineering services, local construction contractors and other trades. The industry distribution of the value-added impact is illustrated in the following chart, which analyses the effects of $1 billion in Defence spending. While the biggest direct impacts are experienced in the Defence sector, more than half of the value-added impacts (contribution to GSP) flow to other sectors that supply Defence. This provides a clear picture of the economic linkages of the NSW defence industry to broader economic development.
Specifically, significant boosts to real value added are observed in the construction and business service sectors (including financial services, rental, hiring and real estate, and professional and technical services), as these industries benefit from additional demand for their products from the NSW Defence sector.

Trade (wholesale and retail), transport and telecommunications also benefit as a result of additional business and household demand for their outputs. As resources are diverted into domestic activities, and there is higher demand for imports, activity is lower in trade-exposed industries such as mining and agriculture.

In addition to boosting value added, an increase in government spending on Defence in NSW is also expected to lead to higher employment in NSW.

The following chart shows industry and employment linkages in the NSW economy. The most significant boost to NSW employment occurs in the NSW defence sector, with 3,500 Defence personnel supported as a direct result of the higher Defence activity in NSW. Higher Defence activity is expected to stimulate higher employment across most sectors, including in the construction and professional services sectors, as they support the additional Defence investment and activity.

Overall, this Defence activity supports around 3,500 Defence jobs as well as 6,500 jobs in other sectors that supply goods and services to the NSW defence sector and its employees, including manufacturing, construction, professional services, retail trade, accommodation and food services, and health care.

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4 The contribution of Defence to the NSW economy: An analysis for the NSW Department of Industry, August 2016.

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5 The contribution of Defence to the NSW economy: An analysis for the NSW Department of Industry, August 2016.
DEFENCE AS A CATALYST OF FURTHER ECONOMIC DEVELOPMENT

DEFENCE PRECINCTS AND REGIONAL CENTRES OF EXCELLENCE

The attraction of Defence investment to NSW acts as a catalyst to other industry development. Largely organic in its development, the current defence industry already features clusters of large-scale prime contractors, agile SMEs and world-class research and development institutions that are responsive to specific Defence needs and capabilities. There are already opportunities where obvious synergies exist, for example, in developing helicopter maintenance and avionics services in the Shoalhaven region. There is also significant opportunity to establish Williamtown as the centre of Australian industry participation supporting the Joint Strike Fighter fleets in the Asia Pacific region. There is a significant existing fixed-wing maintenance and training capability at RAAF Base Williamtown and the Jetstar maintenance facility at Newcastle Airport.

GROWING THE EDUCATION AND TRAINING SECTOR

NSW is the main provider of the Defence and defence industry workforce, which is an important source of skilled jobs. However, the defence industry is not a clearly articulated career path for science, technology, engineering and maths (STEM) graduates, and the competition for talent both locally and internationally is high. Part of the issue is public perceptions that manufacturing is an industry in decline, whereas there are significant prospects for growth in advanced manufacturing. The skills sets required in the defence industry such as coding, simulation, robotics and material science are strongly aligned to the jobs of the future, and there is an opportunity to communicate these opportunities through the education and training sector.

DEVELOPING NSW AS A CENTRE FOR RESEARCH AND DEVELOPMENT EXCELLENCE

NSW has a significant level of local and international investment in R&D through its leading universities and research institutions, but this has not been evaluated in terms of its economic impact. There is an opportunity to quantify this investment, and also to better identify the key areas of strength. Areas of strength already exist including the Australian Centre for Field Robotics at University of Sydney, the Centre for Quantum Computation and Communication Technology (CQC2T) at the University of NSW and the Centre for Autonomous Systems at the University of Technology Sydney. Better coordination of the NSW research and development activity will be a key factor in NSW’s approach to securing funding from the CDIC’s Next Generation Technology Fund and Defence Innovation Hub.
The initiatives below will be coordinated as a state campaign by Defence NSW.

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<tr>
<th>INITIATIVE SUPPORTED</th>
<th>PROJECT DESCRIPTION</th>
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<tr>
<td>1C</td>
<td>Promote collaboration between states/territories to ensure delivery of the national acquisition program.</td>
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<tr>
<td>2A</td>
<td>Ensure NSW remains Australia's leader in complex systems integration and sustainment.</td>
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| 2C                   | Target major defence projects through coordinated campaigns including:  
|                      | - Joint Strike Fighter (AIR6000)  
|                      | - Air Force’s Future Battle Management System (AIR6500)  
|                      | - Combat Vehicles (LAND400)  
|                      | - Future Submarines (SEA1000)  
|                      | - Offshore Patrol Vessels (SEA1180), and Future Frigate (SEA5000) |
| 2D                   | Explore Western Sydney Airport as a future aerospace precinct through engagement and partnership with NSW and federal governments. |
| 3A                   | Promote interest and accessibility of STEM in NSW's secondary and tertiary institutions, and promote careers paths in defence industry and technology through industry partnerships. |
| 4A                   | Assist the Navy to manage its interests at a congested Fleet Base East and position NSW as a leader in maritime sustainment. |
| 4B                   | Position Port Kembla steel products for ADF projects. |
| 4C                   | Grow and connect regional networks to enhance collaboration and develop business opportunities. |
| 5A                   | Enhance greater R&D activity in NSW through closer partnerships between NSW businesses, universities and institutions and Defence and Defence research institutions. |
Defence organisations and the defence industry have a significant influence on the Sydney region, which hosts a significant number of Australian Defence Force bases, personnel and facilities. The Defence infrastructure and facilities are complemented by the concentration of large prime contractors working in defence and specialist SMEs both in defence and the wider industry. This is supported by the presence of extensive skills, research capabilities and other business enablers.

Investments in infrastructure, tertiary education and the revitalisation of the services economy have seen the Sydney region provide robust growth opportunities for Defence and industry. The Sydney region has been the main driver of the Australian economy, accounting for 30% of the GDP growth in the 2014-15 period, with much of that growth occurring in Western Sydney.

The Sydney region hosts a number of industry clusters in areas critical to Defence. These clusters converge on technologies and capabilities including system integration, cybersecurity, electronics and advanced materials. This is supplemented by research linkages and the availability of extensive skills and a workforce geared towards new technologies and capabilities.

Western Sydney is a major driver of advanced manufacturing activity with significant linkages to Defence including a number of aerospace activities, materials and technologies. The development of the Western Sydney airport will provide added impetus in growing the aerospace and aviation-related linkages in the region.

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### KEY STATISTICS

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<tr>
<th>Defence industry in Sydney</th>
<th>$4.35 billion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>15,290 people employed in Defence and defence industries</td>
</tr>
<tr>
<td>Defence presence</td>
<td>Fleet Base East and associated facilities</td>
</tr>
<tr>
<td></td>
<td>RAAF Richmond and Glenbrook</td>
</tr>
<tr>
<td></td>
<td>Holsworthy, Victoria Barracks and Orchard Hills</td>
</tr>
<tr>
<td>Prime contractors</td>
<td>Airbus, BAE Systems, Boeing, Lockheed Martin, Northrop Grumman, Raytheon, Safran, Thales Australia.</td>
</tr>
<tr>
<td>Regional Defence stakeholders</td>
<td>AIDN NSW, Ai Group, ICN NSW, local government, NSW Business Chamber, SADIG, universities and research institutions.</td>
</tr>
</tbody>
</table>

Source: KPMG and NSW Department of Industry.

---

### DEFENCE INDUSTRY IN SYDNEY

The Sydney region hosts significant industry capabilities that support the operational and capability needs of Defence. The region boasts expertise in technologies identified as critical to the success of the Defence Force in the coming years. These include:

- acoustic technologies and systems
- complex system integration
- cybersecurity
- advanced materials and optics
- helicopter and jet engine maintenance and simulation
- intelligence, surveillance and reconnaissance (ISR)
- electronic warfare
- space technologies
- small arms manufacturing.

These capabilities are supported by an innovation ecosystem that incorporates universities, research institutions and the operations and facilities of large defence contractors. This ecosystem enables the Sydney region of NSW to provide Defence with a resilient and diverse pool of suppliers, skills and capabilities.

### EDUCATION AND TRAINING

The Sydney region benefits from the presence of some of the leading universities in the world including the University of Sydney, University of NSW, University of Technology Sydney (UTS), Macquarie University, Western Sydney University and a number of other research institutions including the CSIRO. These institutions and their linkages with industry have been critical in developing and disseminating technologies and the skilled workforce required by Defence and industry.

Universities and research institutions in the Sydney region have strong linkages with Defence and industry and include the presence of specialised research and industry centres in project management, cybersecurity, robotics, advanced materials and computing.

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## PLANNED INITIATIVES

A number of projects are planned to leverage existing and new capabilities and investments and support the growth, sustainment and retention of capabilities, skills and investments. Other initiatives are listed below.

<table>
<thead>
<tr>
<th>INITIATIVE SUPPORTED</th>
<th>PROJECT DESCRIPTION</th>
</tr>
</thead>
</table>
| 1B                   | Support Defence Force redevelopment plans and leverage planned infrastructure upgrades for:  
Fleet Base East  
RAAF Richmond redevelopment  
Holsworthy Barracks
Enable support networks for families of ADF/APS and Defence businesses to increase competitiveness for talent and skills. |
| 1C                   | Collaborate with all three levels of government to provide integrated services which encourage growth and innovation within Defence and industry. Work with CDIC to support its local presence and improve access for local businesses. |
| 2A                   | Maximise opportunities for NSW industry in upcoming investments in maritime platforms including assisting SMEs access supply chains and promoting NSW capabilities in maritime technologies and systems. |
| 2B                   | Build collaboration between the ACT and NSW industries in the cyber and space domains. Implement a cybersecurity strategy and ensure capabilities in NSW research institutions and businesses are promoted to Defence and other sectors. |
| 2D                   | Explore Western Sydney Airport as a future aerospace precinct through engagement and partnership with the Commonwealth Governments. |
| 3A                   | Build skills sets in Western Sydney to address Defence and industry requirements. |
| 4C                   | Support strong industry networks by working with industry associations, AIDN ICN, SADIG and others to enable faster dissemination of innovation, collaboration and business opportunities across the sector. |
| 4D                   | Assist NSW SMEs access federal and state government programs to build participation in trade events, global supply chain and capability development initiatives. Work with CDIC and Team Defence Australia to enable NSW SMEs participation in trade missions and development of export opportunities. |
| 4E                   | Increase opportunities in areas of competitive advantage such as aerospace, advanced materials, simulation and autonomous systems. Develop economic opportunities around established and emerging industry clusters. |

## MEASURES OF SUCCESS

Success will be measured at both the enterprise and Defence level by examining:

- Increased opportunities for NSW defence businesses through sustainment contracts
- New contracts won internationally
- Jobs added due to new contracts
- Increased capabilities in cybersecurity, space and intelligence, surveillance and reconnaissance.

## LOCAL PROFILE

**QUICKSTEP**

Quickstep is an Australian-listed company that manufactures advanced composite components and assemblies in Australia and develops advanced composite manufacturing solutions for the global Aerospace, Defence and Automotive markets. Quickstep has significant capabilities and expertise in the production of aerospace-grade advanced composite components using both conventional autoclave-based manufacturing and leading out-of-autoclave production technologies, including its patented Qure and Resin Spray Transfer (RST) processes.

Quickstep currently employs around 150–200 FTEs with potential for significant growth as work flowing from the Joint Strike Fighter program and other aerospace and automotive projects ramp up.

Quickstep has continued investing in new technologies and new areas of expertise, including the recent set up of R&D capabilities and manufacturing facilities for the automotive sector.
The Hunter Region hosts key RAAF and Army bases, including RAAF Base Williamtown, Australia’s premier jet fighter base. The broader Hunter and Central Coast region has a diverse industrial base servicing a range of sectors including defence and Defence projects.

The next generation of aircraft for the RAAF, the Joint Strike Fighter (JSF) or F-35, will be introduced at Williamtown from 2019, catalysing $1 billion of investment in the base. Prime contractors are well represented in the region, with Thales, Boeing, Lockheed Martin, Northrop Grumman, Raytheon, TAE, Forgacs/Civmec and Varley all having a presence. BAE Systems Australia has been assigned the role of Southern Pacific Regional Depot Airframe Maintenance, Repair, Overhaul and Upgrade (MROU) provider for the F-35, supporting not only RAAF aircraft, but aircraft of other nations in the region.

The Hunter Region hosts an array of professional service organisations and subcontractors with experience in land, air and sea projects, including simulation. This is underpinned by a track record of successfully completing defence projects, including the supply of vehicle modules for Land 121 phase 3B vehicles, blocks for the Air Warfare Destroyers and upgrades to RAAF fast jets.

There is a large skilled workforce to support manufacturing and sustainment in aerospace, specialised vehicles and ship building. The University of Newcastle, TAFE and local schools all support engineering, commercial, industrial and defence-focused education and training. The innovative ME Program operates in the region’s high schools to increase the take up of science, technology, engineering and maths (STEM) subjects, to support the future skills needs of manufacturing and defence projects.

**APPENDIX 3.3:**

**HUNTER REGION**

The region hosts an array of prime contractors and sub-contractors that service a range of air, land and sea projects. Companies and activities include:

- Boeing: in-service support of AEW&C aircraft, deeper-level maintenance on the RAAF’s fleet of F/A-18 Classic Hornet aircraft
- BAE Systems Australia: maintenance of Hawk 127 fleet
- Raytheon: in-service support of the F/A-18 Hornet Aircrew Training System
- TAE: maintenance of F404 jet engines
- Thales: Mine Hunter
- Varley: builder of modules for Land 121 Phase 3 (a) and 3 (b)
- Bohemia: simulation software for tactical training and mission rehearsal
- Civmec/Forgacs: modules for warships.

**KEY STATISTICS**

| Regional economic contribution of Defence (2014-15) | $1.31 billion. |
| Employment | 4,620 people employed in Defence and defence industries |
| Defence presence | RAAF Williamtown, Lone Pine Army Barrack’s School of Infantry (Singleton), Special Forces Training Centre (Singleton), Myabat Logistics Company |
| Prime contractors | BAE Systems, Boeing, Thales Australia, TAE, Civmec/Forgacs, Northrop Grumman, RUAG Australia, Varley and Lockheed Martin |
| Regional Defence stakeholders | HunterNet, RDA Hunter, Hunter Business Chamber, University of Newcastle, Hunter Development Corporation, Local Councils and TAFE Hunter |

**EDUCATION AND TRAINING**

The region hosts a number of educational and training institutions that support the defence and aerospace sectors.

**University of Newcastle**

- Mobile robotics in marine and aerospace applications
- Guidance and motion control of marine platforms
- Robust autonomous systems
- Security and counter-terrorism risk assessment
- Weapon and collateral damage estimation
- Vibration analysis.

**UNSW**

- Defence studies and research
- Cybersecurity and information assurance
- Robotics and autonomous systems
- Materials science and engineering.

**TAFE Hunter**

- Vocational education and training programmes in defence-related fields
- Apprenticeships and traineeships in technical and trade occupations.

**RDA Hunter**

- Regional Development Agency promoting industry development and innovation.

**Hunter Business Chamber**

- Networking and support for local businesses in the defence sector.
PLANNED INITIATIVES

There are a number of planned initiatives that will support the growth of the industry in the region. These initiatives are consistent with the NSW Government’s Hunter Regional Plan 2036 and Implementation Plan 2016-2018 released in October 2016, to be delivered by the Hunter Development Corporation.

<table>
<thead>
<tr>
<th>INITIATIVE SUPPORTED</th>
<th>PROJECT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B</td>
<td>Work with RAAF and Army to support initiatives to grow and sustain the local bases at Williamtown and Singleton. Support projects in the Hunter that provide networks for families of ADF/APS and Defence businesses to increase competitiveness of regional locations.</td>
</tr>
<tr>
<td>1C</td>
<td>Collaborate with all three levels of government to provide integrated services which encourage growth and innovation within Defence and industry. Work with Centre for Defence Industry Capability (CDIC) to support its local presence and improve access for local businesses.</td>
</tr>
<tr>
<td>2A</td>
<td>Explore opportunities for the Hunter in commercial and Defence marine sustainment including utilising opportunities through the development of a precinct in the Port of Newcastle.</td>
</tr>
<tr>
<td>2C</td>
<td>Facilitate the growth of the Hunter region as a regional support facility in the Southern Pacific for the JSF and leverage the expertise to develop further global opportunities for JSF activities and fast jet MRO. Facilitate the growth of the Hunter as a hub for ADF land vehicle development and sustainment.</td>
</tr>
<tr>
<td>3A</td>
<td>Support skills and knowledge initiatives in partnership with the University of Newcastle, TAFE NSW and local schools, especially through the RDA Hunter ME Program and HunterNet. Target the partnership to increase simulation and visualisation capabilities in the region.</td>
</tr>
<tr>
<td>3C</td>
<td>Support strong industry networks by working with industry associations including HunterNet, Hunter Business Chamber, RDA Hunter, ICN NSW and others to enable faster dissemination of innovation, collaboration and business opportunities across the sector.</td>
</tr>
<tr>
<td>4A</td>
<td>Assist NSW SMEs access federal and state government programs to build participation in trade events, global supply chain and capability development initiatives. Work with CDIC and Team Defence Australia to enable NSW SMEs participation in trade missions and development of export opportunities.</td>
</tr>
<tr>
<td>4C</td>
<td>Develop economic opportunities around established and emerging industry clusters, including the aerospace precinct around Williamtown.</td>
</tr>
<tr>
<td>5B</td>
<td>Assist prime contractors to grow and partner with SMEs including linkages with University of Newcastle.</td>
</tr>
</tbody>
</table>

MEASURES OF SUCCESS

The success measures will be focused on making quantifiable contributions to business growth and the facilitation of increased activities of Defence Forces and the defence industry in the region. This includes:

- jobs and investment related to Defence projects won in the region
- the number of companies in the region working on defence projects
- successful activation of shovel-ready land adjacent to the RAAF base
- Williamtown being a regional hub for JSF activity encompassing airframe and engine maintenance, component maintenance and warehousing
- the number of SMEs accessing funding from the Commonwealth’s technology and innovation programs.

LOCAL PROFILE

BAE SYSTEMS AUSTRALIA

Williamtown is the centre of BAE System’s fast jet maintenance activities, including deeper maintenance and line maintenance for the RAAF’s fleet of 33 Hawk 127 lead-in fighters. The presence of BAE acts as a catalyst for other business development in the region.

BAE Systems Australia has been assigned the role of Southern Pacific Regional Depot for Airframe Maintenance, Repair, Overhaul and Upgrade (MROU) provider to support the JSF, which could be up to 130 aircraft. This includes F-35 from foreign air force assets operating in the region, such as those from South Korea, Japan, Singapore and the US. Further opportunities exist for regional component maintenance (repair and testing) and warehousing for the regional JSF fleet.
The Shoalhaven region has a long and proud history of providing innovative defence technology and services to the Australian and global defence industries. Renowned as Australia’s centre for naval aviation, the Shoalhaven is home to a number of defence companies employing a highly skilled workforce and offering an attractive and affordable lifestyle.

### Key Statistics

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional economic contribution of Defence (2014–15)</td>
<td>$540 million</td>
</tr>
<tr>
<td>Employment</td>
<td>1,915 people employed in Defence and defence industries</td>
</tr>
<tr>
<td>Defence presence</td>
<td>HMAS Albatross, HMAS Creswell, Beecroft weapons range, School of Survivability and Ship's Safety</td>
</tr>
<tr>
<td>Prime contractors</td>
<td>BAE Systems, Lockheed Martin, Sikorsky Helitech, Raytheon and CAE.</td>
</tr>
<tr>
<td>Regional Defence stakeholders</td>
<td>Shoalhaven Defence Industry Group (SDIG), Shoalhaven Business Chamber, Shoalhaven City Council.</td>
</tr>
</tbody>
</table>

### Defence Industry in the Shoalhaven Region

Significant Defence Force and defence industry capabilities have been developed in the Shoalhaven to service both the operational needs of the Royal Australian Navy (RAN) and the broader needs of Defence across all domains including:

- Design, manufacture and in-service support of mechanical and electronic systems
- Test regimes
- Simulation and training services
- Technical consultancy services
- Infrastructure design and construction

### Education and Training

**Helicopter Aircrew Training System:**

Boeing Defence Australia will deliver a modern helicopter training system to the next generation of Army and Navy aircrew transitioning to Australia’s future combat helicopters.

The program will be supported by 15 Airbus EC135 helicopters and three Thales Reality H full flight simulators, to be housed in the purpose-built training facilities at HMAS Albatross. Training will commence in 2018.
PLANNED INITIATIVES

Planned initiatives leverage existing and newly-developed infrastructure and strong rotary wing capability to build a sustainable defence industry in the Shoalhaven beyond the roll out of current capital programs.

<table>
<thead>
<tr>
<th>INITIATIVE SUPPORTED</th>
<th>PROJECT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B</td>
<td>Increase collaboration between businesses and Defence in supporting growth of the Albatross Aviation Technology Park. Enable support networks for families of ADF/APS and Defence businesses to increase competitiveness of regional locations for talent and skills. Evaluate ways to enhance the presence of naval weapons ranges in the Shoalhaven and Jervis Bay regions. The investment in infrastructure at Albatross Aviation Technology Park provides the potential for encouraging helicopter maintenance for other helicopter fleets. Conduct a campaign to maximise the use of the available facilities.</td>
</tr>
<tr>
<td>1C</td>
<td>Work with HMAS Albatross, Shoalhaven Defence Industry Group (SDIG), Shoalhaven Council and others to increase opportunities for businesses.</td>
</tr>
<tr>
<td>3B</td>
<td>Explore further opportunities in Helicopter Aircrew Training Systems (civil and defence).</td>
</tr>
<tr>
<td>4C</td>
<td>Work with industry associations and networks including SDIG, ICN, AIDN, RDA Far South Coast and others to enable faster dissemination of innovation, opportunities and collaboration across the sector.</td>
</tr>
<tr>
<td>4D</td>
<td>Assist NSW SMEs access federal and state government programs to build participation in trade events, global supply chain and capability development initiatives. Work with CDIC and Team Defence Australia to enable NSW SMEs participation in trade missions and development of export opportunities.</td>
</tr>
<tr>
<td>4E</td>
<td>Develop economic opportunities around established and emerging industry clusters, including the Albatross Aviation Technology Park. Develop the Shoalhaven as a Centre of Excellence in rotary wing MRO.</td>
</tr>
</tbody>
</table>

MEASURES OF SUCCESS

Success will be measured at both the enterprise and the Defence level by examining the number of:

- new businesses located within the Shoalhaven engaged with Defence businesses within the Shoalhaven accessing programs offered by the NSW Government and the Commonwealth to grow their engagement with Defence businesses within the Shoalhaven accessing the Global Supply Chain businesses located within the Shoalhaven winning contracts with Defence or within a Defence contract supply chain.

LOCAL PROFILE

GLOBAL DEFENCE SOLUTIONS

Global Defence Solutions (GDS) is a wholly Australian-owned solution provider to the Australian Defence Force and Security Services. Based in Nowra, GDS offers turnkey project management, integrated system design and niche product solutions using its in-house capabilities and approved third-party product suppliers from around the world.

GDS is currently engaged with Singaporean, New Zealand and Malaysian militaries to grow its market footprint.
DEFENCE INDUSTRY IN THE ILLAWARRA REGION

Wollongong companies provide important contributions in ensuring that the ADF can perform its warfighting and security functions safely and sustainably. Companies such as Bisalloy, Bluescope and Prokote provide world-leading armoured steel plate for a range of RAN ships and submarines, as well as Australian Army protected mobility vehicles.

Other Wollongong companies provide important high-end electrical equipment, complex communications systems, engineered plastics, remote education systems, ruggedised computers and data storage solutions, and medically approved computing devices to Defence.

DMTC develops and delivers new materials technologies and manufacturing processes to enhance Australia’s defence capability. This is achieved through adoption of a collaborative partnership approach between the Defence Force, defence industries and research agencies.

Leading defence research and development organisations in Wollongong include the maritime arm of the Defence Materials Technology Centre (DMTC), the SMART Infrastructure Facility, the Steel Research Hub and Centre for Computer and Information Security Research (CCISR).

Wollongong has a track record in converting technical know-how into defence capability that protects ADF service personnel. For example, armoured steel for the following platforms was developed and manufactured in Wollongong:

- Collins-class submarines
- Adelaide-class frigates
- Hobart-class Air Warfare Destroyers
- Australian Army Bushmasters.

EDUCATION AND TRAINING

Leading defence research and development organisations in Wollongong include the maritime arm of the Defence Materials Technology Centre (DMTC), the SMART Infrastructure Facility, the Steel Research Hub and Centre for Computer and Information Security Research.

DMTC is a multi-partner collaborative research centre aimed at providing the defence industry with materials and manufacturing solutions to enhance Australian defence capability.

The NSW node of DMTC is established at the University of Wollongong and is conducting research into materials and production techniques associated with the fabrication of land and marine platforms.

APPENDIX 3.5:

ILLAWARRA REGION

Wollongong is a city transformed. It has a well-developed and sophisticated innovation ecosystem that ensures it is at the cutting edge of applied research and industry collaboration. This focus on innovation ensures the ADF maintains its technological edge.

Leading defence research and development organisations in Wollongong include the maritime arm of the Defence Materials Technology Centre (DMTC), the SMART Infrastructure Facility, the Steel Research Hub and the Centre for Computer and Information Security Research (CCISR).

Wollongong has a track record in converting technical know-how into defence capability that protects ADF service personnel. For example, armoured steel for the following platforms was developed and manufactured in Wollongong:

- Collins-class submarines
- Adelaide-class frigates
- Hobart-class Air Warfare Destroyers
- Australian Army Bushmasters.

Photo: Tobias Rowles. Image © Destination NSW.
PLANNED INITIATIVES
There are a number of planned initiatives that will support the growth of the defence industry in the region.

<table>
<thead>
<tr>
<th>INITIATIVE SUPPORTED</th>
<th>PROJECT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B Work with the University of Wollongong to develop opportunities for closer engagement with the Defence Material Technology Centre.</td>
<td></td>
</tr>
<tr>
<td>1C Collaborate with all three levels of government to provide integrated services that encourage growth and innovation within Defence and industry.</td>
<td></td>
</tr>
<tr>
<td>2C Promote Wollongong technology, equipment and services into major defence projects.</td>
<td></td>
</tr>
<tr>
<td>4A Explore opportunities to help reduce congestion in Fleet Base East.</td>
<td></td>
</tr>
<tr>
<td>4B Promote the inclusion of Port Kembla steel into the ADF’s ship and vehicle procurement.</td>
<td></td>
</tr>
<tr>
<td>4C Work with industry associations and networks like Advantage Wollongong, AIDN, ICN, RDA Illawarra and others to enable faster dissemination of innovation, opportunities and collaboration across the sector.</td>
<td></td>
</tr>
<tr>
<td>4D Assist NSW SMEs access federal and state government programs to build participation in trade events, global supply chain and capability development initiatives.</td>
<td></td>
</tr>
<tr>
<td>4E Develop economic opportunities around established and emerging industry clusters.</td>
<td></td>
</tr>
<tr>
<td>5B Collaborate with the University of Wollongong to grow the capabilities of NSW SMEs in advanced materials and other emerging areas.</td>
<td></td>
</tr>
<tr>
<td><strong>MEASURES OF SUCCESS</strong></td>
<td></td>
</tr>
<tr>
<td>Success will be measured at both the enterprise level and the Defence level and will include:</td>
<td></td>
</tr>
<tr>
<td>➤ retention of Defence Materials Technology Centre node at the University of Wollongong</td>
<td></td>
</tr>
<tr>
<td>➤ Port Kembla steel supplied into:</td>
<td></td>
</tr>
<tr>
<td>➤ SEA 1000 – Future Submarines</td>
<td></td>
</tr>
<tr>
<td>➤ SEA 1180 – Offshore Patrol Vessels</td>
<td></td>
</tr>
<tr>
<td>➤ SEA 5000 – Future Frigates</td>
<td></td>
</tr>
<tr>
<td>➤ Land 400 – Armoured Vehicles</td>
<td></td>
</tr>
<tr>
<td>➤ number of new businesses located in the Illawarra engaged with Defence</td>
<td></td>
</tr>
<tr>
<td>➤ number of businesses in the Illawarra accessing programs offered by the NSW Government and the Commonwealth to grow their engagement with Defence</td>
<td></td>
</tr>
<tr>
<td>➤ number of businesses in the Illawarra accessing the Global Supply Chain program</td>
<td></td>
</tr>
<tr>
<td>➤ number of businesses located within the Illawarra winning contracts with Defence or within a Defence contract supply chain.</td>
<td></td>
</tr>
</tbody>
</table>

LOCAL PROFILE
BISALLOY
Based in Wollongong, and working in close collaboration with local steel manufacturer BlueScope Steel and the DST (Defence Science and Technology) Group, Bisalloy’s range of defence and ballistic grades of steel are specifically designed for use in military applications where light-weight, maximum protection and superior ballistic performance is required. Steel grades manufactured by Bisalloy such as Ultra High Toughness Armour and Ultra High Hardness Armour exceed US military standards.

Bisalloy’s distinguished accomplishments include providing all of the armour and high-performance plate for the Collins-class submarines, Adelaide-class frigates and Australian Army Bushmasters vehicles. Bisalloy have also proudly supplied their Australian made material to militaries and civilian customers through North America, Asia, the Middle East and Europe. Several foreign governments in these regions have qualified Bisalloy’s armour plate for use by their militaries.
The Murray-Riverina region in southern NSW is the home of military training and specialised contract engineering, as well as propellant and military explosive manufacturing. The $200 million Royal Australian Navy Defence Communications Station makes the Riverina home to some of the most advanced communication technology in the world.

KEY STATISTICS

| Employment | 2,290 people employed in Defence and defence industries |
| Defence presence |  
  - RAAF Base Wagga  
  - Blamey Barracks-Kapooka  
  - Latchford Barracks (Albury/Wodonga) |
| Prime contractors | Thales Australia, BAE Systems. |

DEFENCE PRESENCE

The Defence presence in Wagga Wagga consists of the RAAF Base Wagga Wagga (which includes the National Aerospace Training Centre, and aviation Initial Technical Training—ITT—for Navy personnel), and Blamey Barracks base at Kapooka (which includes the national Army Recruit Training Centre). Defence also has presence in the wider region at Latchford and Gaza Ridge Barracks in North East Victoria.

Although Defence facilities in Murray–Riverina are predominantly centred around Wagga Wagga, there is a strong industry base in and around Albury and the wider Albury-Wodonga region in advanced manufacturing, communications and technologies.
**DEFENCE INDUSTRY IN THE MURRAY-RIVERINA REGION**

Defence industry in the Murray and Riverina region is focused on military training, specialised contract engineering, propellant and military explosive manufacturing and includes:

- design
- specialised engineering and electronics
- technical, non-technical and recruitment training
- helicopter airframe structures, maintenance and component overhaul
- target technologies
- remote control systems manufacturing
- munitions disposal.

**Thales—Mulwala**
Thales’ Mulwala facility provides the only manufacturing capability for propellants and military explosives in Australia, and manufactures high-quality propellants and explosives that perform at consistent velocities over an extended temperature range. Thales is the largest supplier of explosive ordnance to the ADF and has world-class propellant research and development capabilities.

**Australian Target Systems—Albury**
Australian Target Systems (ATS) is a dominant provider of robotic training systems and live-fire training design to the ADF and has been delivering live-fire target systems globally for over 50 years. ATS provides full-spectrum capability for live-fire target systems including design, project management, systems development, installation and maintenance. ATS also provides technical advisory services for range management, policy formulation and experimental activities.

Other defence companies in Murray–Riverina include Australian Aerospace Engineering, DTD Engineering, BAE Systems, Ladex Construction, Flip Screen, Hutchins Bros, Silvertone Electronics and Pentarch, Spotless and Megitt Training Systems.

**EDUCATION AND TRAINING**

**Training at Blamey Barracks Kapooka**
Originally established in 1951 as the 1st Recruit Training Battalion, the Army Recruit Training Centre has evolved since 1989 to become a world-class training establishment for all soldiers selected to join the Australian Army. The training the soldiers receive is world-class. The skills and knowledge gained in the Army begin with soldier training at the 1st Recruit Training Battalion. The barracks provide a variety of physical and academic training activities including the use of firing and weapons ranges, and fire training.

**Training at RAAF Base Wagga Wagga**
RAAF Base Wagga is located in Forest Hill and is the major ground training base for RAAF. The Base delivers technical and non-technical initial employment and postgraduate training that is fundamental to the delivery of military air and space power in support of national objectives. The Base supports four major training units:

- No 1 Recruit Training Unit
- the RAAF School of Technical Training (RAAFSTT)
- RAAF School of Administration and Logistics Training
- the School of Postgraduate Studies.

Since 1993, Navy Aviation Technician trainees have been undertaking Aviation Initial Technical Training at RAAFSTT at RAAF Base Wagga.
PLANNED INITIATIVES

There are a number of planned initiatives that will support the growth of the defence industry in the region.

<table>
<thead>
<tr>
<th>INITIATIVE SUPPORTED</th>
<th>PROJECT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B</td>
<td>Work with RAAF and Army to support initiatives to grow and sustain the local bases at Wagga Wagga, Albury and Kapooka.</td>
</tr>
<tr>
<td>1C</td>
<td>Collaborate with all three levels of government to provide integrated services which encourage growth and innovation within Defence and industry.</td>
</tr>
<tr>
<td>3B</td>
<td>Work with the Defence Force to build on the training and education strengths in the Murray-Riverina in partnership with Training Services NSW and Charles Sturt University.</td>
</tr>
<tr>
<td>4C</td>
<td>Support strong industry networks by working with industry associations including AIDN, ICN, RDA Southern Inland, Murray and Riverina and others to enable faster dissemination of innovation, opportunities and collaboration across the sector. Defence Murray Riverina Alliance, a regional network of government and partner organisations operating throughout the Murray Riverina, aiming to promote the region’s defence industry capabilities and attract business, investment and jobs to the region.</td>
</tr>
<tr>
<td>4D</td>
<td>Assist NSW SMEs access federal and state government programs to build participation in trade events, global supply chain and capability development initiatives. Work with CDIC and Team Defence Australia to enable NSW SMEs participation in trade missions and development of export opportunities.</td>
</tr>
<tr>
<td>4E</td>
<td>Develop economic opportunities around established and emerging industry clusters.</td>
</tr>
</tbody>
</table>

MEASURES OF SUCCESS

Success will be measured at both the enterprise and the Defence level by examining the:

- new businesses located within the Murray-Riverina engaged with Defence
- businesses within the Murray-Riverina accessing the global supply chain
- businesses located within the Murray-Riverina winning contracts with Defence or within a defence contract supply chain.

LOCAL PROFILE

Milspec Manufacturing originated from the federal government-owned Australian Defence Industries (ADI). After privatisation of ADI, in April 2002 there was a management buyout of the business and the Milspec brand was born. Today, Milspec works closely with most Defence prime contractors, designing and manufacturing subsystems for complex Defence programs as well as infrastructure projects. Milspec’s own products include military standard alternators, exportable power systems, auxiliary power units, power distribution units and cabling systems.

In 2016, Milspec renovated its Albury facilities and expanded its factory shop floor by approximately 15%. This included the introduction of a new robotic welding cell, a larger clean room for electrical/electronic work, and an upgraded security system for sensitive military work. A significant growth in workforce was also an element of the expansion.

Milspec is engaged in a number of programs and projects with substantial opportunities for further growth.

MILSPEC MANUFACTURING

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Milspec is engaged in a number of programs and projects with substantial opportunities for further growth.
The Capital region adjoins the ACT, the centre for the Australian Government’s defence and security policy making and the focus of national defence procurement decision making. As a consequence of its place as the centre of government, the ACT boasts a significant presence of the defence prime contractors together with representation of specialist cybersecurity, advanced communications, radar, ICT and surveillance businesses. The greater Canberra region extending beyond the borders of the ACT and encompassing the Southern Tablelands is also home to key defence establishments and important defence industry participants.

The economic impact of the Defence Force spending in the region is already significant, and is expected to grow under the 2016 Defence White Paper, with both prime contractors and SMEs benefiting from their proximity to decision makers.

The ADF’s most significant establishment in the region outside of the ACT is located in Bungendore, NSW, 25 kilometres from the Canberra CBD. Headquarters Joint Operations Command (HQJOC) is responsible for the command and control of all ADF operations worldwide. Each of the ADF’s Combined Task Forces (CTF) and Joint Task Forces (JTF), and the Australian contingents to UN peace monitoring operations, are directly subordinate to HQJOC. The facility employs some 550 personnel.

**KEY STATISTICS**

| Employment | 770 people employed in Defence and defence industries |
| Defence presence | HQJOC Bungendore |
| Prime contractors | Major primes are proximate to the Capital Region (in the ACT). |

**DEFENCE INDUSTRY IN THE CAPITAL REGION**

The region is home to significant industry skills and expertise (including ACT) that is being driven by the growing demand from Defence for industry capability in computer system design, engineering design, and investigation and security services.
**PLANNED INITIATIVES**

Planned initiatives leverage existing and developing capability in highly technical sectors such as computer system design, engineering design, investigation and security services. The Department of Industry will work with stakeholders and industry leaders to set up and develop an industry network.

This network will:
- provide a forum to engage with the Defence Force
- connect industry with large defence contractors
- enable the dissemination of knowledge and programs
- position the region as an important contributor to defence.

<table>
<thead>
<tr>
<th>INITIATIVE SUPPORTED</th>
<th>PROJECT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1C</td>
<td>Collaborate with all three levels of government to provide integrated services that encourage growth and innovation within Defence and industry.</td>
</tr>
<tr>
<td>2B</td>
<td>Explore opportunities in cybersecurity, phased array radar and Defence materials.</td>
</tr>
<tr>
<td>3B</td>
<td>Leverage training strengths of the Capital Region.</td>
</tr>
<tr>
<td>4C</td>
<td>Work with industry associations and networks including AIDN ICN, RDA and others to enable faster dissemination of innovation, opportunities and collaboration across the sector.</td>
</tr>
<tr>
<td>4D</td>
<td>Assist NSW SMEs access federal and state government programs to build participation in trade events, global supply chain and capability development initiatives. Work with CDIC and Team Defence Australia to enable NSW SMEs participation in trade missions and development of export opportunities.</td>
</tr>
<tr>
<td>4E</td>
<td>Develop economic opportunities around established and emerging industry clusters.</td>
</tr>
</tbody>
</table>

**MEASURES OF SUCCESS**

Success will be measured at both the enterprise level and the Defence level by examining the:
- number of new businesses located within the Capital region engaged with Defence
- number of businesses within the Capital region accessing programs offered by the NSW Government and the Commonwealth to grow their engagement with Defence
- number of businesses located within Capital region winning contracts with Defence or within a defence contract supply chain
- increasing opportunities for local industry at HQJOC Bungendore
- growth in the regionally-based high-frequency and phased-array radar sector
- successful consideration of the potential for a defence industry and research hub.
LOCAL PROFILE
CODARRA ADVANCED SYSTEMS

Codarra is a wholly Australian-owned consulting, training and systems integration company. Codarra’s national headquarters is located in Queanbeyan and an office in Melbourne.

Codarra assists its clients manage complex projects through professional management and technical consulting, training and the provision of turnkey solutions. As an example of its ability to deliver complex projects, Codarra was engaged to project manage the command, control, communications, computing and intelligence (C4I) capability for HQJOC when it was established at Bungendore.

Codarra holds specialised expertise in systems engineering, communications, command, control, surveillance, reconnaissance and vehicles.
The Northern region of NSW includes the Far North Coast, the Mid North Coast, Western NSW and the Northern Inland. The key areas of existing expertise include arms manufacturing, pilot training, shipbuilding, ship maintenance and sustainment, UAV technology and metallurgy manufacturing. The major defence companies in this location are BAE Systems, Birdon Marine, Steber International, Bale Defence, UAV Vision and Harwood Marine.

**APPENDIX 3.8:**

**NORTHERN NSW REGION**

**KEY STATISTICS**

**Defence presence**
- ADF Basic Flight Training in Tamworth (Air Force, Army, and Navy)
- RAAF Cadets at multiple locations (e.g. 331 SQN AAFC—Coffs Harbour, 333 SQN AAFC—Port Macquarie, 310 SQN AAFC—Air Force Cadets Tamworth)
- GRES Depots at multiple locations (e.g. Murwillumbah GRES Depot)
- Space and Communications at multiple locations (Point Lookout Repeater Station Radio/Navigational Aid—Ebor, Mt Dowe Communications Station Radio/Navigational Aid—Kaputar National Park Narrabri, Uralia and Parkes)

**Prime contractors**
- BAE Systems, Lockheed Martin.

**Regional Defence Stakeholders**
- AIDN NSW, ICN NSW, SADIG, Local Councils, Ai Group, NSW Business Chamber and Universities and research institutions (CSIRO, UNE, SCU, CSU).

**DEFENCE INDUSTRY IN NORTHERN NSW**

Significant defence industry capabilities have been developed in the Northern NSW region including the presence of a number of major defence companies.

Lockheed Martin Earth–Earth station, which provides telemetry, tracking and command services; the Narrabri Observatory is part of the Australia Telescope National Facility (ATNF), which is operated by the CSIRO; and Parkes Observatory.

Product specialisations include:
- flight training
- premium manufacturer of commercial fiberglass vessels and composite components
- shipbuilding
- in-service support and fleet maintenance
- design, manufacture and through-life support of military equipment and defence-related products
- unmanned aerial vehicles (UAV)
- space telecommunications—Uralia

Tamworth currently employs approximately 100 FTE private sector positions, approximately 50 Defence Force personnel, and 240 students on rotation. It has been estimated the pilot training contract in Tamworth contributes between $15 million to $20 million to the NSW economy each year.

**EDUCATION AND TRAINING**

One of the largest suppliers in this region, BAE Systems, provides the Australian Defence Force, Republic of Singapore Defence Force, Royal Brunei Air Force, and Papua New Guinea Defence Force with training at Tamworth Airport.

The region hosts significant education and training establishments that include pilot training at Tamworth. Tamworth training includes basic-flight pilot training (fixed wing and rotary) and defence aviation technical trades training.

**SHIPBUILDING AND SUSTAINMENT**

The region hosts significant shipbuilding and sustainment facilities. Harwood Marine has a 2,500 tonne slipway. Birdon Marine is a major shipbuilder with experience on delivering for domestic and international markets. Steber International is another shipbuilder in the region.
**PLANNED INITIATIVES**

Planned initiatives leverage existing and new capabilities and investments to support the growth, sustainment and retention of core regional capabilities.

<table>
<thead>
<tr>
<th>INITIATIVE SUPPORTED</th>
<th>PROJECT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B</td>
<td>Support existing Defence Force establishments to prosper in NSW through closer engagement at regional level to build defence-supportive communities.</td>
</tr>
<tr>
<td>1C</td>
<td>Collaborate with all three levels of government to provide integrated services which encourage growth and innovation within Defence and industry.</td>
</tr>
<tr>
<td>3A</td>
<td>Promote Northern NSW as a region of excellence for aviation training, ship building and sustainment.</td>
</tr>
<tr>
<td>4C</td>
<td>Build strong regional industry networks by working with industry associations and others to enable faster dissemination of innovation, opportunities and collaboration across the sector.</td>
</tr>
<tr>
<td>4D</td>
<td>Assist NSW SMEs access federal and state government programs to build participation in trade events, global supply chain and capability development initiatives. Work with CDIC and Team Defence Australia to enable NSW SMEs participation in trade missions and development of export opportunities.</td>
</tr>
<tr>
<td>E</td>
<td>Develop economic opportunities around established and emerging industry clusters including the leveraging of regional maritime manufacturing capabilities.</td>
</tr>
</tbody>
</table>

**MEASURES OF SUCCESS**

Success will be measured at both the enterprise level and the Defence level by monitoring:

- increased opportunities for NSW Defence businesses through sustainment contracts
- new contracts won internationally
- jobs added due to new contracts
- increased capabilities in cybersecurity, space and ISR.

**LOCAL PROFILE**

**BALE DEFENCE INDUSTRIES**

Bale Defence Industries is a privately owned company dedicated to the support of Australian and New Zealand Defence Forces with the design, manufacture and through-life support of military equipment and defence-related products. Bale Engineering, the parent company, was established in Port Macquarie, NSW, in 1979. Continued growth and expansion over the years sees the company now employing a highly trained and skilled workforce, delivering a range of products and services to Defence facilities and associated industries throughout Australia and the Pacific Rim.

Bale Defence is a regional supplier for a number of overseas companies from around the world. Bale works closely with almost all of the defence prime contractors in delivering customised engineering systems and solutions for both Army and Navy.

Bale Defence Industries is the 2015 NSW Small Employer of the year.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AIDN</td>
<td>Australian Industry and Defence Network</td>
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<tr>
<td>CDIC</td>
<td>Centre for Defence Industry Capability</td>
</tr>
<tr>
<td>CSIRO</td>
<td>Commonwealth Scientific and Industrial Research Organisation</td>
</tr>
<tr>
<td>DIPS</td>
<td>Defence Industry Policy Statement</td>
</tr>
<tr>
<td>DSTG</td>
<td>Defence Science and Technology Group</td>
</tr>
<tr>
<td>DWP</td>
<td>Defence White Paper</td>
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<tr>
<td>FTE</td>
<td>Full Time Employee</td>
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<tr>
<td>I3net</td>
<td>Illawarra Innovative Industry Network</td>
</tr>
<tr>
<td>ICN</td>
<td>Industry Capability Network</td>
</tr>
<tr>
<td>IIP</td>
<td>Integrated Investment Plan</td>
</tr>
<tr>
<td>ISR</td>
<td>Intelligence, Surveillance and Reconnaissance</td>
</tr>
<tr>
<td>JSF</td>
<td>Joint Strike Fighter</td>
</tr>
<tr>
<td>MRO</td>
<td>Maintenance Repair and Overhaul</td>
</tr>
<tr>
<td>MROU</td>
<td>Maintenance, Repair, Overhaul &amp; Upgrade</td>
</tr>
<tr>
<td>RDA</td>
<td>Regional Development Australia</td>
</tr>
<tr>
<td>SADIG</td>
<td>Sydney Aerospace and Defence Interest Group</td>
</tr>
<tr>
<td>SDIG</td>
<td>Shoalhaven Defence Industry Group</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprise</td>
</tr>
<tr>
<td>STEM</td>
<td>Science, Technology, Engineering and Maths</td>
</tr>
<tr>
<td>UAV</td>
<td>Unmanned Aerial Vehicle</td>
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