Part VI

Defence industry

The Australian Government recognises that Australia's defence industry has an important role in delivering and sustaining the ADF's capability. The White Paper makes clear that procurement, sustainment and industry support are 'critical to defence capability and operational effectiveness'. It stated:

> The ADF requires a deep, diverse and secure supply chain to acquire and maintain the capabilities it needs, and Defence's procurement and sustainment systems must continue to be flexible and responsive as possible.*

In the following chapters, the committee considers the partnership between Defence and defence industries. It looks at industry's skill base, its access to information on Defence planning and scheduling for major projects, the workflows generated by defence projects, and the relationship between Defence and industry including industry's early engagement.

*Department of Defence, *Defending Australia in the Pacific Century: Force 2030,* Defence White Paper 2009, Commonwealth of Australia, 2009, paragraph 16.1.

Chapter 13

Sustaining and building Australia's defence industry

13.1 Released in July 2010, the Defence Industry Policy Statement noted that a strong, successful and skilled Australian defence industry would be needed for Defence to deliver the future capability needed for the ADF.[1] The ambitious acquisition program set out in the White Paper will require Australia's defence industry to increase both its capacity—the size of its workforce—and also its technical expertise, particularly for projects such as the Future Submarine Project. This places increasing importance on how Defence's procurement decisions affect Australia's defence industry and Defence's role in helping industry to grow the capability and capacity to deliver *Force 2030*.

13.2 Australia's defence industry comprises a small number of Australian subsidiaries of global prime contractors, such as BAE Systems, Thales and Raytheon; ASC, a Government Business Enterprise;[2] and Australian SMEs. In this chapter, the committee considers the relationship between Defence and defence industries and the ways in which Defence assists industry in Australia to contribute to ADF capability.

Assisting Australian defence industry

13.3 In its submission, Defence noted that industrial capacity 'needs to be planned, built, managed and continually re-shaped—and industry must plan to ensure it can play its part'.[3] As the sole purchaser of major defence capital equipment in Australia, Defence exerts considerable influence on the performance and viability of the domestic defence industry. Consequently, Defence cannot be a disinterested bystander of the national defence industry and should have 'a strong and enduring interest in the industry's success'. In the following section, the committee considers the ways in which Defence supports industry with an emphasis on industry's skills base, industry's access to information and workflows.

Skills in industry

13.4 According to Defence, Australia's defence industry currently employs approximately 29,000 people and supplies over $5 billion worth of materiel and services to Defence each year.[4] Defence has estimated that the defence industry workforce will need to grow to about 34,000 workers to meet the requirements of the

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1 Department of Defence, *Submission 21*, p. 6.

2 All the shares issued in the capital of ASC are owned by the Minister for Finance and Deregulation.

3 *Submission 21*, p. 6.

4 Department of Defence, *Submission 21*, p. 6.

White Paper, with most of the growth required from 2020.[5] Growing Australia's defence industry workforce, particularly its engineers, presents significant difficulties in light of the demands for engineers in the resource sector and the availability of skilled engineers within Australia.[6] For example, a recent survey of Australian defence industry capability suggested that, given the projected staffing levels planned for five years' time, an impending problem loomed with the expected size and skill profile of the systems integrations and systems engineering workforce.[7] The Future Submarine Project in particular will require significant increases in the defence industry workforce in both engineers and draftsmen over the next two decades.

13.5 The committee is aware of some of the difficulties faced by Australia's defence industry in attracting and retaining skilled engineers in the face of competing demands for those engineers from higher-paying resource companies. Additionally, as Mr Brent Jackson of Engineers Australia pointed out, the defence industry is also subject to further constraints with regard to their ability to attract engineers from overseas:

> Where other companies, resource companies for example, can draw from migrant engineers quite freely, Defence is constrained somewhat by citizenship requirements and, of course, security clearances and such, which means that they largely have to rely on domestic growth to fuel their demand, which is of course a lot slower than just getting somebody in from overseas who is suitably qualified.[8]

13.6 Industry made the point forcefully that a skilled workforce takes time to build: that you cannot simply flick a switch and skilled workers can be found.[9] Australia's naval shipbuilding industry demonstrates the difficulty for industry to acquire and maintain its skilled workforce.

Shipbuilding projects

13.7 Currently, the Air Warfare Destroyer (AWD) Program illustrates the challenges that industry faces in having the necessary capacity and skilled workforce ready to deliver complex projects on schedule.[10] In this case, the BAE Systems

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5 Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 3.

6 Australian Industry Group Defence Council, *Submission 10*, p. 12. See also Engineers Australia, *Submission 32*, pp. 2–3.

7 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

8 Brent Jackson, Engineers Australia, *Committee Hansard*, 5 October 2011, p. 4.

9 Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, pp. 4–5.

10 Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 3.

shipyard in Melbourne could not cope with the construction work on the AWDs and building steel blocks for the Landing Helicopter Dock (LHD) ships. The first of the two Canberra-class LHD ships is expected to arrive in Melbourne in 2012 for further construction and internal fitout, with the second ship expected to arrive in 2013.

13.8 One of the challenges for the contractor was starting production for the AWDs from a cold start and with a reduced workforce. Following difficulties in engineering and construction of some the first hull blocks, the Minister for Defence announced that the AWD Alliance had reallocated the construction of some blocks to other shipyards in Adelaide, Melbourne, Newcastle and Ferrol, Spain.[11]

13.9 The Future Submarine Project will also test industry's capacity to deliver. The Project aims to replace the Collins Class submarines with 12 new submarines capable of travelling further, longer, more frequently and providing more capabilities than the Collins Class. The process of acquiring these submarines will be Australia's most complex defence procurement in history. According to the RAND Corporation, Australia will need a workforce of approximately 1,000 skilled draftsmen and engineers across industry and government for the Future Submarine Project.[12] The study suggested that while Australia has the requisite number of skilled engineers and draftsmen, many of them are currently employed on other commercial or naval programs, and few have experience in submarine design.[13]

13.10 The RAND study found that while it would be possible for Australia to grow its submarine-building workforce to levels required for the Future Submarine Project, the duration and cost of the program would be significantly increased if Australia did not bring in some submarine-experienced personnel from overseas.[14] When factoring the demands from other programs, the data in the RAND study shows significant shortfalls in several key skill categories including naval architecture and combat systems.[15]

Defence Materiel Organisation and government initiatives

13.11 DMO has established several programs to increase the availability of skilled workers to the defence industry. These include training programs, such as the Skilling Australia's Defence Industry (SADI) program, the Defence and Industry Study Course, the Industry Skilling Program Enhancement Package, the Priority Industry

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11 The Hon. Stephen Smith MP, Minister for Defence, Media Release, 'Changes to Air Warfare Destroyer Construction Program', MIN663/11, 26 May 2011, http://www.defence.gov.au/minister/Smithtpl.cfm?CurrentId=11862 (accessed 2 January 2012).

12 RAND Corporation, *Australia's Submarine Design Capabilities and Capacities*, 2011, p. xxiii.

13 RAND Corporation, *Australia's Submarine Design Capabilities and Capacities*, 2011, p. xxvi.

14 RAND Corporation, *Australia's Submarine Design Capabilities and Capacities*, 2011, p. xxvi.

15 RAND Corporation, *Australia's Submarine Design Capabilities and Capacities*, 2011, p. xxxix.

Capability Innovation Program, and internships and other programs targeted at students.

13.12 The SADI program was established in 2005 and is designed to assist the defence industry to address the shortage of skilled workers. It seeks to up-skill existing employees, to improve the quality and quantity of skills training in defence industry; and to generate additional skilled positions.[16] The program provides funding for training to industry where training is linked to a defence capability need, and since its inception over 24,000 training places have been funded.[17] The Minister for Defence Materiel announced in September 2011 that the government would provide $14 million to 109 companies for over 4,000 training places in 2011–12.[18]

13.13 A number of submissions cited the SADI program as an important measure to help tackle the problem of securing skilled workers for the defence industry.[19] The Australian Industry Group Defence Council suggested that funding for the SADI program be increased, as currently many companies that apply for assistance under the scheme miss out.[20]

13.14 Defence's fluctuating demand for work affects industry's ability to contemplate future investment. In its submission, Sonartech Atlas argued that despite significant government initiatives in the form of programs such as the SADI program, 'extended and delayed procurement timelines can still have a negative impact on suppliers beyond recovering or offsetting cost'.[21] It also noted that programs such as SADI need to be complemented by actual work experience that allows newly trained staff to consolidate and practise their skills.[22]

13.15 In addition to the various DMO initiatives, in September 2011, the Minister for Defence Materiel announced the Defence Industry Workforce Strategy, which involves Skills Australia working with the DMO to prepare a comprehensive workforce strategy for the defence materiel supply industries by June 2012.[23] The strategy is intended to include an assessment of the preparedness of Australia's

16 Defence Materiel Organisation, 'Skilling Australia's Defence Industry (SADI) Program', http://www.defence.gov.au/dmo/id/sadi/index.cfm (accessed 9 January 2012).

17 Minister for Defence Materiel, the Hon. Jason Clare MP, 'Industry Feedback on Defence Skills Program', 20 September 2011.

18 Minister for Defence Materiel, the Hon. Jason Clare MP, 'Industry Feedback on Defence Skills Program', 20 September 2011.

19 Australian Industry Group Defence Council, *Submission 10*, pp. 5 and 12.

20 Australian Industry Group Defence Council, *Submission 10*, p. 13. See also Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

21 Sonartech Atlas, *Submission 13*, p. 3.

22 Sonartech Atlas, *Submission 13*, p. 3.

23 Skills Australia, *Defence Industry Workforce Strategy: Discussion Paper*, January 2012, p. 1.

defence industry to compete for major defence projects. It is also to include recommendations on building and supporting the skills required in the defence industry with an aim to assist:

> …better positioning Australia's Defence materiel supply industries to fully participate in emerging opportunities for Australian Government Defence procurements through ensuring the availability of a more skilled workforce.[24]

13.16 Skills Australia's January 2012 discussion paper makes several important points, some of which have also been raised in submissions or witness testimony. These include:

- the need for better data to assess fully current capacity; and future needs in the defence industry;[25] and
- the likelihood that skill shortages for upcoming major defence projects are likely to occur as the defence industry competes for skilled workers with the resource and infrastructure sectors.[26]

13.17 Consistent with evidence before the committee, the paper raises questions on how Defence and industry can best address skill shortages in the future.

Committee view

13.18 The committee understands that the defence industry workforce is suffering from skill shortages, a shortfall in capacity, and limited experience in some areas such as submarines. It especially recognises the difficulties faced by industry in attracting and maintaining the skilled personnel—particularly engineers—required for defence procurement. For industry to deliver the major capital projects set out in the White Paper, the industry workforce will have to grow by approximately 5,000 workers over the next two decades while competing against the resource sector for the limited numbers of skilled workers available. Even if this growth is achieved, the lack of experience of the Australian workforce in some critical areas may still impose significant delays on some projects—such as the Future Submarine Project—unless additional industry expertise and capacity is obtained from overseas.

Access to information

13.19 Due to Defence's dominance in the domestic defence market, Australian firms are largely dependent on Defence's decisions for business. Clearly, public information

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24 Skills Australia, *Defence Industry Workforce Strategy: Discussion Paper*, January 2012, p. 5.

25 Skills Australia, *Defence Industry Workforce Strategy: Discussion Paper*, January 2012, pp. 8 and 10.

26 Skills Australia, *Defence Industry Workforce Strategy: Discussion Paper*, January 2012, pp. 12–13.

is essential for industry planning particularly around resourcing and investment.[27] By providing clear and timely information to industry, Defence can assist these firms to undertake more informed planning, investment and innovation, and as a result, offer better value for money and greater capacity to Defence.

13.20 The main public information tools that the government uses to convey its priorities to industry are the Defence White Paper and the DCP. The 2009 White Paper set out the long-term capability goals that the government intended to achieve. According to Air Marshal Harvey, the White Paper and the DCP generally provide a very high level description of the required outcome but not necessarily the materiel solution.[28] Descriptions of outcomes required (for example, a submarine capability), however, can provide industry with valuable information about future acquisition projects.

13.21 The White Paper also announced the government's undertaking to ensure that certain strategically important industry capabilities would continue to be available from within Australia. In July 2009, following the publication of the White Paper, the government released a fact sheet outlining 12 Priority Industry Capabilities (PICs).[29] The PICs are defined as:

> …those capabilities that confer an essential strategic advantage by being available from within Australia and which, if not available, would significantly undermine defence self reliance and Australian Defence Force (ADF) operational capability.[30]

13.22 The DCP, which provides the defence industry with insight into defence procurement, is a practical document and one of the fundamental sources of inputs to the strategic planning processes. The 2011 DCP contained an account of major capital initiatives that were currently planned for government consideration in the period to 2021.[31] An ASPI paper, described the DCP as a key document:

> Without doubt, the DCP is the single most important source of defence capability planning information available to industry, the media, academe and the public at large—not to mention the Parliament of Australia and the men and women of our defence force.[32]

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27 See BAE Systems Australia, *Submission 12*, p. 4.

28 *Committee Hansard*, 7 October 2011, p. 27.

29 Department of Defence, Fact Sheet, *Priority Industry Capabilities*, July 2009.

30 Department of Defence, Fact Sheet, *Priority Industry Capabilities*, July 2009, p. 1.

31 See for example, Sonartech ATLAS Pty Ltd, *Submission 13*, p. 1 and Department of Defence, *Defence Capability Plan*, 2011, p. 1.

32 Leigh Purnell and Mark Thomson, 'How much information is enough? The disclosure of defence capability planning information', Australian Strategic Policy Institute under contract to the Australian Department of Defence, December 2009, p. 1.

13.23 The public version of the DCP 2009 was updated twice in 2010, further revised in 2011 and the latest version published in July 2012.[33] The current DCP contains 111 priority projects, or phases of projects, worth approximately $153 billion and planned for either first or second pass approval over the four year Forward Estimates period.[34]

13.24 Defence also releases defence industry policy statements. The 2010 statement set out the government's vision for how Defence and industry would work together to achieve a combination of outcomes—the ADF receives the equipment that it needs, Australian taxpayers receive value for money, and local businesses obtain opportunities to win business domestically and internationally.[35] It cited four key principles underpinning the policy:

- setting clear investment priorities;
- establishing a stronger Defence-industry relationship;
- seeking opportunities for growth; and
- building skills, innovation and productivity.[36]

13.25 The policy statement cited the PICs as an aspect of the first principle, noting that 'Government may take into account factors such as Australian industry impacts, the national interest, broader strategic factors, and other whole-of-government considerations' when making decisions based on value-for-money in PIC-related procurements.[37]

13.26 Defence has also created the Defence+Industry ePortal, a website that provides links to key planning documents, media releases and tender announcements.[38] According to Defence, 'the ePortal is designed to provide industry with a tool to access a wide and comprehensive range of Defence information

33 Stephen Smith MP, Minister for Defence, 'Minister for Defence and Minister for Defence Materiel—Joint media release—Defence Capability Plan', 10 July 2012, http://www.minister.defence.gov.au/2012/07/10/minister-for-defence-and-minister-for-defence-materiel-joint-media-release-defence-capability-plan/ (accessed 29 July 2012).

34 Stephen Smith MP, Minister for Defence, 'Minister for Defence and Minister for Defence Materiel—Joint media release—Defence Capability Plan', 10 July 2012, http://www.minister.defence.gov.au/2012/07/10/minister-for-defence-and-minister-for-defence-materiel-joint-media-release-defence-capability-plan/ (accessed 29 July 2012).

35 Department of Defence, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base*, 2010, p. 8.

36 Department of Defence, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base*, 2010, pp. 9–11.

37 Department of Defence, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base*, 2010, pp. 9–10.

38 Leigh Purnell and Mark Thomson, 'How much information is enough? The disclosure of defence capability planning information', Australian Strategic Policy Institute under contract to the Australian Department of Defence, December 2009, p. 24.

including opportunities for companies, including SMEs, to participate in Defence acquisition and sustainment programs'.[39] Additionally, the Defence+Industry conference is an annual conference bringing together defence personnel and industry representatives.[40] Industry values the conference highly as an opportunity to meet defence officials and show products.[41]

Industry's perspective

13.27 A number of analysts and witnesses were critical of the quality and reliability of information available and drew particular attention to the Defence Capability Plan (DCP).[42] The Australian Business Defence Industry Unit and Sonartech Atlas urged the government to provide industry with clear messages to increase the industry's confidence in Defence.[43] According to Sonartech Atlas (STA), the DCP funding brackets in their current form are interpreted by STA as a less than perfect predictive tool to glean the intent of the Commonwealth in relation to a particular project. It argued that a 'greater level of detail regarding the Commonwealth's expectations on the outcomes or deliveries would help to minimise ambiguity with potential benefits for both defence and industry'.[44] In its view, there was scope for the DCP to be of greater benefit to industry by providing more detail of the Commonwealth's expectations on delivery, better fidelity in project timelines and allocation of priorities for listed projects. It stated:

> As it stands, it is not possible for a business to determine the priority order of the projects within the DCP, ie the risk a project could be progressed or slipped dependent on other higher priority projects. This can be a significant issue if the project a potential supplier is pursuing and investing for is a lower priority project with less likelihood of advancement.[45]

13.28 Dr Thomson described the DCP as 'unhelpful'. He stated that 'while specific years used to be provided for the planned approval of projects, there are now only multiyear brackets that obscure what's going on with individual projects'. The

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39 Defence Materiel Organisation, 'Defence Industry ePortal', http://www.dplusi.defence.gov.au/ (accessed 16 January 2012).

40 See http://australia.gov.au/topics/defence-and-international/defence-industry (accessed 15 June 2012).

41 Leigh Purnell and Mark Thomson, 'How much information is enough? The disclosure of defence capability planning information', Australian Strategic Policy Institute under contract to the Australian Department of Defence, December 2009, p. 68.

42 For example, in its submission, the Australian Industry Group Defence Council supported ASPI's recommendation that Defence move to a 10-year DCP timeframe but with regular, six-monthly online updates. *Submission 10*, p. [11].

43 Australian Business Defence Industry Unit *Submission 6* p. 4; Australian Industry Group Defence Council, *Submission 10* p. [5] and Sonartech, *Submission 13*, p. 1.

44 *Submission 13*, p. 1.

45 *Submission 13*, p. 1.

Submarine Institute of Australia Inc informed the committee that in recent years the former clarity of the DCP had been undermined. In its opinion, this tendency 'runs counter to the increasing demands for accuracy and detail in plans and schedules from industry'.[46] One industry representative questioned the reliability of both the White Paper and DCP with regard to projects being on time and on track.

> The reality…is that there is a delay process in that front end on these things. Obviously the strategic requirements can change. We all acknowledge that, but when it comes to the defence capability planning cycle…these things become quite critical to companies' investments in facilities, training, staffing, retention of staff and so on. So there is almost a loss of credibility around the significance of a white paper, the significance of a DCP and the underlying actions that will achieve the dates of those plans.[47]

13.29 The Defence Council noted that in December 2010 when the updated public DCP was released, Ministers Smith and Clare 'announced the cancellation or postponement of 21 major projects or phases of projects' without explaining adequately these changes to the DCP.[48]

13.30 It should be noted that both experts and commentators as well as representatives of defence industry have been critical of the information made available through the DCP for many years. For example one of the loudest messages coming out of the committee's 2006 inquiry into naval shipbuilding was that industry 'wants clearer guidance from government on its long term plan and objectives for the industry'. The report also found that the plan 'currently seems to bring industry into the discussion about capability development too late'. It concluded that:

> …the DCP should provide the opportunity for Australian industry, and indeed, the wider community, to engage with Defence in the earlier stages of analysing and identifying Australia's strategic priorities and the capabilities needed to meet them.[49]

13.31 With regard to the information available on priority industries, some industry representatives welcomed the government's commitment to sustain PICs and Strategic Industry Capabilities (SICs) within Australia. The 2012 DCP listed the following as PICs:

- Acoustic Technologies and Systems
- Anti-Tampering Capabilities
- Combat Uniform and Personal Equipment
- Electronic Warfare

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46 *Submission 9*, p. 2.

47 *Committee Hansard*, in camera.

48 Australian Industry Group Defence Council, *Submission 10*, p. [11].

49 Senate Foreign Affairs, Defence and Trade References Committee, *Blue water ships: consolidating past achievements*, December 2006, paragraph 15.65.

- 'High-end' System and 'system of systems' integration
- High Frequency and Phased Array Radars
- Infantry Weapons and Remote Weapons Stations
- In-Service Support of Collins Class Submarine Combat Systems
- Selected Ballistic Munitions and Explosives
- Ship Dry Docking Facilities and Common User Facilities
- Signature Management, and
- Through-life and Real-Time Support of Mission Critical and Safety Critical Software.

13.32 While industry representatives welcomed the publication of PICs, they regarded them as 'too narrow, not well defined or limited to one stage of the lifecycle'. According to the Australian Industry Group Defence Council, the information provided by government and Defence has not been sufficient for some businesses and industry groups to make informed longer-term investment decisions.[50] Additionally, BAE Systems also argued that at present the PIC and SIC do not provide 'sufficient information for industry to make longer-term investment decisions'.[51] Other industry representatives also noted that Defence should provide clearer guidance to industry.[52] Similarly, a 2009 ASPI's report found that industry considered the list of PICs too limited and focused only on 'high profile' capabilities, and lacking the required level of detail.[53] A survey of defence industry capability supported this view and suggested further that PICs are 'not yet accompanied by a clear implementation strategy or evidence of action resulting from their publication'.[54]

Committee view

13.33 Defence's approach to its dealings with industry—planning, acquisition and sustainment for defence projects—is essential for the successful delivery of *Force 2030*. Industry's ability to plan for, and invest in, people and facilities to deliver future defence projects is significantly dependent on the information Defence provides about its intentions. The DCP and Defence White Papers are the main public information tools and key planning documents for industry. Clearly, from industry's perspective, they fall short in providing the level of certainty and confidence that industry requires

50 Australian Industry Group Defence Council, *Submission 10*, p. 10.

51 BAE Systems, *Submission 12*, p. 1.

52 *Committee Hansard*, in camera.

53 Australian Strategic Policy Institute, 'How much information is enough? The disclosure of defence capability planning information', 2009, p. 64.

54 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

to be an effective partner in capability development. Furthermore, the committee believes that the involvement of industry at the earliest stage of capability planning is inadequate, including Defence White Paper preparation (see paragraphs 3.20, 3.24–3.30).

Off-the-shelf

13.34 In the previous chapter, the committee noted the consequences for skills development in Defence caused by purchasing OTS. The very strong collective view of respondents to a survey of defence industry capability was that the continuing Defence preference for the inclusion of off-the-shelf solutions was 'reducing the amount of engineering design work at the sub-system level and below'. The respondents regarded government's emphasis on MOTS/COTS as 'somewhat misguided' because they believed that to be competent in systems integration, engineers required a deep understanding in a domain (i.e. software, hardware, electronics, etc) and then broader experience in systems engineering. According to the results of the survey:

> This consequently means that there will be fewer engineers in the future that have had the benefit of having been involved in the detailed design and interfacing of hardware and software. The concern from industry was that 'People that study SI [systems engineering] only, without practical technology experience, are often the ones who make mistakes on complex SI [System integration] projects as they are only 'book smart' system with little real subsystem and equipment experience.[55]

13.35 Industry's concerns about the need to provide opportunities for those in defence industries to gain practical technology experience in detailed design and hardware and software interfacing is another consideration that should be factored into decisions about, and arrangements for, purchasing OTS.

Workflows

13.36 As noted earlier, Defence is the sole customer for Australia's domestic defence industry and its procurement decisions directly affect the industry, including the viability of some companies. In particular, uneven demands on defence industry can reduce its ability to support Australia's capability needs. Australian SMEs that rely on work generated from major Defence capital equipment projects are particularly vulnerable to Defence's procurement decisions and are dependent on Defence to provide them with an even flow of work.

13.37 In this regard, a dominant theme among industry submissions to this inquiry has been the need for Defence to commit to more regular flow of new projects and

55 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

sustainment work to encourage investment in the defence industry.[56] Industry representatives, both primes and SMEs, supported each other in their call for Defence to smooth out fluctuations in the workload.

13.38 Defence's cyclical demands—for example, periods of heavy shipbuilding followed by a drop-off in demand—can create difficulties for industry in maintaining a workforce through periods of low demand. Prolonged gaps between projects can force the prime contractors to lay off workers and SMEs to leave the defence sector altogether. The Royal Institution of Naval Architects referred to the provision of a steady stream of work at whatever level Defence feels is an appropriate level as very important to defence industry:

> Peaks and troughs should be avoided wherever possible, and as much notice given to industry when these are unavoidable, to help companies to plan.[57]

13.39 The Australian Business Defence Industry Unit argued that to deliver new platforms and systems beyond the next decade, industry will 'need to build and grow skills in capability development, design engineering, project management, assembly and systems integration'. Workforces with these skills, however, 'can only be maintained and grown through regular tranches of new defence projects between 2011-2019'.[58]

13.40 BAE Systems Australia similarly noted that a robust indigenous industry requires a smooth and consistent demand to maintain capability. It argued that fluctuations in demand would 'invariably lead to degradation in industry capability.' It cited the four year gap from 2014 to 2018 in ship building requirements of the present DCP, which will result in deterioration in workforce skills and expertise in the maritime sector.[59] Mr Innes Willox of the Australian Industry Group Defence Council described the situation:

> …what bedevils all the companies we represent here is that projects start and stop and then there are gaps; then they start and stop and then there are gaps; and then there are ramp-ups and ramp-downs all through this. So the pipeline does not flow; it either gushes or dribbles. It is that feast or famine scenario which bedevils the entire industry, because you do lose that skills base. They go off…and then they do not come back…So we lose all the great technological and technical expertise that we developed through the Collins class submarines and the Anzac frigates, or it disappears or we

56 Australian Business Defence Industry Unit, *Submission 6*, p. 3; Sonartech ATLAS, *Submission 13*, p. 2; BAE Systems Australia, *Submission 12*, p. 3; Australian Association for Maritime Affairs, *Submission 17*, pp. 5–6; Royal Institution of Naval Architects, *Submission 18*, p. 5; and Innes Willox, *Committee Hansard*, 11 August 2011, p. 2.

57 *Submission 18*, p. 5.

58 *Submission 6*, p. 3.

59 *Submission* 12, pp. 2–3.

> cannot find it again. We cannot rummage around in the bottom drawer and just pick it up and start again.[60]

13.41 According to Mr Tonkin, Australian Industry and Defence Network, the government's policy has failed to maintain a sustainable workload in the defence shipbuilding space to enable industry to maintain its skills. He referred to the importance of spreading acquisitions over time and concluded that 'If you were to deliver ships in a succession, as they do in some other countries, you would find that we would have the capability to adequately undertake that task'.[61] Along the same lines, BAE noted:

> Consistent and sustained demand is necessary for industry to develop and maintain both capability and capacity. This requires longer term contracts for sustainment that provide incentives for industry for investment, particularly in skilled people. In addition to the issue of industry capability, there is the equally important factor of capacity that requires a baseline level of work to maintain or alternatively sufficient notice and certainty for industry to ramp-up to the required level.[62]

13.42 Dr Davies explained the problem in terms of naval shipbuilding where there is a surge while one class of ship is being built, followed by a hiatus, and 'then a lot of those skills need to be relearned'. As noted earlier, the AWD stands out an example of where peaks and troughs created problems for the industry. He noted:

> We have just seen that play out in the air warfare destroyer project. The BAE shipyards did a fine job building the Anzac frigates. Fast forward 10 years and all sorts of problems emerge when they start to construct the first modules for the air warfare destroyers.[63]

13.43 Looking forward, the Victorian Government registered concerns about another significant gap in demand before the next tranche of shipbuilding commences following the completion of the AWDs and LHDs.[64]

Slowdown in approvals

13.44 On a related matter, a number of companies cited the rate of project approvals as a worrying trend. In chapter 3, the committee referred to the slippage in the approval rate in the context of the need for sound planning for future capability development based on early and robust analysis. The following consideration of the slow rate of approvals is concerned with the effect of delays on industry.

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60 *Committee Hansard*, 11 August 2011, p. 17.

61 *Committee Hansard*, 11 August 2011, p. 17.

62 *Submission 12*, p. 3.

63 Andrew Davies, *Committee Hansard*, 12 August 2011, p. 6.

64 *Submission 27*, p. 8.

13.45 In recent years, project approvals have slowed which, in industry's experience, is having a negative impact on companies, particularly on prime contractors, SMEs and professional service providers.[65] A number of submissions cited the Defence Incoming Government Brief 'Red Book' released by the government on 28 October 2010, which revealed that the two-pass process had stalled. According to Dr Davies and Dr Thomson, it was clear that things were slipping behind schedule as early as May 2010. Since then, the situation has deteriorated further. In their view, 'given the mounting delays, it looks increasingly unlikely that the program of modernisation can be achieved on schedule'. More recently in ASPI's 2011 Defence Budget Brief, Dr Thomson stated:

> They can change the goalposts all they want, but the fact remains that implementation of Force 2030 has fallen steadily behind schedule over the past two years…over the past 24 months, a mere ten projects have been given the nod, whereas more than three times that number was planned. And it is set to get worse.[66]

13.46 He suggested that 'the unambiguous lesson of the past decade was that while planning for new capability is easy, delivering it can be very difficult'. To his mind, it 'is already clear that the new capabilities envisaged in the White Paper will not enter service as planned'.[67] According to BAE Systems, the NSC would need to approve approximately 50 projects per year to meet the present DCP timeline.[68] The present average, however, is less than ten per year. In his most recent Defence Budget Brief, Dr Thomson stated that the lead indicator of future work, first-pass approvals, was still 'badly behind schedule'.[69]

13.47 One consequence of this delay is increased cost to industry as project teams are formed and disbanded. BAE Systems stated that the time the NSC takes to consider and approve projects affects the flow of work to industry. A slowdown in the rate of project approvals can create a lower and less predictable workload for industry,[70] and as a result, can also impose significant costs on industry. In its view, the slow rate of approval aggravates the already severe problem of uneven workload.[71] The Australian Industry Group Defence Council similarly observed that

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65 Graham Priestnall, Australian Industry and Defence Network Inc., *Committee Hansard*, 11 August 2011, p. 3.

66 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2011–2012*, May 2011, p. vii.

67 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2011–2012*, May 2011, p. 103.

68 *Submission 12*, p. 3.

69 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2012–2013*, May 2012, p. 119.

70 *Submission 12*, p. 3.

71 *Submission 12*, p. 3.

the delay in approvals undermines 'industry's investment in infrastructure and skilling, including causing cash-flow and staffing problems for SME companies'.[72]

13.48 The Australian Industry Defence Network supported the contention that the slowdown in the approval rates had adversely affected the defence industry. In its view, this interruption had the potential to delay capability needed by the ADF and, through the delay, increase the cost of providing that capability.[73] Numerous other witnesses cited the detrimental effect that Defence's general slow-down in decision-making was having 'on the ability of defence industry companies to make the necessary business and investment decisions to ensure the ongoing viability of the sector'.[74]

13.49 Industry representatives noted that current delays in decisions were causing particular problems for the smaller companies and stressed the need for Defence to maintain a consistent flow of work to keep the industry going.[75] In December 2011, *Jane's Defence Weekly* reported that at least ten defence-related SMEs 'operating in niche capability areas' had ceased trading or withdrawn from the defence industry. Delayed program approvals were cited as a decisive factor forcing companies to withdraw from the defence sector.[76] A recent survey of defence industry capability also indicated that 'many significant job losses had occurred in some companies over 2009–10 and more were 'expected as many projects were delayed by the White Paper preparation in 2009 and had not gone to contract'.[77]

13.50 While a slowdown in approvals of new projects may result in an increase in sustainment spending, as existing systems must be maintained for longer, the Northern Territory (NT) Government argued that this had not occurred in recent years.[78] The slowdown in the volume of work going to both prime contractors and SMEs has had significant impacts in the NT, with SMEs in particular suffering from the reduced workload and being forced to sustain operations in other industry sectors instead of

72 *Submission 10,* p. [3].

73 *Submission 19,* p. 1.

74 See for example, *Submission 12*, p. 3; *Submission 10,* p. [3]; *Submission 19*, p. 1 and Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

75 Christopher Burns, Defence Teaming Centre, *Committee Hansard*, 11 August 2011, p. 4.

76 Jon Grevatt, *Jane's Defence Weekly*, 'Challenges lie ahead for Australian defence', 21 December 2011.

77 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

78 Northern Territory Government, *Submission 4*, p. 3.

defence. The NT Government warned that industry capability in NT would soon be lost if current delays were not resolved.[79]

13.51 Defence acknowledged that it faced challenges in delivering the number of project approvals for government consideration.[80] In October 2011, in response to a question about the rate of project approvals by the NSC, Air Marshal Harvey, then CCDG, stated that first and second pass approval rates were increasing.[81] As noted earlier, however, Dr Thomson indicated that first pass approvals were 'badly behind schedule'[82] He observed further:

> It is worrying, that the usual surge in approvals following a White Paper simply did not occur in 2009. Moreover, the election in 2013 (which historically reduces the number of approvals) and a White Paper in the same year (which on past experience will be preceded by a substantial hiatus in approvals), will probably see a reduced throughput of approvals over the next eighteen months.[83]

Time lapse to contract signature and commencement

13.52 Industry also raised concerns about the time lapse from the bidding phase for a project to contract award and contract commencement. The Australian Association for Maritime Affairs stated that current processes 'take so long, delay the expenditure of money; and diffuse personal responsibility for the eventual outcome'.[84] According to the Australian Industry Defence Network, the delays around decision-making to contract result in higher costs, due to the effects of inflation, the increased cost of later technology and of government and defence industry resources 'treading water' while waiting for a decision.[85] The Defence Teaming Centre believed that this process 'requires reform and tighter timelines, especially for contract award'. It argued that 'the delayed time frame, sometimes years, eventually creates an unrealistic timeline in which industry must then deliver'.[86] In addition, according to the centre, 'the company may lose vital intellectual capability within their staff if not utilised within the original time frame proposed'.[87] The Australian Industry Group Defence Council urged Defence to 'embrace speedier tendering and contracting processes and outcomes

79 Northern Territory Government, *Submission 4*, p. 4.

80 *Supplementary Submission 21A*, p. 3.

81 *Committee Hansard*, 7 October 2011, p. 31.

82 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2012–2013,* May 2012, p. 119.

83 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2012–2013,* May 2012, p. 121.

84 *Submission 17*, p. 4.

85 *Submission 19*, p. 3.

86 *Submission 16*, p. 4.

87 *Submission 16*, p. 4.

which incorporate proven cost-effective commercial practices and processes'.[88] DMO's tendering and contract practices are considered in the following chapter.

Committee view

13.53 Many witnesses voiced their concerns about delays in the procurement processes and the lack of attention given to ensuring that the work generated by defence procurement was steady. As Australia has only a finite amount of industry capacity in terms of engineers, shipyards and other resources, Defence needs to consider carefully how it could better manage its flow of work in order to assist industry to remain productive.[89] This does not mean that government resources should be used to give industry work to do in between projects to keep the workforce stood up and the skills base intact. As industry emphasised a more consistent workflow is needed to enable industry to invest and increase its capability and capacity to the levels that will be needed in the coming decades.[90]

13.54 As a relatively small force, it can be difficult for Defence to moderate its acquisition projects so that demand for work from industry is even and constant. Even so, it is clear that Defence must do its utmost to develop a DCP that provides an even flow of work that would encourage industry 'to invest wisely in infrastructure, skills and staffing'.[91]

Recommendation

13.55 The committee recommends that Defence make their DCP a document that provides industry with greater certainty about its plans and intentions for future capability development to enable industry to invest with confidence in capability development. In particular, the committee recommends that the next DCP include:

- **a schedule that provides anticipated timelines for the construction and delivery of all DCP items, with continuity the key feature; and**
- **a detailed explanation on this acquisition schedule indicating the reasoning and analysis behind it and how Defence has taken into account demand flows; and**
- **reliable cost estimates.**

88 *Submission 10*, Recommendation 13, p. 5.

89 Mark Thomson, *Committee Hansard*, 12 August 2011, p. 11.

90 BAE Systems, *Submission 12*, p. 3, Sonartech Atlas, *Submission 13*, p. 2.

91 Australian Industry Group Defence Council, *Submission 10*, p. [5].