

## Constraints

- 9.1 Importantly, the Committee inquired into external constraints facing Defence – which relate to energy and the environment.
- 9.2 These matters are considered in this, and the following Chapter. For these, the Committee sought Defence comment by written questions on notice. This chapter is based on those questions and Defence’s written responses.

## Climate change

- 9.3 Appendix 7 of the *Defence Annual Report 2007-08* details aspects of Defence’s environmental approach and constraints, including reporting on Defence’s management of its obligations regarding climate change (including carbon outputs), and its handling of ‘ozone-depleting substances and synthetic greenhouse gases’.<sup>1</sup>

## Carbon

- 9.4 The Committee asked Defence to provide it with greater detail on Defence’s responsible management of its obligations in relation to carbon outputs. In particular, the Committee asked what Defence was doing to monitor its carbon footprint.
- 9.5 Defence advised the Committee that it did not maintain a separate monitoring regime for carbon outputs from Defence. Rather, Defence gathered data on carbon outputs as part of its obligations as part of

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1 *Defence Annual Report Volume 1*, pp.208, 210.

government, 'utilising the Whole of Government Energy Reporting regime as the method to monitor Defence's carbon footprint'.<sup>2</sup>

9.6 Under these arrangements Defence reports on its greenhouse gas emissions 'from electricity, gas and operational fuel annually as part of the energy report regime to meet the Commonwealth Governments Energy Efficiency in Government Operations Policy (2006)'.<sup>3</sup>

9.7 The Committee asked Defence to detail its efforts to reduce its carbon footprint. Defence advised the Committee that it was:

... working to reduce energy consumption by increasing efficiency of existing equipment and infrastructure, for example by adjusting temperature control settings in buildings and replacing high energy using equipment with more efficient equipment.<sup>4</sup>

9.8 In addition, Defence was:

... implementing a wide range of energy saving initiatives across the estate including Defence's Green Building policies, pilot energy efficiency projects, and the ongoing development of regional and site energy action plans and communication and support tools.<sup>5</sup>

9.9 The Committee asked Defence to describe efforts it made to bench-mark its carbon footprint. Defence advised the Committee that it had not undertaken a formal bench-marking exercise against comparable Defence establishments in the UK and US. However, Defence was able to tell the Committee that:

- Defence is the largest consumer of electricity within the Commonwealth Government;
- Defence's energy consumption was 'reported in the Energy Use in the Australian Government's Operations report'; and that
- in the 2006-07 reporting period 'Defence's energy consumption was around 4 million gigajoules, which is equivalent to approximately 1.6 million tonnes of greenhouse gas emissions'.<sup>6</sup>

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2 Department of Defence, *Submission no.2*, p.6.

3 Department of Defence, *Submission no.2*, p.6.

4 Department of Defence, *Submission no.2*, p.7.

5 Department of Defence, *Submission no.2*, p.7.

6 Department of Defence, *Submission no.2*, p.7.

## Ozone-depleting substances and synthetic greenhouse gases

9.10 The Committee also asked Defence for further detail on its monitoring and management of ozone depleting substances and synthetic greenhouse gases, including reporting mechanisms in this area. The Committee also asked how Defence rates against comparable organisations in this regard.

9.11 Defence advised the Committee that it was 'in the process of finalising an Ozone Depleting and Synthetic Greenhouse Chemicals Manual', which provides:

...the policy under which Defence will meet its obligations under the Vienna Convention for the Protection of the Ozone layer, the Montreal Protocol on Substances that Deplete the Ozone Layer and the United Nations Framework Convention on Climate Change.<sup>7</sup>

9.12 Defence advised the Committee that it has an obligation to 'comply with the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (the Act) and the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995* (the Regulations)'.<sup>8</sup>

9.13 Defence advised the Committee that, its activities '[i]n accordance with the Act' were scrutinised by appointed agencies:

... the acquisition, possession or disposal of fire extinguishing agents which are deemed to be scheduled substances is regulated and appropriate permits, licences and exemptions are required to be obtained from the Department of the Environment, Water, Heritage and the Arts (DEWHA) or the agency appointed by DEWHA to administer the regulations on behalf of the Government. The agency appointed by DEWHA to administer these regulations is the Fire Protection Association of Australia.<sup>9</sup>

9.14 Defence advised the Committee that under this regime:

Defence monitors its stockpile of ozone depleting substances and synthetic greenhouse gases by fortnightly leak detection and biannual weighing of cylinders. Defence's leak monitoring is conducted above the minimum regulatory requirement.<sup>10</sup>

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7 Department of Defence, *Submission no.2*, p.7.

8 Department of Defence, *Submission no.2*, p.7.

9 Department of Defence, *Submission no.2*, p.7.

10 Department of Defence, *Submission no.2*, p.7.

- 9.15 As a result of these measures, Defence advised the Committee, 'Defence's monitoring and reporting is comparable to other public sector organisations and meets regulatory requirements'.<sup>11</sup>
- 9.16 Further, 'Defence closely aligns its system of managing ozone depleting and synthetic greenhouse gases with DEWHA'. To further this process, a 'Memorandum of Understanding is currently being developed between the two departments', which 'will formalise arrangements and bond common objectives of enhanced control and the uptake of alternatives as they become available'.<sup>12</sup>
- 9.17 The Committee also asked Defence if there were avenues for improvement on Defence's management of carbon outputs and synthetic greenhouse gases. Defence advised the Committee that it was pursuing improvements in this area by:
- considering climate impacts during procurement decision-making;
  - 'constant review' of opportunities to replace 'ozone depleting substances and synthetic greenhouse gases with less hazardous extinguishing agents'; and
  - active engagement in 'discussion with international partners', including the 'US Defense Department and Environmental Protection Agency'.<sup>13</sup>
- 9.18 Defence advised the Committee that 'replacement of ozone depleting substances and synthetic greenhouse gases with less hazardous extinguishing agents is under constant review'.<sup>14</sup> This process, Defence advised the Committee, would be expressed in the Defence procurement process, resulting over time in the acquisition of other technologies more favourable to the environment:

The search for ozone depleting substance alternatives will change the way Defence makes procurement decisions. Defence sources the majority of its equipment from other countries such as the United States, and is reliant on platform design changes in those countries to eliminate the use of ozone depleting substance. Defence recognises the need to become an influential and informed consumer and to carefully consider commercially viable replacements for ozone depleting substances.<sup>15</sup>

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11 Department of Defence, *Submission no.2*, p.8.

12 Department of Defence, *Submission no.2*, p.8.

13 Department of Defence, *Submission no.2*, p.8.

14 Department of Defence, *Submission no.2*, p.8.

15 Department of Defence, *Submission no.2*, p.8.

- 9.19 Defence also suggested that this would form part of the criteria upon which to make procurement decisions within a wider process of 'equipment selection':

With a greater reliance on civilian systems and solutions, equipment selection will continue to be based on a rational assessment of value-for-money and fit-for-purpose requirements.<sup>16</sup>

## Preparation for oil depletion and oil shocks

- 9.20 The Committee asked Defence to detail its strategy on sudden shortages or the depletion of oil. The Committee noted that oil shortages had occurred periodically over the past 40 years, resulting in sudden escalations in the price of oil. It also noted recent debates on whether world oil production had reached a peak ('peak oil'), in which case declining production could be anticipated overall. In the Committee's view these matters were of special importance to Defence, in view of its energy and mobility requirements.<sup>17</sup>
- 9.21 In the first instance, the Committee asked Defence what actions it was taking to mitigate such risks. Defence advised the Committee that in the event of a sudden scarcity of oil, Defence would have recourse to a framework established under federal legislation, of which an important component is the *Liquid Fuel Emergency Act 1984*.<sup>18</sup>
- 9.22 This framework consists of the National Oil Supplies Emergency Committee, 'the main executive mechanism by which the Commonwealth, State/Territory Governments and Australian industry develop national responses to fuel supply emergencies'.<sup>19</sup>
- 9.23 Defence advised the Committee that the National Oil Supplies Emergency Committee, of which Defence was a 'standing member', had developed a National Liquid Fuel Emergency Response Plan, which 'would be implemented during a national liquid fuel emergency'.<sup>20</sup>
- 9.24 Defence advised the Committee that under this framework 'the importance of maintaining fuel supplies to the ADF is recognised by both legislation and the National Oil Supplies Emergency Committee'.<sup>21</sup>

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16 Department of Defence, *Submission no.2*, p.8.

17 Department of Defence, *Submission no.2*, p.4.

18 Department of Defence, *Submission no.2*, p.4.

19 Department of Defence, *Submission no.2*, p.4.

20 Department of Defence, *Submission no.2*, p.4.

21 Department of Defence, *Submission no.2*, p.4.

- 9.25 It also indicated that there was ‘a standing process for designating the ADF as a priority fuel user in a national fuel supply emergency’. This process would include:
- The declaration by the Governor General of a ‘national liquid fuel emergency’ under the Act;<sup>22</sup>
  - Provision to the Minister for Resources, Energy and Tourism of ‘wide-ranging powers’ over crude oil and liquid fuels;
  - Defence would then seek from the Minister identification as a ‘bulk customer’ under s.10 of the legislation, and this would be provided in recognition of Defence’s ‘role in facilitating a Government response to any emergency’;
  - Defence ‘would also seek to be identified as an essential user under s.11 of the Act’. The National Oil Supplies Emergency Committee would ensure that all ‘essential users’, including Defence, ‘had sufficient fuel to meet their requirements’.<sup>23</sup>
- 9.26 Defence advised the Committee that there were also measures Defence pursued within its own domain. This entailed, Defence advised the Committee, a focus on ‘internal policy reform and strategic engagement to drive a comprehensive whole-of-Defence approach to fuel management’.<sup>24</sup>
- 9.27 Defence advised the Committee that a key element in this was the establishment of the Defence Fuel Management Committee ‘to provide a coordinated whole-of-Defence approach to fuel management’. This also ‘acts as the principal advisory body to the Chief of the Defence Force on fuel-related matters’.<sup>25</sup>
- 9.28 Defence noted that it maintains ‘Stock on Hand’, ‘which could be used to mitigate against a short-term fuel shock’. However, Defence noted:
- ...the circumstances surrounding the shock, likely period of fuel outage/shortage and consequent level of ADF intensity for the period of the fuel shortage would determine the endurance of the fuel held in bulk storage.<sup>26</sup>

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22 Department of Defence, *Submission no.2*, p.4.

23 Department of Defence, *Submission no.2*, p.5.

24 Department of Defence, *Submission no.2*, p.5.

25 Department of Defence, *Submission no.2*, p.5.

26 Department of Defence, *Submission no.2*, p.5.

9.29 Accordingly, Defence advised the Committee:

Work has also commenced to determine the strategic fuel reserve stockholding requirements of the Services [and] it is expected that surge provisions will be included within new fuel procurement arrangements that will enable Defence to task its commercial suppliers to meet heightened operational usage requirements at short notice.<sup>27</sup>

## Alternatives to oil

9.30 The Committee asked Defence to advise on progress in seeking alternatives to oil. Defence advised the Committee that it 'had undertaken some initial investigations into the effects of alternative fuels on the ADF'.<sup>28</sup>

9.31 Defence noted that specific element of Defence responsible for this area is the Defence Science and Technology Organisation (DSTO). DSTO 'is responsible for coordinating research and providing specialist scientific advice to Defence's technical regulatory authorities and capability developers on the suitability of alternative fuels for Defence platforms'.<sup>29</sup>

9.32 In terms of research, Defence advised the Committee that the DSTO 'recently completed a study to estimate the joint fuel demands for the Navy, Army and Air Force'. Further, the DSTO 'is a partner with the United States, the United Kingdom and Canada in a Study Group examining future military power and energy requirements'.<sup>30</sup>

9.33 Defence advised the Committee that, as part of a new strategy, the DSTO 'will work closely with the CSIRO and other agencies to investigate the development and use of alternative fuels'.<sup>31</sup>

9.34 Defence also advised the Committee that it was maintaining a close watching brief on developments by other defence establishments on this matter, particularly the US:

The United States has been trialling alternative fuels in the United States Air Force. The use of alternative fuels in aviation applications requires development of detailed specifications, supported by comprehensive testing and certification activities to

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27 Department of Defence, *Submission no.2*, p.5.

28 Department of Defence, *Submission no.2*, p.5.

29 Department of Defence, *Submission no.2*, p.6.

30 Department of Defence, *Submission no.2*, p.6.

31 Department of Defence, *Submission no.2*, p.6.

ensure that airworthiness requirements are not compromised. The United States Air Force has a forward program for certifying the use of alternative fuels in specific fleets such as B52 and C-17.<sup>32</sup>

9.35 Moreover, Defence advised the Committee:

The ADF remains engaged with the United States military to support the exchange of relevant information that is developed in the United States certification programs. The exchange of this information will allow Defence to position itself to exploit the benefits of alternative aviation fuels as they are certified for use and become commercially available.<sup>33</sup>

### Committee comment

- 9.36 On the matter of climate change and associated arrangements, Defence's efforts are in step with other government agencies. They do not appear to go beyond any other government agency, nor is there any apparent plan to do so. This raises some questions about what is an appropriate objective for a large governmental agency with a considerable carbon footprint and a large discretionary budget in terms of defence procurement.
- 9.37 On the matter of peak oil, oil shocks and alternatives to oil, Defence's current policy stance does not sufficiently protect Australia's defence capability against foreseeable risk. Again, Defence appears to be in step with other agencies, but not ahead, also prompting questions about appropriate objectives.
- 9.38 The Committee notes that a sizable component of Australia's fuel suitable for vehicles is sourced from overseas, and this increases strategic risk. Defence's advice to the Committee is that in the event of an oil shock Defence will have access to a proportion of fuel oil available in the domestic market.
- 9.39 In the Committee's view, this position does not anticipate more severe disruptions to fuel supply, where the overall quantum of fuel available to domestic users could, conceivably, be smaller than anticipated. This represents a significant gap in Australia's current strategic planning.
- 9.40 Research on alternative energy sources for military equipment and facilities needs to be given greater priority. Undertaking this in a joint manner with our allies is desirable.

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32 Department of Defence, *Submission no.2*, p.6.

33 Department of Defence, *Submission no.2*, p.6.



**Recommendation 6**

The Committee recommends that Defence adopt a more assertive strategy with regard to oil shocks and alternative fuels, with the specific purpose of providing a capability to mitigate risk due to a dependence on oil-based fuels. Defence should provide such a capability, sufficient to maintain an identified core capability, within a timeframe of 10 years.

**Recommendation 7**

The Committee recommends that new fuels developed to mitigate risk to Australia's defence capability from oil shocks and oil scarcity be designed to reduce Defence's carbon footprint, where possible, in balance with energy yields and other practical considerations.

