

## 1997 Protocol to amend the Maritime Pollution Convention (MARPOL 73/78)

### Introduction

- 4.1 The *International Convention for the Prevention of Pollution from Ships of 2 November 1973*, as modified by the Protocol of 17 February 1978 is commonly known as MARPOL 73/78. Australia has been a party to MARPOL, administered by the International Maritime Organization (IMO), since 1987. The Convention addresses marine pollution and currently has five technical annexes (dealing with oil, bulk noxious liquid substances, harmful substances in packaged forms, sewage, and garbage).<sup>1</sup>
- 4.2 The Protocol of 1997 to amend MARPOL 73/78 added **Annex VI, Regulations for the Prevention of Air Pollution from Ships**, hereafter referred to as 'the 1997 Protocol' or 'Annex VI'. It contains regulations to prevent and control harmful air emissions from vessels through set standards on the emissions from diesel engines, the release of volatile organic compounds (VOCs) from cargoes carried in tankers and the use of ozone depleting substances (ODS).<sup>2</sup> It also specifies requirements for type, approval and operation of shipboard incinerators.

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1 Ms Poh Aye Tan, *Transcript of Evidence*, 13 February 2004, p. 7.

2 NIA, paras 8-13.

- 4.3 The Committee understands that the need for the 1997 Protocol arose from the recognition by the international shipping and maritime community that, while a great deal has been achieved internationally to reduce atmospheric emissions from land-based sources, there remained considerable scope for reduction of air pollution from seagoing ships, and that air pollution from ships is one of the few areas related to shipping where there are currently no enforceable international standards.<sup>3</sup>
- 4.4 According to the National Interest Analysis (NIA) and the Department of Transport and Regional Services (DOTARS), Australia's accession to and implementation of the Protocol will provide consistent national standards for commercial vessels trading internationally and will implement a full range of enforcement measures available under MARPOL.<sup>4</sup> The Committee understands that
- for Australia, this will result in streamlined regulatory processes, reduced monitoring and enforcement costs and higher levels of compliance.<sup>5</sup>
- 4.5 According to the NIA, Australia was an active participant during the IMO deliberations that resulted in the adoption of the 1997 Protocol.<sup>6</sup>
- 4.6 Australia acceded to the two mandatory annexes of MARPOL 73/78 when it ratified the Convention in 1987. It acceded to Annexes III and V in October 1994 and August 1990 respectively. It was expected that Australia would accede to Annex IV in early 2004, following the review of that Annex by this Committee in *Report 52: Treaties Tabled in March 2003*, completed in June 2003.<sup>7</sup> **Annex VI** is expected to enter into force automatically in mid-2004.<sup>8</sup>

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3 Ms Poh Aye Tan, *Transcript of Evidence*, 13 February 2004, p.7, and NIA, para. 4.

4 Ms Poh Aye Tan, *Transcript of Evidence*, 13 February 2004, p.7, and NIA, para. 5.

5 NIA, para. 5.

6 NIA, para. 6.

7 The relevant Chapter of Report 52 of JSCOT can be accessed at <http://www.aph.gov.au/house/committee/jsct/march2003/report/chap4.pdf> (viewed 22 March 2004).

8 Information on accession to all MARPOL annexes and expected date of entry into force for Annex VI is taken from paragraphs 2 and 3 of the NIA.

## Background – emerging environmental concerns

- 4.7 The Committee understands that in Australia, the transport sector is the single largest contributor to urban ambient air pollution, with road transport contributing up to 70 per cent of total urban air pollution. By comparison, coastal shipping in Australia accounts for 2 per cent of transport emissions.<sup>9</sup>
- 4.8 The Committee recognises the efforts made to minimise the effects of air pollution from the road transport sector in Australia (such as improved vehicle technology, emission standards and fuels), but accepts that the risk of focussing on one transport mode is that contributions to air pollution from other modes, such as shipping, can be ignored.<sup>10</sup>
- 4.9 The Committee notes with concern that research recently undertaken for the European Community indicates that by 2010, if unregulated, sulphur oxide emissions from ships are likely to be equivalent to over 75 per cent of all land based emissions in the European Union, due to the reduction in sulphur content in petrol and diesel fuel in land-based sectors.<sup>11</sup>
- 4.10 According to the Regulation Impact Statement (RIS), prepared by DOTARS, in 1990 the international shipping community, under the auspices of the IMO, recognised several emergent environmental concerns, including emissions of sulphur and nitrogen oxides (SO<sub>x</sub> and NO<sub>x</sub> respectively), and emissions of chlorofluorocarbons (CFCs), halon, and VOCs.<sup>12</sup> The RIS states the effects of these emissions in some detail.
- 4.11 According to the RIS, national ambient air quality standards in Australia have been established to monitor the concentrations of six major air pollutants: carbon monoxide, NO<sub>x</sub>, ozone, lead, fine particles and SO<sub>x</sub>.<sup>13</sup> The Australia State of the Environment Report 2001 found that the amount of ozone in the atmosphere is within safe levels in most Australian cities and towns. In larger cities like

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9 Regulation Impact Statement (RIS), para. 1.1.

10 RIS, paras 2 and 3.

11 RIS, para. 1.3.

12 RIS, paras 1.4 – 1.5.

13 RIS, para. 1.20.

Melbourne and Sydney however, the safe level of ozone is exceeded several times a year.<sup>14</sup>

- 4.12 The Committee acknowledges that it is in Australia's best interests to effectively minimise the environmental and health impacts caused by various emissions from ships and develop enforceable international standards that are currently lacking in this area of shipping.

## Obligations under Annex VI

- 4.13 As mentioned at 4.2 above, the 1997 Protocol sets standards for the emissions of SO<sub>x</sub> and NO<sub>x</sub> from diesel engines, the release of VOCs from cargoes carried in tankers and the use of ODS such as CFCs and halons in shipboard systems. According to the NIA, it also specifies requirements for type, approval and operation of shipboard incinerators, including prohibiting incineration of certain harmful substances such as oil cargo residues and garbage containing more than traces of heavy metals.<sup>15</sup>

## Australia's existing compliance with Annex VI obligations

- 4.14 The Committee understands that Australia has met, and in some cases exceeded, its obligations to control ODS under the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, as amended in London in 1990.<sup>16</sup> The Montreal Protocol is an international environmental treaty, drawn up under the auspices of the United Nations, under which nations agreed to cut CFC consumption and production in order to protect the ozone layer.<sup>17</sup>
- 4.15 Obligations under the Montreal Protocol are met through the *Ozone Protection Act 1989* and associated legislation.<sup>18</sup> The prohibition on deliberate emissions of CFCs is currently covered in Australia by existing State and Territory ozone protection legislation. By the end of 2003, the Committee understands that it was also expected to be covered by Commonwealth ozone protection legislation.<sup>19</sup>

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14 RIS, para. 1.21.

15 NIA, para. 16.

16 RIS, para. 4.14.

17 RIS, para. 4.14.

18 RIS, para. 4.14.

19 RIS, para. 4.15.

- 4.16 The Committee was advised that Australian industry already meets emission limits set for offshore platforms, and sulphur content limits for fuel on board ships are also being met by the international and Australian oil industries.<sup>20</sup>

## Extension of obligations under Annex VI

### Sulphur content of fuel oil

- 4.17 Annex VI includes a global cap on the sulphur content of fuel oil. The Committee understands that Australian suppliers already use International Standards Organisation (ISO) 8217 as a standard fuel which will be revised to reflect the new Annex VI standard.<sup>21</sup> In special SOx 'Emission Control Areas'<sup>22</sup> there will be tighter controls on sulphur emissions. The emissions must not exceed the specified limit or ships are required to fit an exhaust gas cleaning system or use another technological method to limit SOx emissions.<sup>23</sup>

### Nitrogen oxide emissions from diesel engines

- 4.18 The limits placed by Annex VI on NOx emissions from diesel engines can be addressed by three possible options. The most cost effective option is to modify the combustion properties of existing engines.<sup>24</sup> The impact of this has been minimised as it only applies to new diesel engines and those undergoing major conversion. Existing engines can live out their normal operational life. There has also been retrospective application to diesel engines fitted after 1 January 2000. The Committee understands that, as industry has been aware of Annex VI requirements, it has been fitting compliant engines for over 2 years.<sup>25</sup>

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20 Ms Poh Aye Tan, *Transcript of Evidence*, 13 February 2004, p. 7.

21 RIS, para. 4.8.

22 According to evidence presented by DOTARS at the public hearing on 13 February 2004 (see p. 9 of *Hansard* transcript), so far the only special emissions control areas which have been designated to date are the Baltic and the North Seas. This information is also included in the RIS, at para. 4.10.

23 RIS para. 4.8.

24 RIS paras 4.25 – 4.26.

25 RIS para. 4.27.

## Shipboard incinerators

- 4.19 The 1997 Protocol prohibits the incineration on board ship of certain products such as contaminated packaging materials and polychlorinated biphenyls (PCBs).<sup>26</sup>
- 4.20 Shipboard incinerators that were fitted before 1 January 2000 are to be tested for compliance with requirements of the regulations. Currently the IMO has only non-mandatory guidelines for incinerators.<sup>27</sup> The Committee understands that, as with the diesel engines, incinerators fitted before 1 January 2000 can serve out their normal operational life and the retrospective application of this provision means that industry has effectively already implemented this change.<sup>28</sup>
- 4.21 The Committee heard that a shipboard incinerator will operate for an average of eight to ten years, with costs ranging from \$20 000 up to several hundred thousand dollars depending on the type of vessel.<sup>29</sup>

## Inspection regime

- 4.22 Under Regulation 5 of the 1997 Protocol, the Australian Maritime Safety Authority (AMSA) and/or an authorised classification society will undertake survey and certification of ships as part of its flag state control function.<sup>30</sup>
- 4.23 Further to paragraph 4.17 above in relation to sulphur content in fuel oil, AMSA will be required to maintain a current register of fuel oil suppliers in Australian ports. Suppliers are required to provide ships with documentation, certifying that the content and quality of sulphur in the fuel oil meets Annex specifications.<sup>31</sup>
- 4.24 Ship inspections that are already conducted under AMSA's port state control regime will be extended to include air emissions requirements, primarily involving an inspection of an additional certificate carried on board the ship.<sup>32</sup>

As well as looking at the certification for things like oily water separators and the way ships carry oil, our inspectors

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26 NIA, para. 13.

27 RIS, para. 4.29.

28 RIS, para. 4.29.

29 Mr Paul Nelson, *Transcript of Evidence*, p.10.

30 NIA, para. 18.

31 RIS, para. 4.12.

32 RIS, para. 4.30.

would be looking at the sort of certification required for compliance with this Convention – for example, emissions certificates attesting to the emissions from the diesel engines on board the ships.<sup>33</sup>

4.25 The Committee was advised that

AMSA generally aims to inspect 50 per cent of ‘eligible’ foreign flag ships arriving at Australian ports...AMSA also has a targeting system that allocates risk ratings to each arriving ship that is eligible for inspection so that higher risk ships are targeted for inspection. The targeting system sets minimum inspection levels based on the type of ship, its age and inspection history.<sup>34</sup>

4.26 The Committee was pleased to be advised that while the targeted overall inspection rate was 50 per cent, the actual inspection rate was 80 per cent.<sup>35</sup>

### **Petroleum industry**

4.27 There will be a minimal impact on the petroleum industry as Annex VI only applies to activities of offshore fixed and floating rigs and drilling platforms that are not directly related to the exploration and exploitation of the seabed.<sup>36</sup> The Committee understands that the Department of Industry, Tourism and Resources (DITR) has confirmed that the emission standards can be incorporated in environment plans for offshore facilities under existing regulations.<sup>37</sup>

4.28 Survey and certification of facilities will be enforced to verify compliance with requirements. The Committee was informed that the impacts of these new requirements will be minimised by incorporating them into environmental plans and audits carried out by State authorities under existing legislation.<sup>38</sup> The Committee understands that detailed arrangements for the survey and certification requirements will be established through consultations prior to the entry into force of Annex VI for Australia.<sup>39</sup>

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33 Mr Paul Nelson, *Transcript of Evidence*, 13 February 2004, p. 9.

34 AMSA, *Submission*.

35 AMSA, *Submission*.

36 RIS, para. 4.31.

37 RIS, para. 4.32.

38 RIS, para. 4.33.

39 RIS, para. 4.36.

## Volatile Organic Compounds

- 4.29 Emissions of VOCs from oil tankers is the only optional provision where each party will decide whether or not to regulate emissions. The Committee understands that consultations with Australian stakeholders have indicated that there is currently no requirement for domestic regulation of VOC emissions.<sup>40</sup>

## Costs

- 4.30 The Committee understands that implementation of Annex VI will not impose any additional costs on the Australian Government, State and Territory governments or port authorities.<sup>41</sup> There will be some cost implications for Australian registered vessels and regulations may be applied regardless of Australia's participation. Survey and certification requirements in Annex VI will not result in additional costs for governments as these functions are delegated to classification societies.<sup>42</sup> The costs for industry to comply with Annex VI are expected to be minimal as a number of the Protocol's requirements have already been initiated.

## Impact on fuel oil

- 4.31 The fuel oil required to meet more stringent controls on sulphur (SOx) emissions is expected to cost around 20 – 30 per cent more than regular fuel oil.<sup>43</sup> The Committee understands that there will be some administrative impact on AMSA and fuel oil suppliers in Australian ports. AMSA will be required to maintain an up-to-date register of fuel oil suppliers in Australian ports. According to the NIA, there are currently approximately 62 suppliers in 27 ports.<sup>44</sup> Suppliers will be required to provide documentation and a sample certified by the supplier that the fuel oil meets the requirements relating to sulphur content and quality.<sup>45</sup> The NIA notes that these 'minor administrative requirements are unlikely to be burdensome for any fuel suppliers'<sup>46</sup>

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40 RIS, para. 4.38.

41 NIA, para. 24.

42 RIS, para. 4.30.

43 RIS, para. 4.11.

44 NIA, para. 23.

45 NIA, para. 23.

46 NIA, para. 23.



and that as the measures apply to all fuel oil suppliers, small fuel supply firms will not be disadvantaged.<sup>47</sup>

## Consultations

- 4.32 The Committee understands that the shipping industry will be the main body affected by the proposed legislation and that there has been extensive consultation at all stages in the development of the regulations contained in Annex VI.<sup>48</sup> An example of this communication is AMSA Marine Notices advising ship owners on the current position regarding Annex VI, the technical requirements and retrospective application.<sup>49</sup>
- 4.33 The Committee understands that Environment Australia was also consulted in relation to the Annex to ensure the provisions for ODS were consistent with existing Australian regulations, and that extensive consultations with DITR resulted in agreement on how to implement provisions for offshore fixed and floating drilling rigs and other platforms.<sup>50</sup>
- 4.34 The Committee notes that ‘industry firmly supports early international entry into force of the 1997 Protocol’.<sup>51</sup> The Committee understands that no objections or concerns were raised by the Australian Transport Council (ATC), comprising Government and State and Territory Transport Ministers, when consultations took place in November 2002. The ATC
- agreed that the implementing legislation should be expressed to apply to all Australian jurisdictions, with a savings clause to preserve the operation of any existing or future complementary State/Territory legislation.<sup>52</sup>
- 4.35 The Committee notes that this approach has been applied in respect of the other Annexes of MARPOL 73/78 that Australia has implemented.

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47 RIS, para. 4.12.

48 NIA, para. 25.

49 AMSA Marine Notice, 11/1999, [www.amsa.gov.au/amsa/mn/Mn1999/Mn1199.htm](http://www.amsa.gov.au/amsa/mn/Mn1999/Mn1199.htm), (viewed 16 February 2004).

50 RIS, para. 5.5.

51 Consultations Annex, tabled with treaty text.

52 Consultations Annex, tabled with treaty text.

## Implementation and entry into force

- 4.36 The Protocol will be implemented by amendments, where required, to the *Protection of the Sea (Prevention from Pollution from Ships) Act 1983* and the *Navigation Act 1912*.
- 4.37 Given that the Protocol was signed in 1997, the Committee inquired about reasons it is only entering into force this year and was advised that this sort of time frame is not unusual. According to Mr Paul Nelson, from AMSA
- these sorts of international treaties unfortunately sometimes take that sort of time to come into force. The process in a lot of governments of turning a convention into legislation can be time consuming.<sup>53</sup>
- 4.38 The Committee understands that the date of accession by Australia is dependent on domestic legislation being enacted, and that the Bill to implement obligations relating to Annex VI is expected to be introduced into Parliament in 2004.<sup>54</sup> The Committee notes that any future amendments to the 1997 Protocol will be subject to the Australian treaty process.<sup>55</sup>

## Conclusion

- 4.39 The Committee appreciates that acceding to the Protocol will give Australia consistent national standards that could be applied effectively to foreign ships operating in Australian waters. The Committee also notes that Australia's accession to the 1997 Protocol is consistent with obligations to protect the marine environment as a signatory to the UN Convention of the Law of the Sea.

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53 Mr Paul Nelson, *Transcript of Evidence*, 13 February 2004, p. 8.

54 NIA, para. 3.

55 NIA, para 33.

### **Recommendation 3**

**The Committee supports the *Protocol of 1997 to Amend the International Convention for the Prevention of Pollution from Ships of 2 November 1973, as Modified by the Protocol of 17 February 1978, done at London, 26 September 1997*, and recommends that binding treaty action be taken.**