

www.defra.gov.uk

UK ship recycling strategy

Final Regulatory Impact Assessment

February 2007

UK Ship Recycling Strategy

Final Regulatory Impact Assessment

FEBRUARY 2007



Department for Environment, Food and Rural Affairs
Nobel House
17 Smith Square
London SW1P 3JR
Telephone 020 7238 6000
Website: www.defra.gov.uk

© Crown copyright 2007

Copyright in the typographical arrangement and design rests with the Crown.

This publication (excluding the royal arms and departmental logos) may be re-used free of charge in any format or medium provided that it is re-used accurately and not used in a misleading context. The material must be acknowledged as crown copyright and the title of the publication specified.

Information about this publication and further copies are available from:

Waste Management Division
Zone 6/E5
Defra
Ashdown House
123 Victoria Street
London SW1E 6DE
Email address: waste.policy@defra.gsi.gov.uk
Tel: 020 7082 8451

This document is also available on the Defra website.

Published by the Department for Environment, Food and Rural Affairs

TABLE OF CONTENTS

TABLE OF CONTENTS.....	3
REGULATORY IMPACT ASSESSMENT	4
Proposal	4
Purpose and intended effect	4
Objectives	4
Background.....	5
Part I – Policy on the recycling of UK Government-owned vessels	8
Rationale for Government Intervention	8
Options	9
Costs and benefits	15
Summary	20
Recommendations.....	22
Part II – Application of Waste Shipments Regulation to UK-flagged vessels going for recycling	27
Options	28
Costs and benefits	29
Summary	33
Recommendation.....	34
Competition Assessment.....	35
Enforcement, sanctions and monitoring	35
Monitoring and review	35
Consultation	36
Public consultation	37
Contact point	38
ANNEX I - UK GOVERNMENT AGENCIES OWNING VESSELS	40
ANNEX II - MINIMUM STANDARDS	41
ANNEX III - CHECKLIST FOR ESM COMPLIANCE	48

REGULATORY IMPACT ASSESSMENT

Proposal

1. Regulatory Impact Assessment (RIA) for the UK Ship Recycling Strategy, specifically:
 - policy on the recycling of Government-owned vessels (Part I); and,
 - application of the Waste Shipments Regulation to UK-flagged commercial vessels going for recycling from UK ports (Part II).

Purpose and intended effect

Objectives

2. The aims of the UK Ship Recycling Strategy are:
 - To develop a strategic approach to the recycling of UK-flagged vessels that is consistent with the UK's national and international sustainable development commitments;
 - To encourage, through the provision of guidance, the development of UK capacity for recycling of end-of-life vessels in an environmentally sound manner.
3. The Strategy establishes domestic policy for the recycling of UK Government-owned vessels, sets out relevant waste controls and recommendations for owners and operators of UK-flagged vessels and provides guidance to those wishing to recycle ships in the UK.
4. The policy applies to vessels owned by the UK Government and its agencies in England, Wales and Northern Ireland. The Scottish Executive supports the aims of the Strategy. The Executive and its agencies will have due regard for the Strategy when considering disposal routes for vessels under their control, both as guidance on the applicable legislation, and as a useful source of further information on decisions to achieve sustainable outcomes.
5. **Part I** of the RIA presents the policy options for the recycling of Government-owned vessels and outlines the preferred options.
6. **Part II** of the RIA provides an assessment of the impacts of application of the Waste Shipments Regulation to UK-flagged commercial vessels going for recycling (from UK ports). These costs are not new to industry as they result from a legal obligation that has existed since 1993 (the Waste Shipments Regulation).

Background

7. Recycling ships is an inherently sustainable activity where over 95% of a ship's material is recycled¹. However, there is wide concern about the adequacy of the health, safety and environmental standards being met by those participating in the industry, particularly in developing countries. The global market currently favours low-cost, labour intensive facilities in developing countries, undercutting costs of more sophisticated processes that afford a high level of environmental protection. This hinders attempts to create sustainable, environmentally sound facilities.
8. The ship recycling industry is predominantly based in Asia, particularly South Asia, where there is concern that adequate health, safety and environmental standards are not being met. While there is often local legislation addressing the protection of the health and safety of workers and of the environment, it may not meet the equivalent standards in the UK or be effectively enforced. Recycling activities across Europe are also being undertaken to varying degrees in OECD countries including Turkey, Spain, Belgium and the Netherlands. However, there is currently a lack of suitable quality and compliant capacity in European and non-EU OECD countries. In the absence of binding and effective international standards, any such facilities are unlikely to be able to compete economically with Asian facilities.
9. Increased UK focus on ship recycling issues arose primarily from proposals to import decommissioned US vessels into the United Kingdom by Able UK in 2003. The subsequent internal reviews by the Environment Agency² and Defra³ (the Ballard Report) and the EFRA Committee inquiry and report on 'Dismantling Defunct Ships in the UK'⁴ highlighted the need for progress, at both the domestic and international level, on issues related to ship recycling.
10. In its response to the EFRA Committee report in January 2005⁵, Government accepted these recommendations and also committed itself, through Defra, to the development of a UK Ship Recycling Strategy.

Domestic

11. Naval vessels constitute the majority of vessels classed as Government-owned and are thus the focus of the Strategy, although there are numerous other fisheries, research and patrol vessels which are owned by other UK Government agencies (see Annex I for details).

¹ BIMCO, 2004, available at: <http://www.bimco.dk/Corporate Area/Seascapes/Sea View /The business of ship recycling.aspx>

² The Environment Agency – US Naval Vessels, Lessons Learned, April 2004.

³ US Naval Ships, Review of Regulatory Structure, Ballard, April 2004.

⁴ Dismantling Defunct Ships in the UK, House of Commons Environment, Food and Rural Affairs Committee, Eighteenth Report of Session 2003-2004.

⁵ Dismantling Defunct Ships in the UK: Government Reply to the Environment, Food and Rural Affairs Committee's Report, January 2005.

12. Approximately 30 naval vessels are scheduled to come out of operation by 2013 (see Table 1 for details). It is assumed that most of these vessels will ultimately be 'disposed of' as defence sales to other Governments or via commercial disposal routes (other than recycling). However, if sale for further use is unsuccessful, a number of vessels will require recycling and this should be undertaken in a way that does not harm the environment or human health.

Tonnage	Legacy ships	2006	2007	2008	2009	2010	2011	2012	2013
20,000 & over					2	3		1	2
10,000–20,000	2	1			1	1			
2,000–10,000	3	1			2	1	3	2	1
Under 2,000			1						

Note: 1. Legacy ships are those already de-commissioned for which a Government-to-Government sale is not expected. 2. Figures shown for 2006 onwards represent ships being de-commissioned in the future. The disposal routes for these ships have not been agreed. Some may be sold for further use.

Table 1: Ministry of Defence vessels leaving operational service

13. The most immediate issue on the domestic front is the recycling of the ex-Royal Naval (RN) vessel, HMS Intrepid. The vessel is currently being stored at HM Naval Base (HMNB) in Portsmouth while recycling options are being assessed. The recycling contract for Intrepid had been tendered and responses were received from facilities in the UK, Belgium, Lithuania and Turkey. The Environment Agency, on behalf of the Disposal Services Agency (DSA) of the Ministry of Defence (MoD), audited a selected number of these sites in April 2005. At the time of the audits it was found that, to varying degrees, environmental, health and safety improvements were required at all of the sites audited to meet UK expectations for compliance with transfrontier shipments of waste legislation (which is based on EU requirements). Given the lack of active recycling capacity in the UK and concerns regarding the standards of those sites audited in Europe, there was increased pressure to find a suitable recycling option for HMS Intrepid, this was progressed. Recently following a new tendering process a preferred contractor has been selected. The storage of the vessel is also in question as HMNB has limited capacity and will have additional vessels to accommodate in the coming months.
14. In March 2005, Defra commissioned BMT Defence Services Limited (BMT) to undertake a study of ship recycling capacity in the UK. A total of 43 sites were identified in the UK as having the potential to undertake ship recycling activities. Twenty-four of these sites were assessed as part of the audit programme from April to June 2005. At the time of the study, operational capacity was deemed to be limited mainly to small scale dismantling of fishing trawlers and wooden-hulled vessels. Since the

study, there have been several facilities that have taken steps to obtain the necessary consents and permits to undertake ship recycling activities. . These include Able UK in Teesside and Harland & Wolff in Belfast), which are at varying stages in the permitting process.

15. Although improved guidance on technical and regulatory requirements to operate recycling facilities will help those companies interested in establishing suitably compliant facilities in the UK, In terms of operational costs (especially labour costs), sites in the UK are unlikely to be able to compete with their counterparts in Asia, including Turkey, and Eastern Europe. In addition, the market for scrap steel is far more buoyant in Asia as this is the region of core demand though this may change over time as the UK places more emphasis on sustainable consumption and production (a core Defra objective). Of those UK facilities interested in diversifying into ship recycling, there is a general awareness that this business in itself is unlikely to be self-sustaining and that additional operations (e.g. decommissioning oil rigs) would need to be undertaken.

International

16. At the international level, it is estimated that due to the International Maritime Organization's (IMO) decision to phase out single-hulled tankers, approximately 400 EU-flagged tankers will require recycling by 2010. Concern over the lack of suitable recycling capacity is being discussed at the international level under the auspices of the IMO, the International Labour Organization (ILO) and the UNEP Basel Convention on the transboundary movement of hazardous wastes and their disposal.
17. It is widely agreed that globally enforceable standards are required for ship recycling. At the end of November 2005, the IMO's General Assembly adopted a Resolution to develop a new mandatory instrument on ship recycling. The scope of the instrument has been broadly defined and should address the design, construction and operation of ships to facilitate environmentally sound recycling, the operation of ship recycling facilities in a safe and environmentally sound manner and the establishment of an appropriate enforcement mechanism for ship recycling (i.e. certification and reporting requirements). The Resolution passed by the Assembly calls for the instrument to be ready for adoption in the 2008-09 biennium.
18. Government supports the process ongoing in the IMO to develop a legally binding instrument as any long term, sustainable solution ultimately has to be at the global level. While there is encouraging progress being made at the international level, until the new IMO instrument comes into force, there are a number of risks which require mitigation at the domestic policy level.

Part I – Policy on the recycling of UK Government-owned vessels

Rationale for Government Intervention

19. The lack of recycling and storage options poses concern for the DSA as a number of RN vessels have already, or are scheduled to, leave service in the coming months. Facilities wishing to store or recycle vessels classified as waste require a Waste Management Licence, in addition to any other relevant consents or permits. For vessels not classified as waste, the situation is less complicated in that a Waste Management Licence is not necessarily a pre-requisite to store such vessels. There is currently no known suitably licensed capacity outside HMNB Portsmouth that could store or recycle 'waste' vessels. Viable options for the storage and recycling of Government-owned vessels need to be determined to relieve the capacity and storage issues currently being experienced at HMNB in Portsmouth.
20. Public interest in this issue was demonstrated when Able UK imported four decommissioned US vessels in 2003. The perceived lack of clarity regarding the status of the necessary consents and permissions required to operate ship recycling facilities resulted in a high profile public debate over the import of the vessels and the permitting of the site in question. Coherent guidance on the consents and permits necessary to undertake ship recycling in the UK will help ensure that such a situation does not arise in future.
21. Following changes to the Basel Convention and the OECD decision, the Waste Shipments Regulation has been revised to ensure that the changes are implemented within the Community. The European Commission published their proposal for a revised Waste Shipments Regulation in 2003. In October 2005 an agreement was reached between the Council of the European Parliament on the revised Regulation. Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste was published in June 2006 and will apply from 12 July 2007. An amendment to the Basel Convention⁶ (the 'Basel ban'), transposed by the WSR, prohibits the export of hazardous waste from OECD countries to non-OECD countries, including India, Bangladesh, Pakistan and China.
22. The current UK Management Plan for Exports and Imports of Waste (UK Plan)⁷ sets out Government policy on the transfrontier shipment of waste and incorporates technical guidance and assessment criteria designed to assist UK competent authorities in taking decisions on proposed shipments notified under the WSR. While in cases of exports of hazardous waste destined for recovery in the OECD the competent

⁶ Basel Convention's Decisions II/12 and III/1.

⁷ United Kingdom Management Plan for Exports and Imports of Waste, 1996, available from the Office of Public Sector Information, www.opsi.gov.uk.

authority of dispatch should generally accept the views of the competent authority of destination, the current UK Plan, which is legally binding, clearly states that responsibility for ensuring environmentally sound management of hazardous waste exports rests with the competent authority of dispatch. Where a competent authority is not satisfied that wastes will be managed in an environmentally sound manner in the country of destination, it must raise reasoned objections to the shipment in accordance with the WSR. A revised UK Plan is expected to enter into force on 12 July 2007 and it is unlikely that the current UK Plan requirement relating to the environmentally sound management of waste will need to be retained in the revised UK Plan. This is because the revised Waste Shipment Regulation, which is directly applicable in the UK, requires competent authorities to prohibit the export of the waste if they have reason to believe that waste will not be managed in an environmentally sound manner in a country of destination outside the Community .

23. While the difficulties in applying transfrontier shipment of waste controls to movements of end-of-life vessels destined for recycling are well documented, Government-owned vessels can readily be dealt with within this control framework. Any exports of Government-owned vessels for recycling are undertaken in accordance with the provisions of the WSR and UK Plan.

Options

24. There are two separate issues to be addressed in the policy on recycling UK Government-owned vessels:

- I. Government-owned vessels destined for further use, and
- II. Government-owned vessels destined for recycling.

25. Options are displayed for each of these issues.

I. Government-owned vessels destined for further use

Option 1 – Do nothing (limited stipulations in sales contracts)

26. This option is based on the assumption that stipulations for recycling a vessel at its end-of-life will not be made in Government sales contracts beyond current provision. Current (MoD) Government-to-Government sales contracts include a condition requesting that Government be informed of the transfer of ex-RN ships. In the case where an ex-RN vessel is to be sold on, Government must be notified of the recipient country (the MoD then has the right to object). In the case where a vessel is going for recycling, it is classed as a commercial sale, and theoretically, Government should be informed to whom the vessel will be sold. However, this is not stipulated in the contract. The only requirement on the part of the recipient owner is to ensure that the vessel is recycled in accordance with all applicable legislation at its end-of-life. There is

nothing in current sales contracts that stipulates that Government could object to the recycling destination or how the vessel would be recycled (e.g. beaching in India). The following is an example of a relevant clause in an (MoD) Government-to-Government sales contract:

“[New owner] will not sell, dispose of, lease, or otherwise transfer possession of the Ships, weapon equipments, missiles, gas turbines and ancillaries or their supporting documentation without the prior consent in writing of the UK MoD (except with regard to converting into scrap in accordance with all applicable legislation at the end of useful life time). Under normal circumstances, following formal receipt and acknowledgement of any consent request, the UK MoD will use its reasonable endeavours to respond within a period of forty days.”

27. It is unclear what recourse Government would have, if any, if a recipient owner were to breach its contractual obligations.
28. The key risk associated with this option is highlighted by the recent experiences with the ex-Government-owned vessel, the Sir Geraint. In 2005, this former landing vessel was sold on a commercial basis to a company registered in London. Before it left for its commercial voyage to Pakistan, concerns were raised that it was destined for recycling on a Pakistani beach once it had delivered its cargo. Despite reassurances from the buyer that this would not occur, it is believed that the vessel was recycled at Gadani beach, Pakistan.
29. In practice, this option will deliver little more than a political signal. It is unlikely to prevent any recycling in unsuitable circumstances.

Option 2 – Strengthened stipulations in sales contract

30. This option is based on the assumption that a sales contract/agreement for a defence or commercial sale of a Government-owned vessel would stipulate how and/or where the vessel should be recycled. Such stipulations could include specifying acceptable destinations for the recycling of the vessel and/or minimum standards which must be adhered to at the facility where the vessel is to be disposed of. Contractual stipulations would be based upon the policy option selected for Government-owned vessels destined for recycling (see section on Government-owned vessels destined for recycling), and might include the following requirements of the new owner:
 - To ensure that the vessel’s Green Passport is updated throughout the remainder of its service and passed to the recycling facility;
 - Not to dispose of the vessel without prior consent in writing of the UK Government;
 - To demonstrate that the vessel will be recycled in accordance with all applicable legislation, and with reference to the IMO Guidelines on Ship Recycling and the Basel Convention Guidelines for the

Environmentally Sound Management of the Full and Partial Dismantling of Ships;

- To take appropriate steps to ensure the facility where the recycling is to take place abides by acceptable environmental, health and safety standards (an example is available at Annex II) and is also shown in the Strategy document.

31. Government may wish to counterbalance stipulations on recycling conditions with other contractual obligations, so as not to deter Government-to-Government or commercial sales. Implied commitments to sell ex-Government-owned vessels to certain countries need to be considered. In addition, there will be difficulties in ensuring contractual obligations are being fulfilled, both by the new owner of the vessel and the facility undertaking the recycling.

Option 3 – Return vessels to the UK for onward recycling

32. This option is based on the assumption that vessels sold on a Government-to-Government or commercial basis are returned to UK ownership at their end of life before being sent for recycling either in the UK or elsewhere. A potential alternative is that vessels are leased to recipient Governments, with the UK retaining the ownership throughout the vessel's life, and thus the responsibility for its recycling.

33. Of the policy options presented for vessels sold for further use, this approach would provide the greatest assurance that Government-owned vessels would be recycled in accordance with preferred Government standards. However, this approach would have to consider the full environmental and economic costs/ benefits associated with returning the vessels to the UK.

34. A wider benefit would be to reduce the impact of poor standard recycling in developing countries and the environmental and social/health implications to local regions.

35. However it must be borne in mind that, vessels sold on this basis may be sold on to other governments or commercial entities, which would potentially result in contractual problems and issues with traceability. There is also the possibility that a vessel's configuration may change during its operation by the recipient owner (for example, some countries still use asbestos for insulation) and this would place an additional burden (and cost) on Government when disposing of the vessel. A leasing arrangement, whereby the UK remains the owner of the vessel, may provide a more workable solution from a legal perspective.

Option 4 – Undertake a market assessment and include strengthened stipulations in sales contract

36. This option builds on 'Option 2 – Strengthened stipulations in sales contracts'. It is based on the assumption that the UK Government seller undertakes a market assessment of the vessel prior to its sale for further use. If this indicates that the age, condition and value of the vessel make it likely that the vessel is very close to the end of its working life, then it should be sent for recycling instead. If the assessment suggests that the vessel still has a reasonable working life, then it can be sold for further use with stipulations in the sales contract/agreement determining how and/or where the vessel should be recycled (see stipulations in Option 2). In marginal cases, the Strategy dictates that the vessel should be sent for recycling.

II. Government-owned vessels destined for recycling

Option 1 – Do nothing ('OECD only' policy)

37. This option is based on existing Government practice whereby end-of-life vessels are only permitted for recycling in OECD countries⁸.
38. An 'OECD only' policy is in accordance with the UK's European and international commitments. This policy is based on the 'Basel ban' that prevents the export of hazardous waste from OECD to non-OECD countries. Although the ban is not yet in force in its own right, it has been fully implemented in the European Waste Shipments Regulation, thus it is legally binding for all EU Member States.
39. Specifying OECD countries only as acceptable destinations for Government-owned vessels does not, however, ensure that any particular facility would necessarily meet the test of environmentally sound management standards that would be acceptable to UK competent authorities when considering notifications of export of vessels under the EC Waste Shipments Regulation. The Environment Agency audits demonstrated that not all of the key environmental criteria for control could be met by selected yards in some OECD countries. This raises concerns about the effectiveness of a policy which does not specify criteria beyond acceptable destinations. Further reassurances would usually need to be sought.

Option 2 – Specify minimum standards

40. This option is based on the assumption that Government-owned vessels are only recycled in OECD countries and that facilities bidding for these recycling contracts would have to meet certain environmental, health and safety minimum standards. Clear specifications of standards would be provided in tender documentation and in the criteria for evaluating tenders. An example of the kind of minimum standards which could be required of recycling facilities is available at Annex II. These standards are based on a shipowner's Standard Operating Procedures manual for vessel recycling, recommendations in the Basel Guidelines and the IMO Guidelines for the Development of a Ship Recycling Plan.
41. Introducing adherence to minimum standards as evaluation criteria for Government recycling tenders will address the issue of varying standards across OECD countries and ensure that vessels are recycled in

⁸ Following advice from Defra's Legal Department, it has been determined that a 'UK only' or 'UK first' policy is not feasible. Such a policy would be based on the premise that ex-RN vessels could only be recycled in the UK. This policy could be challenged on the grounds that it offended against the Government Procurement Agreement (GPA). GPA is a WTO agreement that provides that no less favourable treatment should be given to the products, services and suppliers of another EU country (or other GPA signatory countries which include EU Member States, Norway, Canada, Japan and the United States). An 'EU only' or 'EU first' policy, whereby ex-RN vessels would be recycled only within the EU, could also be challenged on the grounds that it offended against the GPA.

appropriate conditions and in accordance with suitable standards. Such standards provide a core set of environmental, health and safety criteria which would be required at a minimum for recycling Government-owned vessels. A mechanism, such as that outlined in the Basel Guidelines, could be introduced to encourage facilities to continually improve standards with the ultimate objective of achieving compliance with principles of Environmentally Sound Management (ESM). The Basel Guidelines set out actions that should be achieved in the one, five and 10 year timeframes to move towards ESM compliance (see Annex III for Basel checklist for achieving ESM compliance).

42. A key issue associated with this option is the limited number of facilities in OECD countries which are known to comply with these minimum standards. The Environment Agency audits, which were based on fewer criteria, failed to identify any of the facilities assessed as suitable for the recycling of UK Government-owned vessels at the time of assessment (April 2005).
43. The requirement for minimum standards as tender evaluation criteria will also have implications for Government's commitment to maximise returns with respect of the sale of Government-owned assets.

Option 3 – Pre-decontaminate in UK

44. This option is based on the assumption that ex-RN vessels are completely decontaminated prior to export for recycling. Hazardous materials would require removal at suitably compliant facilities in the UK. It is estimated that approximately 95% of a vessel is salvageable as scrap steel. This is classified as non-hazardous (or 'green' list) waste and could therefore be exported for further use without need for a notification under the Waste Shipments Regulation. Given the construction of many, especially Royal Naval, vessels and the fact that much of the hazardous material found onboard is integral to the make-up of the vessel (e.g. asbestos in insulation, PCBs potentially found in wire cabling), it is likely that the vessel would have to be towed to its final destination for recycling once the hazardous elements had been removed.
45. Pre-decontamination would enable Government to ensure that hazardous materials are disposed of at appropriate facilities and to UK standards. While the remainder of the vessel would generally not be classified as hazardous waste, there is a preference to apply restrictions on the choice of the final destination for recycling. Vessels would still be subject to transfrontier shipment of waste controls and would have to be recycled at an ESM compliant facility in an OECD country.

Option 4 – Partnership with recycling facility(ies)

46. This option is based on the assumption that Government partners with a UK or foreign facility to undertake full ship recycling activities. If the facility were UK-based, this policy option might encourage other Government

agencies and industry to consider (although not exclusively) UK ship recycling facilities, providing a potential stimulus to the industry.

47. Given the number of commercial, and to a lesser extent, Government-owned, vessels that will require recycling in the coming years, there is a need to develop global ship recycling capacity that abides by adequate environmental, health and safety standards, or to upgrade the standards at existing sites. The ship recycling industry is predominantly based in Asia, particularly south Asia, where labour costs are low and regulatory pressures are minimal. This also has a high environmental and health cost. There are, however, several sites in the UK and other OECD countries interested in undertaking ship recycling activities.
48. Given the competition and the strong market for scrap steel in Asia, a convincing business case for recycling in the UK in particular, has yet to be developed and implemented. Of the UK facilities that have expressed an interest and met with Defra, all have surmised that a clearer understanding of Government's requirements and intentions towards recycling its own vessels would provide a lead for the industry. A potential partnership with one or more of these facilities could ensure a supply of vessels for recycling, at least in the short term, enabling such facilities to bid more competitively for the recycling of commercial vessels.
49. Considering the results of the BMT audits, there are a number of facilities in the UK which may be appropriate. It was estimated during the audits that, provided the necessary outstanding consents were obtained (and the time that will be required depends on well-founded proposals that effectively address relevant planning and environmental considerations and community concerns, both on and off site), several of these sites could undertake ship recycling activities in six to 12 months.
50. In addition to UK-based facilities, there is the potential to partner with yards in other OECD countries. For example, the yards in Turkey, Belgium and Lithuania that tendered for the recycling of HMS Intrepid.

Costs and benefits

(i) Costs

51. Costs of recycling Government-owned vessels will fall on HM Government (HMG). Companies looking to establish ship-recycling facilities in the UK could benefit from this, although competition law is such that any tenders would generally have to be offered across the OECD.

I. Government-owned vessels destined for further use

Option 1 – Do nothing (limited stipulations in sales contracts)

52. This is the business as usual scenario and there are no direct additional costs to Government.

Option 2 – Strengthened stipulations in sales contract

53. Strengthened stipulations in sales contracts imply higher costs for the vessel's ultimate recycling which will have to be met by the final owner. This has the potential to depress the price HMG receives for sale of the vessel.

Option 3 – Return vessels to the UK for onward recycling

54. The costs associated with this option would include the return voyage of the vessel to the UK (which could include towing from anywhere in the world) and any recycling costs. While the costs of this approach may seem prohibitive (potentially £1m-2m, depending on the size of ship), these would only account for a small percentage of the sales contract (generally worth £15m-30m per ship, although such contracts are worth approximately £100m to UK industry and Government). These costs would need to be met by relevant Government departments.

55. A leasing option, whereby Government leases out vessels to commercial operators, might be more practical from a legal perspective. There would be administration costs in terms of negotiating and managing lease deals, in addition to any recycling costs.

Option 4 – Undertake a market assessment and include strengthened stipulations in sales contract

56. Costs associated with this option include the administrative costs of undertaking a market assessment and/or the cost to engage experts to provide an accurate assessment. This option may also lead to more vessels being sent for recycling (i.e. in marginal cases) which will result in higher costs to HMG.

57. In addition, strengthened stipulations in sales contracts imply higher costs for the vessel's ultimate recycling which will have to be met by the final owner. This has the potential to depress the price HMG receives for sale of the vessel.

II. Government-owned vessels destined for recycling

Option 1 – Do nothing (OECD only policy)

58. This is the business as usual scenario and there are no additional costs to Government.

Option 2 – Specify minimum standards

59. Government has a commitment to the UK tax payer to get the best value possible when selling Government-owned assets. Imposition of minimum standards for the recycling of Government-owned vessels will have cost

implications for Government. Tenders for the recycling of HMS Intrepid, which didn't contain specific minimum criteria, ranged between significant revenues and costs (approximately -£400,000 to £700,000). It is estimated that the imposition of minimum standards could result in costs to Government of £1m-2m, depending on the size of vessel.

60. These end-of-life disposal costs are only now being factored into the MoD's CADMID cycle. Integrated Project Teams (IPTs), which are responsible for and hold the budget for the full range of activities throughout a vessel's lifetime (e.g. Frigate IPT, major warships IPT, etc.), will need to ensure that any such costs are taken account of. This is especially the case for legacy ships which may contain comparatively large quantities of hazardous material (e.g. asbestos, PCBs); the expensive remediation costs of which have not previously been allowed for in the cycle. It must be considered how these disposal costs will be met, especially in the short term.
61. Imposing strict minimum standards upfront without allowing a 'phase-in' period will place higher demands on some recycling facilities which will be required to make the necessary investment and upgrades upfront, potentially before securing a recycling contract.

Option 3 – Pre-decontaminate in UK

62. The costs associated with pre-decontamination, towing and the ultimate recycling of a legacy vessel may be prohibitive. The MoD's Disposal and Reserve Ships Organisation (DRSO) has estimated that to remove all asbestos from HMS Intrepid and Fearless would cost in the region of £500,000 to £1m per ship. It would cost an additional £100,000 per ship to ensure that all other hazardous materials were identified and removed, although given the complex construction of many Royal Naval legacy vessels in particular, it may be difficult to remove all hazardous materials and deem the vessel completely 'decontaminated'. Towing a vessel the size of Intrepid or Fearless would cost anything from £10,000 to £20,000 per day (charter) plus any additional demurrage charges, surcharges (dependent on the geographical region) and insurance costs. There is a question as to whether there are sufficient ocean-going tugs to support a situation where vessels are pre-decontaminated in the UK/Europe and towed to alternate destinations for recycling.

Option 4 – Partnership with recycling facility(ies)

63. While this policy would reduce the environmental costs of decommissioning in the developing world potential drawbacks of adopting this policy include cost implications (it will still be more expensive to recycle Government-owned vessels in the UK due to labour and insurance costs and the market for recyclable materials although this would need to be offset against the economic costs of not developing a domestic recycling market). Figures provided in response to the tender for HMS Intrepid from UK facilities indicate potential costs/revenues spanning from

approximately -£400,000 to £100,000. However, none of the companies that bid for the contract were licensed to operate recycling facilities at the time of tender, and minimum standards were not stipulated in the tender documentation. It is estimated that the imposition of minimum standards could result in costs to Government of £1m-2m, depending on the size of vessel although further recycling costs might fall over time as UK facilities develop further.

64. This option may contravene EU and international commitments and Government's procurement policy, and requires further exploration.

(ii) Benefits

65. Domestic policy is required to ensure that Government-owned vessels are recycled at suitably compliant facilities and to adequate environmental, health and safety standards. Experience has shown that current practices undertaken in preparation for the sale and recycling of Government-owned vessels do not ensure that these conditions are met.

66. Government has an opportunity to provide a positive example, both to other Governments and the international shipping community, by ensuring it responsibly disposes of its surplus vessels in adequate conditions and in accordance with its commitments under the Basel Convention and EC Waste Shipments Regulation. Increased media and NGO interest in the issue has demonstrated that this is indeed expected in the absence of a globally binding instrument on ship recycling.

I. Government-owned vessels destined for further use

Option 1 – Do nothing (limited stipulations in sales contracts)

67. There are no additional benefits to this option as this is the business as usual scenario.

Option 2 – Strengthened stipulations in sales contract

68. Strengthened obligations would provide a strong signal to those interested in purchasing Government-owned vessels that Government wishes to see certain basic standards met, e.g. implementation of the IMO Guidelines. Nevertheless, the problem of effectively enforcing these provisions still remains.

Option 3 – Return vessels to the UK for recycling

69. The key benefit of this option is that Government has full control over the recycling process at the end of the vessel's life and can be assured of the safety and environmental conditions under which this process is undertaken. A leasing scenario would provide better control over the vessel during its operational life and necessary planning for recycling activities.

70. This option could potentially provide a positive stimulus for the ship recycling industry in the UK who would be invited to tender for recycling contracts for de-commissioned Government vessels (along with facilities in other OECD countries).

Option 4 – Undertake a market assessment and include strengthened stipulations in sales contract

71. Undertaking a market assessment improves the information concerning a vessel's potential for future use and enables the Government seller to make an informed decision on that basis. In marginal cases, the Strategy should dictate that the vessel be sent for recycling. This will help avoid the situation that arose with the former MoD vessel, Sir Geraint, which was sold for further commercial use, but ended up on a beach in Pakistan for recycling. A market assessment would help determine a sale price for the vessel which would make it more viable for any new owner to operate the vessel on a commercial/defence basis, as opposed to sending it straight for recycling.

72. Strengthened obligations would provide a strong signal to those interested in purchasing Government-owned vessels that Government wishes to see certain basic standards met, e.g. implementation of the IMO Guidelines. Nevertheless, the problem of effectively enforcing these provisions still remains.

II. Government-owned vessels destined for recycling

Option 1 – Do nothing (OECD only policy)

73. Restricting recycling destinations for Government-owned vessels to only OECD countries may provide a stimulus to the ship recycling industry in the OECD and lead to expansion of capacity which is currently limited.

Option 2 – Specify minimum standards

74. This option would provide reassurance to Government that its vessels are being recycled to acceptable environmental, health and safety standards within the OECD.

75. The use of such standards would provide clarity for industry on what is expected at facilities recycling UK Government-owned vessels. Government would also provide a positive example to the international shipping community, especially owners and operators of UK-flagged vessels, by ensuring its vessels are recycled in accordance with acceptable standards, particularly in accordance with the principles of environmentally sound management (ESM).

Option 3 – Pre-decontaminate in UK

76. Pre-decontamination would enable Government to ensure that hazardous materials are disposed of at appropriate facilities and to known standards.

77. This option could benefit the UK waste management industry who would undertake pre-decontamination of vessels and dispose of the waste arising.

Option 4 – Partnership with recycling facility(ies)

78. Partnership with a facility in the UK or abroad would provide Government with greater control over the conditions in which its vessels are recycled. It could also strengthen the business case for those wishing to establish facilities in the UK.

Summary

Option	Total cost per annum Economic, environmental, social	Total benefit per annum Economic, environmental, social
I. Government-owned vessels destined for further use		
1. Limited stipulations in sales contracts (the baseline)	No additional financial costs. No assurances that adequate environmental, health and safety standards will be met when a vessel sold for further use is ultimately recycled.	No additional benefits.
2. Strengthened stipulations in sales contract	Imply higher costs for the vessel's ultimate recycling which will have to be met by the final owner. This has the potential to depress the price HMG receives for sale of the vessel.	Strong signal to those interested in purchasing Government-owned vessels that Government wishes to see certain basic standards met at recycling facilities.

<p>3. Return vessels to the UK for onward recycling</p>	<p>Costs include return voyage of vessel to UK and recycling. Estimated at £1m-2m per vessel (depending on vessel size).</p>	<p>Government retains full control over recycling process; ensures adequate environmental, health and safety standards are met. Sets a clear example of UK best practice and commitment to the environment (and non exploitation of developing countries)</p>
<p>4. Undertake a market assessment and include strengthened stipulations in sales contract</p>	<p>Administrative costs of undertaking a market assessment and/or the cost to engage experts to provide an accurate assessment. More vessels may be sent for recycling (i.e. in marginal cases) which will result in higher costs to HMG. Imply higher costs for the vessel's ultimate recycling which will have to be met by the final owner. This has the potential to depress the price HMG receives for sale of the vessel.</p>	<p>Improves the information concerning a vessel's potential for future use and enables the Government seller to make an informed decision on that basis. Strong signal to those interested in purchasing Government-owned vessels that Government wishes to see certain basic standards met at recycling facilities.</p>
<p>II. Government-owned vessels destined for recycling</p>		
<p>1. OECD only policy (the baseline)</p>	<p>No additional costs.</p>	<p>Potential stimulus to ship recycling industry in OECD and expansion of capacity.</p>
<p>2. Specify minimum standards</p>	<p>Recycling to acceptable environmental, health and safety standards estimated</p>	<p>Ensures UK Government-owned vessels are recycled to acceptable</p>

	at £1m-2m per vessel (depending on vessel size). Higher demands on recycling facilities to make investments and upgrades upfront.	standards within the OECD. Potential stimulus to ship recycling industry in OECD and expansion of capacity.
3. Predecontaminate in UK	£500K-£1m for asbestos removal and £100K to ensure other hazardous materials identified and/or removed. Towing to final recycling destination likely to be required at a cost of £10-20K per day (depending on destination).	Ensures hazardous materials are disposed of at appropriate facilities and to acceptable standards. Stimulus to UK waste management industry.
4. Partnership with recycling facility(ies)	Recycling to acceptable environmental, health and safety standards estimated at £1m-2m per vessel (depending on vessel size).	Greater control over the conditions in which Government-owned vessels are recycled. Potentially strengthen business case for those wishing to establish facilities in UK.

Recommendations

79. In view of the costs, benefits and risks assessed for each option, the following options are recommended for selection:

I. Government-owned vessels destined for further use

80. While Option 3 – ‘Return vessels to the UK for onward recycling’ is ultimately the favoured option as it provides greatest assurance that Government-owned vessels would be recycled in accordance with preferred standards, further discussion as to the financing, practicality and execution of this approach is required.

81. Therefore, of the options presented to ensure vessels sold for further use are recycled at their end-of-life in accordance with acceptable environmental, health and safety standards, **Option 4 – ‘Undertake a**

market assessment and include strengthened stipulations in sales contract' is preferred.

82. The parameters for any market assessment would have to be set upfront. Such parameters could include thresholds for price (i.e. the sale price for the vessel would have to be substantially higher than the potential price received for its recycling), remaining years of operation and the vessel's condition (i.e. the likelihood substantial repair/conversion work would have to be undertaken during the vessel's remaining years in service). The Government seller would be required to commit, in marginal cases, to send the vessel for recycling, which implies higher costs to HMG.
83. After sale, a key issue is how to ensure the recipient owner fulfils its contractual obligations when the vessel reaches its end-of-life. A solution may be available by the recipient agreeing to meet the requirements of the new Ship Recycling Convention (see para 96) in the medium to longer term. In any event added assurance is provided for in the decision making process under paragraphs 3 and 4 of the Strategy to reduce the likelihood of recycling to unacceptable standards in the short term. The situation will be more straightforward with commercial sales agreements as Government has the potential to take legal action for any breach of contract. Where the new owner breaches its contractual obligations, Government should review the options it has available on a case-by-case basis. Further discussion is required as to other measures which could be taken (e.g. securing a financial bond) to ensure compliance with contractual obligations.
84. Transparency is also an issue as it may be difficult for Government, and potentially the recipient owner, to verify the standards implemented at certain recycling facilities.

II. Government-owned vessels destined for recycling

85. Of the options presented to ensure Government-owned vessels are recycled at their end-of-life in accordance with acceptable environmental, health and safety standards, ***Option 2 – 'Specify minimum standards' is preferred.***
86. Implementing an 'OECD only' policy would present few difficulties in terms of justifying what countries are deemed as 'acceptable destinations' for recycling and in ensuring the policy is adhered to (i.e. only OECD countries would be permitted to tender for recycling contracts). As stated previously, an 'OECD only' policy is in accordance with the UK's commitments under the Basel Convention and the Waste Shipments Regulation (WSR).
87. All vessels would be subject to prior written notification and consent from the competent authorities in the countries of dispatch (UK) and destination. In accordance with the provisions outlined in the UK Plan, the competent authority for dispatch (Environment Agency in England and Wales,

Scottish Environment Protection Agency in Scotland and the Environment and Heritage Service of the Department of the Environment in Northern Ireland) could only authorise export if it was assured that the waste would be managed in an environmentally sound manner.

88. In addition to specifying an 'OECD only' policy and requiring that all vessels sent for export are done so in accordance with the WSR, facilities tendering for recycling contracts would be required to demonstrate that they abide by certain environmental, health and safety standards, at a minimum. The potential facility would be required to provide evidence of adherence to certain environmental, health and safety (EHS) standards at the time of bidding for the contract (an example of which is available at Annex II). This would, in effect, be additional criteria by which Government would evaluate tender bids.
89. It is recommended that an Evaluation Committee be established to assist in the assessment of bids for each recycling contract. For example, for ex-MoD vessels, this would comprise experience from the relevant Integrated Project Team (e.g. major warships, frigate, etc), DSA, DLO Environmental Policy, DRSO, Defra and the Health and Safety Executive (HSE). Such an assessment would remain independent from the notification process required under the WSR.
90. The adopted policy on vessels sold for further use and those going for recycling will have to fit with current Government practices, in particular, the MoD's Project Oriented Environmental Management System (POEMS) and the Project Oriented Safety Management System (POSMS). Both form part of the MoD's management systems and are used to develop and implement its environmental and safety policies and manage these aspects. There will be strong interplay with POEMS which is designed to cover the full CADMID cycle and looks at planning and preparing for a vessel's disposal at the concept phase. At this phase, aspects such as minimising the hazardous materials used in the vessel's construction are addressed. During the manufacture phase, a Green Passport will be prepared for the vessel, to be continually updated during the in-service phase when repairs and refits take place.
91. The final disposal phase commences when the vessel is taken out of active service and a determination is made as to whether it will go for Government-to-Government or commercial sale or recycling. As many of the vessels coming up for disposal in the next 10 years are without Green Passports or thorough inventories of hazardous materials onboard, the MoD has previously taken steps to mitigate these risks by commissioning Environmental Impact Assessments (EIA) for its vessels. The EIA investigates impacts associated with all possible disposal routes for these vessels, whether via defence sale, commercial sale or recycling. In the case where a vessel is sold for further use and an EIA is prepared, it will be passed onto the new owner.

92. Greatest interaction between proposed policy and POEMS will come at the final phase, prior to a vessel's sale for further use or recycling. In the case for further use, transfer of the ownership of the vessel should include, but would not be limited to, agreement to the stipulations in the sales agreement regarding end-of-life recycling and handover of the vessel's Green Passport and EIA (if available). In the case where a vessel may be sent for recycling, it is recommended that the activities undertaken to prepare the ship for commercial disposal (by DRSO) are finalised prior to commencement of the tender process for the recycling contract. Provided the MoD does not have a genuine intention to recycle the vessel at this stage and is considering other disposal options, the vessel would not be classified as a waste and may be moved to another facility for storage to relieve capacity issues at HMNB Portsmouth. If the decision was then taken to recycle the vessel, the tender process could then commence, and once the Evaluation Committee select a facility for recycling, the MoD would notify the Environment Agency of its intention to export the vessel for recycling (if applicable).
93. If the recommended policy for the recycling of Government-owned vessels is adopted, the greatest impact for the MoD will be on costs. While the MoD is endeavouring to factor in planning and preparation for a vessel's disposal at the concept phase, further understanding is required as to how this is factored into the various Integrated Project Team's budgets. According to the Acquisition Safety and Environment Support Group (ASESG) of the MoD which acts on behalf of the IPTs, there is currently no budget for the disposal of legacy vessels. Only a few of the MoD's newbuilds will have the costs of disposal factored into their project budgets. Having considered the various policy options for the recycling of ex-RN vessels, it is more than likely that the preferred option will incur costs. These need to be factored into IPT budgets at the concept phase, to relieve budgetary pressure when a vessel reaches its end-of-life. A possible solution that is being discussed for commercial vessels is to set aside a bond for all newbuilds which will be used to cover recycling costs (if any) at their end-of-life.
94. Finally, the interplay of policy options 3 (Pre-decontaminate in the UK) and 4 (Partnership with recycling facility(ies)) with the preferred policy option needs to be considered. Contaminant-specific partial decontamination also merits further investigation (e.g. removal of PCBs and/or asbestos prior to dispatch in line with the recycling facility's capabilities). While the principle of pre-decontamination is desirable, in practice it is likely to be unattainable and the costs prohibitive for legacy vessels. One of the benefits of pre-decontamination would be that hazardous materials would be disposed of in the UK, providing a potential stimulus to UK industry. The remainder of the vessel could be exported as non-hazardous waste, with fewer restrictions on its destination. However, given the difficulties in achieving complete decontamination of a legacy naval vessel due to its complexity and the sheer quantity of hazardous material onboard, it is unlikely that an ex-RN vessel could ever be exported as non-hazardous or 'green list' waste (in TFS terms). DRSO has provided cost estimates for

the sampling and removal of hazardous materials such as asbestos which also indicate that given the volume of hazardous materials to be remediated for legacy vessels prior to export, the costs would in fact be prohibitive. For newer vessels containing fewer hazards, the costs of pre-decontamination are likely to be significantly lower and this option may be feasible in such cases. This option will be continually reviewed in light of discussions on pre-cleaning at the IMO as part of a new Ship Recycling Convention.

95. Partnership with recycling facility(ies) may not be permitted under UK, EU and international procurement obligations (although this option requires further exploration with regard to EU State Aid rules). While this is an option that can be considered by the MoD, it is more likely that facilities in the UK could provide greatest support in storage of ex-RN vessels and possible bidding for recycling contracts.

Part II – Application of Waste Shipments Regulation to UK-flagged vessels going for recycling

96. The problems of applying Basel Convention controls to movements of end-of-life vessels destined for recycling have been discussed at the international level. As reflected in the Government's response to the Environment, Food and Rural Affairs (EFRA) Committee's Report on 'Dismantling Defunct Ships in the UK', the UK is fully committed to the development of a legally binding instrument on ship recycling. The International Maritime Organization has recently agreed to develop such an instrument on ship recycling and negotiations for a new Convention began in March 2006. In the longer term, this instrument should provide appropriate and sufficient obligations to ensure the safe and environmentally sound recycling of ships. At that stage, end-of-life vessels might be specifically excluded from the Basel Convention and the EC Waste Shipments Regulation.
97. However, in the meantime, the UK is obliged to comply with its existing international and European legal obligations under the Basel Convention and the EC Waste Shipments Regulation for imports and exports of waste end-of-life vessels to and from the UK.
98. The Government's response to the EFRA Committee's report outlines the UK's current legal obligations with regard to the application of the Waste Shipments Regulation. The UK Ship Recycling Strategy details how these obligations impact on owners and operators of UK-flagged vessels. Where an end-of-life vessel falls with the definition of waste, as set out in the Waste Framework Directive, the controls under the EC Waste Shipments Regulation (WSR) will apply. This is consistent with the regulators' approach to the application of the transfrontier shipment of waste (TFS) controls.
99. In brief, when an owner or operator of a UK-flagged vessel forms the intention to export that vessel for recycling, it will fall within the definition of waste as set out in the Waste Framework Directive. In this case, obligations and controls under the Waste Shipments Regulation will apply. This will also apply to vessels being imported into the UK for recycling.
100. The biggest impact of the application of the WSR to end-of-life vessels is implementation of the 'Basel ban' whereby exports of all hazardous waste to non-OECD countries are prohibited. As with ex-Royal Naval vessels, pre-decontamination to 'Green list' standards within UK facilities followed by towing might be feasible, but given the range of hazardous materials found in end-of-life vessels, it is likely that they would be classified as hazardous. In practice, this means that they may only be exported to OECD countries. This restriction limits the likely financial return to the shipowner, or could even result in significant costs. By comparison, recycling in a non-OECD country, at current scrap prices for steel, could allow returns of between \$200-400/ldt to be realised. This

cost impact encourages circumvention of the controls, and the continued recycling of ships in non-OECD countries.

101. An average of 5 vessels leave the UK flag each year for recycling, although it is not clear how many of these sail directly from the UK to recycling facilities (see Table 2 below). While the number leaving the flag has decreased over the past few years, this could be a result of ‘flag out’ data inaccuracies.

Year	No. leaving UK flag	No. leaving for recycling	Estimated total tonnage (ldt)
1998/99	30	7	45,000
1999/00	60	6	16,000
2000/01	149	3	14,000
2001/02	91	5	20,000
2002/03	69	4	26,000
2003/04	114	2	7,500
2004/05	97	4	4,000

Table 2: Summary of fate of UK-flagged vessels⁹

102. In general, vessels below 1,000 gross tonnes seem to be recycled within the EU, while the larger vessels have been destined for Asia.

Options

103. While the UK has legal obligations under the Basel Convention and Waste Shipments Regulation which it must abide by, this RIA explores options available with regard to application of the Waste Shipments Regulation to UK-flagged commercial vessels being exported for recycling, for the purpose of assessing the costs and benefits associated with application of the WSR.

Option 1 – Non-application of the Waste Shipments Regulation

104. This option is based on the assumption that the Waste Shipments Regulation would not apply to UK-flagged commercial vessels being exported for recycling from a UK port. Such vessels would not be subject to the transfrontier shipment of waste controls, and as such, their export would not be required to be notified to the competent authorities of dispatch, transit and destination. In addition, there would be no restriction on the export destination of such vessels, as the Basel Ban which prohibits the export of hazardous waste from OECD to non-OECD countries would not apply.

⁹ Provided by the Maritime & Coastguard Agency. The figures presented are based upon an analysis of rolling UK flag-out data and should be treated with caution due to historical inaccuracies in some parts of the data.

Option 2 – Application of the Waste Shipments Regulation

105. This option is based on the assertion that the Waste Shipments Regulation applies to UK-flagged commercial vessels being exported for recycling from a UK port. Such vessels would be classified as waste under the Waste Framework Directive and would be subject to the transfrontier shipment of waste controls. The 'Basel Ban', which prohibits the export of hazardous waste from OECD to non-OECD countries, would then apply and export destinations would be limited to OECD only facilities.

Option 3 – Application of the Waste Shipments Regulation and adherence to best practice

106. This option is based on the assertion that the Waste Shipments Regulation applies to UK-flagged commercial vessels being exported for recycling from a UK port, and that owners/operators of such vessels would adhere to best practice at all stages of a vessel's recycling. Such vessels would be classified as waste under the Waste Framework Directive and would be subject to the transfrontier shipment of waste controls. The 'Basel Ban', which prohibits the export of hazardous waste from OECD to non-OECD countries would then apply and export destinations would be limited to OECD only facilities.

107. Best practice would mean that shipowners give effect to the guidance outlined in the UK Ship Recycling Strategy. Shipowners would apply the IMO Guidelines on Ship Recycling at all stages when a ship is sold for recycling, and the minimum standards Government will adhere to when sending its own vessels for recycling.

Costs and benefits

(i) Costs

Option 1 – Non-application of the Waste Shipments Regulation

108. The UK has clear legal obligations under international law and Community legislation on exports of waste through the UNEP Basel Convention on the transboundary movement of hazardous wastes and their disposal and the EC Waste Shipments Regulation. Failure to comply with community law carries substantial risks of infraction proceedings against the UK by the European Commission if these obligations are not enforced. Any such cases could be referred to the European Court of Justice and in the result of an adverse judgement, could lead to fines for the UK that can amount to several hundred thousand Euros per day. In addition, it would be open to third parties, such as environmental NGOs, to take legal action against UK authorities for non-application of Community legislation.

109. Non-application of the WSR also means that there would be no restriction on destinations for recycling of end-of-life vessels and management of the hazardous wastes arising from them. There is concern that adequate health, safety and environmental standards are not being met in recycling facilities in developing countries. While the cost to human health and the environment as a result of sub-standard practices is difficult to quantify accurately, these costs cannot be disregarded. The Gujarat Maritime Board in India recorded 372 casualties due to accidents from 1983-2004. However, a Greenpeace-FIDH report maintains that these casualties are largely underestimated¹⁰.

Option 2 – Application of the Waste Shipments Regulation

110. The regulatory costs – in terms of fees payable to the competent authority - of exporting waste from the UK are relatively minimal (approximately £1000 for the notification plus £90 for the actual shipment/movement from England and Wales; costs of shipments leaving Scotland and Northern Ireland are less). In addition, exporters of waste are required to provide a financial guarantee to cover repatriation of the waste in the event it cannot be adequately dealt with in the country of import. Financial guarantees are released upon completion of the recovery operation.

111. The bulk of the costs to the shipping industry will be borne through the recycling itself. Factors such as a stronger scrap steel market, cheaper labour costs and less stringent environmental regulations mean that facilities in Asia, particularly South Asia, pay the best prices for end-of-life vessels. Application of the Waste Shipments Regulation would prohibit export of UK-flagged vessels (from UK ports) to these facilities. Owners would be restricted to facilities based in OECD countries where the costs of protecting human health and safety and the environment are more likely to be internalised into the recycling process, resulting in reduced profits from the sale of a vessel, or possibly costs. As current recycling capacity in OECD countries is limited this may depress prices further, although there is some indication that the market is responding and this is expanding, particularly in the UK.

112. Pacific Nuclear Transport Limited (PNTL), a subsidiary of British Nuclear Fuels (BNFL), exported two of its decommissioned nuclear fuel carriers to the Netherlands for recycling. Both exports were subject to the full TFS notification procedure. The owners could have netted approximately one million pounds per vessel if they had been recycled in India due to the value of scrap steel at the time. However, recycling of the vessels in the Netherlands resulted in a cost to PNTL of several hundred thousand pounds per 4000 tonne vessel.

¹⁰ The Human Cost of Breaking Ships, Greenpeace and the International Federation for Human Rights (FIDH), in cooperation with Young Power in Social Action (YPSA), October 2005.

113. It is possible that application of the WSR will also have an impact on the UK flag – namely that vessels may re-flag to avoid these controls. Re-flagging and change of ownership of vessels would potentially have a negative impact on the employment of UK seafarers (although there is no crew nationality requirement associated with the UK flag) and may adversely affect employment protection of UK nationals. In addition, there is a possible loss of revenue to HMG through a potential reduction in receipts from tonnage tax (although this is ownership and not flag-based) and ship registration.

114. Finally, the loss of livelihood of those employed in recycling facilities in developing countries cannot be discounted. The industry employs hundreds of thousands of workers in countries such as India, Bangladesh and Pakistan. This is generally a migratory workforce which travels to ship recycling yards in search of employment that is not available elsewhere.

Option 3 – Application of the Waste Shipments Regulation and adherence to best practice

115. The costs associated with this option are the same as Option 2 – Application of the Waste Shipments Regulation. In addition, it is likely that additional costs will be incurred as a result of adherence to best practice. Best practice suggests that shipowners would refer to the guidance outlined in the UK Ship Recycling Strategy, which, in particular, recommends that shipowners make reference to the IMO Guidelines on Ship Recycling at all stages when a ship is sold for recycling. Provisions in these guidelines include minimisation of hazardous substances used in the construction of new ships and their equipment and preparation of a Green Passport which will place additional costs on the shipowner.

(ii) Benefits

Option 1 – Non-application of the Waste Shipments Regulation

116. The key benefit associated with this option is the avoidance of the costs incurred when applying the Waste Shipments Regulation to the export of end-of-life vessels and freedom of access to all available facilities regardless of their standards. As discussed in the Option 2 ‘costs’ section, these can be considerable and relate mainly to the additional expense incurred from recycling a vessel in an OECD country where scrap steel prices are lower and operating costs are higher. Under this option, there would be no restriction on the final destination for end-of-life vessels for recycling.

Option 2 – Application of the Waste Shipments Regulation

117. The UK is legally obliged to implement European Directives and Regulations, and failure to implement these can result in infraction proceedings by the European Commission, referral to the European Court

of Justice and significant fines. The main benefit associated with this option is that the UK abides by its legal obligations.

118. In addition, the export of a vessel for recycling will only be permitted to another country within the OECD, and will have to be notified to the competent authorities of dispatch, transit and destination. In the UK, the competent authority of dispatch (for example, the Environment Agency in England and Wales) has responsibility for ensuring the waste will be handled in an environmentally sound manner in the country of destination. Where the competent authority is not satisfied this will be the case, it will raise reasoned objections to the shipment in accordance with the WSR. This system aims to ensure, as far as practicable, that adequate standards are achieved in recovery operations, irrespective of their location within the OECD.

119. Finally, the restriction on exports of vessels from the UK to non-OECD countries may stimulate expansion of capacity within OECD countries which is currently limited. Some sites within the UK are currently in the process of applying for licences and permits to undertake recycling activities in the UK, and one or more of these sites is likely to be up and running within the next 12 months.

Option 3 – Application of the Waste Shipments Regulation and adherence to best practice

120. The benefits associated with this option are the same as Option 2 – Application of the Waste Shipments Regulation. As discussed in the Option 2 'benefits' section, the system which covers exports of waste for recovery in the UK, the transfrontier shipment of waste controls, aims to ensure that recovery operations in other countries where waste is destined for is undertaken to adequate standards. The UK Ship Recycling Strategy provides guidance to shipowners to encourage a move towards best practice in the industry. The recommendations, based on the IMO Guidelines on Ship Recycling, encourage a life cycle approach to the issues associated with ship recycling. Minimisation of the hazardous substances used in the construction of new ships and their equipment helps address concerns of the impact of such waste on recycling workers and the environment at source. In addition, ensuring the recycling facility has access to adequate information regarding a vessel sent for recycling, by way of a Green Passport as suggested in the IMO Guidelines, can improve the management of wastes and the recycling process as a whole. Such measures are likely to result in improved conditions for both workers and the environment.

121. Negotiations are currently underway in the IMO on a legally binding instrument to ensure the safe and environmentally sound recycling of ships. It is expected the instrument will be adopted in the 2008/09 biennium and enter into force thereafter. Guidance is already available on many of the aspects to be included in the new instrument, for example, the design, construction and operation of ships to facilitate environmentally

sound ship recycling, in the IMO Guidelines. Consideration of elements in the Guidelines at this stage will ensure industry is prepared when the instrument enters into force.

Summary

Option	Total cost per annum Economic, environmental, social	Total benefit per annum Economic, environmental, social
1. Non-application of the Waste Shipments Regulation	Possible infraction proceedings, referral of cases to ECJ and possibility of significant fines (which can amount to several hundred thousand Euros per day). Costs to human health and environment at facilities where conditions are inadequate.	Avoidance of costs associated with application of the Waste Shipments Regulation.
2. Application of the Waste Shipments Regulation	Regulatory costs associated with TFS procedures (approx. £1000 for the notification plus £90 for the actual shipment/movement). Costs of recycling in the OECD (rough costing provided by PNTL at several hundred thousand pounds per 4000 tonne vessel). Limited OECD recycling capacity. Impact on UK flag and potential negative impact on employment of UK seafarers. Reduction in HMG revenue from tonnage	UK abides by its legal obligations under the Waste Shipments Regulation and avoids infraction proceedings, possible referral to ECJ and significant fines (which can amount to several hundred thousand Euros per day). System to ensure, as far as practicable, that wastes are handled in an environmentally sound manner. Potential expansion of ship

	tax and ship registration. Loss of livelihood for those employed in recycling facilities in developing countries.	recycling capacity in the UK.
3. Application of the Waste Shipments Regulation and adherence to best practice	Same as Option 2. Additional costs incurred from adhering to best practice (e.g. implementation of the IMO Guidelines).	Same as Option 2. Improved management of the recycling process and a life cycle approach which improves conditions for workers and the environment. Industry more prepared for entry into force of new IMO instrument.

Recommendation

122. Clearly Option 1 is untenable as this would, in Government's view, involve a breach of Community legislation. Option 3 may be preferred on environmental grounds if the additional costs of best practice over and above responsible recycling are either minimal or negligible, as this option gives greater clarity and certainty for the recycling process and further encourages minimisation of hazardous wastes. It is not yet clear whether the costs might outweigh the benefits or that they would in practice be affordable at this stage, i.e. where the overall return on a vessel recycled to a higher standard is positive.

123. Therefore, of the options presented with regard to application of the Waste Shipments Regulation to UK-flagged commercial vessels being exported for recycling, **Option 2 – 'Application of the Waste Shipments Regulation' is preferred.**

124. Hence an owner or operator of a UK-flagged vessel intending to send, by export or otherwise, that vessel for recycling would be carrying out an activity that falls within the definition of waste as set out in the Waste Framework Directive. In this case, for export, obligations and controls under the Waste Shipments Regulation will apply. This will also apply to vessels being imported into the UK for recycling.

125. Government will work actively to encourage UK shipowners to make use of the good practice guidance identified in Option 3. (Operators are

encouraged to consider the additional benefits and costs of Option 3 and provide any views or information.)

Competition Assessment

126. The competition filter has not been applied as the policy on recycling Government-owned vessels is not expected to have a significant impact on industrial or commercial interests in the UK.

127. With regard to the application of the Waste Shipments Regulation to ships as waste, the competition filter has not been applied as these are existing obligations. Application of the WSR could disadvantage EU shipowners because of the prohibition on exports of hazardous wastes and the costs subsequently incurred from recycling in the OECD.

Enforcement, sanctions and monitoring

128. Any export of a Government-owned or UK-flagged commercial vessel from the UK for recycling overseas will generally have to be notified to and approved by the relevant competent authority of dispatch and destination. In the UK the competent authorities are the Environment Agency in England and Wales, the Scottish Environment Protection Agency in Scotland and the Environment and Heritage Services in Northern Ireland.

129. The Transfrontier Shipment of Waste Regulations 1994 (S.I. 1137) set out the offences and penalties for the transfrontier shipment of waste controls. In addition, the UK has reporting obligations under the Basel Convention and the Waste Shipments Regulation whereby notified shipments of wastes are reported on an annual basis.

130. As highlighted by the EFRA Committee's report, there are difficulties in enforcing these controls to movements of end-of-life commercial vessels destined for recycling; in particular, that they can be easily circumvented. Whilst it is possible for an operating ship to be identified as waste under the Framework Directive and TFS controls if the owner has discarded or intends to discard it, there are practical difficulties in demonstrating on a case by case basis whether an owner actually has discarded or intends to discard a particular ship, especially where it is sent on a last journey carrying a cargo or sold via a broker who may themselves decide what to do with it. It should also be noted that enforcement of the controls is only possible for UK-flagged vessels within the UK's jurisdiction, i.e. leaving UK ports. It is also not possible to enforce the controls on foreign-flagged vessels leaving UK ports for recycling facilities since this would conflict with the provisions of the UN Convention on the Law of the Sea.

Monitoring and review

131. Government Departments will review the effectiveness of the policy on Government-owned vessels through a Ship Recycling Evaluation Committee (see Recommendations section) and as part of ongoing

international work in the IMO to develop a mandatory instrument on ship recycling.

Consultation

132. Defra consulted with Governmental Departments and Agencies, Devolved Administrations, industry and a number of non-Governmental organisations in the development of the UK Ship Recycling Strategy.

Government stakeholders	Cabinet Office Centre for Environment, Fisheries and Aquaculture Science Department of Trade and Industry Department for Education and Skills Department for Environment, Food and Rural Affairs Department for Transport Disposal and Reserve Ships Organisation Disposal Services Agency Environment Agency Foreign and Commonwealth Office Regional Government Offices Health and Safety Executive HM Treasury Maritime and Coastguard Agency Ministry of Defence Office of the Deputy Prime Minister OneNorthEast
In Wales	National Assembly for Wales Agriculture Department
In Scotland	Scottish Executive Environment and Rural Affairs Department Scottish Environment Protection Agency
In Northern Ireland	Department of Environment for Northern Ireland Environment and Heritage Service Northern Ireland
External stakeholders	
NGO Stakeholders	Friends of the Earth GMB Greenpeace WWF UK
UK Industry Stakeholders	AP Moller Maersk (formerly P&O Nedlloyd) A&P Group

Able UK
 BAE
 BMT Defence Services Ltd
 BP Shipping
 British Chamber of Shipping
 British Nuclear Fuels
 British Ports Association
 Clarksons
 Det Norske Veritas (DNV)
 DSM Demolition
 Environmental Industries Commission
 Environmental Industries Federation
 Fields Environmental
 Golder Associates
 Harland & Wolff
 International Chamber of Shipping
 Lloyd's Register
 Maritime Steam Restoration Trust
 Northern Defence Industries Ltd
 Numast
 P&O Steamship Navigation Company
 Renew Tees Valley
 Shell International Trading & Shipping
 Company
 Shipbuilders & Shiprepairers Association
 Tees Valley Regeneration
 University of Newcastle

Public consultation

133. In line with the Cabinet Office Code on Consultation, a 12 week public consultation exercise was carried out between 30 March and 22 June 2006. The Consultation was posted on the Defra website and emailed to over 100 stakeholders. 25 responses were received. The breakdown of the responses by sector was as follows:

Sector	Number of respondents
Industry	2
Non-Governmental Organisations	3
Government bodies	4
Academia	1
Trade associations	7
Trade unions	3
Consultancies	2
Other	3
Total	25

Table 3: Breakdown of respondents by sector

134. All responses received have been considered when reviewing the UK Ship Recycling Strategy, Regulatory Impact Assessment and Guidance. A summary of the responses is available at <http://www.defra.gov.uk/corporate/consult/shiprecycling-strategy/index.htm>.

Contact point

Waste Management Division

Defra

6/E5 Ashdown House

123 Victoria Street

London SW1E 6DE

Tel: 020 7082 8451

Fax: 020 7082 2470

Email: waste.policy@defra.gsi.gov.uk

September 2006

1. Declaration and publication

I have read the regulatory impact assessment and I am satisfied that the benefits justify the costs

Signed

Date

Minister's name, title, department

Contact point for enquiries and comments: name, address, telephone number and email address.

ANNEX I - UK GOVERNMENT AGENCIES OWNING VESSELS

British Antarctic Survey
BNFL
Caledonian MacBrayne, Scotland
Centre for Environment, Fisheries and Aquaculture Science
Defence Research and Evaluation Agency
Department for Environment, Food and Rural Affairs
Department for Regional Development, Northern Ireland
Department of Agriculture and Rural Development, Northern Ireland
Department of Agriculture & Fisheries for Scotland
Environment Agency
Environment and Heritage Service, Northern Ireland
Fisheries Research Services, Scotland
HM Revenue & Customs
Maritime and Coastguard Agency
Ministry of Defence
Natural Environment Research Council
Northern Lighthouse Board
Royal Fleet Auxiliary
Sea Fisheries Committees
Scottish Environment Protection Agency
Scottish Executive Environment and Rural Affairs Department
Scottish Fisheries Protection Agency
Trinity House

ANNEX II - MINIMUM STANDARDS

RECYCLING FACILITY

(IMO) indicates standards or criteria recommended in 'Guidelines for the Development of the Ship Recycling Plan' issued by the International Maritime Organization.

This appears as Annex I to the UK Ship Recycling Strategy

The facility:

- will be a registered business entity within the applicable national framework;
- will be auditable by the organization selling the vessel and provisions should be made for site visits (if required);
- will be in possession of all relevant permits, approvals and licences required by international, national and local agencies, and will provide a list and evidence of these on request (IMO);
- will have adequate insurance to cover health and safety liabilities and environmental remediation in compliance with local legislation;
- will identify all entities to be involved in the ship recycling process, including sub-contractors, waste management companies, asbestos removal companies, and provide evidence of their licences, approvals, permits, etc (IMO);
- will provide a list of hazardous materials the facility is capable of handling including related details of the final disposal facility;
- will have prior experience in recycling ships and other marine structures and will have professional references readily available (not applicable for new facilities);
- will declare whether it, its parent company(ies), subsidiaries or affiliates, or any proposed sub-contractors or other entities involved in the recycling process, has received any fines, notices, etc. from regulatory entities in the last five years (IMO);
- will be in receipt of the following documents prior to the commencement of recycling to assist in the development of a Ship Recycling Plan:
 - A 'Ready for Recycling' certificate (or its equivalent);
 - The vessel's Green Passport including a list of hazardous materials (and their location) onboard (IMO);
 - Any ship plans or drawings.

- will issue a ‘Recycle’ certificate upon completion which confirms the remainders of the ship have been processed and removed;
- is recommended to make reference to the following sets of Guidelines throughout the recycling process:
 - Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships developed by the Secretariat of the Basel Convention¹¹;
 - IMO Guidelines on Ship Recycling developed by the International Maritime Organization¹²;
 - Safety and Health in Shipbreaking: Guidelines for Asian countries and Turkey developed by the International Labour Organization¹³.
- The facility, in conjunction with the shipowner, will be responsible for the development of a ship recycling plan for the vessel and should have procedures in place to develop such a plan (IMO). The plan should include provisions for:
 - Worker health and safety;
 - Environment including waste management.

It should be noted that both existing and new facilities should be acceptable, provided that they have or obtain all the necessary regulatory consents and satisfy all other requirements, including those of the competent authorities for transboundary waste controls .

Worker Health & Safety

The facility is required to implement methods and procedures to protect, monitor and enforce worker health and safety. These should reflect applicable requirements of national legislation and, where appropriate, the ILO Guidelines on Safety and Health in Shipbreaking.

- The facility is required to have procedures in place to cover the following operations in respect of worker health and safety:
 - Confined and enclosed spaces (procedures for identifying and working in dangerous atmospheres) (IMO);
 - Welding, cutting, grinding and heating (procedures for ventilation, personnel monitoring for lead/cadmium/mercury/beryllium exposure, protection of personnel, training, respiratory protection, torch cutting, permits and inspections (including hotwork certification)) (IMO);

¹¹ Basel Convention ‘Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships’, 2002, available at: <http://basel.int/ships/techguid.html>.

¹² International Maritime Organization (IMO) Guidelines on Ship Recycling, 2003, available at: http://www.imo.org/includes/blastDataOnly.asp/data_id%3D11404/ResShiprecycling962.pdf.

¹³ International Labour Organization (ILO) ‘Safety and Health in Ship Breaking, Guidelines for Asian Countries and Turkey’, 2004, available at: <http://www.ilo.org/public/english/protection/safework/cops/english/download/e000020.pdf>.

- Fire prevention/protection (procedures for fire watch, raising alarm, hazards, fire extinguishers, hose lines, water supply, fire fighting equipment, training, proper handling and storage procedures and identification of potential ignition sources) (IMO);
 - Compressed gas cylinders (procedures for transporting, moving, securing and storing, and the use of hoses and torches in the vicinity of or on the bottles) (IMO);
 - Scaffolds, ladders and workman aloft, other working surfaces (procedures for use of personnel flotation devices, guarding of deck openings and deck edges, platforms, personnel fall arrest systems, guardrails and access to ships) (IMO);
 - Housekeeping and temporary lighting (procedures for work areas, including aisles, passageways and temporary floor openings) (IMO);
 - Health and sanitation (availability of toilet and washing facilities, changing rooms and eating and recreational areas) (IMO);
 - Communication of hazards (procedures for providing information to employees on potential hazards associated with the job) (IMO);
 - Asbestos Abatement Programme or similar (exposure assessment processes, use of regulated areas, in-process monitoring procedures, engineering controls and work practices, qualified personnel, measures to prevent exposure of workers and the environment to asbestos) – see ILO Code of Practice (Appendix C of Basel Guidelines) (IMO);
 - Gear and equipment for rigging and material handling (procedures for testing and inspection of ropes, chains, slings and hooks, chain-falls and hoisting and hauling equipment) (IMO);
 - Personal Protective Equipment (procedures and equipment for protection of employees from risks associated with ship recycling) (IMO);
 - Employee emergency plans (emergency escape routes, procedures to account for employees during evacuations, alarm systems, weather plans, rescue and medical duties, treatment of injured personnel and training procedures) (IMO);
 - Lead Abatement Programme or similar (procedures to provide ventilation, hygiene facilities and practices, shower/change rooms, warning signs, medical surveillance, exposure monitoring, testing and training) (IMO);
 - Spill containment and emergency response plans (procedures for clean-up activities, emergency equipment, site security, etc.) (IMO);
 - Diving operations (a full diving programme, if required) (IMO).
- The facility is required to have a system which reports, records and notifies work-related injuries, diseases and death;
 - The facility is required to ensure the competence of its employees through safety and skills (use of tools, machines and other equipment) training;
 - The facility is required to monitor its workers' health and work environment and provide occupational health services as required.

Environment

The facility will implement methods and procedures to protect the environment. These should reflect applicable requirements of national legislation and, where appropriate, the Basel Convention Technical Guidelines for the ESM of Dismantling of Ships.

- The facility is required to demonstrate the following in respect of the environment:
 - That it engages in safe and effective waste management and has operational waste reception facilities (for storage of waste on site prior to remediation, recycling and/or disposal either on or off site) (IMO);
 - Has procedures in place for managing (including identification (sampling/analysis), abatement, removal, treatment, storage, transportation and disposal) potentially hazardous materials, including (IMO):
 - Fuel, lubricants and coolants; chemicals in drums, buckets, pressurized bottles, stored solvents and other chemical stocks;
 - Cargo residue
 - Floatable materials (e.g. Plastics, Styrofoam, etc)
 - Materials possibly containing PCBs, such as wiring insulation, paints, transformers, lighting ballasts, capacitors and other electrical items if installed before 1986);
 - Waste water/sludges, sewer or grey water, residues of bilge and ballast water;
 - Harmful aquatic organisms, non-indigenous species and marine growth in ballast water and on the hull, and sediments in ballast tanks;
 - Asbestos used in older ships as insulation material;
 - Chromium (ballast water treatment, paint coatings, gaskets, etc.)
 - TBT paints (collection and containment of all wastes resulting from paint removal process).
 - That work will be carried out in a controlled environment so that any loss of pollutants can be monitored and managed (e.g. Bunds and booms for wet dock work, work planning to minimise pollutant loss, etc.). Best practice suggests that full recycling should be undertaken in a dry dock, or within an area that allows full capture of all liquid/solid waste (e.g. oil/water/bilge/ballast/etc.);
 - That the local environment is monitored at regular intervals to mitigate the effects of pollution. A monitoring programme is required for:
 - Ground/groundwater;
 - Seawater/sediments;
 - Air, noise, vibrations.

- Has management controls and procedures in place.

Operations

The facility will provide details of the methods and procedures involved, and sequencing of, the ship recycling process, including work that will be accomplished prior to and after the ship arrives at the facility. These should reflect practices recommended in the ILO, IMO and Basel Convention Guidelines on ship recycling.

- This facility is required to detail the following elements in a ship recycling plan or similar document:
 - A schedule showing the progressive order in which the work will be carried out (IMO);
 - Details of the arrangement of the facility to accommodate the flow of regulated material and completion of recycling, including the production flow of hazardous/regulated material and the layout/arrangement of the facility (IMO);
 - Details of the arrangements with other facilities for the safe handling, transport and ultimate recycling/disposal of all wastes;
 - Provide step-by-step procedures to be followed when performing ship recycling, including (IMO):
 - Plans for using dry dock, slipway, floating dry dock or other method;
 - Procedures for identification and labelling of hazardous materials;
 - Measures to be taken to ensure stability and strength during hull recycling;
 - Procedures for final recycling of underwater hulls;
 - Measures to be taken to prevent flooding/sinking of the hull;
 - Measure to be taken to prevent slag or other contaminants from entering the water;
 - Cleaning tanks and bilges prior to recycling;
 - Dealing with piping and fittings (not burning but cutting).
 - Procedures to be used for securing the vessel in the event of severe weather (IMO);
 - Procedures for spill cleanup and notification (IMO).
- The facility is required to have procedures in place for hot work, cutting and entry into enclosed spaces onboard ships including (IMO):
 - 'Gas free for hot work' certification carried out by a relevant and appropriate body;
 - Continuous monitoring of enclosed spaces;
 - Continuous ventilation of tanks and compartments;
 - Cleaning of oil tanks and compartments before hot work commences;

- o Testing of compartments for presence of toxins, corrosives, irritants and flammable vapours before entrance and commencement of cutting and hot work.

SHIPOWNER

Design and Construction of vessels

The shipowner:

- will abide by criteria required by the IMO Guidelines or other relevant standards, including:
 - Minimisation of hazardous materials used in construction of new vessels;
 - Minimisation of potentially hazardous materials used in construction of new vessels;
 - Design ship/equipment to facilitate recycling and removal of hazardous waste;
 - Preparation of a Green Passport;
 - Minimisation of waste generation.

Disposal

- Shipowner should ensure transparency in all phases of the recycling process:
 - Announce intention to sell a ship;
 - Tender/bid process (including confirmation that facility meets minimum environmental, health and safety standards);
 - Negotiation and main terms;
 - Preparation of documentation (contracts, sales agreement, and memorandums of understanding between the owner and facility);
 - Pre-cleaning (Ready to recycle certificate);
 - Delivery/decommissioning of vessel.
- Shipowner should select a facility that is in compliance with the minimum environmental, health and safety standards required of recycling facilities. Best practice suggests adherence to the IMO/ILO/Basel Convention Guidelines at all stages of recycling;
- Shipowner should make provisions for facility audits to verify standards and site visits (if required);
- Where required, the shipowner should be in possession of a 'Ready for Recycling' certificate, signalling that all hazardous materials onboard the vessel have either been removed or notified to the recycling facility;
- Shipowner should present an updated version of the vessel's Green Passport to the recycling facility;
- Shipowner should be in receipt of a contract, sales agreement and a ship recycling plan (issued by the recycling facility) prior to dispatch of the vessel to the facility.

ANNEX III - CHECKLIST FOR ESM COMPLIANCE

Basel Guidelines checklist for achieving ESM compliance¹⁴

Implementation of Actions			
Existing Practice and Standards	Immediately – At the latest within one year	Within one to five years	Within five to ten years at the latest
	Physical identification and labelling of hazardous materials on board	Adequate transfer operations facilities	Impermeable floors whenever hazardous materials and wastes are handled
	Cleaning of oil tanks/compartments before hot work commences	Spill containment boom	Adequate draining and pumping equipment
	Use solvents to dissolve heavyweight sludge so that most oil and sludge can be pumped out	Minimise use of manual labour inside the tanks for removal operations (use of pumps)	Provide adequate treatment/disposal facilities for the different hazardous materials
	Ventilate components / tanks continuously	Provide adequate storm water discharge facilities, to avoid contamination of storm water runoff	Spill cleanup equipment
	Introduce a hot work certification system	Create an enclosed chamber in the ship where asbestos has been identified. Limit access. Filter air emissions.	Create a separate area for paint removal operations with impermeable floor. Cover and install air filtration
	Test compartments for presence of flammable vapour before hot work	Create dedicated area for asbestos removal. Limit access	Create a dedicated area for segregation of hazardous materials
	Provide adequate storage facilities for hazardous waste	Collect and contain all wastes resulting from asbestos removal process.	Complete containments/ impermeable floors
	Test compartments for toxins, corrosives, irritants before entry	Decontaminate workers when leaving the asbestos removal area	

ESM - Compliant Model Ship-breaking Yard

¹⁴ Extracted from Basel Convention 'Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships', 2002, p.92. Physical measures are shaded.

Identify and remove toxic or flammable paint prior to metal cutting			
Collect and contain all wastes resulting from paint removal processes			
Spill cleanup and notification procedures			
Always wear rigid helmets, hard toed shoes and gloves and personal protective equipment for eyes, face and skin			
Use appropriate protective equipment vs. respiratory hazards			
Keep fire extinguishing equipment immediately available			
Implement appropriate asbestos management procedures in accordance with ILO code of practice			
Work with asbestos should be carried out by trained personnel only			
Determine pollutant concentrations prior to removal of bilge and ballast water			
Remove and dispose of PCB-containing material in a controlled manner			