

Recovery of Obsolete vessels not used in the fishing trade

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Guideline on the Recycling of Recreational Vessels (including metal and non-metal hulled vessels)

Introduction

Purpose

1. This guideline offers information to assist those who may need to deal with the dismantling of small vessels (below 500 GT) or to establish arrangements for so doing. It is particularly addressed to those who either plan to introduce new schemes on recycling of small recreational vessels where these have not existed before or to offer suggestions for improvements in updating current schemes. Annex I contains some references and sources of further information.
2. This guideline is intended to be of interest to recreational boat users, coastal and inland waterways, small commercial boat operators, harbour and marina operators, local, regional and government authorities.

Scope

3. The guideline focuses on the recycling practice for recreational vessels within Europe, particularly those that would not fall within the scope of the Hong Kong Convention on the Safe and Environmentally Sound Recycling of Ships. This includes recreational vessels, mostly operating within inshore waters in inland waterways with a gross tonnage of less than 500GT. Some vessels at the higher end of this scale are more likely to be undertaking short international sea voyages and may be registered as ships (i.e. on the register of a Flag State).
4. Hence the dismantling facilities serving these vessels are mostly but not exclusively within the European Union. Some facilities in OECD countries adjacent to the EU capable of treating such vessels may also be available. These facilities should be equivalent in terms of environmental, health and safety practices to those facilities operating in the EU.
5. Recreational vessels have a variety of types of construction covering a range of hull types and uses. There are two main categories, namely those with metal hulls and those with non-metal hulls. Distinguishing these two overall categories of hull material is important in relation to the recycling operations, as the cash-flow generally is positive for the owner of a metal-hulled vessel whereas it is generally negative for the owner when recycling a non-metal hulled vessel.
6. The vessel recycling facilities themselves may not necessarily be exclusively employed for dismantling these vessel types, but may also be engaged in dismantling of e.g. larger ships, smaller commercial vessels including fishing trawlers or even motor vehicles. Metal hulled vessels are more likely to be attractive to motor vehicle dismantlers who will be familiar with the metals recycling market. They will also possess the necessary techniques and equipment for removal of components (motors) for refurbishment and re-use as well as suitable temporary storage arrangements for hazardous liquids such as oils and fuels.

Exclusions – Matters not covered

7. This guideline is concerned mainly with the treatment of vessels at facilities for their dismantling and processing. It does not cover the downstream treatment of wastes generated from the process. This is expected to be regulated and managed in accordance with European Union law and its implementation with respect to waste transportation, waste treatment, landfill and integrated permitting etc. as appropriate.

Background- Scale, Environmental Impacts and Costs

8. The treatment of recreational vessels at recycling facilities poses potential concerns in much the same way as waste facilities do. While the true number of recreational vessels discarded across European Union Member States for dismantling is not known with accuracy, ICOMIA¹ estimates the population of recreational vessels in use across Europe is some 6,000,000. With an estimated average lifespan of 45 years approximately 140,000 vessels per annum would be expected to arise for scrapping [COWI 2011]. In some countries such as France it is estimated that around 25,000 recreational vessels are scrapped every year. The number of those treated at authorised facilities is not known, some may be stored or a limited number, according to COWI [COWI 2011], are left abandoned or become derelict.
9. Even where the vessels are scrapped at an approved recycling facility the operation can cause local impacts such as air, land and water pollution due to the presence of oil and hazardous substances.
10. The availability of local facilities can avoid long road transport journeys which would add costs to the owner and further environmental impacts from vehicle emissions. Where practicable and appropriate use of other recycling facilities may therefore be considered such as for fishing vessels or end of life vehicles, where these facilities have undergone the necessary adaptations and have been granted the appropriate environmental permits. For some vessels, such as those that may not be moved because of deterioration, it may be possible to arrange for a mobile processor to dismantle on site, subject to an appropriate permit.
11. Average estimates of dismantling costs (per vessel) for recreational vessels are [COWI 2011]:
 - For boats up to 7 metres: EUR 800
 - For boats from 10 to 12 metres: EUR 1.500
 - For 15 metre boats: EUR 15.000.

Guideline

Principles

12. In general the environmental hazards are similar between the dismantling and scrapping operations of each type of facility as is the infrastructure and techniques used. In essence therefore the same principles apply for the recycling of non-metal hulled vessels as for metal hulled vessels and the relevant standards are the same. Such recycling facilities are expected to operate in accordance with the provisions of Directive 2008/98/EC on waste (the Waste Framework Directive).
13. The differences between these types of facilities relate to the means of dismantling and disposing of the hull components. COWI [COWI 2011] indicated that recycling opportunities for fibre glass type hull materials are limited and often landfill is the default option. An environmentally preferable solution is to follow the well-established EU waste hierarchy and

¹ Decommissioning of End of Life Boats, A Status Report 2nd Edition, ICOMIA (International Council of Marine Industry Associations) December 2007.

identify opportunities for recycling or reuse of the hull material before incineration with energy recovery. Currently recycling of fibreglass is not considered to be economically feasible as few facilities are known to process it and the scale of such operations seems to be too small to be economically attractive for operators. This may change as techniques improve or new are introduced, e.g. solvent recovery processes are being piloted.

14. Particular attention should be given to potential risks that may arise from mechanical treatment of fibre glass. Size reduction processes (crushing, grinding) can cause release of respirable fibres with potential health consequences. Appropriate measures, including a method of working and controls to protect worker and public health and safety and the environment should be taken. Good practice for these facilities would include:
 - Disassembling before crushing to remove valuable/re-usable components
 - Segregation of recyclable materials after crushing
 - Access to nearby waste management facilities for de-pollution and treatment of hazardous and non-hazardous residues from vessel dismantling
 - Air pollution prevention for hull crushing
 - Preparation of fibreglass for reuse, or energy recovery as opposed to landfill.
15. The principles of operation common to all facilities should be to ensure that the facility:
 - Is secure i.e. with good quality security fencing
 - Has means of control of entry and exit
 - Has impermeable surfaces to protect the ground from accidental spillages and leaks
 - Possesses suitable storage for recovered waste and hazardous waste.
16. Additionally an operator of a facility needs to ensure that systems are in place to:
 - Identify hazardous materials
 - Ensure safe removal and storage of hazardous materials pending recovery or disposal
 - Monitor for pollution within and around the facility
 - Maintain accurate records of wastes.
17. In terms of location the facilities may be either adjacent to the water bodies they serve or may be inland (as for those that are co-located with end of life vehicle dismantling facilities). Those found at harbours and marinas or in docks will have specialised equipment to lift vessels out of the water or pull them up a slipway.
18. For facilities close to waterways, management of the risk of flooding affecting hazardous waste storage also needs to be considered.

Role of owner - Disposing of an end of life vessel

19. When deciding to dispose of a vessel an owner should consider a number of steps to ensure safe and environmentally sound disposal:
 - Maintaining the vessel in an acceptable condition on the water until it is removed for disposal and recycling, or storing it in a safe place i.e. at a boat yard
 - Removal of hazardous material on board in case the vessel is not regularly looked after
 - Selecting an authorised vessel dismantler with the necessary permits.

Actions for local authorities

20. Local authorities and/or designated competent authorities, as appropriate should:
 - Ensure the facility holds appropriate permit(s) with conditions
 - Inspect and ensure compliance with the conditions of the permit(s) taking enforcement action as necessary
 - Monitor the facility and the environment for pollution.

Actions for Federal Authorities/Government

21. Federal Authorities / Government should:

- Encourage the establishment of a network of suitable dismantling facilities in accordance with the provisions of the Waste Framework Directive
- Ensure that facilities are compliant with waste and environmental legislation
- Ensure that authorities and vessel owners can locate their nearest dismantling facility, e.g. by publication of a register of permitted sites.

Recycling standards for Recreational Vessels (including metal and non-metal hulled vessels)

22. Because of the potential range of facilities from small vessels to those approaching 500 GT the standards expected will in many cases be similar to those for larger vessels for example e.g. as described in the UK Ship Recycling Strategy, which has been drawn on for developing the standards described here . The application of the standards described below will depend on the complexity of the operation and the types of vessel dismantled and recycled. Those dealing with small recreational vessels will not require the full range of standards set out here, rather those relevant factors that apply to facilities accepting smaller vessels need only be applied, on a case by case basis.

23. For all facilities the range of actions to be taken should be identified and appropriate controls established, for worker health and safety and protection of the environment, from among the following, according to the degree of complexity and scale of operation. The facility:

- Should be a registered business entity within the applicable national framework
- Should be auditable by the owner or organization selling the vessel and provisions should be made for site visits (if required)
- Should be in possession of all relevant permits, approvals and licences required by national and local agencies, and should provide a list and evidence of these on request
- Should have adequate insurance to cover health and safety liabilities and environmental remediation in compliance with local legislation
- Should 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.
- Should provide a list of hazardous materials the facility is capable of handling including related details of the final disposal facility
- Should have prior experience in recycling recreational vessels and should have professional references readily available (not applicable for new facilities)
- Should 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
- Should issue a certificate upon completion which confirms the ship materials and wastes have been processed and removed in an environmentally sound manner.

24. The facility should be required to implement methods and procedures to protect, monitor and enforce worker health and safety. These should reflect applicable requirements of national and EU legislation. The facility should be required to have procedures in place to cover any of the following operations carried out to protect worker health and safety, according to the degree of complexity and scale of operation:

- Working in confined and enclosed spaces (procedures for identifying and working in dangerous atmospheres)

- 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))
 - 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)
 - 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)
 - 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)
 - Housekeeping and temporary lighting (procedures for work areas, including aisles, passageways and temporary floor openings)
 - Health and sanitation (availability of toilet and washing facilities, changing rooms and eating and recreational areas)
 - Communication of hazards (procedures for providing information to employees on potential hazards associated with the job)
 - Asbestos management (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)
 - 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)
 - Personal Protective Equipment
 - 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)
 - 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)
 - Spill containment and emergency response plans (procedures for clean-up activities, emergency equipment, site security, etc.).
25. The facility should be required to have a system which reports, records and notifies work-related injuries, diseases; to ensure the competence of its employees through safety and skills (use of tools, machines and other equipment) and to monitor its workers' health and work environment and provide occupational health services as required.
26. The facility should implement methods and procedures to protect the environment. These should reflect applicable requirements of national legislation. The facility should demonstrate the following in respect of the environment, according to the degree of complexity and scale of operation:
- 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)
 - Has procedures in place for managing potentially hazardous materials (including identification (sampling/analysis), abatement, removal, treatment, storage, transportation and disposal), including:
 - Fuel, lubricants and coolants; chemicals in drums, buckets, pressurized bottles, stored solvents and other chemical stocks
 - Floatable materials (e.g. Plastics, Styrofoam, etc)
 - Materials possibly containing PCBs, such as wiring insulation, paints, transformers, lighting ballasts, capacitors and other electrical items
 - 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
- 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
- That the local environment is monitored at regular intervals to mitigate the effects of pollution
- That management controls and procedures are in place.

27. Operationally the facility should provide, depending on the size of vessel treated, the methods and procedures involved in the vessel recycling process. The following actions should be put in place:

- The facility should be required to detail the following elements in a plan or similar document, according to the degree of complexity and scale of operation:
 - A schedule showing the progressive order in which the work will be carried out
 - 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
 - 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:
 - 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
 - Measures 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
 - Procedures for spill clean up and notification.
- The facility should be required to have procedures in place for hot work, cutting and entry into enclosed spaces on board ships where such techniques or methods are employed, according to the degree of complexity and scale of operation, these procedures would include:
 - '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
 - Testing of compartments for presence of toxins, corrosives, irritants and flammable vapours before entrance and commencement of cutting and hot work."

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Annex I References and further information

References

Directive 2008/98/EC of the European Parliament and the Council of 19 November 2008 on waste and repealing certain Directives (Waste Framework Directive)

Disposal and Recycling of HSC Materials, Henning Gramann, Reinhard Krapp, Volker Bertram
Proceedings HIPER'08, 6th International Conference On High-Performance Marine Vehicles, Naples (Italy), 18th-19th September 2008, University of Naples "FEDERICO II", Faculty of Engineering, Naples, pp 271-280.

Recovery of Obsolete vessels not used in the fishing trade (COWI 2011).

Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste (Waste Shipments Regulation)

Technical guidelines for the environmentally sound management of the full and partial dismantling of ships, Secretariat of the Basel Convention, 2003 ISBN : 92-1-158620-8

UK Ship Recycling Strategy, 2007, Department for Environment, Food and Rural Affairs
Nobel House, 17 Smith Square, London UK, SW1P 3JR

Further Information- Inter-Governmental Organisations (IGOs)

The Basel Convention

The Basel Convention on the Control of Transboundary Movement of Hazardous wastes and their Disposal (1989) has dealt at some length with the issue of ship dismantling and the web site of the Secretariat to the Convention has a specific page that brings together practical information and documents from various sources on the environmentally sound management of ship dismantling. Links to items discussed at meetings of the Convention Parties and other documents are at <http://archive.basel.int/ships/compilation.html>. This includes references and links to guidelines produced by the Basel Convention, ILO & IMO

The European Commission

The European Commission has a dedicated section on its website that deals with European interests in ship recycling; the approach to a European Strategy for ship recycling, research and studies carried out and links to other organizations involved with this topic; all may be found at <http://ec.europa.eu/environment/waste/ships/index.htm>

It also links to the work of the European Maritime Safety Agency on ship recycling at Work of the European Maritime Safety Agency (EMSA) on ship recycling: www.emsa.europa.eu

International Labour Organisation (ILO)

The ILO adopted technical guidelines on ship dismantling in 2004: "Safety and Health in Shipbreaking – Guidelines for Asian countries and Turkey".

http://www.ilo.org/public/libdoc/ilo/2004/104B09_279_engl.pdf

International Maritime Organization (IMO)

The IMO is the UN specialized agency that dealing with maritime issues including ship recycling and the Hong Kong Convention was developed under its auspices. The IMO continues to develop various guidelines on the recycling of ships.

The IMO Secretariat produced a note in 2005 (Joint Working Group document ILO/IMO/BC WG 1/2/2) providing information on the various IMO legal instruments and guidelines relating to the abandonment of ships. This note has been considered by a Joint Working Group of the ILO IMO and

BC at its first session, the twenty-seventh Consultative Meeting of the Parties to the London Convention 1972 and the ninety-first meeting of the IMO Legal Committee.

Further Information Non-Governmental Organisations (NGOs)

A number of associations exist specifically for recreational boating at national European and international level and have been examining the issue of end of life vessels. Further advice or information may be obtained from:

European Boating Association (EBA)
c/o Royal Yachting Association,
RYA House,
Ensign Way,
Hamble,
Southampton, SO31 4YA,
United Kingdom
Tel: +44 23 8060 4230
Fax: +44 23 8060 4299
email: secretary@eba.eu.com

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Or through national associations.

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