



EBA Position Statement End of Life Boats

Executive Summary

Fibre Reinforced Plastic (FRP)^a boats are highly durable and end-of-life (EOL) disposal has not so far been a major issue. However, the time is coming when these boats will reach the end of their lives and will have to be disposed of. As regulation restricts the disposal of FRP to landfill, recycling will become the only realistic option.

A number of projects have examined boat dismantling and recycling practices and increase awareness of the problem; none have addressed how disposal is to be financed. It has been suggested that the costs should fall on the boat owner, but this does not recognise that the boatbuilding industry, and the wider composites industry, has its part to play and development of marine products that are more sustainable throughout their life cycle must be incentivised.

As a result, and in spite of the great advances in waste management in Europe, there is a compelling need for specific legislation related to management, scrapping and recycling of boats.

The European Boating Association¹ (EBA) believes that the marine industry must start developing viable EOL strategies itself or have solutions imposed upon it by European legislation akin to those that have evolved for the auto trade. Legislation must ensure that boats are designed and manufactured in such a way as to allow their reuse, recycling and recovery to be achieved, and must also address the legacy of 50 years of FRP boat construction.

The EBA notes that, according to a study by the European Composites Industry Association, the marine element of composite waste streams is forecast to be around 10% of the total by 2025 (70 kilotons out of a 683 kilotons total)

Legislation should ensure that producers meet all, or a significant part of, the costs of the implementation of these measures.

Background

^a Fibre-reinforced polymer (FRP), also Fibre-reinforced plastic, is a composite material made of a polymer matrix reinforced with fibres. The fibres are usually glass, carbon, or aramid, although other fibres such as paper or wood or asbestos have been sometimes used. The polymer is usually an epoxy, vinylester or polyester thermosetting plastic. FRPs are commonly used in the aerospace, automotive, marine, and construction industries.

The average lifespan for recreational boats² is around 10 years for inflatable boats, 20 for motorboats and 30 years or more for sailboats. These average data are obtained from different studies in Europe and other parts of the world.

The International Council of Marine Industry Associations (ICOMIA) has estimated that there are more than 6 million recreational boats in Europe alone. If only 0.1% falls out of use each year that still equates to 6,000 boats. Because Fibre Reinforced Plastic (FRP) vessels are highly durable, end-of-life (EOL) disposal has not so far been a major issue. Many of the numerous glass-fibre boats produced in the early years are still in use. But the time will come – is coming – when these boats will reach the end of their lives and will have to be disposed of.

The present trickle of EOL disposals is likely to become a particular problem as successive generations of FRP boats cease to be fit for purpose. Unlike metal and wooden boats, which are made of recyclable or naturally degrading materials, fibreglass boats need particular consideration and safe working practices.

BoatDIGEST

Boat DIGEST is an EU-funded project that ran from October 2013 to the end of 2015 to address the problem of end-of-life boats. The project's main activities were to identify boat dismantling and recycling practices and locations across Europe and also to gather dismantlers' and boat owners' opinions in order to better understand the existing problems faced by them.

The European Boating Association (EBA) was involved in the Boat DIGEST project as an Advisory Board member and it provided suggestions and feedback on the deliverables, the vocational education and awareness materials that were developed. The EBA has disseminated these activities to its members and has discussed the outputs with them.

Four sets of "Guidelines" are now published on the project's website www.boatdigest.eu. They target the following audiences: boat owners and nautical associations, marinas and leisure harbours, repair & refit companies, boating schools and skipper training centres. The "Guidelines" offer information on the actions that can be taken by these four groups and the role they play in raising boat owners' awareness about the issue.

The EBA recognises the valuable contribution that Boat DIGEST has made in raising the level of awareness of the issue among a number of key sectors, however, the project did not make an assessment of the possible financing models for disposing of an old boats; this and where costs fall is an issue that troubles boat owners the most.

BOATCYCLE Project

The European Union sponsored a project that addressed the EOL issue as part of an aim to reduce the environmental impact of the marine industry. The BOATCYCLE project, implemented in Spain and Italy between 2010 and 2012 and so called because it attempted a 'cradle-to-grave' lifecycle analysis of vessels' economic and environmental impacts, investigated disposal options for four types of vessel, a small yacht, a sizeable sailboat, a rigid inflatable boat (RIB) and a fully inflatable boat.

The project succeeded in demonstrating that fibreglass can be recovered as part of the EOL boat disposal process, that the fibres are readily cleaned and extraneous materials removed, that a useful proportion of the fibres' original as-new properties are available in the recovered form, and that the fibres can have a second service life. Moreover, the resulting thermoplastic composites are, unlike thermosets, themselves recyclable since they can repeatedly be re-moulded under heat.

BOATCYCLE's ambitious mission to investigate the entire boat lifecycle was illuminating, particularly in showing that EOL disposal overall needs to be better managed and that there are better options available than those available at present. However, like BoatDIGEST, the big question that was not answered was what costs are involved and who will pay them?

On-going EC End of Life Working Group

The EBA has continued to be involved in a European Commission project, the Groupe des Parties Prenantes pour la Fin d'Utilisation des Bateaux de Plaisance, to further assess end-of-life options.

The programme is led by the European Boating Industry (EBI) and, following an 18-month break, is due to re-start in Q4 2020. The EBA will continue to engage with this group and to promote our view that, in addition to actions to address design and materials selection and disposal issues, the Commission needs to address the costs of disposal and to apply the extended producer responsibility principle. The EBA will also continue to encourage an approach that looks at the wider composites industry, drawing in expertise from the aerospace, renewables and transport sectors.

Other Research and Country Approaches

A recent report from the European Composites Industry Association shows that the marine element of composite waste streams is forecast to be around 10% of the total by 2025 (70 kilotons out of a 683 kilotons total). This reinforces the need for the EBA and EBI to work with the wider composites industry to address this key issue.

The International Maritime Organisation (IMO) commissioned a report from AQASS in the UK to assess the technical issues around end-of-life boats. There is a link to the report, published in 2019, in the references.

The French Energy Transition Act promotes the principle of extended producer responsibility and as a result, since 1 January 2019, anyone introducing recreational craft to the French market on a professional basis has been required to contribute to the costs of, or directly provide, recycling and waste treatment facilities for their products.

Sweden has boat breaking yards that have benefitted from projects and funding to assist with the clean-up and salvage of abandoned boats.

Norway has companies that are experimenting with grinding FRP down and using it to make flowerpots, benches and other items.

Germany has banned FRP going to landfill, largely due to the problem of dealing with old wind turbine blades. This knock-on effect means waste FRP from boats can't be put into landfill.

Canada has a funded scheme that is effectively combing the coastline looking for wrecks and abandoned boats and then disposing of them.

In the US, there is a funded project supported by the Rhode Island Marine Trades Association (RIMTA) to break boats down and use the waste FRP material in the cement industry.

Who will pay?

Researchers calculated that the average cost of conventionally dismantling a 7 m long boat, including logistics, is €800, rising to some €1500 for a 10-12 m boat and €15,000 for a 15 m boat. (The escalation is related more to boat volume than to length and to the greater complexity of larger boats).

It has been suggested that the costs should fall on the boat owner, but many of the owners who are in place at the ends of boats' lives are unwilling or unable to afford such substantial sums, at least within a short time span. Unlike owners of metal boats, which have significant scrap value in their recyclable metals, those of reinforced plastic boats cannot rely on embodied scrap value to reduce disposal costs. Collecting the costs from owners, even those that can be traced would be difficult.

For the boat owner the problem with this scheme is that it does not recognise that the boatbuilding industry has its part to play and there appears to be little incentive for innovation in green design and the development of new marine products that are more sustainable throughout their life cycle and also during scrapping and recycling.

It is now time that European policy makers consider the concept of extended producer responsibility (EPR) as the best route to take. In this approach, the industry itself has the primary responsibility for EOL disposal. Owners of time-expired boats would pass them back to their original builders, who would then dispose of them under controlled conditions using approved methods. This reflects the fact that boat builders and their suppliers are, after all, key stakeholders in the lifecycle process and working towards sustainable production is in their interests.

Although EPR is not without its problems; (who 'inherits' the responsibility if the original fabricator goes out of business since many boat builders last nowhere near as long as the composite boats they build), the EBA believes that the marine industry must start developing viable EOL strategies itself or have solutions imposed upon it by European legislation akin to those that have evolved for the auto trade.

A Directive on the End of Life Boats

Where they exist, different national measures concerning end-of life boats should be harmonised to minimise the impact of end-of life boats on the environment, thus contributing to the protection, preservation and improvement of the quality of the environment. A Community-wide framework is necessary in order to ensure coherence between national approaches, particularly with a view to the design of boats for recycling and recovery, to the requirements for collection and treatment

facilities, and to the attainment of the targets for reuse, recycling and recovery, taking into account the principle of subsidiarity and the polluter-pays principle.

In line with the Community strategy for waste management, the generation of waste must be avoided as much as possible and the fundamental principle that waste should be reused and recovered, and that preference be given to reuse and recycling. Member States should take measures to ensure that economic operators set up systems for the collection, treatment and recovery of FRP boats that are no longer fit for use.

Member States should ensure that the last holder and/or owner can deliver the end-of life boat to an authorised treatment facility without any cost as a result of the boat having no or a negative market value. Member States should ensure that producers meet all, or a significant part of, the costs of the implementation of these measures; the normal functioning of market forces should not be hindered.

The requirements for dismantling, materials reuse and recycling of end-of life boats and their components should be integrated in the design and production of new boats, following the principles of the circular economy.

The EBA Position on End of Life Boats within the European Union

Today, in spite of the great advances in waste management in Europe, there is a compelling need for specific legislation related to management, scrapping and recycling of boats.

The EBA believes that, similar to the Directive on End-of Life Vehicles, there is now a requirement for an EU Directive on EOL boats that lays down measures which are aimed at:

- ensuring that boats are designed and manufactured in such a way as to allow the quantified targets for reuse, recycling and recovery to be achieved;
- preventing of waste;
- promoting refurbishment and upgrade of older vessels to extend their life;
- promoting recyclability in new build and research into materials recovery for the legacy fleet;
- obligating the use of manufacturing processes without hazardous substances;
- improving the environmental performance of all the economic operators involved in the life cycle of boats; and
- a financial model based around extended producer responsibility.

A Directive should cover boats and end-of life boats, including their components and materials. This shall take the form of an extended producer responsibility model, applying irrespective of how the boat has been serviced or repaired during use and irrespective of whether it is equipped with components supplied by the producer or with other components whose fitting as spare or replacement parts accords with the appropriate Community provisions or domestic provisions.

The EBA will continue to engage positively with EU and wider initiatives that increase technical knowledge and financial understanding of these issues.

References

1. The BOATCYCLE Project – The Boat Scrapping Business.
2. Material Today - Where do GRP boats go at the end of their service life? 01 Oct 13.
3. The Technology Center LinseT - End-of-life boat disposal – a looming issue for the composites industry, 09 Sep 13.
4. Kathleen Stevenson - End of Life Boat Hulls, the Current Situation and Disposal Options.
5. Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles.
6. IMO report on end of life boats:
<http://www.imo.org/en/OurWork/Environment/LCLP/newandemergingissues/Documents/Fibre%20Reinforced%20Plastics%20final%20report.pdf>
7. RIMTA: <http://rimta.org/index.php/environmental-programs/>
8. European Composites Industry Association: Estimation of composite waste streams via GDP method, February 2019

Notes

¹ European Boating Association

The European Boating Association, Europäischer Sportschiffahrtsverband, Association Européenne de Navigation de Plaisance, is a civil, not for profit association of recreational boat users' organisations, founded in 1982, and established as an Unincorporated Association whose members agree to be governed by its constitution. The EBA member organisations (see <http://www.eba.eu.com/participantorgs>) collectively represent in excess of 1.5 million recreational boaters and an estimated 20 million active participants.

The purpose of the EBA is to represent the mutually agreed common interests of national recreational boat users' organisations in Europe, and in particular to:

- Coordinate and develop recreational boating activities in Europe by exchange of information, and action on matters of mutually agreed common interest.
- Promote the practice of all activities on the water, promoting and exchanging knowledge and experience between recreational boat users' organisations in Europe.
- Represent EBA members in environmental, regulatory and technical matters affecting their safe enjoyment of recreational boating activities on the water.
- Encourage the safe, unhampered and environmentally sustainable use of recreational boats on all European waters.
- Provide the link between the European institutions and EBA Members for consultation and information on proposed EU directives and regulations.

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- Provide the link between other relevant global and regional organisations and EBA Members.

² **Recreational Boating**

The EBA is the European representative organisation for recreational boating.

There is no general consensus as to the terminology used to describe the types of boat used for “recreational boating”, with expressions such as “recreational craft” or “private pleasure craft” being used to describe only subsets of such types of boat for the purposes of specific pieces of EU legislation. “Recreational boating” also includes the use of beach- or slipway-launched water toys such as wind surfers, sailing dinghies, inflatable boats and personal watercraft.

Boats used for “recreational boating” may be small or large, propelled by sail and/or power and used on inland waters and/or at sea. “Recreational boating” at sea can range from close-to-shore to trans-oceanic.

“Recreational boating” also includes the use of such boats privately owned and operated by the owner, hired (on bareboat or skippered charter) or used to provide a service (such as training or race participation).

In the context of this document, therefore, the EBA considers “recreational boating” to mean using boats that are designed or adapted for sport or leisure, whether propelled by sail and/or power, for the purposes for which they are designed or adapted.