

Ship Recycling in Turkey

Challenges and Future Direction





About Us

The NGO Shipbreaking Platform is a coalition of environmental, human and labour rights organisations working to promote safe and environmentally sound ship recycling globally. The Platform was first created in September 2005 after the few NGOs working on the issue noticed that a broader base of support, a stronger network of organisations from ship-owning and shipbreaking countries, and a long-term approach were needed to challenge the political clout of the shipping industry.

The coalition quickly evolved from being a European Platform to a global one, including NGOs based in the major shipbreaking countries India, Bangladesh, Pakistan and Turkey, and now has 17 member organisations and ten partners in 12 countries. The Platform is recognised by United Nations agencies, the European Union and leading media outlets as the preeminent international civil society advocacy organisation on ship recycling.

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Vision

Our vision is that vessels are recycled in facilities that ensure clean, safe and just practices, offering decent jobs. Our commitment to finding sustainable global solutions is based on the respect for human rights and the principles of environmental justice, producer responsibility, 'polluter pays' and clean production.

Mission

To advocate for sustainable ship recycling globally in respect of human rights, labour standards and environmental justice, and for the prevention of dirty and dangerous practices, such as the dumping of end-of-life vessels on the beaches of developing countries.

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Glossary

Aliağa OSGB: Aliağa Joint Health and Safety Unit

Basel Convention: The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

BLL: Blood Lead Levels

EIA: Environmental Impact Assessment

EPRP: Emergency Preparedness and Response Plans

EU List: The European List of Ship Recycling Facilities

EU SRR: The European Union Ship Recycling Regulation

GT: Gross Tonnage

Hong Kong Convention: The Hong Kong Convention on the Safe and Environmentally Sound Recycling of Ships

IHM: Inventory of Hazardous Materials

IMO: International Maritime Organization

IPPC: Intergovernmental Panel on Climate Change

Izmir Directorate of Environment: İzmir Governorship Provincial Directorate of Environment, Urbanization and Climate Change

ISRA: The International Ship Recycling Association

LDT: Light Displacement Tonnage

Ministry of Environment: Ministry of Environment, Urbanism and Climate

Ministry of Labour: Ministry of Labour and Social Security

Ministry of Transport: Ministry of Transport and Infrastructure

NORM: Naturally Occurring Radioactive Material

ODS: Ozone-Depleting Substances

OHS: Occupational Health and Safety

PIC: Prior Informed Consent

PPE: Personal Protection Equipment

POPs: Persistent Organic Pollutants

QMS: Quality Management System

SRAT: Ship Recyclers' Association of Turkey

SRFP: Ship Recycling Facility Plan

SRP: Ship Recycling Plan

TMMOB: Chambers of Turkish Engineers and Architects

TOKİ: Housing Development Administration of Turkey

TÜBİTAK: The Scientific and Technological Research Council of Turkey

Executive Summary

Turkey has the fourth largest ship recycling industry globally and is one of the world's largest importers of scrap steel. Concentrated in the coastal town of Aliağa in Izmir province, 22 facilities dismantle ships and provide scrap for the steel mills in the region. The sector has raised concerns for high rates of accidents and fatalities, coastal pollution, worker exposure to asbestos and other toxics and mismanagement of hazardous waste. Yet, despite public demands for greater transparency, ship recycling facilities in Turkey have traditionally operated behind closed doors.

Beginning in 2018, the European Union has required its Member States to recycle their ships only in facilities that they have audited and whose yards and operations conform with the EU Ship Recycling Regulation (SRR). Several yards in Aliağa have applied to be approved on the EU List, and the approval process has been instrumental in shedding light on regulatory failures and conditions in the yards, as well as showing potential for motivating the facilities to make positive changes. Currently nine facilities in Aliağa are listed on the EU List of Approved Ship Recycling Facilities.

Now, new opportunities have arisen to strengthen regulation of the ship recycling sector both domestically and in the EU. In Turkey, the rental agreements for yard owners expire in 2026, the publicly owned ship recycling area having been put up for sale in October 2023, making this an apt time to reassess facilities to ensure the implementation of better technologies. Secondly, the EU is currently conducting a public evaluation of the Ship Recycling Regulation, presenting an opportunity to strengthen its ability to reduce the negative impacts of ship recycling and contribute to the EU circular economy action plan.

This report presents the outcomes of an in-depth assessment of the Turkish ship recycling sector, including its regulatory framework, and identifies areas for improvement. Recommendations are directed at the relevant authorities in Turkey, the

European Commission and industry stakeholders. The aim is to shed light on the opportunities that lie ahead, while emphasising the improvements needed to ensure sustainable practices.

Methodology

To assess the status of the ship recycling in Turkey, we employed a methodology that encompassed a wide range of data sources from public and research institutions, responses to parliamentary written questions, public information requests, EU inspection reports, site visits and interviews with experts and workers, and spatial analysis using satellite imagery.

Key Findings

Pollution and dangerous working conditions remain serious concerns in Aliağa, and regulatory gaps persist in every stage of the ship recycling process, from the permitting of the yards, the import of the ships and their dismantling, to the smelting of steel scrap and disposal of the hazardous wastes.

The ship recycling yards in Aliağa have been exempted from having to conduct Environmental Impact Assessments, and the environmental licensing and permitting process for the ship recycling sector has been put on hold since 2016, awaiting a separate instrument outlining specific procedures for ship recycling.

Recent studies in 2019 and 2022 by the Ministry of Environment, TÜBİTAK and Ege University, as well as EU inspection reports show that the ship recycling yards are heavily polluted with toxic substances including arsenic, lead and other heavy metals, asbestos, polyaromatic hydrocarbons, tributyltin oxide and dieldrin. Oil-derived solid and liquid wastes from ship bilge, water, ballast and sludge contribute to the coastal pollution. High concentrations of lead in soil at the ship recycling yards have been attributed to ship paints. Particulate matter and heavy metal pollution in the air were most intense in the ship recycling region.

Operational aspects at the yards that contribute to the high pollution levels include deficient drainage systems, absence of a proper waste water treatment system and separators, burning of cables, and hazardous waste streams that are poorly monitored or managed.

Ship owners must provide an Inventory of Hazardous Materials (IHM) onboard and within the structure of the ship. Turkey currently lacks procedures to verify IHMs creating uncertainties in hazardous waste management. The IHMs of ships sent for recycling have not always accounted for the actual amount of their hazardous contents. EU inspection reports have found ship recyclers declaring less quantities of hazardous waste from their recycling activities than indicated by the ship's IHM, without providing evidence to justify the discrepancy.

The report furthermore finds that several yard owners still fail to provide appropriate personal protective equipment and clothing to workers; safety measures and techniques are often inadequate, resulting in accidents that could have been avoided; and, while serious irregularities in handling asbestos have been identified, occupational diseases continue to go undetected, whereas the necessary guarantees associated for workers to access appropriate follow-up, compensation, or legal recourse are missing.

Astonishingly, not a single case of an officially diagnosed occupational disease has been reported since the establishment of the Aliğa ship recycling area, despite the toxic environment of the workplace and the high risk of exposure coupled with inconsistent or no use of PPE. An EU inspection report, for example, revealed that concentrations of asbestos in one yard was high enough to pose a risk to human health.

Steel from the dismantled ship is sent for smelting at the electric arc furnace (EAF) steel mills in Aliğa. The scrap, typically contaminated by paints, lubricants, plastics, and other organic compounds, can release significant amounts of aromatic organohalogenes, PCDD/F, PCBs, PAHs, and combustion by-products when used in steel production. The lack of proper facilities to store slag and treat flue dust from the steel sector have furthermore raised concerns.

Deficiencies, often identified as having persisted over longer periods of time, have been detected by EU inspections at several yards in Aliğa that have applied to be on the EU List of approved ship recycling facilities. Some facilities were found to have improved their practices upon recommendations from the EU evaluators. However, in other yards, no substantial measures have seemingly been taken to address the lack of compliance with the EU Ship Recycling Regulation, yet they remain listed as approved under the EU Ship Recycling Regulation.

Recommendations

Turkey possesses significant opportunities to achieve sustainable ship recycling and steel production given its strategic location and industrial capabilities. However, the sector needs stronger regulation and enforcement, incentives, and vision to fulfil this potential. The expiration of the public land lease in 2026 and announced sale of the plots in October 2023 create an opening to bring needed changes to the ship recycling industry. The Ministries of Environment, Labour and Transport should seize this opportunity and adopt forward-thinking and comprehensive ship recycling legislation to fill existing gaps in regulation and transition the industry towards sustainable practices.

Adequate oversight necessitates a comprehensive Environmental Impact Assessment, defining environmental licensing processes, enforcing existing legal instruments for permitting and monitoring both from a safety and environmental perspective. Continuous environmental monitoring in and around ship recycling yards are needed to identify sources of pollution and remediation strategies. Safety and occupational monitoring and in-depth studies are needed to identify the root causes of accidents and work-related illnesses and occupational diseases.

Operational priorities for a comprehensive legislation are to improve the environmental and safety management of the industry by requiring effective drainage channels, wastewater treatment with oil-water separators, third party IHM verifications during dismantling,

adequate hazardous waste management, ISO compliant tanks and storage buildings, standards for secure pulling and lifting capacity and equipment, and proper gas-free operations and emergency response plans.

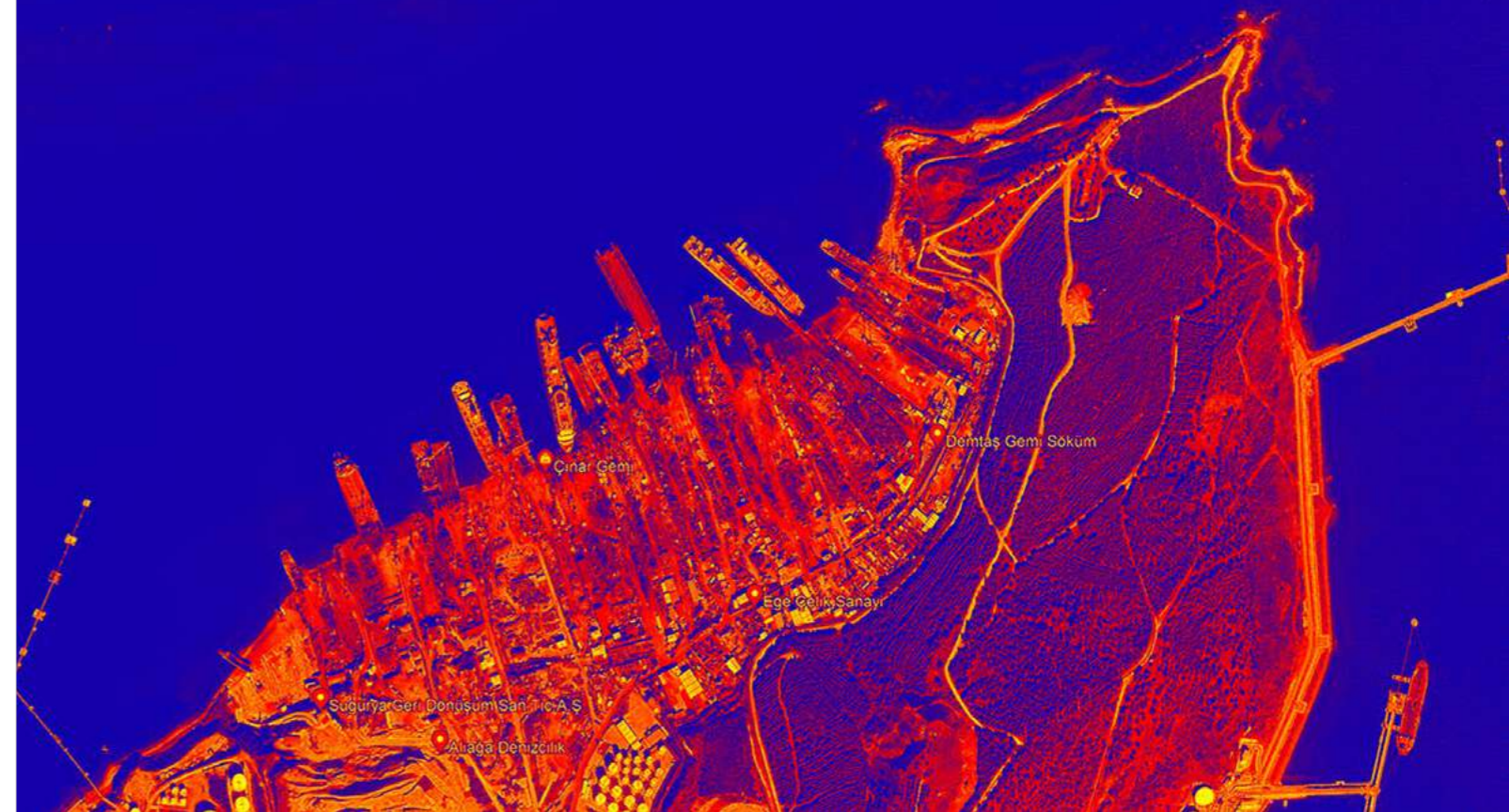
Defining clear, uniform procedures for operational aspects and downstream waste management is necessary to ensure consistent practices, including sampling and analysis of hazardous materials. Instilling a safety culture needs to be a goal of the legislation, phasing out lump-sum payments and other unsafe practices.

Forward-thinking legislation should mobilize investments and incentives to introduce safer and cleaner technologies, such as cold cutting. A Master Plan for the region addressing rising sea levels and incorporating dry docks should be established to ensure the sustainability and resilience of ship recycling operations. Authorities will need to lead the difficult transition to dry docks, which provide a stable and contained working platform and represent the future direction of the industry.

The EU plays a pivotal role in driving yard improvements. However, the fact that facilities continue to be approved under the EU Ship Recycling Regulation despite the detection of ongoing non-compliance needs to be addressed, as well as the lack of governance that allows yards to operate without EIAs or adequate monitoring.

The EU can improve verification by cross-referencing hazardous waste records, including waste applications, IHM records, yearly waste declarations and disposal receipts. Inspections of day-to-day operations at ship recycling yards need to be conducted more frequently and unannounced, and ways to suspend EU approval upon detection of non-compliance should be introduced. Incorporating workers' perspectives and experience can further inform evaluations. The EU should also strengthen the criteria of ship recycling, waste management and steel recovery operations to boost cleaner technologies and promote circularity of resources.

Whilst this report gives insight to the many challenges that the ship recycling sector in Aliğa currently faces, it also underscores the immense potential for driving forward sustainable ship recycling practices. The findings highlighted in this report demonstrate a clear path towards achieving this goal, including a robust Environmental Impact Assessment; new industrial platforms to ensure containment; new cutting technologies to reduce exposure to risk; improved working conditions and participation of workers; and a strong waste management plan to protect workers, local communities and the environment. Only by leveraging these opportunities, will the future of ship recycling in Turkey become truly sustainable.



Methodology

To compile this report, we employed a comprehensive methodology that encompassed various data sources. These sources included multiple reports from both public and research institutions, responses to parliamentary written questions, information obtained through public information requests, and EU inspection reports, which provided detailed, yard-specific information about operational aspects. The report also integrates historical spatial analysis, based on satellite data accessed through Google Earth, to better understand the development of ship recycling activities in Aliğa, along with their environmental impacts in the region.

Field visits conducted in Aliğa, İzmir, Ankara, and Istanbul enabled us to make firsthand observations and to carry out interviews with experts, workers and other stakeholders. We handled the personal data of the interviewed individuals confidentially, and have anonymised the interviewees due to concerns of job-loss and security. The statements we gathered were corroborated by public reports, repeated across interviews or supported by our own observations.

We also made efforts to engage with ship recycling yards and the Ship Recycling Association of Turkey (SRAT) by extending an open invitation for collaboration and participation in our research (Annex 8 and 9). However, we did not receive any response from the yards or Association.

Sources on the operational aspects of the yards were obtained mainly through yard specific information provided in the EU inspection reports of facilities applying for approval under the EU Ship Recycling Regulation. EU Inspection reports were available for the following yards: Avsar, Öge, Leyal, Leyal Demtaş, Sök, Ege Çelik, Anadolu, BMS, Kılıçlar, Temurtaşlar, Ege Gemi, Dörtel, Blade, Işıksan and Şimşekler. Examples of EU SRR non-complaint practices that have later

been rectified following EU recommendations are included in this report. Inspection reports for the yards Bereket, Sugurya, AGGD, that have applied to be on the EU List, had not yet been available published at the time of writing. The yards Metaş, Ersay, Kursan, Soylu have not as of yet applied to be approved by the EU, and are otherwise not mentioned by name in this report. No yard-specific inspection reports or information by Turkish authorities have been made publicly available.

The data and insights presented in this report are rooted in our best efforts to gather available information, ensuring a comprehensive and well-informed analysis.





Overview on Ship Recycling in Turkey

Ship recycling activities in Turkey began in Istanbul in 1925 and continued there until 1970¹. The industry then moved to Aliğa, where the Ship Dismantling Organised Industrial Zone was established in the İzmir province in 1976² and leased to ship dismantling companies for five-year periods³. In 2004, the area was transferred to the Housing Development Administration of Turkey (TOKİ)⁴ and is currently rented to facilities under contracts that will end in 2026⁵. In October 2023, TOKİ, however, listed the entire shipbreaking area for sale⁶.

The municipality of Aliğa, north of the city of İzmir, is one of the largest industrial areas in Turkey, which also includes two ports, an LNG terminal, a power plant, and a major refinery. The region is furthermore home to a number of major steel mills and a centre for facilitating the recovery of various other metals and equipment from ships. The ship recycling yards are located 70 km northwest of the city centre of İzmir Province and eight km to the northwest of the centre of the Aliğa District. They cover around 70 hectares of land on the shore facing Çandarlı Bay in the Aegean Sea.

¹ 'Tarihçe', Gemisander <<https://www.gemisander.com/tarihce>> Accessed 3.8.2023.

² Along with the Decree of the Council of Ministers dated 07.10.1974 and numbered 7/8951, the land was expropriated by the General Directorate of the Land Office in accordance with the 9th article of the law 1164 2nd article. 'Tersaneler ve Gemi Geri Dönüşüm Tarihçesi', Ulaştırma ve Altyapı Bakanlığı. <<https://kygm.uab.gov.tr/tersaneler-ve-gemi-geri-donusum-tarihcesi>> Accessed 24.10.2022.

³ 'İzmir Aliğa Gemi Geri Dönüşümü Sektör Analizi' İzmir Kalkınma Ajansı (2022) 35 <<https://izka.org.tr/izmir-aliaga-gemi-geri-donusumu-sektor-analizi-yayinda/>> Accessed 22.2.2023.

⁴ The Land Office Law 1164 was amended as the "Law on Land Production and Utilisation" with the law dated 8.12.2004, and numbered 5273.

⁵ 'Hukuki Mevzuat', Gemisander <<https://www.gemisander.com/hukuki-mevzuat>> Accessed 22.2.2023.

⁶ 'Toki'den Aliğa'ya dev satış' <<https://www.egedesonsoz.com/haber/toki-den-aliaga-da-dev-satis-tam-7-milyar-tl/1160907>> Accessed 20.10.2023.



Credit: Instagram account of @shipsengineer, January 2022

The public land within 15 km radius of the ship recycling yards includes olive groves, settlements (Aliğa urban area, rural settlements, summer houses) with schools and hospitals, agricultural areas, villages, meadows, public beaches, wetlands, lagoons, bird sanctuaries, tourism areas, river deltas, and archaeological sites.⁷ The Aliğa Güzelhisar River Delta and Bakırçay River Delta (Çandarlı Bay) are important wetlands in the area, while Foça (south of Aliğa) is listed as Special Protection Zone – Natural Habitat for the Mediterranean Sea.⁸ Moreover, İzmir is situated in a region known for its high seismic activity.

Whilst the coastline encircling the Aegean Sea is populated and also a highly touristic zone both for Turkey and Greece, access to the ship recycling area by the general public is limited, rendering it challenging to monitor the sector.⁹

The Environmental Development Plan of the Ministry of Environment, Urbanism, and Climate (Ministry of Environment) divides the cape where the ship recycling yards are located into an industrial zone, an industrial area (unorganized), and a storage area,¹⁰ including 17 parcels, of which 14 are owned by TOKİ and three by the state treasury 11 and a public field of 3186 m². Currently, there are 22 active ship recycling companies operating in 28 different plots in Aliğa.¹²

More recently, a new area for ship dismantling activities is planned in Zonguldak, located in the North of Turkey.¹³ A surface area of 36.219 m² owned by the State, located more precisely in Kilimli District, has been allocated for the purpose of establishing a ship recycling facility. While the landing method is foreseen, no applications for environmental permits have yet been submitted.

⁷ Environmental Development Plan /2014-2025 /1/100000 / Ministry of Environment, Urbanization and Climate Change.

⁸ Ibid.

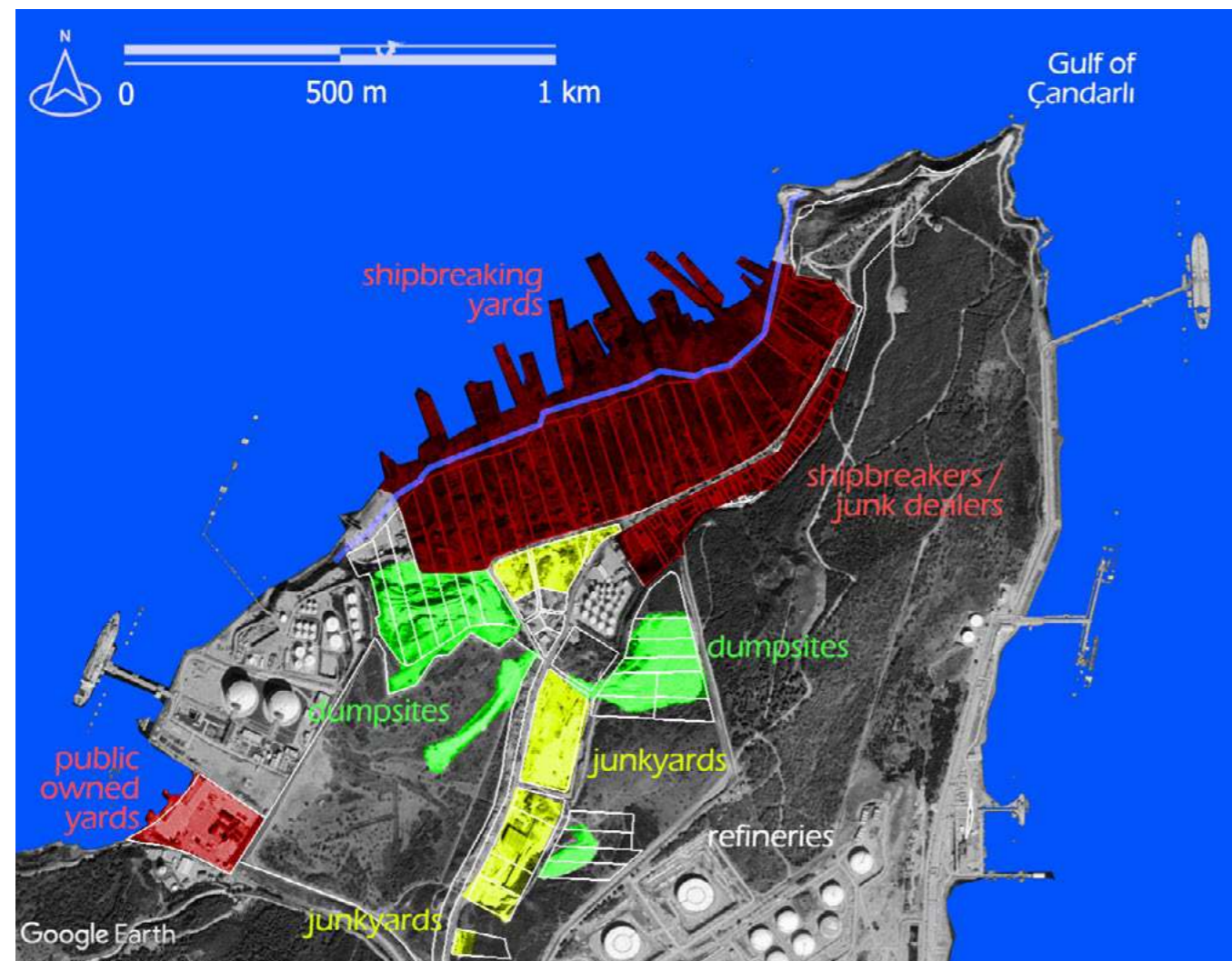
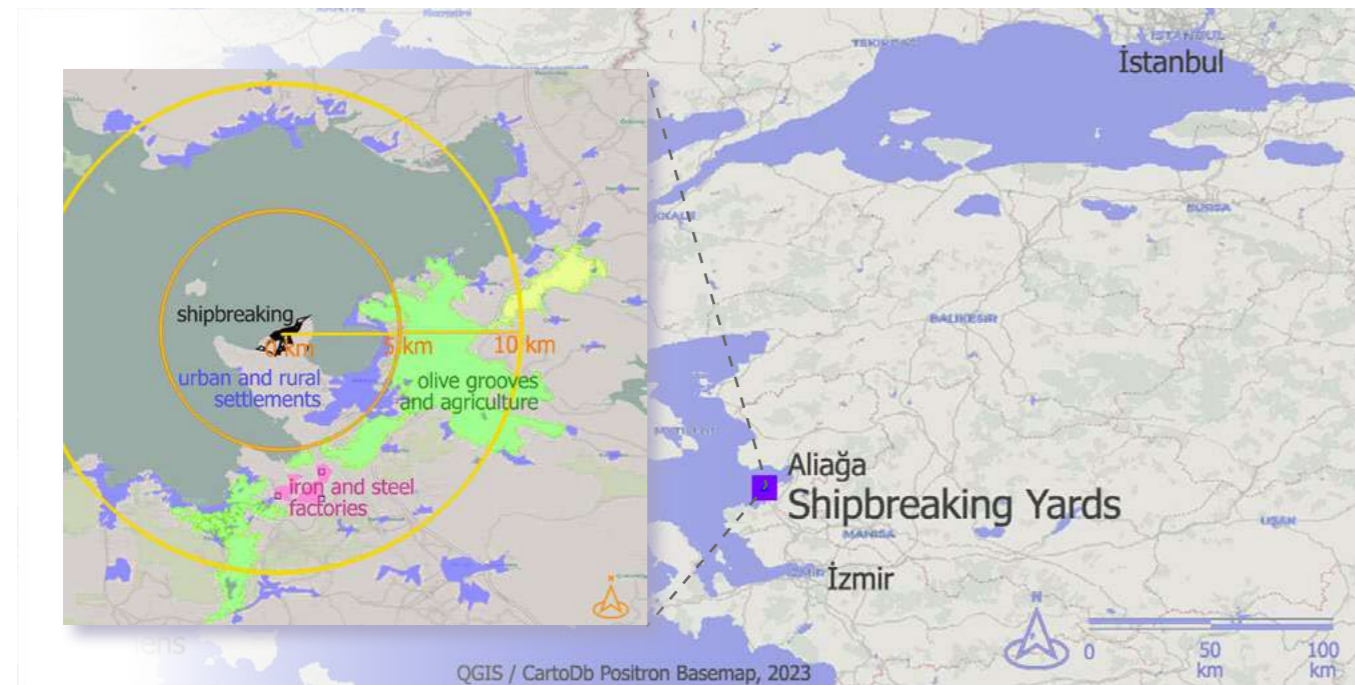
⁹ The ship dismantling area remains within the special security zone due to the presence of refineries <https://webdosya.csb.gov.tr/db/izmir/icerikler/pg_boru-hatti-5000ni_rapor_27072022-20220922124433.pdf>

¹⁰ Environmental Development Plan (n 7).

¹¹ İzmir Province, Aliğa District, Development Plan Revision for the Shipbreaking Zone 1/1000 (2020) Housing Development Administration - TOKİ, p. 6 <https://webdosya.csb.gov.tr/db/izmir/icerikler/izmir_aliaga_5000-20230406132411.pdf> Accessed 11.7.2023.

¹² İzmir Aliğa Gemi Geri Dönüşümü Sektör Analizi (n 3) p. 37.

¹³ The response dated 14.03.2023 to the CIMER application numbered 2302187790.



1. Main Actors In the Field

Authorities: The relevant competent entities in Turkey are the Ministry of Environment, Urbanism and Climate Change (Ministry of Environment), Ministry of Labour and Social Security (Ministry of Labour) and Ministry of Transport and Infrastructure (Ministry of Transport), along with the Harbour Master. The Ministry of Labour regulates occupational health and safety (OHS) conditions, including the removal and handling of asbestos, the work with hazardous materials and employment conditions. The Ministry of Environment and the Ministry of Transport are responsible for issuing the operational permits of the yards.

European Commission: The European Commission conducts audits of the ship recycling facilities that have applied for the EU approval under the EU Ship Recycling Regulation (EU SRR). In Turkey, the first EU inspection took place in 2018. The Commission assesses and monitors whether the yards meet the environmental, safety, and labour standards as required by the EU SRR. EU-flagged commercial vessels above 500 Gross Ton (GT) may only be recycled in ship recycling facilities that have received EU approval.

Ship Recyclers' Association of Turkey¹⁴: The Ship Recyclers' Association of Turkey (SRAT) has represented the industry since its establishment in 2001. A Waste Management Centre, outlined in more detail below, was established by SRAT in 2004 and received the "Asbestos Removal Permit"¹⁵ (Annex 1) and "Temporary Storage Permit"¹⁶ (Annex 2) from the Ministry of Environment. SRAT centrally carried out the handling, temporary storage and disposal of all wastes originating from ship recycling activities until 2021. The industry association has also provided many other services to the facilities, including various trainings, seawater measurements, first aid, firefighting support and periodic workers' health screenings.

Ship Recycling Facilities: Currently, there are 22 active ship recycling companies operating in 28 different plots in Aliğa.¹⁷ Nine of these are currently EU-listed.

Every yard has its own individual temporary waste storage area (since 2021¹⁸), legal entity, work force and authorisations.

The International Ship Recycling Association (ISRA): ISRA is a global industry organisation, and its members include seven ship recycling companies from Turkey.¹⁹ The association imposes minimum requirements on its members, and states that its goal is to promote environmentally sound and safe vessel recycling, as well as to connect responsible yards with ship owners.

Ship Recycling Consultancies: Several consultancies assist ship owners in the recycling of their assets. Dutch Sea2Cradle and Norwegian Grieg Green, part of the Grieg Group, are two such companies that have been active in Turkey. They provide a wide range of services from issuing Inventories of Hazardous Materials (IHM) to recycling plans.

Workers: As of January 2023 there are 1.201 registered workers in the ship recycling sector. Increased awareness of their rights led them to conduct a wildcat strike in February 2023, which lasted 11 days.

National Non Governmental/Occupational Organisations and Citizens: The branches of the Union of Chambers of Turkish Engineers and Architects (TMMOB), Turkish Medical Association (TTB), Izmir Bar Association, Environmental Platforms of Aliğa, Foça, Izmir and Ege, Izmir Labor and Democracy Forces and several other local and national environmental and labour platforms have all engaged on the issue of ship recycling. Their overall general concerns are that the ship recycling activities in Turkey are not carried out in accordance with the law and the principles of environmental and labour protection, and that the government monitoring activities are insufficient. These members of civil society have raised concerns over the environmental pollution in the region and the risks of exposure for workers during campaigns relating to specific vessels, such the Otopan, Kuito and Ethane and more recently the Brazilian aircraft carrier São Paulo.

¹⁴ "Gemisander" <<https://www.gemisander.com/>> Accessed 23.2.2023.

¹⁵ "Gemi Söküm İzni" Ministry of Environment, dated 23.03.2010 and numbered B.18.0. ÇYG.0.01.02-147/6033.

¹⁶ Temporary Storage Permit dated 11.11.2009 numbered 9.

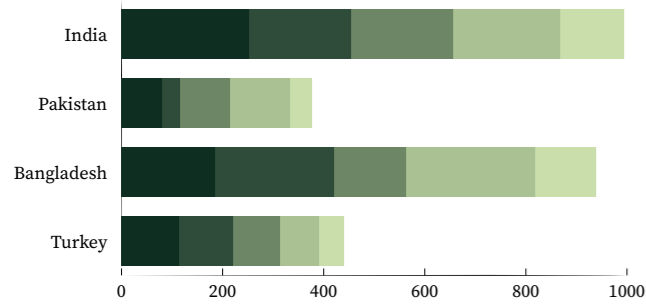
¹⁷ A cursory examination of the Turkish Trade Register uncover a pattern where a limited number of yard managers and owners hold positions on multiple ship recycling yard boards.

¹⁸ Izmir Aliğa Gemi Geri Dönüşümü Sektör Analizi (n 3) p. 116.

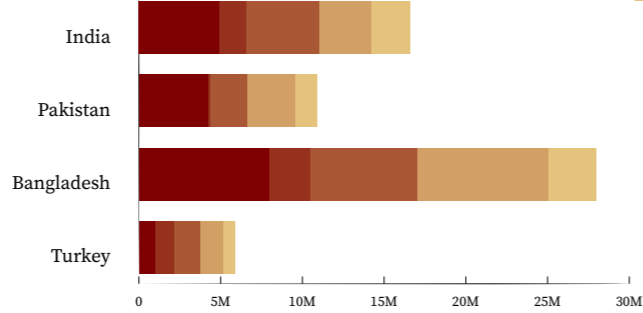
¹⁹ Avşar, Ege Çelik, Işıksan, Leyal Demtaş, Öge, Sök, Şimşekler.

2. Dismantling Statistics

Number of Ships Dismantled Per Year



Total GT Per Year



Turkey is the fourth scrapping destination worldwide, after Bangladesh, India and Pakistan.

The total number of end-of-life vessels dismantled in Turkey has steadily increased since 2009.¹⁰ The highest Gross Tonnage (GT) dismantled reached its peak in 2020 at 1.776 million GT, whilst the highest number of ships, 281, were dismantled in 2012.

The table “Total LDT of Ships Dismantled in Turkey” shows the total amounts of Light Displacement Tonnage (LDT) in years. During research for this report, three distinct sources provided data for the total LDT of dismantled ships. The figures from SRAT and a response to a public information request exhibited figures which were relatively closely aligned, whilst the report of Reaching and Accessibility in Turkey presented slightly different figures, particularly for the years between 2019 and 2021.²¹

Dismantling Statistics per Year

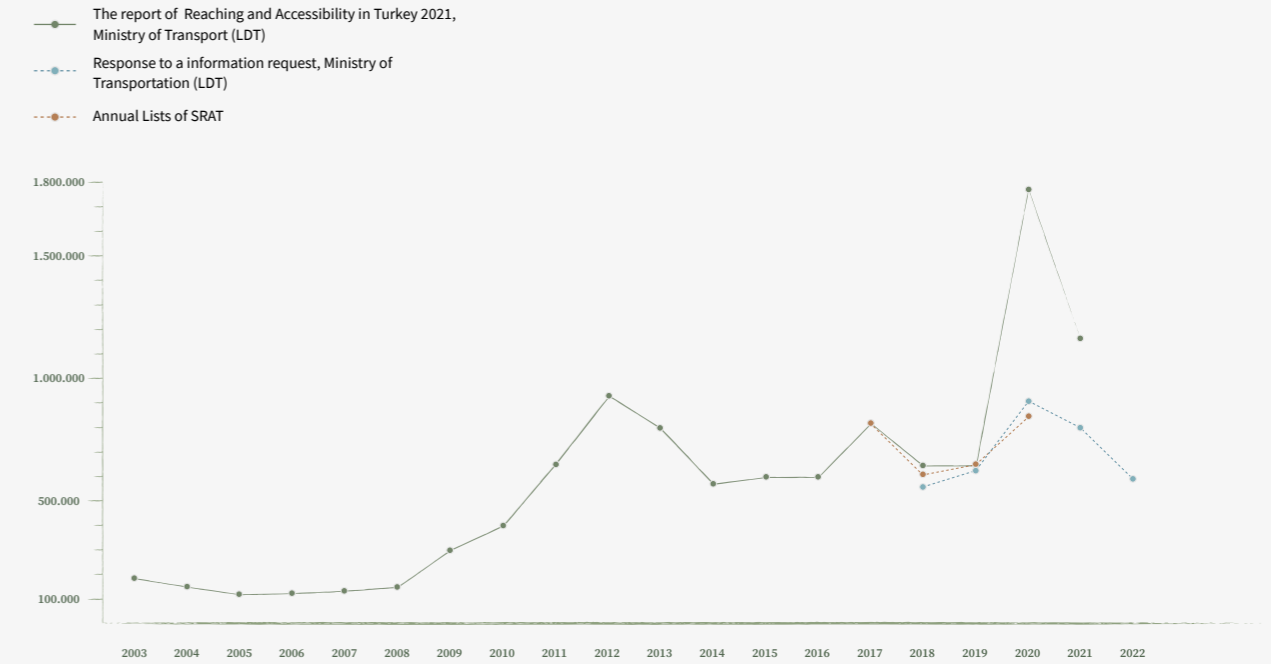
Year	Number of Ships	Gross ton (in million)
2009	73	557
2010	127	659
2011	238	1.067
2012	281	1.541
2013	232	1.370
2014	203	978
2015	113	752
2016	121	752
2017	189	971
2018	158	1.030
2019	128	1.060
2020	118	1.776
2021	112	1.441
2022	86	1.012
2023 (until October)	45	423

²⁰ ‘Geri Dönüştürülen Gemi Sayısı’ Ulaştırma ve Altyapı Bakanlığı <<https://tkygmistatistikleri.uab.gov.tr/geri-donusturulen-gemi-sayisi>> Accessed 22.2.2023.

‘Gemi Geri Dönüşüm Tonajı’, Ulaştırma ve Altyapı Bakanlığı <<https://tkygmistatistikleri.uab.gov.tr/geri-donusturulen-gemi-tonaji>> Accessed 22.2.2023.

²¹ ‘Ulaşan ve Erişen Türkiye’ Ulaştırma ve Altyapı Bakanlığı (2021) p383.

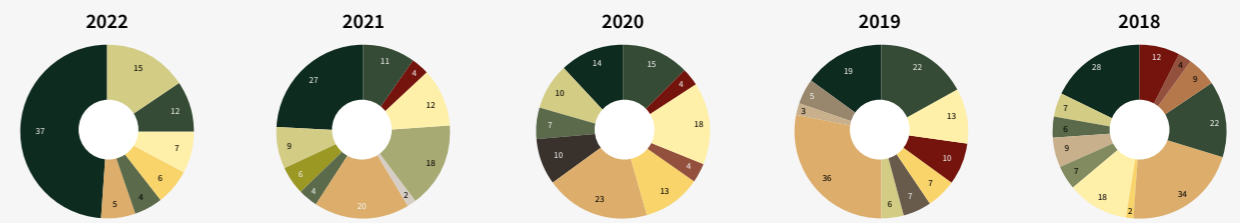
Total LDT of Ships Dismantled in Turkey



Ship Dismantling Statistics by Vessel Type

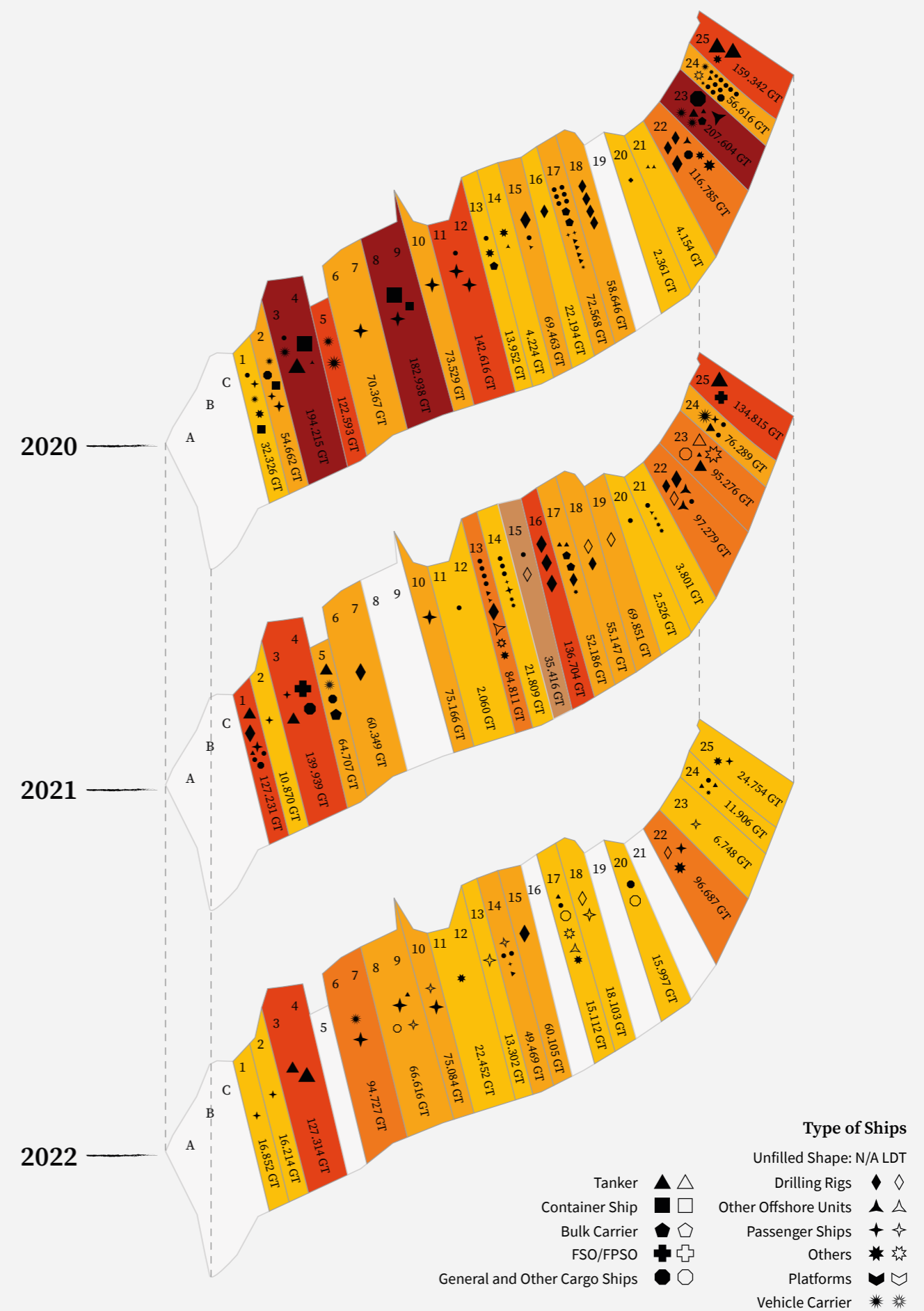
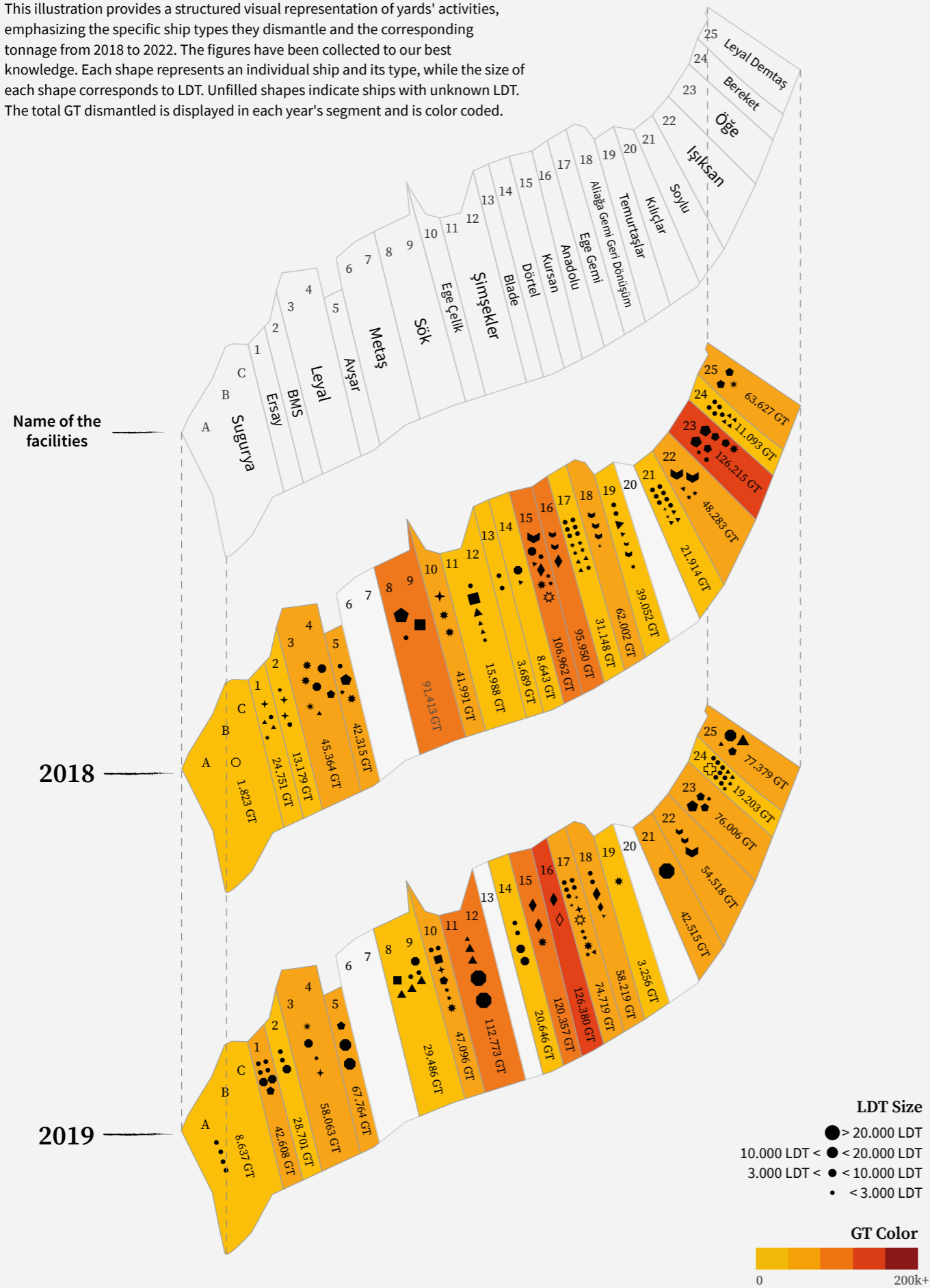
The data is compiled from the monitoring activities of NGO Shipbreaking Platform and the available yearly lists of SRAT. The unknown category refers to ships known to have been dismantled during that year, but of unknown type.

- Bulk Carriers
- Container Ship
- Tug
- General Cargo
- Drilling Ship
- Tanker
- Passenger Ship
- Drilling Rig
- Other Cargo Ships
- Roro Cargo
- Other Offshore Units
- Others
- Unknown
- Vehicle Carrier
- Other Cargo
- Heavy-Load Carrier
- Platforms
- FPSO



Number and Types of Ships Dismantled

This illustration provides a structured visual representation of yards' activities, emphasizing the specific ship types they dismantle and the corresponding tonnage from 2018 to 2022. The figures have been collected to our best knowledge. Each shape represents an individual ship and its type, while the size of each shape corresponds to LDT. Unfilled shapes indicate ships with unknown LDT. The total GT dismantled is displayed in each year's segment and is color coded.



3. Environmental Concerns

Local movements and NGOs in Aliğa have long criticised the pollution caused by the shipbreaking activities and inadequate occupational measures at the yards. During the 1990s, several studies were conducted to investigate the management of asbestos and other environmental pollutants.²²

In 1993, the Izmir Bar Association's Environmental Commission conducted a study at the Aliğa Ship Recycling Facilities. Their report revealed that the Port Authority lacked sufficient capacity, including staff and time allocation, to adequately monitor the ship dismantling activities.²³

Seawater measurements conducted in 2000 in Aliğa indicated significantly higher levels of aluminium and iron waste (both in dissolved form and overall) compared to the reference point.²⁴

In 2002, Greenpeace published a report on the ship recycling sector in Aliğa revealing poor conditions for workers' health and environmental concerns. Various samples were taken from water, soil, and insulation materials in the region.²⁵ Analyses of these samples indicated widespread presence of asbestos, as well as contaminants such as mineral oil and heavy metals. The researchers concluded that the facilities lacked adequate protection for workers and had no proper measures in place to prevent environmental contamination.

In 2009, the NGO Shipbreaking Platform released a

follow-up report on downstream waste management. While noting significant progress, concerns remained regarding certain waste streams, including the disposal of heavy metals and PCBs. The fate of several hazardous wastes was uncertain, and monitoring was lacking. The report recommended the expansion of hazardous waste management coverage at yards, public participation in monitoring operations, and control by independent third parties.²⁶

Oil-derived solid and liquid wastes originating from ships, such as bilge water, ballast, sludge, slop, and residue oil have been found to contribute to pollution in the region. The discharge into the sea of oil and fuel-derived waste from dismantled ships have been legally challenged as deliberate pollution of the environment in numerous cases, resulting in repeated legal proceedings.²⁷ The Ministry of Environment has imposed administrative penalties on facilities multiple times due to environmental pollution detected along the coastline.²⁸

Whilst conditions have improved over the years, pollution remains a concern. A study conducted in 2019 by the Ministry of Environment found the area and the surrounding environment to be heavily polluted with substances such as heavy metals, polyaromatic hydrocarbons, TBT and dieldrin.²⁹ High concentrations of heavy metals were found especially in the soil at the ship recycling yards in Aliğa with ship paints identified as the source.

In more detailed reports published in 2022, the

Scientific and Technological Research Council of Turkey (TÜBİTAK) and Ege University Faculty of Agriculture conducted research on the pollution levels in the Aliğa region.³⁰ These reports clearly show environmental pollution exceeding national permitted levels, especially in the area where ship recycling yards are located.

The Ege University Faculty of Agriculture report warns that the biosphere in Aliğa and its immediate vicinity is in an extremely dire state and that the carrying capacity of the basin has been exceeded. The report notes that arsenic and lead pollution especially has cumulatively reached dangerous levels in terms of human health and the environment and that the ongoing industrial activities in the region, including the ship recycling sector, are unsustainable in terms of their effects on soil and plants. According to the regional soil analysis, arsenic values are above the limit value of 20 mg/kg recommended by WHO and FAO, while accumulation of lead has reached dangerous levels. In addition, Pb, Cd, Ni, Fe, Mn, Cr, Cu, Co, Co, Mo, Mo, Al and Sn heavy metal concentrations in regional soil and plant samples, including the ship dismantling facilities, were found to be excessively high.

The TÜBİTAK report analysis of air quality and water resources. First, it was determined that there were no water resources of good/very good quality in all surface and underground water resources examined within the scope of the research. Based also on seawater monitoring, the report furthermore concluded that there is an increasing accumulation of pollutants in the region. The air pollution (PM10 and PM2.5) measurements in the ship recycling area also exceeded both WHO-recommended and domestic limits. Also arsenic concentrations in the ship dismantling area were

regularly much higher than the limit value of 6 ng/m³. High Lead values in PM10 were furthermore found to be caused by ship recycling activities. Particulate matter and heavy metal pollution in the air was most intense in the region where ship dismantling activities are carried out, reaching unsustainable levels for Aliğa and its immediate surroundings.

Particulate matter and heavy metal pollution in the air was most intense in the region where ship dismantling activities are carried out, reaching unsustainable levels for Aliğa and its immediate surroundings.

Environmental monitoring results in EU inspection reports³¹

The EU SRR sets stringent standards for environmental monitoring and management systems, including comprehensive analyses of water, air, noise, soil and sediment to assess the level of pollution and contamination.

To comply with the EU SRR, ship recycling yards that have applied to be approved on the EU list have contracted private laboratories to ensure monitoring of air, soil, and sediment quality within the ship recycling yards. However, the initial EU reports pointed out that the environmental monitoring results of sea, soil and sediment had not analysed all of the required parameters.³² The facilities were requested to also analyse levels of brominated flame retardants, PCBs, PFOS and POPs and ensure the analysis was conducted by an accredited laboratory with a comparison against relevant standards. Concerns were also raised with regards to the source of water samples: *"It appears that this sample was not taken of water from the facility that is discharged to sea, and it was neither taken right outside the facility."*³³

High concentrations of heavy metals were found especially in the soil at the ship recycling yards in Aliğa with ship paints identified as the source.

²² Prof. Dr. Karl Lorber and his students from the Technical University of Berlin issued an academic study on the effects of asbestos on workers, addressing also environmental pollution and occupational health issues.

Recknagel, Eva ve Alleweldt, Frank. Die Asbestproblematik der Abwrackwerften von Aliğa, Türkei (Aliğa Gemi Sökümü Tesislerindeki Asbest Problemi) (1992).

²³ 'Aliğa Gemi Sökümü Tesisi Hakkında İzmir Barosu Çevre Komisyonu Raporu', İzmir Barosu Çevre Komisyonu (1993).

²⁴ Ertuğrul Bilir, 'Gemi Sökümü Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliğa Gemi Sökümü Bölgesinde Bir Araştırma' Marmara Üniversitesi Sosyal Bilimler Enstitüsü Çalışma Ekonomisi ve Endüstri İlişkileri Ana Bilim Dalı (İstanbul, 2019) pp. 116-120.

²⁵ E. Vardar and M. Harjono 'Zehirli Hurda Gemi Sökümü: Yasadışı Tehlikeli Atık Ticareti. Aliğa Gemi Sökümü Tesisi'ndeki Çevre, Sağlık ve Çalışma Koşulları Hakkında Greenpeace Raporu' (2002) İzmir, Greenpeace Akdeniz Ofisi.

²⁶ 'Downstream Waste Management at Aliğa Shipbreaking Yards in Turkey' NGO Shipbreaking Platform (2009) <https://shipbreakingplatform.org/wp-content/uploads/2022/01/Fate_of_Shipbreaking_Waste_Turkey_2009_compressed-compressed.pdf> Accessed 27.2.2023.

²⁷ Supreme Court (Yargıtay) 4. CD. E. 2013/7387 K. 2014/36816 T. 22.12.2014, Supreme Court (Yargıtay) 4. CD. 2012/6496 K. 2014/34040 T. 24.11.2014, Supreme Court (Yargıtay) 18. CD E. 2015/38647 K. 2017/9978 T. 2.10.2017, Supreme Court (Yargıtay) 18. CD E. 2015/40439 K. 2017/12746 T. 13.11.2017, Supreme Court (Yargıtay) 4. CD E. 2013/23965 K. 2014/34070 T. 24.11.2014, Supreme Court (Yargıtay) 4. CD E. 2020/5820 K. 2021/2022 T. 25.1.2021.

²⁸ Council of State (Danıştay) 6. Daire, E. 2019/9877 K. 2020/3175 T. 4.3.2020, Council of State (Danıştay) 6. Daire, E. 2019/8625 K. 2020/3204 T. 4.3.2020, Council of State (Danıştay) 6. Daire E. 2019/8900 K. 2020/3331 T. 5.3.2020, Council of State (Danıştay) 6. Daire E. 2019/8594 K. 2020/3330 T. 5.3.2020, Council of State (Danıştay) 6. Daire E. 2019/8935 K. 2020/3199 T. 4.3.2020, Council of State (Danıştay) 6. Daire E. 2019/9433 K. 2020/3135 T. 4.3.2020, Council of State (Danıştay) 14. Daire 2014/4635 K. 2016/1834 T. 16.3.2016, Council of State (Danıştay) 14. D. 2015/3186 K. 2018/992 T. 28.2.2018, Council of State (Danıştay) 14. D. 2018/1984 K. 2018/6563 T. 7.11.2018, Council of State (Danıştay) 14. D. 2016/8015 K. 2018/3853 T. 22.5.2018, Council of State (Danıştay) 14. D. E. 2015/2528 K. 2016/198 T. 21.1.2016.

²⁹ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques, Sector Guide of the Project' Ministry of Environment and Urbanisation (December 2019) <https://cevresehirliklimutuphanesi.csb.gov.tr/ShowPDF/680cd195-a52b-4f12-894d-b289ccde2179> Accessed 15.10.2023.

³⁰ 'Aliğa Bölgesi Toprak ve Bitki Kirliliği Durum Tespiti Sonuç Raporu' Ege Üniversitesi Ziraat Fakültesi (Kasım 2020- Aralık 2021)

³¹ 17 facilities in Aliğa have applied for EU approval. Data is thus missing from the five facilities that have not applied and have not been inspected by the EU.

³² EU Site Inspection Report of Şimşekler (20.3.2020) pp. 9-10; EU Site Inspection Report of Sök (04.2.2020) p. 2; EU Site Inspection Report of Işıksan (26.3.2019) pp. 3-4; EU Site Inspection Report of Ege Gemi (16.12.2020) pp. 8-9; EU Site Inspection Report of Anadolu (15.01.2021) pp. 10-11; EU Site Inspection Report of Dörtel (19.9.2022) p. 9; EU Site Inspection Report of BMS (19.9.2022) p. 9; EU Site Inspection Report of Avşar (8.7.2020) p. 9-10; EU Site Inspection Report of Öge (24.4.2023) p. 8; EU Site Inspection Report of Temurtaşlar (2.2.2021) pp. 11-12; EU Site Inspection Report of Kılıçlar (10.10.2022) p. 10; Mid-term Inspection Report of Sök (14.6.2023), p.7.

³³ EU Site Inspection Report of Şimşekler (20.3.2020) p. 9; EU Site Inspection Report of Sök (04.02.2020) p2.

The EU inspection reports furthermore revealed that some of the applicant yards had high concentrations of pollutants in soil. For example, Işıksan yard had high levels of Chromium (VI), PCBs, and PAHs compared to natural background levels.³⁴ Şimşekler yard had elevated levels of zinc and asbestos, with asbestos concentrations at a level that could pose a risk to human health.³⁵ Remediation was requested from the facility, but copper and zinc levels were still observed in the soil after the existing soil was replaced. During the first inspection of Ege Gemi yard, some criteria exceeded limits but were considered acceptable for workers' health.³⁶ Ege Çelik yard had slightly higher Chromium VI levels.³⁷ Regarding sediments, Işıksan had high concentrations of Chromium, Copper, and Zinc compared to natural background levels³⁸; Ege Gemi had parameters in high concentrations and exceeding limits, particularly PAH and lead; while Dörtel sediments contained a high concentration of PFOS.³⁹ Most recently, after Leyal was asked by the EU evaluators to assess the contamination of underlying soil, the facility removed and disposed of the polluted soil.⁴⁰

4. Safety Concerns

In 2005, the Ministry of Labour published a report based on monitoring activities conducted in the Aliğa ship recycling area that revealed numerous deficiencies and workers' rights violations.⁴¹ The report identified a lack of basic OHS measures and documented a total of 23 serious occupational accidents which took place in 15 yards between 1985-2003 causing the death of 29 workers. A total of 263 workers suffered various injuries

and fractures. A second publicly accessible report was published in 2007 and identified six accidents between 2004-2007, one of which resulted in a fatality,⁴² as well as 131 violations related to 56 different offences in 20 facilities.⁴³ The violations encompassed breaches related to health surveillance, work equipment, chemical tanks, asbestos handling, and personal protective equipment. The report emphasised the importance of coordination between relevant institutions, the establishment of a safety culture in the sector, and the formulation of specific health and safety policies for ship dismantling activities.

The ShipDigest project researchers concluded that the official records of non-fatal accidents, incidents and near misses were not systematic.⁴⁴

5. Cases that Have Raised Public Attention

In recent years, several ships brought to Aliğa for dismantling have been in the spotlight. The import of ships such as Sea Beirut, Otapan, Ethan, Alba, Kuito and São Paulo have been disputed due to concerns related to hazardous substances contained onboard the vessels and irregularities in their Inventory of Hazardous Materials (IHM).⁴⁵

For instance, in the Otapan case, it was revealed that the ship contained 60 tons of asbestos, while it had been initially declared as containing only one ton.⁴⁶ In response to opposition to importing such large amounts of asbestos contaminated materials, the ship

was sent back to the Netherlands, the original exporter.

The issue of inaccurate declarations of hazardous materials also arose in the Kuito case. In 2015, the Chamber of Environmental Engineers reported finding radioactive waste and opposed the entry of the Kuito, an FPSO with a Bahamas flag, into Turkey. Authorities, however, did not stop the entry and dismantling of the ship, and when the Izmir 3rd Administrative Court decided on 16 October 2015 to suspend the ship dismantling operations due to irregularities related to its import, the ship had, by then, already been dismantled, creating a public scandal.⁴⁷

More recently, the Brazilian aircraft carrier São Paulo, previously owned by the French Navy, was purchased by Sök on 18 March 2022.⁴⁸ The ship's IHM, prepared by consultant Grieg Green, received criticism for failing to identify significant amounts of asbestos, PCBs, and radioactive contamination.⁴⁹ Only 12% of the ship's rooms had been inspected, compared to 82% on its sister-ship, the Clemenceau. The IHM for the São Paulo estimated 9.6 tons of asbestos, while by comparison the Clemenceau had at least 600 tons. PCBs were not detected on the São Paulo, despite being commonly used in ship components at the time of its building and operation. Concerns were also raised about the vessel's contamination due to its involvement in atmospheric nuclear bomb testing and the presence of lead/cadmium paint.

A campaign against dismantling the São Paulo in Turkey was launched by various organisations and political leaders, resulting in the Ministry of Environment revoking consent for the ship's import.⁵⁰ The protests and ban considerably raised awareness of issues in the ship recycling sector in Aliğa, including ongoing environmental breaches and poor working conditions. Following the mobilisation, several reports looking at

the problems of the ship recycling sector were issued by different institutions.⁵¹ The aircraft carrier was sent back to Brasil where it was tragically sunk by the Brazilian navy.



Protests during the campaign against São Paulo

6. Climate Crisis and Rising Sea Levels

Another significant concern relates to the pressing issue of climate change. The climate crisis exerts a wide range of impacts on various geographic regions, with its elements encompassing temperature fluctuations, the proliferation of extreme weather events and, most notably for the Aliğa ship recycling zone, rising sea levels.

According to the Intergovernmental Panel on Climate Change (IPCC), under the continued emission of greenhouse gases (GHGs), sea levels are projected to rise by an estimated range of 9-88 cm by the year 2100. However, the distribution of this average sea level increase varies significantly depending on the specific coastal location. In the case of the Aegean shores, including Aliğa, there is a 1% probability of sea levels exceeding one metre by

³⁴ EU Site Inspection Report of Işıksan (26.3.2019) pp.2-3.

³⁵ EU Site Inspection Report of Şimşekler (20.3.2020) p.9.

³⁶ EU Site Inspection Report of Ege Gemi (25.01.2020) p. 10; EU Site Inspection Report of Ege Gemi (25.01.2022) p.9.

³⁷ EU Site Inspection Report of Ege Çelik (21.10.2019) p.10.

³⁸ EU Site Inspection Report of Işıksan (26.3.2019) p.3.

³⁹ EU Site Inspection Report of Ege Gemi (16.12.2020) p.10; EU Site Inspection Report of Dörtel (19.9.2022) pp.10-11.

⁴⁰ EU Site Inspection Report of Leyal Demtaş (12.09.2023) pp. 7-9.

⁴¹ Gemi Söküm Yapılan İşyerlerinde İş Sağlığı ve Güvenliği Proje Denetimi Değerlendirme Raporu, Çalışma ve Sosyal Güvenlik Bakanlığı İş Teftiş Kurulu Başkanlığı (October 2005) <https://www.csgeb.gov.tr/medias/5970/2005_09.pdf> Accessed 16.2.2023.

⁴² Gemi Söküm Yapılan İşyerlerinde İş Sağlığı ve Güvenliği Projesi-2 Genel Değerlendirme Raporu, Çalışma ve Sosyal Güvenlik Bakanlığı İş Teftiş Kurulu Başkanlığı (November 2007) p. 13. <https://www.csgeb.gov.tr/medias/5981/2007_22.pdf> Accessed 16.2.2023.

⁴³ Ibid.

⁴⁴ Stuart A. McKenna, Rafet E. Kurt and Osman Turan, 'Report on Training Needs Analysis for the Turkish Ship Dismantling Industry' Project Ship Dismantling Insight by Generating Environmental and Safety Training, University of Strathclyde (2012).

⁴⁵ 'Gemi Söküm Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliğa Gemi Söküm Bölgesinde Bir Araştırma' (n 24) p. 91.

⁴⁶ 'Otapan kabusu sona erdi' Evrensel (10.2.2007). <<https://www.evrensel.net/haber/249220/otapan-kabusu-sona-erdi>> Accessed 3.4.2023.

⁴⁷ 'Zehirli Gemi Söküldü, Mahkemeden Sökülemez Kararı Geldi' <<https://www.hurriyet.com.tr/ekonomi/zehirli-gemi-sokuldu-mahkemeden-sokulemez-karari-geldi-40013224>> Accessed 20.10.2023.

⁴⁸ 'Sale of asbestos-laden aircraft carrier São Paulo raises concerns' NGO Shipbreaking Platform (23.6.2021) <<https://shipbreakingplatform.org/sao-paulo-scrapping-turkey/>> Accessed 3.8.2023.

⁴⁹ 'Toxic warship "Clemenceau II" starts voyage from Brazil to the Mediterranean Sea' NGO Shipbreaking Platform (5.8.2022) <<https://shipbreakingplatform.org/aircraft-carrier-sao-paulo-leaves-brazil/>> Accessed 3.4.2023.

⁵⁰ 'Cancellation of Notification Consent with Conditions for vessel Nae Sao Paulo- BR 231121' Ministry of Environment, Urbanisation and Climate, dated 26.8.2022 and numbered 4439554.

⁵¹ 'Gemi Söküm Faaliyetleri Ön Değerlendirme Raporu' TMMOB Çevre Mühendisleri Odası (September 2022) Izmir Aliğa Gemi Geri Dönüşümü Sektör Analizi (n 3).

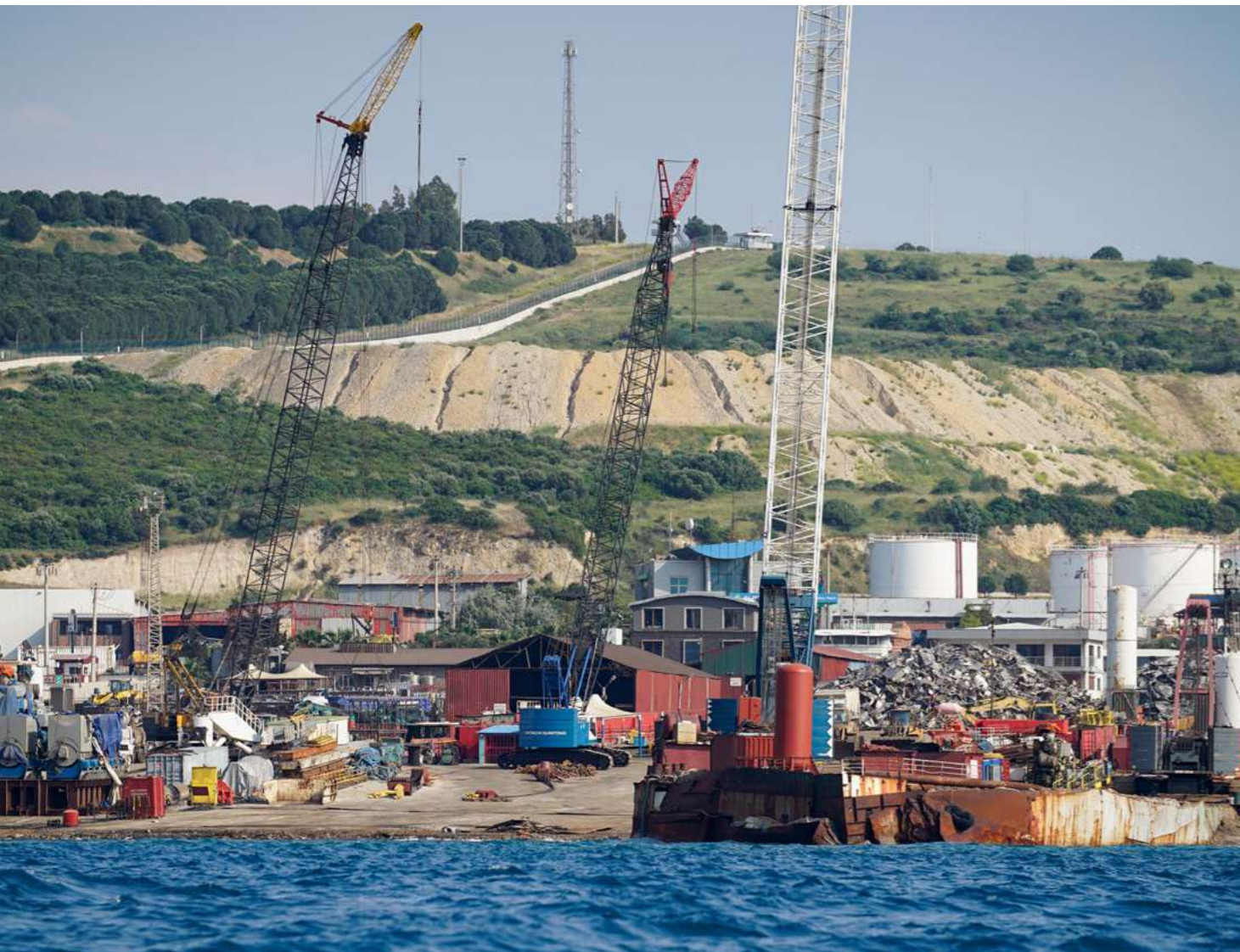
'Aliğa'da asbest araştırması: İzmir'i etkileyebilir' <<https://www.gazeteduvar.com.tr/aliagada-asbest-arastirmasi-izmiri-etkileyebilir-haber-1533431>> Accessed 2.3.2023

'Ezilme, patlama, yüksekten düşme, zehirlenme, asbest... 2013-2022 yılları arasında Aliğa'da en az 97 işçi hayatını kaybetti' (July 2022) <<http://www.isigmeclisi.org/20767-ezilme-patlama-yuksekten-dusme-zehirlenme-asbest-2013-2022-yillari-a>> Accessed 2.3.2023.

2100. By the year of 2200, there is a 3% probability of a two metre rise and a 1% likelihood of a four metre rise.

While these dates may appear distant, and the rise seemingly incremental, a one metre rise in sea level within the ship recycling area would likely inundate more than 70% of the ship recycling yards, whilst a two metre rise would result in the complete submersion of

these yards. A lower than one metre sea level rise is likely to also have a significant impact on the ship recycling yards, highlighting the necessity of addressing the impending challenges posed by rising sea levels.⁵²



Credit: Doğu Eroğlu, 2023 May

⁵² Estimations based on the elevation data observed from the Google Earth Pro.

Legal Framework

1. National Framework

Authorisation of ship recycling activities

The primary regulation governing ship recycling activities in Turkey is the Ship Dismantling Regulation,⁵³ which is supplemented by many other domestic regulations such as the Environmental Law,⁵⁴ Occupational Health and Safety Law,⁵⁵ and Regulation on Health and Safety Measures in Working with Asbestos.⁵⁶ This regulatory framework governing ship recycling facilities encompasses the associated authorisations and evaluation processes for the proper monitoring of the sector, including its responsibility to adequately manage hazardous materials.

This report, however, finds significant shortcomings in both the content and the implementation of the applicable legislation. These shortcomings raise concerns, as outlined below, about the ability for enforcement authorities to effectively ensure that the sector complies with environmental and OHS standards.

(i) Ship Dismantling Regulation under the Ministry of Transport

The Ship Dismantling Regulation⁵⁷ puts forward requirements and provides a general framework for the measures to be followed during ship recycling activities, including:

- * The dismantling of the ship can only be done on parts that are landed more than three metres above the shoreline. Parts of the ship below this level may not be dismantled until they have been moved/pulled three metres inland from the shoreline, with exceptions made for heavy ships that can be dismantled in lower levels.
- * Ship parts containing liquid waste can be scrapped after being pulled at least ten metres above the shoreline, following confirmation by the Port Authority that the required cleaning process has been meticulously completed.
- * Liquid waste from scrapped ships must be discharged into a floating pontoon or a liquid waste collection tank positioned next to the dismantled ship. The liquid waste must be collected and stored in a licensed interim storage facility and subsequently undergo purification through a refinery process.
- * Floating barriers should be deployed before commencing dismantling to prevent accidental spillage into the sea.
- * Yards are entrusted with the responsibility of ensuring environmentally sound waste disposal during the dismantling process and are required to develop a Waste Management Plan.
- * Operators bear the onus of implementing necessary measures and promptly addressing contamination in case of potential pollution incidents.

⁵³ Gemi Söküm Yönetmeliği, Official Gazette Date: 08.03.2004 Number: 25396.

⁵⁴ Çevre Kanunu No. 2872 Official Gazette Date: 11.08.1983 Number: 18132.

⁵⁵ İş Sağlığı ve Güvenliği Kanunu No. 6331 Official Gazette Date: 30.6.2012 Number: 28339.

⁵⁶ Asbestle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik, Official Gazette Number: 28539 Date: 25.01.2013.

⁵⁷ Gemi Söküm Yönetmeliği (n 53).

Under the Ship Dismantling Regulation, facilities must obtain a ‘Ship Dismantling Authorisation Certificate’ from the Ministry of Transport (Annex 3). Although the Regulation does not specify the duration of the Certificate, based on the EU inspection reports and the responses to parliamentary inquiries, the Certificate is issued for a period of one year.⁵⁸

Finally, the Regulation requires that every ship intended for dismantling obtains a Dismantling Permit from the Harbour Master. To obtain the Dismantling Permit, the necessary documents include a gas-free report, an agreement with a disposal facility, a customs survey, and a deratization certificate. The Regulation states that these documents should be submitted for each individual ship prior to the dismantling. When only the double bottom of the dismantled vessel remains, the facility is required to receive authorisation from the Harbour Master for the conclusion of the dismantling. When the vessel is completely dismantled, the facility informs the Harbour Master. The Harbour Master then issues the “Statement of Completion of Dismantling”.

(ii) Ship Dismantling Permit under Ministry of Environment

Ship recycling yards additionally need to obtain a Ship Dismantling Permit from the Ministry of Environment (Annex 4). This is the only operational permit that takes environmental considerations into account and is granted on an annual basis in accordance with the “Technical Guidelines for the environmentally sound management of the full and partial dismantling of ships” established by the Basel Convention Secretariat to attain Environmentally Sound Management (ESM).⁵⁹ The specific details of the permitting procedure, criteria, and the inspection process conducted at the yards are, however, not publicly available nor defined in a domestic regulation. This lack of clarity renders

the effectiveness of the Ship Dismantling Permit questionable.

(iii) Environmental Permit and License Regulation

The Environmental Permit and License Regulation⁶⁰ is one of the main environmental permitting instruments in Turkey. Under this Regulation, facilities are required to obtain environmental permits or licences based on their environmental impacts. These permits include restrictions on air emissions, environmental noise, wastewater discharge, and deep sea discharge. Facilities listed in Annex-1 and Annex-2 of the Regulation initially must obtain a temporary operating certificate, followed by an Environmental Permit/License within one year to commence their operations.

While the Regulation mandates that ship recycling facilities obtain an Environmental Permit⁶¹, the licensing process for these facilities has been put on hold since 2016 until a separate instrument is established to outline the specific procedures for ship recycling. Such a separate sector specific legal instrument should define the licences required for ship recycling activities and provide guidance on waste disposal methods, waste tracking systems and capacity assessments, amongst other. However, since 2016, no sector-specific legal instrument for ship recycling has been published to address these requirements.

As a result, ship recycling facilities have been operating without undergoing the environmental permitting and licensing processes required by the Regulation. This gap in the regulatory framework raises serious concerns regarding the oversight and control of the environmental impacts associated with ship recycling.

⁵⁸ To obtain the Certificate, the yards should submit: (i) a copy of the license for opening an operating a facility; (ii) a copy of the establishment permit and operating certificate from the Ministry of Labor and Social Security; (iii) a copy of the rental contract of the shipbreaking site; (iv) the undertaking, the scope of which will be determined by the Administration; (v) ship dismantling facility site plan; (vi) signature circular of persons and a copy of the Turkish Trade Registry Gazette; (vii) a copy of the document showing that the facility is registered with the Chamber of Shipping closest to the activity area (viii) other information and documents that may be deemed necessary by the Administration.

⁵⁹ “Technical Guidelines for the environmentally sound management of the full and partial dismantling of ships” Secretariat of the Basel Convention (December 2002) <<https://www.basel.int/Portals/4/Convention%20Convention/docs/meetings/sbc/workdoc/techships-e.pdf>> Accessed 10.10.2023.

⁶⁰ Çevre İzin ve Lisans Yönetmeliği, Official Gazette Date: 10.09.2014 Number: 29115.

⁶¹ With the amendment made on 21.09.2016, number 29115.

(iv) Izmir Governorate Local Environment Board Decision

A Board Decision in 2019 issued by the Izmir Local Environment Board⁶² addresses the working conditions at ship recycling yards with the aim of preventing environmental risks and ensuring orderly operations. Awaiting ship recycling specific regulation, the decision was issued to ensure compliance with various relevant regulations, including the Environmental Law, Waste Management Regulation, Water Pollution Control Regulation, and the law for emergency response and compensation for the marine pollution. While listing the documents required in the notification procedure for ship imports, the Board Decision only vaguely determines the conditions for actual operations. The Izmir Local Environment Board, for example, mandates the construction of drainage systems at the yards, but it does not provide clarity on criteria for approval, sanctions for non-compliance, or administrative oversight and inspection.

Furthermore, according to the Board Decision, a Ship Recycling Plan (SRP) has to be submitted along with the import notification procedure to the İzmir Governorship Provincial Directorate of Environment, Urbanization, and Climate Change (İzmir Directorate of Environment).⁶³ While, the legislation does not define what actually needs to be included in the SRP, the plan should be submitted to the competent authorities for obtaining permission to dismantle a ship.⁶⁴ In the EU evaluation procedure, several SRPs were found to be of a generic nature, rather than ship specific, with similar plans seen at several facilities and with procedures not

necessarily matching the facility’s own actual methods or the ship specifics as stated in the Ship Recycling Facility Plan (SRFP) and Quality Management System (QMS) instructions.⁶⁵ The EU evaluators concluded that “It was [...] explained by the facility that the SRP developed for submission to the authorities is more of a pro-forma. The authorities do not receive any further updates of the SRP or a cutting plan.”⁶⁶

(v) Environmental Impact Assessment (EIA) Regulation

According to the Environmental Impact Assessment (EIA) Regulation, ship recycling facilities are categorised as projects that require an EIA. Therefore, it is mandatory for a planned ship recycling yard to undergo the EIA process and obtain an EIA Affirmative Decision. However, the EIA Regulation provides an exemption for projects that started operating before the Regulation’s publication date of 7 February 1993. These exempted projects are considered outside the scope of the EIA Regulation. Ship recycling facilities in Aliğa, first established in the 1970s, have thus been exempted⁶⁷ Yet, in order to continue benefiting from the exemption, there should be no changes in capacity, operating conditions, or process modifications. Furthermore, according to the Ministry’s Implementation Instruction,⁶⁸ the exemption applies to the project owner, and cannot be transferred to another operator. Considering the changes that have taken place in ship dismantling facilities since the 1990s, including changes in capacity and multiple transfers of facilities to different companies, conducting an EIA procedure in the region seems to be a necessity.

⁶² Decision of Izmir Governorate Local Environment Board, numbered 317/2019/03 and dated 4.7.2019.

⁶³ According to the Izmir Governorate Local Environment Board decision.

⁶⁴ Site inspection reports of yards located in third countries, the heading of “Article 15 (2) (b): Explicit or tacit procedure” of all reports <https://environment.ec.europa.eu/topics/waste-and-recycling/ships/site-inspection-reports_en> Accessed 15.11.2022

⁶⁵ “the SRP is neither explicitly approved nor rejected as a standalone document. [...] The timeframe for issuing the permission to dismantle a ship is no more than 15 days, according to the İzmir Governorship Provincial Directorate of Environment and Urbanization”.

⁶⁶ EU Site Inspection Report of Öge (06.1.2020) p.29; EU Site Inspection Report of Ege Çelik (21.10.2019) p.40

⁶⁷ For instance, according to the plan of the former, the statement of “No dismantling permitted on non impermeable/ contained areas (includes the ship itself)” was false. Large parts of the ship were cut and dismantled while the hull was resting on the intertidal zone.

⁶⁸ EU Site Inspection Report of Dörtel (19.9.2022) p. 33; EU Site Inspection Report of BMS (19.9.2022) p. 34

The evaluators concluded the same during the inspections of Sök and Şimşekler: “During the first site inspection, a ship recycling plan was observed, but all over very superficial with no real cutting plan. The only practical use of the SRP was perceived to be primarily the IHM list, otherwise cutting and dismantling was decided verbally on site, based on experience. The SRP was in a different format and had other instructions than the SRFP and the QMS. The three documents were not speaking to each other. The evaluators advised to harmonize the SRP with the revised SRFP, with the same philosophy of the SRFP as being an instruction rather than more of a high-level document.” (EU Site Inspection Report of Şimşekler (20.3.2020) p.43; EU Site Inspection Report of Sök (04.2.2020) p.38).

⁶⁷ A request for information was submitted to the Ministry of Environment on 29.09.2022, inquiring about the completion of any EIA procedures in ship recycling facilities. The response received stated that ship recycling facilities are considered exempt from the EIA Regulation under provisional article 1.

⁶⁸ ‘ÇED Yönetmeliği Uygulama Yazısı’, Çevre ve Şehircilik Bakanlığı, dated 09.09.2022, numbered 4527998.

Changes in the ship recycling sector that require EIA Procedure

Since the 1990s, ship recycling infrastructure investments have included excavation, rock filling, water wells and machinery parks.⁶⁹ Concrete areas have furthermore been built, while cranes, lifting and pulling equipment has been introduced. Also the organisational structures have changed in recent years. The yards have started to work with OHS experts, environmental engineers and subcontractors for different services. Moreover, since the establishment of the sector in Turkey, the Regulation on Health and Safety Measures in Working With Asbestos and the Occupational Health and Safety Law were published.

Impermeable floors started to be built after 2005, and drainage systems were established in later years. The drainage system, consisting of channels with gratings, collects all kinds of wastes from the dismantling site and directs them to a storage tank through a pumping system. The functionality and effectiveness of the drainage system depends on various factors, such as the design, layout, and capacity of the system, measures to prevent overflow, and the quality of the materials used. Currently, however, the responsibility for overseeing the drainage system is addressed only through the Izmir Governorate

Local Environmental Board Decision, which lacks a clear legal framework as well as a detailed account of the technical requirements.

Moreover, as described in this report's section of Waste Management below, SRAT was responsible for the temporary storage of hazardous wastes until 2021⁷⁰. Thus, the facilities were not storing any hazardous waste on site. In 2021, temporary storage was mandated to be carried out separately by the facilities. The facilities have since built temporary storage areas for hazardous waste, and are also responsible for removing and arranging the disposal of the wastes.

Although there have been fluctuations, the dismantling rates and capacities of the facilities have significantly increased since 1993 when the EIA Regulation came into force, affecting waste management plans and all operational aspects.

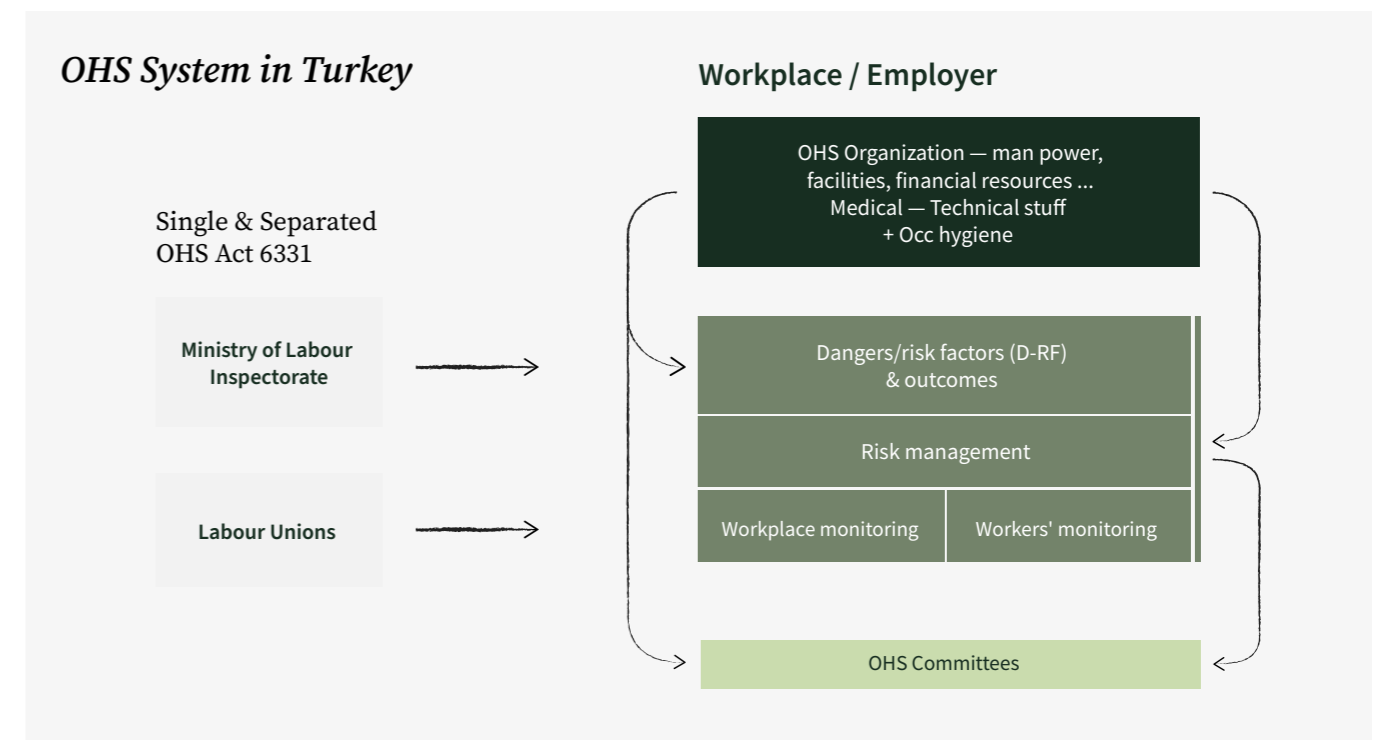
Lastly, according to the Ministry's Implementation Instruction on the EIA Regulation, exempted facilities were not permitted to transfer their EIA exemption to another operator⁷¹. However, yards operating when the EIA Regulation was enacted, and thus exempted, have since transferred ownership many times without producing an EIA.

(vi) Occupational Health and Safety Law

In Turkey, the Occupational Health and Safety Law,⁷² establishes the legal framework for OHS regulations and standards. All hazards and risks that may occur in the ship recycling sector are evaluated within the scope of this law. Moreover, there are more than 40 regulations detailing the Occupational Health and Safety Law under responsibility of The Ministry of Labour.

Employers at workplaces with fifty or more employees and where continuous tasks lasting more than six months are carried out,⁷³ are obliged to establish an

to address risk at source, and ensure the well-being of employees in all work-related aspects. This includes adapting working conditions to individual needs, utilising technological advancements, substituting hazardous substances or procedures with safer alternatives and providing adequate training and instructions. The Occupational Health and Safety Committee is established to ensure adequate communication and assessments, including participation of the workers, and a platform for problem-solving and monitoring compliance. Employers are obliged to implement Committee decisions in line with applicable regulations.⁷⁴



Occupational Health and Safety Committee consisting of an occupational safety specialist, a workplace physician and an employee representative. The employer's outsourcing of services or delegation of competent individuals does not absolve them of their responsibilities.

Employers are furthermore responsible for conducting risk assessments, implementing necessary measures

(vii) Concluding Remarks

The Ship Dismantling Regulation falls short in terms of mandating and monitoring the operational methods of facilities. The Regulation does not provide clear guidelines on infrastructure and equipment, including cutting procedures, to be used during dismantling to

⁶⁹ 'Gemi Söküm Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliağa Gemi Söküm Bölgesinde Bir Araştırma' (n 24) p. 82.

⁷⁰ İzmir Aliağa Gemi Geri Dönüşümü Sektör Analizi' (n 3) p. 116.

⁷¹ 'ÇED Yönetmeliği Uygulama Yazısı' (n 68).

⁷² İş Sağlığı ve Güvenliği Kanunu (n 55).

⁷³ The Occupational Health and Safety Committee consists of seven members: (i) Employer or employer representative, (ii) Occupational health and safety specialist, (iii) Workplace physician, (iv) An individual responsible for human resources, personnel, social affairs, or administrative and financial tasks, (v) In the case of availability, a civil defense specialist, (vi) In the case of availability, a foreman, head foreman, or skilled worker (viii) employee representative, head representative if there is more than one employee representative in the workplace

⁷⁴ 'İşyerlerinde İş Sağlığı ve güvenliği Kurulları Çalışma Rehberi', Aile Çalışma ve Sosyal Hizmetler Bakanlığı (2019) p.i. <<http://isg.ankara.edu.tr/wp-content/uploads/sites/160/2020/01/%C4%B0%C5%9Fyerlerinde-%C4%B0SG-Kurullar%C4%B1-%C3%87a%C4%B1%C5%9Fma-Rehberi.pdf>> Accessed 16.8.2023.

protect the environment from pollution and workers from occupational hazards. Important aspects such as the drainage system, site layout, and the labelling and sampling of hazardous materials are not adequately detailed or addressed.

Additionally, the Ship Dismantling Regulation fails to mention Ship Recycling Plans and Ship Recycling Facility Plans, which are essential for defining instructions and procedures. The regulation furthermore does not provide information on emergency procedures or the establishment of emergency plans, nor does it have detailed provisions for worker training or occupa-

tional health and safety reporting. Inspections by the Ministries are not described, nor is there clarity regarding fines and sanctions in case of non-compliance.

The absence of clear guidelines in the regulation

creates ambiguity in defining instructions and procedures. The lack of standardisation and inconsistency across facilities, and deficiencies at the ship recycling yards, related to, amongst other, equipment usage, safety measures, environmental protection, cutting procedures, and overall safety and pollution measures, are further apparent in the section of ‘Operational Aspects.’

The exemption from both the EIA and Environmental Permit and License Regulation raises significant concerns. Although the Ministry of Environment annu-

ally grants the Ship Dismantling Permit to the yards, it is not clear how and what parameters are checked when issuing this Permit. The current Izmir Board Decision also lacks the necessary specification and measures to address environmental and OHS concerns. Without a comprehensive assessment of potential environmental and health impacts, there is a risk of overlooking crucial factors that could lead to adverse effects on the environment and workers.

The absence of robust frameworks and guidelines to effectively delineate the procedures and principles that should govern these ship recycling operations is a major problem. The need for new legislation addressing ship recycling activities has been raised multiple times, with attempts made in 2012⁷⁵ and 2014⁷⁶ to introduce detailed rules. However, none of these attempts were enacted.

Monitoring the ship recycling sector

(i) Ministry of Environment

The earliest inspection details from the ship recycling facilities shared with the public were carried out by the Ministry of Environment in 2013 and 2014.⁷⁷ Information on subsequent inspections and fines have only been obtained via the responses to parliamentary questions. According to a response dated November 2022, a total of 497 inspections were carried out in the Aliğa ship recycling area by the Izmir Directorate of Environment between 2018 and 2022, resulting in 18 administrative sanctions and a total of 3,054,064 TL⁷⁸ in administrative fines.⁷⁹ In the latest submitted question, a member of parliament requested details on the frequency of the inspections of the facilities, the deficiencies identified

⁷⁵ ‘Gemi Geri Dönüşümü Hakkında Yönetmelik Taslağı’ <<https://tkygm.uab.gov.tr/uploads/pages/gemi-geri-donusumu-hakkinda-yonetmelik-taslagi.pdf>> Accessed 7.4.2023.

⁷⁶ ‘Hurda Gemi Geri Dönüşümüne İlişkin Tebliğ’ (9.5.2014) <<https://cygm.csb.gov.tr/hurda-gemi-geri-donusumune-iliskin-teblig-taslagi-goruse-acilmistir-duyuru-15166>> Accessed 7.4.2023.

⁷⁷ During the 2013 inspections, 23 facilities were fined 3.565.000 Turkish Lira (approximately 1.510.593 €). According to the statement, the reasons for the fines included lack of waste management plans, lack of compulsory financial liability insurance for hazardous substances and hazardous wastes, and disposal of wastes in violation of the relevant legislation. ‘Aliğa Gemi Söküm Tesislerine 3,5 Milyon TL Ceza, Çevre, Şehircilik ve İklim Bakanlığı’ (October 2013) <<https://csb.gov.tr/aliaga-gemi-sokum-tesislerine-3-5-milyon-tl-ceza-bakanlik-faaliyetleri-740>> Accessed 2.3.2023

In the 2014 inspections, the main nonconformities are summarized as follows: Inappropriate identification and warning signs; Scrap cutting, stacking, etc. areas are not in accordance with the site layout plan; Nonconformities in safety pools; Damage to concrete floors; Materials that will cause pollution in the soil area; Deficiencies in cleaning and sealing of grid channels; Use of inappropriate vehicles for on-site waste transportation; Cleaning and hygiene problems in social facilities; Deficiencies in the emergency response equipment room. Gemi Söküm Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliğa Gemi Söküm Bölgesinde Bir Araştırma (n 24) p. 213.

⁷⁸ Approximately between 680€ and 180€ (depending on inflation rate).

⁷⁹ Ministry of Environment response dated 23.11.2022 no 5089774 to the parliamentary question numbered 7/68665 of Murat Bakan.

during the inspections and the reasons for the fines. However, the Ministry has to this date left these questions unanswered.⁸⁰

It is known that regular checks are conducted in the yards, particularly by the Ministry of Environment, to ensure compliance with environmental regulations such as the Environmental Law⁸¹ and Waste Management Regulation.⁸² Yet, the effectiveness of the inspections is not clear. For the monitoring of marine pollution, the Izmir Directorate of Environment, for example, carries out controls with drones, taking samples from sea water every six months and from the grids of yards at certain intervals. However, no penalty can be applied in the case of contamination in the test results, since the responsible yard cannot be determined.⁸³

Additionally, given the extensive workload required to address systemic issues in the ship recycling sector, there are concerns that the Izmir Directorate of Environment lacks sufficient capacity to effectively carry out inspections.

Several workers interviewed for this research claimed that they have never seen an inspector from the Ministry of Environment. A worker who has been employed in the ship recycling sector for more than 25 years stated that “*Inspectors come from the Ministry of the Environment, but they are always in the office with yard owners. They don’t actually check how we work or how the yard is.*”

Claims from other workers include:

“The auditors never visit the field. They never see the workers. The yard owners have already been informed before the inspectors come. Before they arrive, all cleaning will be done. I’ve been working in this industry for 20 years, and I’ve never met an auditor in the field so

far. Precautions are taken because they give notice in advance. Errors are corrected. I’ve worked in other facilities as well, that’s how it is everywhere.”

“I’ve never seen an inspector from the Ministry.”

“I have never seen a Ministry inspector.”

An expert who worked in the sector claimed that “*Auditors often come to the facility from the Ministry of Environment. But does it really help to improve anything? No. At best, if they observe an irregularity, they sometimes give fines and leave. Nothing has been done to fix the underlying problems. For example, temporary storage permits do not meet the conditions. But they have the permission.*”

(ii) Ministry of Transport

The Ministry of Transport is the responsible authority for monitoring the operational conditions of the ship recycling yards, according to the Ship Dismantling Regulation. How the inspections under the Regulation are conducted is, however, not publicly available.

In response to a parliamentary question, the Ministry of Transport provided information on all the fines issued between 2002 and 2019.⁸⁴ Recently, in another parliamentary question, it was asked how often the inspections of the facilities were carried out, what deficiencies were detected in the inspections and what fines were imposed. In their response dated 1 September, 2023, the Ministry of Transport did not fully answer these questions, but stated that annual inspections were carried out at the facilities and a total of 11 yards had been fined under the responsibility of the Port Authority, without mentioning the reason.⁸⁵

The existence of fines and purported annual inspections appear to be more of a superficial or token

⁸⁰ Ministry of Environment, response dated 26.12.2022 numbered 5363311 to the parliamentary question numbered 7/74230 of Ali Öztunç.

⁸¹ Çevre Kanunu (n 54).

⁸² Atık Yönetimi Yönetmeliği, Official Gazette Date: 2.4.2015 Number: 29314.

⁸³ ‘Perspectives on Green Transformation and Blue Opportunities in Izmir’ Izmir Development Agency (August 2022) p. 77 <https://izka.org.tr/izmirde_yesil_donusum_ve_mavi_firsatlar_perspektifi/> Accessed 6.10.2023.

⁸⁴ Ministry of Transport response dated 29.03.2019 numbered 25220 to the parliamentary question numbered 7/8558 of Murat Bakan. ⁸⁵ ‘İşyerlerinde İş Sağlığı ve güvenliği Kurulları Çalışma Rehberi’, Aile Çalışma ve Sosyal Hizmetler Bakanlığı (2019) p.i. <<http://isg.ankara.edu.tr/wp-content/uploads/sites/160/2020/01/%C4%B0%C5%9Fyerlerinde-%C4%B0SG-Kurullar%C4%B1-%C3%87a%C4%B1%C5%9Fma-Rehberi.pdf>> Accessed 16.8.2023.

⁸⁵ Ministry of Transport, response dated 9.1.2023 numbered 1150510 to the parliamentary question numbered 7/74450 of Ali Öztunç.

“Annual inspections of the facilities are carried out by the Ministry of Environment, Urbanization and Climate Change and by the Port Authorities. Apart from the fines imposed by the Ministry of Environment, Urbanization and Climate Change, it was stated that within the scope of the relevant legislation, administrative fines were imposed on 11 ship-breaking enterprises by the Port Authorities.” However, in which years or dates and the reasons for these fines were not shared.

effort, as the subsequent examination by the Court of Accounts dated September 2023 revealed a lack of effective control and inspection activities.⁸⁶ The report revealed that the Port Authority had failed to conduct any control or inspection activities from the moment permission was granted for ship dismantling until the application for the completion of dismantling.

Inspections of Ministries of Transport and Environment: Available Information on Yearly Fines

Year	Ministry of Transport		Ministry of Environment		
	Number of Fine	Total Amount (lira)	Number of Fine	Inspections Carried out	
2012	16	944.259	-	-	
2013	39	3.565.755	-	-	3.565.755
2014	7	1.142.039	-	-	
2015	7	1.154.726	-	-	
2016	3	50.195	-	-	
2017	3	146.165	189	-	
2018	5	313.226	18	497	3.054,064
	1	1.055			
2019	4	16.500			
2020	1	10.000			
2021	7	45.400			
2022	2	7.387			
	11	-			

(iii) Ministry of Labour

Essential monitoring to ensure occupational health and safety in the workplace involves monitoring the health of workers, accidents and near-miss accidents, and reporting on findings so that necessary actions can be taken to mitigate risk.

No inspection reports have been made publicly available by the Ministry of Labour since 2007, but basic improvements in occupational health and safety conditions have been observed over the years.⁸⁷ These developments are attributed to the efforts of labour and environmental movements, public institutions responsible for the sector, EU inspections and market

influences.⁸⁸ However, while conditions have improved compared to 15 years ago, there remain concerns as outlined in more detail in chapters below. Several yard owners, for example, still fail to provide appropriate personal protective equipment and clothing to workers; safety measures and techniques are often inadequate, resulting in accidents that could have been avoided; and serious irregularities in handling asbestos, as shared in

the section on Waste Management below, have been identified, while occupational diseases continue to go undetected.

Although it is not an inspection report, the Shipbreaking Workplaces Occupational Health and Safety Sector Guide, published by the Ministry in 2019, identified several concerns, including the absence of workplace risk assessments, deficiencies in emergency plans, inadequate training for workers, and the lack of appointed workplace physicians and occupational safety specialists. Additional concerns included the shortage of personal protective equipment, and violations related to explosive atmospheres, asbestos handling, working at heights, and the handling of chemical substances.⁸⁹

⁸⁶ Ulaştırma ve Altyapı Bakanlığı, Sayıştay Denetim Raporu (Eylül 2023) <<https://www.sayistay.gov.tr/reports/download/G0YE3mWg3-ulasirma-ve-altyapi-bakanligi>> Accessed 4.10.2023.

⁸⁷ 'Gemi Söküm Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliğa Gemi Söküm Bölgesinde Bir Araştırma' (n 24) p. 92.

⁸⁸ Ibid p. 232.

⁸⁹ Gemi Söküm İşyerleri İş Sağlığı ve Güvenliği Sektör Kılavuzu, Aile, Çalışma ve Sosyal Hizmetler Bakanlığı, İzmir (2019).

(iv) Concluding remarks

The Ministries of Environment, Transport, and Labour are the responsible authorities for ship recycling yards. However, there seems to be a lack of coordination and communication between these ministries. During research for this report, it was observed that inspections and monitoring activities are primarily conducted through reviews of paperwork⁹⁰, which raises concerns about their effectiveness. The weak coordination and monitoring identified contrasts with the evidence of pollution, deficiencies in safety equipment, as well as workplace accidents and deaths.

2. The EU Framework

The European Union (EU) Ship Recycling Regulation (EU SRR) was adopted in 2013 to minimise the negative impacts associated with ship recycling.⁹¹ The EU SRR mandates that EU-flagged commercial vessels above 500 GT only be recycled in approved facilities listed on the European List of Ship Recycling Facilities (the European List). This list was first established in 2016 and is regularly updated to either include compliant facilities or remove non-compliant ones. Facilities

are listed for a five-year period with a review of their compliance mid-term.

To be included in the European List, ship recycling facilities, regardless of their location, must meet certain safety and environmental requirements. Facilities within the EU are approved by national authorities, while those located in third countries, such as Turkey, are assessed by the European Commission. The EU List serves as a valuable differentiating mechanism for yards that have invested in proper safety and environmental standards.

Several yards in Aliğa have applied to be included in the EU List and inspection reports from these facilities has provided insight into their operations. Currently, there are nine ship recycling facilities in Aliğa included on the EU List: Leyal, Leyal Demtaş, Ege Çelik, Öge, Sök, Avşar, Anadolu, BMS and Kılıçlar.⁹² However, concerns have been raised that some of these yards actually do not comply with the EU SRR. Whilst in December 2022, two yards in Aliğa, Şimşekler and Işıksan, that initially had been approved were removed from the EU List due to non-compliance,⁹³ compliance of Ege Çelik, Sök and Öge was not fully confirmed in their recent mid-term reviews, yet these facilities remain on the EU List.

Yards on the EU List	Yards that have applied to the EU List and that have been inspected, but not approved	Yards that have applied to the EU List, but do not have the inspection report yet	Yards that have not applied to the EU List
Avşar, Öge, Leyal, Leyal Demtaş, Sök, Ege Çelik, Anadolu, BMS, Kılıçlar	Temurtaşlar, Ege Gemi, Dörtel, Blade	Işıksan ⁹⁴ , Bereket, Sugurya, AGGD	Metaş, Ersay, Kursan, Soylu, Şimşekler ⁹⁵

⁹⁰ 'Gemi Söküm Faaliyetleri Ön Değerlendirme Raporu' (n 51) p.18.

⁹¹ Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20.11.2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC <<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013R1257>> Accessed 25.10.2022.

⁹² Anadolu, BMS and Kılıçlar were included to the EU List on 27.7.2023.

⁹³ '11th edition of the European List of ship recycling facilities' <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2023.190.01.0013.01.ENG> Accessed 23.10.2023.

⁹⁴ '10th edition of the European List of ship recycling facilities' <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32022D2462>> Accessed 23.10.2023.

⁹⁵ Işıksan applied again to the EU list after its removal.

⁹⁶ Şimşekler did not apply to the EU List after its removal.

Audits and monitoring activities of the European Commission

The EU inspection reports provide insight on the practices at the yards, and the recent reports since late 2022 have provided especially valuable information as the European Commission has begun to move through a more detailed examination of actual practice, especially the conditions of pulling arrangements, management of asbestos and use of PPE.

Moreover, workers interviewed have stated that the EU inspection procedure has increased awareness of OHS at the yards and that their working conditions have become slightly better following EU audits:

“When I was working at 20 metres, no helmet, gloves or protective clothing were given before. In recent years, it has started to be provided following the EU audits. For instance, fire proof gloves started to be provided once a month.”

“We have seen a lot of benefits from EU inspections. Ship owners began to arrive. Conditions tightened. Last year, work stopped for 15 days twice in Işıksan. It’s just because the owner didn’t like the dismantling.”

“We were working in the dirt. It got a little better with the EU supervision. Before that, we were praying not to have an accident.”

“The EU inspections made things a little bit better. Awareness of what we are doing and how dangerous it is increased in general, and also by each of us.”

However, the Ministry of Environment in Turkey states in a report that, although the facilities have EU approvals and ISO certificates, compliance in some cases may remain only on paper.⁹⁶ Also civil society members, experts and workers interviewed during the research stated that the conditions inspected by the EU do not reflect the actual dismantling operations on the ground.

A worker from an EU-approved yard claimed that *“If the audits would happen on a daily basis, the EU approvals would never have been obtained. Everywhere is dirty, and ropes are not tidy. Normal operation is not reflected/upheld during the inspection process. While there is an inspection of the neighbouring facility, we try to fix the site as well.”*

“On normal days, when there is no inspection, everywhere is messy.”

“When there is an inspection, the yard is cleaned up and only small scraps are left at the yard. We cut only clean parts during the inspection. When there is no inspection, we cut the contaminated scraps and send them to the steel plants.”

“While there is an inspection, small and smoke-free parts are neatly placed on the field. It’s the same if they come to the neighbour. The working area of 30-40 people falls to 10 people during the EU inspection.”

As outlined in sections below, the EU reports have also revealed that not all aspects of the operations have been thoroughly checked. Additionally, yards where deficiencies have been identified, often as having persisted over longer periods of time and with no substantial measures seemingly having been taken by the yard to address the lack of compliance with the EU SRR, remain listed as approved. That facilities are on the EU List without meeting mandatory standards is a matter that should be seriously addressed.

That facilities are on the EU List without meeting mandatory standards is a matter that should be seriously addressed.

⁹⁶ ‘Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques’ (n 29) 50.

3. International Framework

Basel Convention

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) is an international treaty designed to regulate the transboundary movements of hazardous waste, including ship recycling. The Convention establishes a framework for cooperation and sharing of information to ensure that hazardous waste is managed in an environmentally sound manner. As per the Convention, there is a ban on exporting hazardous waste from countries listed in its Annex VII to non-Annex VII countries. The intention is to avoid the potential dumping of hazardous waste in countries without sufficient means to adequately protect human health and the environment. Turkey is an Annex VII country and so may receive hazardous waste from other Annex VII countries under the Basel Convention.

According to the Basel Convention, Prior Informed Consent (PIC) is essential and required for the receiving country to assess whether it has the capacity to manage the hazardous waste properly. It is crucial that the PIC provide comprehensive information about the exported hazardous materials to ensure the proper environmental management and disposal of the hazardous wastes. However, many vessels enter the receiving country without PIC. Ships entering Turkey without PIC have been observed, while illegal shipments from Turkey to non-Annex VII countries in South Asia, despite being prohibited by the Basel Ban, have also been documented.⁹⁷

Hong Kong Convention

The Hong Kong Convention on the Safe and Environmentally Sound Recycling of Ships (Hong Kong

Convention) was adopted by the International Maritime Organization (IMO) and aims at regulating ship recycling practices globally. Turkey signed and ratified the Convention in 2010 and 2017, respectively.⁹⁸ With the recent ratification of Bangladesh and Liberia, the Hong Kong Convention will enter into force on 26 June 2025.

The UN Special Rapporteur on Toxics and Human Rights, the Centre for International Environmental Law, the European Parliament and NGOs have criticised the Hong Kong Convention for its weak standards and lack of enforcement mechanisms, and for its failing to provide an equivalent level of control to the Basel Convention by allowing the dumping of toxic ships in developing countries.⁹⁹ Compared to the Basel Convention and the EU SRR, the Hong Kong Convention lacks robust environmental and social standards for the sound management of toxic substances in end-of-life ships and does not comprehensively cover labour rights in ship recycling yards. The Hong Kong Convention silently endorses beaching – the scrapping of ships on tidal mudflats, a method banned in most parts of the world – and lacks provisions to protect workers in facilities operating under these dangerous conditions. Despite some beaching yards claiming compliance, European Commission audits have revealed serious problems, disqualifying the beaching yards from the EU List of approved facilities.

The weaknesses in the Hong Kong Convention make it less effective in achieving its intended goals of ensuring safe and environmentally sound ship recycling practices worldwide. For the Convention to be more impactful, it would need to set a higher standard for the industry, including comprehensive guidelines on labour rights and safeguards for upholding the environmental justice principles enshrined in the Basel Convention, as well as stronger enforcement mechanisms, including independent third party controls.

⁹⁷ ‘Press Release – Ship owner and two directors fined by Dutch Court for breaching EU waste law’ <<https://shipbreakingplatform.org/dutch-court-fines-ship-owner-and-two-directors/>> Accessed 23.10.2023.⁹⁶

⁹⁸ ‘2009 Gemilerin Emniyetli ve Çevreye Duyarlı Geri Dönüşümü Hakkında Hong Kong Uluslararası Sözleşmesinin Onaylanmasının Uygun Bulunduğuna Dair Kanun’ Official Gazette Number: 30024 Date:31.3.2017.

⁹⁹ Calin Georgescu, Special Rapporteur on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, ‘Preliminary assessment of whether the Hong Kong Convention establishes an equivalent level of control and enforcement as that established under the Basel Convention,’ (2010) <<https://shipbreakingplatform.org/wp-content/uploads/2019/01/UN-special-rapporteur-on-Basel-IMO-conventions-comparison.pdf>> Accessed 23.10.2023.

‘HKC Statements of Compliance’ <<https://shipbreakingplatform.org/issues-of-interest/the-law/hkc-soc/>> Accessed 23.10.2023.



Credit: Doğu Eroğlu, May 2023

Operational Aspects

During ship recycling activities, the infrastructure and procedures, roles and responsibilities, control of leakage and drainage systems, cutting procedures, lifting equipment, and pulling arrangements all require careful attention. Adequately addressing these operational aspects is key to ensure safe and environmentally sound ship dismantling. In this section, findings regarding the current operations at the yards are shared and their challenges are identified.

1. Location

The landing method

In the coastal area of Aliaga, ship recycling yards use slipways to pull the vessel ashore, also called the landing method. Whilst in 2006, the landing area of the

ship recycling yards in Turkey primarily consisted of soil, over the years, the yards have undergone changes and concrete flooring has been introduced. The use of concrete flooring suggests an effort to enhance the infrastructure of these facilities, yet the specific standards followed for the construction of the concrete floors remain unknown.

Several experts interviewed expressed their opinion that the concrete flooring in the ship recycling yards does not comply with the standards set by the International Organization for Standardization (ISO). This raises questions about the structural integrity of the flooring and its ability to contain pollution. Moreover, it was found by the Ministry of Environment that some areas at the facilities lack concrete flooring, posing risks for soil contamination.¹⁰⁰

The coastal area of the ship recycling yards is comprised of filling areas in addition to the slipways.¹⁰¹ Spatial analyses have revealed colour and tone variations in the coastal areas indicating morphological changes caused by the friction of pulling ships and platforms ashore, and from filling and excavation works. There are also sightings of metal scrap and objects in the coastal area.¹⁰²

Satellite images furthermore reveal corrosion of the concrete floors of the yards. The corrosive effects can be attributed to the combination of exposure to seawater and the impact of ships being brought ashore. The constant pounding of ships against the coast leads to a weathered appearance of the shoreline, suggesting that the coastline undergoes continuous erosion. The table Shoreline History of the Yards shows the spatial change of the coastal zone across time.



Continuous erosion



Discolourations

¹⁰⁰ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques' (n 29) p. 65.

¹⁰⁰ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques' (n 29) p. 65.

¹⁰¹ Development Plan Revision for the Shipbreaking Zone (n 11) p.6.

¹⁰² Ibid p.52.



Storage on permeable floors
Credit: Doğu Eroğlu, 2023 May



Flooring of the Yards
Credit: Instagram account of @shipsengineer, January 2022


Shoreline History of the Yards




Year	Satellite View
2006	
2013	
2022	




Spatial history of the area


Whilst the history of the sector in Aliağa dates back to 1976, the first satellite view is from 1985. The white lines in the satellite images represent the property/plot lines relevant for ship recycling. These areas include not only ship recycling yards but also storages, administrative buildings and unsanitary landfills thought to be linked to ship recycling activities. This means that there is a

discrepancy between the areas formally designated for ship recycling and the unregulated and unsanitary space that they have created over time through subsequent landfills. The methodology for identifying the dumpsites from satellite imagery is explained in Annex 5, while more information can be found in the section 'Dumping Sites'.

Year, Total Area (Ha)	Satellite View	Notes
1985 35 (Ha)		The area estimated from this blurry satellite view is relatively compact, the surface of yards is soil, the dumpsites were hard to observe, the scale of ships seems relatively smaller.
2006 66.4 (Ha)		The area of the ship recycling yards is similar to today, yet it is underused while the storages and administrative buildings are nearly nowhere to be found. Small dumpsites lie to the south of the area. The ships are of a smaller scale and the surface of yards seems to be soil.

Year, Total Area (Ha)	Satellite View	Notes
2010 69.85 (Ha)		The area of shipyards has reached its maximum and nearly all area is used. Dumpsites are slightly sprawled and the surface seems to be discoloured concrete. The scale of ships are still small, while the number of storages and administrative buildings have increased.
2013 81.82 (Ha)		The expansion of the shipbreaking yards has stopped. The scale of ships has become slightly larger. A dumpsite right below the shipyards on the left is substantially expanded. The number of administrative buildings and storages have increased slightly, as well as the area fringed to the south on the path of the connection road.
2015 86.21 (Ha)		The area of shipbreaking yards has remained the same, while the outskirts to the south now have more storage areas and facilities. The dumpsite is not expanded but now has more layers. Administrative buildings have nearly reached their peak. The ships are now definitely larger.

Year, Total Area (Ha)	Satellite View	Notes
2017 85.43 (Ha)		Some parts of the dumpsites are covered with vegetation and have become invisible from the satellite perspective, this could indicate a slowing down in activity, but otherwise not much has changed.
2019 89.18 (Ha)		The outskirts on the southern part of the area seems to be expanding while other areas have remained nearly the same. The dumpsite appears less used in the last two years.
2021 91.91 (Ha)		

Year, Total Area (Ha)	Satellite View	Notes
2023 112.33 (Ha)		The massive increase in total area stems from the significant increase in dumpsites observed from 2021 to 2023. Three new dumpsites have been added to the areas where shipbreaking activities take place. The coastline appears heavily damaged (most likely signifying contamination of seawater) alongside damaged concrete surface (leakage to soil)

Underlying infrastructure

In a wider context, spatial planning and not just technical infrastructure,¹⁰³ suffer from the lack of comprehensive planning in the coastal ship recycling area.

One of Aliaga's main challenges is heavy traffic due to inadequate surface coverage and width in its road infrastructure. Parked vehicles along certain road sections furthermore impede traffic flow, while insufficient turning radius at intersections also contributes to congestion and poses a significant risk.¹⁰⁴ Traffic reaches a standstill, especially during peak hours, which could obstruct ambulances or fire trucks in emergency situations requiring urgent intervention, or impede evacuation.¹⁰⁵

Aygaz Street, the only road used to transport scrap in the ship recycling zone and also used by other facilities in the region to carry dangerous goods and liquid cargo, is paved with bad asphalt.¹⁰⁶



Aygaz Street

Source: Analysis of the Current Transportation and Logistics Situation in the Back Area of Aliaga Ports, İZKA (2022)

¹⁰³ 'Aliaga Ports Hinterland Transportation and Logistics Study, Existing Situation Analysis and Intervention Perspective' İzmir Regional Development Agency (2022) p. 76 <<https://izka.org.tr/wp-content/uploads/pdf/aliaga-liman-arkasi-mda-tasarim.pdf>> Accessed 13.07.2023.

¹⁰⁴ Ibid p.56.

¹⁰⁵ Ibid p.105.

¹⁰⁶ Ibid p.55.

In addition, trucks from the ship recycling area are often loaded with scrap beyond their capacity and frequently spill materials along their way.¹⁰⁷ These overloaded trucks create risks for by-passers and traffic, pollute the environment and damage the road network. In 2020 alone, 35 traffic accidents were reported in the area, and 1.372 drivers were issued traffic fines.¹⁰⁸

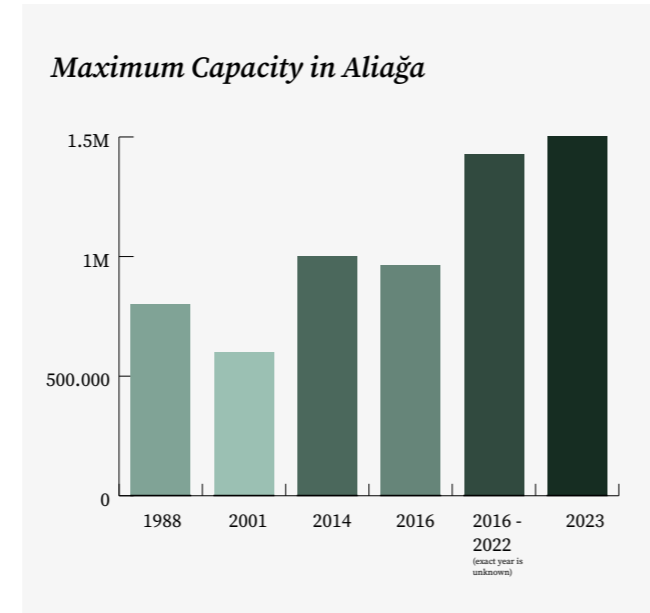
The coastal ship recycling region additionally lacks essential infrastructure for drinking water and sewerage systems. The absence of such infrastructure has led to short-term solutions, such as transferring drinking water, and impeded full-scale renovation.



Overloaded Trucks and Traffic Congestion

Source: Analysis of the Current Transportation and Logistics Situation in the Back Area of Aliğa Ports, İZKA (2022)

2. Capacity of the Yards



The Aliğa Chamber of Commerce is responsible for measuring capacity at the facilities. However, the Ship Dismantling Authorization Certificate, issued by the Ministry of Transport, does not specify the capacity of the yards, and clear information on how capacity is measured could not be found.

A comparison of Ministry of Transport official data, which indicates that the capacity of each facility has increased since 2017, with information provided by the EU inspections further shows that capacity notifications are not always consistent.

The capacity of a facility is determined by the number of employees, the technique and tools used during the cutting process, and the waste management plans, among other factors. Whilst the ship recycling sector has nearly doubled their capacity in recent years with the introduction of mechanisation and transportation vehicles, it remains unclear how that capacity is calculated, especially considering that the cutting areas of the facilities and the techniques used have remained largely unchanged.

Parcel no	Facility	Facility Area m ²	Figure in 2016 from Ministry of Transport	The most recent Figures from Ministry of Transport	Maximum annual ship recycling output, calculated as the sum of the weight of ships expressed in LDT that have been recycled in a given year in that facility	The theoretical maximum annual ship recycling capacity of the facility
1	Ersay	11.000	40.000	50.000	N/A	N/A
2	BMS	10.500	40.000	50.000	37.132 LDT in 2017	75.000 LDT
3-4	Leyal	27.000	60.000	100.000	55.494 LDT in 2015	80.000 LDT
5	Avşar	14.800	40.000	50.000	54.224 LDT in 2012	60.000 LDT <small>In their website it is 50.000</small>
6-7	Metaş	28.500	60.000	100.000	N/A	N/A
8-9	Sök	29.050	60.000	100.000	66.167 LDT in 2017	100.000 LDT
10	Ege Çelik	14.700	40.000	50.000	55.503 LDT	60.000 LDT
11-12	Şimşekler	28.000	60.000	100.000	51.569 LTD in 2016	N/A
13	Blade	15.350	40.000	50.000	8.373 LDT in 2020	N/A
14	Dörtel	16.040	40.000	50.000	41.268 LDT in 2017	75.000 LDT
15	Kursan	15.560	40.000	50.000	N/A	N/A
16	Anadolu	15.840	40.000	50.000	111.823 LDT in 2019	120.000 LDT
17	Ege Gemi	14.490	40.000	50.000	50.035 LDT in 2013	70.000 LDT
18	Aliğa Gemi Geri Dönüşüm	16.310	40.000	50.000	N/A	N/A
19	Temurtaşlar	15.730	40.000	50.000	12.340 LTD in 2018	80.000 LDT
20	Kılıçlar	18.180	40.000	50.000	16.711 LDT in 2021 16.614 LDT in 2017	30.000 LDT
21	Soylu	17.390	40.000	50.000	N/A	N/A
22	Işıksan	23.680	40.000	100.000	91.850 LDT in 2017	<small>In their website, it is 120.000 LDT</small>
23	Öge	17.540	40.000	100.000	62.471 LDT in 2015	90.000 LDT
24	Bereket	10.560	40.000	50.000	N/A	N/A
25	Leyal-Demtaş	13.490	40.000	50.000	57.275 LDT in 2021	70.000 LDT
ABC	Sugurya	30.000	60.000	100.000	N/A	N/A
Total Amount			940.000	1.450.000		

¹⁰⁷ Ibid p.110.

¹⁰⁸ Ibid.

3. Organisational structure, roles, and responsibilities

According to the European Commission, the Ship Recycling Facility Plan (SRFP) is a cornerstone document and should fully describe the operations and procedures that are in place at a facility to ensure compliance with the EU SRR: “The governing document for the site inspection, defining the baseline of the facility’s performance, is the SRFP. [...] A paramount task of the inspection was to verify that the SRFP is a living, logical and systematic document accurately reflecting the developments and operational practice on the ground, including the demonstration of the control of any leakage, in particular in intertidal zones.”¹⁰⁹

According to the EU SRR, the SRFP should include step-by-step chronological detailed instructions, the facility’s actual organisational plan, including role and responsibilities, and workflow related to all operational aspects and waste management procedures. In contrast, the domestic legislation in Turkey provides no information on how the facilities should prepare the SRFP.

EU inspections prior to 2021 highlighted that several procedures and practices observed on the ground at several yards were not included or explained in their SRFP. The evaluators asked these yards to review and

update their SRFPs¹¹⁰ and to improve their implementation within the facilities.¹¹¹ In general, during each first inspection, the EU evaluators found that the presentation and detail of the procedures outlined in the SRFPs needed to be improved and tidied up into useful, practical instructions for workers rather than explanatory text for third parties. Mostly, the evaluators found that the instructions and procedures in the SRFP were partly detached from actual activities at the yards,¹¹² and wanted to see more step-by-step detailed instructions.¹¹³ Several facilities were advised to consolidate safe-for-hot and confined space working procedures.¹¹⁴

During the first EU evaluations, some of the yards’ roles and responsibilities did not match their organisational chart,¹¹⁵ while others were clearly outdated.¹¹⁶ Finding job descriptions to be overlapping and unclear, the EU evaluators recommended the yards to develop a set of job descriptions matching the organisation and the actual work performed, clearly listing the position title and include affiliated manager/title, substitute, main objective, main responsibilities and qualifications.¹¹⁷ Overall, the yards inspected by the EU improved their documentation and instructions according to the advice of evaluators.

EU evaluators furthermore observed that some ship recycling yards did not operate as a single entity, but jointly with other yards. For example it was noted regarding the yards Temurtaşlar and Aliğa Gemi: “it

¹⁰⁹ EU Site Inspection Report of Öge (24.4.2020) p.4.

¹¹⁰ Generally, the European Commission observed that the SRFPs were: were targeted to third parties, rather than to the facility itself. Based on a cut, paste and tweak “one size fits all” template from an external provider, not written according to the actual and day to day activities at the facility. Written narratively rather than procedurally. Not indicating who is responsible for the various tasks, nor what is to be done or by whom.

¹¹¹ SRFPs advised to be: Clear, step-by-step instructions for SRF own practical use; Write what you do, not what you should do; All info in one document, no need to look in attachments; Less content means more thought; Use bullet points (vessel acceptance, cutting, cleaning, near miss reporting etc.); Use matrixes (training plan, PPE, health monitoring etc.); Chronological instructions; References to forms and checklists; Certificates etc. in separate attachment; Photos if instructive; No sales pitches; Readable, with line-, paragraph- and numbering indents and spacing, consistent formatting and chaptering / numbering; Searchable TOC with no inserted documents changing the chaptering; Write a procedure once; Harmonize with SRP and EPRP (emergency plans).

During the second inspection of Dörtel it was observed that the SRFP was not fully implemented on site as further described in the report dated 5.6.2023. The facility came back with updated documents after the second inspection, but the effectiveness of implementation could not be confirmed based on these documents. According to the third site inspection report dated 21.04.2023 of Ege Gemi, although there is an improvement regarding the SRFP, the implementation of it could not be ascertained.

¹¹² EU Site Inspection Report of Ege Çelik (21.10.2019) p. 18; EU Site Inspection Report of Işıksan (25.3.2019) pp. 9-10, EU Site Inspection Report of Sök (04.02.2020) pp. 12-13; EU Site Inspection Report of Ege Gemi (16.12.2020) pp. 15-17; EU Site Inspection Report of Anadolu (15.1.2021) pp. 19-20.

¹¹³ EU Site Inspection Report of Kılıçlar (10.10.2022) p. 15; EU Site Inspection Report of BMS (19.9.2022) pp. 15-16
In Temurtaşlar, the evaluators concluded that it was not clearly indicated who is responsible for the various tasks, nor what is to be done by whom. Furthermore, based on the information provided, it was still not clear to the evaluators how slag and paint chip collection when cutting of outer hull is performed. The evaluators wanted to see further detailed descriptions on how slag- and paint chip collection is done when cutting the outer hull (Site Inspection Report of Temurtaşlar, pp. 19-20) Similarly, there were no descriptions of debris control or slag collection in Ege Gemi. The applicant was advised to update its procedures with step by step detailed instructions. (Site inspection report of Ege Gemi (25.01.2022) p. 14) Moreover, the documentation did not provide which workers are part of the cleaning team in Anadolu, whereas it was not defined who is responsible for the various operations for the double bottom dismantling method and ensuring that debris/slag are not polluting the sea during cutting operation on board the vessel and below the drainage line. (Site inspection Report of Anadolu (15.01.2021) pp. 19-20).

In the report of Blade, there were discrepancies between the English and Turkish versions of the instructions. While the former states the cleaning with water and foam, the latter only mentioned water. Moreover, the evaluator’s understanding was that implementation of instructions and procedures on-site was inconsistent with what is written in the documents. (Site inspection Report of Blade (13.01.2023) p. 12).

In the first report of BMS, the EU evaluators asked the yard re-evaluated the tank-cleaning process. Yet, there was no info on how they implemented the new procedure in the second inspection report. (Site Inspection Report of BMS (27.3.2023) p. 15).

appeared that the two facilities (Temurtaşlar and Aliğa Gemi) operate more like one facility than two separates.”¹¹⁸ [...] Several positions in the organisation are shared between the two facilities. Interviews with workers on-site confirmed that they cooperate for dismantling of vessels and that both plots’ ship cutters were working onboard the vessel under dismantling at the time of the inspection.¹¹⁹ Similarly, and based on the information provided to the evaluators at the time of the first site inspection of Anadolu, it was not clear whether workers were employed at Işıksan or at Anadolu.¹²⁰

4. Steps of Recycling a Ship in Turkey

Ship recycling in Aliğa generally proceeds in accordance with the steps outlined in the Ship Dismantling Process flowchart.

The dismantling process begins by gradually pulling the ship onto land. During the initial cutting phase (primary cutting), the parts of the vessel that have been moved onto an impermeable area above a drainage channel are cut. Alternatively, the ship’s hull may be utilised as flooring and containment. According to the EU SRR, all subsequent cutting (secondary cutting) activities should be conducted on a concrete floor that includes a drainage system to ensure that all liquids and debris generated during the dismantling process are effectively collected.

Upon evidence that the ship is positioned over the

grating and that all fuel has been removed from the bilge tank, the ship recycler submits an application to the Port Authority for the dismantling of the double bottom. Only upon receiving permission, should the dismantling of the double bottom commence. Once the ship dismantling is fully completed, the ship recycler should notify the Port Authority. This notification should include information about the waste and its disposal.

5. Measures to Prevent Leakage

To protect the intertidal zone and sea, the ship must be pulled above the drain line to conduct cutting operations in a contained area. However, during EU inspections, it was found that dismantling took place many times below the drainage channel, causing waste to flow into the sea.

Several facilities were found without sufficient capacity to pull the ships over the drainage channel.¹²¹ Vessels under demolition at the facilities of Şimşekler and Sök were seen lying below the drainage line with their double bottom exposed during the first EU inspections. Ege Gemi Söküm’s ability to pull a vessel beyond the drain line before any cutting starts was not clear during the first inspection.¹²² Furthermore, the aft part of a ship being dismantled at Blade had been cut directly on the permeable ground without drainage.¹²³ Similarly, in the mid-term report of Ege Çelik, the EU evaluators observed that the hull had been cut when the ship was

¹¹⁴ EU Site Inspection Report of Şimşekler (20.03.2020) pp. 47-49; EU Site Inspection Report of Sök (4.2.2020) pp. 42-43; EU Site Inspection Report of Temurtaşlar (2.2.2021) pp. 45-46; EU Site Inspection Report of Ege Gemi (16.12.2020) p. 39; EU Site Inspection Report of Anadolu (15.01.2021) pp. 46-48; Second Site Inspection Report of Ege Gemi, pp. 33-34.

¹¹⁵ EU Site Inspection Report of Şimşekler (20.03.2020) p. 15; EU Site Inspection Report of Sök (4.2.2020) p. 9; EU Site Inspection Report of Anadolu (15.01.2021) p. 16; EU Site Inspection Report of Temurtaşlar (2.2.2021) p. 17; EU Site Inspection Report of Ege Gemi (21.04.2023) p. 14; EU Site Inspection Report of Avcılar (8.7.2020) p. 18; EU Site Inspection Report of Dörtel (19.09.2022) p. 14; EU Site Inspection Report of BMS (19.9.2022) p. 14.

¹¹⁶ EU Site Inspection Report of Ege Gemi (16.12.2020) p. 13; EU Site Inspection Report of Şimşekler (20.03.2020) pp. 13-14.

¹¹⁷ Ibid.

¹¹⁸ EU Site Inspection Report of Temurtaşlar (02.02.2021) pp.15-16.

¹¹⁹ Ibid.

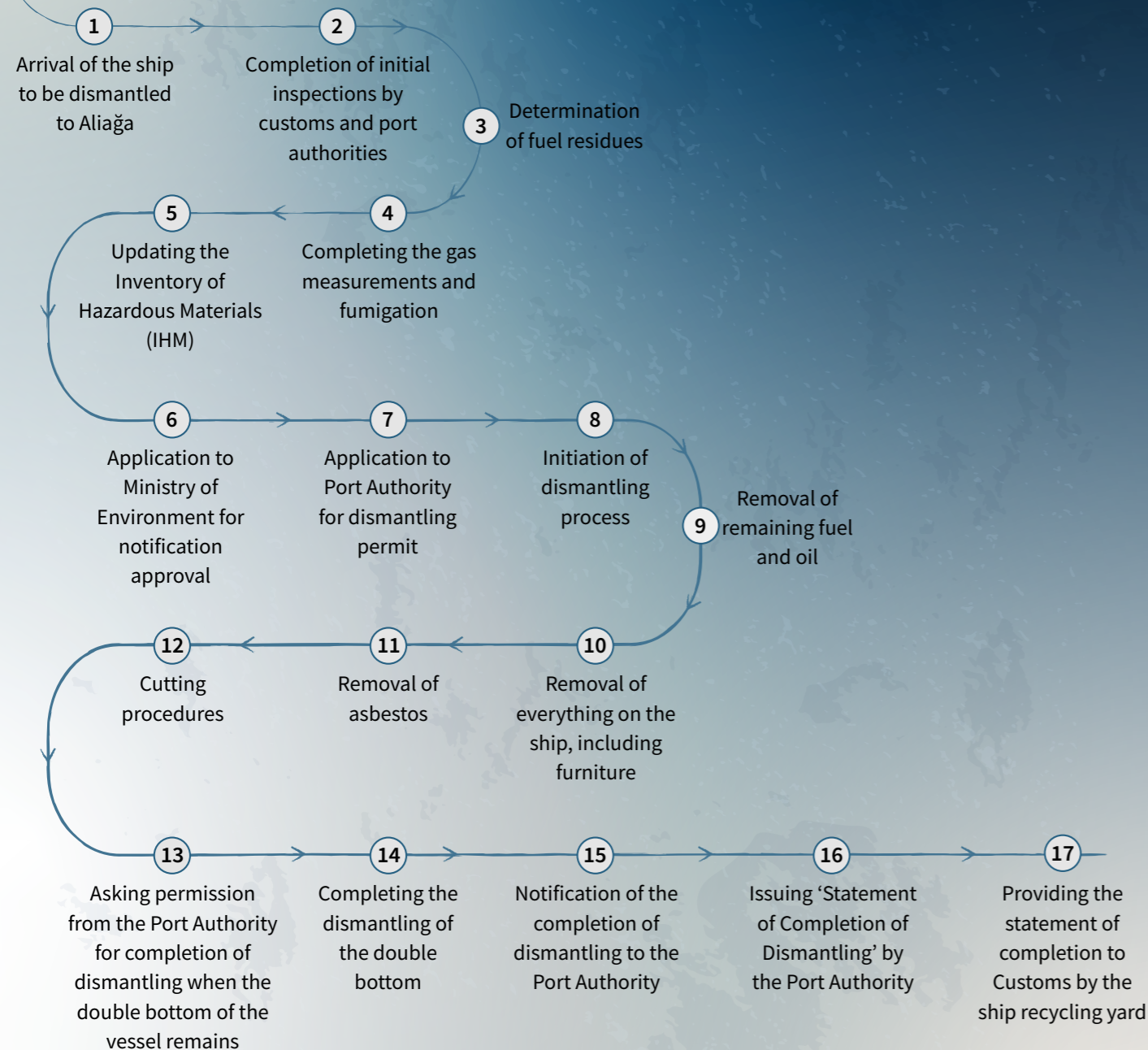
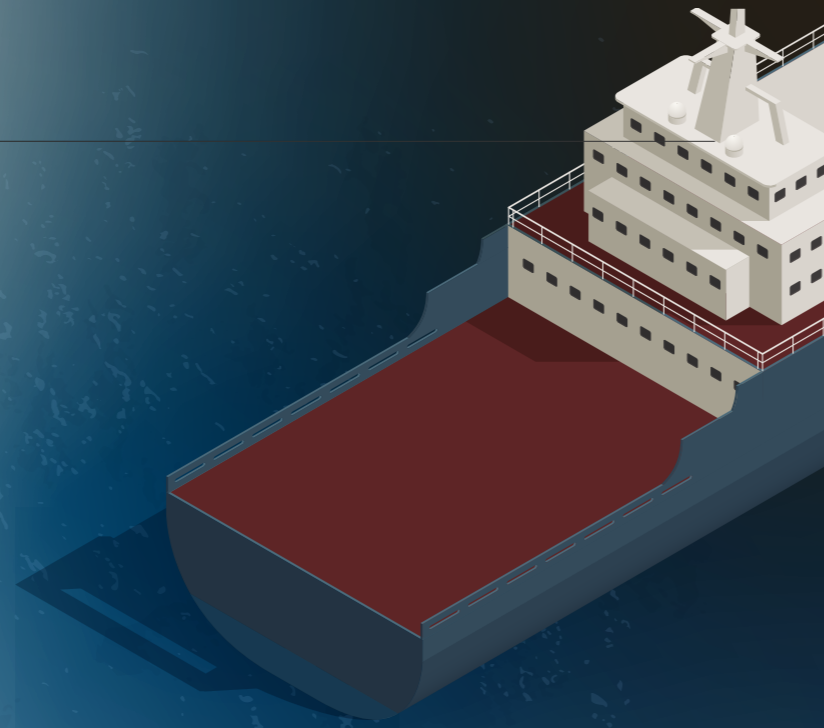
¹²⁰ EU Site Inspection Report of Anadolu (15.01.2021) pp.16-17: “Several people in the updated organisation chart could not be found in the overview of employees from the Social Security Institution in Turkey for July for AGS. Some of the workers were however found in the overview of employees from the Social Security Institution for Işıksan e.g. the HSE manager and the safety officers. Some employees were not found in any of the lists e.g. the quality responsible, yard manager and the technical manager. [...] The evaluators were told that many of the workers presented in the organisation chart work at both facilities, AGS and Işıksan. In Turkey an employee is employed in one company and if an employee is to work for another company the worker must be appointed. No documentation on appointments could be provided upon request at the time of the inspection.” The facility organisation was later confirmed in the recent report dated 13.3.2023. (EU Site Inspection Report of Anadolu (13.3.2023) p. 12).

¹²¹ EU Site Inspection Report of Kılıçlar (10.10.2022) pp. 15-17: “The evaluators further advised that if pulling above the drain line is not possible, the facility should describe the measures they can put in place to prevent the release of hazardous materials to the environment during the primary cutting phase.”

¹²² EU Site Inspection Report of Şimşekler (20.3.2020) p.1 and 21; EU Site Inspection Report of Ege Gemi (16.12.2020). p. 19; EU Site Inspection Report of Sök (4.2.2020) p.17.

¹²³ EU Site Inspection Report of Işıksan (26.5.2019) p.13.

Ship Dismantling Process



located below the impermeable surface and drainage channel.¹²⁴

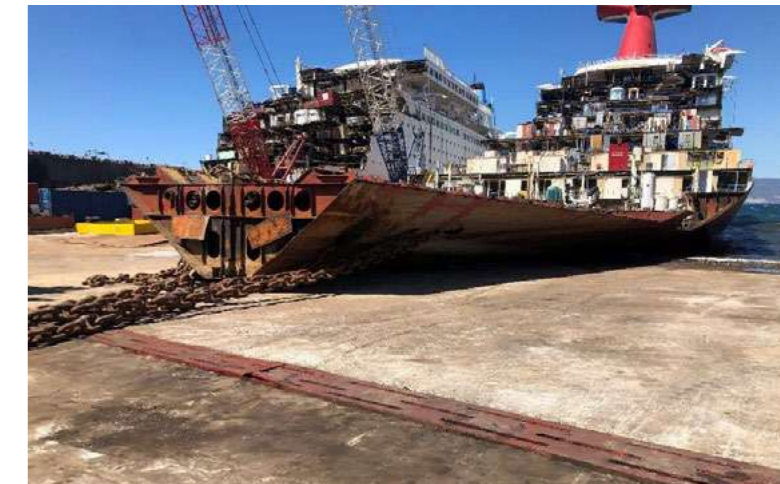
During their first inspections, EU evaluators furthermore noted that some facilities lacked sufficient measures to control leakage to water and soil,¹²⁵ such as adequate concrete and impermeable flooring.¹²⁶ In



Foreshore

Source: Site Inspection Report of Kılıçlar (30.3.2023)

addition, they found the intertidal zone to be polluted¹²⁷ with various debris,¹²⁸ "including all sorts of plastic, metal, wood, cables, chipping, rubbers, foams etc."¹²⁹ Whilst these deficiencies were since found to have been alleviated upon subsequent inspections at the concerned yards, with some facilities having extended



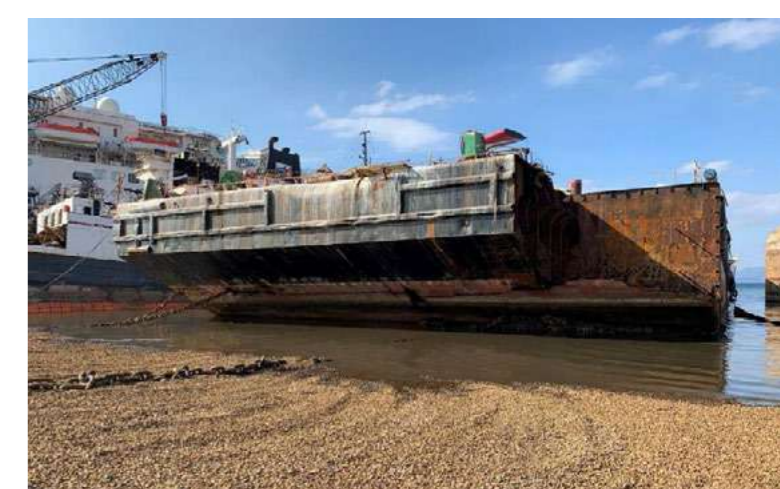
Barge being dismantled. Coarse gravel foreshore, in the foreground.

Source: Site Inspection Report of Dörtel (5.6. 2023)



Aft part of the ship cut off on the beach

Source: Site Inspection Report of Blade (13.1.2023)



Evident that primary cutting has been performed below the drainage channel

Source: Midterm Review Report of Ege Çelik (11.7.2023)

¹²⁴ Mid-term Review Report of Ege Çelik (17.7.2023) p.11.

¹²⁵ EU Site Inspection Report of Ege Gemi (25.1.2022) p.15: "the evaluators could not confirm compliance with the requirements concerning the demonstration of control of any leakage and the handling of hazardous materials only on impermeable floors with effective drainage systems."

¹²⁶ "During the first inspection it could not be confirmed that the concrete flooring, used as cutting area and for storage of various equipment, was continuous and impermeable" EU Site Inspection Report of Şimşekler (20.3.2020) p.1

"the evaluators could not confirm compliance with the requirements concerning the demonstration of the control of any leakage and the handling of hazardous materials only on impermeable floors with effective drainage systems."

"It could however not be confirmed that the concrete flooring, used as cutting area and for storage of various equipment, was continuous and impermeable." EU Site Inspection Report of Sök (4.2.2020) p.1

¹²⁷ EU Site Inspection Report of Sök (4.2.2020) p.14:

"...during the first inspection, the intertidal zone was seen with blackened earth (apparently from oil) and a minor amount of visible debris. However, in light of the missing, proven and detailed procedures on protecting the intertidal zone, the observed poor condition of the open soil areas surrounding the impermeable areas, stored with engines and other oily equipment, and the standard drainage system partly covered with steel plates, it was apparent to the evaluators that the intertidal zone was not sufficiently protected." EU Site Inspection Report of Şimşekler (20.3.2020)p. 19: "the intertidal zone was seen with blackened earth from residues and debris."

¹²⁸ EU Site Inspection Report of Avşar (8.7.2020) p.21.

¹²⁹ EU Site Inspection Report of Öğe (6.1.2020) p.14.



Debris, including EE-waste was observed in the permeable area between the seashore and the drainage line

Source: Site Inspection Report of Temurtaşlar (2.2.2021)

their concrete areas towards the sea and below the drainage line, facilities that have not been subject to the EU inspection processes might still lack adequate impermeable flooring, indicating weak domestic oversight.

The environmental and health hazards associated with copper and chromium-6 compounds found in anti-fouling paints and coating formulations applied to the ship's external steel surfaces are of particular concern. Torch cutting conducted below the drainage line may release contaminated steel particles into the sea, which can adversely affect marine life. Coat-stripping

to remove paints and other coatings from the hull prior to cutting can significantly mitigate the emissions of hazardous pollutants to the water and soil.¹³⁰

In the EU inspection reports, many yards were strongly advised to follow precise instructions, methods, tools and procedures to control leakage and accumulation of slag and debris.¹³¹ The EU evaluators questioned “how it was ensured in rainy weather that slag and paint chips were not washed to sea”¹³² and expressed concerns over the effectiveness of the oil booms used.¹³³ The evaluators also wanted to see further detailed descriptions on how slag and paint chips were collected when cutting the outer hull,¹³⁴ and “a step by step procedure on primary cutting, how lifting and transporting are to be decided and carried out, the detailed measures in place to prevent impact on the environment in way of leakages from piping, machinery and tanks, slag, paint chips, debris, double bottom cutting etc.”¹³⁵

Furthermore, the absence of soil and sediment monitoring at the facilities was highlighted by the EU evaluators as problematic as it made it impossible to determine the environmental impacts of the operations.¹³⁶

Finally, the control of leakage and other adverse effects to the environment when dismantling oil rigs were not always found to be satisfactory, leading the EU evaluators to recently advise that specific recycling methods be outlined for these types of assets.¹³⁷

¹³⁰ ‘Ship Dismantling and Pre-cleaning of Ships’ European Commission Directorate General Environment (2007) pp. 95-99 <https://ec.europa.eu/environment/pdf/waste/ships/ship_dismantling_report.pdf> Accessed 23.10.2023.

¹³¹ ‘Safety and Health in Shipbreaking: Guidelines for Asian Countries and Turkey’ International Labor Office (2004) p. 4, 63 and 94 <https://www.ilo.org/wcmsp5/groups/public/@ed_protect/@pro-trav/@safework/documents/normativeinstrument/wcms_107689.pdf> Accessed 23.10.2023.

¹³² EU Site Inspection Report of Sök (4.2.2020) p.15; EU Site Inspection Report of Temurtaşlar p.1; EU Site Inspection Report of Aşar (8.07.2020) p.1; EU Site Inspection Report of Anadolu (15.1.2021) p.1; EU Site Inspection Report of Işıksan (26.5.2019) p.13-14; EU Site Inspection Report of Dörtel (19.9.2022) p.16.

¹³³ EU Site Inspection Report of Şimşekler (20.3.2020) p.20.

¹³⁴ EU Site Inspection Report of Sök (04.2.2020) p.14-15; EU Site Inspection Report of Temurtaşlar (2.2.2021) pp.21-22; EU Site Inspection Report of Ege Gemi (16.12.2020) p.18. Mid-Term Inspection Report of Işıksan (27.09.2022) p.9-11: “It can be seen from the photos in December that that oil boom present in the November photo was no longer deployed, which is not in accordance with the stated prevention measures [...] This procedure clearly explains the use of this equipment, although the scenarios for use do not include complex areas of structures such as semi-submersible offshore platforms [...] The evaluators are of the opinion that employing these measures is a positive action, but they will not be able to ensure that all slag is caught [...] Procedures for cutting complex areas of structures such as semi-submersible offshore platforms should also be developed.”

¹³⁵ EU Site Inspection Report of Ege Gemi (25.1.2022) p. 15.

¹³⁶ EU Site Inspection Report of Ege Çelik (21.10.2019) pp.19-21

“Pre-cleaning of tanks and other polluted areas; stripping of accommodation areas, down to steel, putting debris and insulation in bags; dismantling of pipes by de-flanging, emptying oil residues in containers; cleaning of machinery components with rags etc.; blocking of open pipes and machinery components inlet / outlet connections by rags, wooden plugs or steel flanges
-Daily planning of cutting, considering vessel balance and steel structural balance, avoiding bouncing, by experience; lifting cut blocks directly from the vessel to the impermeable secondary cutting area, by crane; the crane lifts and moves the blocks partly above the vessel by using the vessel as a containment and places the pieces on to the secondary cutting zone.
-Nothing is dropped on the intertidal zone; slag and chips are removed from the intertidal zone by industrial magnet attached to the excavator, recorded, stored and sold; a net is erected towards the sea to catch larger flying debris; the beach is manually cleaned about every second day, with records kept.

¹³⁷ EU Site Inspection Report of Sök (4.2.2020) p.14.

¹³⁸ EU Midterm Site Inspection Report of Ege Çelik (12.1.2023) p.11.



Slag collector

Source: Midterm review Report of Ege Çelik (12.1.2023)



Prototype working basket with slag collection system

Source: Site Inspection Report of Kılıçlar (10.10.2022)

6. Cutting Zones and Procedures

The EU SRR requires that materials cut from the vessel and needing further cutting, be transported onto secondary cutting areas where cutting can take place on a concrete impermeable floor with drainage connected to storage tanks.¹³⁸ However, EU evaluators have found that some yards use steel plates instead of concrete flooring and have raised concerns.

¹³⁸ EU Site Inspection Report of Leyal p. 12; EU Site Inspection Report of Anadolu (15.1.2021) p. 22.

¹³⁹ EU Site Inspection Report of Ege Gemi (16.12.2020) pp.19-20 (Compliance is confirmed in the third site inspection report as far as can be ascertained from document review as it is stated.) EU Site Inspection Report of Temurtaşlar pp.21-22.

¹⁴⁰ EU Site Inspection Report of Şimşekler (20.3.2020) p. 20; EU Site Inspection Report of Sök (4.2.2020) p.16.

¹⁴¹ EU Site Inspection Report of Sök (4.2.2020) p.18.

¹⁴² EU Site Inspection Report of Öge (6.1.2020) p.15; EU Site Inspection Report of Ege Çelik (21.10.2019) p.21.



Secondary cutting area

Site Inspection Report of BMS (19.9.2022)

Furthermore, during some of the initial EU site visits, uncertainties arose regarding the permeability of concrete floorings that seemed to have been freshly repaired. The concrete surfaces were in some cases heavily covered with soil, making it difficult to assess the presence of concrete. In subsequent inspections, cutting areas were found to be cleaned of surface soil and mud, and repairs had been made to the concrete flooring in multiple locations.¹³⁹

The EU evaluators noted that in certain areas a significant amount of recycled engines, equipment, and cranes were stored on permeable ground, and questioned why large quantities of machinery and scrap were retained long term at some facilities,¹⁴⁰ while other yards maintained a policy of getting rid of scrap as early as possible in a systematic way.¹⁴¹ Several facilities inspected by the European Commission did not have clearly stated cutting plans and procedures¹⁴² specified in the QMS or SRFP. These facilities instead based cutting operations on verbal communication and experience, as was also confirmed by interviewed workers. In an accident that occurred in the yard of Dörtel in July 2022, a worker cut the pipe section of a hydraulic tank with a torch. The accident report stated that the pipes



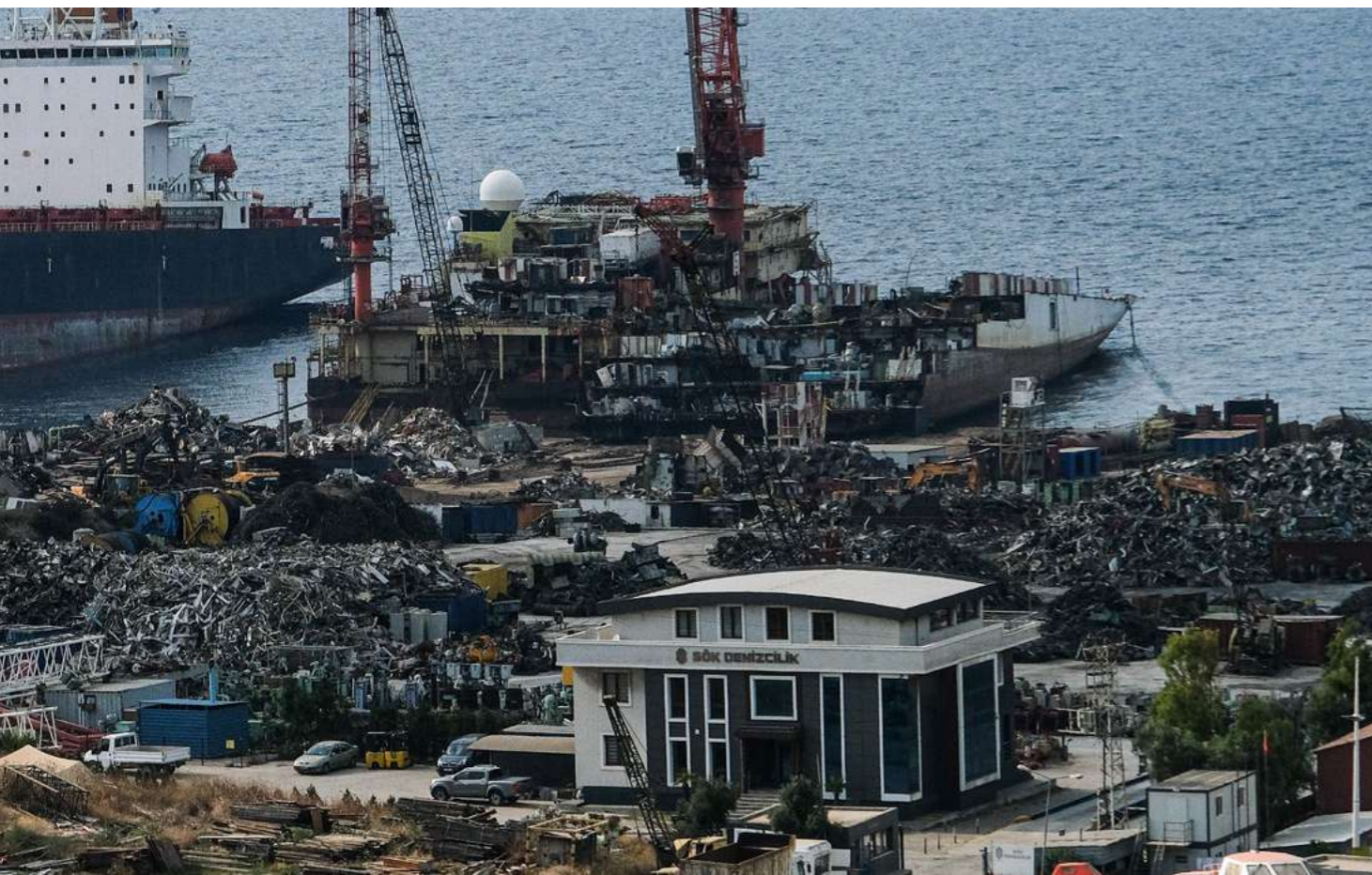
Secondary cutting area
Midterm review report of Sök (14.6.2023)

had not been cleaned prior to torch cutting, prompting the EU evaluators to question whether procedures had been correctly implemented and parts of instructions skipped.¹⁴³

Workers shared the following observations during our interviews:

“There is no field order. Scraps are not stored in accordance with occupational safety. We are all working next to each other. There is a great danger of accidents. Many times our friends died before our eyes. The cutting procedure is always up to us. If the worker takes his own precautions, he does, otherwise no one interferes. Occupational safety experts are usually at their desk, and not in the field.”

“When the cutting is conducted, a plan is not provided. There is no order in the field. While cutting, for example, the tubes sometimes come out of places that we do not see or the natural gas cylinder was not collected,



Credit: Vedat Örüç, August 2023

¹⁴³ EU Site Inspection Report of Anadolu (15.1.2021) pp.35-36; EU Site Inspection Report of Ege Gemi (16.12.2020) pp. 28-29; EU Site Inspection Report of Avşar (8.7.2020) p.35; EU Site Inspection Report of Işıksan (26.5.2019) pp. 22-23; EU Site Inspection Report of Öge (6.1.2020) pp.22-23; EU Site Inspection Report of Şimşekler (20.03.2020) pp. 19-20; EU Site Inspection Report of Sök (4.2.2020) pp.27-28; EU Site Inspection Report of Temurtaşlar p. 34-35; EU Site Inspection Report of Dörtel (05.6.2023) pp. 30; EU Site Inspection Report of Kılıçlar (10.10.2022) p. 27; EU Site Inspection Report of BMS (19.09.2022) pp.26-27.

¹⁴⁴ EU Site Inspection Report of Dörtel (19.9.2022) p.31.

but we continue to cut. A friend accidentally cut a fire extinguisher. Thank God it was empty and there was no accident.”

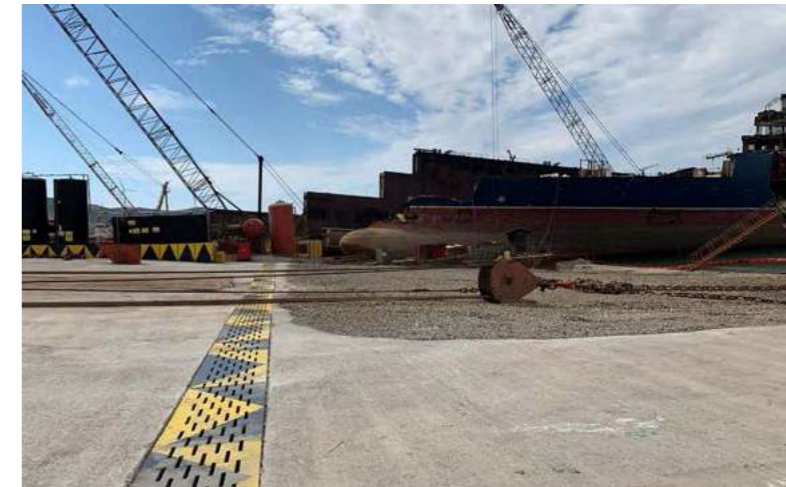
“There are neither safety conditions nor a plan. No one tells us the cutting procedure. In order to make the final cuts, the scrap pieces from the ship are put in front of us with a vehicle. Normally, a sign should be placed around this scrap. At least a certain area should be empty. There should be spaces in between, but they don't leave any spaces. We cut several pieces at the same time. Many times we have told the OHS expert and the field officer, but they do not improve the situation because they want to finish the job as soon as possible.”

7. Drainage System

A drainage channel is a constructed pathway or channel designed to collect and direct the flow of water. Collecting the hazardous wastes generated during dismantling in the grates of the drainage system prevents hazardous wastes from entering the environment. Adequate storm-water and surface drainage systems are important to mitigate the potential negative effects of rainfall and flooding.¹⁴⁴ During secondary cutting operations, the cutting area is washed with seawater to remove small particles that spread across the yard. The wastewater from cleaning these secondary cutting areas should be collected through the drainage channels as well.¹⁴⁵ *“It's been 4-5 years since the drainage system was built. Everything was going to the sea before. We were throwing waste and stuff into the sea.”*

The constructed drainage area should be impermeable and connected to a tank that collects the waste with a pump. The structure, including the thickness of the cement, layout, suitability of the materials used, pumping system, location and capacity measurements to prevent overflow, are all important considerations.

The obligation to construct drainage channels is vaguely defined by the local government decision



Lower drainage line
Source: Site Inspection Report of BMS (27.3.2023)



Drainage line, and drainage sump area
Source: Site Inspection Report of Dörtel (19.9.2022)

published in 2019. However, there is no transparent information on how the drainage channels are planned, nor guidelines on how they need to be constructed. The technical qualities of existing drainage systems are not known, nor whether all of the facilities currently have drainage channels.

Several problems related to the drainage system have been illustrated in the EU reports and within the scope

¹⁴⁵ Development Plan Revision for the Shipbreaking Zone (n 11) p.50.

¹⁴⁶ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques' (n 29) 41.



Overflowing primary drain line

Source: Site Inspection Report of Işıksan (26.3.2019)



Drainage system pump was out of function

Source: Site Inspection Report of Işıksan (26.3.2019)

of a project¹⁴⁷ carried out by the Ministry of Environment in ship recycling facilities and shipyards. The EU inspections have found that drainage systems and hazardous waste storage tanks meet a variety of different technical specifications, even when the facilities have almost the same physical conditions and capacities.¹⁴⁸

According to the project report of the Ministry of Environment, a commonly encountered problem in many facilities is the construction of drainage lines too far away from the sea.¹⁴⁹ According to the report of the Ministry of Environment, when a ship is landed, the area between the ship and the drainage is not protected and can result in pollutants released to the sea or soil during the dismantling process. Drainage channels should be constructed up to the furthest point that waves can

reach, and the report suggested building intermediate channels perpendicular to the sea. The construction of a drainage channel close to the sea was requested also by the EU evaluators, and as a result, two separate drainage lines have been built in the facilities that have been inspected by the EU.

The Ministry of Environment have also highlighted that drainage channels should include grates with a slight slope or cylindrical shape.¹⁵⁰ To ensure the effective utilisation of the drainage system, the EU evaluators noted the importance of capacity calculations, including rainfall, and highlighted the need for improvement.¹⁵¹ While some of the yards' drainage systems were damaged, the cleanliness of the channels was also criticised, and the EU evaluators furthermore

¹⁴⁷ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques' (n 29).

¹⁴⁸ The capacity of the storage tank in the yard of Şimşekler (EU Site Inspection Report of Şimşekler (20.3.2020) p.22) reportedly 27,5 tons. The drained water is collected in two storage tanks, while Ege Gemi has two tanks with 40 and 25 cubic metres capacity (EU Site Inspection Report of Ege Gemi (16.12.2020) p.20). Similarly, the drained water is collected in two waste liquid storage tanks in the yard of Anadolu, each with a 30 cubic metres capacity. (EU Site Inspection Report of Anadolu (15.1.2021) p.23) Besides, Öge Gemi has the biggest channel among the yards which is subject to EU inspections: "The drainage channel stretched the full width of the plot, and was, with a width of over 1,6 m, the biggest the evaluators had seen. The drainage was covered with recessed steel plates with large, staggered openings, based on flow calculations. The channel was serviced by 1 buoy pump, with one in spare, leading to a 133 m³ collecting tank." (EU Site Inspection Report of Öge (06.1.2020) p.16).

Moreover, 3 drainage channels were built in the yard of Ege Çelik (Site Inspection Report of Ege Çelik p.22), which is unusual, compared to other facilities: "Ege Çelik has 3 drainage channels, channel A, B and C respectively, underground pools and permanent drain water tanks covered with overflow pools. The drainage channels A are stretched on the right and left side of the plot, which surrounds the whole secondary cutting area with a length of 170 m, depth of 20 cm, and width of 60 cm each. Drainage channel B is stretched almost the full width of the plot (45 m) and connected to side channels A, therefore forming a complete semi-round of the entire plot. The depth of channel B is 50 cm with a width of 60 cm. Channels A and B are connected to an underground pool, with a capacity of 20 m³. When the drain water level reaches a certain level, a buoy system runs automatically, and the drain water is pumped to two cylindrical tanks with capacity of 13.4 + 24.48 = 37.88 m³. There are 3 pumps to pump the drain water into collection tanks for emergency reasons. The channel itself has a capacity of 55 m³, therefore the total capacity of the first drainage system is 112.88 m³. The drainage channel C was located a couple of meters below the first drainage system, closer to the shoreline with a length of 45 m width of 70cm and depth of 90cm. The drainage channel was connected to an underground pool with a capacity of 20 m³. When the drain water level reaches a certain level, a buoy system runs automatically, and the drain water is pumped to a cylindrical tank with a capacity of 25 m³. There were 3 pumps to pump the drain water into collection tanks for emergency reasons. The channel had been properly engineered, with a capacity of 28.35 m³. The total capacity of the second drainage system was 73.35 m³." Kılıçlar has four drainage lines running across it: "The drainage channel nearest the sea was seen during the site inspection to be newly constructed and the drainage pump and associated pipework was not yet installed. The storage tank intended to receive drainage water from this channel was in place but not connected at the time of the site inspection. Further, it was seen that this drainage channel did not span the entire width of the plot, thus allowing liquid to pass on the sides. [...] The applicant addressed these deficiencies." (EU Site Inspection Report of Kılıçlar (10.10.2022) p.18) Dörtel and BSM have two drainage lines running across the plot. While the former's capacity of each of the tanks are 65 cubic meters, the latter's drained water is collected in two storage tanks, with 20 and 10 cubic meters capacity. (Site Inspection Report Application 40, p.18; EU Site Inspection Report of BSM (19.09.2022) p. 18) In addition, the yard of Anadolu informed the evaluators that they recently constructed two new drainage lines. (Site Inspection Report of Anadolu 13.3.2023, p.16.).

¹⁴⁹ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques' (n 29) p. 45.

¹⁵⁰ Ibid p. 45.

¹⁵¹ Ibid p. 45.



Drainage system unable to cope with the volume of rainwater at the time of the inspection.

Source: Site Inspection Report of Dörtel (5.6.2023)



Flooded drainage system

Source: Site Inspection Report of Dörtel (5.6.2023)

raised doubts whether the drainage system can collect all runoff from the sites.¹⁵²

It is important to collect and treat rainwater as it may contain pollutants from the ship recycling activities.¹⁵³ During one EU inspection, an overflowing drainage system was causing rainwater¹⁵⁴ flow into the sea, apparently because the drainage system did not have sufficient pump capacity. It was also clear that the drainage system had not been cleaned or emptied of debris prior to the rainfall.¹⁵⁵ According to worker interviews, such incidents are common in Aliğa.

8. Waste Water Treatment

Despite the recognised importance of wastewater treatment, the ship recycling facilities in Aliğa lack both a proper water treatment system and a separator. According to a parliamentary response from the Ministry of Environment in 2002, the ship recycling yards had built an impermeable concrete pool within the TÜPRAŞ facility south of the ship recycling area to manage wastewater including bilge and ballast water.¹⁵⁶ Yet, this practice was not observed during the research, while the Ministry of Environment project report in 2019 found that ballast water was directly discharged

¹⁵² During the first inspection of SÖK (EU Site Inspection Report of Sök (4.2.2020) p. 18-19), the evaluators stated that the drainage system had previously been damaged, while the cleanliness of the channels were criticized: "A second drainage system was in an area where main engines were stored. This drainage system is reportedly connected to the other drainage system. During the first inspection, it appeared to be clogged as it was almost filled up with oily water and sediments. The facility was asked on site when the second drainage was discharged and cleaned last time, but no information was provided during the first site inspection. It could also not be established if the drainage system can collect all runoff from the site, due to lack of continuous impermeable flooring." The applicant upgraded the drainage system as a result of the findings of the initial site assessment. During the second inspection, it was determined that the yard had renovated the drainage system and built a new drain line that was located closer to the seafront and was deemed adequate. (EU Site Inspection Report of Sök (4.2.2020) pp.18-19)

Furthermore, as also stated during the first site inspections, the drainage system of Avşar (EU Site Inspection Report of Avşar (08.7.2020) p.24) was seen partly filled with water that did not drain well into the sump, because the pipe between the sump and the drain channel was placed at a high level, while in the yard of Anadolu, the connection pipe was not located at the bottom of the drainage line, resulting in some of the water being trapped in one side of the drainage line, and water not entering this drain line. (EU Site Inspection Report of Anadolu (15.1.2021) p.23) Similarly, according to the Işıksan's report "During the site-inspection it was observed that the pump of the drainage system was not working." (EU Site Inspection Report of Işıksan (26.5.2019) p.1) At the time of the inspection of Kılıçlar the lower drainage line currently did not have a drainage pump or pipe-work installed. It was also noted that it did not span the entire width of the impermeable floor, thus allowing liquid to pass freely around the ends. The applicant addressed those deficiencies. (EU Site Inspection Report of Kılıçlar (10.10.2022) pp.6-7) At the time of the second site inspection of Dörtel, the drainage channel had overflowed, and the overflowing water was heading towards the sea. Although it is true that it was raining heavily when the inspection took place, it is assumed that the drainage system is built and maintained to withstand such rainfall. It seemed as though the pump's capacity was inadequate. During the second visit, the evaluators were unable to certify that the facility was built, operated, and designed in a safe and environmentally sound manner. (EU Site Inspection Report of Dörtel (5.6.2023) p.7).

¹⁵³ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques' (n 29)

¹⁵⁴ The rainy season in Aliğa lasts for 5.7 months, from November to April, when the probability of rain any given day is higher than 16%. The month with the most rainy days in Aliğa is December with an average of 9.2 days.

¹⁵⁵ Site Inspection Report of Dörtel (5.6.2023) p.21.

¹⁵⁶ Ministry of Environment response numbered 169 to the parliamentary question dated 30.12.2002 and numbered 261/1565 of Hakkı Ülkü.

into the sea without any treatment.¹⁵⁷

“The ballast water is also discharged into the sea.”

“The ballast water is sometimes poured into the canals and sometimes it is discharged into the sea. Normally, the ship has to be emptied properly, but because it slows down the work, releasing it to the sea makes it easier. In order to pull the ship, that water has to be drained.”



Discharging the ballast water to the sea

Source: Report of the Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques

The waste that accumulates in the drainage channels consists mostly of a mixture of oil and water. To properly manage this waste, it is essential to implement a separation process by separating the oil from the mixture and sending it to dedicated disposal facilities. However there is no procedure for this in the yards. A communication by the Ministry of Environment to SRAT in 2010 stated the works related to the oil water separators should be completed and put into operation immediately.¹⁵⁸ Yet more than ten years later, oil water separators are still not in operation, and there is no such procedure in the yards. Due to the absence of separators in the facilities, the management of large volumes of oily water waste becomes problematic.¹⁵⁹

An expert who worked in the sector stated that *“The volume of oily water is very large. It is very difficult to send it to the disposal facility. Since the yard does not have a separator, the waste oil must be taken with water by the*

disposal facility. But the disposal or cement facility does not want to buy a mix of waste. Therefore, the water is usually discharged into the sea to get rid of it and only the waste oil is sent to the disposal facility. This can be easily detected by checking what is sent to the disposal facility, and calculating the approximate amount of the waste and whether there is a separator and how they use it.”

Several workers shared experiences of similar practices, i.e. releasing the water accumulated in the drainage channel to the sea, and only transferring small amounts of the oily wastewater for disposal.

A worker claimed that *“Water accumulates in the drainage system and oil stays in the above. They release the water with a pump and pour it into the sea. We clean the drainage from inspection to inspection. And when there is only oil in the canals, they take it out of the tanks to send to the disposal facility.”*

According to the recent report Perspectives on Green Transformation and Blue Opportunities in Izmir issued by the Izmir Development Agency: *“During rainy days when the capacity of this system is insufficient, oil-containing wastewater overflows into the sea. Additionally, due to the high volume of wastewater, the transportation costs to the treatment facility increase, and some companies may choose to discharge the wastewater into the sea instead of sending it for treatment in order to avoid transportation expenses.”*¹⁶⁰

Another concern relates to the lack of a sewerage system in the area. Sewage accumulates in pits dug

Despite the recognised importance of wastewater treatment, the ship recycling facilities in Aliğa lack both a proper water treatment system and a separator.

by the facilities and is mostly discharged to the sea without treatment.¹⁶¹

9. Lifting Equipment and Pulling Arrangements

Lifting and pulling arrangements play a crucial role in a ship recycling facility. Cranes, winches and hoists handle heavy equipment, machinery, and materials during the ship dismantling process.

Lifting arrangements enable the transfer of large sections of the ship, such as superstructures, engines, and cargo holds.¹⁶² The “Regulation on Health and Safety Conditions in the Use of Work Equipment” does not require the accreditation of service providers who periodically control lifting equipment. The regulation require equipment to be tested at 1,25 times their capacity weight, while other countries, such as the USA, apply the test load to 10 times the equipment capacity.¹⁶³ According to the EU inspection reports, a proper inventory list of lifting equipment including their capacity must be made available, while lifting sets for personnel lifting baskets should be clearly identified and traceable.¹⁶⁴

Pulling arrangements are utilised to pull the ship, and include pulling systems such as slings, shackles, and winch pulling wires. In this context, there should be a maintenance scheme and an inventory list, while the items should be subject to colour coding or similar schemes for identification. The safe use of pulling equipment should be ensured, especially considering the proximity of workers.

In their inspections the EU evaluators identified the use of pulling systems that were in bad condition. Insecure

pulling arrangements is a serious concern, as showcased by a recent fatal accident caused by the breaking of a wire rope.¹⁶⁵

Pulling arrangements must have sufficient capacity to pull a ship onto the impermeable ground above the drainage channel. The EU inspections found that not all yards had sufficient capacity to pull vessels above the drainage channel, or were not considering all



View of pulley systems

Source: Site Inspection Report of Ege Gemi (25.1.2022)



Pulley arrangement

Source: Site Inspection Report of Blade (13.1.2023)

¹⁵⁷ ‘Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques’ (n 29) p.65.

¹⁵⁸ Çevre ve Orman Bakanlığı, numbered 6033 and dated 23.3.2010.

¹⁵⁹ ‘Perspectives on Green Transformation and Blue Opportunities in Izmir’ (n 83) p.77.

¹⁶⁰ Ibid p.77.

¹⁶¹ ‘Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques’ (n 29)

¹⁶² While some yards use the company of AFS for the periodic checks (EU Site Inspection Report of Avşar (8.7.2020) p. 34; EU Site Inspection Report of Anadolu (15.1.2021) p. 34; EU Site Inspection Report of Şimşekler (20.3.2020) pp.31-32), some others revised contacted with Perkon. (EU Site Inspection Report of Öğe (06.1.2020) p. 22; EU Site Inspection Report of Temurtaşlar (2.2.2021) p.32; EU Site Inspection Report of Kılıçlar (10.10.2022) p. 26

¹⁶³ EU Site Inspection Report of Avşar (8.7.2020) pp. 34-35.

¹⁶⁴ According to the report of Anadolu, “[...] it could not be seen during the second inspection that the components of the pulling arrangements were individually identifiable marked and traceable in an inventory log. The applicant later explained the revised procedures for the management of ropes.” (EU Site Inspection Report of Anadolu (13.3.2023) p. 27)

¹⁶⁵ ‘İzmir’de tersanede çelik halat koptu: 2 işçi öldü’ <https://www.cumhuriyet.com.tr/haber/izmirde-ter-sanede-celik-halat-koptu-2-isci-oldu-1868422> Accessed 10 October 2023.

components in the pulling calculations,¹⁶⁶ leading the evaluators to request additional documentation on the capacity of modified components.¹⁶⁷ Some of the yard's equipment was also found to be deformed¹⁶⁸ and it was highlighted that damaged pulling equipment should be documented, addressed as an incident, and corrective measures be developed.¹⁶⁹ In one case, EU evaluators recommended that a facility obtain the services of an independent engineer to verify the design and capacity of the pulling system since the service supplier did not identify the damages in their own inspection.¹⁷⁰



Example of deformed pin and connecting plates in the pulling system arrangement

Source: Midterm Review Report of Sök (12.2022)



Crudely modified components in pulling system

Source: Midterm Review Report of Ege Çelik (12.1.2023)



Deformed shackle pin in pulling arrangement

Source: Site Inspection Report of Kılıçlar (10.10.2022)

¹⁶⁶ EU Site Inspection Report of BMS (19.09.2022) p.28; EU Site Inspection Report of Dörtel (5.6.2023) pp.32-35; EU Site Inspection Report of Kılıçlar (10.10.2022) p.28; EU Site Inspection Report of Ege Gemi (21.4.2023) p.27.

¹⁶⁷ Midterm Site Inspection Report of Ege Çelik (12.1.2023) p.16.

¹⁶⁸ Mid-term Review Report of Ege Çelik (12.1.2023), p. 16; EU Site Inspection Report of Kılıçlar (10.10.2022) p. 30; Midterm Review Report of Sök (December 2022) pp. 15-16; EU Site Inspection Report of Ege Gemi (21.4.2023) p. 24.

According to the first Report of Kılıçlar: "Parts of the wires were also found to be frayed and in poor condition. It was observed that there is no intrinsic redundancy in the system as is, and should a shackle fail completely, the results may be dramatic." During the second site inspection, it was observed that the equipment was being subject to repair and maintenance. The equipment was found in good condition. (EU Site Inspection Report of Kılıçlar (30.3.2023) p. 31).

The yard of Öge has been using up to four pulling arrangements to maneuver vessels onto the shore. Although these arrangements were generally in decent condition, some areas showed signs of overload and poor design, such as deformed shackles, mismatched shackles and padeyes, and wire rope connections that did not adhere to best practices. During the mid-term inspection, it was discovered that certain items of the pulling arrangements were in poor condition or damaged. The facility confirmed that these items were no longer in use. One notable finding was a damaged 200-ton shackle, but the facility could not provide an inspection certificate for it from an independent inspection company. The windlasses, which control the limits of the pulling arrangements, were regulated by measuring the revolutions of the associated motor, with the limits set at 1200 rpm. The evaluators requested documentation explaining how this limit was determined. The facility stated that the limit was established through calculations; however, the calculation reports were not readily available during the inspection. The facility mentioned that they would need permission from the company responsible for the calculations before sharing them. Subsequently, the facility provided details of the corrective actions they planned to take to replace the damaged equipment identified during the mid-term inspection. They also outlined how these actions would be incorporated into their working methods going forward. Additionally, the facility shared information about the load testing they conducted for two of the pulling arrangements. (EU Midterm Site Inspection Report of Öge (24.4.2023) pp. 15-17)

¹⁶⁹ EU Midterm Site Inspection Report of Sök (December 2022) pp. 15-16.

¹⁷⁰ EU Midterm Site Inspection Report of Ege Çelik (12.1.2023) p. 16.

Waste Management

The industry has in the past come under criticism from NGOs, labour rights activists, local media, and international observers for the lack of attention to the environmental risks associated with the removal, handling and disposal of hazardous materials found on-board end-of-life vessels. Although the industry has improved its performance over the years, there remain serious concerns, as illustrated by the examples outlined below.

authorities discovered a wide range of waste materials abandoned in Aliğa, including contaminated soil, life jackets, piping, and more.¹⁷¹ In later years, fines were imposed several times on SRAT and individual yards for lack of waste management plans; improper waste disposal, such as burying wastes underground;¹⁷² storing hazardous wastes incorrectly;¹⁷³ disposing contaminated soil without analysis; burning wastes and

Total Disposed Hazardous Waste*

Years	Hazardous Waste	Asbestos
2016	12.123 tons	2.150 kg
2017	16.552 tons	25.610 kg
2018	16.427 tons	13.960 kg
2019	18.553 tons	69.300 kg
2020	10.568 tons	130.950 kg
2021	23.454 tons	239.278 kg
2022	11.224 tons	267.855 kg
2023 (until August)	4.034 tons	1.369 kg

1. Dumping Sites

Irregularities in waste management by the ship recycling sector has raised concerns on numerous occasions, and incidents of negligence and non-compliance with environmental regulations have been extensively documented across multiple facilities. In 2006,

sending contaminated waste and potential hazardous waste to household waste storage areas.¹⁷⁴ Several criminal cases have also been filed based on facilities intentionally polluting the environment, including dumping oil and petroleum-derived materials into the sea, taking advantage of stormy weather conditions and the presence of waves for discharging wastes to

*The response of the Ministry of Environment dated 20.5.2021 numbered 955328, parliamentary question numbered 7/43968 of Murat Bakan.

¹⁷¹ İzmir İl Çevre ve Orman Müdürlüğü, decision dated 15.1.2007 numbered 2400-15.

As a result of the analysis made in the laboratory of Dokuz Eylül University, it was determined that the wastes had the characteristics of the waste that should be pre-treated before being stored in the hazardous waste storage area or stored separately in the hazardous waste storage area. In this sense, İzmir Provincial Directorate of Environment and Forestry fined SRAT with 300,000 TL in accordance with Article 20(v) of the Environment Law. The decision was upheld by the decision of the Council of State. (Danıştay 6. Dairesi E. 2008/1332 K. 2010/1366 T. 12.2.2010).

¹⁷² Decision dated 26/2/2014 numbered 140020 and Danıştay (Council of State) 14. D., E. 2015/9114 K. 2018/995 T. 28.2.2018.

¹⁷³ In 2013, 23 facilities were fined 3 Million 565 thousand TL, and two of the reasons for the fines were lack of waste management plans and disposal of wastes in violation. (Çevre ve Şehircilik Bakanlığı, ÇED İzin ve Denetim Genel Müdürlüğü, decision dated 04.10.2013 numbered 2013/103).

¹⁷⁴ A total of 121.908 TL fine (dated 04.10.2013 and numbered 94) was imposed to yards in 2013, because the wastes generated during the operation were sent to the Harmandalı Solid Waste Storage Area without analysis, although it was obligatory since the waste was including contaminated soil and potentially hazardous waste. The penalty was upheld by the Council of State (Danıştay 14. D., E. 2015/10521 K. 2016/257 T. 22.1.2016).

the sea, and the illegal burning of plastic, rubble pieces, wood, paper, cloth, and various other ship wastes.¹⁷⁵

A 2019 report by the Ministry of Environment stated that the open burning of materials, including cables, released harmful emissions and posed a significant danger in the region.¹⁷⁶ In September 2022 the Izmir Directorate of the Ministry of Environment informed the EU evaluators that burning cables remained a concern,¹⁷⁷ and an EU inspection report dated June 2023 underscores the ongoing practice of burning cables to remove the insulation in order to sell the remaining metal.



Debris onboard the vessel being dismantled
Signs of fires were present
Source: Site Inspection Report of Dörtel (5.6.2023)

During interviews for this report, workers also highlighted irregularities:

“When the ship arrives, a certain part of the waste is packaged and collected. But these correspond to only 10 percent of the total waste of the ship. After a while they say that’s enough, the rest is buried somewhere. Sometimes it is burned. If there is stormy weather, they dump it into the sea. Metal parts are also thrown into the sea.”

“The cables get burned sometimes. We try to stay away while burning, but you’re still exposed to that smoke. Garbage is also burned. We also see it being burned at the neighbour sites. Even if I don’t burn it myself, the smoke affects everyone.”

“The oil is poured into the sea, and the fire foam is put on it so that the oil is covered up and dispersed with pressurized water. We’ve seen this in many yards”

“When we start the cutting, paint chips fall into the sea. No basket or anything. It goes to the sea as it is.”

“The water accumulated in the drainage is poured into the sea by a pump. Only the oil accumulated on the top is transferred to the tank.”

“There is also cable burning, we are burning it.”

Furthermore, as previously mentioned, spatial analyses of the area show the presence of dumping sites in close proximity to the ship recycling facilities.

“When the ship arrives, a certain part of the waste is packaged and collected. But these correspond to only 10 percent of the total waste of the ship. After a while they say that’s enough, the rest is buried somewhere. Sometimes it is burned. If there is stormy weather, they dump it into the sea. Metal parts are also thrown into the sea.”

¹⁷⁵ Yargıtay 4. CD E. 2013/13886 K. 2014/35412 T. 8.12.2014

Yargıtay 18. CD E. 2015/38082 K. 2017/9982 T. 2.10.2017

Yargıtay 4. CD. E. 2016/18461 K. 2018/15873 T. 27.11.2018

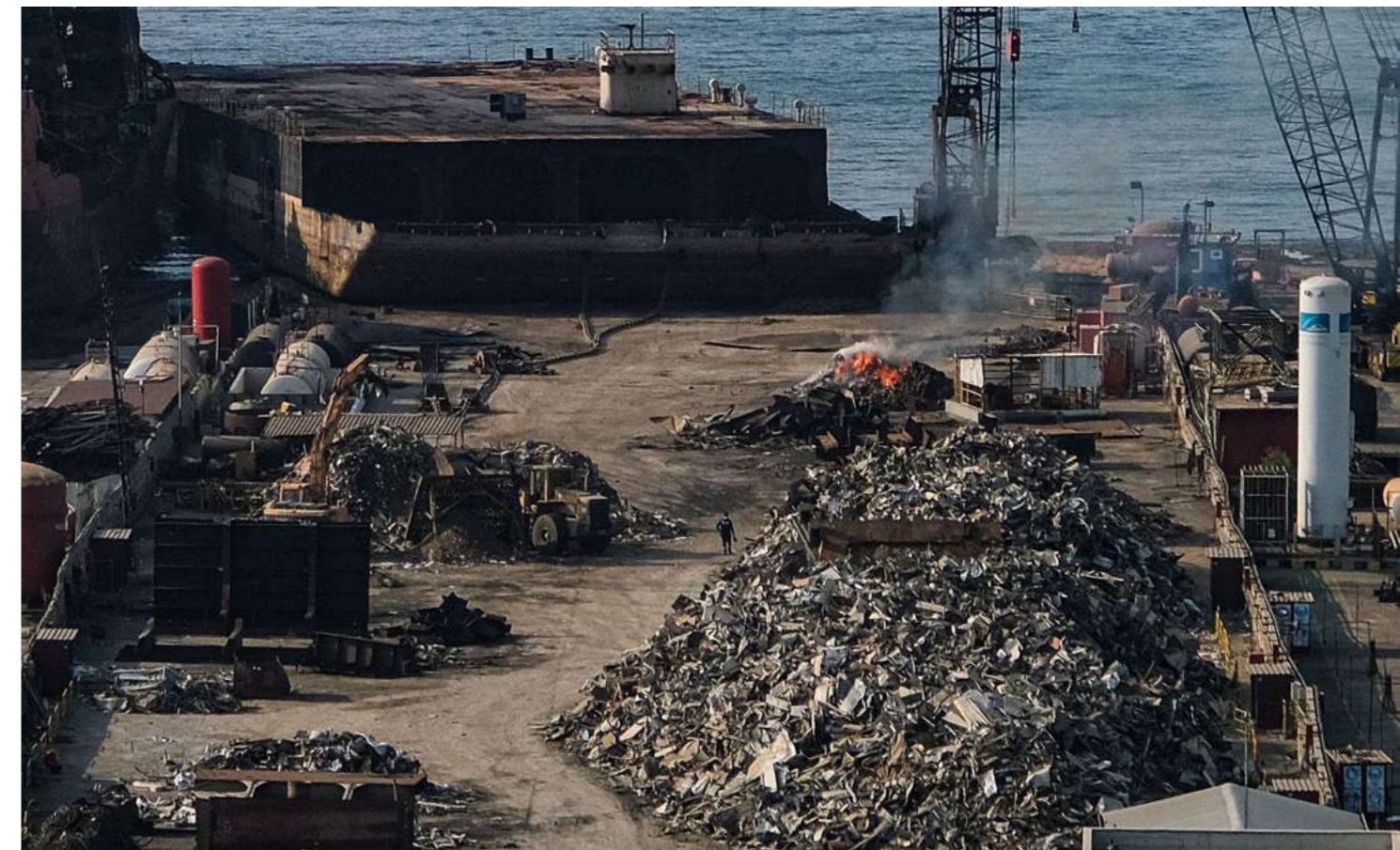
Yargıtay 4. CD 2013/12181 K. 2014/34249 T. 26.11.2014

¹⁷⁶ ‘Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques’ (n 29) 66

¹⁷⁷ EU Site Inspection Report of Dörtel (5.6.2023) p. 20



Dumping sites, May 2022



Open burning

Credit: Vedat Örüç, August 2023

Timeline of the Dumping Areas

2006



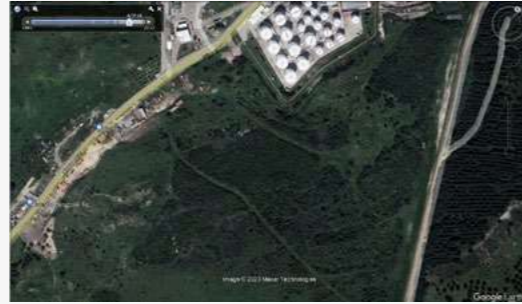
2013



2022



2018



2023



Zoom in



2021



2023



2013



2023



2. Pros and cons of dissolving the centralised system

In 2004, a centralised, special waste management system was established for the ship recycling sector in Aliaga. SRAT was granted authorisation by the Ministry of Environment to conduct the detection, removal,

collection, temporary storage, transportation to disposal/recycling facilities, and was given the responsibility to report on all hazardous wastes originating from ships. The facilities were thus not directly managing the removal or storage of hazardous materials. SRAT obtained the Asbestos Removal Permit in 2007 from the Ministry of Environment, which was renewed in 2010¹⁷⁸ (Annex 1), while the Waste Management Centre established by SRAT obtained a temporary storage permit in 2009 (Annex 2).¹⁷⁹

¹⁷⁸ Ministry of Environment and Forestry, dated 12.3.2007 numbered 14896.

Ministry of Environment and Forestry, Ship Dismantling Permit, dated 23.3.2010 numbered 6033.

¹⁷⁹ Directorate of Environment and Forestry, Temporary Storage Permit dated 11.11.2009 numbered 9.

The centralised role of SRAT and the activities of the Waste Management Centre were terminated with a circular of the Ministry of Environment, which then gave responsibility for all waste management to the individual facilities.¹⁸⁰ The Waste Management Centre was consequently dissolved in March 2021,¹⁸¹ leaving the yards with the responsibility for individual temporary storage areas and for arranging removal and disposal of hazardous materials.

Whilst it remains unclear under which specific legislation SRAT was issued a permit and monitored, concerns were raised as to whether SRAT had sufficient capacity to cater to the needs of 22 yards in Aliğa, encompassing tasks such as issuing IHM certificates and managing the removal and disposal of all types of wastes, including asbestos. Additionally, important considerations, such as the criminal and legal liability of SRAT were never specified.

During the initial EU inspections which led to the approval of eight ship recycling yards in Aliğa, the European Commission seemingly only assessed paperwork related to the functionality of SRAT and its role in managing ship recycling wastes. Concerns began to arise as findings from subsequent inspections questioned the capacity of SRAT, suggesting its limited number of workers have been insufficient to effectively serve all the ship recycling yards.

On the other hand, interviews and field visits conducted for this report also highlighted that the centralised system operated by SRAT provided coordination.

An expert who worked in the sector stated that: *“In fact, the waste management was done better in the central system by SRAT. When there was the Waste Management Centre of SRAT, facilities had to send at least some amount of, if not all, hazardous waste. Now the facilities provide their own contracts. They choose the person who will come for the removal of asbestos and the disposal facilities where they will send the hazardous waste. There is no one to control how they do it. Therefore, even*

if the disposal and waste management were not done completely properly when there was SRAT, it was better.”

Another expert stated that: *“Documentation on waste management was also more precise. SRAT provided coordination. It can be said with certainty that after the Waste Management Centre closed there was a gap and the facilities followed a worse waste management plan.”*

A worker stated that: *“I have been working in the ship recycling sector for many years. For a year or two, asbestos has never been found on paper. But of course, there is asbestos. We cut the asbestos-contaminated scrap as if it is a normal piece. They used to come from the SRAT for asbestos removal. But since they changed the system, no one is coming.”*

Another worker stated that: *“Asbestos exists a lot on older cruise ships. In the past, SRAT used to come and remove it. There is no team now. Sometimes we observe the asbestos during the cutting.”*

The Customs and Trade Regional Directorate furthermore opposed the termination of the centralised system as they saw it as a way to ensure effective monitoring of fuel waste obtained from vessels (Annex 6). Ensuring diligent monitoring of fuels procured from end-of-life vessels was considered paramount by the Directorate, which strictly prohibited storing fuel waste at dismantling sites. Concerns raised by the Customs and Trade Directorate related to the dissolving of the centralised system included the potential for abuse and illicit financial gains.¹⁸² The Directorate strongly emphasised that the Ministry of Environment should issue a specialised waste management communication specifically addressing the ship recycling sector.

3. Inventory of Hazardous Materials

An Inventory of Hazardous Materials (IHM), is a document that identifies and provides detailed information

about the hazardous materials present in a ship. It plays a crucial role in ensuring safe and environmentally sound ship recycling practices.

Ship owners are required to provide an overview of hazardous materials according to the Basel Convention and EU SRR. Upon arrival at the dismantling destination, ships should thus already hold a valid IHM. However, it is common practice for ship recycling facilities to also conduct their own verifications prior to and during the dismantling operations. To ensure accuracy, ship recycling yards should conduct thorough sampling throughout the dismantling process, as the ship owner’s IHM might omit materials that only become evident during recycling.

One misconception presented in domestic public documents is that ship recycling facilities have the responsibility of “issuing” the IHM. The import of ships lacking IHMs is a violation of the EU SRR and Basel Convention which mandates the presence of a full inventory of all hazardous materials on-board and contained within the structure of the end-of-life ship as part of the Prior Informed Consent (PIC) procedure.

For the purpose of verifying the IHM, ship recycling facilities can refer to the İzmir Provincial Directorate of Environment and Urbanization’s ‘Instruction on the procedure to follow in the preparation of the IHM.’ While the instructions are not publicly available, the Chamber of Environmental Engineers shares that the instructions outline the following procedure: the IHM should be prepared by a committee consisting of a

person appointed by SRAT, an environmental engineer working at the yard and an expert.¹⁸³ Domestic legislation, however, lacks clear reference as to when and how sampling and analysis to verify the IHMs should be conducted. The monitoring activities of the Ministry of the Environment only check paperwork to verify the existence of the IHM, and do not check the accuracy of any sampling and analyses. And, whilst EU evaluators raised concerns that SRAT (prior to 2021) did not conduct additional sampling on a regular basis and that the IHMs were evaluated by visual inspection only,¹⁸⁴ EU inspections have not systematically checked the new sampling procedures in the approved yards upon the dissolution of the Centralised System.

The EU evaluators have found several times in the latest inspections that the quantities of asbestos identified in the original IHMs were higher than those identified by the facility, without any justification, removal proof, or sampling and analysis to justify the reduction. They also questioned how the same person who provided a multitude of services to yards, including gas-free certificates, removal of hazardous materials and training to workers, had the capacity to additionally evaluate IHMs, raising concerns of possible conflict of interest.

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¹⁸⁰ İzmir Aliğa Gemi Geri Dönüşümü Sektör Analizi (n 3) p. 116.

¹⁸¹ ‘Duyuru’, Gemisander <<https://www.gemisander.com/cdn/MTYyNDNmMzMDJlMDM.pdf>> Accessed 15.3.2023.

¹⁸² Gümrük ve Ticaret Bakanlığı, Atıklar Görüş Talebi, numbered 131.01.01 dated 12.3.2016.

¹⁸³ ‘Gemi Söküm Faaliyetleri Ön Değerlendirme Raporu’ (n 51) p. 17.

¹⁸⁴ “It is unclear if any additional samples are taken by SRAT. For the vessel under dismantling, the IHM had been developed by SRAT by visual inspection only, which in the evaluator’s opinion, is inadequate [...] no analysis reports could be found in the received documentation. [...] it is not possible for the evaluators to confirm that additional sampling and analysis are conducted by SRAT on a regular basis.” EU Site Inspection Report of Ege Gemi (16.12.2020) pp. 47-48.

Similar approach towards the criticism of SRAT’s sampling procedure was expressed in the first site inspection report of Anadolu: “To identify hazardous materials, sampling is mainly required. The collaboration between the applicant and SRAT regarding identification is not entirely clear to the evaluators. Also, the sampling analysis report forwarded is three years old.” EU Site Inspection Report of Anadolu (15.1.2021) pp. 54-55.

The evaluators highlighted the same irregularity in the yard of Temurtaşlar: “the collaboration between the applicant and SRAT regarding sampling and analysis is not entirely clear to the evaluators. [...] it is not possible for the evaluators to confirm that additional sampling and analysis are conducted on a regular basis.” EU Site Inspection Report of Temurtaşlar (02.2.2021) p. 52.

“The evaluators have difficulties accepting IHMs from XXX due to the quality and accountability experienced.[...] The facility was asked to clarify how they will ensure reliable IHMs for all vessels to be recycled if they are listed on the EU list.”¹⁸⁵

“There appears to be discrepancies between the IHM prepared by the approved hazmat expert and the IHM prepared by SRAT. The changes are not traceable, nor could the facility present any documentation or sampling at the time of the inspection.”¹⁸⁶

During interviews conducted for this report, several people having worked in the sector in previous years stated that most yards do not conduct sampling and analysing:

“IHM is created mostly with eyes. What should be written and what should not be written on the document was decided without analysis.”

“Since all the employees work under the yard owner, it is impossible to carry out an IHM without the foresight of the facility owners. What they don’t want cannot be documented. In the end, they are part of the SRAT or they

The consequences of incomplete IHMs affect all steps of hazardous waste management. Not only will workers unknowingly be exposed to hazardous materials, but contaminated materials can enter the second-hand market or be directed towards steel plants, resulting in a substantial increase in exposure and air pollution throughout Izmir.

are paying the salary of the environmental engineer in the yard. Therefore, the IHMs coming out of the facility do not reflect the truth.”

Recent cases such as those of the aircraft carrier São Paulo and ILOS (so-called Gökhan HAN) illustrate how vessels are imported with IHMs that grossly underestimate the amount of asbestos-contaminated materials on-board, casting doubt on the veracity of waste declarations.¹⁸⁷ The consequences of incomplete IHMs affect all steps of hazardous waste management. Not only will workers unknowingly be exposed to hazardous materials, but contaminated materials can enter the second-hand market or be directed towards steel plants, resulting in a substantial increase in exposure and air pollution throughout Izmir.

4. Focus on Asbestos

When extracted, asbestos breaks into fine fibres, which can remain suspended in the air for long periods of time, putting anyone nearby in danger of inhaling or ingesting it. Airborne asbestos fibres can cause a variety of diseases when breathed, including lung cancer and mesothelioma, with an average lag time of 30 years between exposure and the onset of symptoms.¹⁸⁸ Secondary or indirect exposure can also be as dangerous as primary exposure.¹⁸⁹ Asbestos fibres can travel to the workers’ accommodation through clothes, lengthening exposure to the pollutant and exposing others living in the same location/household.

On ships, asbestos can be found in insulation, gaskets, and other components, posing a risk to those involved in the maintenance, renovation and recycling of the ship. It is thus crucial to handle asbestos-containing materials with extreme caution to prevent exposure and comply with relevant safety regulations.

The law in Turkey sets out clear procedures for asbestos removal and handling. Asbestos removal procedures

must follow the instructions and principles stated in the Regulation on Health and Safety Measures While Working With Asbestos.¹⁹⁰ According to the Regulation, removal of asbestos can only be done by asbestos removal workers and under the supervision of an asbestos removal specialist. Both the asbestos removal worker and specialist need to complete the training program approved by the Ministry of Labour and receive a course completion certificate.¹⁹¹

Before starting asbestos removal, facilities must prepare a work plan and notify the employment agency.¹⁹² The notification must include the amount and type of asbestos, planned starting date and estimated finishing date; number of workers; certificates of the workers and the specialist; and equipment that will be used.¹⁹³ The places adjacent to the asbestos removal location should be isolated, the area to be quarantined should be determined, and a negative pressure room should be created.¹⁹⁴ Exposure to asbestos should be measured during the work and the results of the measurements should determine the planning of the removal process. Moreover, asbestos removal activities cannot exceed four consequent hours, which should include the time needed to ensure hygiene.¹⁹⁵

After the asbestos removal, sampling and analysis of the surrounding environment should be conducted. The employer shall ensure that there is no risk of exposure to asbestos dust in the workplace and provide the measurement results in a document prepared by accredited laboratories¹⁹⁶ to the Provincial Directorate of Labour and Employment Agency.¹⁹⁷ The quarantine can end if the results indicate complete absence of asbestos. The employer is furthermore obliged to ensure health surveillance of the employees.¹⁹⁸ An occupational physician should assess the health status

of the employees, taking into account the risk assessment and measurement results, and repeating the lung radiographs at appropriate intervals according to the results of the assessment.

Whilst the above procedures are well outlined in domestic law, these procedures are not always duly applied in the ship recycling sector.

Lack of capacity and training

EU inspection reports had already expressed concerns regarding the limited capacity of SRAT to conduct asbestos removal while the association was responsible for the centralised Waste Management Centre: “According to information obtained on-site, SRAT has currently 3 people trained for asbestos removal. According to the qualifications listed on the SRAT homepages, two people are listed as asbestos specialists while 4 people are listed as asbestos removal training. [...] When interviewing workers, it became clear that most of the listed SRAT people are not known by workers at the facility. [...] it seems unlikely that the listed people frequently visit the yard for asbestos removal [...] Based on the numbers of employees listed on SRAT webpages it seems unlikely for SRAT to serve the 22+ yards in the Aliaga cluster of ship recycling facilities, particularly now due to the high ship recycling activity.”¹⁹⁹

Both before and after the closure of the Waste Management Centre, the EU inspection reports conclude that there is a lack of capacity and find that the involvement of untrained workers in asbestos removal is common practice in Aliaga.

According to Temurtaşlar’s EU report “during the inspection, it was explained that hazardous waste is handled by the facility’s own workers. When asked if the workers

¹⁸⁵ EU Site Inspection Report of Kılıçlar (30.3.2023) p. 47. The name is redacted in the EU report.

¹⁸⁶ EU Site Inspection Report of Dörtel (19.9.2022) p. 22.

¹⁸⁷ ‘ASUD ve EİB açıkladı: Asbestli ‘Gökhan Han’ gemisi Aliaga’da sökülüyor’ <<https://www.gazeteduvar.com.tr/asud-ve-eib-acikladi-asbestli-gokhan-han-gemisi-aliagada-sokuluyor-haber-1570570>> Accessed 23.10.2023.

¹⁸⁸ ‘Commission acts to better protect people from asbestos and ensure an asbestos-free future’ European Commission (28.9.2022) <<https://ec.europa.eu/social/main.jsp?langId=en&catId=89&furtherNews=yes&newsId=10418#navItem-relatedDocuments>> Accessed 16.2.2023.

¹⁸⁹ ‘Secondary Asbestos Exposure & Mesothelioma’ <<https://www.asbestos.com/exposure/secondary/>> Accessed 21.3.2023.

¹⁹⁰ Asbestle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik (n 56).

¹⁹¹ Ibid Article 4.

¹⁹² Ibid Article 9.

¹⁹³ Ibid.

¹⁹⁴ Ibid.

¹⁹⁵ Gemi Söküm İşyerleri İş Sağlığı ve Güvenliği Sektör Kılavuzu (n 89) p. 39.

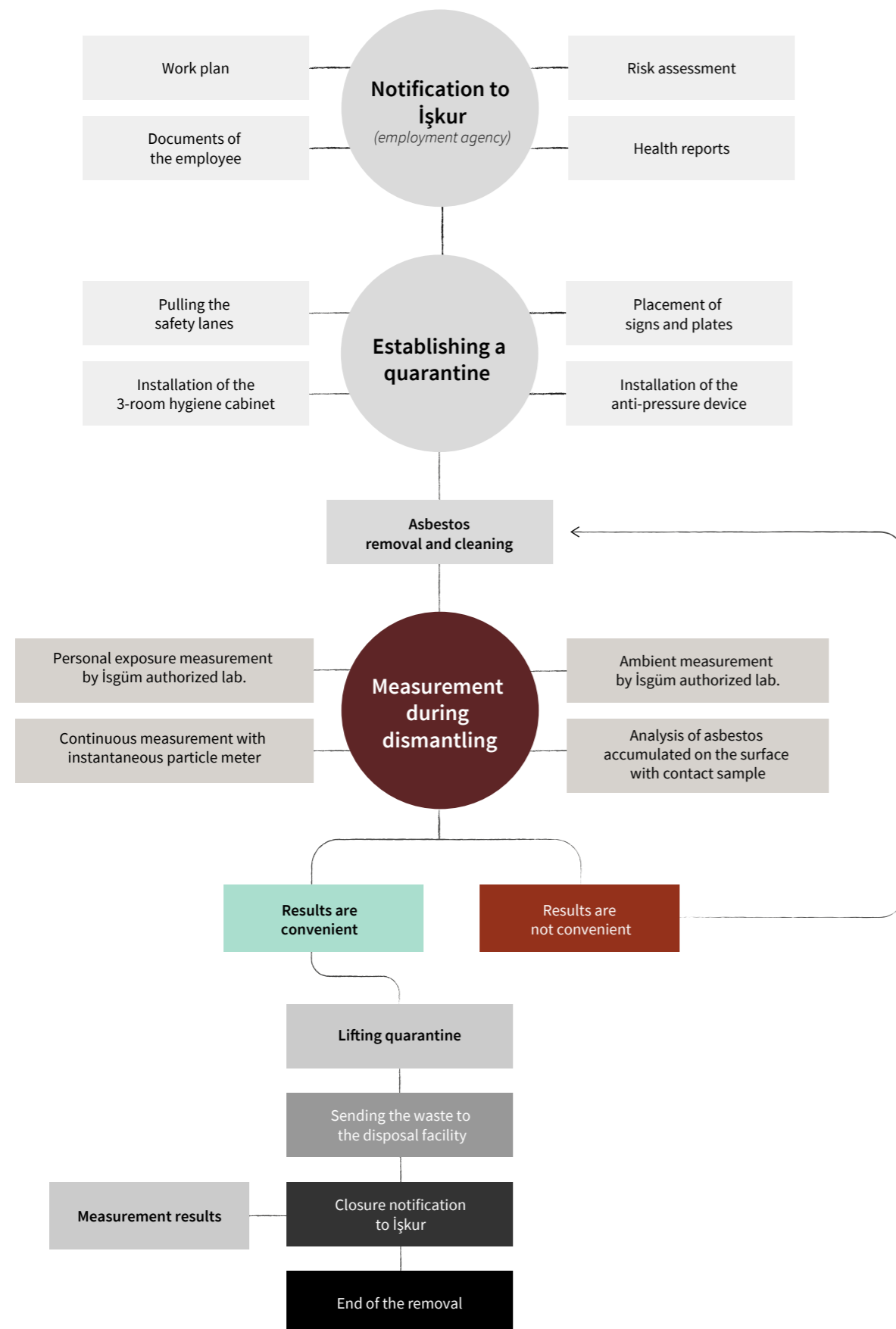
¹⁹⁶ Asbestle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik (n 56) Article 9/4.

¹⁹⁷ Ibid.

¹⁹⁸ Ibid Article 16/1-a.

¹⁹⁹ EU Site Inspection Report of Anadolu (15.1.2021) pp. 49-51.

Asbestos Removal Procedure According to Domestic Law



had been trained the yard replied that they had not been trained.²⁰⁰ [...] the evaluators have been informed by several workers at the ship recycling facilities that it is common in Aliaga that the yards' own workers are involved in asbestos removal. [...] information received is contradictory and confusing".²⁰¹

According to the first EU inspection report of Anadolu, the IHM of one dismantled vessel had identified asbestos onboard. "When asked to see the documentation that the asbestos had been removed from the vessel, a waste disposal report could not be provided. [...] Based on all the information received during the site inspection, the evaluators concluded that it was very likely that facility workers were involved with asbestos removal."²⁰²

Similarly in Ege Gemi's first report: "[...] it was explained that hazardous waste is also handled by the facility's own workers, including removal of asbestos. When asked if the workers had been trained, the yard replied that they had not been trained."²⁰³

In the first report of Kılıçlar: "From the reports and the photos, the evaluator's understanding is that the facility's own workers have been involved in asbestos removal onboard the vessels."²⁰⁴

In the report of Blade: "During the inspection, it was clear that the facility's own workers are involved with asbestos removal. Initially, the applicant stated that only a third-party removes asbestos. [...] The facility eventually admitted that the asbestos was removed by their own workers. It was also stated on site that these workers are not trained, nor authorised to remove asbestos as required by Turkish requirements."²⁰⁵

During the mid-term report review of Ege Çelik, it was unclear how many workers had received training.²⁰⁶

In the most recent inspection report of the Dörtel, it was found that workers were involved in asbestos removal, but it could not be determined what kind of training they had received in this regard.²⁰⁷

In January 2023, the Black Sea reported that workers of the yard Kılıçlar received minimal training just a few hours before the arrival of an asbestos laden ship. Managers forced the workers to sign a certificate calling them "asbestos removal workers" and assigned them to remove the asbestos on the ship. While the training was conducted in-house, the information was shared that the workers had received only a dust mask for protection. Footage of the situation was captured by a worker.²⁰⁸

An interviewed worker claimed that "The people who remove the asbestos are actually a group of workers



Footage captured by a worker
Credit: The Black Sea

²⁰⁰ EU Site Inspection Report of Temurtaşlar (2.02.2021) p. 31.

²⁰¹ EU Site Inspection Report of Temurtaşlar (2.02.2021) pp. 48-49.

²⁰² EU Site Inspection Report of Anadolu (15.1.2021) p. 50.

²⁰³ EU Site Inspection Report of Ege Gemi (16.12.2020) p. 26.

²⁰⁴ EU Site Inspection Report of Kılıçlar (10.10.2022) p. 44.

²⁰⁵ EU Site Inspection Report of Blade (13.1.2023) pp. 32-33.

²⁰⁶ EU Midterm Review Report of Ege Çelik (17.7.2023) p. 14

²⁰⁷ EU Site Inspection Report of Dörtel (5.6.2023) p. 49.

²⁰⁸ Zeynep Şentek and Vedat Örüç 'Shipbroken: EU inspectors ignore lethal practices at Turkish shipyards' (October 2023) <<https://theblacksea.eu/stories/shipbroken-lethal-practices/>> Accessed 5.10.2023.

called 'lumberjacks'. They buy the furniture before the dismantling begins. They are not shipbreaking workers. These are usually construction workers.”

Another worker claimed that “These teams sell items such as tables and chairs from the ship, and at the same time, asbestos and glass wool removal is done by them. They are day workers without any training. Or, there are second hand dealers of other materials who conduct the removal as a team. They buy and sell especially wooden materials from the ship and do all the asbestos removal work.”

According to the law in Turkey, removal of asbestos can only be conducted by the asbestos removal workers who have attended a training approved by the Ministry of Labour. Whilst it is common practice that workers without any training are involved in asbestos removal, when trainings are provided they are not always in line with law. For example, several trainings for asbestos removal are provided by the yard itself, SRAT, or an asbestos removal specialist.²⁰⁹ According to the regulation, the trainings are valid only if they are provided by public institutions and organisations,²¹⁰ worker and employer unions, professional organisations with public institution status, and institutions authorised by the Ministry of Labour for occupational medicine and workplace safety specialist training.

Despite the above findings, yards report that asbestos removal is conducted mostly by service providers.²¹¹ The main responsible person, who acted as an asbestos removal expert also for SRAT, continues to provide services for various yards, including asbestos removal, through the company Okyanus.²¹² EU reports have repeatedly questioned the accountability and transparency of this company’s work due to potential conflict of interest.²¹³ Several experts and workers interviewed for this report corroborated these concerns.

In many reports, the EU evaluators furthermore found that although a facility had contracted with an external company for asbestos removal, the involvement of the contracted company was limited to shoreside activities, whilst the removal on-board the ship was done by the workers as outlined above. Moreover, in several cases, it was not even clear who had removed the asbestos.

According to the first report of Kılıçlar: “it is stated in the asbestos removal report that asbestos was removed under the supervision of an asbestos expert. All photos indicate that the asbestos removal companies have been involved on the shore side only. None of the reports

include photos onboard the vessel. From the reports and the photos, the evaluators’ understanding is that the facility’s own workers have been involved in asbestos removal onboard the vessels and that the asbestos containing materials have been transported by the facility workers to shore, while the asbestos was packed by the asbestos removal company on the shore side. [...] The facility has not demonstrated that its workers are trained and authorised for such works, nor is it known if the workers are equipped with sufficient protective equipment to perform such works.”²¹⁴

²⁰⁹ Asbestos awareness training course certificates for the asbestos team members of the yard BMS were provided to the evaluators. The applicant was requested to explain how it decided on the level of training that was required for its “asbestos removal team” and how this is monitored to ensure that the level of training is sufficient. Subsequently, the applicant has advised that it is their Asbestos Expert who is deciding on the level of training required. (EU Site Inspection Report of BMS (19.9.2022) p. 41). It was mentioned during the site inspection that the facility’s workers may also provide assistance in the removal of asbestos. (EU Site Inspection Report of BMS (19.9.2022) p. 40) In this case, there was no information about the structure of the trainings. The second report of BMS, observed that workers involved in asbestos removal received 6 hours of training from an institution verified by the Ministry. (EU Site Inspection Report of BMS (27.3.2023).)

²¹⁰ Asbest Söküm Programlarına İlişkin Tebliğ, Official Gazette Date: 29.6.2013 Number: 28692 <<https://www.resmigazete.gov.tr/eskiler/2013/06/20130629-2.htm>> Accessed 11.4.2023.t

²¹¹ Currently, Okyanus Çevre, Turkaş, Sekoya and Yılmaz are the monitored service providers.

²¹² EU Site Inspection Report of BMS (19.9.2022) p. 19.

²¹³ EU Site Inspection Report of Kılıçlar (30.3.2023) p. 47; EU Site Inspection Report of BMS (27.3.2023) p. 42; EU Site Inspection Report of Blade (26.5.2019) p. 31.

²¹⁴ EU Site Inspection Report of Kılıçlar (10.10.2022) p. 44.

According to the report of Blade: “The applicant provided a report prepared by the asbestos removal company, but the report states that this company only packed the asbestos on-site. Furthermore, the invoice of approximately 4000TRY (approximately 200 Euro) suggests that the company did not board the vessel and removed + 500 kg of asbestos. The IHM states that asbestos were found all over the vessel and at such, appropriate asbestos removal is time consuming.”²¹⁵

Mid-term report of Sök: “The facility forwarded asbestos removal reports [...] It is observed that in both reports the photos are from the shore-side only. It is described that the asbestos was dismantled under the supervision of an asbestos expert, but it is not clear who removed the asbestos-containing parts from the ships. The evaluators are aware of the practice in several facilities in Aliağa where the facilities own workers are involved in removing asbestos containing parts from the vessel, while the asbestos removal company is involved in the shoreside activities only.”²¹⁶

According to the mid-term report of Ege Çelik: “The report includes photos from the shoreside only. The evaluators are uncertain if these photos are representative for this project as by experience [...] use illustrative photos in their reports.”²¹⁷

Workers interviewed during our research also shared troubling accounts. One worker stated, “I was in the asbestos removal team for a while. For the photo shoot the clothes and all the Personal Protective Equipment were put on. After the pictures, we removed the asbestos without equipment. I have friends in other yards and I know that they remove asbestos with their normal clothes by hand or with a crane.”

Contradicting documents and amounts of asbestos

The amount of asbestos contained in the end-of-life ship can be found in its IHM and in the notification submitted to Ministry of Labour,²¹⁸ while the asbestos removal report states the amount of asbestos that was sent to the disposal facility. In recent EU inspection reports, evaluators have started to scrutinise the notifications and compare the three documents. It was discovered that the documents often contradicted each other, and that justification for these discrepancies was lacking. Moreover, it was observed that notification to the Ministry of Labour was not always available.

During the first inspection of Kılıçlar, the evaluators stated that “Based on the documents received, it appears that the applicant has not dismantled vessels with asbestos onboard since September 2021 [...]. It is found that there are discrepancies between the amount of asbestos in the IHM, Iskur notification and the asbestos removal report for all three vessels. Furthermore, it is noted that it is stated in the asbestos removal report that asbestos was removed under the supervision of an asbestos expert.”²¹⁹

Workers interviewed during our research also shared troubling accounts. One worker stated, “I was in the asbestos removal team for a while. For the photo shoot the clothes and all the Personal Protective Equipment were put on. After the pictures, we removed the asbestos without equipment. I have friends in other yards and I know that they remove asbestos with their normal clothes by hand or with a crane.”

²¹⁵ EU Site Inspection Report of Blade (13.1.2023) p. 33.

²¹⁶ EU Midterm Site Inspection Report of Sök (12.2022) pp. 11-12.

²¹⁷ EU Midterm Site Inspection Report of Ege Çelik (12.1.2023) pp. 12-13.

²¹⁸ According to the Regulation on Working with Asbestos, the amount of asbestos, the number of workers and their certificates, planning of the removal, and analyses after the removal should be notified to the Ministry of Labour before starting the removal.

²¹⁹ EU Site Inspection Report of Kılıçlar (10.10.2022) pp. 43-44.

Vessel	Asbestos in IHM (kg)	Asbestos in Iskur notification (kg)	Asbestos in asbestos report(kg)	Invoice in TRY
[REDACTED]	7.5	7.5	48.8	1770 (~105 EUR)
[REDACTED]	90	30	20	2000 (~120 EUR)
[REDACTED]	200	30	140	4250 (~250 EUR)

Source: EU Site Inspection of Kılıçlar (10.10.2022)

The amount of asbestos found in the documents for the three different ships are summarised in the table above:

The discrepancies between the amount of asbestos identified in the IHM, the amounts identified in the notification made to the Ministry of Labour and Social Security and the amounts disclosed in the asbestos removal reports are especially worrying because the yard was unable to provide justification for these discrepancies as no sampling had been conducted.

The mid-term report of Öge found that although an IHM report, prepared by a well-recognised hazmat expert, identified 500 kg of asbestos contaminated materials, SRAT reported that there was no asbestos onboard,²²⁰ a conclusion that was unsupported by sampling, justification or documentation.

Vessel	Asbestos ref IHM	Invoice TRY	Date of Invoice
[REDACTED]	50 kg	2000	25.05.2021
[REDACTED]	311 kg		
[REDACTED]	200 kg	Not ship specific	24.12.2020

Source: EU Site Inspection of BMS (27.3.2023)

In the second EU inspection report of BMS, the facility was requested to forward additional documentation for asbestos removal onboard three vessels. *“The IHM reports prepared by SRAT do not appear to contain sampling and as such not found to be developed in accordance with the EU SRR. [...] It is observed that the amount of asbestos was reduced from 311kg to 20 kg for one vessel without any justification or documentation. [...] In*

March 2023 the facility forwarded additional clarification stating that they will only accept ships with Recognised Organisation (RO) approved IHM reports and will refrain from purchasing ships without RO approved IHM. This is considered adequate.”²²¹

According to the updated mid-term Report of Sök, the evaluators found inconsistencies in the IHM reports submitted by the facility. The original IHM report stated the presence of over 100 kg of asbestos in insulation gaskets, whereas the IHM issued by the facility mentions lower amounts of asbestos. The facility provided documents related to the disposal of asbestos from the vessel, including transport receipts and confirmations. While the documentation clarified some discrepancies, there were still inconsistencies in the reported

amounts of asbestos. The receipt of the transportation to disposal facility stated 340 kg asbestos, whereas online waste tracking system referred to only 40 kg of asbestos.²²² When the evaluators asked for explanations, it was stated that the remaining amount (300 kg) had been sent under the name of another ship.

²²⁰ EU Midterm Review Report of Öge (24.4.2023) p.10.

²²¹ EU Site Inspection Report of BMS (27.3.2023) pp. 4-43.

²²² EU Midterm Site Inspection Report of Sök (14.6.2023) pp. 11-14.

Vessel	Asbestos ref IHM	Invoice TRY	Invoice EUR	Date of Invoice
[REDACTED]	700 kg	13.000	705	18.04.2022
[REDACTED]	300 kg	2500	135	23.09.2022

Source: EU Site Inspection of Dörtel (5.6.2023)

Moreover, some of the EU inspection reports highlighted the very low amounts in the invoices issued for asbestos removal. According to the Midterm Report of Ege Çelik: *“The invoice for removal of the asbestos is TRY 4000 which equals approximately 220 EUR. [...] The evaluators find it unlikely that 4300 kg asbestos onboard the vessels have been removed in a safe way onboard for 220 EUR.”²²³* Similarly in Kılıçlar, the evaluators concluded that *“The invoices of between 1700 TRY and 4250 TRY also indicate that the involvement of the asbestos companies has been limited.”²²⁴* The additional documentation and invoices issued by the service supplier of Dörtel also could not justify the time and resources required for adequate asbestos removal.²²⁵

Concluding Remarks

Asbestos removal in Aliğa has been identified as deficient in multiple ways, including a lack of capacity and an inconsistent sampling practice that exacerbates the risk of misrepresenting quantities of asbestos at every stage of the process. There continues to be evident unqualified worker involvement in asbestos removal, and disposal procedures remain inconsistent with the law. Resolving these issues requires increased transparency, rigorous monitoring at the domestic level and collaboration between EU and domestic authorities.

The EU inspections have identified serious issues of non-compliance with the EU SRR at several facilities, yet some of these remain on the EU List. Facilities should not be allowed to brand themselves as EU compliant when non-compliance has been detected, and all non-compliant issues should be solved before approval is provided. More frequent and unannounced

inspections, and ways to suspend EU approval upon detection of non-compliance should be introduced.

5. Focus on NORM

Naturally Occurring Radioactive Material (NORM) can be found in oil and gas related assets, coating the interior of storage, transportation, and production equipment. NORM scale consists of radioactive elements that are present in the extracted oil and gas. The North Sea basin, in particular, has been identified as a significant source of NORM. In the last five years, at least 123 vessels from the oil and gas sector were dismantled in Aliğa.

According to the Law on Nuclear Regulation, radioactive wastes generated during an activity performed outside Turkey cannot be brought into the country.²²⁶ Moreover, radiation safety must be ensured at ship recycling facilities and a radiation protection officer is required for the detection and collection of radioactive parts at the facilities.²²⁷ The issue of properly managing radioactivity in Aliğa was raised following the dismantling of Kuito in 2015. Concerns had been raised that although the vessel reportedly contained high levels of radioactive waste, no proper radioactivity measurements had seemingly been conducted. As a result, a radiation measurement device was established by SRAT at the entrance of the ship recycling zone.

An expert who worked in the ship recycling sector stated that *“When Kuito arrived, it was quite a problem. Later, they put a metre on the way out of the facilities. Measurements are made as the scraps pass there, but it is not clear how reliable this measurement is. Besides, the*

²²⁴ EU Midterm Site Inspection Report of Ege Çelik (12.1.2023) p. 12-13.

²²⁵ EU Site Inspection Report of Dörtel (5.6.2023) p. 49.

²²⁶ Nükleer Düzenleme Kanunu, no.7381, Official Gazette Date: 8.3.2022 Number:31772, Article 9(1).

²²⁷ ‘Radyasyon Güvenliği İle İlgili Temel Bilgiler’ Nükleer Düzenleme Kurumu <<https://www.ndk.org.tr/radyasyon-guvenligi-ile-iligili-temel-bilgiler>> Accessed 29.6.2023.

ship is already dismantled before the scrap goes there. Before going to the iron and steel companies, two-stage measurements need to be made. But I don't think they are supervised by any organisation.”

Another expert who worked in the ship recycling sector stated that “Normally, radioactive waste is forbidden to come as per international regulations. The NORM should be removed before the arrival. But when it arrives, no special procedure is applied. I have never seen it.”

In addition, in the EU inspection report of Kılıçlar, it was stated that “all other radioactive substances would be removed by the Turkish Atomic Energy Agency.”²²⁸ However, there is no official collaboration between TENMAK and the ship recycling facilities for the removal of radioactive wastes.²²⁹ The facilities are only required to send the radioactive wastes to TENMAK which ensures the acceptance, storage, and safe disposal of radioactive waste, not the removal from the ship.

6. Focus on Mercury

Mercury is used in fluorescent light bulbs, paints, batteries, electrical switches, and scientific instruments such as thermometers and barometers, while mercury is also a naturally occurring element present in virtually all oil and gas fields. Like NORM, mercury can contaminate the hydrocarbon processing and storage equipment of offshore units and ballast waters. Mercury is considered one of the top ten chemicals of major public health concern by the World Health Organisation. Exposure to low levels of mercury vapour can cause serious health problems. Exposure to high levels can deeply harm the nervous, digestive and immune systems and organs like lungs and kidneys.

Despite the known dangers related to handling mercury, little is known regarding the cleaning procedures at the ship recycling facilities. There is no management



Credit: Doğu Eroğlu, May 2023

²²⁸ EU Site Inspection Report of Kılıçlar (30.3.2023) p.24.

²²⁹ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques' (n 29) p. 52.

plan found specifically for mercury, and all of the interviewees stated that the facilities had no process or management method for mercury.

Sea2Cradle, a consultancy providing services in ship recycling yards in Turkey, recommends that “NORM and mercury must be cleaned before the arrival of the ship to Aliğa”.

Mercury cannot be removed from the steel mill scrap feed after the recycled material has been crushed or shredded, which means that materials need to be decontaminated at an early stage of the recycling process.²³⁰ If mercury is not identified prior to scrapping, risks for workers and the environment are high. Heating contaminated scrap via the use of blow torches causes mercury to vaporise, posing a risk of occupational exposure.²³¹ Mercury emissions in steel facilities are also a concern as recycling mercury-contaminated steel can release gas, particles, and dust.

7. Management of Other Hazardous Wastes

Ships contain various other hazardous materials, including PCBs, ODS, toxic paints and coatings, operationally generated waste, PFOs, heavy metals, E-waste, mercury, and NORM. Adequate information and procedures are available for asbestos removal and disposal, even if not always followed. However, when it comes to other hazardous materials, there is a lack of comprehensive domestic requirements related to their removal and disposal for the ship recycling sector.

During the Centralised System, the EU inspections did not check in detail how SRAT was managing the hazardous wastes, but only stated in the EU inspection reports that “the facilities did not manage any hazardous waste. This is only conducted by SRAT.”²³² Whilst the annual reports of SRAT dated 2017-2020 state that there were no hazardous chemicals (PCB-HBCCD-FSPO-PCN TBT, etc.) above international threshold limits in ships arriving,²³³ the claim lacks credibility due to the absence of regular sampling and analysis. Without proper sampling and analysis, it is impossible to accurately determine the presence or absence of dangerous chemicals in these vessels.

Adequate information and procedures are available for asbestos removal and disposal, even if not always followed. However, when it comes to other hazardous materials, there is a lack of comprehensive domestic requirements related to their removal and disposal.

After the Waste Management Centre was closed, several of the EU-approved facilities have been audited again during their mid-term review. However, the mid-term review reports do not include any information about how these facilities are managing a wide range of hazardous wastes.²³⁴ The only hazardous substances that seem to have been scrutinised in the mid-term reviews are asbestos and ODS.

²³⁰ 'Handheld XRF Technology Determines Surface Mercury Contamination' <<http://www.thermoscientific.com/content/dam/tfs/ATG/CAD/CAD%20Documents/Application%20%20Technical%20Notes/Portable%20Analyzers%20for%20Material%20ID/Handheld%20XRF/Mercury-Contamination-App-Note.pdf>> Accessed 18.4.2023.

²³¹ Molly E. Finster, Michelle R. Raymond, Marciene A. Scofield, and Karen P. Smith, 'Mercury-Impacted Scrap Metal: Source and Nature of the Mercury' p. 1 <<https://t.ly/zGhAO>> Accessed 18.4.2023.

²³² “PCB containing waste above 50 mg/kg is delivered to İzaydaş for incineration. Information regarding İzaydaş has been provided. It is described that wastes are incinerated at a temperature range between 1000° C and 1200° C in a Rotary Kiln.”

“Ozone depleting substances are removed by licensed experts, and temporarily stored before sent to disposal at İzaydaş, and reportedly incinerated at a temperature range between 1000° C and 1200° C in a Rotary Kiln.”

“Paints and coatings are sent to Süreko where it is transformed to residual derived fuel for the cement factories.

All liquid waste such as sludge, bilge, remaining bunker, drained water etc. are collected and mixed in temporary tanks at the “SRAT facility prior to further handling. The liquid is sent to İzaydaş or the cement factories to be used as a fuel additive.”

For material containing PFOS below 50mg/kg, including firefighting foam, the waste will be used in RDF process at Süreko. For material containing PFOS above 50mg/kg, including firefighting foam, the waste will be sent for incineration at İzaydaş”

“The metals are separated for metal recovery. For example, lead batteries are recycled and lead reused. Fluorescent tubes and other mercury containing waste are sent to Süreko. Süreko collect mercury gases in special tubes while the glass materials are sent to landfill.”

²³³ Gemi Geri Dönüşüm Sanayicileri Derneği 2017 Sektör Raporu, p. 12; Gemi Geri Dönüşüm Sanayicileri Derneği 2018 Sektör Raporu, p. 13; Gemi Geri Dönüşüm Sanayicileri Derneği 2019 Sektör Raporu, p. 16; Gemi Geri Dönüşüm Sanayicileri Derneği 2020 Sektör Raporu, p. 18.

²³⁴ EU Site Inspection Report of Dörtel (05.6.2023) p. 23; Midterm Site Inspection Report of Leyal Demtaş (04.7.2022) p. 13; EU Site Inspection Report of Kılıçlar (10.10.2022) p. 24; EU Site Inspection Report of Anadolu (15.1.2021) p. 32; EU Site Inspection Report of Ege Gemi (16.12.2020) p. 26.

Waste Management Practices of EU Reviewed Yards

Date of the Report	Type of The Report	Name Of The Yard	Asbestos	PCB	ODS
March 2023	Site Inspection Report	Anadolu	Third Party	PCB over 50 ppm is handled by SRAT while PCB below 50 ppm is handled by the facility's waste team	ODS gas in systems is collected by an authorized cooling gas specialist and ODS containing foam is removed by the applicant's waste team
January 2023	Site Inspection Report	Blade	Initially the yard stated that third party removes asbestos but eventually the facility admitted that asbestos removed by their own workers	PCBs are said to be removed and temporarily stored by the applicant's workers under the supervision of an Environmental Engineer and Dangerous Goods Specialist	ODS containing material in tubes and cooling systems was said to be removed by the service company. ODS in other forms said to be removed by the facility's employees
March 2023	Site Inspection Report	BMS	Asbestos is removed Under the supervision of third party. The yard has its own asbestos team consisting of 5 workers	PCBs and materials containing PCBs are removed and temporarily stored by the facility.	ODS containing material in tubes and cooling systems is removed by a third party. ODS in other forms is removed by the facility's employees
September 2022	Site Inspection Report	Dörtel	Third Party	PCBs are removed and temporarily stored by the facility	ODS containing material in tubes and cooling systems is removed a third party. ODS in other forms (e.g. foam and insulation) is removed by the facility's employees
July 2023	Midterm Review Report	Ege Çelik	Third Party	No Information	No Information
April 2023	Site Inspection Report	Ege Gemi	Third Party	PCB is handled by the facility's waste team	Third Party

Paints and Coating	Operationally Produced Waste	PFOS	Heavy Metals	Other Hazardous Waste
Removed by hand scraping prior to hot cutting	No Information	No Information	Equipment containing heavy metals is removed by the applicant's workers	Removed by the applicant's workers
Removed and temporarily stored by yard's waste team	Removed and temporarily stored by the facility's waste team	No Information	Removed and temporarily stored by the yard's workers	Removed and temporarily stored by the yard's workers
Removed and temporarily stored by the facility	All operationally generated wastes from the vessel are removed and temporarily stored by the facility	All liquids from vessels are removed and temporarily stored by the facility	All heavy metals are removed and temporarily stored by the facility	All other hazardous waste are removed and temporarily stored by the facility
Removed and temporarily stored by the facility	All operationally generated wastes from the vessel are removed and temporarily stored by the facility	All liquids from the vessel are removed and temporarily stored by the facility	All heavy metals are removed and temporarily stored by the facility	All other hazardous materials are removed and temporarily stored by the facility
No Information	No Information	No Information	No Information	No Information
No Information	No Information	No Information	Heavy metals are mainly handled by the facility's workers	Other hazardous materials in Annex II are mainly handled by the facility's workers

Waste Management Practices of EU Reviewed Yards

Date of the Report	Type of The Report	Name Of The Yard	Asbestos	PCB	ODS
Sept. 2022	Midterm Review Report	Işıksan	No Information	No Information	No Information
March 2023	Site Inspection Report	Kılıçlar	Third Party	PCBs are removed by workers under the supervision of the in-house environmental engineer	ODS containing material in tubes and cooling systems is removed by a third party. ODS in other forms are removed by the facility's employees
July 2022	Midterm Review Report	Leyal	Service company assisted by the facility's workers who have received asbestos training	No Information	Service company for gaseous ODS removal
August 2022	Midterm Review Report	Leyal-Demtaş	Service company assisted by the facility's workers who have received asbestos training	No Information	Service company for gaseous ODS removal
April 2023	Midterm Review Report	Öge	No Information	No Information	No Information
June 2023	Midterm Review Report	Sök	Third Party	No Information	Third Party
February 2022	Site Inspection Report	Temurtaşlar	It was unclear whether the workers involve in asbestos removal	No Information	SRAT

Paints and Coating	Operationally Produced Waste	PFOS	Heavy Metals	Other Hazardous Waste
No Information	No Information	No Information	No Information	No Information
Paints are removed and temporarily stored by the facility's workers	All the operationally generated wastes from vessel are removed and temporarily stored by the applicant	All operationally generated wastes from the vessel are removed and temporarily stored by the facility under the supervision of their HAZMAT expert	All heavy metals are removed and temporarily stored by the applicant's workers	All other hazardous materials are removed and temporarily stored by the applicant's workers
No Information	No Information	No Information	No Information	No Information
No Information	No Information	No Information	No Information	No Information
No Information	No Information	No Information	No Information	No Information
No Information	No Information	No Information	No Information	No Information
SRAT	No Information	SRAT	SRAT	SRAT

POPs:

Due to the robustness of their structure, which allows them to persist in the environment for more than a thousand years, Persistent Organic Pollutants (POPs) are referred to as “forever chemicals.”²³⁵ The Stockholm Convention on Persistent Organic Pollutants was developed in 2001 to regulate POPs at the international level with the aim of reducing and, when feasible, eliminating releases of POPs.²³⁶ Since then, the European Union has passed the POPs Regulation (No. 2019/1021) to ban or restrict the use of POPs. POPs are regulated in Turkey by the Regulation on Persistent Organic Pollutants.²³⁷ It is not clear how the yards manage PFOS and PCBs during their operation.

PFOs:

As of the 1940s, PFOS has been employed in numerous consumer and industrial goods, such as carpets, rugs, upholstered furniture, non-stick cookware, and leather items.²³⁸ On ships, PFOS is often contained in firefighting foam mixtures. Elevated levels of PFOS in human beings have been associated with heightened cholesterol levels, modified liver operation, changes in thyroid hormone levels, and reduced immune system reactions.²³⁹

PCBs:

PCBs can be found in solid and liquid forms in equipment and materials on ships. When burned, PCBs create some of the most hazardous substances known – dioxins and furans. While it is relatively easy to remove liquid PCBs prior to export, the use of solid PCBs in old ships is extensive. Ships can contain many hundreds of tonnes of PCB contaminated materials including: insulation, paints, decking, gaskets, wires and cables. Exposure to PCBs have been associated with a variety of adverse health effects, such as effects on the

immune system, reproductive system, nervous system, and endocrine system. PCBs are regulated in Turkey by the Regulation on Control of Polychlorinated Biphenyls and Polychlorinated Terphenyls.²⁴⁰ The regulation requires detailed analysis, labelling and inventory preparation. Yet, implementation of the Regulation at the Aliğa ship recycling yards could not be observed during the research.²⁴¹

Ozone depleting substances:

Ozone-depleting Substances (ODS) have a significant environmental impact. These chemical substances, primarily utilised in cooling appliances, play a crucial role in depleting the ozone layer and contributing to global warming when released into the atmosphere.

Paints and coating:

Anti-fouling coatings and paints are hazardous and toxic to the environment and workers, and contain materials such as copper, arsenic, and other biocides. Ultimately the paint may flake off or leach into the water, releasing dangerous chemicals into the marine environment.

Operationally generated waste:

Operationally generated waste covers hazardous liquids, residues, sediments, water and other hazardous substances, including waste collected in the drainage channels.

Heavy metals and e-waste:

Electrical equipment such as transformers, batteries, cables and accumulators may potentially contain substances of concern, such as lead or cadmium. Yet, how the yards are managing their e-waste and wastes containing heavy metals is not fully transparent.

²³⁵ 'Chemical Water Contamination: PFAS, PFOA, PFOS, POPs Regulations' <<https://www.siliconexpert.com/blog/pfas-pops-2023/>> Accessed 12.4.2023.

²³⁶ Stockholm Convention regulates 29 POPs. Parties must ban or restrict intentionally produced POPs, restrict trade in POPs, develop BAT action plans to control unintentionally produced POPs, and manage POP-containing stockpiles and wastes.

²³⁷ 'Kalıcı Organik Kirlenmeler Hakkında Yönetmelik' Official Gazette Number: 30595 Date: 14.11.2018

²³⁸ 'PFOS (Perfluorooctane Sulfonate or Perfluorooctane Sulfonic Acid)' <<https://www.p65warnings.ca.gov/fact-sheets/pfos-perfluorooctane-sulfonate-or-perfluorooctane-sulfonic-acid#:~:text=Starting%20in%20the%201940s%2C%20PFOS,training%20facilities%2C%20and%20military%20airfields>> Accessed 14.8.2023.

²³⁹ 'PFOS and Groundwater' Minnesota Department of Health Health Risk Assessment Unit <<https://www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/pfosinfo.pdf>> Accessed 12.4.2023.

²⁴⁰ 'Poliklorlu Bifenil ve Poliklorlu Terfenillerin Kontrolü Hakkında Yönetmelik' Official Gazette Date: 27.12.2007 Number: 26739.

²⁴¹ 'Downstream Waste Management at Aliğa Shipbreaking Yards in Turkey' (n 26) p13.

8. Waste Storage

The temporary storage of the wastes was carried out by the Waste Management Center before 2021. Currently, the yards are storing their own waste at the facilities.

Temporary storage on site

According to domestic law, the yards should have a temporary waste storage permit, which allows them to temporarily store hazardous waste, organise transport and arrange for the final disposal. According to the Report of Izmir Development Agency: “In order for the process to be carried out smoothly, it is important for the facilities to make the necessary arrangements with experienced personnel and to continue their cooperation with SRAT.”²⁴²

Temporary storage at the facilities requires built storage rooms for hazardous waste that should contain impermeable flooring and absorbent material to prevent leaks, feature a grated enclosure, emergency safeguards, waste segregation, and designated oversight.²⁴³ According to some of the EU inspection reports, the rooms have concrete floors, walls, cofferdams (where required), roofing, ventilation and are possible to lock.²⁴⁴

However, an expert who worked in the sector stated, “When looked at, yes, they [the facilities] have permissions from the Ministry. But how and under what conditions these permissions were granted is seriously questionable. Anyone with a basic engineering knowledge of storage areas can quickly realise that these areas do not meet the standards. There is no standardisation in waste storage areas at the facilities.”

Another expert shared: “These areas are closed, yes, built on concrete ground. However, there are many criteria for these to be considered sufficient. Unfortunately these are not taken into account. The floor of the hazardous waste storage area must be impermeable. For this, it should be checked whether a membrane has been laid, but this is



View inside the hazardous waste temporary storage area
Source: Site Inspection Report of BMS (19.9.2022)



Temporary storage area for hazardous waste
Source: Site Inspection Report of Ege Gemi (25.1.2022)



Temporary storage area for hazardous waste
Source: Site Inspection Report of Kılıçlar (10.10.2022)

²⁴² Izmir Aliğa Gemi Geri Dönüşümü Sektör Analizi (n 3) p. 108.

²⁴³ 'Tehlikeli ve Tehlikesiz Atık Geçici Depolama Alanı' <https://www.ktu.edu.tr/dosyalar/sifiratik_720af.pdf> Accessed 16.8.2023.

²⁴⁴ EU Site Inspection Report of Dörtel (19.9.2022) p. 19; EU Site Inspection Report of BMS (19.9.2022) p. 18; EU Site Inspection Report of Kılıçlar (10.10.2022) p. 19.



Storage on permeable floor

Kaynak: Doğu Eroğlu, Mayıs 2023



not questioned. For example, not all tanks comply with ISO standards. There must be a fire suppression system. Most of the walls are brick or aerated concrete. For real durability, the wall must be a concrete shear wall.”

Hazardous wastes can only be stored in the temporary storage area for a maximum of 180 days and non-hazardous wastes for a maximum of one year.²⁴⁵ However, according to EU evaluators, some of the items looked to have been kept for two to three years.²⁴⁶ Several interviewees also stated that wastes were often kept for longer periods.

According to a Report of the Ministry of Environment, in many facilities, electronic waste and various other wastes tend to accumulate in random places on-site. Before starting the ship dismantling process, all removable waste should be taken off the ship and sorted into groups in designated areas. Simply storing various wastes, including scrap steel, in an open-air setting

is concerning and poses significant risks, especially during rainfall, as items, dust and residues risk being washed away. On-site waste storage areas should be actively used to avoid pollution and ensure a more orderly site area.²⁴⁷

Furthermore, during a field visit for this study in December 2022 waste was found accumulating in the vicinity of the facilities, including ropes, chains, several items resembling furniture, storage containers, and even what appeared to be abandoned lifeboats.

Waste Codes for storage and disposed

According to the Waste Management Regulation, only wastes that are permitted in the temporary storage permit are allowed to be stored at the facilities. The disposal of hazardous and non-hazardous waste needs



Waste around the the vicinity of the facilities

Credit: Ekin Sakin, December 2022

²⁴⁵ 'Tehlikeli Atıkların Yönetimi' Çevre, Şehircilik ve İklim Değişikliği Bakanlığı .<<https://cygm.csb.gov.tr/tehlkeli-atiklarin-yonetimi-duyuru-89435>> Accessed 10.9.2023.

²⁴⁶ EU Site Inspection Report of Şimşekler (20.03.2020) pp. 22-23; EU Site Inspection Report of Sök (4.2.2020) pp.19-20.

²⁴⁷ 'Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques' (n 29) p.44.

Comparison on Temporary Storage Permits

Facility Name		Öge	BMS	SÖK	Bereket	
Issuing Date		01 May 2022	April 2021	March 2021	April 2021	
Storage Capacity	Number of Areas	2	3	2	2	
	1st Area	Details	1 container	2 container/ 50 m ³ each	2 tanks/50 m ³ each	2 container/50 m ³ in different places in the facility
		Type of storage	IBC tank, plastic bag, plastic barrel	Two sheet metal tanks	Two sheet metal tanks	Two sheet metal tanks
		Dimension	32,5 m ²	N/A	N/A	N/A
	2nd Area	Type of waste	(1) 07 02 14, 08 01 11, 08 03 17, 13 02 08, 13 07 03, 14 06 01, 15 01 10, 15 01 11, 15 02 02, 16 02 15, 16 03 03, 16 03 04, 16 06 01, 16 06 02, 16 06 04, 17 04 10, 17 05 03, 17 06 01, 18 01 03, 19 12 11, 18 01 09, 20 01 21, 20 01 26, 20 01 01, 20 01 02, 20 01 39, 20 01 40	Wastes such as fuel etc.	Wastes such as fuel etc.	Wastes such as fuel etc.
		Details	6 tank and in total 123 m ³	In the entrance area of the facility, the top and sides are closed, it consists of 6 compartments in the locked area and there is a tank in a 2 cubic meter pool for the storage of the wastes generated as a result of the engine oil change.	5 compartments	The top and sides are closed, it consists of 5 compartments in the locked area
		Type of storage	Tank	IBC tank, plastic bag, plastic metal barrel ve on the concrete zone	IBC tank, plastic bag, plastic metal barrel ve on the concrete zone	IBC tank, plastic bag, plastic -metal barrel and on the concrete floor
	3rd Area	Dimension	-	120 m ²	65 m ²	50 m ²
		Type of waste	13 07 03	Engine oil and others?	Other type of hazardous materials	N/A
		Details	N/A	2 tanks/ 20 m ³ capacity each	N/A	N/A
Type of waste in general	Dimension	N/A		N/A	N/A	
	Type of waste	N/A	Wastes collected in drainage canals	N/A	N/A	
		08 01 11, 08 03 17, 13 02 08, 13 07 03, 14 06 01, 15 01 10, 15 01 11, 15 02 02, 16 02 15, 16 03 03, 16 03 04, 16 06 01, 16 06 04, 17 04 10, 17 06 01, 18 01 09, 20 01 21, 20 01 26, 20 01 01, 20 01 02, 20 01 39, 20 01 40	07 02 14, 08 01 11, 13 07 03, 14 06 01, 15 01 10, 15 01 11, 15 02 02, 16 01 09, 16 02 15, 16 03 03, 16 05 08, 16 06 01, 16 06 02, 17 04 10, 17 06 01, 18 01 03, 19 12 11, 20 01 21	08 01 11, 13 02 08, 13 07 03, 14 06 01, 15 01 10, 15 01 11, 15 02 02, 16 02 15, 16 03 03, 16 06 01, 17 04 10, 17 05 03, 16 05 08, 17 06 01, 18 01 03, 19 12 11, 20 01 21, 20 01 26	08 01 11, 13 07 03, 15 01 10, 15 01 11, 15 02 02, 16 01 03, 17 06 01, 19 12 11	

Öge

07 02 14^{*} Waste of additives containing hazardous substances
08 01 11^{*} Waste paints and varnishes containing organic solvents or other hazardous substances
08 03 17^{*} Waste printing toners containing hazardous substances
13 02 08^{*} Other motor, transmission, and lubricating oils
13 07 03^{*} Other fuels (including mixtures)
14 06 01^{*} Chlorofluorocarbons, HCFCs, HFCs
15 01 10^{*} Metallic packaging containing residues of hazardous substances or contaminated with hazardous substances
15 01 11^{*} Metallic packaging containing hazardous porous solid materials, including empty pressurized containers (e.g., asbestos)
15 02 02^{*} Absorbents, filter materials (unless otherwise specified, oil filters), wiping cloths, protective clothing contaminated with hazardous substances
16 02 15^{*} Hazardous components removed from discarded equipment
16 03 03^{*} Inorganic wastes containing hazardous substances
16 03 04^{*} Inorganic wastes other than those specified in 16 03 03
16 06 01^{*} Lead-acid batteries
16 06 02^{*} Nickel-cadmium batteries
16 06 04^{*} Alkaline batteries (except 16 06 03)
17 04 10^{*} Cables containing oil, tar, and other hazardous substances
17 05 03^{*} Soil and stones containing hazardous substances
17 06 01^{*} Insulation materials containing asbestos
18 01 03^{*} Metals (except 18 01 03)
19 12 11^{*} Other hazardous wastes (including mixed materials) resulting from mechanical treatment of wastes (except 18 01 08)
18 01 09^{*} Pharmaceuticals other than those specified in 18 01 08
20 01 21^{*} Fluorescent lamps and other mercury-containing wastes
20 01 26^{*} Liquid and solid oils other than 20 01 25
20 01 01^{*} Paper and cardboard
20 01 02^{*} Glass
20 01 39^{*} Plastics
20 01 40^{*} Metals

BMS

07 02 14^{*} Waste of additives containing hazardous substances
08 01 11^{*} Waste paints and varnishes containing organic solvents or other hazardous substances
13 07 03^{*} Other fuels (including mixtures)
14 06 01^{*} Chlorofluorocarbons, HCFCs, HFCs
15 01 10^{*} Metallic packaging containing residues of hazardous substances or contaminated with hazardous substances
15 01 11^{*} Metallic packaging containing hazardous porous solid materials, including empty pressurized containers (e.g., asbestos)
15 02 02^{*} Absorbents contaminated with hazardous substances, filter materials (unless otherwise defined, oil filters), cleaning cloths, protective clothing
16 01 09^{*} Parts containing PCBs
16 02 15^{*} Hazardous components removed from discarded equipment
16 03 03^{*} Inorganic wastes containing hazardous substances
16 05 08^{*} Discarded organic chemicals containing hazardous substances or composed of them
16 06 01^{*} Lead-acid batteries and accumulators
16 06 02^{*} Nickel-cadmium batteries
17 04 10^{*} Cables containing oil, tar, and other hazardous substances
17 06 01^{*} Insulation materials containing asbestos
18 01 03^{*} Wastes collected and treated specifically to prevent infection
19 12 11^{*} Other hazardous wastes (including mixed materials) resulting from mechanical treatment of wastes
20 01 21^{*} Fluorescent lamps and other mercury-containing wastes

SÖK

08 01 11^{*} Waste paints and varnishes containing organic solvents or other hazardous substances
13 02 08^{*} Other motor, transmission, and lubrication oils
13 07 03^{*} Other fuels (including mixtures)
14 06 01^{*} Chlorofluorocarbons, HCFCs, HFCs
15 01 10^{*} Metallic packaging containing residues of hazardous substances or contaminated with hazardous substances
15 01 11^{*} Metallic packaging containing hazardous porous solid structures, including empty pressurized containers (e.g., asbestos)
15 02 02^{*} Absorbents contaminated with hazardous substances, filter materials (unless otherwise defined, oil filters), cleaning cloths, protective clothing
16 02 15^{*} Hazardous components removed from discarded equipment
16 03 03^{*} Inorganic wastes containing hazardous substances
16 06 01^{*} Lead-acid batteries and accumulators
17 04 10^{*} Cables containing oil, tar, and other hazardous substances
17 05 03^{*} Soil and stones containing hazardous substances
18 01 03^{*} Discarded organic chemicals containing hazardous substances or composed of them
17 06 01^{*} Insulation materials containing asbestos
18 01 03^{*} Wastes collected and treated specifically to prevent infection
19 12 11^{*} Other hazardous wastes (including mixed materials) resulting from mechanical treatment of wastes
20 01 21^{*} Fluorescent lamps and other mercury-containing wastes
20 01 26^{*} Liquid and solid oils other than those specified in 20 01 25^{*}

Bereket

08 01 11^{*} Waste paints and varnishes containing organic solvents or other hazardous substances
13 07 03^{*} Other fuels (including mixtures)
15 01 10^{*} Metallic packaging containing hazardous porous solid structures, including empty pressurized containers (e.g., asbestos)
15 01 11^{*} Metallic packaging containing hazardous porous solid materials, including empty pressurized containers (e.g., asbestos)
15 02 02^{*} Absorbents contaminated with hazardous substances, filter materials (unless otherwise defined, oil filters), cleaning cloths, protective clothing
16 02 15^{*} Hazardous components removed from discarded equipment
16 03 03^{*} Inorganic wastes containing hazardous substances
16 06 01^{*} Lead-acid batteries and accumulators
17 04 10^{*} Cables containing oil, tar, and other hazardous substances
17 05 03^{*} Soil and stones containing hazardous substances
18 01 03^{*} Discarded organic chemicals containing hazardous substances or composed of them
17 06 01^{*} Insulation materials containing asbestos
18 01 03^{*} Wastes collected and treated specifically to prevent infection
19 12 11^{*} Other hazardous wastes (including mixed materials) resulting from mechanical treatment of wastes
20 01 21^{*} Fluorescent lamps and other mercury-containing wastes
20 01 26^{*} Liquid and solid oils other than those specified in 20 01 25^{*}

(1)

Waste paints and varnishes containing organic solvents or other hazardous substances, * Waste printing toners containing hazardous substances, * Other motor, transmission, and lubrication oils, * Other fuels (including mixtures), * Chlorofluorocarbons, HCFCs, HFCs, * Packaging containing residues of hazardous substances or contaminated with hazardous substances, including empty pressurized containers (e.g., asbestos), * Metallic packaging containing hazardous porous solid structures, * Absorbents contaminated with hazardous substances, filter materials (unless otherwise defined, oil filters), cleaning cloths, protective clothing),

* Hazardous components removed from discarded equipment, * Inorganic wastes containing hazardous substances, * Inorganic wastes other than those specified in 16 03 03, * Lead-acid batteries and accumulators, * Alkaline batteries (except 16 06 03), * Cables containing oil, tar, and other hazardous substances, * Insulation materials containing asbestos, * Pharmaceuticals other than those specified in 18 01 08, * Fluorescent lamps and other mercury-containing wastes, * Liquid and solid oils other than those specified in 20 01 25, Paper and cardboard, Glass, Plastics, Metals.

to be notified to the Ministry. The amounts and the waste codes need to coincide with the wastes that have been stored at the facilities.

A comparative analysis of temporary storage permits (Annex 7) from four different facilities was conducted for this report. The analysis found significant disparities not only in the composition of storage areas, but also in the coding of waste types stored within these areas. At the Bereket facility, for example, fluorescent lamps, oils and liquids, metals, glass, and plastics were not listed.²⁴⁸ There were equally no codes for oils and liquids in the storage permit of the EU listed BMS facility.²⁴⁹ This is particularly alarming as oil and fluorescent lamps constitute a significant waste stream generated during ship recycling activities. As contracts with external disposal facilities directly depend on the storage permits of the respective facilities, the absence of waste codes further renders the proper disposal of the wastes questionable.

Storage area outside the facilities

During our field visits and spatial analysis, wastes and second-hand goods from ship recycling activities were found to be stored in areas outside the facilities.²⁵⁰

A worker shared, “*this area is where materials removed from the ship are sold for second-hand use. Previously, there was vegetation. Then they dug and built a storage area.*”

Another worker stated, “*Previously, the facilities had nothing but their own parcels. The outside areas were green areas. Firms were doing business on their own parcels and did not put anything outside. But over time, a second-hand sector emerged with the materials removed from the ships and sold outside.*”

A person who worked in the sector claimed, “*They also fenced the area. Sometimes they move the waste there before inspections. I don't think they have any licence.*”



Storage Area Outside the Facilities

Credit: Doğu Eroğlu, May 2023

²⁴⁸ Temporary Storage Permit Document dated 30.4.2021 numbered 596.

²⁴⁹ Temporary Storage Permit Document dated April 2021 numbered 583.

²⁵⁰ İzmirlili, Aliğa, Aliğa köyü, Ada: 1145, parsel:1 <<https://parselsorgu.tkgm.gov.tr/#ara/idari/147577/1145/1/1699020710501>> .

The photograph above shows a partly asphalted area where a storage area has been built. Materials are stored directly on grass or on permeable flooring. The Ministry of Environment has not responded to our request for clarification on whether an environmental permit to store waste has been issued for the area.

Regardless of whether an area is publicly owned or privately held, an environmental permit, issued by the Ministry of Environment, is required to store waste and second-hand materials. The Ministry of Environment also has the responsibility to monitor the storage activities.

Storage and disposal of lifeboats

Lifeboats from end-of-life ships can include potentially hazardous materials such as fuel and lead-acid batteries. During its inspections, the European Commission noted that lifeboats should not be stored on permeable floors unless they were free of hazardous materials. Yet, some EU inspection reports observed lifeboats with hazardous materials are being stored



Lifeboats

Credit: Doğu Eroğlu, May 2023

on permeable floors.²⁵¹ Moreover many lifeboats were seen outside the facilities and on the road leading to the ship recycling area.

In previous years, allegations have emerged that human smugglers have used lifeboats originating from ship recycling yards for the passage of immigrants to Europe. In this context, according to the local media, the Izmir Governorship decided that the sale of lifeboats cannot take place without the permission of the Coast Guard Aegean Regional Command.²⁵²

An expert who worked in the sector stated, “Lifeboats sometimes have special buyers. They can modify, they can transform the boats. But mostly the lifeboats are just stored. They have been waiting for years to be sold as second hand. But no one takes the lifeboat that has touched the ground and waited so long. Some people are interested, but it is not something that is in demand. It cannot be used on new ships either.”

Another person explained, “Usually one or two lifeboats come out of the ships. There are 13 or 14 lifeboats on cruise ships. The lifeboats have been stored for years. Sometimes some people buy them, but in general they



Lifeboats

Credit: Vedat Örüç, August 2023

²⁵¹ EU Site Inspection Report of Temurtaşlar (2.2.2021) p. 24; EU Site Inspection Report of Anadolu (15.1.2021) p.23.

²⁵² ‘Can kurtarma filikalarına sıkı takip’ (2.2.2016). <<https://www.hurriyet.com.tr/gundem/can-kurtarma-filikalarına-siki-takip-40048419>> Accessed 30.6.2023

‘Son 1 haftada Ege’de 18’i çocuk 74 mülteci hayatını kaybetti’ (2.2.2016). <<https://t24.com.tr/haber/egede-1-haftanın-bilançosu-18i-cocuk-74-multeci-hayatini-kaybetti,326565>> Accessed 30.6.2023.

are just accumulating. If it is wanted to be disposed of, how the disposal procedure will be is another matter, since there is no specific facility to dispose of the lifeboats.”

9. Downstream Waste Management

Environmentally sound waste management relies on the responsible disposal of all wastes, including transporting the waste to licensed facilities and implementing robust monitoring and auditing systems that ensure compliance with occupational safety and environmental regulations.

Several workers claimed that not all the waste they removed from the ships was sent to disposal facilities.

“Everything, including glass wool, is collected, bagged and stored. When the inspectors are there and if they see it, they will think that the yard will send it to the disposal facilities. After the inspectors leave, they all go to normal household waste storage areas. No precautions.”

Waste management application by The Ministry of Environment

Under the Waste Management Application issued by the Ministry of Environment, the Hazardous Waste Declaration System (TABS), Mobile Waste Tracking System (MoTAT), and Mass Balance System (KDS) are utilised for online monitoring, inspection and reporting. Waste departure authorisation is obtained through MoTAT, and KDS enables the online monitoring, inspection, and reporting of the final processes of waste recovery or disposal. The transport of waste using licensed vehicles is facilitated by MoTAT, which employs GPS-supported systems to track vehicle movements online.

This integrated approach aimed at ensuring the comprehensive management of waste, allowing for effective

oversight. TABS also requires facilities to submit annual waste declarations, ensuring transparency in waste generation. The Waste Management Application thus intends to track the entire journey of waste, from its origin to the final stages of treatment or disposal.

Disposal facilities

The Ministry of Environment monitors waste disposal facilities and cement factories. Whilst the incinerators in general have air pollution control systems, and the levels of emissions and toxic fumes are monitored through the Regulation on the Monitoring of Greenhouse Gas Emissions, the reports and data for the emissions are not publicly available.

The yards are responsible for arranging the disposal of wastes at authorised facilities, and the majority of hazardous waste generated by the ship recycling activities is transferred to Süreko in Manisa Province and İzaydaş in Kocaeli Province.

20% of the total waste Süreko’s landfill site receives comes from the ship recycling facilities in Aliğa. The total coverage of the disposal area is 7.12 hectares.²⁵³



The distance from the ship recycling facilities is around 196 km.²⁵⁴ As the Süreko landfill capacity is expected to be fully reached by the end of 2024, a feasibility study is underway for the construction of a new landfill adjacent to the current one.²⁵⁵ It should be noted that the site has come under scrutiny due to air pollution affecting local residents and possibly agricultural land.²⁵⁶

²⁵³ Calculated from Google Earth Pro.

²⁵⁴ Which indicates possible contamination routes if enough precautions are not taken while transferring the hazardous waste from the ship recycling yards. The route is an estimation of Google Maps (shortest distance), while it might change depending on the hour of the day and specific limitations on the road.

²⁵⁵ EU Site Inspection Report of BMS (27.3.2023) p.49.

²⁵⁶ ‘Köylüler atık toplama tesisine tepkili: 13 yıldır zehir soluyoruz’ <https://www.evrensel.net/haber/499221/koyluler-atik-toplama-tesisine-tepkili-13-yildir-zehir-soluyoruz#google_vignette> Accessed 31.10.2023.



Manisa-Kula
Süreko Solid Waste Disposal



Kocaeli-İzmit
İzaytaş Solid Waste Disposal

In the mid-term reports of Ege Çelik and Sök, and during the second site inspection of Dörtel, the EU evaluators requested additional information regarding the treatment of ODS, and more specifically halon.²⁵⁸ Procedures for disposal of halon were not clear in Dörtel and Sök.²⁵⁹ The EU evaluators have highlighted that disposal of Halon needs to be conducted in line with the Montreal Protocol and relevant EU regulations.²⁶⁰



The route to Süreko

The other downstream management facility utilised by the ship recycling sector is the İzaytaş solid waste disposal area, which is located in Kocaeli-İzmit province, nearby İstanbul.

The area of the İzaytaş site is massive with a coverage of 77 hectares, while the distance between the ship recycling yards and the İzaytaş Solid Waste Disposal Site is 431 km. Although receiving various documents regarding the waste disposal capacity of İzaytaş, the most recent EU inspection of BMS was not provided with requested monitoring results for the incinerator.²⁵⁷



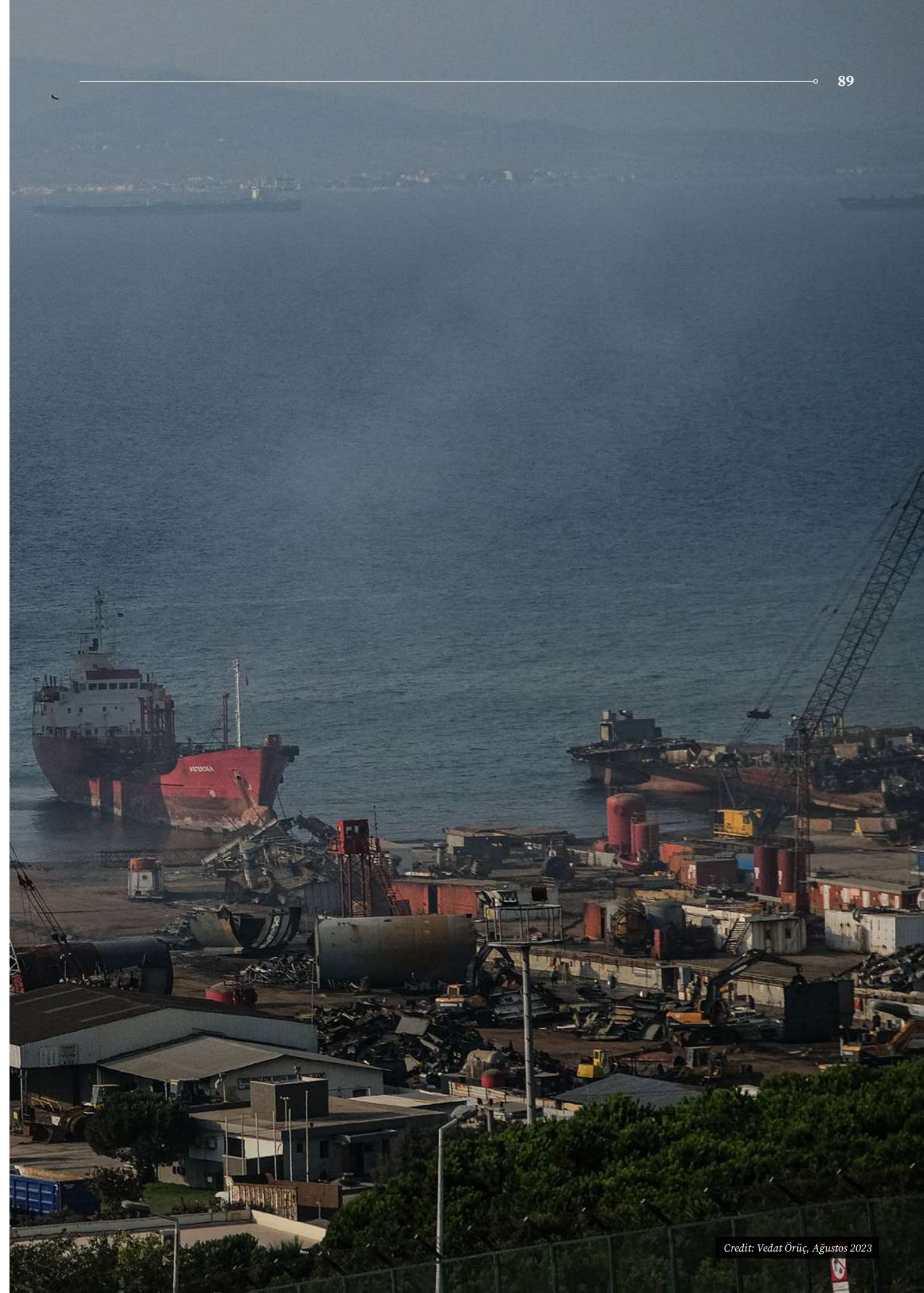
The route to İzaytaş

²⁵⁷ EU Site Inspection Report of BMS (27.3.2023) p.49.

²⁵⁸ EU Midterm Review Report of Sök (12.2022) pp.12-13; EU Midterm Review Report of Ege Çelik (12.1.2023) pp.13-14.

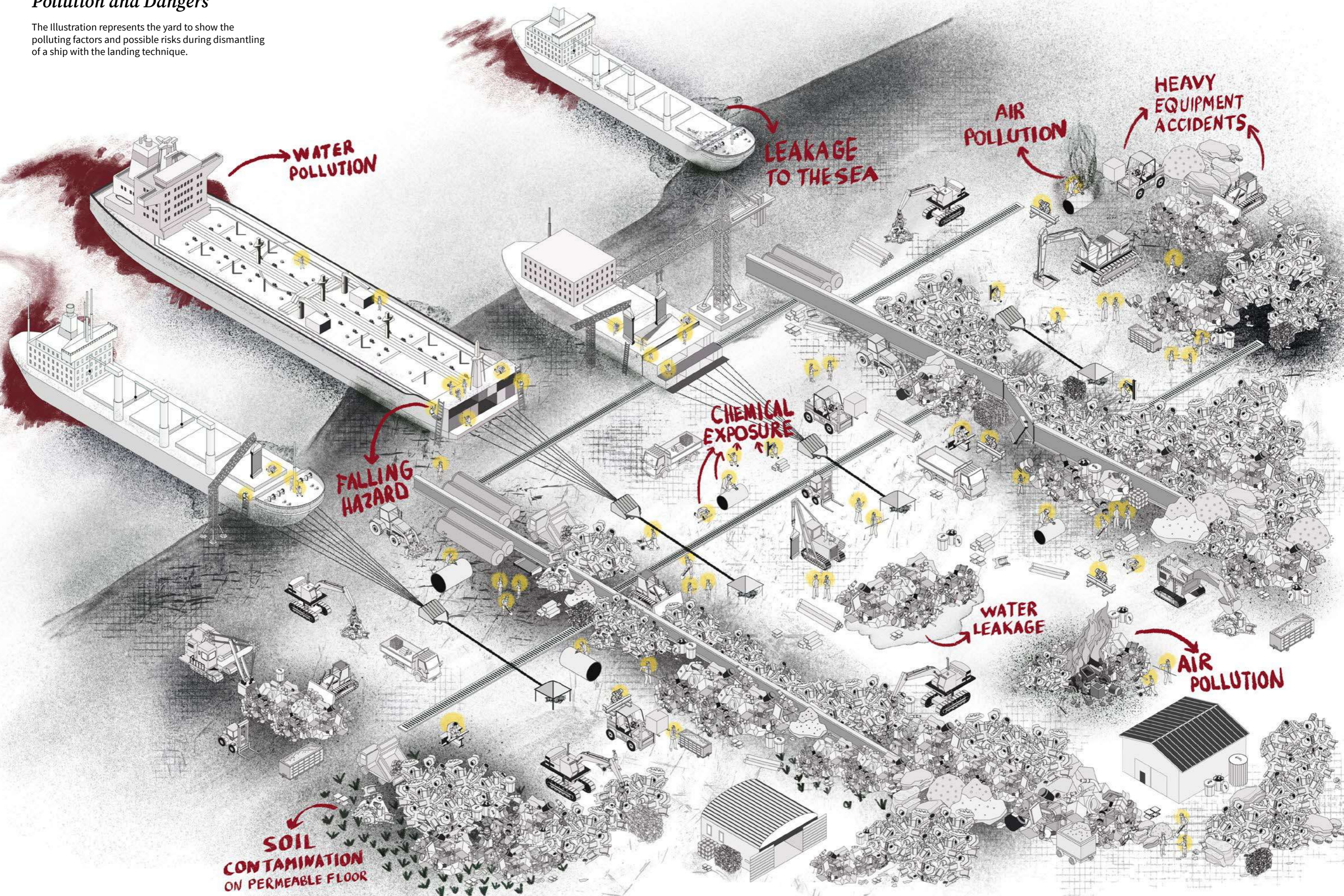
²⁵⁹ EU Midterm Site Inspection Report of Sök (14.06.2023) p.14, EU Site Inspection Report of Dörtel (5.6.2023) p. 23.

²⁶⁰ Regulation (EC) No 1005/2009.

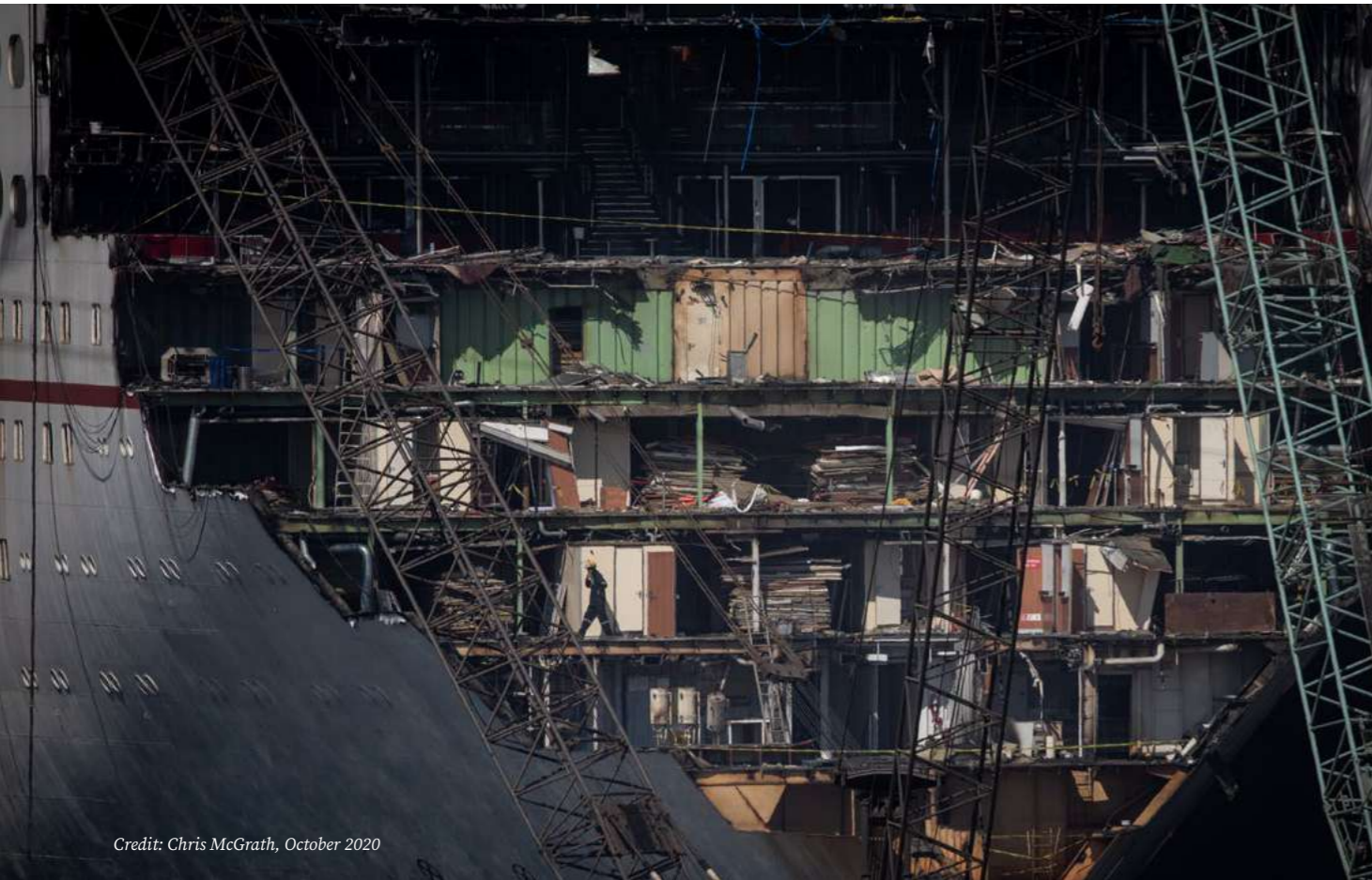


Pollution and Dangers

The illustration represents the yard to show the polluting factors and possible risks during dismantling of a ship with the landing technique.



Occupational Health and Safety



Credit: Chris McGrath, October 2020

Ship recycling, as classified by the International Labour Organisation (ILO), is one of the most perilous occupations worldwide. Turkey faces significant challenges in addressing occupational health and safety (OHS) issues. The absence of a well-functioning national social dialogue policy framework, as highlighted in the EU Enlargement Report of Turkey, exacerbates the situation,²⁶¹ also for the ship recycling sector.

1. Taking a Holistic Approach to OHS

The working environment in ship recycling facilities encompasses various risk factors, including physical, chemical, ergonomic, psychosocial, biological, and mechanical factors. These factors have the potential

to lead to occupational diseases or accidents. Common risks during ship recycling operations include exposure to asbestos and other hazardous materials, explosions, and such incidents as falling from heights or being crushed by falling parts.

A three-pillar approach is typically employed to effectively manage these risks: danger-focused measures, management or process-focused measures, and worker-focused protection. Among these measures, danger-focused measures, which involve better engineering methods, are considered the most effective. All three pillars should, however, be utilised to ensure a safe working environment based on prevention. The techniques and operational processes employed in the ship recycling sector are required to reflect a comprehensive understanding of the interconnection between

²⁶¹ 'Communication on EU Enlargement policy' Turkey Report, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (12.10.2022) < <https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-10/T%C3%BCrkiye%20Report%202022.pdf> > Accessed 20.2.2022.

workers' health and environmental sustainability.

The preference for manpower over adequate mechanisation at certain stages of the ship recycling process, as well as the outsourcing of jobs to subcontractors challenges proper implementation of OHS obligations. A closer examination of the ship recycling yards in the region reveals significant structural problems that impede a comprehensive implementation of OHS standards. It is for example crucial to address the operational and waste management problems highlighted in the sections above, such as poor pulling and lifting equipment and inadequate waste management, to reduce and eliminate existing risks.

2. Working Conditions

Risk assessment and monitoring

According to the Communiqué on Workplace Hazard Classes Regarding Occupational Health and Safety, ship recycling facilities fall under the definition of "very hazardous workplace". The Occupational Health and Safety Law²⁶² mandates that all workplaces defined as very hazardous hire an OHS specialist and a company doctor. The doctor and OHS specialist must provide a report to the employer outlining legislation and technical developments related to occupational health

and safety, and guidance on how any deficiencies and malfunctions can be addressed.²⁶³

The EU inspection reports identify that OHS specialists are externally provided from Aliğa Joint Health and Safety Unit (Aliğa OSGB) to the ship recycling yards.²⁶⁴ The outsourcing of OHS services to OSGB has come under criticism due to concerns of potential conflict of interest and lack of transparency.²⁶⁵ During the EU inspection procedure, the evaluators, questioned the objectivity of the OHS experts and safety officers:²⁶⁶ "The evaluators have observed that more and more yards in the area use personnel from Aliğa OSGB as safety officers on site. Considering the number of facilities serviced by OSGB, it was unclear how Aliğa OSGB is capable to service all facilities efficiently. The same yards, using personnel from Aliğa OSGB as safety officers on-site also use Aliğa OSGB as Occupational Safety Expert as required by law. This means that they are acting both as the Safety Officer and as the Occupational Safety Expert, subsequently controlling their own work."

²⁶⁷ The EU evaluators recommended hiring additional safety inspectors and the establishment of a safety culture, including clear roles and responsibilities for safety personnel.²⁶⁸

The yards are furthermore obligated to have a risk assessment done in terms of workplace safety.²⁶⁹

The risk assessment should identify all risks as well

²⁶² İş Sağlığı ve Güvenliği Kanunu (n 55) Article 6/1(a).

²⁶³ According to the law, OHS specialists who have an (A) class occupational safety expertise certificate can take part in the workplaces of very dangerous class. Yet, an exemption was provided under the law which provides that OHS specialists who have an (B) class occupational safety expertise certificate can work in the "very hazardous" workplaces until 31.12.2023. Moreover, occupational safety specialists in very dangerous workplaces have to work 15 minutes, while doctors have to work 40 minutes per month per employee. Yet, the interviewers during this research claimed that the time thresholds to work in the yards for the OHS experts and doctors might be missing in ship recycling yards.

²⁶⁴ EU Site Inspection Report of Şimşekler (20.3.2020), p. 26; EU Site Inspection Report of Temurtaşlar p. 28; EU Site Inspection Report of Işıksan (26.5.2019) p. 17; EU Site Inspection Report of Ege Çelik p. 27; EU Site Inspection Report of Dörtel (05.06.2023) p. 21; EU Site Inspection Report of BMS (19.09.2022) p. 21.

²⁶⁵ 'OSGB'ler mutlaka kapatılmalı' <<https://www.birgun.net/haber/osgb-ler-mutlaka-kapatilmali-393807>> Accessed 10.10.2023.

²⁶⁶ EU Site Inspection Report of Avşar (8.7.2020) pp. 28-29.

"The facility had previously utilized external subcontractor Aliğa OSGB on periodic inspections as per practice in several other facilities, always in the name of the manager and owner of OSGB, XXX, supported by OSGB hired safety inspectors. Considering the number of facilities serviced by OSGB it was always a question to what extent OSGB was able to service all facilities efficiently. In the second site visit, the facility reported that the owner of Aliğa OSGB has now engaged himself full time at Avşar, from 08:00 to 17:00 hours. There was however no written contract to witness [...] In response to the draft report of the second inspection, the applicant has created a safety officer in its organisation and filled this position. Reportedly, the Safety Officer takes care of the facility's occupational safety issues while Aliğa OSGB remains as the OSE. [...] As the Safety Officer is in-house and the OSE is from external provider, the conflict of interest is no longer present, and it is understood from the information provided that the Safety Officer is present on-site full-time."

²⁶⁷ EU Site Inspection Report of Şimşekler (20.3.2020) pp. 27-28.

²⁶⁸ Furthermore, the compliance was not confirmed in Temurtaşlar and during the first site inspection of Anadolu. For the latter, the Health and Safety Responsible was not listed in the overview of employees from the Social Security Institution in Turkey for July 2020 for Anadolu, but for Işıksan. It was not clear to the evaluators who is responsible for safety on-site at Anadolu. The evaluators wanted to see that the workers are contracted to Anadolu to confirm compliance. (Site Inspection Report EU Site Inspection Report of Anadolu (15.1.2021) p. 31) During the second reporting period, the yard hired a new safety responsible contracted to Anadolu. (Site Inspection Report Anadolu 13.3.2023 p. 20) In addition, according to the evaluation results of the yard of Temurtaşlar, the two facilities of Temurtaşlar and AGGD work more like one facility, but have different plots. The evaluators recommended employing additional safety inspectors, to have a safety culture for facilitating safe behaviour. An important part of the safety inspectors' responsibility is to ensure that the employees at the facility inhabit a sufficient understanding of risk and create and provide policies and procedures for controlling the risks. (EU Site Inspection Report of Temurtaşlar p. 29-30).

In the yard Blade, which has a contract with Aliğa OSGB, the compliance was not confirmed as well. It was noted by the evaluators that the facility should ensure that they have sufficient and empowered safety personnel, working with the workers, and creating a positive attitude. It was also stated that the roles must be clearly defined, and responsibilities included in the respective job descriptions. (EU Site Inspection Report of Işıksan (26.5.2019) p. 18).

²⁶⁹ The following points should be taken into account when making a risk assessment: (i) Status of employees who will be affected by certain risks (ii) Selection of work equipment, chemicals and preparations to be used (iii) The organisation and order of the workplace.

as include Emergency Preparedness and Response Plans (EPRP). Some of the yards shared during the EU inspections that the risk assessment report was prepared by the Aliğa OSGB.²⁷⁰ Yet, the risk assessment has to be carried out by a team consisting of OHS specialists, a workplace doctor and an employee representative, similar to the OHS Committee composition.²⁷¹

According to the EU evaluators, the EPRP's goal is to provide the facility's staff with practical guidance on how to foresee crises and how to respond to them should they occur. Some EPRPs were found to be template-based documents issued by an external provider. Facilities were advised to create the EPRP as an easy-to-follow document for workers and include it to the SRFP.²⁷²

Trainings

OHS trainings informing about the hazards and risks related to work at the ship recycling yards, as well as identifying the causes of occupational accidents, should be given before starting work, in case of a change of workplace or job, and in case of a change of work equipment. The training should be renewed in accordance with emerging risks, and be repeated when necessary and at regular intervals.²⁷³ According to the domestic law, the duration of trainings should be at least 16 hours.²⁷⁴ The former requirement of conducting the trainings in four hours blocks was removed, leading often to shorter sessions over an extended training period and thus work conducted without full training. Several workers stated that in some yards, the mandatory trainings are given during the lunch breaks. The

practice of conducting mandatory trainings during lunch breaks raises concerns as it may infringe upon labour rights and compromises the opportunity for employees to take a genuine break and recharge.

Workers were also informed of the administration of a multiple-choice test at the end of the training, which in itself can be a useful tool; but the concern was that the trainer provided the answers, raising serious questions about the integrity of the training process and the ability to evaluate the workers' understanding of the issues at stake, and thus the effectiveness of the training.

The practice of conducting mandatory trainings during lunch breaks raises concerns as it may infringe upon labour rights and compromises the opportunity for employees to take a genuine break and recharge.

PPE

It has long been monitored by several journalists, workers and local NGOs that not providing or ensuring adequate and proper Personal Protective Equipment (PPE) is a common practice in Aliğa.²⁷⁵ Similarly, the interviews with workers for this report showed that several yards are ill-equipped and lack awareness regarding the importance of using proper PPE.

(i) Masks, gloves, flame-retardant clothing and shoes

Masks are divided into two types: dust masks and gas masks. Their usage should be evaluated based on the specific job and the type of exposure. Workers in enclosed spaces and those involved in cutting operations must, for example, use a gas mask. It is also important to consider the intensity of the work to determine how frequently the masks should be replaced.

There are various types of gloves. While gloves resistant to normal mechanical hazards may be sufficient, there should also be fire-resistant gloves for protection against heat. If there is a high risk of cuts in the tasks being performed, appropriate gloves should be provided accordingly.

The recent EU inspection reports evidenced that there is a lack of PPE in ship recycling yards.²⁷⁶ It is notable that the first EU inspection reports did not extensively scrutinise the use of PPE, allowing, as it was later revealed in mid-term review audits, deficiencies to persist in yards that received EU approval.

According to the mid-term reports of Sök and Ege Çelik, for example, evaluators concluded that the facilities did not purchase filters on a regular basis after comparing copies of PPE purchase orders with the number of workers and total work hours.²⁷⁷ In addition, during the mid-term review of Öge, the evaluators observed that the facility purchased filters irregularly and the number of filters suggested that these were not offered on a daily basis, and thus did not fully comply with the relevant rules in the EU Ship Recycling Regulation.²⁷⁸ During



All filters stored in the emergency room had expired
Site Inspection Report of Blade (13.1.2023)

the inspection of BMS, there were several out-of-date breathing filters discovered in store cabinets. The evaluators advised the facility to conduct systematic stock controls to make sure that goods are replaced before they expire.²⁷⁹ Also at the yard of Dörtel, based on the information available to the evaluators, it could not be ascertained that the facility offers its workers adequate respiratory protection.²⁸⁰

The EU inspection report of Blade stated, "the suitability of personnel protective equipment provided to workers removing asbestos was not known by the evaluators." Moreover, evaluators found that only PP3 masks were readily available for the cutters.²⁸¹

²⁷⁰ EU Site Inspection Report of Şimşekler (20.3.2020) p. 30; EU Site Inspection Report of Sök (04.2.2020) p. 25; EU Site Inspection Report of Avşar (08.7.2020) p. 31.

²⁷¹ İş Sağlığı ve Güvenliği Kanunu (n 55) Article 30
İş Sağlığı ve Güvenliği Risk Değerlendirmesi Yönetmeliği, Official Gazette Date: 29.12.2012 Number: 28512, Article: 6/1.

²⁷² For instance, the plan of Temurtaşlar was not found adequate: "Further improvements are recommended to have short and concise instructions, written as bullet points with line and paragraph spacing so it is easy to read. The EPRP shall be for the workers, considering what a worker will do and behave in reality in the various emergencies. [...] The EPRP must be immediate in its instructions and prioritized, and the evaluators can see that some improvements have been made. [...] As discussed during the inspection, it is important to prioritize emergency cases that are more likely to happen. The evaluators cannot see that this has been considered by the applicant. For instance, sabotage/terrorist attack and natural disasters and pandemic are prioritized before rescue from confined space and fall from heights." (EU Site Inspection Report of Temurtaşlar (02.2.2021) pp. 26-27)

Another illustration is that the emergency plan of Anadolu was not covering the critical items such as recovery of persons fallen from height and recovery of persons from confined spaces. The compliance was confirmed later. (EU Site Inspection Report of Anadolu (13.3.2023) p. 18) In both of the reports of BMS, the evaluators suggested to prepare an appendix to the EPRP, where the emergency response information is provided in a simple and clear manner and maybe with some flow charts, while stating what and how to mention different aspects, while this was not followed up in the last report. (EU Site Inspection Report of BMS (27.3.2023) p. 19).

²⁷³ İş Sağlığı ve Güvenliği Kanunu (n 55) Article 17.

²⁷⁴ Çalışanların İş Sağlığı ve Güvenliği Eğitimlerinin Usul ve Esasları Hakkında Yönetmelik, Official Gazette Date: 15.05.2013 Number: 28648, Article 11.

²⁷⁵ 'Aliğa'da asbestli gemi sökümü: Doğru dürist eldiven vermiyorlardı' <https://gezegen24.com/aliagada-gemi-sokumu/> Accessed 13.2.2022.

'Gemi sökümü işçisi: Bize toz maskesiyle asbest söktürüyorlar' <https://haber.sol.org.tr/haber/gemi-sokum-iscisi-bize-toz-maskesiyle-asbest-sokturuyorlar-324197> Accessed 13.2.2022.

'Gemi sökümü işçileri anlattı: 3 liralık maskesi olmadığı için ölen işçiler var' <https://t24.com.tr/haber/gemi-sokum-iscileri-anlatti-3-liralik-maskesi-olmadigi-icin-olen-isciler-var,236849> Accessed 13.2.2023.

²⁷⁶ In the last report of Anadolu, the evaluators checked the receipts: "The applicant requested to forward receipts of PPE purchased in 2020, 2021 and 2022. According to the forwarded receipts the facility purchased 100 replaceable filters to half face masks in December 2020 and 92 filters September 2022. This would maximum last for 96 weeks for 1 cutter, for 10 cutter 9 weeks and for 20 cutters less than 5." [...] "After the third inspection, the facility forwarded additional receipts. The receipts shows that the facility purchased 50 filters 06.1.2022, 50 filters 21.1.2022, 50 filters 28.1.2022, 50 filters 04.2.2022, 34 filters 03.3.2022, 116 filters 11.3.2022, 17.3.2022, 140 filters 15.4.2022, 200 filters 20.5.2022, 61 filters 22.6.2022, 137 filters 23.6.2022, 150 filters 31.10.2022, 70 filters 02.11.2022, 154 filters 02.12.2022 and 4 filters 05.12.2022." (EU Site Inspection Report of Anadolu (13.3.2023) pp. 31-32).

EU Site Inspection Report of Kılıçlar (10.10.2022) p. 35.

"Based on the documentation currently available to the evaluators it is concluded that the facility does not on a regular basis offer sufficient respiratory protective equipment to its workers, contradictory to what the facility stated in response to the draft report." During the second inspection procedure of Kılıçlar, "The facility has forwarded receipts of 90 half faced masks and in total 227 filters that can be used with the half-faced masks. [...] During the second inspection the facility stated that they use filters in combination. The facility had 32 filters in stock and had reportedly recently ordered 50 additional filters" In addition, evaluators found expired filters in the emergency response equipment on-site. The yard forwarded a document titled PPE Planning/PPE Needs and Distribution Chart. Together with the documents the receipts were found adequate. (EU Site Inspection Report of Kılıçlar (30.3.2023) p. 37).

According to the Site Inspection Report of Ege Gemi: "During this inspection the facility could provide an additional invoice dated 29.11.22 for 18 masks and 18 filters. When asked for the low number of filters the applicant replied that filtered masks are only used in confined spaces. It was stated that the cutters are offered PP3 masks." (EU Site Inspection Report of Ege Gemi (21.4.2023) p. 30).

²⁷⁷ EU Midterm Review Report of Sök (December 2022) pp. 17-18; EU Midterm Review Report of Ege Çelik (12.1.2023) pp. 18-19.

²⁷⁸ EU Midterm Site Inspection Report of Öge (24.4.2023) pp. 17-18.

²⁷⁹ EU Site Inspection Report of BMS (19.9.2022) p. 33.

²⁸⁰ EU Site Inspection Report of Dörtel (5.6.2023) p. 39.

²⁸¹ Site Inspection Report Blade (13.1.2023) pp. 25-26.

Several workers interviewed during the research for this report also claimed that PPE was not provided regularly. Several workers stated:

“There is not enough PPE. We are wearing dust masks. It is not safe and sufficient. There is no problem with glasses and visors, but those who want to wear masks do, those who don’t want to don’t. They just don’t care. I said many times that I wanted a filtered mask, but I could not get it. Sometimes we find old masks from the ship and put them on, but it’s unclear how protective they are.”

“Gloves are provided. We can take as many gloves as we want per week. But no filtered mask. They give dust masks. We asked for a filter mask, but they did not give it.”

“Training is given on using PPE, but the equipment is given to us only when there is an inspection. They do not give PPE because it takes longer to cut with the equipment. Most facilities are like this.”

Moreover, Blade, Sök, Öge and Dörtel failed to demonstrate, during the EU evaluation, that they provided workers exposed to heat and flames with flame retardant clothing.²⁸² All interviewed workers said they bought their own clothes. According to the law, the employer cannot transfer the cost of occupational health and safety measures to its employees.²⁸³ All personal protective equipment and work clothes must be provided to workers by the employer.



Burn marks on clothes

Site Inspection Report of Blade dated 13.1.2023



Cutters were observed to wear clean and new PPE during the inspection

Site Inspection Report of Öge (6.1.2020)

In addition, all the workers interviewed said that the PPE worn during the EU inspections was not worn on a day-to-day basis. A worker stated, *“Audits are always fake. In the last 5-6 years, since the EU inspections started, protective clothing has been given from inspection to inspection. Otherwise it is always at our own expense.”*

On the other hand, some workers signalled that there are improvements in terms of awareness, especially following stricter EU inspections:

“In the last 3-5 years, it’s changed for the better. I have been working in this industry for 30 years. There wasn’t any safety before. There were no gloves, no masks. Now, in the yard where I work, at least there are masks. We were not using masks before. Now they are giving masks. There are glasses and gloves. Before, some places gave 3-5 masks a week. We objected. We asked for 1-2 masks every day. That’s why they started to give.”

Another type of PPE is safety footwear. In facilities where cutting operations are performed and there are many metal parts, there is a high risk that sharp objects may penetrate the foot. However, no information regarding footwear was found in the EU inspection reports. This is one of the areas that requires attention and consideration.

²⁸² EU Site Inspection Report of Blade (13.1.2023) pp. 25-26; EU Midterm Review Report of Sök (12.2022) pp. 17-18; EU Midterm Review Report of Öge (24.4.2023) pp. 17-18
EU Site Inspection Report of Dörtel (5.6.2023) p. 39: “In response to the final report the facility forwarded additional documentation regarding the flame retardant workwear, found to be adequate.”

²⁸³ İş Sağlığı ve Güvenliği Kanunu (n 55) article 4.

(ii) Safety belt and lifeline

One of the greatest hazards is falling from heights, requiring measures to prevent the fall of workers and materials. In cases where collective protection measures cannot completely eliminate the risk of falling, full-body belt systems or similar safety systems should be used to create connection points or lifelines.²⁸⁴ When necessary, descending and ascending equipment, energy absorbing apparatus, rope holders that provide connection to horizontal and vertical lifelines or similar equipment should be provided and used.²⁸⁵

According to a worker, *“We wear safety belts in dangerous places, but I can’t say the same for all the places. Yet, when it comes to inspection, we wear it everywhere. When the inspectors leave, we work however we want.”*

An expert who worked in the sector claimed, *“Workers work from height during dismantling. Working standards are far below the criteria of worker health and safety. But it is not possible to explain this to the owners of the ship recycling industry because they only want to finish the work as soon as possible. A huge change is needed.”*

Warning signs/labels and workers’ safety

Various safety deficiencies were observed across different ship recycling yards, during the EU inspections. Safety signs were lacking in hazardous areas where objects could potentially fall from great heights, raising concerns about the absence of proper

warnings.²⁸⁶ Additionally, one yard did not provide a complete inventory²⁸⁷ of the carrying capacities of lifting equipment, such as slings, shackles and steel ropes, leaving uncertainties about their safe usage. In another instance, discrepancies were found between the maintenance records and the numbering on the fire extinguishers on-site, indicating incorrect labelling.²⁸⁸ Furthermore, the lack of sufficient eyewash stations was highlighted as problematic in one yard.²⁸⁹ In yet another yard, safety signage on the vessel was found to be insufficient, and the conditions and instructions for lifting equipment were inadequate.²⁹⁰

Gas-free measurements

Before dismantling, gas measurements on the ship must be made and a gas-free certificate must be obtained after gases have been purged from all closed spaces where flammable, explosive and combustible materials have been used or stored.²⁹¹ During dismantling, gas measurement should be taken periodically.

During the interviews, it was repeatedly stated that gas-free measurements were not carried out properly in Aliağa and that cutting often started before the tank cleaning was completed.²⁹² Two recent explosions in 2021 and 2023 occurred respectively in the yards of Metaş and Blade, the former resulting in a fatality.²⁹³

This problem of gas-free measurements is reflected in the EU inspection reports many times. The first inspection of Anadolu in 2021, for example, discovered that the person supposedly responsible for gas measurements was unaware of his role.²⁹⁴ According to the inspection report of Ege Gemi dated January 2022,

²⁸⁴ Connection ropes, hooks, carabiners, pulleys, rings, slings.

²⁸⁵ İş Sağlığı ve Güvenliği Kanunu (n 55) Article 30, Yapı İşlerinde İş Sağlığı ve Güvenliği, Official Gazette Date: 5.10.2013 Number: 28786, Article 5/2.

²⁸⁶ EU Site Inspection Report of Temurtaşlar (2.2.2021) p. 32.

²⁸⁷ Ibid, p.33.

²⁸⁸ Ibid, p. 38

²⁸⁹ Ibid, p., 36; EU Site Inspection Report of Ege Gemi (16.12.2020) p. 30.

²⁹⁰ EU Site Inspection Report of Işıksan (26.5.2019) p. 20.

²⁹¹ Gemi Söküm Yönetmeliği (n 53) article 8.

²⁹² In a work accident in one of the facilities back in 2012, a tank explosion resulted in a serious injury of a worker. It is indicated in the criminal case that the dismantling of the ship was started without gas-free operation. The worker stated in his statement to the prosecutor’s office that gas-free operation was not carried out during the time he worked at the facility (Supreme Court 12. CD., E. 2018/3487 K. 2019/12042 T. 19.12.2019).

²⁹³ In July 2021, a work accident took place in the yard of Metaş where a worker died, and another worker was seriously injured. The cause of the accident was an explosion due to gas compression. Furthermore, recently, in the yard named Blade, an accident occurred as a result of the explosion of the fuel tank, and a worker was seriously injured in March 2023

“METAŞ Gemi Söküm’de yine iş cinayeti: 2 işçi yaşamını yitirdi” <<https://www.evrensel.net/haber/442511/metas-gemi-sokumde-yine-is-cinayeti-2-isci-yasamini-yitirdi>> Accessed 8.3.2023
<https://twitter.com/DGDSEN/status/1641786454874488833>.

²⁹⁴ EU Site Inspection Report of Anadolu (15.1.2021) pp. 46-47.

the person performing gas measurements was not following any particular procedure.²⁹⁵ In the mid-term report of Işıksan, the first gas-free certificate that was provided was found to be generic, and thus not ship specific.²⁹⁶ Moreover, in the inspection report of Blade dated 2023, the evaluators found that the information provided for gas measurements was contradicting: “The facility did not have trained personnel to conduct gas measurements and that the facility always called the third-party [...] to conduct the gas measurements. When asked about his availability to come on a regular basis to conduct gas measurements, the facility stated that he was always available when needed. The evaluators question this statement as he is involved in gas measurements, ODS removal and asbestos removal for several facilities in Aliğa. On the second day one person explained that they conduct the gas measurements themselves, while another person explained that [same person] is conducting the gas measurements.”²⁹⁷

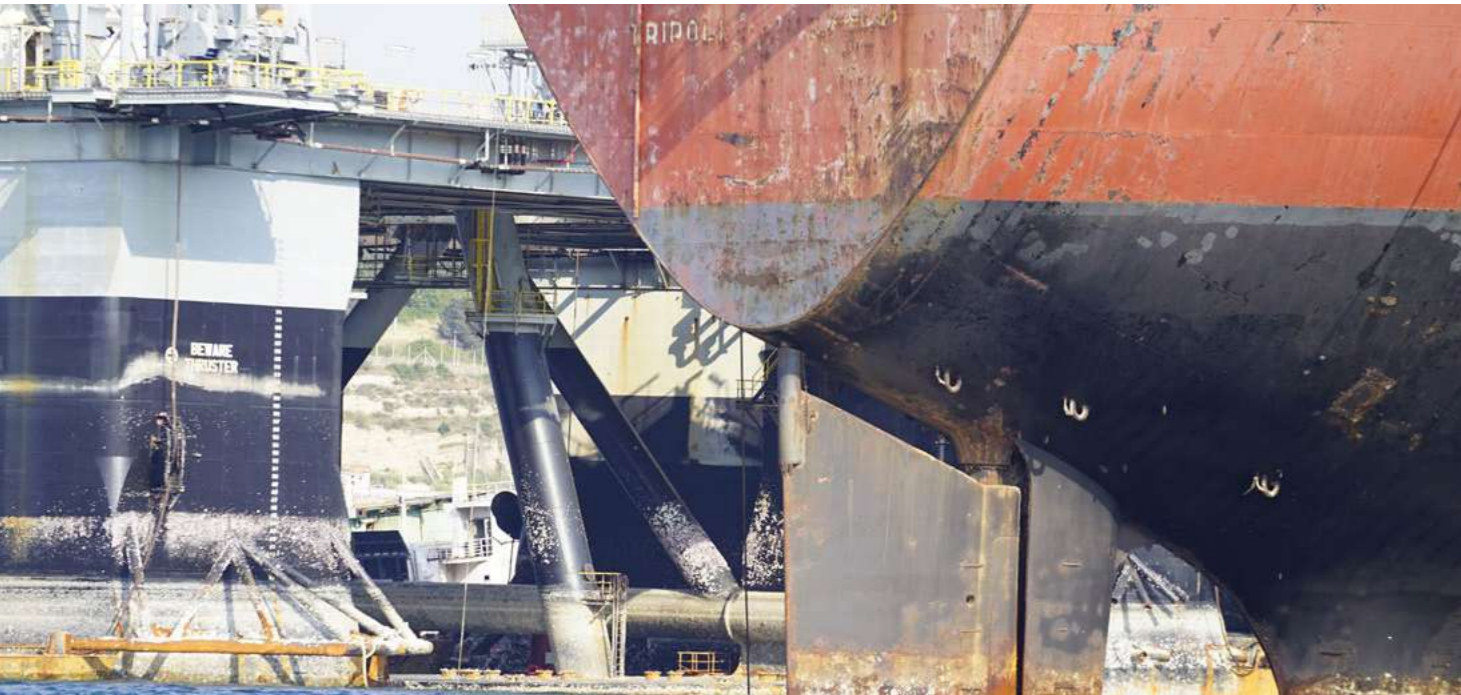
Gas-free measurements need to be monitored by the Port Authority and the above findings reveal a serious lack of oversight.

Workers facilities

There is no public water in the region where the ship recycling facilities are located. Instead, the facilities have storage tanks for drinking water, and the water is tested before arriving at the yards. However, concerns related to neglecting the testing of stagnant water, which is necessary to prevent the spread of bacteria, were raised by the EU evaluators. Lack of experience in tank cleaning and testing further compounds the problem.²⁹⁸

3. Medical Monitoring

Prolonged exposure to hazardous materials, especially in the absence of proper safety measures and equipment, significantly increases the likelihood of workers developing occupational illnesses or sustaining injuries. Medical monitoring plays a crucial role in ensuring occupational health and safety, but it should be viewed as one of the later steps in a comprehensive approach that puts the primary focus on prevention. While health checks aim to detect diseases at an early stage, medical monitoring is not a method of prevention.



Concerns related to the ship Slough came to the agenda with the claim that the gas measurement was not done before its arrival in Aliğa

Credit: Doğu Eroğlu, May 2023

²⁹⁵ EU Site Inspection Report of Ege Gemi (25.1.2022) pp. 33-34.

²⁹⁶ Midterm Review Report of Işıksan (27.9.2022) p. 14.

²⁹⁷ EU Site Inspection Report of Blade (26.5.2019) p. 31.

²⁹⁸ EU Site Inspection Report of Işıksan (26.5.2019) p. 5; EU Site Inspection Report of Ege Çelik (21.10.2019) p. 11; EU Site Inspection Report of Aşar (08.07.2020) p. 15; EU Site Inspection Report of

The employer has an obligation to ensure that employees have access to a health surveillance program,²⁹⁹ including annual tests³⁰⁰ for hearing, vision, lung capacity, blood test and lung x-ray.³⁰¹ However, occupational diseases are scarcely recorded and registered in Turkey, where the burden of the registration process falls upon the ill or deceased worker's family, who typically have very limited resources and lack the necessary organisational power.³⁰² Astonishingly, not a single case of an officially diagnosed occupational disease has been reported since the establishment of the Aliğa ship recycling area. Although ship recycling yards conduct regular medical monitoring, these periodic health checks may not actually detect illness and often lack the necessary guarantees associated for workers to access appropriate follow-up, compensation, or legal recourse.

Lung diseases

Detecting and attributing occupational diseases related to chronic lung conditions in Aliğa is challenging. The current healthcare system in Turkey often overlooks inquiries about workplace history, making it difficult to establish a direct link between occupation and illness. Additionally, the nature of these diseases requires long-term monitoring over several decades, posing further difficulties in identifying and linking them specifically to asbestos exposure, even more so considering the high labour force turnover.

Although occupational diseases are not recorded and registered in Turkey, it is reported that different types

of cancer, especially lung cancer, are very prevalent, both in surrounding communities and in Aliğa.³⁰³ A worker stated that “There are workers who die of lung cancer. Many of us have accepted the situation. Many of us say that I’m going to die of cancer anyway.”

Asbestos is one of the most common and hazardous materials found on-board ships.³⁰⁴ Although many countries have banned asbestos, it is still found in many ships.³⁰⁵ Recent estimates indicate asbestos is still found in over 65% of vessels.³⁰⁶ As previously outlined, many irregularities related to the removal and disposal procedures of asbestos in the ship recycling sector have been identified. Given that the amount of asbestos is not properly determined in the first place, and PPE is not properly used, many workers are exposed to asbestos.

Focus on lead

Although many heavy metals are of concern in ship recycling, one of the most recurring and highly toxic ones is lead, which is mostly used to make alloys, plumbing materials, and lead-acid batteries. Other uses include ammunition, paints, glazes, and cable wrapping. Workplace exposure can also arise when lead-containing paint is applied and removed, as well as when lead-coated items are grounded, welded, or cut.³⁰⁷

Lead is a cumulative toxin that impacts several body functions, including the immunological, gastrointestinal, cardiovascular, haematological, neurological, and renal systems.³⁰⁸ Long-term exposure to lead can have many negative effects.³⁰⁹ According to the

Temurtaşlar (2.2.2021) p. 14; EU Site Inspection Report of Dörtel (19.9.2022) p. 12; EU Site Inspection Report of BMS (19.9.2022) p.12.

The evaluators highlighted the importance of testing the stagnant water in all inspections in all facilities: “During the first site inspection, it was recommended that the yard ensure regular testing of the water in accordance with testing requirements for stagnant water. Stagnant water allows for the incubation of biological activity, due to the decay of disinfectants and can lead to the growth of unwanted bacteria including Legionella which can be spread in showers.” EU Site Inspection Report of Şimşekler (20.3.2020) p. 12).

²⁹⁹ According to Article 15 of the Occupational Health and Safety Law, the employer shall ensure that employees are subject to health surveillance, during their recruitment process, change of jobs of employees and the continuation of the work. According to the Regulation on Duties, Responsibilities, Authorities and Training of Workplace Physician and Other Health Personnel, health checks should be made at least once a year in “very dangerous workplaces”. A workplace doctor should be appointed for at least 15 minutes per employee per month.

³⁰⁰ It is observed from the EU Inspection Reports that the testing was performed by the service suppliers Yasa Sağlık Medical Center, Asklepion and Aliğa OSGB.

³⁰¹ EU Site Inspection Report of Anadolu (15.1.2021) pp. 41-42; EU Site Inspection Report of Işıksan (26.5.2019) p. 29; EU Site Inspection Report of Ege Çelik (21.10.2019) p. 10.

³⁰² “Turkey seen through the prism of occupational diseases...” <<https://disk.org.tr/2014/07/turkey-seen-through-the-prism-of-occupational-diseases/>> Accessed 23.10.2023.

³⁰³ “Sanayinin Ortasında Kanseri Köy” <<https://www.voaturkce.com/a/sanayinin-ortasinda-kanserli-koy/6696107.html>> Accessed 16.2.2022.

³⁰⁴ “İzmir Aliğa’da Asbestten Kaynaklı Kanseri Vakası” <[https://www.yasadikka.com/izmir-aliagada-asbestten-kaynakli-kanser-vakasi/](https://www.yasadikka.com/izmir-aliagada-asbestten-kaynakli-kanser-vakasi/?cn-reloaded=1)> Accessed 16.2.2022.

³⁰⁵ Laurie Kazan-Allen, “Bangladesh Shipbreaking Industry Exposed” <<http://ibasecretariat.org/lka-bangladesh-shipbreaking-industry-exposed.php>> Accessed 21.3.2023.

³⁰⁶ A commercial vessel could contain as much as 10 tons of Asbestos Containing Materials in engine rooms, fuel lines, sea water lines and fireproofing material, whereas navy vessels, such as the aircraft carriers São Paulo and Clemenceau, are estimated to contain as much as 900 tons of asbestos and ACMs. “Press Release – Clemenceau’s sister ship heading for the scrapyards” <<https://ship-breakingplatform.org/sao-paulo-scrapping/>> Accessed 21.3.2023.

³⁰⁷ “Naida Hakirevic Prevljak Maritec: Over 65% of all ships contain asbestos” <<https://www.offshore-energy.biz/maritec-over-65-of-all-ships-contain-asbestos/>> Accessed 21.3.2023.

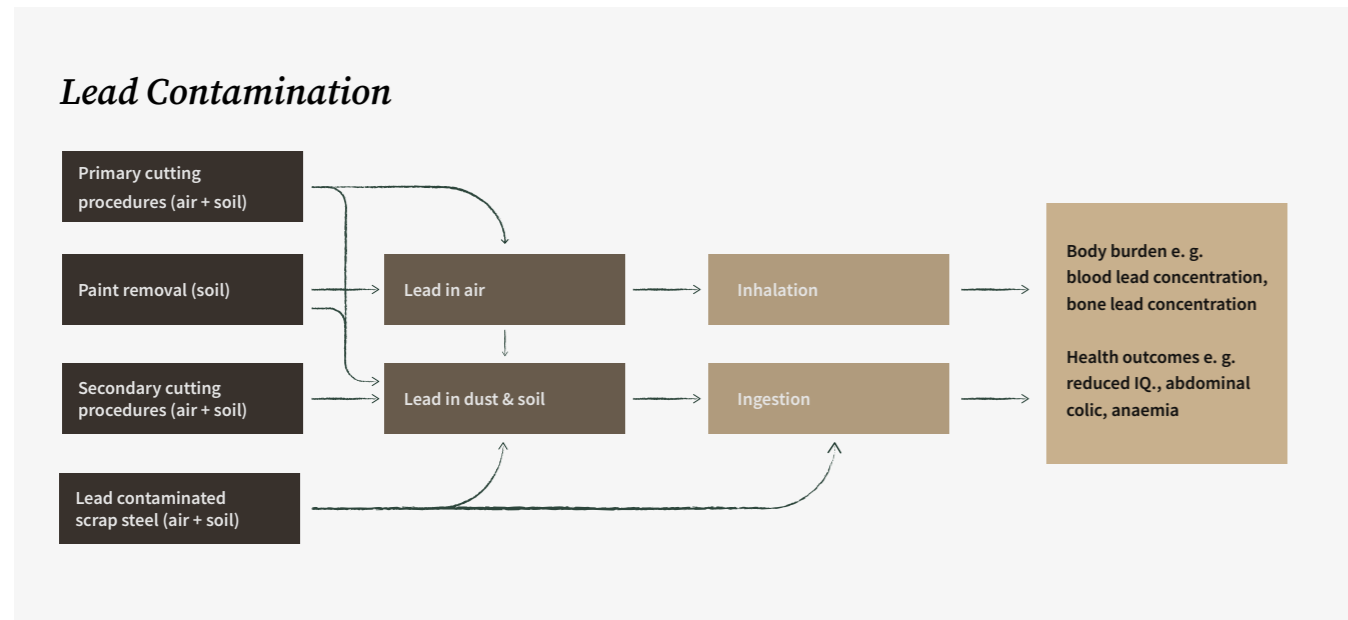
³⁰⁸ “Exposure to Lead: A Major Public Health Concern” WHO (21 October 2021, Second Edition) 2 <<https://www.who.int/publications/i/item/9789240037656>> Accessed 14.2.2023.

³⁰⁹ Ibid, p. 1.

Ibid, p. 4.

International Agency for Research on Cancer, inorganic lead compounds have been categorised as possibly carcinogenic to humans.³¹⁰ High lead levels in the air are also transmitted via inhalation.³¹¹

lead exposure levels (BLL < 10 µg/dL).³¹⁵ The American College of Occupational and Environmental Medicine has endorsed an expert group's recommendation to maintain a BLL below 20 µg/dL to prevent acute effects.



Threshold for Blood Lead Level (BLL)

Both the European Council Directive on Worker Health and Safety Regarding Chemical Risks³¹² and the Regulation on Health and Safety Measures In Working With Chemical Substances³¹³ stipulate the necessity of medical surveillance when a worker's Blood Lead Level (BLL) exceeds 40 µg Pb/100 ml, while the limit value is 70 µg Pb/100 ml.

Yet, many experts say it is misleading to assume that keeping BLLs below 40 µg/dL over a worker's lifespan can effectively safeguard from harm.³¹⁴ The risk of adult cardiovascular illness, such as hypertension and coronary heart disease, is elevated even at low

But the US National Toxicology Program (NTP) considers even lower levels to be cause for concern, saying *"there is substantial evidence that BLLs 10 µg/dL and 5 µg/dL are linked with significant health consequences in children and adults"*. Moreover, the Joint FAO/WHO Expert Committee on Food Additives estimates that the previously established provisional tolerable weekly intake of 25 µg/kg body weight per week could no longer be considered protective and withdrew it after conducting a review of the scientific data in 2010. The Committee determined that it was impossible to create a new provisional tolerable weekly intake that would be health-protective since dose-response studies failed to provide a threshold for the primary adverse effects of lead.³¹⁶

³¹⁰ 'Summaries & evaluations: Inorganic and organic lead compounds. Lyon' International Agency for Research on Cancer (IARC Monographs for the Evaluation of Carcinogenic Risks to Humans, IARC (2006) Vol. 87; <http://www.inchem.org/documents/iarc/vol87/volume_87.pdf> Accessed 14.2.2022.

³¹¹ 'Global elimination of lead paint why and how countries should take action' WHO (2020). <<https://apps.who.int/iris/bitstream/handle/10665/333840/9789240005143-eng.pdf?sequence=1&isAllowed=y>> Accessed 15.2.2023.

³¹² Council Directive 98/24/EC of 7.4.1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, Annex II <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31998L0024>> Accessed 15.2.2023.

³¹³ 'Kimyasalların Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik' Official Gazette No: 28733 Date: 12.08.2013 Annex II <<https://www.mevzuat.gov.tr/mevzuat?Mevzuat-No=18709&MevzuatTur=7&MevzuatTertip=5>> Accessed 15.2.2022.

³¹⁴ 'Potential Health Risks to DOD Firing-Range Personnel from Recurrent Lead Exposure' Committee on Potential Health Risks from Recurrent Lead Exposure of DOD Firing-Range Personnel; Committee on Toxicology; Board on Environmental Studies and Toxicology; Division on Earth and Life Sciences; National Research Council (2013, the National Academy of Sciences) 4 <https://www.ncbi.nlm.nih.gov/books/NBK206966/pdf/Bookshelf_NBK206966.pdf> Accessed 15.2.2023.

³¹⁵ 'Global elimination of lead paint why and how countries should take action' (n 311) p. 7.

³¹⁶ 'Exposure to Lead: A Major Public Health Concern' (n 307) p. 3.

Test results and tackling blood lead levels

As stated by the WHO, the most successful method of treating lead poisoning is primary prevention, i.e. eliminating lead exposure by removing lead at source.³¹⁷ The high risk of exposure faced by workers in the ship recycling environment, however, requires strengthening and enhancing engineering controls, administrative controls, work-practice controls, and, finally, the use of PPE.³¹⁸ The issue of elevated blood lead levels has persisted as a long-standing concern within the ship recycling yards in Aliğa where the current practice to treat high blood lead is to mandate employees to not to work. In 2013, a doctor having worked at these facilities reported that out of 1,000 workers examined, 74 workers had lead levels in their blood that were close to the limit value of 70 µg/100 ml (ranging from 60 to 65 µg/100 ml).³¹⁹

The EU inspection reports have expressed concerns regarding the reliability of lead test results. For example, at the SÖK yard all test results of workers were consistently reported as 20 µg/100 ml in 2018, suggesting that workers exposed to lead and those not exposed had similar test results. The yard stated that workers with lead levels above 20 µg/100 ml received training, but only acknowledged smoking as an explanation for increased lead levels, while ignoring the many possible sources of occupational exposure at the facility. The EU evaluators determined that the lead assessments conducted at the facilities were insufficient, highlighting the need for improved monitoring practices to ensure the safety and well-being of workers in relation to lead exposure.³²⁰

During the mid-term review in 2023, EU evaluators reported that Sök facility workers with lead concentration of 20 µg/100 ml would receive training; those of

30-40 µg/100 ml would be asked to take a leave; and those of 40 µg/100 ml and above reportedly would have their employment terminated.³²¹ When the evaluators questioned the termination of employment, SÖK responded that there must have been a misunderstanding, as they would not terminate any employment, but rather remove the employee from the exposure, while the social insurance and monthly salary would be paid.³²²

Other mid-term reviews revealed similar policies at other facilities. At Ege Çelik, workers with lead concentrations of 20-40 µg/100 ml would receive training, those with concentrations of 40 µg/100 ml would be asked to take a paid leave, while the workers with a lead concentration of 70 µg/100 ml would be hospitalised.³²³

Some workers at Öge had lead concentrations above 20 µg/100 ml. Plans were made for training workers with lead concentrations of 20 µg/100 ml.³²⁴

Several workers from different yards shared that they are placed on unpaid "lead leave," a local colloquial term for the period during which employees with high lead concentrations are asked to take leave.

Several workers from different yards shared that they are placed on unpaid "lead leave," a local colloquial term for the period during which employees with high lead concentrations are asked to take leave.

A worker stated that *"The result of my lead values was very high in the previous years. It was over 40 µg/100 ml. The doctor prevented me from going to work for a while, then the value dropped. We are exposed to a lot*

³¹⁷ Ibid p. 4.

³¹⁸ 'Lead' The National Institute for Occupational Safety and Health <<https://www.cdc.gov/niosh/topics/lead/employerinfo.html>> Accessed 10.10.2023.

³¹⁹ 'Gemi Söküm Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliğa Gemi Söküm Bölgesinde Bir Araştırma' (n 24), p.169.

³²⁰ EU Site Inspection Report of Sök (4.2.2020) pp.35-36.

³²¹ EU Midterm Review Report of Sök (12.2022) pp.8-9.

³²² EU Midterm Review Report of Sök (14.6.2023) p.8.

³²³ EU Midterm Review Report of Ege Çelik (12.1.2023) p.8.

³²⁴ EU Midterm Review Report of Öge (24.4.2023) p.7.

to lead. It is very normal that lead levels are high, especially because until recent years, PPE was not available that much. After the EU inspections, there is a little more awareness.”

Hearing and other health issues

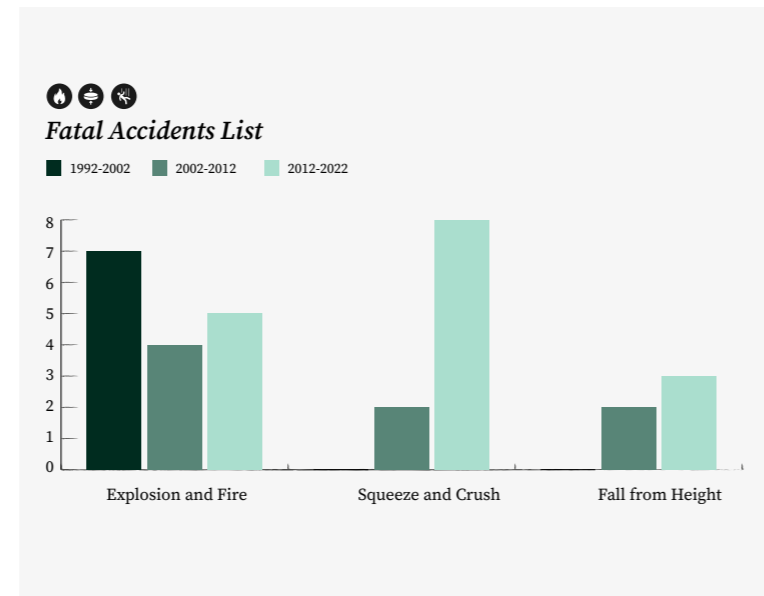
The monitoring of hearing disturbance is crucial in ship recycling facilities due to activities such as grinding, hammering, and metal cutting. Noise measurements should be conducted, and personal exposure should be determined according to relevant regulations.³²⁵ Similarly, the level of mechanical vibration should be monitored to assess employee exposure. If the exposure exceeds the limits, appropriate ergonomically designed equipment with minimal vibration should be selected.³²⁶

However, limited information on hearing tests and mechanical vibration monitoring was found in EU reports. Only the EU inspection report of Anadolu mentioned hearing monitoring. Whilst a portion of the workers at the yard were transferred for additional hearing tests, the monitoring reports were not properly recorded.³²⁷ Unfortunately, this issue was not followed up in the subsequent 2023 report.

4. Workplace Accidents

According to a 2022 report by Istanbul Health and Safety Labour Watch (ISIG), at least 97 workers lost their lives in all the sectors in Aliğa between 2013 and the first six months of 2022. Several of these occurred in the ship recycling sector, where the fatal accident

incidence rate was higher than the average incidence rate in Turkey.³²⁸



Since 2020, at least seven workers have died in different ship recycling yards. In October 2020, Can Sünmez, 21, working at Işıksan, fell from a height of 40 meters.³²⁹ In February 2021, Turan Arslan, who was working at Şimşekler ship recycling, died as a result of a piece of steel falling on him.³³⁰ In July 2021, Yılmaz Demir and Oğuzhan Taşkın lost their lives as a result of a fire and explosion during the dismantling of a cruise ship at the facility of Metaş.³³¹ In September 2021, İlyas Bıdık and Veli Bal passed away as a result of the breaking of a rope in Metaş.³³² In June 2022, Yıldırım Kipel, who worked at Şimşekler, lost his life in a fire that broke out while cutting a fuel tank.³³³

SRAT does not maintain an accident and near-miss accident databank or conduct post-investigations to analyse the root causes for accidents. Neither does

the Turkish Social Security Organization (SGK) deliver current workplace accident and occupational disease figures on a sector specific level. The inspection reports by the Ministry of Labour are not accessible to the public. There is no official study on the structural reasons for accidents, nor an analysis of the organisation of work to prevent future accidents. While EU inspections do include coverage of accidents, it has become evident that the data is not consistently updated. In fact, recent inspection reports often reference previous accident figures rather than reflecting the most current information.

The two fatal incidents that occurred in the previously but no longer EU-listed Simsekler facility in February 2021 and June 2022 have been assessed by the European Commission in terms of accident investigation and root cause analysis. The Commission identified organisational issues to be a root cause of the accidents and recommended that the yard strengthen its risk management and take steps to enhance worker safety. Yet, the facility did not comply with the European Commission’s request to be informed of developments on the matter. Having failed to comply with the requirements of the EU SRR, Simsekler was removed from the EU List in December 2022.³³⁴

Also in the site inspection report of Blade, the EU evaluators highlighted the problem of lack of root cause investigation: “Generally the evaluators find that the conclusions of the incident and root cause investigations in the Aliğa recycling facilities are focused on the individual (the injured worker) who allegedly did wrong. Limited attention is paid to the role of the context and the organization for which the injured was working. If the investigation is conducted too superficially, it could be difficult to offer learning value to the yard.”³³⁵

The same concern was reflected in several inspection reports:

Sök: “At the time of the first site inspection, the facility did not have a live, formal Incident monitoring and reporting regime, with any spreadsheet, action list or log. The evaluators could not witness any root cause analysis. The facility is obliged to report accidents, other than minor injuries, to the authorities as per Turkish Law. The yard had reportedly not had any serious accidents the last 15 years, only minor incidents such as scratches and squeezed fingers.”³³⁶

In the report of Avşar, the evaluators found discrepancies in the accident lost days reported compared to the finding during inspection.³³⁷ The second report of Anadolu mentions that accidents and lost days were significantly higher compared to other years. The increase in “near miss” reporting is said to be due to a heightened focus that encourages such reporting. However, the reason for the rise in “lost working day incidents” remains unexplained. The applicant was asked for an explanation, but the response did not address this concern.³³⁸

There is no official study on the structural reasons for accidents, nor an analysis of the organisation of work to prevent future accidents.

³²⁵ ‘Çalışanların Gürültü ile İlgili Risklerden Korunmasına İlişkin Yönetmelik’ Official Gazette Date: 28.07.2013 Number: 28721, article 5.

³²⁶ İş Sağlığı ve Güvenliği Kanunu (n 55) Article 30.

‘Biyolojik Etkenlere Maruziyet Risklerinin Önlenmesi Hakkında Yönetmelik’ Official Gazette Date: 15.6.2013 Number: 28678, Article 8/3/b.

³²⁷ EU Site Inspection Report of Anadolu (15.1.2021) pp.41-42.

“24 out of 77 workers were transferred for additional hearing tests. The applicant has not systemized the health monitoring reports”.

³²⁸ ‘Ezilme, patlama, yüksekten düşme, zehirlenme, asbest... 2013-2022 yılları arasında Aliğa’da en az 97 işçi hayatını kaybetti’ (26.7.2022, ISIG) <http://www.isigmeclisi.org/20767-ezilme-patlama-yuksekte-dusme-zehirlenme-asbest-2013-2022-yillari-a> Accessed 20.2.2023.

³²⁹ ‘Işıksan Gemi Sökümde iş cinayeti: 21 yaşındaki işçi yaşamını yitirdi’ <https://www.evrensel.net/haber/415581/isisksan-gemi-sokumde-is-cinayeti-21-yasindaki-isci-yasamini-yitirdi> Accessed 21.3.2023.

³³⁰ ‘Aliğa’da gemi söküm işçisi üzerine düşen parça nedeniyle yaşamını yitirdi’ <https://www.evrensel.net/haber/425234/aliagada-gemi-sokum-iscisi-uzerine-dusen-parca-nedeniyle-yasamini-yitirdi> Accessed 21.3.2023

The file is being viewed in Aliğa 3 Criminal Court of First Instance with the number 2021/722.

³³¹ ‘Tersanede patlamada yaralanan işçi hayatını kaybetti’ <https://www.dokuz8haber.net/tersanede-patlama-yaralanan-isci-hayatini-kaybetti> Accessed 21.3.2023

³³² ‘Two workers die while scrapping cruise ship in Turkey’ NGO shipbreaking Platform (2.7.2021) <https://shipbreakingplatform.org/two-workers-die-in-turkey/> Accessed 6.4.2023.

³³³ ‘İzmir’de tersanede çelik halat koptu: 2 işçi öldü’ <https://www.cumhuriyet.com.tr/haber/izmirde-tersanede-celik-halat-koptu-2-isci-oldu-1868422> Accessed 21.3.2023.

³³⁴ ‘Aliğa Gemi Sökümde geçtiğimiz günlerde iş kazası geçiren işçi yaşamını yitirdi’ <https://www.evrensel.net/haber/463729/aliaga-gemi-sokumde-gectigimiz-gunlerde-is-kazasi-geciren-isci-yasa>

mini-yitirdi’ Accessed 21.3.2023.

The criminal case is being heard in Aliğa 1st Criminal Court of First Instance with file number 2023/49.

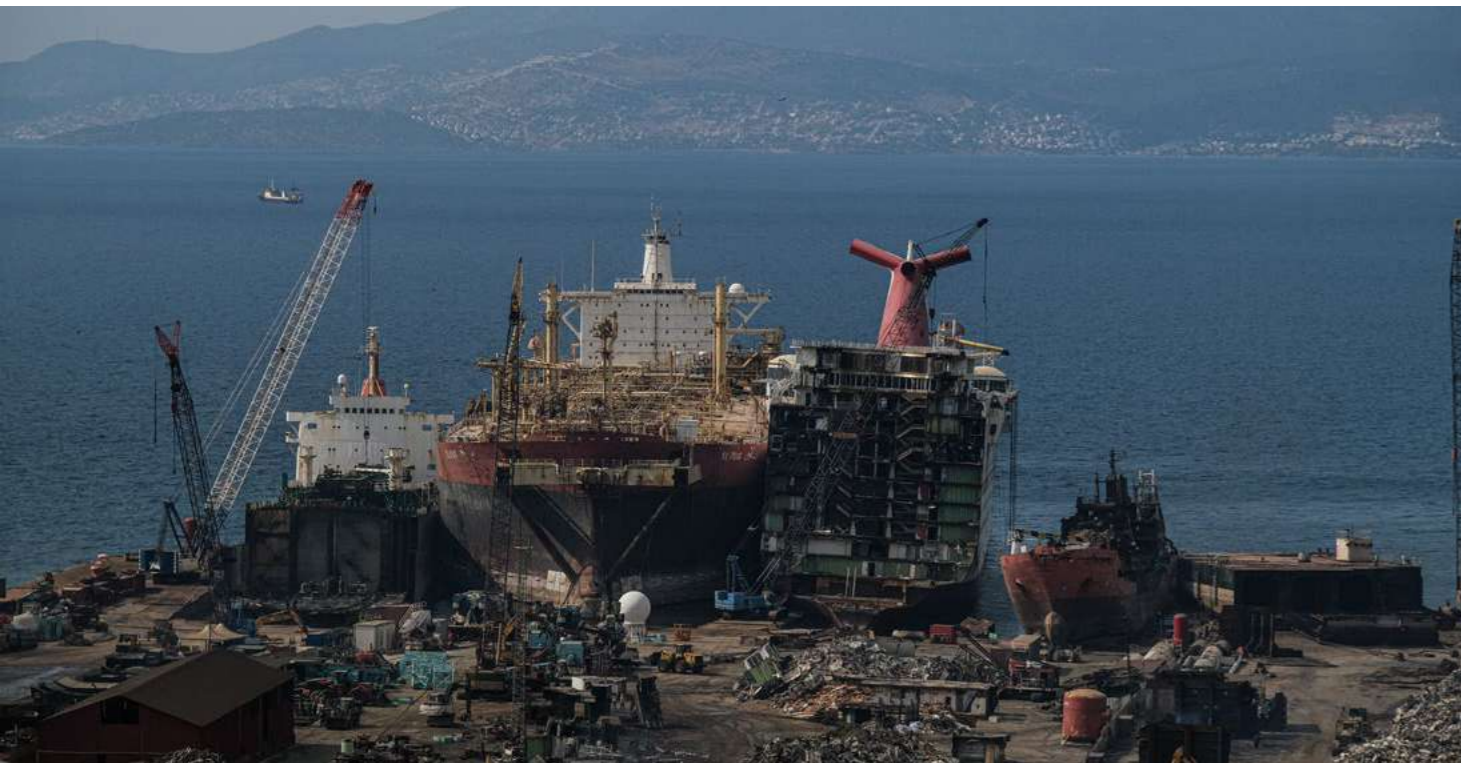
³³⁴ ‘Update of the EU List of Ship Recycling facilities: two yards removed and a new one added’ (14.12.2022) European Commission <https://environment.ec.europa.eu/news/update-eu-list-ship-recycling-facilities-2022-12-14_en> Accessed 20.2.2023.

³³⁵ EU Site Inspection Report of Blade (13.1.2023) pp.26-27.

³³⁶ EU Midterm Site Inspection Report of Sök (14.6.2023) p.36.

³³⁷ EU Site Inspection Report of Avşar (8.7.2020) p.44.

³³⁸ EU Site Inspection Report of Anadolu (13.3.2023) p.33.



Credit: Vedat Örüç, August 2023

5. Problems on Labour Rights

Employment numbers and employment types

Although the ship recycling sector is classified as “very dangerous work” according to its OHS risk level, there are no consistent employment figures delivered by any state institution or business representation on the basis of which one could develop a risk analysis or occupational health and safety metrics.

Employment numbers fluctuate and include informally/illegally employed, subcontracted labour. In 2007 the Turkish Ministry of Labour and Social Security estimated that the ship recycling sector employed 291 workers.³³⁹ Doctoral research by Ertuğrul Bilir, estimated that in

2012 maximum employment was reached with 1700 workers.³⁴⁰ When the NGO Shipbreaking Platform visited the Aliğa ship recycling yards in June 2015, the chairperson of SRAT said that 810 workers were directly employed. According to the information provided by the Ministry of Transport, between 2014 and 2016 the average monthly number of employees between 2014 and 2016 was 951. Most recently, responding to a parliamentary question in January 2023, the Ministry of Transport stated that 1,201 workers were directly employed in all the ship recycling yards.³⁴¹

Domestic law restricts the employment of indirect/subcontracted workers to a limited number of technically justified side-tasks within a main sector.³⁴² Subcontracted/indirect labour for conducting the main tasks of the ship recycling sector is thus prohibited. Ship recycling yards have, however, paid huge amounts of financial penalties due to non-compliance.³⁴³ Especially

³³⁹ ‘Gemi Söküm Yapılan İşyerlerinde İş Sağlığı ve Güvenliği Teftiş Projesi-2 Genel Değerlendirme Raporu’ (n 42) p.13.

³⁴⁰ ‘Gemi Söküm Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliğa Gemi Söküm Bölgesinde Bir Araştırma’ (n 24) p.213.

³⁴¹ Response dated 877707 and numbered 9.01.2023 of the Ministry of Transport and Infrastructure to the parliamentary question of Ali Öztunç numbered 7/74450.

³⁴² İş Kanunu N.4857, Official Gazette Date: 10.6.2003 Number: 25134 Article 2.

³⁴³ SRAT informed the NGO Shipbreaking Platform that in 2013 routine inspections of the Labour Ministry fined a total of seven companies around 10.000 euros for not complying with the subcontracting regulation of the Labour Law.

during particularly busy periods, it is common to informally hire precarious subcontracted labour, which can be easily dismissed when the workload diminishes.³⁴⁴ Some of the yards also use an external service to remove the furniture and wooden parts of the ships, including operations that may expose workers to hazardous material as explained in above sections of this report.

Several yards still use an external service that does not provide official registration and insurance to the workers, according to interviews for this report. This practice not only raises serious health concerns but also has the unintended consequence of obscuring the comprehensive health effects resulting from asbestos exposure, and exacerbates the inadequate registration of occupational diseases in the ship recycling sector.

A worker stated, “Before dismantling, the wood on the ship must be removed. Sometimes a crew comes before the dismantling starts and they pull out the wood in the ship. They buy the furniture and all the stuff. But for this, workers usually come from the outside. We know that there are migrant workers among them and that they do not have insurance. Of course, this creates a lot of problems. Once there was a serious work accident, for example, the worker had neither registration nor insurance.”

Another worker explained, “Asbestos sometimes exists between the furniture and steel or wooden parts. When there is asbestos under a wooden wall, they also break it down. We also know that they work without insurance. They take the furniture but it can be contaminated with asbestos.”

Insurance and annual leave

Whilst most employees are insured before they start to work, workers have raised the problem that insurance premiums are paid on low wages. The employees

receive only a portion of their salary through bank transfer, the rest is paid in cash and constitutes unofficial payments. As a result, the official payments for severance, sickness, unemployment, and retirement are calculated based only on the (minimum wage) amounts received via bank transfer. This practice leads to lower payments for insurances, as the unofficial payments are not taken into account in the calculation. In February 2022 the workers conducted a strike, and according to the workers, the major gain of the strike was receiving their full salaries via bank transfer, which prevents the yard owners from underestimating the insurance payments.

Another problem has been the lack of annual leave in line with the law.³⁴⁵ A worker stated that “After the strike, the Ministry of Labour conducted inspections. They asked us all about our salary, work clothes and annual leave. After the inspection, we took annual leave for the first time.”

Lump-sum payments

In the lump-sum payment method, the workers form a team with the appropriate number of people for the ship to be dismantled. They negotiate with the yard owner a certain amount of total payment and an estimated time for the dismantling of a ship. While the dismantling is in progress, the workers receive wages based on regular daily rates. The lump-sum money is paid when the ship is dismantled, and if the dismantling is terminated earlier than estimated, the workers get a bonus.³⁴⁶

Despite working with the same equipment, the increase in income is ensured by an increase in the pace of work and working longer days, including during official holidays and disregarding the weekly leave requirements. Workers in Aliğa generally prefer the lump-sum payment method, since they can earn more by working faster; however this practice systematically violates the working hour and official leave regulations.

³⁴⁴ ‘Gemi Söküm Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliğa Gemi Söküm Bölgesinde Bir Araştırma’ (n 24) 229.

³⁴⁵ According to Labor Law numbered 4857, the annual paid leave duration for employees is determined based on their length of service as follows:

a) For employees with a service period of up to five years (including five years), the leave duration is at least fourteen days.

b) For employees with a service period of more than five years but less than fifteen years, the leave duration is at least twenty days.

c) For employees with a service period of fifteen years or more (including fifteen years), the leave duration is at least twenty-six days.

³⁴⁶ ‘Gemi Söküm Endüstrisinde Çalışma Şartları ve Çalışma İlişkileri: Aliğa Gemi Söküm Bölgesinde Bir Araştırma’ (n 24) 164.

A worker stated that “We also prefer to work on a lump sum basis because we earn more. And there is not much that interferes with us. The goal is to finish the job as soon as possible.”

Lump-sum working arrangements increase risks in terms of occupational health and safety. Being able to earn higher wages by working faster can lead to physical wear and derogation of worker health and safety measures.³⁴⁷ The focus on earning more money by working faster leads to neglecting safety measures. Workers may prioritise individual earnings over teamwork and adherence to proper recycling practices, potentially resulting in inefficient and unsafe practices, increasing the risk of accidents and injuries.

An expert who worked in the sector stated, “The main problem in Aliğa, both in terms of workers’ rights and occupational health and safety, is the lump-sum form of work. This is what creates the main grievance of workers. People have accidents because they have to work fast. They earn a lot with this method, but in the end, they

become exhausted. Their salaries are given via the banking system as a minimum legal salary. They get the rest cash when the job is done or each month, depending on the contract between yard and workers. The sooner it ends, the more premium they get. But when this person retires, he can’t get the money he should get since officially only the minimum legal wage is paid. They tend to work in bad conditions.”

Although workers report that the practice of this payment method has been reduced, it still exists in many yards.

An expert who was interviewed stated that “This practice can be inferred by following the cutting durations. Ships have an average cut-off time. If these workers can cut a cargo ship of 20,000 LDT in four months, it means that the work has been done very quickly. In this case, it can be concluded that the lump sum procedure continues.”

An expert who worked in the sector stated, “The main problem in Aliğa, both in terms of workers’ rights and occupational health and safety, is the lump-sum form of work. This is what creates the main grievance of workers. People have accidents because they have to work fast. They earn a lot with this method, but in the end, they become exhausted. Their salaries are given via the banking system as a minimum legal salary. They get the rest cash when the job is done or each month, depending on the contract between yard and workers. The sooner it ends, the more premium they get. But when this person retires, he can’t get the money he should get since officially only the minimum legal wage is paid. They tend to work in bad conditions.”

Wildcat strike and total work stoppage in February 2022

Ship recycling workers in Aliğa conducted a wildcat strike for 11 days between 10-21 February 2022. There had never before been such a long and all-encompassing work stoppage in the ship recycling sector. Following the workers’ demands for a salary raise at the Temurtaşlar facility, daily wages were increased.³⁴⁸ However, this positive development triggered a series of partial work stoppages in other yards as well.³⁴⁹ Temurtaşlar, on the other hand, withdrew the increases upon the reaction of other employers. Thereupon, the workers of 22 facilities came together for a strike and continued their protests for 11 days.³⁵⁰ The workers listed their main demands as follows: (i) an increase in wages, (ii) salaries not to be paid by hand but via bank transfer, (iii) no dismissal of those participating in the strike, (iv) occupational safety equipment to be provided by the yard

owners, (v) no salary and insurance deductions in case of bad weather and similar situations, and (vi) annual leaves to be used at any time.³⁵¹

According to the statement of one worker during the strike: “Our working conditions are difficult. We are exposed to toxics such as smoke, lead and asbestos. There is also the danger of falling from heights and heavy tonnage parts falling on us. There are also dangers such as overturning the crane and breaking the ship. There are fatal accidents as a result of being hit and crushed by construction machinery. They give us a mask once a day, but that mask loses its function after two hours. They give us gloves once a week and we have to use them for a week. They don’t give us work clothes and we buy them with our own money. We call on them to fulfil the provisions of the Labour Law. We say this to the government and employers. Fulfil the laws of the state and accept all our demands.”³⁵²



Workers in strike gathered in the city centre of Aliğa

Source: <https://www.wsws.org/tr/articles/2022/02/21/turk-f21.html>

³⁴⁸ 250 TL was increased to 350 TL for apprentices, 450 TL for secondary cutters and 500 TL for ship cutters.

³⁴⁹ ‘2 bin gemi söküm işçisi 4 gündür grevde’ (15.2.2022) <<https://www.sozcu.com.tr/2022/ekonomi/2-bin-gemi-sokum-iscisi-4-gundur-grevde-6954291/>> Accessed 21.02.2023
‘Aliğa’da gemi söküm işçileri eylemlerini sürdürüyor: ‘Diğer patronların baskısıyla...’ <<https://www.cumhuriyet.com.tr/turkiye/aliagada-gemi-sokum-iscileri-eylemlerini-surduruyor-diger-patronlarin-baskisiyla-1908794>> Accessed 21.2.2023.

³⁵⁰ ‘Gemi söküm direnişi: İş durdurma tek firmada başladı, tüm bölgeye yayıldı’ <<https://www.evrensel.net/haber/476819/gemi-sokum-direnisi-is-durdurma-tek-firmada-basladi-tum-bolgeye-yayildi>> Accessed 21.2.2023.

³⁵¹ ‘Gemi söküm işçileri Aliğa Meydanı’nda: Gemileri yaktık geri dönüş yok’ <<https://www.gazeteduvar.com.tr/gemi-sokum-iscileri-aliaga-meydaninda-gemileri-yaktik-geri-donus-yok-haber-1553885>> Accessed 21.2.2023.

³⁵² ‘Aliğa’da işçilerin direnişi sürüyor: Bu sektörde ölümün nereden geleceği belli değil, hakkımızı istiyoruz’ (15.2.2022) <<https://www.gazeteduvar.com.tr/aliagada-iscilerin-direnisi-suruyor-bu-sektorde-olumun-nereden-gelecegi-belli-degil-hakkimizi-istiyoruz-haber-1553192>> Accessed 21.2.2023.



Source: <https://www.ilerihaber.org/icerik/gemi-sokum-iscilerinin-direnisi-suruyor-137075>

On 15 February 2022, the owners of the two ship recycling facilities filed a lawsuit for an injunction on charges of “illegal strike” and “causing damage to the workplace” in order to cover their losses and to stop the strike, in which around 2,000 workers participated. However, the request to stop the strike was rejected by the court.³⁵³

The strike, which ended on 22 February, played a significant role in advancing the workers’ struggle for their rights. The lawyer who provided support to the workers throughout the strike emphasised three key demands: salary increases, job security without dismissals, and the transition to bank payments for salaries. The workers’ request for bank payments of salaries was accepted, marking a positive step forward in addressing their concerns.³⁵⁴

A worker stated that “*The working conditions can be divided into a period before and after the strike. Some things have changed after the strike. For example, now our salaries are paid via the bank.*”

A worker: “*After the strike, there was some change. Before we were officially getting less salary. After the strike, they had to fix it. We heard that İşksan even pays overtime.*”

The strike also served as a catalyst for raising awareness among workers about their rights. Additionally, the spotlight shifted toward the working conditions within the facilities. As discussions surrounding the strike unfolded, attention gradually shifted towards the pressing issue of substandard working conditions. This newfound focus on the working environment brought to the forefront the need for further improvements and reforms to ensure the well-being and safety of all employees. The strike’s impact extended beyond immediate demands, sparking a broader dialogue on the importance of addressing working conditions in these facilities.

Dismissals of workers and union busting

After the strike, however, at least 15 workers employed at the ship recycling facilities Dörtel, BMS, Metas, Ersay, Bereket, and Leyal were terminated from their positions.³⁵⁵ It is believed that they were fired after their active participation in the strike. Following the strike, there has been a recession in ships arriving Aliğa, and dismissals have gradually increased. Some interviewees have asserted that the number of workers has continued to decrease by 20% following the dismissals that took place at the end of 2022 and thereafter.

³⁵³ ‘Aliğa Gemi Söküm direnişinde patronların ihtiyati tedbir talebi reddedildi’ <<https://gazetemanifesto.com/2022/aliaga-gemi-sokum-direnisinde-patronlarin-ihiyati-tedbir-talebi-reddedildi-484085/>> Accessed 21.2.2023.

³⁵⁴ ‘Gemi söküm işçilerinin grevi mahkeme tarafından haklı bulundu’ <<https://www.evrensel.net/haber/455219/gemi-sokum-iscilerinin-grevi-mahkeme-tarafindan-hakli-bulundu>> Accessed 21.2.2023.

³⁵⁵ ‘İzmir-Aliğa’da gemi söküm işçileri 11 gündür sürdürdükleri eylemi talepleri karşılanmadan bitirdi’ <<https://medyascope.tv/2022/02/23/izmir-aliagada-gemi-sokum-iscileri-11-gundur-surdurdukleri-eylemi-talepleri-karsilanmadan-bitirdi/>> Accessed 21.2.2023.

³⁵⁶ İzmir Aliğa Gemi Söküm’de 15 işçi işten çıkarıldı <<https://www.evrensel.net/haber/456039/izmir-aliaga-gemi-sokumde-15-isci-isten-cikarildi>> Accessed 21.3.2023.

Steel Plants

The ships recycled in Aliğa recover scrap steel which goes to the steel mills in the İzmir region. In 2022, steel production in Turkey amounted to 35.1 million tons.³⁵⁶ About 70% of the domestic steel is produced in electric arc furnaces (EAF), which generally can use a 100% scrap metal feedstock to produce steel. Turkey, which does not have sufficient domestic resources for generating high amounts of scrap, ranks one of the first in the world for scrap steel imports. It is estimated that 70% of the scrap used as raw material in EAF has been imported to Turkey.³⁵⁷ Today, there are 26 EAF, 11 induction furnaces and three basic oxygen furnace steel plants in Turkey.³⁵⁸ All steel companies operating in Turkey belong to the private sector, and the steel industry represents the fourth largest sector in the country’s economy.³⁵⁹

According to the İzmir Regional Plan,³⁶⁰ the metal industry is clustered in Aliğa and prioritized in eco-efficiency/industrial symbiosis projects. 40% of all steel and iron industry of Turkey is located and operates in İzmir,³⁶¹ hence the location of the ship recycling activities in Aliğa.

The ship recycling yards and steel production from scraps are further listed by the İzmir Regional Plan as the most polluting activities in the province.³⁶² 25% of all hazardous waste in Turkey is produced in İzmir, and

Aliğa is among target districts for solid waste management investments, as well as industrial and air pollution controls.

The estimated scrap steel obtained from ship recycling in Aliğa is shared in the below table.³⁶³

Year	Total dismantled LDT	Estimated scrap steel obtained from ship recycling
2017	817.807	695.136
2018	602.346	511.994
2019	654.802	556.226
2020	854.802	726.582
2021	801.469	681.249
2022	592.459	503.590

1. Emissions

Steel facilities in Turkey are subject to regulations on greenhouse gas emissions and industrial air pollution. Whilst public access to the monitoring results is not available, about a quarter of industrial emissions come from the iron and steel sector, which contributes to 2.2% of national greenhouse gas emissions³⁶⁴ and 97.7% of the metal sector’s greenhouse gas emissions.³⁶⁵

Scrap contaminated by paints, lubricants, plastics, and other organic compounds, can release significant amounts of aromatic organohalogens, PCDD/F, PCBs,

³⁵⁶ Türkiye Çelik Üreticileri Derneği Basın Bülteni <<https://celik.org.tr/turkiye-celik-ureticileri-dernegi-basin-bulteni-60/>> Accessed 17.4.2023.

³⁵⁷ “KPMG Perspektifinden Demir Çelik Sektörüne Bakış” KPMG Türkiye (2021) <<https://assets.kpmg.com/content/dam/kpmg/tr/pdf/2021/07/kpmg-perspektifinden-demir-celik-sektoru-bakis-2021.pdf>> Accessed 17.4.2023.

³⁵⁸ European Steel Association, Annual Report 2022 p. 11 <<https://www.eurofer.eu/assets/publications/reports-or-studies/annual-report-2022/EUROFER-Annual-Report-2022.pdf>> Accessed 17.4.2023.

³⁵⁹ Türkiye Çelik İhracatçıları Birliği, İstatistikler <<https://www.cib.org.tr/istatistikler.html>> Accessed 17.4.2023.

³⁶⁰ İzmir Regional Plan /2014-2023 / İzmir Regional Development Agency - İZKA <https://izka.org.tr/wp-content/uploads/2021/06/Strplan_Izmir.pdf> Accessed 10.8.2023.

³⁶¹ 1/5000 Development Plan.

³⁶² İzmir Regional Plan /2014-2023 (n 360).

³⁶³ The data is obtained according to the calculation method of Sandbag ‘European Scrap Steel Floats Away Under Carbon Market Incentives’ <<https://sandbag.be/2022/09/22/european-scrap-steel-floats-away-under-carbon-market-incentives/>> Accessed 25.10.2023.

³⁶⁴ Türkiye’nin 7. Ulusal Bildirimi, Çevre ve Şehircilik Bakanlığı (2018) p. 20 <<https://www.undp.org/sites/g/files/zskgke326/files/migration/tr/UNDP-TR-7NC-TUR-2019.pdf>> Accessed 13.4.2023.

³⁶⁵ Ibid p. 61.

PAHs, and combustion by-products when used in steel production.³⁶⁶ The steel industry is the sector with the highest emissions of persistent organic pollutants (POPs) to the air in Turkey.³⁶⁷ Turkey's National Plan to the Stockholm Convention has identified steel plants as significant sources of PCBs in the air and soil. In addition, the National Plan found Aliğa to be a vulnerable area,³⁶⁸ although this assessment lacks data on unintentionally produced POPs contamination.³⁶⁹

Scientific research conducted by TÜBİTAK and Ege University Faculty of Agriculture revealed excessive levels of air pollution in the area where the steel plants are located in İzmir.³⁷⁰ Measurements of PM10 and PM2.5 at points within the industrial zone impacted by iron and steel plants exceeded permitted levels. Researchers attributed the high emissions to the steel plants (including fugitive emissions from storage), traffic emissions and road dust. Additionally, SO2 measurements were higher in the vicinity of the operating facilities, and benzene levels exceeded the limit of 5 µg/m3 near the intensive operation of the iron and steel sector. High concentrations of lead, cadmium, nickel, and arsenic were also found in both air and soil impacted by iron and steel production facilities, such as Horozgediği and Bozköy. Despite having emission permits, air quality levels for certain parameters (PM10, PM2.5, VOC, and NMTHC) were found to be extremely poor. Furthermore, these heavy metals can accumulate in the soil through air movement. Samples taken from regions with intense iron and steel industry activity exhibited higher concentrations of copper and chromium compared to reference points with no pollution pressure.

2. Problem of Contaminated Scrap Steel

According to industry experts, scrap steel from ships is highly regarded as a superior secondary raw material that can be further processed within steel plants. Ships serve as an excellent source of high-quality scrap steel with an E3 specification, characterized by its low impurity levels.³⁷¹ However, scrap steel derived from vessels often contains contaminants such as lead, copper, mercury and chromium-6, substances that are often found in the coatings and paints. When the steel has not been pre-cleaned, cutting and shredding operations can release contaminated steel scrap debris into the surrounding environment.³⁷² For assets coming from the oil and gas sector, there is a high chance that the steel is contaminated with mercury and NORM. These substances are found in oil and their contamination of the steel depends on their time of exposure with the metal.

In particular, mercury compounds are unstable at elevated temperatures, and the release of fugitive gas and particulates, if not controlled through filters, potentially pose an occupational exposure risk to workers at the recycling and scrap metal processing facilities.³⁷³

Turkey further lacks legislation regulating contaminated scrap steel and its safe handling and recycling. A systematic screening of the type and quantity of contaminants should be conducted before selling the scrap to steel mills. Accurate characterization of scrap and its contaminants is important for steel production,³⁷⁴ and can be achieved by establishing acceptance criteria based on production requirements and

Turkey further lacks legislation regulating contaminated scrap steel and its safe handling and recycling. A systematic screening of the type and quantity of contaminants should be conducted before selling the scrap to steel mills.

classifying the scrap steel according to size, alloys, degree of cleanliness, etc. Ensuring storage on an impermeable flooring equipped with a drainage and collection system is essential to prevent the risk of soil contamination,³⁷⁵ however, scrap metal is typically stored on large, uncovered and uncoated floors.

3. Slag Storage and Flue Dust

Slag is defined as a by-product of metals or metal-containing ores formed when they are melted and then deposited on the surface of the molten metal due to density difference. Left over from basic oxygen furnaces and electric arc furnaces, slag accounts for roughly 15% of the mass of the steel produced. The Basel Convention does not consider most slags from metal processing to be “hazardous waste,” unless they contain materials listed in Annex I and cause the occurrence of Annex III-listed characteristics.

In the USA, EU and other countries, iron-steel smelting slags are excluded from the definition of waste and are rather considered as by-products to be brought back into the economy.³⁷⁶

Steelmaking slag is categorized as non-hazardous waste in Turkey,³⁷⁷ and it may be utilised as a raw material for various applications. According to the Association of Steel Producers of Turkey, between 150 and 200 kg of steel slag is generated per tonne of crude steel.³⁷⁸ The traditional method of slag management in Turkey has been landfilling, and by 2015 over 100 million tonnes of slag from EAF production had accumulated in landfills.³⁷⁹ The annual slag waste output of 470,580 tonnes from six iron-steel plants in İzmir constitutes 10.5% of the national total for all facilities in Turkey. Additionally, 47% of the slag waste in İzmir is inadequately stored.³⁸⁰ National legislation to use steelwork slag in road construction was published in 2017, and three projects were initiated in January 2019 to investigate the possibilities of using slag as “Coastal Port Filling Material, Railway Ballast Material and Mineral Fertilizer in Agriculture.”³⁸¹

Until 2021, the iron and steel facilities in Aliğa used the Slag Storage Area in the Gölyüzü Area of Foça district. Local residents and NGOs repeatedly raised concerns over the poor environmental protection measures at the site. Due to recurrent fires and smoke, and related soil and water pollution, residents and environmental organisations demanded the closure of the storage facility, and, in late 2021, the İzmir Municipality finally decided to close the slag storage facility due to its detrimental impact on local communities and the environment.³⁸² While this closure is a positive step for public health, the absence of an environmentally sound alternative facility raises concerns. In İzmir, six iron-steel plants produce approximately 470,580 tonnes of slag waste per year, of which 47% is estimated to be improperly stored due to lack of proper sanitation measures.³⁸³

³⁶⁶ 'Sanayide Temiz Üretim Olanaklarının ve Uygulanabilirliğinin Belirlenmesi Projesi, Demir-Çelik Sektöründe Temiz Üretim El Kitabı' p. 149 TÜBİTAK (2016) <https://www.temizuretimmerkezi.org/images/buyuk/Demir_Celik_Sektorunde_Temiz_Uretim_EL_Kitabi_SANTEM_Projesi.pdf> Accessed 17.4.2023.

³⁶⁷ 'Türkiye'de Kalıcı Organik Kirlenmelerin (KOK'lar) Yönetimi Ulusal Uygulama Planı' Çevre ve Şehircilik Bakanlığı (2014) p. 30 <https://webdosya.csb.gov.tr/db/kimyasallar/editedosya/2_%20UUP%20Metni_Taslak_Tr.pdf> Accessed 14.04.2023.

³⁶⁸ Ibid p. 33.

³⁶⁹ Ibid p. 35.

³⁷⁰ 'Aliğa Bölgesi Toprak ve Bitki Kirliliği Durum Tespiti Sonuç Raporu' Ege Üniversitesi Ziraat Fakültesi (Kasım 2020- Aralık 2021)

³⁷¹ 'İzmir İli Aliğa İlçesi Çevre Durum Tespiti Projesi, Proje Sonuç Raporu' Türkiye Bilimsel ve Teknolojik Araştırma Kurumu Marmara Araştırma Merkezi (June 2022).

³⁷² Arcelormittal presentation at Ship Recycling Lab 2022.

³⁷³ 'Sanayide Temiz Üretim Olanaklarının ve Uygulanabilirliğinin Belirlenmesi Projesi, Demir-Çelik Sektöründe Temiz Üretim El Kitabı' (n 366) p. 73.

³⁷⁴ 'Killing contaminants in steel scrap'

<<https://recyclinginternational.com/business/killing-contaminants-in-steel-scrap/45668/>> Accessed 10.10.2023.

³⁷⁵ 'Sanayide Temiz Üretim Olanaklarının ve Uygulanabilirliğinin Belirlenmesi Projesi, Demir-Çelik Sektöründe Temiz Üretim El Kitabı' (n 366) p. 73.

³⁷⁶ Elektrik Ark Ocakları, Sektörel Uygulama Kılavuzu, Çevre ve Şehircilik Bakanlığı, p. 3. <https://webdosya.csb.gov.tr/db/sanayihavarehberi/icerikler/10_elektr-k-ark-ocaklari-20200103075113.pdf> Accessed 17.04.2023.

'Sanayide Temiz Üretim Olanaklarının ve Uygulanabilirliğinin Belirlenmesi Projesi, Demir-Çelik Sektöründe Temiz Üretim El Kitabı' (n 366) p. 52.

³⁷⁷ Statistics 2018 <<https://www.euroslag.com/wp-content/uploads/2022/04/Statistics-2018.pdf>> Accessed 10.10.2023.

³⁷⁸ Zulfıadi Zulhan, 'Iron and Steel Making Slag: Are they Hazardous Waste' (November 2013) <https://www.researchgate.net/publication/260980266_IRON_AND_STEELMAKING_SLAGS_ARE_THEY_HAZARDOUS_WASTE> Accessed 29.03.2023.

³⁷⁹ Demir Çelik Cüruf Raporu, Türkiye Çelik Üreticileri Derneği (2015) <https://celik.org.tr/wp-content/uploads/2016/12/4-TCUD-Curuf_Raporu.pdf> Accessed 29.4.2023.

³⁸⁰ Yasin Öcal, 'Demir Çelik Sektöründe Atık Yönetimi' Kalkınma Bakanlığı (2014) p. 135. <<https://www.sbb.gov.tr/wp-content/uploads/2022/08/Demir-Çelik-Sektorunde-Atik-Yonetimi-Yasin-Ocal.pdf>> Accessed 01.09.2023.

³⁸¹ İzmir Regional Plan /2014-2023 (n 360) p.116.

³⁸² Türkiye Demir ve Çelik Dışı Metaller Meclisi Raporu, Türkiye Odalar ve Borsalar Birliği (2019) pp. 58-62 <http://tobb.org.tr/Documents/yayinlar/2020/demir_ve_demir_disi_metaller.pdf>.

³⁸³ 'Çevre kirliliğine yol açan Foça'daki cüruf tesisi için kapatma kararı' <<https://www.cumhuriyet.com.tr/turkiye/cevre-kirliligine-yol-acan-focadaki-curuf-tesisi-icin-kapatma-karari-1876477>> Accessed 23.03.2023.

'Foçada cüruf depolama sahası kapatıldı' <https://ankahaber.net/haber/detay/focada_curuf_depolama_sahasi_kapatildi_57316> Accessed 23.3.2023.

³⁸⁴ İzmir Regional Plan /2014-2023 (n 360) p. 116.

In 2022, two projects for a new slag storage facility were planned³⁸⁴ but faced criticism from local movements and NGOs, resulting in protests in Aliğa and the surrounding region.³⁸⁵ One of the projects, named Ekovar, plans to store and dispose of steel production slag in a large facility covering approximately 543,000 square metres.³⁸⁶ However, local citizens and environmental organisations have filed a currently pending case to cancel the EIA Affirmative decision, citing potential damage to pastures, forests, groundwater resources, and agricultural areas.³⁸⁷ Similarly, the other project, Habaş, proposes the construction of a facility in an area surrounded by agricultural land and located close to residential habitats.³⁸⁸ A lawsuit filed

by the local NGOs to cancel the EIA affirmative decision was accepted by the court in October 2023 in October 2023.³⁸⁹

In addition to slag, steel mills also produce flue dust containing considerable quantities of heavy metals. Heavy metals found in this flue dust can dissolve easily, are toxic and have the potential to spread readily through contact with different solutions in the environment, highlighting the importance of properly managing this waste type.³⁹⁰ Flue dust generated by iron-steel plants in İzmir province where Aliğa is located are stored within the factory premises as there is no dedicated facility for their treatment.



Unsanitary landfilling of slag in İzmir

Credit: Vedat Örüç, August 2022

³⁸⁴ ÇED Olumlu Kararı <<https://izmir.csb.gov.tr/ced-olumlu-karari-duyuru-434078>> Accessed 23.3.2023.

³⁸⁵ Aliğalılar cüruf tesisine karşı ayakta: Kanser olmak istemiyoruz' Yeşil Gazete (14 October 2022) <<https://yesilgazete.org/aliagalilar-curuf-tesislerine-karsi-ayakta-kanser-olmak-istemiyoruz/>> Accessed 23.3.2023.

³⁸⁶ Bakanlıktan Aliğa'ya cüruf tesisi onayı... ALÇEP'ten karara tepki: "Yürütmenin durdurulması ve ÇED iptali için dava açacağız" <<https://demokratgundem.com/h-bakanliktan-aliaga-ya-curuf-tesisi-onayi-alcep-ten-karara-tepki-yurutmenin-durdurulmasi-ve-ced-iptali-icin-dava-acacagiz-39742>> Accessed 23.3.2023

³⁸⁷ 'Aliğa'da Cüruf Tesisi'ne ikinci ret: 'Zehirlenmek istemiyoruz' <<https://www.izgazete.net/aliagada-curuf-tesisine-ikinci-ret-zehirlenmek-istemiyoruz>> Accessed 23.3.2023.

³⁸⁸ Ekovar Çevre Grup Geridönüşüm A.Ş. Batı Ege ve Güney Marmara Endüstriyel Atık (cüruf) Bertaraf Tesisi Projesi, Nihai ÇED Raporu 2022, pp. 1-2.

³⁸⁹ 'Yurttaşlar atık tesisine karşı dava açtı: Aliğa dünyanın çöplüğü değildir' <<https://www.birgun.net/haber/yurttaslar-atik-tesisine-karsi-dava-acti-aliaga-dunyanin-coplugu-degildir-408603>> Accessed 23.3.2023.

³⁹⁰ 'Aliğalılar cüruf tesisinin ÇED kararını mahkemeye taşıdı: Artık yeter!' <<https://yesilgazete.org/aliagalilar-curuf-tesisinin-ced-kararini-mahkemeye-tasidi-artik-yeter/>> Accessed 23.3.2023.

³⁸⁸ Habaş Sınai ve Tıbbi Gazlar İstihal Endüstrisi A.Ş., Cüruf Depolama Tesisi Projesi, Nihai Çed Raporu 2022, p. 12.

³⁸⁹ HABAŞ'ın "cüruf depolama" tesisi davasında mahkeme: Kamu yararı bulunmuyor <<https://www.evrensel.net/haber/501400/habasin-curuf-depolama-tesisine-davasinda-mahkeme-kamu-yarari-bulunmuyor>> Accessed 25.10.2023.

³⁹⁰ 'Elektrikli Ark Ocagi Baca Tozu Geri Dönüşüm Tesislerinde Kurşun Maruziyetinin Değerlendirilmesi' Çalışma ve Sosyal Güvenlik Bakanlığı İş Sağlığı ve Güvenliği Genel Müdürlüğü, İlhami Kanbur, İş Sağlığı ve Güvenliği Uzmanlık Tezi.



Unsanitary landfilling of slag in İzmir

Credit: Vedat Örüç, August 2022

Recommendations and Future Direction for Ship Recycling in Turkey

Turkey possesses significant opportunities for sustainable ship recycling and steel production given its strategic location and industrial capabilities. However improved regulation, enforcement, incentives and vision are needed to fulfil this potential. The EU has shown that it can play a role in motivating ship recyclers in Turkey who seek approval to recycle EU-flagged ships. The following recommendations are directed primarily towards policy makers in Turkey and the European Commission, but also to industry stakeholders, and outline a path forward for a sustainable ship recycling sector in Turkey.

1. Recommendations for Turkey

Given that the rental agreements for yard owners expire in 2026, while the publicly owned ship recycling area was put up for sale in October 2023, it is timely to reassess the ship recycling sector to ensure the implementation of better practices. The **Ministries of Environment, Labour and Transport** need to jointly evaluate the ship recycling sector holistically in terms of its operating principles, occupational health and safety, and environmental impact. A **new and comprehensive regulation, taking into account requirements under labour and environmental law, should clearly outline respective responsibilities**. Turkey has the opportunity to foster sustainable recycling and the following recommendations for an improved legal framework are directed towards domestic authorities:

Closing the gaps for a comprehensive ship recycling standard

Necessary operating principles and protective measures for safe and environmentally sound ship recycling, including the handling and storage of all hazardous substances, should be outlined in clear standards for **better operational conditions, technologies and infrastructure**.

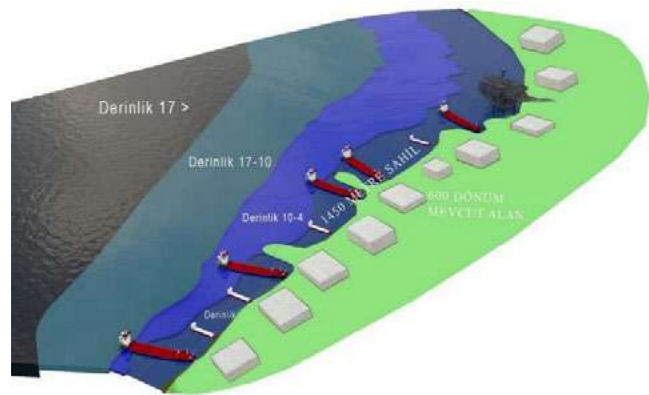
More specifically, the following gaps and actions need to be addressed in a new regulation:

- * Develop clear standards and capacity calculations for **effective drainage systems** to ensure their efficiency also during heavy rainfall. Position secondary drainage channels perpendicular to the yard and ensure proper housekeeping and the regular cleaning of all drainage channels.
- * Build a **wastewater treatment system**, including **separators for oil water**. Provide best available technologies to treat waste water, control of ballast water and put in place a sewage treatment system.
- * **Conduct IHM verifications** via **independent sampling** during dismantling. The ship's IHM serves as the initial phase of waste management. If the IHM lacks impartiality and objectivity, the entire waste management process can be compromised. According to the Basel Convention, and EU SRR for EU flagged vessels, it is the ship owner's responsibility to prepare a list of the hazardous wastes onboard the ship. Ships should thus not be allowed to arrive in Aliğa, without such a document and

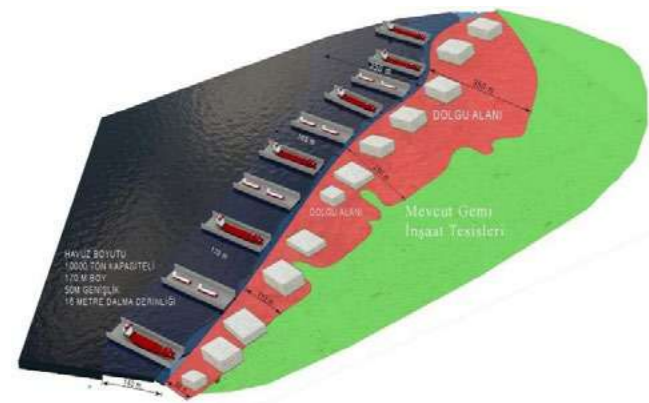
Prior Informed Consent as required by the Basel Convention. Further sampling should continue during the dismantling process as parts of the vessel become accessible, and the IHM only be altered when sampling and analysis justify changes. In view of the many discrepancies identified in this report, robust and comprehensive guidance on sampling procedures and protocols needs to be developed, and sampling should be carried out by an independent party.

- * **Environmentally sound waste management** demands specific attention in the ship recycling industry in Aliğa. Several court decisions in previous years and the satellite images obtained and analysed in this report unequivocally expose that dumping practices still occur in Aliğa. Hazardous materials cannot be adequately managed through such careless practices, and it is thus vital to adopt measures for storage and downstream treatment of hazardous wastes. **Hazardous waste management plans** should be adopted to handle waste oils, fuels, paint, fluorescent materials, liquid waste, contaminated waste, and electronic waste. While procedures for asbestos removal and disposal exist, compliance is inconsistent. For other hazardous materials, comprehensive removal and disposal requirements are lacking. Currently, external companies handle ODS and asbestos removal, while workers manage all the other hazardous materials. This negligence not only endangers the workers directly involved in handling these materials but also poses a potential threat to the environment and public health.
- * **Storage areas** should, as a minimum, meet ISO standards for tanks and storage buildings and have the capacity and management plans for storing all wastes at the facility. Also, approval should consider assessing the capacity.
- * Set clear standards for **secure pulling and lifting arrangements, capacity and equipment** to prevent injuries and improve productivity. An inventory list that documents all the arrangements and their condition should be kept.

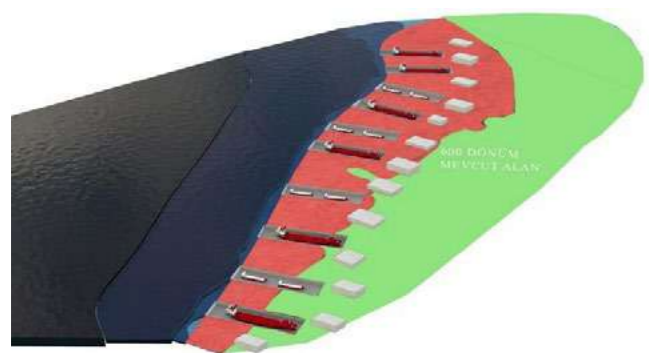
- * Take immediate action, clear responsibilities, and enforcement of stringent safety measures by authorities are imperative to prevent further accidents caused by lack of **proper gas-free operations**. Port authority should address the safety of gas-free operations when evaluating the permits of the yards. Tragically, past accidents and criminal cases have demonstrated the severe consequences of starting dismantling work without proper gas-free operations. Despite some efforts to address the issue, inconsistencies and lack of clarity in the information provided by the facilities have raised doubts about their commitment to ensuring safety for hot work.
- * **Emergency response plans and risk assessments** are key components of a safety management plan, and include developing and implementing robust safety policies, monitoring and systematic holding of records and analysis of accidents, near-miss accidents and diseases. Minimising risk of accident requires a holistic approach that combines advanced technologies, optimised operations, and a strong safety culture supported by effective safety management.
- * **A Ship Recycling Facility Plan (SRFP) and ship specific Ship Recycling Plan (SRP)** to guide day-to-day operations should be required by the legislation. SRFPs and SRPs should be living documents based on actual scenarios, and easily comprehensible for workers.
- * New **mechanical or waterjet cutting techniques** should replace oxy-propane gas cutting, which presents a hazard due to its rapid ignition and release of emissions when cutting through paint coatings. Cold-cutting through steel mechanically reduces emissions and worker exposure and risk of accident. Waterjet cutting involves cutting with high-pressure water. Both methods avoid altering the chemical properties of the material and do not pose a risk of ignition at high temperatures. Furthermore, these techniques can cut a variety of thin and thick materials without gas emissions. The



The Current Situation



Option of Floating Docks



Option of Dry Docks

Source: Report of the Project on Effects of Shipyards on the Marine Environment and Determination of Clean Production Techniques

Izmir Development Agency conducted a cost-benefit analysis of implementing waterjet cutting instead of the oxy-propane gas cutting method in Aliğa. However, while promising, waterjet cutting creates wastewater that would need to be managed and treated, and thus would be better applied in enclosed drydocks rather than on the open slipways used for the landing method practised in Aliğa.

- * **Transition from landing method to dry docks for stable and contained dismantling.** Dry docks are the most secure and stable means of dismantling ships, providing a stable working platform and full containment. Ships are built, maintained and repaired in dry docks and there is no reason why final dismantling should occur under less secure conditions. Research on potential new technologies for ship recycling in Aliğa, conducted by the Ministry of Environment, assessed alternative technologies for ship recycling in Aliğa. As part of this initiative, it was evaluated that dry-dock infrastructure can be adopted and changes made to the applicable cutting technique. The initiative also determined that the transition could be realised via joint investments. The development of a Master Plan, as provided in the domestic zoning laws, would be an important step towards improving practices in Aliğa.

Closing the gaps for effective permitting, monitoring and enforcement

- * **Environmental permitting and monitoring**

Exemptions from both the **Environmental Impact Assessment (EIA)** procedure and Environmental Permit and License Regulation create serious gaps in oversight, while those environmental permits that have been issued lack transparency. Authorities should revoke EIA exemptions for facilities that increased capacity, made operational changes or

transferred ownership since the EIA Regulation was implemented in 1993.

The absence of specific requirements to monitor air, soil, and sediment at the ship recycling yards under domestic law further hinders the ability to effectively assess and address the environmental impacts of the sector. While using the Ministry of Environment's waste tracking system of Waste Management Application, domestic authorities and inspections must also shift their focus from assessing only paperwork to **assessing actual practices based on standardised auditing references** for parameters relating to leakage, cutting zones, sampling procedures, drainage systems and hazardous waste and wastewater management.

Regular environmental monitoring is needed to **identify pollution sources so that effective prevention and mitigation measures can be introduced.** Continuous monitoring of the environmental quality of the region will help inform the revision of environmental management plans.

Cumulative and historical pollution require special consideration. A comprehensive plan and strategy for addressing pollution that has accumulated over time should be developed and should outline specific and practical countermeasures for the parameters exceeding threshold levels.

- * **Better OHS monitoring and implementation**

Improving occupational health and safety (OHS) requires implementing better technologies such as dry docks and mechanical or waterjet cutting along with a holistic approach that addresses management plans. Poor operations and waste management cause not only pollution, but also poor conditions for worker health and safety. Effective management and monitoring of OHS is key to ensure effective implementation:

Strengthen safety monitoring and inspections by impartial OHS experts. Separating key roles and establishing independent oversight is necessary to mitigate conflicts of interest, safeguard objectivity and impartiality, and to avoid an inadequate risk assessment that can lead to non-compliance. Monitoring should include checking emergency response plans, risk assessments and safety management plans. Independent controls and inspections, including unannounced visits, are furthermore needed to ensure the implementation of OHS measures on a daily basis.

Ensure the selection, training, inspection and maintenance of the appropriate personal protective equipment (PPE) throughout the entire ship recycling process. There remains a concerning organisational trend of not fully supplying adequate and sufficient PPE equipment. Monitoring should be conducted to ensure that workers receive necessary instructions for the use of PPE, as well as training to establish a healthy safety culture. It is possible to prevent occupational diseases and work accidents only if proper and adequate protective equipment is provided and used.

Systemic change in health monitoring and preventative practices to deter or detect diseases at an early stage. Ship recycling facilities should be required to implement comprehensive measures for monitoring all types of occupational diseases affecting workers in the yards, including lung diseases, hearing disturbance and harm from mechanical vibration. While blood lead levels are monitored as an indicator of the correct usage of protective equipment, the real solution lies in prevention of exposure in the first place. Preventative measures can be achieved by implementing better technologies and cutting techniques that minimise exposure during the recycling process.

Identifying Root Causes. It is paramount that the public authorities assume a proactive role in

the monitoring and reporting of accidents, near misses, and occupational diseases, and conduct comprehensive root cause analyses. Fostering transparency will enhance the facilities' ability to prevent incidents, improve safety practices, and build trust with their stakeholders.

Fair wages and workers' rights. These goals can be achieved by addressing issues such as informal/subcontract employment conditions, appropriate insurance coverage, right to collective bargaining and eradicating the lump-sum payments that reward quick dismantling rather than safe and environmentally sound operations. Public authorities must proactively update the regulatory framework to effectively adapt to the ever-evolving landscape of the sector.

* Stronger enforcement mechanisms

As identified in this report, polluting practices have been allowed to persist, highlighting the

necessity for not only regular inspections, but also **stronger enforcement mechanisms.** The optimal solution involves more than just imposing fines; rather, it should focus on encouraging yards to adopt improved operational practices and actively seek solutions, while, in parallel, it is recommended to enhance the enforcement power and penalty system.

Improved steel recovery

Identification and separation of contaminated scrap steel would optimise steel recycling by effectively eliminating the contaminants during the melting process. Efficient filters are needed to contain toxic fumes and dust, while better management of by-products such as slag and flue dust should align with the best available technologies.

Circular Economy

Policy makers around the world, including in Turkey, are exploring novel production models within the framework of sustainability and innovation aimed at enhancing circularity. This involves re-evaluating product design with the aim of reducing wastes generated during production and throughout the product life-cycle, including end-of-life. An integrated pollution prevention and control (IPPC) approach implements the most effective techniques available to minimise waste generation and ensure waste reduction at its source, and aims to promote industrial circular symbiosis. There are implemented projects based on this approach in cement production facilities, automotive production facilities, large combustion plants, and ferrous and non-ferrous metal production facilities, including ship recycling. For the shipping sector, the transition to a circular economy has the potential to change how ships are designed, maintained and recycled, even how they are owned and valued. The antic-

ipated building of ships with low carbon technologies and the increasing number of ships heading to the scrap yard create both opportunities and urgency for circular innovation. Thus, collaboration among shipyards, steel plants, and ship recycling facilities is crucial to achieving a circular economy approach. Minimising waste generation by promoting the reuse and refurbishment of ship components and equipment, and tracing and retaining value of materials through the generation of a digital material passport offer new opportunities for circularity. Ultimately, the adoption of the circular economy perspective in the design, building and recycling of ships will optimise dismantling and material separation and offer new economic opportunities, collaborations and partnerships. Effectively recovering and reusing valuable resources, circular hubs can create a closed-loop system that reduces dependence on raw materials, lowers production costs, and fosters a more sustainable and resilient industry.

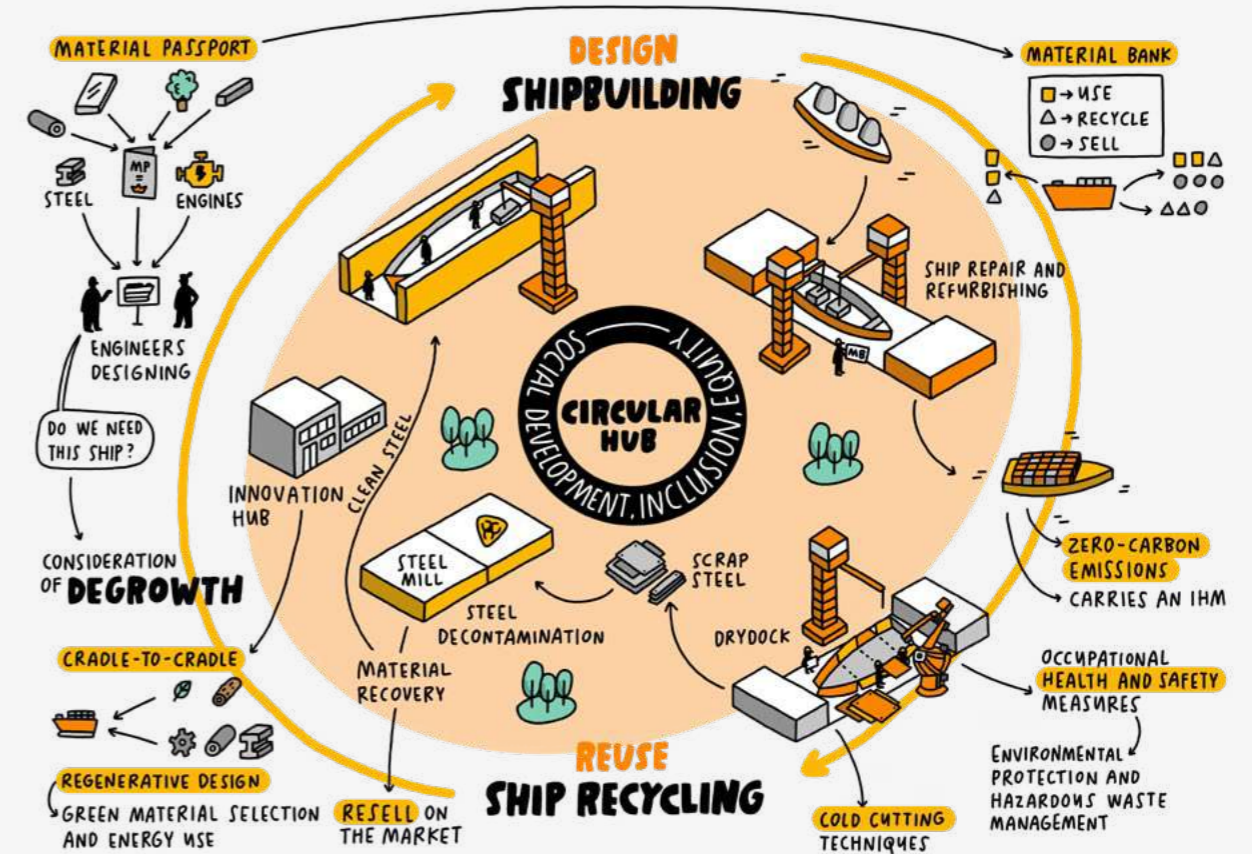
2. Recommendations for EU

The EU inspection reports provide valuable insights for understanding the conditions at the ship recycling facilities in Aliğa and recommend several appropriate actions to improve practices. Acknowledging the significance of the EU list and its associated inspections, the **European Commission plays a pivotal role in driving yard improvements.**

However, the fact that facilities continue to be listed as approved by the EU despite the detection of ongoing non-compliance with the requirements set by the EU SRR is an issue that urgently needs to be addressed. Facilities should not be allowed to brand themselves as EU compliant when non-compliance has been detected, and all non-compliant issues should be solved before approval is provided. More **frequent inspections, unannounced inspections,** and ways to **suspend EU approval upon detection of non-compliance** should therefore be introduced.

The observation that inspection conditions diverge from the day-to-day reality of ship recycling yards furthermore underscores the need to conduct unannounced visits. Unannounced visits offer a more accurate representation of ship recycling operations, revealing practices that might be concealed during announced visits. By also **incorporating workers' perspectives and experience** via structured interviews in a neutral setting without surveillance from the shipyard administration, the EU will obtain valuable information that might reveal structural deficiencies. Cooperation should for that purpose be sought with the Ministry of Labour.

A similar inspection approach as for asbestos in more recent audits should be adopted for all hazardous materials, and include **cross-referencing all the records submitted to the domestic Waste Management Application** with IHM reports, waste codes indicated in



Credit: NGO Shipbreaking Platform

permits for temporary storage, as well as **yearly waste declarations** submitted by the facilities to the Ministry of Environment and hazardous waste **receipts and records related to disposal**. The capacity of the sector should take into account not only the annual tonnage, but also the number and type of ships that can be simultaneously held or recycled, paying attention also to ensuring adequate waste sorting and processing logistics.

In light of the on-going review of the EU SRR, the EU has the opportunity to **strengthen the requirement for ship recycling operations and effectively incorporate criteria for evaluating related waste management and steel recovery operations**. The use of cleaner technologies, efficient waste management systems, and effective pollution control measures should be required in a revised EU SRR.

Better technologies for safe and sound ship recycling

Advanced technologies can play an important role in improving the practices of ship recycling in Turkey. Precise engineering calculations are, for example, essential for the design of effective drainage systems, and mechanical cutting techniques can considerably reduce workers' exposure to risk. Workplace accidents are often influenced by a combination of factors, including technologies (or lack thereof). Investing in advanced technologies, such as automated systems and intelligent safety controls, can significantly reduce accidents by minimising human error and improving operational safety. Technology can also help minimise the environmental impact associated with ship recycling and contribute towards a more sustainable future for the sector.

With the transition to a low carbon, circular economy, countries see increasing value in retaining clean, high quality scrap steel to meet steel production carbon targets and sustainability goals. Responding to this demand, a number of ship recycling ventures have begun to start up in Europe and other parts of the world, relying on innovative technology, new business models and a cleaner scrap steel products to compete. One common characteristic of these new ventures is that they recycle ships in dry docks, providing both a more stable working platform and maximum containment of wastes and materials.

Closing Remarks: Future of Ship Recycling in Turkey

The future of ship recycling in Turkey hinges on investments and the adoption of better technologies to ensure safe and sustainable practices. In Aliğa, future developments should be determined by environmental impact assessments, cost-benefit analyses, and stakeholder consultations.

Information on industrial activities that concerns the public should not be treated as proprietary or commercially sensitive data. Its dissemination should instead foster the active engagement of civil society and research organisations, ensuring transparency, accountability, and the inclusion of diverse perspectives in decision-making processes related to ship recycling. By promoting an open dialogue, also with workers, the ship recycling sector will be better equipped to address the concerns and interests of the broader community.

Replanning the ship recycling region with proper zoning and supporting infrastructure, along with stringent environmental regulations and waste management systems, as well as occupational health and safety standards, is essential to raise standards within an overwhelmingly substandard industry. The establishment of dry docks will provide a controlled environment for responsible ship dismantling, maximising resource utilisation and minimising environmental impact.

As the existing rental agreements for the ship recycling facilities in the region will come to a conclusion by 2026, while the publicly owned ship recycling area was put up for sale in October 2023, the time seems optimal for a transformation of the ship recycling sector in Aliğa toward heightened sustainability. Conducting a proper Environmental Impact Assessment (EIA) in the planning process, and as part of a new Master Plan outlined in the zoning laws, will be instrumental to comprehensively evaluate the potential impacts and benefits

of the proposed changes, and facilitate informed decision-making by shedding light on the ecological, socio-economic, and public health implications.

Cooperation among public institutions, industry stakeholders, and environmental and labour rights organisations is crucial to ensure the effective implementation of applicable regulations. The EU can also play a key role in promoting the adoption of best practices for ship recycling and material recovery.

Whilst this report gives insight to the many challenges that the ship recycling sector in Aliğa currently faces, it also underscores the immense potential that Aliğa holds for driving forward sustainable ship recycling practices. The findings highlighted in this report demonstrate a clear path towards achieving this goal, including a robust Environmental Impact Assessment; new industrial platforms to ensure containment; new cutting technologies to reduce exposure to risk; improved working conditions and participation of workers; and a strong waste management plan to protect workers, local communities and the environment. Only by leveraging these opportunities, will the future of ship recycling in Aliğa become truly sustainable.

Annexes

Annex 1

Asbestos Removal Permit of SRAT

T.C.
ÇEVRE VE ORMAN BAKANLIĞI
Çevre Yönetimi Genel Müdürlüğü

23 03 2010

Sayı : B.18.0.ÇYG.0.04.02-147/6033
Konu : Gemi Söküm İzni

19327

GEMİ GERİ DÖNÜŞÜM SANAYİCİLERİ DERNEĞİNE
(Gemi Söküm Bölgesi P.K.88 Aliaga/İZMİR)

İlgi : a) 12.03.2007 tarihli ve B.18.0.ÇYG.0.04.02-153-3988-14896 sayılı yazımız.
b) 04.02.2010 tarihli ve 23/2010 sayılı yazınız.

İlgi (a) yazı ile, Gemi Geri Dönüşüm Sanayicileri Derneğine 12.03.2010 tarihine kadar geçerli olmak üzere "Asbest Söküm İzni" verilmiştir. İlgi (b) yazı ile, Derneğin Asbest Söküm İzninin yenilenmesi talep edilmiştir.

Durum tespiti için 08-09.03.2010 tarihleri arasında Bakanlığımız ve Denizcilik Müsteşarlığı elemanlarınca Gemi Söküm Bölgesinde yerinde inceleme yapılmış olup, Gemi Geri Dönüşüm Sanayicileri Derneği'nin izin şartlarına uygun olarak çalıştığı tespit edilmiştir.

Bu bağlamda, ekte belirtilen hususlara uyulması, istenilen bilgi ve belgelerin belirlenen periyotlarda Bakanlığımıza gönderilmesi şartıyla, Basel Sekreteryası tarafından hazırlanan ve nihai hale getirilen "Gemilerin Çevreye Duyarlı Şekilde Kısmen veya Tamamen Parçalanmasına İlişkin Teknik Kılavuz" çerçevesinde; Gemi Geri Dönüşüm Sanayicileri Derneği'nin Asbest Söküm İzninin yenilenmesi uygun görülmüştür. Belirtilen şartların sağlanmaması, istenilen bilgi ve belgelerin hazırlanarak belirlenen periyotlarla Bakanlığımıza gönderilmemesi, Bakanlığımız ve Valilik uzmanlarınca yapılacak denetimlerde, tesisin izne uygun olarak çalıştırılmadığının tespit edilmesi halinde verilen izin iptal edilecektir.

Bilgilerinizi ve gereğini rica ederim.

[Redacted Signature]

EK-1 : Çevre Kanunu Gereğince Uyulması Gereken Hususlar (1 sayfa)

DAĞITIM:
- Denizcilik Müsteşarlığı (Gemi İnşa ve Tersaneler Genel Müdürlüğü)
- İzmir Valiliği (İl çevre ve Orman Müdürlüğü)
- Gemi Geri Dönüşüm Sanayicileri Derneği

Annex 2

Temporary storage permit of SRAT

T.C.
İZMİR VALİLİĞİ
İl Çevre ve Orman Müdürlüğü

GEÇİCİ DEPOLAMA İZİN BELGESİ

Belge no: 9 .11./11/2009

1. Firmanın adı, adresi ve telefon numarası:
Gemi Geri Dönüşüm Sanayicileri Derneği
Gemi Söküm Bölgesi P.K. 88 Aliğa-İZMİR
Tel: (0232) 6182001

2. Geçici olarak depolanacak atık türleri:
Sintine, atık yağ, atık yakıt, asbest, atık ilaç, kontamine atık, kontamine ambalaj, atık akümülatör, basınçlı kap

3. Depolama kapasitesi:

Atık yağ	214 tonluk betonarme depo
	30 tonluk 2 (iki) adet sac depo
Yakıt atığı	120 tonluk sac tank
Sintine	50 tonluk sac tank
Kontamine atık	Konteynır
Kontamine ambalaj	Konteynır
Asbest	Konteynır
Atık ilaç	Üzeri ve dört tarafı kapalı alan
Atık akümülatör	Üzeri ve dört tarafı kapalı alan

4. Depolama şekli:
Dökme, big-bag

5. Geçici depolama alanından sorumlu personelin adı:
[REDACTED]

NOT: Geçici depolama izni verilen firmanın sahiplerinde ya da atık depolama alanının depolama kapasitesinde, depoda, depolama şeklinde ve/veya depolanacak atık türlerinde değişiklik olduğunda bu belge Valiliğe iade edilecektir.

Annex 3

Example of an authorisation certificate

T.C.
ULAŞTIRMA ve ALTYAPI BAKANLIĞI
TERSANELER ve KIYI YAPILARI GENEL MÜDÜRLÜĞÜ

GEMİ SÖKÜM YETKİ BELGESİ

Tesisin Adı : Öge Gemi Söküm İth.İhr. Tic. ve San. A.Ş.

Tesisin Adresi : Atatürk Mah. Aygaz Cad. 23 Nolu Parsel Aliğa / İZMİR

Düzenleme Tarihi : 06/12/2022

Belge Geçerlilik Tarihi : 31/12/2023

Belge No : GSB-2022-P23


[REDACTED]

Annex 4

Example of a ship dismantling permit



T.C.
ÇEVRE, ŞEHİRCİLİK VE
İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
Çevre Yönetimi Genel Müdürlüğü



GEMİ SÖKÜM İZİNİ

Belge No: **GSİ R4 35 011**

İşbu gemi söküm izin belgesi, Taraf olduğumuz Basel Sözleşmesi çerçevesinde ILO ve IMO gibi kuruluşlarla işbirliği içinde Basel Sekreteryası tarafından hazırlanan ve nihai hale getirilen “Gemilerin Çevreye Duyarlı Şekilde Kısmen veya Tamamen Parçalanmasına İlişkin Teknik Kılavuz” çerçevesinde 31/12/2023 tarihine kadar geçerli olmak üzere, Aliğa Gemi Söküm Bölgesinde faaliyet gösteren Ege Gemi Söküm San. ve Tic. A.Ş.’ne ait gemi söküm tesisine verilmiştir.



Annex 5

How we deciphered the dumpsites from the satellite views?

The color difference of the soil was the first sign. The areas were more geometrical, signifying a direct human intervention, and the color was a soft hue of a very light yellow to white. This change in the coverage likely indicate that the soil is covered with some other substance. The dumpsites can be observed below with forms

showing artificial small hills, cascaded in time, one layer flattened above another. The patterns observed within these areas are similar to unsanitary landfills (an example can be seen in the second satellite view below). Hence, the areas are marked as dumpsites.



Annex 6

Opinion of Customs on waste management

06.2016

IMG_6138.JPG

T.C. GÜMRÜK VE DİŞİŞLER BAKANLIĞI
VE TİCARİT BAKANLIĞI MÜHÜRÜ
GÜMRÜK VE TİCARİT BAKANLIĞI
Tarih: 12.03.2016 11:21
Sıra: 1090677/131.01.001/500997

Atık Geçici Depolama Lisansı alınması halinde 2013/27 sayılı genelge hükümleri uyarınca yağ ve sıvı yakıt atıklarının "Atıkların Yakılması İlişkin Yönetmelik" hükümleri kapsamında Çevre ve Şehircilik Bakanlığı'ndan söz konusu atıkların bertarafı veya enerji geri kazanımı amacıyla Geçici Etkiyet Belgesi ve/veya Çevre Lisansı alımı yakıt atıklarının bertaraf tesislerinde bertarafının sağlanması gerekmektedir, bu kapsamda yakıt atıklarının GİDA olanlarından UATP formu ve lisanslı araçlarla yakıt veya beraber yakıt tesislerine gönderilmesi gerekmektedir. Yani Tehlikeli Yakıt Atıkları Geçici Depolama iznini alan her firma bu yakıt atığını 180 gün tesisinde bulundurup, istediği bertaraf tesisine bünyesel olarak yollama hakkına sahip olacaktır.

Ayrıca hurda gemiden kaynaklanan (Fuel oil, motor oil, yağlama yağları) yakıt atıkları sistimale açık petrol türlerindedir.

Gemi söküm firmalarının beşinün geçici depolama lisansı alınmalarını, sahadaki taşıma araç ve insan sirkülasyonunu artıracakları aşikardır.

Yukarıda açıklanan hususlar dikkate alındığında;

1-Bölgenin özel durumu,

2-Yakıt atıklarının haksız kazanç elde etmeye müsait ve istismara açık bulunması,

3-Firmaların geçici depolama izni alınması halinde, bölgeye girecek tanker sayısına bağlı izleme ve kontrol zorluğu,

4-22 gemi geri dönüşüm firmasının geçici depolama alanlarında depolanacak petrol türlerinin depolama süresi de dikkate alınarak istismara açık bulunması,



5-Firmaların söküm alanlarında üretilen aylık atık miktarı dikkate alınarak Müdürlüğünüzce belirlenecek kapasite için gerekli güvencü alanlara arzlığı gibi hususlar çerçevesinde Aliğa Gümrük Müdürlüğü/Amirliği denetim, gözetim, takip kayıt kolaylıkları dikkate alınarak yakıt atıklarının gemi söküm firmaları tarafından depolanmasının ve bertaraf tesislerine gönderilmesinin uygun olmayacağı, Çevre ve Şehircilik Bakanlığı'na Gemi Söküm Bölgesine özel bir etik yönetin tebliğinin yayınlanmasının uygun olacağı düşünülmekte olup, Müdürlüğünüzce bu konuda yapılacak çalışma ve işlemlerde Bölge Müdürlüğümüz görüşlerinin dikkate alınmasında yarar görülmektedir.

Bilgi ve gereğini arz ederim.

Ek: Yazı ve ekleri (16 sayfa)

Annex 7

Temporary storage permits

**T.C.
İZMİR VALİLİĞİ
ÇEVRE VE ŞEHİRCİLİK İL MÜDÜRLÜĞÜ**

GEÇİCİ DEPOLAMA İZİN BELGESİ

Belge no:596 Tarih: 30/04/2021

1. Firmanın adı, adresi ve telefon numarası:
BEREKET GEMİ SÖKÜM İTH. İHR. TIC. LTD. ŞTİ.
(Atatürk Mahallesi, Aygaz Caddesi, Gemi Söküm Tesisleri, 24 nolu parsel ALIĞA / İZMİR)
Tel: 0 232 618 2220 ; Faks: 0 232 618 2210

2. Geçici olarak depolanacak atık türleri:
0801113 130703, 150110, 150111, 150202, 160103, 160601, 170601, 191211 kodlu atıklar.

3. Depolama kapasitesi:
İşletmede; 1. atık alanının 2 adet 50'şer metreküplük tanklardan oluştuğu, bu alanda gemilerden kaynaklı yakıt vb. atıkların depolandığı, tankların tesisin sağ ve sol bölgesinde ayrı olarak konumlandırıldığı; 2. atık alanının tesisin orta bölgesinde üstü ve yan tarafları kapalı, kilit altında alanda 5 bölümlü alandan oluştuğu, alanın toplam 50 metrekare alana sahip olduğu,

4. Depolama şekli:
1 nolu alanda iki adet sac tanklar içerisinde, 2 nolu alanda IBC tank, plastik torba, plastik-metal varillerde ve beton zemin üzerinde depolama şeklinde, depolama yapılmaktadır.

5. Geçici depolama alanından sorumlu personelin adı:
[Redacted]

[Redacted]

NOT: Geçici depolama izni verilen firmanın sahiplerinde ya da atık depolama alanının depolama kapasitesinde, depo ve depolama şeklinde, depolanacak atık türlerinde değişiklik olduğunda bu belge Valiliğe iade edilecektir. Ayrıca Atık Yönetimi Yönetmeliği gereği tehlikeli atıklar geçici depolama alanında en fazla 180 gün süreyle geçici depolanır.

Temporary storage permits



T.C.
İZMİR VALİLİĞİ
ÇEVRE VE ŞEHİRCİLİK İL MÜDÜRLÜĞÜ

GEÇİCİ DEPOLAMA İZİN BELGESİ

Belge no:583

Tarih:../04/2021

1. Firmanın adı, adresi ve telefon numarası:

BMS GEMİ GERİ DÖNÜŞÜM SAN. VE TİC. A.Ş.

(Atatürk Mahallesi, Aygaz Caddesi, Gemi Söküm Tesisleri, No:27 ALIĞA / İZMİR)

Tel: 0 232 618 2220 ; Faks: 0 232 618 2210

2. Geçici olarak depolanacak atık türleri:

070214 080111 130703 140601 150110 150111 150202 160109 160215 160303 160508 160601 160602 170410 170601 180103 191211 200121 kodlu atıklar.

3. Depolama kapasitesi:

İşletmede; 1. atık alanının 2 adet 50'şer metreküplük tanklardan oluştuğu, bu alanda gemilerden kaynaklı yakıt vb. atıkların depolandığı; 2. atık alanının tesisin giriş bölgesinde üstü ve yan tarafları kapalı, kilit altında alanda 6 bölmeli alandan oluştuğu, ayrıca alanda motor yağı değişimi sonucu oluşan atıkların depolanması için 2 metreküplük havuz içerisinde tank bulunduğu, alanın toplam 120 metrekare alana sahip olduğu, 3. atık alanının her biri 20 metreküp kapasiteli olan 2 adet toplam 40 metreküplük, tanktan oluştuğu ve bu alanda, tesisin kıyı bölgesinde yer alan mazgalda biriken tehlikeli atıkların depolandığı,

4. Depolama şekli:

1 nolu alanda iki adet sac tanklar içerisinde, 2 nolu alanda IBC tank, plastik torba, plastik-metal varillerde ve beton zemin üzerinde depolama şeklinde, 3 nolu alanda yine iki adet tank içinde depolama yapılmaktadır.

5. Geçici depolama alanından sorumlu personelin adı:

[REDACTED]



NOT: Geçici depolama izni verilen firmanın sahiplerinde ya da atık depolama alanının depolama kapasitesinde, depo ve depolama şeklinde, depolanacak atık türlerinde değişiklik olduğunda bu belge Valiliğe iade edilecektir. Ayrıca Atık Yönetimi Yönetmeliği gereği tehlikeli atıklar geçici depolama alanında en fazla 180 gün süreyle geçici depolanır.

Temporary storage permits



T.C.
İZMİR VALİLİĞİ
ÇEVRE ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ İL MÜDÜRLÜĞÜ

GEÇİCİ DEPOLAMA İZİN BELGESİ

Belge no : 553/2

Tarih:18/05/2022

1. Firmanın adı, adresi ve telefon numarası:

ÖGE GEMİ SÖKÜM İTİH İHR. TİC. SAN. A.Ş.

(ATATÜRK MAHALLESİ, AYGAZ CAD. NO:63 ALIĞA / İZMİR)

Tel: 0 232 618 21 05 ; Faks: 0 232 618 21 04

2. Geçici olarak depolanacak atık türleri:

08 01 11, 08 03 17, 13 02 08, 13 07 03, 14 06 01, 15 01 10, 15 01 11, 15 02 02 16 02 15, 16 03 03, 16 03 04, 16 06 01, 16 06 04, 17 04 10, 17 06 01, 18 01 09, 20 01 21, 20 01 26, 20 01 01, 20 01 02, 20 01 39, 20 01 40 kodlu atıklar.

3. Depolama kapasitesi:

İşletmede iki adet tehlikeli atık alanı tanımlanmıştır.

1. alanın 32,5 m² olduğu, 1 konteyner ve 10 güdüken olduğu, bu alanda 07 02 14, 08 01 11, 08 03 17, 13 02 08, 13 07 03, 14 06 01, 15 01 10, 15 01 11, 15 02 02 16 02 15, 16 03 03, 16 03 04, 16 06 01, 16 06 02, 16 06 04, 17 04 10, 17 05 03, 17 06 01, 18 01 03, 19 12 11, 18 01 09, 20 01 21, 20 01 26, 20 01 01, 20 01 02, 20 01 39, 20 01 40 kodlu atıkların depolanacağı,

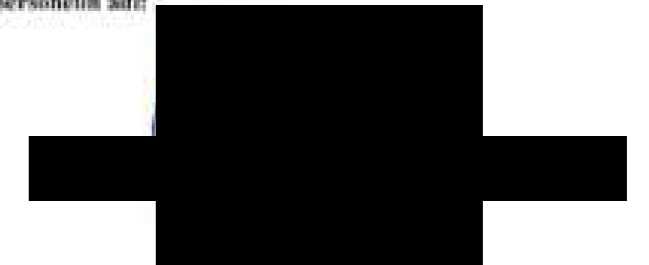
2. alanın 6 adet tank ve toplam 124 m³ lük hacimli tankların olduğu, bu alanda 13 07 03 kodlu atıkların depolandığı,

4. Depolama şekli:

1. nolu alanda IBC tank, plastik torba ve plastik varillerde, 2. nolu alanda tank içinde depolama yapılmaktadır.



5. Geçici depolama alanından sorumlu personelin adı:

[REDACTED]



NOT: Geçici depolama izni verilen firmanın sahiplerinde ya da atık depolama alanının depolama kapasitesinde, depo ve depolama şeklinde, depolanacak atık türlerinde değişiklik olduğunda bu belge Valiliğe iade edilecektir. Ayrıca Atık Yönetimi Yönetmeliği gereği tehlikeli atıklar geçici depolama alanında en fazla 180 gün süreyle geçici depolanır.

Temporary storage permits

**T.C.
İZMİR VALİLİĞİ
ÇEVRE VE ŞEHİRCİLİK İL MÜDÜRLÜĞÜ**

GEÇİCİ DEPOLAMA İZİN BELGESİ

Belge no:589 **Tarih:..../03/2021**

1. Firmanın adı, adresi ve telefon numarası:
SÖK DENİZCİLİK VE TİCARET LTD. ŞTİ.
(Atatürk Mahallesi, Aygaz Caddesi, 8-9 nolu Parsel Gemi Söküm Tesisleri ALIĞA / İZMİR)
Tel: 0 232 618 2092 ; Faks: 0 232 611 2095

2. Geçici olarak depolanacak atık türleri:
08 01 11, 13 02 08, 13 07 03, 14 06 01, 15 01 10, 15 01 11, 15 02 02, 16 02 15, 16 03 03, 16 06 01, 17 04 10, 17 05 03, 16 05 08 17 06 01, 18 01 03, 19 12 11, 20 01 21, 20 01 26, kodlu atıklar.

3. Depolama kapasitesi:
İşletmede; 1. atık alanının 2 adet 50'şer metreküplük tanklardan oluştuğu, bu alanda gemilerden kaynaklı yakıt vb. atıkların depolandığı; 2. atık alanının 5 bölmeli ve 65 metrekarelik alandan oluştuğu, bu alanda yine gemilerden çıkacak diğer tehlikeli atıkların depolanması için kullanıldığı,

4. Depolama şekli:
1 nolu alanda iki adet sac tanklar içerisinde, 2 nolu alanda IBC tank, plastik torba, yığma ve plastik variller içinde depolama yapılmaktadır.

5. Geçici depolama alanından sorumlu personelin adı:
[REDACTED]

NOT: Geçici depolama izni verilen firmanın sahiplerinde ya da atık depolama alanının depolama kapasitesinde, depo ve depolama şeklinde, depolanacak atık türlerinde değişiklik olduğunda bu belge Valiliğe iade edilecektir. Ayrıca Atık Yönetimi Yönetmeliği gereği tehlikeli atıklar geçici depolama alanında en fazla 180 gün süreyle geçici depolanır.

Letter to SRAT



To Whom It May Concern,

We are writing to inform you about our ongoing work on an upcoming report on Turkey's ship recycling industry. This report, which is going to be published in the coming months, delves into a comprehensive analysis of various aspects of the sector in Aliğa and aims to propose ways of ensuring a sustainable future for the sector, and render enhanced occupational safety and environmental performance a competitive advantage.

We would like to stress that we believe a collaborative approach is pivotal. As such, your insights are key and we extend an open invitation to collectively contribute to the development of best practices for ship recycling in Turkey.

SRAT has been the representative of the industry. Along with The Waste Management Centre, the Association provided many services to the facilities. Thus, we cordially invite any insights you might wish to share regarding the operational aspects of the facilities and areas you believe could be improved.

We also have specific questions as outlined below, of which your input would be highly appreciated:

1. What were the benefits and/or negative aspects of the closure of the Waste Management Centre and phasing out of the centralised waste management in Aliğa? What was the procedure for the closure? We are keen to learn more about your experiences.
2. Could you provide a list of what type of supports and/or services the Association is currently providing to the yards?
3. Would you consider supporting the yards and promoting investments in waterjet cutting?
4. Would you consider supporting the yards and promoting investments in the establishment of dry-docks?
5. Would the Association consider publicly disclosing annual statistics related to the ships dismantled in Aliğa?
6. Would the Association consider to publicly share the annual reports?

NGO Shipbreaking Platform
Rue de la Linière 11: B – 1060 Brussels
Tel +32 2 6094 419
www.shipbreakingplatform.org

Annex 8

Letter to SRAT

İletişimimizi kolaylaştırmak için, **yanıtlarınızı 27 Eylül 2023 tarihine kadar Türkçe ya da İngilizce olarak ingvild@shipbreakingplatform.org ve ekin@shipbreakingplatform.org ve adreslerine göndermenizi rica ediyoruz.**

Bu sorulara ilişkin görüşleriniz ve yanıtlarınızın raporumuzu zenginleştireceğine inanıyoruz. Herhangi bir sorunuz varsa veya sorularımız dışında değerlendirmemiz gereken bir bilgi eklemek istiyorsanız, lütfen bizimle iletişime geçmekten çekinmeyin.

Değerlendirmenizi ve yanıtınızı sabırsızlıkla bekliyoruz.

Saygılarımızla,

Ekin Sakin
Politika Sorumlusu

NGO Shipbreaking Platform
Rue de la Linière 11: B – 1060 Brussels
Tel +32 2 6094 419
www.shipbreakingplatform.org

Annex 9

Letter to yards



To Whom It May Concern,

We are writing to inform you about our ongoing work on an upcoming report on Turkey's ship recycling industry. This report, which is going to be published in the coming months, delves into a comprehensive analysis of various aspects of the sector in Aliğa and aims to propose ways of ensuring a sustainable future for the sector, and render enhanced occupational safety and environmental performance a competitive advantage.

We would to stress that we believe a collaborative approach is pivotal. As such, your insights are key and we extend an open invitation to collectively contribute to the development of best practice for ship recycling in Turkey.

To ensure a robust report, we have the following specific questions to which your input would be highly appreciated:

1. Could you provide information on the annual maximum capacity of your facility, based on LDT?
2. We are keen to learn about the methods and strategies you have integrated into your environmental management program, especially concerning aspects such as paints and coatings collection, water waste management and protection of the intertidal zone. Could you provide information on this matter?
3. If you have undergone the EU approval procedure, what were the benefits and subsequent changes observed in your facility following inspections?
4. Would you consider investing in alternative cutting and dismantling technologies, such as water-jet cutting and the establishment of a dry-dock, in the future?
5. What are your expectations regarding the rental agreements, land-use after 2026 and overall in the near future?
6. How do you evaluate the decreased number of dismantled ships in the recent years in Aliğa?
7. Would you consider publicly disclose annual statistics related to the ships dismantled within your yard?
8. Would you consider publicly sharing the annual notifications submitted to the Ministry of Environment regarding hazardous materials disposal?

NGO Shipbreaking Platform
Rue de la Linière 11: B – 1060 Brussels
Tel +32 2 6094 419
www.shipbreakingplatform.org

Annex 9

Letter to yards

9. Would you consider publicly disclosing near-miss reporting and accidental statistics of your yard?
10. Could you provide insight into the frequency of health monitoring conducted for your workers?
11. Would you consider to share the employment figures according to different work statuses such as direct employees, employees in lump sum jobs and subcontracted workers?

To facilitate our communication, we kindly ask you to send your responses in Turkish or English to ingvild@shipbreakingplatform.org and ekin@shipbreakingplatform.org by 27 September 2023.

Your insights and responses to these questions would enhance our report. If you have any questions or believe that additional information should be included, please do not hesitate to contact with us.

We are looking forward your consideration and eagerly await your response.

Yours Sincerely,

Ekin Sakin
Policy Officer



NGO
SHIPBREAKING
PLATFORM

📍 Rue de la Linière 11, B 1060 Brussels - Belgium

🌐 www.shipbreakingplatform.org

✂️ [@NGOShipbreaking](https://twitter.com/NGOShipbreaking)

📘 [@shipbreakingplatform](https://www.facebook.com/shipbreakingplatform)