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DenizGündem

Denizcilik Dünyası Haber Merkezi

INTERNATIONAL

SPECIAL ISSUE: CARBON ERA

ODDYSHIP General Manager Capt. Yusuf Özcan DEMİR:
"The reporting phase is over. The era of financial reckoning has begun — and carbon is sending the bill."

KOSDER:
Maritime is being rewritten in the carbon era.

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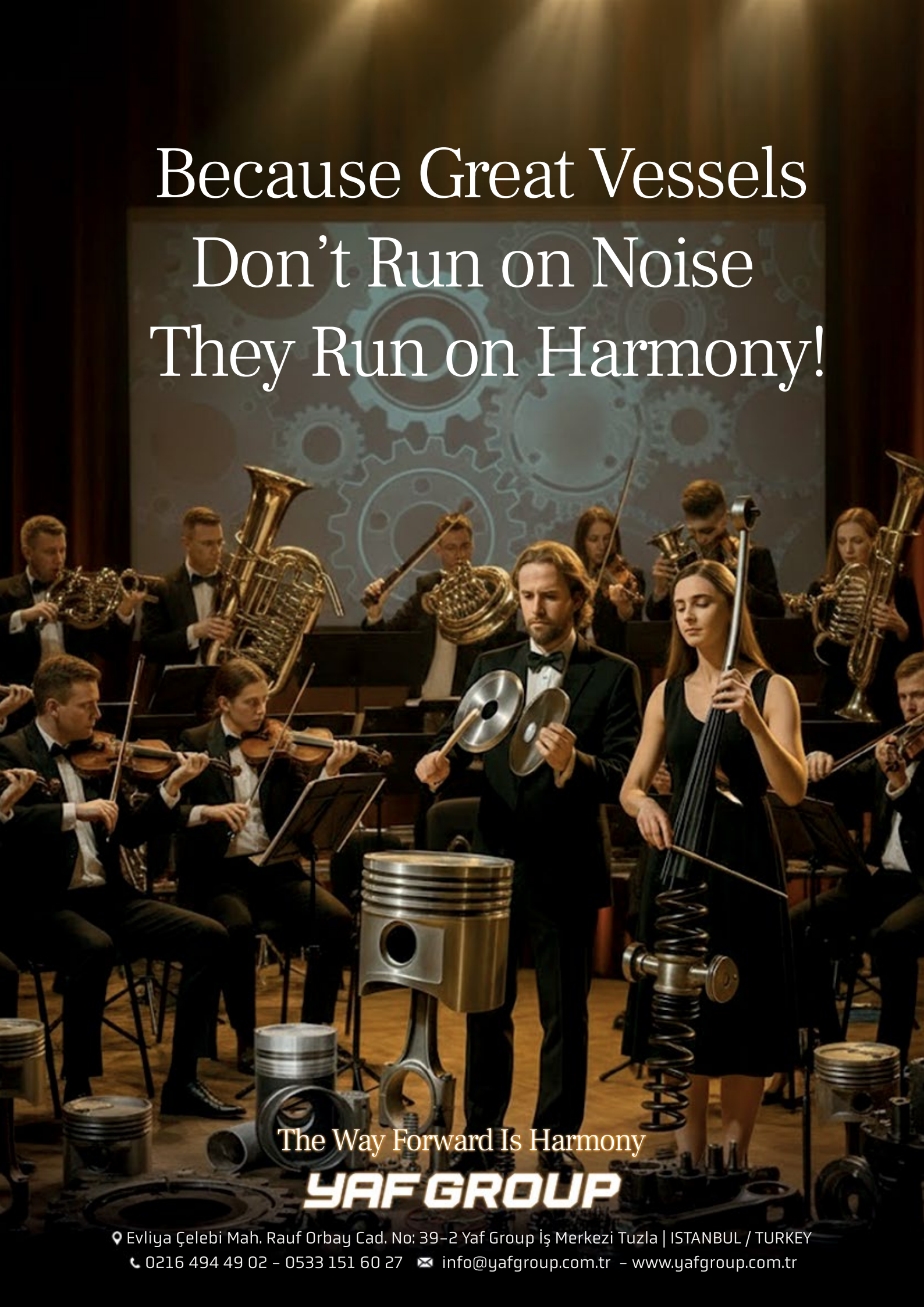
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From the Editor...

The excitement we have carried since the very first day of our publication has never diminished, despite the many issues that have followed. The sense of anticipation we felt with our inaugural issue remains just as vivid today, as we present our fifth issue. Throughout this journey, *Deniz Gündem* has aimed to be more than a publication; it has sought to serve as a platform that closely monitors the sector, questions prevailing approaches, and creates space for meaningful discussion. With this vision, we continue our path into the new year.

In this issue, we have placed carbon and emissions at the center of our focus. Frankly speaking, this is a subject whose technical complexity makes it difficult to fully grasp, even when simply following the regulations. As many within the sector have observed, a significant gap still exists between what is discussed at the regulatory level and what is implemented in practice. Rules are in place, timelines are announced, and targets are declared; yet it remains challenging to speak of tangible and holistic progress.

What is particularly striking is the potential emergence of multi-layered challenges as carbon and emissions regulations are put into practice. Technical compliance, cost pressures, inspection processes, competitive balance, and—most notably—the burden on small and medium-sized enterprises have yet to be clearly defined. This uncertainty carries the risk that well-intentioned environmental goals may translate into sectoral vulnerabilities during the implementation phase.

The purpose of this issue is not so much to provide definitive answers, but rather to go beyond merely asking the right questions—to shed light on this critical area within the maritime sector, to offer guidance to maritime stakeholders, to explain the subject as clearly as possible, and to present a perspective on potential roadmaps going forward. How the maritime industry balances environmental responsibility with operational realities will remain one of the most critical topics of discussion in the years ahead.

Haydar ÖZDEN

As *Deniz Gündem*, we will continue with determination to closely follow this process, bring together diverse viewpoints, and contribute to the sector's collective memory.

I would like to extend my sincere thanks to **Captain Yusuf Özcan Demir** for his valuable efforts and contributions to the realization of this issue.

We wish 2026 to be a healthy, successful, and sustainable year for all our companies, our sector, and our country.

With the same excitement,
and the same sense of responsibility...

Haydar Özden

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Agenda at the DTO Kocaeli Assembly

Economy, Security and Green Transformation

Speaking at the final assembly meeting of the year of the İMEAK Chamber of Shipping Kocaeli Branch, Board Chairman Vedat Doğusel stated that despite the current economic conditions, the recovery process is ongoing and that their expectations for 2026 are positive. The 39th Ordinary December Assembly Meeting of the Kocaeli Branch was held in the branch assembly hall under the chairmanship of Assembly President Vefa İbrahim Aracı. At the opening of the meeting, which began with a moment of silence and the Turkish National Anthem, Aracı congratulated the assembly members on the new year and expressed his belief that 2026 would be a more productive period for both Türkiye and the maritime sector.

The final meeting of the year was held with strong participation. Attendees included Kocaeli Metropolitan Municipality Coordinator Abdullah Köktürk, Employment Office President Öztekin Kaşukçi, Maritime Transportation Branch Manager Mehmet Yıldırım, as well as administrators from Gölcük Şehit Volkan Tantürk and Hereke Nuh Çimento Vocational and Technical Anatolian High Schools, representatives of non-governmental organizations, educators, student clubs, and various stakeholders from the maritime industry. In his assessments of the agenda, Vedat Doğusel noted that a challenging year economically had been left behind, but that concrete steps toward recovery had been taken through the measures implemented by the Ministry of Treasury and Finance. Stating that bringing inflation under control to a certain extent had strengthened expectations, Doğusel emphasized that they foresee the current economic program being continued with determination for some time.

In his speech, Doğusel also addressed regional security issues, stating that attacks targeting Turkish-flagged and Turkish-owned merchant vessels in international waters, particularly in the Black Sea, are a cause for concern. Reminding that Türkiye maintains a peaceful and level-headed stance in the face of regional conflicts, Doğusel stated that attacks originating from Ukraine and Russia threaten the fundamental principles of international maritime trade and expressed his hope that such actions would come to an end as soon as possible. Noting that green transformation is among the priority agenda items of the Chamber of Shipping, Doğusel said that the risk of drought across the country, particularly in the Marmara Region, has heightened environmental concerns. He also shared that at the Green Transformation in Maritime Summit, held for the second time on December 24, strategies for a decarbonized future, alternative energy sources, low-carbon fuels, shipyards, shipbuilding processes, sustainable production in ports, and circular economy approaches were planned to be addressed.

"Economic rebalancing, rising security risks, and the goal of a carbon-free future... The DTO Kocaeli Assembly mapped out the course of maritime transport."

Emphasizing that Kocaeli is a city that trains maritime professionals, Doğusel stated that Kocaeli University and vocational high schools provide the sector with qualified human resources, and that the İMEAK Chamber of Shipping Kocaeli Branch also acts like an educational institution in this process. Sharing data from the Eastern Marmara Customs and Foreign Trade Regional Directorate, Doğusel underlined that exports over the first eleven months reached 41.09 billion USD, highlighting the strategic share of Kocaeli ports nationwide. In addition, the numbers of Turkish- and foreign-flagged vessels calling at Kocaeli, along with cargo and container handling figures for the first eleven months of 2025, were shared with the assembly members. The meeting concluded with sectoral evaluations following the presentations.

KOSDER Met with Honorary President Çakır

The Chairwoman of the Board of Directors of the Coastal Shipowners and Operators Association (KOSDER), Neslihan Torlak Gönençer, together with board members, paid a visit to Honorary President Salih Zeki Çakır, who has devoted many years of service to the association. The breakfast meeting, hosted by Salih Zeki Çakır on Thursday, December 11, 2025, was also attended by former presidents of KOSDER, during which evaluations were made regarding the association's journey from past to present.

During the meeting, held in a sincere and cordial atmosphere, KOSDER's current position within the sector, the ongoing challenges faced by coastal shipowners, and objectives for the upcoming period were discussed. A consensus was reached on strengthening the association's activities, increasing thematic consultation meetings for members, supporting the ongoing campaign to purchase the association's headquarters, and creating sustainable sources of income. It was also emphasized that establishing a data bank to collect up-to-date information on the coastal fleet would position KOSDER as a reference organization within the sector.

At the end of the meeting, a symbolic gift was presented to Salih Zeki Çakır by Neslihan Torlak Gönençer on behalf of the KOSDER Board of Directors in commemoration of the occasion. The visit concluded with mutual good wishes and the hope that efforts to strengthen the association's institutional memory would continue.

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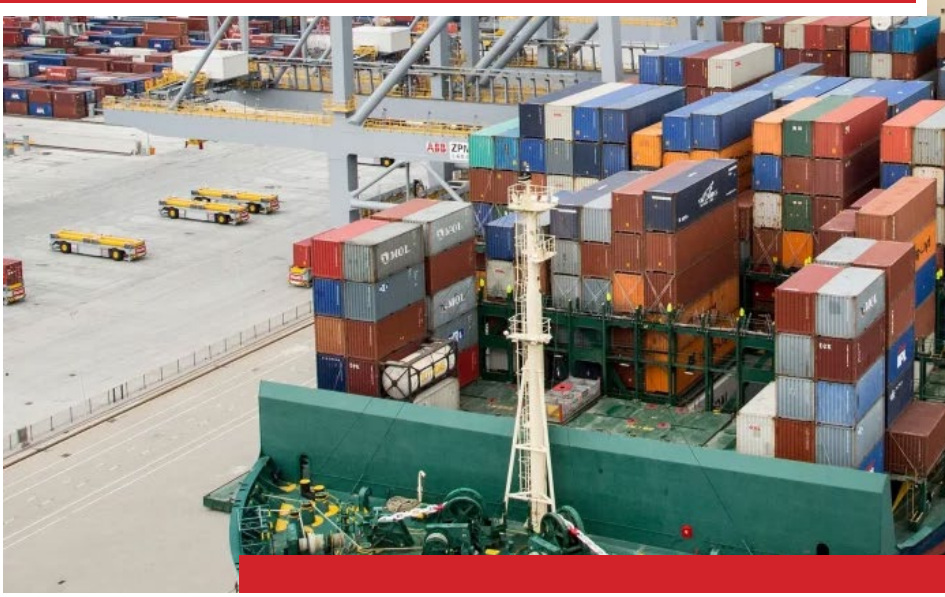
European Ports Have Entered the Digital Age



Europe's leading container ports are accelerating automation investments in response to changing conditions in global trade and increasing competitive pressure. Port authorities emphasize that fully and semi-automated terminal solutions are no longer merely a preference to increase operational speed, but have become a critical necessity in terms of occupational safety, operational continuity, and long-term competitiveness. Growing vessel capacities and carriers' demands for shorter port stays are forcing port operations into a more predictable and uninterrupted structure.

European Ports Enter the Digital Age

New projects implemented at Europe's main container hubs such as Rotterdam, Antwerp-Bruges, Hamburg, Valencia, and Algeciras demonstrate that digitalization in port operations has reached an irreversible point. Automation systems simultaneously optimize numerous processes, from berth planning and cargo distribution to yard traffic management and equipment utilization. As a result, delays caused by human error are reduced, and ports gain an operational structure capable of uninterrupted, 24/7 operation. In next-generation investments, remotely controlled ship-to-shore and yard cranes, AI-supported terminal operating systems, and autonomous yard vehicles stand out. Operators can manage cranes from secure control centers without being physically present in the field, while artificial intelligence–based software analyzes vessel schedules, equipment efficiency, and yard congestion to provide decision support for management. Autonomous vehicles accelerate operational flow by carrying out container transfers without human intervention.

Among the main driving forces behind Europe's automation push are rising labor costs and high occupational safety standards. Port operators state that separating risky and heavy operations from the human factor will reduce workplace accidents and enable employees to be employed in more qualified roles. However, experts also point out that automation brings cybersecurity risks along with its benefits. For this reason, many ports are implementing automation projects together with robust cybersecurity infrastructures.

This accelerated transformation in European ports is expected to increase competitive pressure on ports in the Mediterranean and the Middle East, and to steer regional ports—including those in Türkiye—toward similar investments.

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December Tensions in the Grain Corridor:

UAV Allegation Involving Turkish Vessel VIVA

A development that took place in the grain corridor last month once again brought security concerns regarding maritime trade in the Black Sea to the forefront. The Ukrainian Navy announced that the Turkish-flagged civilian vessel "VIVA," which was sailing from Ukraine to Egypt in December, was allegedly targeted by an unmanned aerial vehicle claimed to belong to Russia. It was alleged that the vessel, carrying sunflower oil, came under attack while navigating through the grain corridor.

According to information shared by the Ukrainian side via social media, the incident occurred while the vessel was within the boundaries of Ukraine's exclusive economic zone and outside the effective range of air defense systems. The statement emphasized that the attack directly targeted civilian maritime transport and posed a serious risk to international maritime trade.

Authorities reported that the 11 Turkish citizens on board were not affected by the attack and that there were no injuries or loss of life. It was also stated that VIVA continued its voyage toward Egypt without sustaining serious damage. The Ukrainian Navy reportedly established contact with the ship's captain and kept search and rescue units on standby to be deployed if necessary.

The Ukrainian administration accused Russia of violating international maritime law due to this incident. Experts, meanwhile, point out that such allegations occurring in December have heightened concerns over the safety of commercial navigation in the grain corridor and the protection of neutral civilian vessels.

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The Sector Entered 2026 with a Message of Solidarity

The Bosphorus Shipbrokers Dinner, held last month with the participation of approximately 500 attendees, brought together national and international stakeholders of the maritime sector, fostering a strong atmosphere of solidarity. The event also attracted significant interest from non-governmental organizations and the maritime press. A dedicated area was created for sponsor companies supporting the 7th Bosphorus Shipbrokers Dinner, scheduled to take place on June 26, 2026. It was noteworthy that the event has become a recognized brand within the sector and received broad sponsorship support ahead of the new year.

Speaking at the evening, Onur Türkeş, Chairman of the Board of Directors of the Shipbrokers Association (GBD), stated that the association concluded 2025 with an intensive agenda, including educational activities, panels, projects carried out with universities, and active participation in international platforms. Türkeş also emphasized that tangible steps were taken in the field of social responsibility through the creation of a Memorial Forest consisting of 2,000 saplings, support provided to families affected by earthquakes, and scholarships granted to students.

Noting that preparations for 2026 are ongoing, Türkeş thanked the sponsor companies that have already contributed to the 7th Bosphorus Shipbrokers Dinner, stating that this support enhances the international visibility of Turkish shipbroking. Following Türkeş's remarks, which concluded with new year wishes, the event came to an end with New Year celebrations.

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A First for Türkiye at Mersin Port: Fully Integrated Yard Automation Goes Live

MIP General Manager Ajay Kumar Singh

Mersin International Port Operations Inc. (MIP) has marked a first in Türkiye's port industry by commissioning a fully integrated yard automation system. Implemented at MIP, the largest container port in the Mediterranean, this investment aims to respond to increasing trade volumes, expand operational capacity, and strengthen Türkiye's position within the global logistics network.

The first phase of the East Med Hub 2 (EMH2) Project, carried out by MIP in partnership with PSA International, IFM Investors, and Akfen Holding, has been completed. Within this scope, Türkiye's first fully integrated yard automation system—comprising four ship-to-shore (STS) cranes and fourteen fully automated rail-mounted gantry cranes (aRMGs)—has been put into service. The fact that the entire system operates on an electric infrastructure is regarded as a significant step in terms of digitalization and sustainability.

The aRMG cranes, operating in integration with the Terminal Operating System (TOS), offer operators a safer and more comfortable working environment thanks to their remote-control capabilities. Equipped with sensors, cameras, and advanced safety systems, this technology aims to enhance precision in container handling processes, reduce waiting times, and increase yard efficiency.

With the EMH2 Project, MIP's annual container handling capacity is planned to be increased to 3.6 million TEU. Thanks to the high outreach and lifting capacity provided by the new STS cranes, it will be possible to serve two mega vessels simultaneously. Upon completion of the project, yard efficiency is expected to double by June 2026, and with low-carbon, environmentally friendly operations, MIP aims to become one of the leading logistics hubs in the Eastern Mediterranean.

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GMO Celebrated Its 71st Anniversary

Tamer Kıran, Chairman of the Board of Directors of the İMEAK Chamber of Shipping

Tamer Kıran, Chairman of the Board of Directors of the İMEAK Chamber of Shipping, attended the celebration evening organized on the occasion of the 71st anniversary of the Chamber of Marine Engineers (GMO) under the Union of Chambers of Turkish Engineers and Architects (TMMOB). The event, held on Saturday evening, December 13, brought together representatives from the public sector, academia, and the private sector within the maritime industry.

Hosted by Bülent Hüseyinoğlu, Chairman of the Board of Directors of the Chamber of Marine Engineers, the evening emphasized the profession's historical legacy and strategic importance within the maritime sector. Speeches highlighted the critical role of marine engineers in the development of Turkish maritime and the value of qualified human resources for the sustainability of the sector.

As part of the program, plaques were presented to GMO members who completed 50, 40, and 25 years in the profession. Engineers who have devoted many years of service to the sector were honored with applause from the guests, and the evening concluded with the taking of commemorative photographs.

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A Digital Touch to Maritime Transport: The Era of Electronic Bills of Lading

With the growing adoption of electronic bills of lading (eBL) and digital trade documents, agricultural commodity trading is entering a new phase of transformation on a global scale. More than 39 companies influential in the global grain and oilseed trade have signed a joint letter published by GAFTA, expressing their support for the transition from paper-based systems to digital infrastructures.

Leading industry players such as ADM, Bunge, Cargill, Louis Dreyfus Company, and COFCO Resources aim, through this step, to establish faster, more transparent, and more secure commercial processes across agricultural and food supply chains. Digital documentation significantly shortens transaction times in international trade while also helping to reduce document-related operational risks.

The widespread adoption of electronic bills of lading also offers substantial benefits for maritime transport. Faster document flows and reduced fraud risks are expected to lower the need for letters of indemnity for shipowners, while enabling a more integrated operational structure with exporters and importers.

To date, more than 5 million tonnes of agricultural commodities have been transported using electronic bills of lading across 80 vessels. Experts emphasize that digitalization aligns not only with efficiency gains but also with sustainability goals, highlighting that the reduction in paper usage plays a significant role in lowering environmental impact.

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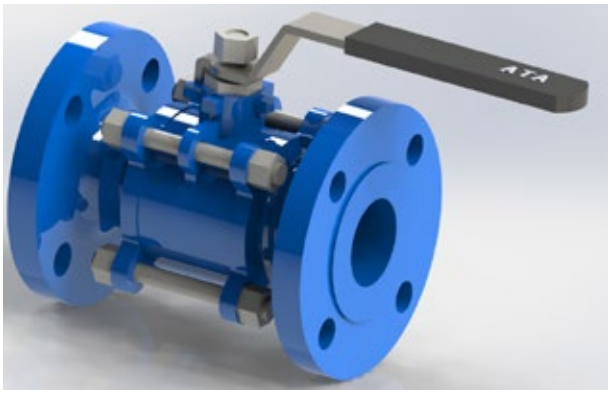

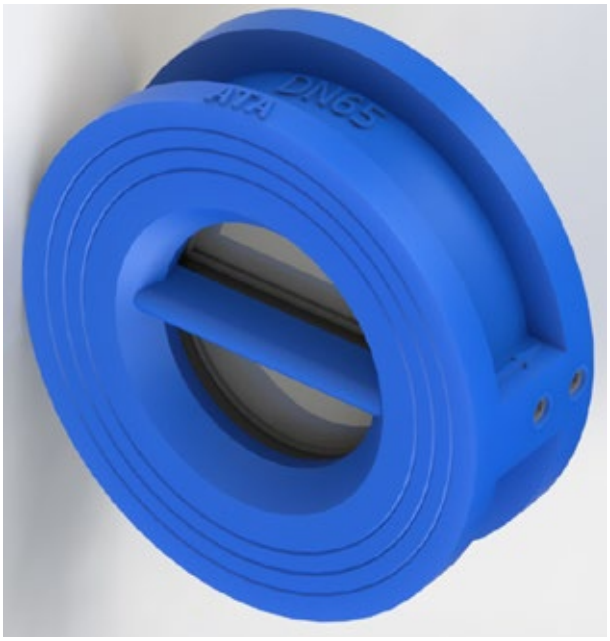

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Green Energy Move from CW Enerji to Desan

CW Enerji has completed the installation of a ground-mounted solar power plant (SPP) in Şanlıurfa for Desan Deniz İnşaat Sanayi A.Ş., a subsidiary of the Kaptanoğlu Maritime Group. With this project, Desan Shipyard is preparing to meet a significant portion of its energy needs from renewable sources. CW Enerji stated that this investment contributes to Türkiye's energy transition process and green production goals.

CW Enerji CEO Volkan Yılmaz emphasized that the commissioned solar power plant project represents a strategic step in terms of both environmental sustainability and economic efficiency. Pointing out the importance of meeting the energy needs of industrial enterprises through domestic and environmentally friendly solutions, Yılmaz stated that Desan sets an exemplary stance for the sector with its environmentally conscious production approach.

Cenk İsmail Kaptanoğlu, Chairman of the Board of Directors of Desan Deniz İnşaat Sanayi A.Ş., stated that the shipyard's carbon footprint will be significantly reduced thanks to the solar energy investment. Kaptanoğlu emphasized that the use of renewable energy is not only an environmental responsibility but also a fundamental part of the company's long-term vision.

IMO Warning for Black Sea: Keep Shipping Out of Conflict

International Maritime Organization (IMO) Secretary-General Arsenio Dominguez drew attention to the increasing military and security risks in the Black Sea, emphasizing that the rising tensions pose serious threats to maritime activities in the region. Dominguez stressed that commercial vessels, port facilities, and innocent seafarers must under no circumstances become targets of conflicts.

Stating that attacks on commercial ships, damage to port infrastructure, and the presence of naval mines in the Black Sea have weakened navigational safety, Dominguez warned against the use of maritime activities as a tool of pressure or bargaining in geopolitical tensions. It was noted that a potential incident could have adverse effects not only on crews, but also on the environment and the global trade chain.

The IMO Secretary-General stated that the organization is ready to support all diplomatic and technical initiatives aimed at ensuring the safe and sustainable continuation of international maritime trade. Reminding that maritime transport is of vital importance to the global economy, Dominguez underlined that ensuring security in the Black Sea is a shared responsibility.

"Commercial vessels, port facilities, and innocent seafarers must not, under any circumstances, be targeted in conflicts."

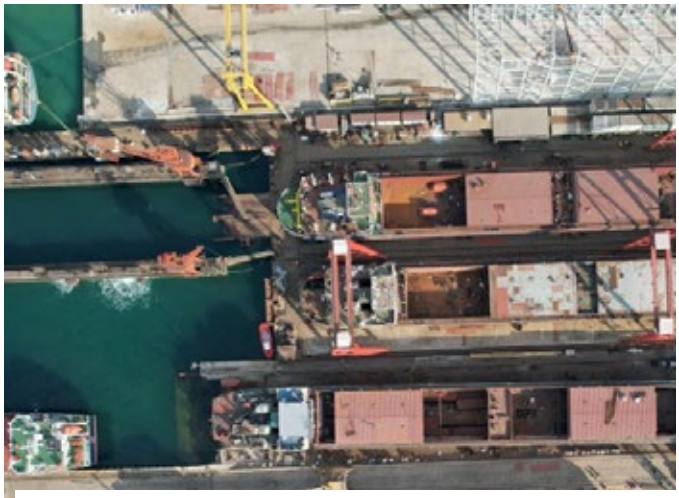
Black Sea Alert: From Grain Corridor to Security Crisis

Minister of Foreign Affairs Hakan Fidan drew attention to the increasing security risks in the Black Sea in recent months, emphasizing that the escalation in the region directly affects not only littoral states but also global trade and food security. Recalling that approximately 30 million tonnes of grain reached global markets thanks to the Grain Corridor Agreement, Fidan underlined that this process is of vital importance, particularly for African countries. However, he warned that the targeting of commercial vessels, naval mines, and UAV threats have severely undermined maritime security in the Black Sea.

Stating that the uncontrolled increase in military activity in the region carries the risk of broader instability, Fidan noted that military cooperation with Romania and Bulgaria is being maintained within this framework. Emphasizing that the quickest and most effective way to ensure security in the Black Sea is a ceasefire, Fidan warned that otherwise regional escalation would become inevitable.

Touching upon the Cyprus issue, Fidan stated that the Southern Cyprus administration's EU Council Presidency process presents both risks and diplomatic opportunities for Türkiye. Pointing out that the current status quo is unsustainable, he argued that a two-state solution must now be discussed openly, stressing that ending the international isolation of Turkish Cypriots is of critical importance for regional stability and cooperation.

"Every disruption along the Black Sea route, which has transported approximately 30 million tonnes of grain to global markets, has vital consequences—especially for Africa."



Strong Export Performance from Yalova: Maritime Sector Leads the Way

Yalova's exports exceeded USD 653 million in the first eleven months of the year, marking a 22.8% increase compared to the same period last year. While notable fluctuations were observed in monthly export performance, November stood out as the month with the highest exports of the year, surpassing USD 131 million. This increase indicates that the upward momentum in the city's production and foreign trade capacity continues.

The shipbuilding, yacht, and maritime services sector accounted for the largest share of export growth. Shipyards in Yalova recorded exports exceeding USD 570 million over the eleven-month period, carrying the city's overall foreign trade performance. The ship and yacht sector was followed by chemicals, mining products, and steel, once again highlighting the decisive role of industrial production in the export composition.

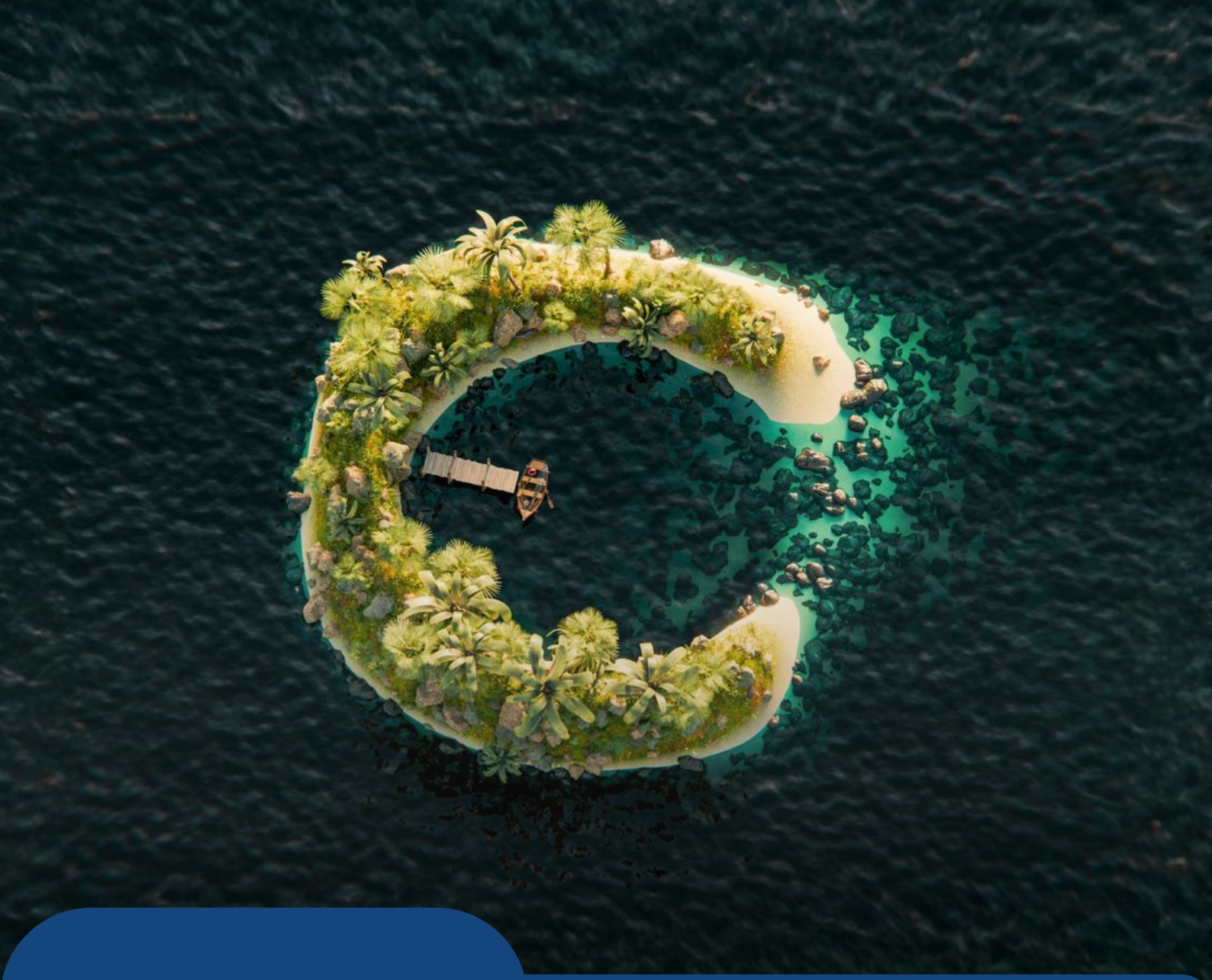
Meanwhile, the ornamental plants sector—one of Yalova's traditionally strong industries—also succeeded in increasing its exports. The sector raised its exports by 7% in the first eleven months of the year, reaching USD 7.7 million. The fact that many sub-sectors, ranging from furniture to machinery, and from electrical-electronics to ready-to-wear, achieved export figures exceeding USD 1 million further strengthened Yalova's increasingly diversified foreign trade structure.

Next-Generation Tanker Move from YAF GROUP

Another significant milestone has been reached in the 7,300 DWT chemical tanker project carried out by Milestone International Shipbuilding, operating in Taizhou, China, under the umbrella of YAF GROUP. Within the scope of three next-generation chemical tankers to be built for STELLA TANKER, a contract covering the main engine and generator systems was signed between Milestone International Shipbuilding and Zichai Power Co. Ltd. at the Marintec China Exhibition. The ceremony was recorded as the official start of cooperation on the project's main propulsion systems.

Designed in full compliance with the latest environmental standards of the IMO, the tankers are equipped with low emissions, high energy efficiency, and modern machinery configurations. Featuring cargo tanks made of duplex stainless steel, the project aims to combine durability and environmental sustainability, thereby enhancing competitiveness in the global chemical tanker market.

With their low emission values, the propulsion systems support the next-generation tanker concept and further strengthen the project's sustainability objectives. Within the scope of the project, Milestone International Shipbuilding undertakes technical consultancy, brokerage management, and technical supervision throughout all production stages, from the contracting process to delivery. Thanks to the strategic cooperation established with Zichai Power, the selected propulsion systems offer low fuel consumption and environmentally friendly emission values, thereby strengthening the project's sustainability objectives.



CARBON FILE

The framework of the Carbon File featured in this issue was developed under the expert consultancy of **Capt. Yusuf Özcan DEMİR**, General Manager of ODDYSHIP.

The selection of contributors and the specific topics addressed in this file were meticulously curated through Capt. Demir's profound command of the industry, his dedicated coordination, and his rigorous approach to content development. Consequently, this file is not merely a collection of articles centered on a theme; rather, it represents a cohesive body of work informed by a deliberate editorial vision.

We extend our deepest gratitude to him for his invaluable contributions in shaping the content of this file and for bringing us together with leading experts in the field.

DENİZ GÜNDEM

Energy Management and the Carbon Era in Shipping

Not a Green Transition, but a New Business Model

Emission management in shipping has moved beyond being a compliance process limited to reporting. Today, energy efficiency, carbon cost, and regulatory strategy determine a vessel's commercial value, contractual leverage, and future. This article explains the real, on-the-ground cost of transformation.

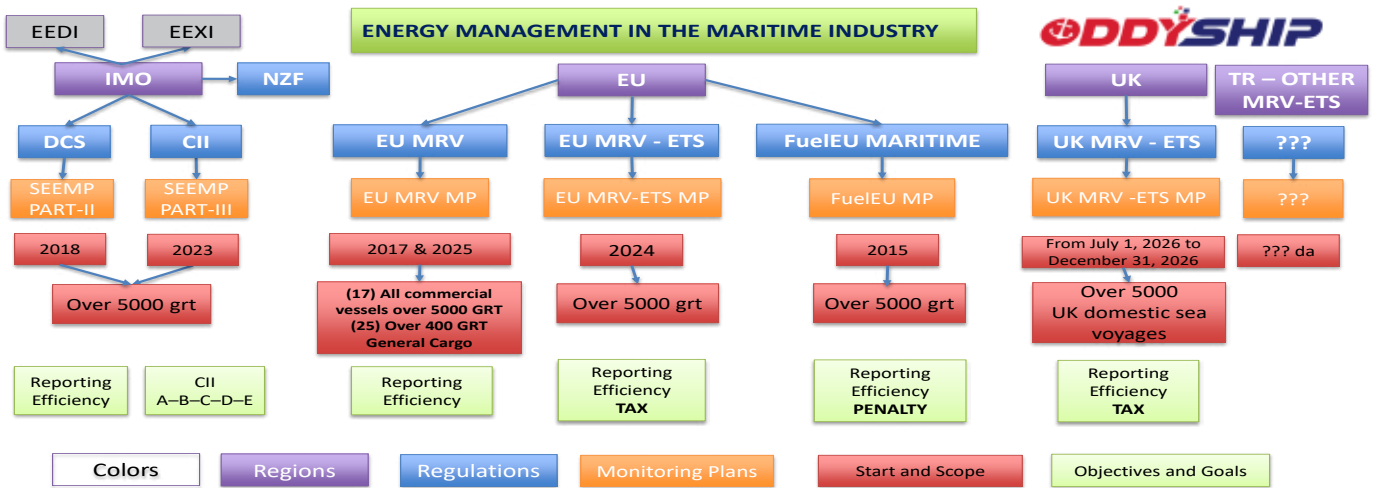
Cpt. Yusuf Özcan DEMİR
ODDYSHIP General Manager

I began working in the field of energy efficiency, emission management, and regulatory compliance in the maritime sector in 2012. Since then, both onboard vessels and on the office side, our progress has been shaped not by theoretical guidelines, but by confronting the real challenges of implementation. At this point, we have reached today, greenhouse gas emissions in shipping are no longer merely an environmental topic; they represent a direct operational, commercial, and financial reality.

Based on this reality, ODDYSHIP has positioned itself as a structure that aims to provide ship operators not only with reporting services, but also with the capability to make decisions based on measurable data, within the scope of EU MRV, EU ETS, FuelEU Maritime, IMO DCS, CII, and Net Zero targets. We provide continuous software and consultancy services to approximately 400 vessels operating under different flags and commercial models. The number of vessels we have served on a project basis has reached 1,000. This diversity enables us to observe where the system actually fails in the field, rather than relying on desk-based scenarios.

Through our work, we have clearly observed that technical decisions related to energy efficiency and emission reduction must be supported by engineering-based analyses rather than assumptions.

In line with this approach, we treat "GHG Readiness" not merely as a documentation or scenario assessment exercise, but as a preparation process supported by engineering-based analyses such as CFD. With our teams of naval architects and marine engineers, we conduct pilot studies under the GHG Readiness Certificate framework; provide continuous support to certain companies, effectively acting as their energy management department and deliver two full-day training programs that equip the sector with certified specialists.



This article is not a regulatory summary, nor an idealized narrative of "green transformation." Its purpose is to reveal the technical conflicts, financial uncertainties, and often-overlooked contractual risks created by regulations in practice, based on real measurement, analysis, and implementation experience gained in the field. The table above presents a guiding visual that summarizes, in a holistic framework, the topics, regulations, practices, and objectives related to energy management in the maritime sector. Energy and carbon management in shipping has evolved into an integrated structure along the axes of EEDI–EEXI (design), DCS–CII (operation), and EU MRV–EU ETS–FuelEU Maritime–IMO NZF (cost and enforcement). Obligations that began as reporting requirements for vessels above 5,000 GT have now transformed into a system that directly influences operational and commercial decisions.

The fact that these regulations rely on similar datasets does not mean they can be managed in the same way. EU MRV, EU ETS, FuelEU, UK MRV–ETS, DCS, CII, and NZF each produce different methodologies, control mechanisms, and outcomes. Managing one correctly does not mean that the others are automatically managed correctly. Holistic energy and carbon management requires these differences to be addressed consciously.

COMMON GROUND: MONITORING PLANS

Although monitoring plans appear to belong to the vessel, in practice they are frameworks that lock in the operator's decisions. Monitoring plans prepared for each vessel under EU MRV, EU ETS, FuelEU, DCS, CII, and NZF are not merely initial documents; they are core texts that define which methods may be used and within what limits.

Choices made in these plans directly determine flexibility during the reporting period. A method not included in the plan cannot be applied later, and even a single-word change triggers a re-approval process. In practice, many operators are encountered who are unable to benefit from alternative fuel advantages or are forced to make non-priority equipment investments due to poorly structured monitoring plans.

Experience gained through reviewing, revising, and implementing thousands of monitoring plans prepared under different flags and regulatory regimes has shown that many shipowners have been unable to utilize the surplus effect of alternative fuels or have been forced to install flowmeters solely due to incorrectly prepared plans.

EU MRV: MONITOR / REPORT / VERIFY

Although EU MRV is often perceived as "just reporting," in practice this stage generates the highest number of errors, revisions, and verifier comments. This is because EU MRV is not merely an annual report, but a system in which measurement methods and data sources are predefined. EU MRV is best understood as a learning and adaptation process.

Inconsistencies between the methods defined in monitoring plans and actual onboard practices are considered methodological violations during verification. For example, if a tank-based fuel measurement method is selected, but different calculation habits emerge during operations, serious inconsistencies arise at the verification stage. Moreover, EU MRV is the primary data source for EU ETS and FuelEU. Therefore, MRV is the first and most critical step that determines the reliability of the entire system.

EU MRV–ETS: FROM REPORTING TO COST

Data collected under EU MRV has, together with EU ETS, turned directly into a monetary obligation. This creates significant cash flow pressure for many operators. Emission data is no longer merely audited; it is priced, purchased, and paid for. As of 2026, allowances will be required for 100% of emissions. In practice, this structure has caused serious cash flow and budget shocks for many companies, as the cost reflects today's price applied to emissions accumulated in the past.

Although ETS obligations are still perceived as an operational detail by some, carbon cost is now as real as bunker and freight. Minor errors in MRV directly result in excess costs under ETS.

Another critical breaking point is how ETS obligations are allocated among the parties. When responsibility for carbon cost is not clearly defined between the owner, charterer, and sometimes the ship manager, ETS shifts from a technical compliance issue into a commercial dispute. Insufficiently defined ETS clauses in contracts can lead to unexpected and retroactive financial claims at the end of the reporting period.

EU ETS is not a temporary practice or a symbolic environmental policy for shipping. Companies that treat ETS not merely as "a cost to be paid," but as a financial risk that must be managed, will positively differentiate themselves from others.

FuelEU MARITIME: FOSSIL FUELS OUT – ALTERNATIVE FUELS IN

FuelEU Maritime is a complex performance mechanism based on deficit–surplus calculations. Fuel type, energy intensity, and voyage profile directly affect the outcome.

The most critical issue is which DOC holder the vessel is under at the end of the monitoring period. Management changes during the year do not imply automatic sharing of responsibility. Although pooling and borrowing mechanisms provide flexibility, particularly under pooling, the single-pool-per-year

rule and counterparty risk create serious commercial and legal uncertainties.

At this point, it must be emphasized that pooling agreements should be treated as an independent risk management issue beyond the regulatory text. If the assumed surplus within the pool is not genuinely available, if allocation methods are unclear, or if responsibility in case of non-compliance is not clearly secured, pooling may fail to provide the expected protection. The real risk in FuelEU is not the existence of the penalty itself, but entering into a new obligation under the assumption that the penalty has been avoided.

For a vessel trading in Europe, as of 2026, 100% of emissions will fall under EU ETS. The ETS-related cost of burning one additional tonne of MGO is approximately EUR 279, based on a carbon allowance price of EUR 87/tCO_2, independent of fuel price. The FuelEU penalty equivalent for one tonne of MGO is approximately EUR 40. Thus, the combined ETS and FuelEU cost reaches approximately EUR 420 per tonne of MGO. When compared with the current market price of MGO, this figure—representing carbon cost alone—clearly demonstrates that ETS and FuelEU are no longer secondary environmental obligations, but critical financial items sitting at the same table as bunker costs. In other words, inefficiency no longer merely means burning more fuel; it generates a direct and unavoidable carbon bill.

IMO DCS AND CII: THE REAL CONSEQUENCES BEGIN AFTER REPORTING

For a long time, IMO DCS was perceived as "just annual reporting." However, today DCS has become the primary data source for the CII system. In other words, fuel consumption and operational data collected under DCS are no longer merely reported; they have turned into performance indicators that determine a vessel's commercial fate. This structure designed by IMO represents a clear transition from reporting to classification.

CII (Carbon Intensity Indicator) uses DCS data to classify vessels from A to E under increasingly stringent targets. Although many operators still view CII as a future issue, vessels already falling into D and E bands are experiencing reduced speed, route, and commercial flexibility. Repeated poor CII ratings make technical measures, operational restrictions, and ultimately loss of commercial value increasingly inevitable.

One of the most challenging aspects of CII is the absence of a retroactive, "purchasable" solution. Unlike ETS allowances or FuelEU pooling mechanisms, CII performance cannot be offset. It is the cumulative result of vessel age, design, operating profile, and daily operational decisions. This makes CII a long-term operational strategy issue rather than a short-term compliance matter.

If, despite all operational measures, a vessel fails to meet tightening CII targets and remains at an "E" rating, the remaining options are typically costly hardware investments. If solutions such as engine or propeller replacement, wind-assisted systems, or carbon capture are not financially feasible, recycling may emerge not as an option, but as an inevitable outcome.

EU ETS, FuelEU & CII: KEY ISSUES EXPERIENCED IN THE FIELD

The Cost Is Clear—But Who Is Responsible?

In EU ETS, FuelEU, and CII, the issue is not the magnitude of the cost, but whose pocket it comes from, under which contract, and by what method.

The most critical and dispute-prone aspect of these mechanisms in shipping is determining which party is responsible for emission outcomes and their associated costs. Regulations define emissions, penalties, and allowance obligations, but leave the commercial allocation of these costs to the parties. This is precisely where disputes begin.

The solution lies in defining responsibility for emission impacts and costs not through statements of intent, but through clear, numerical, and traceable clauses in charter parties and side agreements.

Owner–Charterer Relationship: Technical Obligation or Commercial Cost?

Under EU ETS, allowance obligations are linked to the owner and/or DOC holder; under FuelEU, obligations are defined via the DOC holder. However, operational decisions that generate emissions—such as speed, route, fuel type, and waiting times—are often under the charterer's control. This leads to serious disputes when contracts do not clearly define responsibility for ETS, FuelEU, and CII impacts and costs. Moreover, particularly for FuelEU and CII, the effects are not limited to the charter period; they leave lasting impacts that affect future charterers. Past operational decisions thus become issues to be negotiated with new commercial counterparts.

Whether under time charter or spot employment, ETS, FuelEU, and CII impacts, outcomes, and costs must be explicitly discussed and negotiated at the contract stage. In practice, many owners report that charterers are unwilling to engage in these discussions and that market conditions force owners to absorb the burden. However, owners should not enter into contracts without clearly assessing whether sustainable profitability is possible when assuming these costs alone.

BIMCO Clauses and the Reality of Implementation

BIMCO-published ETS clauses provide a framework for cost sharing, but their mere inclusion is not sufficient. The most common issue observed in practice is the lack of clarity regarding implementation

details, payment timing, data sharing, and dispute mechanisms, even when these clauses are included in contracts. This transforms EU ETS, FuelEU, and CII costs from technical compliance matters into commercial disputes.

Including BIMCO clauses verbatim in charter parties does not always provide a solution and may, in some cases, initiate new uncertainties and disputes. This is because these clauses are framework texts and do not automatically regulate practical implementation details between the parties. To use a common analogy: residential lease agreements are also publicly available standard templates, yet without additional clauses clarifying maintenance responsibilities, disputes inevitably arise. Similarly, inserting BIMCO clauses without adaptation can create serious confusion regarding who bears ETS, FuelEU, and CII costs, under what conditions, and by which method. Seeking expert and legal support is therefore advisable.

Owner–DOC Holder Changes and Vessel Sale & Purchase Transactions

EU ETS, FuelEU, and CII responsibilities are directly linked to the vessel's operator and DOC holder. During management changes, technical operator transfers, or DOC changes, failure to clearly transfer these responsibilities creates uncertainty over which entity carries past and future emissions on its balance sheet—particularly in mid-year transitions.

In sale and purchase transactions, EU ETS, FuelEU, and CII are no longer merely historical performance indicators. If responsibility for emissions and corresponding ETS obligations within the monitoring year is not clearly defined, parties may face unexpected financial claims. These issues must now be addressed under carbon due diligence. For example, under FuelEU, the DOC holder as of 31 December bears responsibility for the entire monitoring year, making partial-period allocation technically impossible.

Carbon Credit Procurement and Pooling Agreements

When procuring carbon credits for surrender through MOHA accounts, the most critical issue is ensuring that the purchased units are valid EU ETS EUA allowances. Units from other mandatory schemes (such as UK ETS) or voluntary carbon markets are not valid for EU MRV–ETS compliance. Additionally, the phase of the EUA is of great importance, with Phase IV allowances being the safest and most preferable option.

In FuelEU Maritime pooling, counterparty reliability is decisive. Where possible, pooling should be conducted with reputable shipowners or strong surplus providers. If a pooling structure fails for any reason, working with strong counterparties capable of guaranteeing compliance or covering penalties provides a far safer operational and financial foundation. Unfortunately, failed pooling projects often result in disputes and even litigation between participating owners.

Alternative Fuel Use

Globally, many environmentally friendly alternatives to fossil fuels are discussed. While scientific research and field applications regarding alternative fuels in shipping are increasing rapidly, there is currently no single dominant alternative fuel for the sector.

For existing fleets equipped with engines designed for fossil fuel consumption, biodiesel (FAME) and renewable diesel (HVO) are currently the most feasible alternatives globally and in Türkiye. Official reports and decisions confirm that bio-blended HFO, LFO, and MGO with up to 30% biomass content can be used in existing engines without hardware modifications. Limited cases of 100% FAME use are also in operation worldwide. It is therefore important for shipowners and managers to carefully review IMO-published reports and field results related to biodiesel and renewable diesel use.

One of the most critical aspects of alternative fuel use is accurately calculating the required volume and assessing its impact on FuelEU Maritime and EU MRV–ETS compliance, as well as its positive effect on CII. It must also be noted that alternative fuels consumed on voyages without a European leg have no impact on FuelEU or EU MRV–ETS and contribute only to CII performance.

IMO NET ZERO FRAMEWORK: NOT A TARGET, BUT A NEW RULEBOOK

The Net Zero Framework is a top-level architecture that connects ETS, FuelEU, DCS, and CII into a single strategic line. IMO's NZF has the potential to fundamentally reshape Europe's FuelEU Maritime system. Fuel strategy, fleet planning, and financing decisions may soon need to be evaluated through a Net Zero perspective, making a "wait-and-see" approach increasingly risky for shipowners.

Ultimately, the Net Zero Framework is not a vision document that can be postponed as a distant target; it is a roadmap showing that decisions not taken today will be imposed tomorrow in harsher and more costly forms. Net Zero in shipping is therefore not an issue of the future, but a strategic challenge of today.

TÜRKİYE PERSPECTIVE: FROM TR MRV TO TR ETS

Although TR MRV is currently perceived as mere reporting, EU and UK experience demonstrates that the transition from reporting to cost happens rapidly. With the introduction of TR ETS, today's data will become tomorrow's cost. Fragmented solutions will not be sufficient for fleets operating under multiple regimes.

The key differentiator will not be when regulations enter into force, but how prepared companies are for the transition. Addressing monitoring plans, data infrastructure, training, and GHG Readiness today can make the TR ETS process manageable. Otherwise, the sector risks experiencing a delayed repetition of Europe's "from report to invoice" shock.

GENERAL PRESCRIPTION (Field-Based Recommendations)

Timely, accurate, and detailed collection of voyage data and fuel consumption supported by documentary evidence.
Clear and unambiguous contractual definition of relationships and responsibilities among owner, DOC holder, and charterer.

Prompt opening of MOHA (EU Maritime Operator Holding Account) and OHA (UK Operator Holding Account) with competent advisors.
Regular review of monitoring plans and full alignment with actual onboard practices.
Continuous optimization through voyage-based and monthly data evaluation, not only year-end reporting.
Prioritizing transparency and loss prevention over confidentiality and short-term gains.
Maximizing lawful exemptions, avoidance mechanisms, and correct management of port-of-call definitions.
Incorporating energy and carbon management parameters as core evaluation criteria in chartering and S&P processes.
Timely and complete fulfillment of tax, penalty, pooling, and related obligations.
Careful evaluation of alternative fuel opportunities, impacts, risks, certifications, surplus rights, and cost–benefit analyses.
Continuous monitoring of evolving national and international green regulations.

CFD AND BLACK CARBON

CFD (Computational Fluid Dynamics) is an engineering-based simulation method that enables detailed sectional analysis of a vessel's behavior in water. The effects of hardware modifications—such as propeller, rudder, or hull form interventions—can be predicted through CFD analyses prior to implementation. CFD is not a solution in itself, but one of the most powerful scientific tools for identifying the correct technical solution. Vessel-specific CFD analysis enables technical decisions to be made based on measurable scenarios rather than assumptions.

Black Carbon, particularly relevant in Arctic regions and regional regulations, is expected to gain greater visibility in the coming period. Although not yet central to global regulation, Black Carbon emissions—closely linked to fuel type, combustion efficiency, and operational conditions—are likely to emerge as a new compliance area driven by fuel choices and regional restrictions.

FINAL WORD

Green transformation in shipping is no longer a vision of the future; it is today's operational and financial reality. The winners in this process will not be those who merely follow regulations, but those who understand, analyze, and actively manage them. At ODDYSHIP, we consider it our core responsibility to move this transformation beyond technical compliance and deliver sustainable and manageable solutions for the sector. ■

Emissions management is no longer just reporting; it is a financial reality. The cost of carbon, which determines a ship's commercial fate, has become an invoiceEmissions management is no ust reporting; it is a financial reality. The cohe field.

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Activities

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Isolation	Decorative Panel
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From Regulations to a National Roadmap

The Decarbonisation Process in Maritime Shipping and KOSDER's Vision

As the transformation process accelerates with MRV, ETS, and FuelEU Maritime, it is of critical importance for the maritime sector not only to comply with regulations but also to develop a comprehensive, nationwide decarbonisation strategy.

KOSTER ARMATÖRLERİ VE İŞLETMECİLERİ DERNEĞİ

Neslihan Torlak GÖNENÇER
Chair of the Board, KOSDER

Green Transformation in Maritime Shipping: Responsibility and a Vision for the Future

The maritime sector forms the backbone of a global ecosystem that carries approximately 90% of world trade. This scale and sphere of influence place not only economic but also environmental and social responsibilities on our industry. From carbon footprints and port operations to ship waste management and energy efficiency, the environmental impact of maritime activities is becoming increasingly visible across a broad spectrum.
Every harm inflicted on nature gradually consumes our future, while every correct step taken today makes it possible to pass on clean and liveable seas and environments to future generations. Protecting blue and green is no longer a choice; it is our shared responsibility toward generations to come.

Climate Change and Its Impact on Marine Ecosystems

Climate change is now a global reality acknowledged across the scientific community, with effects that are felt even in our daily lives. The changes observed over the past 40 years have progressed at an unprecedented pace in human history.

Scientific data indicate that 2023 and 2024 have been recorded as the hottest years in human history. Compared to pre-industrial levels, the global average temperature increase has reached 1.2°C, while the rate of sea level rise has increased from 3.3 millimetres per year to 4.5 millimetres. The Mediterranean Basin, meanwhile, is warming at a rate approximately 20% higher than the global average.

If the necessary measures are not taken, exceeding the 1.5°C threshold by 2030 will become inevitable, placing a large portion of marine ecosystems under serious threat and increasing flood risks for coastal cities. At this point, the maritime sector plays a key role in the fight against the climate crisis. Every step taken in areas such as emissions reduction, the use of green fuels, and energy efficiency will make a significant difference on a global scale.

International Regulations and the Compliance Process

The International Maritime Organization (IMO) and the European Union are increasingly accelerating their efforts to reduce emissions originating from the maritime sector. Although ship-generated emissions account for approximately 2.3% of global greenhouse gas emissions, our sector stands at the centre of the green transition.

With the updated greenhouse gas strategy adopted by the IMO in 2023, a net-zero emissions target by 2050 has been embraced. The European Union, within the framework of the European Green Deal, has included maritime shipping in the Emissions Trading System and has put the FuelEU Maritime Regulation into force as of 1 January 2025. These regulations aim to encourage the use of low-carbon and renewable fuels in maritime transport.

As KOSDER, we consider it our primary responsibility to provide our members and all sector stakeholders with accurate, up-to-date, and timely information throughout this transformation process. Through

the in-person and online events, panel discussions, and training programmes we organise, we aim to maintain a high level of sectoral awareness and to establish regulatory compliance in a conscious and sustainable manner.

The MRV Process as a Turning Point

As environmental sustainability has gained increasing importance in the maritime sector, the MRV process—covering the monitoring, reporting, and verification of emissions—has become a significant turning point for our industry. Beyond regulatory compliance, this process is also a milestone in making our sector's environmental performance transparent and measurable.

Through the MRV training programmes organised under KOSDER Academy, we have addressed in detail the key issues to be considered in fuel consumption monitoring, reporting processes, and verification stages. At the same time, we shared solution proposals with sector professionals regarding the operational and technical challenges that companies may encounter.

"While every harm inflicted upon nature gradually consumes our future, every right step taken today enables the preservation and handover of our seas and environment to future generations in a clean and livable state.

Protecting the blue and the green is no longer a choice; it is our collective responsibility toward the generations of tomorrow."

These training programmes, which have attracted strong interest particularly from shipowners, ship operators, and maritime professionals, have met an important sectoral need by facilitating the practical application of theoretical knowledge. As KOSDER, we remain firmly committed to guiding the sector in its compliance with international regulations and to continuously enhancing our educational activities.

Green Transformation, Renewal of the Coaster Fleet, and Institutional Cooperation: A National Roadmap

Green transformation and sustainability are today among the most critical agenda items of the maritime sector at both national and international levels. With the Emissions Trading System, for which our Ministry has initiated preparatory work, we believe that this process must be managed within a framework of public–private sector alignment, through a planned and comprehensive national decarbonisation roadmap.

One of the most critical components of this roadmap is the renewal of the coaster fleet, which constitutes the backbone of our country's maritime trade. The renewal of our coaster fleet—whose average age has reached 26—has been on our agenda for many years; however, at the current stage, it has become inevitable to address this process through the lens of new environmental regulations, green energy transition, energy efficiency, and digitalisation.

In the fleet renewal process, prioritising ship designs that are compatible with low-carbon and alternative fuels, offer high energy efficiency, and are equipped with digital monitoring and reporting systems is of vital importance for the long-term competitiveness of our sector. At the same time, this transformation brings with it the need for a qualified workforce with high environmental awareness, the ability to use digital systems, and strong knowledge of new regulations. For this reason, it is essential that fleet renewal policies be implemented simultaneously with education, professional competency development, and human resources planning.

As KOSDER, we aim to produce feasible, fair solutions that enhance our competitiveness through strong institutional cooperation with our State, relevant authorities, our Chamber of Shipping, and all sector stakeholders.

We would like to particularly emphasise that we are open to all forms of cooperation for the preparation and implementation of the national decarbonisation roadmap, for the future of our country's maritime sector.

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Meeting the 2050 CII Target

Can Biofuels Deliver the Required CII Compliance?

RED II–certified biofuels can improve CII values based on the Well-to-Wake approach. However, the growing demand for biodiesel after 2030 and increasing cost pressures reveal the economic limitations of this strategy for existing vessels.

Prof.Dr. Adnan PARLAK
CEO
Grandi Tic. R&D Maritime Training and Consultancy Ltd.

The Carbon Intensity Indicator (CII) is a ship efficiency rating system developed by the International Maritime Organization (IMO). It is a mandatory requirement under MARPOL Annex VI, which entered into force on 1 January 2023. The regulation applies to all cargo ships, RoPax vessels, and cruise ships of 5,000 GT and above engaged in international trade. Within three months following the end of each calendar year, ships are required to report their attained annual operational CII to their flag Administration or to a duly authorized Recognized Organization (RO) acting on its behalf. The Required CII defines the annual reduction factor necessary to continuously improve a ship's operational carbon intensity to a specified rating level. The attained annual CII must be documented and compared against the required annual CII. Until 2027, the mandatory annual reduction factor (X) for the Required CII increases by 2% each year. However, at the MEPC 83 meeting held on 7–11 April 2025, this factor was revised to increase by 2.625% annually until 2030. Based on the calculated carbon intensity index, ships are annually certified by verification bodies according to efficiency ratings from A to E. As is well known, ships that receive a "D" rating for three consecutive years or an "E" rating in the current year are required, under SEEMP III, to prepare and submit a corrective action plan for approval by the verification body. For companies operating vessels with engines that are either oversized or inefficient relative to capacity, meeting the required carbon intensity index becomes increasingly difficult over time.

This article focuses on how vessels rated in the "E" efficiency class can improve their letter rating within the current year through the use of biofuels. The economic feasibility of using biofuels is also evaluated.

Can the CII Value of a Ship Be Improved by Using Biofuels?

MEPC.1/Circ.905, approved at MEPC 80, states that the carbon factor (CF) of blended fuels can be reduced through the use of RED II–certified biofuels. As is known, RED II–certified fuels are produced based on the Well-to-Wake (WtW) approach. MEPC.1/Circ.905 is the Interim Guidance on the Use of Biofuels under MARPOL Annex VI (DCS and CII), Articles 26, 27, and 28. The content of this guidance can be explained step by step as follows:

- The 2022 Guidelines on Operational Carbon Intensity Indicators and Calculation Methods (MEPC.352(78) – CII Guidelines, G1) allow the CO_2 Emission Conversion Factor (Cf) to be obtained from the fuel supplier, supported by documentary evidence, if the fuel type is not listed in the relevant guidelines.
- For biofuels or biofuel blends with a Proof of Sustainability (PoS) document in accordance with MEPC.376(80), calculated on a WtW basis, and with WtW emissions below 33 gCO_2e/MJ, the emission factor (Cf) may be calculated based on the WtW approach.
- The Cf value may under no circumstances be less than zero.
- The Cf value of biofuel blends is calculated as the weighted average of the energy content of the fuels in the blend.
- The PoS document must be obtained from the fuel supplier; otherwise, the fuel used is classified as fossil fuel.

Example: A vessel purchases 300 MT of B30 biodiesel. The B30 blend consists of biodiesel and LFO. The lower calorific value (LCV) of LFO is 0.041 MJ/g, its Cf value is 3.151 gCO_2/g fuel, the LCV of biodiesel is 0.037 MJ/g, and its WtW GHGI value is 20 gCO_2e/MJ. Calculate the Cf value of the blended fuel.

Since the biodiesel contained in the purchased B30 fuel has a WtW GHGI value of less than 33 gCO_2e/MJ, the blend complies with the regulation and the Cf value can be calculated. Accordingly, the Cf value of 100% biodiesel is:

$$C_{f,FAME} = WtW\left[\frac{gCO2e}{MJ}\right].LCV\left[\frac{MJ}{g}\right] = 20.0{,}037 = 0{,}740\ gCO2/gfuel$$

According to the guideline, the Cf value of the blend is calculated as the weighted average:

FAME WtW (gCO2eq/MJ)	20,00					
CF,Biofuel	0,740					
YAKIT TİPİ	LCV [MJ/g]	YAKIT [MT]	ENERJİ [MJ]	%ENERJİ	C_F[gCO2/Gfuel]	Ağırlıklı C_F
FAME	0,037	90	3.330.000	28%	0,740	
LFO	0,041	210	8.610.000	72%	3,114	
Karışım		300	11.940.000	100%		2,452

It can be observed that when fossil fuel is blended with RED II–certified FAME (biodiesel), the Cf value of the blend becomes 2.452 gCO_2/g fuel. If the calculation had been carried out based on the Tank-to-Wake (TtW) approach instead of the relevant guideline, the Cf value of biodiesel in the blend would have been taken as 2.834 gCO_2/g fuel. However, when calculated on a WtW basis, the Cf value of the 300 MT blend becomes lower than the TtW emission values of both biodiesel and LFO.
In other words, based on the TtW approach, the total CO_2 emissions of the blend would be:

Total CO_2 = 90 × 2.834 + 210 × 3.151 = 916.77 tonnes

Whereas based on the WtW-adjusted Cf value of the blended fuel:

Total CO_2 = 300 × 2.452 = 735.6 tonnes
In this case, the ship operator can calculate and consume the required amount of biofuel to avoid an “E” efficiency rating under the CII scheme. However, this entails an additional cost.

For existing ships, the price of certified biofuel is in the range of USD 1,500–1,600, whereas VLSFO prices range between USD 550–600. Considering this price difference, the biodiesel cost borne by low-efficiency ships may reach very high levels in the coming years. Table 1 shows the CII letter ratings calculated up to 2050 based on 2024 data. From 2030 onwards, the vessel falls into the “E” efficiency class, making it problematic for the company after that year.

Table 1. CII rating values of the vessel based on 2024 data

SHIPS NAME	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
MV XXXX	B	C	C	C	C	D	D	D	E	E	E	E	E	E

2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
E	E	E	E	E	E	E	E	E	E	E	E	E

Assuming that the company operates the vessel until 2050 and decides to address the issue without taking additional measures by using biodiesel with a WtW emission value of 15 gCO_2e/MJ, the amount of biodiesel required to continue operations without receiving three consecutive “D” ratings or falling into the “E” class is shown in Figure 2.

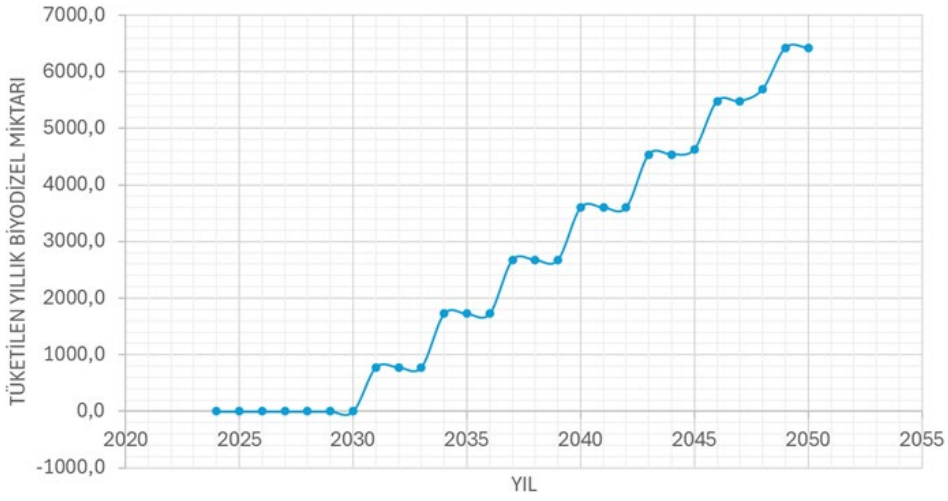

Figure 2. Yearly variation of biodiesel consumption required without corrective action, based on the Cf calculation using the WtW approach

An analysis of Figure 2 shows that, after 2030, a vessel operated until 2050 without receiving an “E” rating or three consecutive “D” ratings would need to consume more than 6,400 MT of biodiesel by 2050. Based on current prices, the additional annual cost of biodiesel required to avoid three consecutive “D” ratings and an “E” classification rises to approximately USD 7 million. Therefore, correcting the CII rating solely through the use of biofuels does not appear economically viable after 2035.
For this reason, when FuelEU Maritime, EU ETS, and the MEPC 83 regulation are considered together, focusing on alternative fuels for improving the CII rating appears to be a more rational approach. ■

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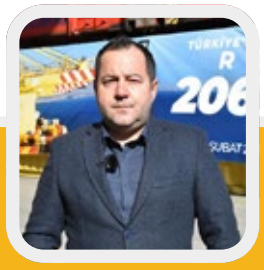
KARTAL / ISTANBUL

Energy Transition in Ports

Asyaport Is Building the Future of Port Operations with Shore Power Today

By supplying vessels with electricity from shore through its OPS system, Asyaport has positioned itself as one of Türkiye's—and Europe's—leading sustainable ports. Renewable energy, electrified equipment, and a people-centered approach are placing the port at the heart of next-generation port operations.

asyaport



Besim DÖNMEZ
Planning and Technical Services Manager
ASYAPORT

Located on the coast of the Sea of Marmara in Tekirdağ, Asyaport handled 2.1 million TEU in 2024, becoming Türkiye's busiest container port. Targeting a year-end volume of 2.2 million TEU, Türkiye's largest container port is preparing to break its own record. Handling 44% of Türkiye's total transshipment container volume on its own and ranking among the world's top 100 ports in Lloyd's List, Asyaport's success extends far beyond throughput figures. The port has also assumed a pioneering role in environmental sustainability.

A New Era in Port Operations with OPS

Asyaport's Onshore Power Supply (OPS) system—the first of its kind in Türkiye—enables vessels calling at the port to meet their energy needs directly from shore. This allows ships to shut down their auxiliary generators, significantly reducing emissions, noise, and vibration, while creating a healthier environment for both port workers and the surrounding community.

In October 2024, the first grid connection of the MSC OSCAR, a vessel with a capacity of approximately 20,000 TEU, marked not only a technical milestone but also delivered a strong message. As Türkiye's largest container port, Asyaport has become one of the first ports in Europe to offer fully comprehensive shore power services, ushering in a new era of sustainable port operations.

Tangible Benefits: Emission Reductions and Fuel Savings

Since its commissioning, the system has supplied more than 5.3 million kWh of electricity to 101 vessels, resulting in savings of approximately 1,325 tonnes of diesel fuel and preventing 4,240 tonnes of CO_2 emissions. With an installed capacity of 8 MVA and the ability to supply power to seven vessels simultaneously, this high-voltage system stands out as a frontrunner not only in Türkiye but across Europe. This achievement is particularly noteworthy at a time when shore power investments across Europe are progressing slowly. According to a Transport & Environment (T&E) report published in July 2025, only 20% of the required infrastructure at EU ports has been completed. Asyaport's privately driven investment demonstrates that the transition can be significantly accelerated through decisive action.

"Shore Power Is a Social and Operational Investment"

Asyaport Planning and Technical Services Manager Besim Dönmez emphasizes that "shore power is not only an environmental investment but also a social and operational one," adding that "cleaner air, a quieter working environment, and more efficient operations form the foundation of a more sustainable future for our port and our employees."

Within the framework of its sustainability strategy, Asyaport has implemented numerous environmentally friendly practices. In addition to the OPS system, the port has been generating electricity through solar panels since its establishment to enhance energy efficiency, with this power used directly in port operations. Thanks to 3,020 solar panels with a total installed capacity of 1,289 kW, approximately 6% of the port's annual electricity consumption is met from renewable sources.

The Goal: A Fully Green Energy Structure

Future projects include the commissioning of wind energy systems and the deployment of AI-supported operational optimization. With planned capacity expansions of the solar power plant and new investments coming online, the ultimate goal is to meet 100% of the port's electricity demand from renewable sources. This will ensure that the energy supplied to vessels through the OPS system is also entirely green, maximizing the project's environmental efficiency.

All STS (Ship-to-Shore Cranes) and RTG (Rubber Tyred Gantry) equipment used in container handling operations are fully electrified. LNG-powered terminal tractors and the wastewater treatment facility are among other investments aimed at reducing the port's environmental footprint. In parallel, the transition of the terminal tractor fleet to electric vehicles has already begun. By the end of the first quarter of 2026, four electric terminal tractors are planned to be commissioned, followed—subject to performance analysis—by an additional order of 36 units by the end of 2026. Alongside the LNG-powered fleet, the shift toward electric vehicles is progressing rapidly. To support operational growth, Asyaport continues to invest steadily in infrastructure and equipment. The port has completed 80% of its 400-meter quay extension project, which is scheduled for completion in the third quarter of 2026 together with new equipment investments. Upon completion, the port's total capacity will reach 4 million TEU. Beyond energy management, Asyaport also leads initiatives with direct environmental impact, such as marine and coastal clean-up activities. Each year, as part of World Environment Day, coastal clean-up events are organized along the Tekirdağ shoreline, with employees participating voluntarily to support the protection of the marine ecosystem. Reflecting Asyaport's environmentally conscious approach, Gündal Beach—located adjacent to the port—was rated "Excellent" in terms of water quality in the 2025 assessment of the Bathing Water Monitoring Program conducted by the Ministry of Health's General Directorate of Public Health. Collectively, these green initiatives earned Asyaport the "Most Environmentally Friendly Port Facility" award at the 4th Turkish Maritime Summit.

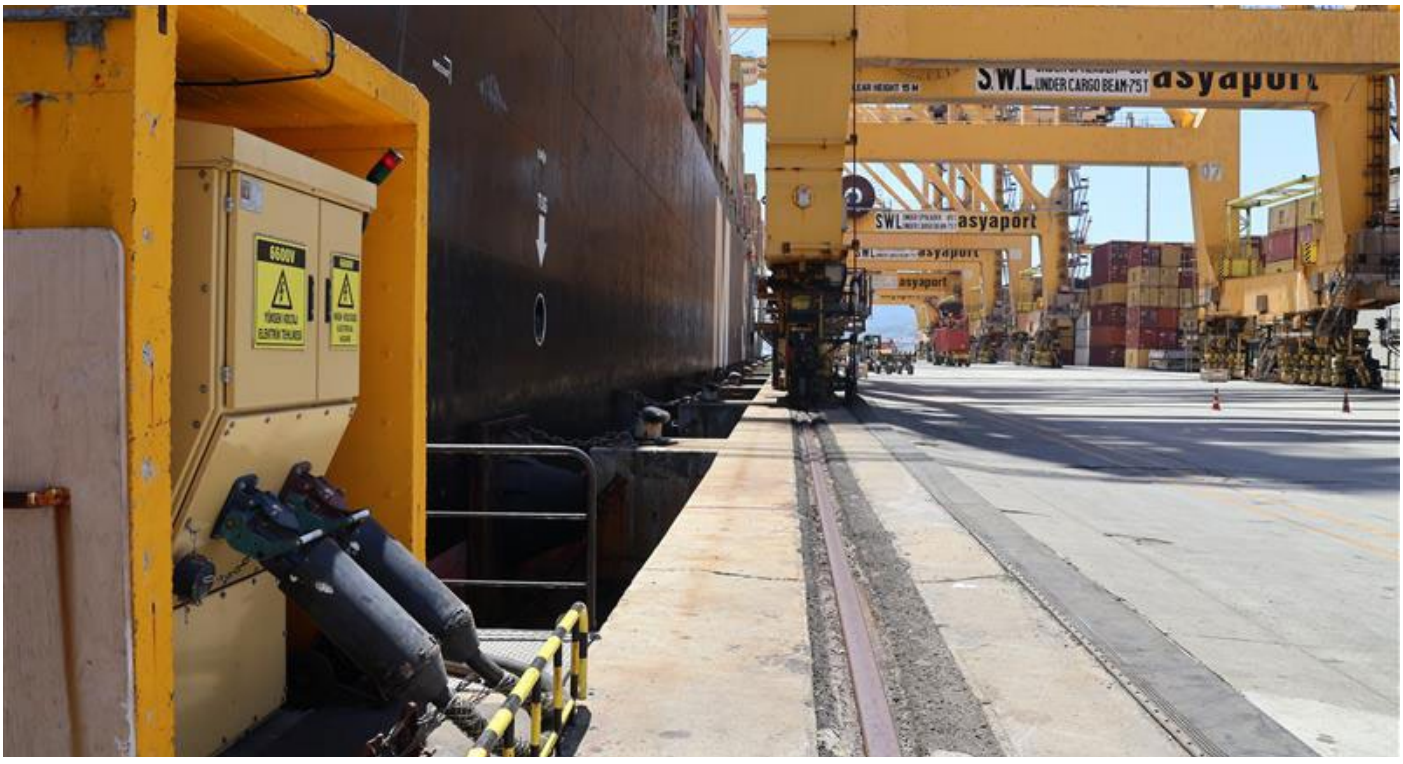
Operations Strengthened by Women's Employment

Asyaport's sustainability story is not limited to technology alone; it also encompasses a people-centered transformation. In a sector traditionally dominated by men, Asyaport makes a meaningful difference by employing approximately 60 women, including terminal tractor operators, crane operators, and field and gate operations personnel.
Asyaport Operations and Marine Services Manager Olkay Elçin notes:
"Our female employees bring discipline, precision, and a strong sense of responsibility to their work. The growing presence of women in the sector once again highlights the importance of competence and equal opportunity."
This human-centered approach aligns closely with the values highlighted in the MSC Group's 2024 Sustainability Report. MSC places decarbonization, inclusive trade, and the principle of "protecting our Blue Planet" at the core of its operations. Asyaport's shore power investment represents a tangible contribution to MSC's vision of a global network of sustainable ports.

"By providing over 5.3 million kWh of electricity to 101 vessels through its OPS (Onshore Power Supply) system, Asyaport has prevented more than 4,240 tons of CO_2 emissions."

Building the Port of the Future—Today

In conclusion, Asyaport has emerged as one of the leading examples of environmentally responsible port operations not only in Türkiye but also across Europe. As Dönmez states:
“Asyaport demonstrates what is possible when vision and determination come together. We are proud to lead Türkiye and Europe toward a cleaner, smarter, and more inclusive port future.”



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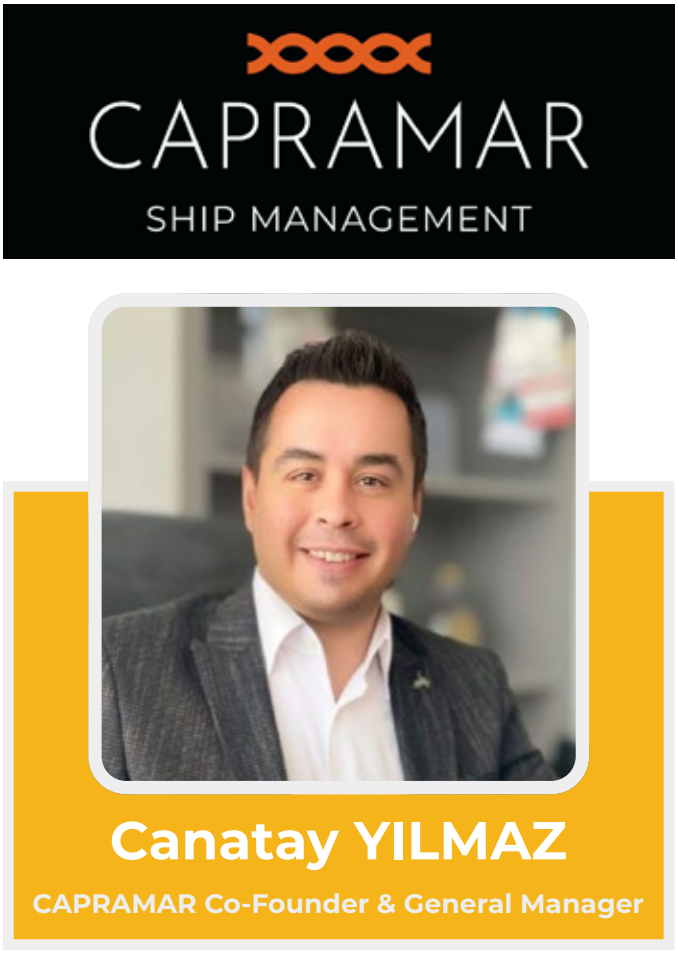
Green Transformation

Strategic Resilience Beyond Compliance

IMO, EU ETS, and FuelEU Maritime demand not only environmental but also managerial transformation in shipping. Success lies not in compliance itself, but in sound governance.



In the maritime industry, green transformation is often addressed under the heading of regulatory compliance. However, current global regulations demand not only compliance, but also measurable performance, sustainable management, and commercial resilience.

Mechanisms such as IMO, EU ETS, FuelEU Maritime, CII, and EEXI have evolved beyond environmental policies into structural instruments that directly influence corporate decision-making processes. For this reason, green transformation is not a project with a completion date; it is a continuous management process that must be embedded in corporate governance.

At Capramar, we approach this transformation not as a temporary compliance agenda, but as a structural process that shapes the company's long-term operational and commercial resilience. We continue to move forward by seeking the views and, when necessary, the support of leading experts in the sector.

Monitoring Plans: Not Documents, but Management Tools

One of the fundamental issues frequently encountered in practice is that monitoring plans are prepared disconnected from operational reality. Plans created through standard templates, without considering vessel type, voyage profile, and commercial model, provide only formal compliance.

This approach renders risks invisible in the short term and leads to both financial and reputational consequences in the medium and long term. An effective monitoring plan must fully align with the vessel's technical structure, operational behavior, and commercial utilization. Otherwise, the plan becomes not a control mechanism, but a delayed warning system.

For this reason, within the Capramar fleet, we treat monitoring plans not merely as documents to be submitted to verifiers, but as management tools that directly influence operational decisions.

Data Management: From Reporting Obligation to Decision Mechanism

In green transformation processes, viewing data solely as an element that gains relevance during reporting periods remains a major mistake that limits management capacity.

A properly designed data management system:

» monitors operational performance,
» makes risks visible at an early stage,
» supports investment and operational decisions.

Through voyage-based and periodic analyses, companies achieve a consistent and defensible position not only vis-à-vis regulations, but also toward charterers, financial institutions, and third-party audits. At Capramar, we therefore focus on making data management a natural part of operational decision-making rather than confining it to year-end reporting. Through voyage-level assessments, we have become capable of managing not only compliance, but also measurable performance.

Efficiency Perspective Instead of a Cost-Focused Approach

Addressing green transformation solely within the framework of "minimizing cost" or "postponing penalties" does not constitute a sustainable strategy.

While this perspective may provide short-term relief, it weakens commercial flexibility and competitiveness in the medium term. Efficiency-oriented approaches, on the other hand, reduce fuel consumption, naturally improve CII performance, and increase operational reliability. At this point, it is critical to treat CII not as a grading system, but as an indicator that enables companies to evaluate their own operational behaviors. Within the Capramar fleet, we regard CII not as a pressure element, but as a consequence of our operational habits. We adopt a management mindset that considers the long-term impacts of decisions related to speed, routing, and fuel consumption.

FuelEU Maritime: Not Avoiding Risk, but Managing It

Obligations under FuelEU Maritime are often assessed solely through their penalty potential. However, penalties are the result of poor management; they are not an inevitable fate.

If pooling mechanisms are not analyzed properly, they may create new areas of risk. There is no single solution that applies to every operational structure. Therefore, FuelEU strategies must be specifically designed by taking vessel profile, trading areas, and commercial models into account.

At Capramar, we choose to address the FuelEU process on a fleet-specific basis rather than through standard solutions. By evaluating not only the advantages offered by mechanisms such as pooling but also counterparty risks, we adopt an approach that makes risk manageable rather than attempting to avoid it.

Strategic Roadmap for Alternative Fuels

The issue of alternative fuels often highlights the gap between strategic preparedness and operational reality in the sector. Decisions made without jointly evaluating technical compatibility, fuel availability, supply infrastructure, and operational sustainability create long-term risks.

For this reason, for many companies today, being prepared for the future through proper analysis is a more rational approach than making immediate investment decisions.
At Capramar, we treat alternative fuels not as a short-term solution, but as a long-term strategic preparedness topic, following an analysis-based roadmap instead of rushing into investments.

EEXI and Equipment Investments: No Decision Without Analysis

Reflexive solutions in equipment investments under EEXI may not deliver the expected benefits and can even increase costs. Engineering-based preliminary studies such as CFD clearly reveal which investments will provide real performance improvements. This approach signifies the sector's transition from the "install and run" era to the "measure–analyze–implement" era.

Accordingly, within the Capramar fleet, we address EEXI-related evaluations through engineering-based analyses, shaping investment decisions based on measurable scenarios rather than assumptions.

Human Factor: The Silent Determinant of Transformation

As regulations become more complex, the role of human resources becomes increasingly critical. Teams lacking adequate training and up-to-date knowledge can create significant risks even within the most advanced systems.

Therefore, green transformation strategies must be addressed not only from technical and financial perspectives, but also through the dimensions of institutional learning and training.

At Capramar, we act with the awareness that transformation is possible not only through systems, but through people, and we consider team competence and ownership of the process as one of the core elements of our strategy.

Compliance Without Resilience Is Insufficient

Green transformation is not a temporary agenda for the sector; it is one of the fundamental elements of the new competitive order. In this process, it is not those who merely comply, but those who build resilience who will survive in the long term.

From an expert perspective, when managed correctly, green transformation is not a burden but a strategic advantage that differentiates companies.
In maritime shipping, the question is no longer "Am I compliant?"

The real question is: "Will I be able to survive?"
At Capramar, we choose to prepare for this question today.

Because tomorrow will be far more difficult for those who are unprepared.

"In maritime, the question is no longer 'have we complied?' he real question is how resilient we are in the face of this transformation."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Pricing of Emissions in Shipping

The Delay in Global Regulation Triggers Regional Pricing Mechanisms

The postponement of negotiations on the IMO's Net Zero Framework may lead to the proliferation of regional greenhouse gas emission pricing mechanisms, potentially forcing the maritime sector to comply with fragmented, complex, and high-cost regulations.

Prof. Dr. Mustafa İNSEL

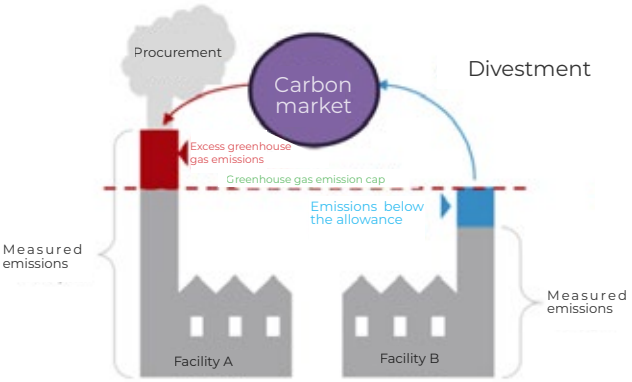
Hydrotechnics, Yacht, Ship and Marine Structures Design Technologies

One of the most critical issues in contemporary maritime operations is the reduction of greenhouse gas emissions, for which global and regional technical and operational measures are being developed. Regulations issued by the International Maritime Organization (IMO)—including the Energy Efficiency Design Index (EEDI and EEXI), the Carbon Intensity Indicator (CII), Ship Energy Efficiency Management Plans (SEEMP), and emissions reporting under the Data Collection System (DCS)—are regarded as regulatory frameworks to which the sector has adapted despite the challenges involved. However, the inclusion of shipping in the European Union Emissions Trading System (EU ETS) at the beginning of 2024 and the introduction of FuelEU Maritime have added a financial dimension to greenhouse gas reduction in shipping, unlike IMO regulations. Although both regulations require financial payments, they are fundamentally based on different objectives.

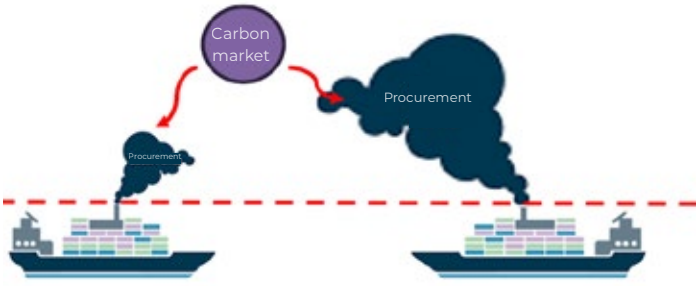
EU Emissions Trading System

The fundamental approach is based on the "polluter pays" principle, requiring the purchase of emission allowances for all greenhouse gas emissions from ships. While free allocation of emission allowances has been applied to other industrial sectors under the system implemented since 2005, such free allocations have not been granted to shipping; instead, a direct purchase obligation has been imposed. The key distinction from a tax is that emission allowance prices are not fixed and can be purchased at any time at prices determined by supply and demand within the existing European carbon market. The scope of emissions is defined as emissions occurring after the fuel tank. Emissions are covered at 100% for voyages within EU ports and between EU ports, and at 50% for voyages from non-EU ports to EU ports and from EU ports to non-EU ports.

Emissions Trading System (ETS) for industrial sectors



Emissions Trading System (ETS) for the maritime sector

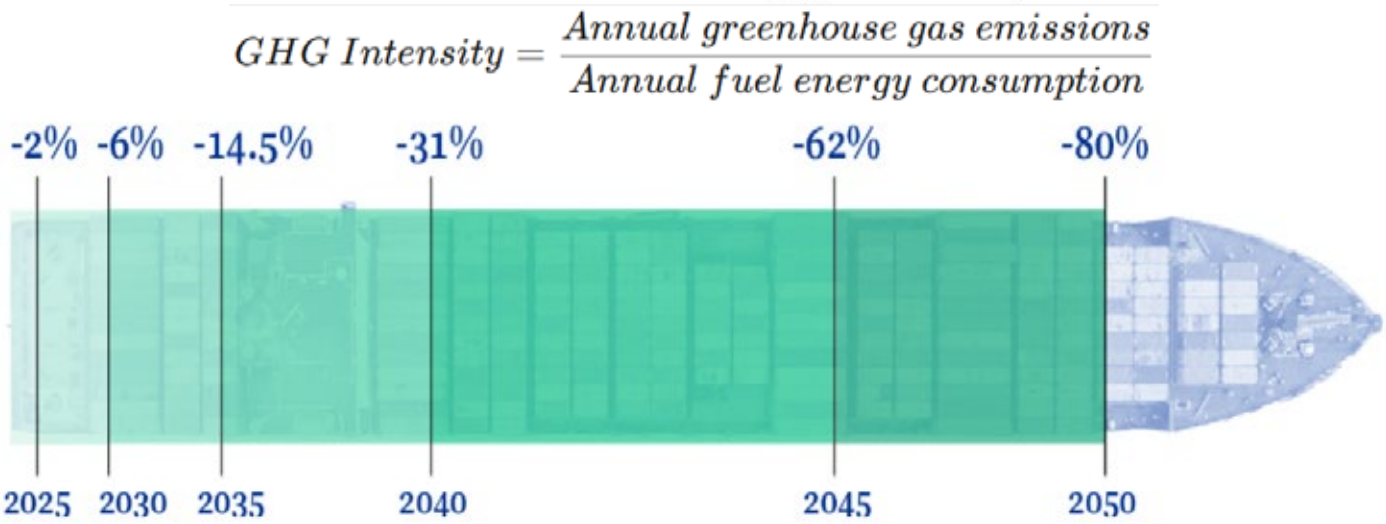


EU ETS system

EU FuelEU Maritime

FuelEU Maritime is based on the principle that the reduction of greenhouse gas emissions in shipping requires the use of zero- or low-emission maritime fuels (ZNZ fuels) instead of fossil fuels. Since it is assumed that the industry would not naturally adopt these fuels due to their price disadvantage, the regulation introduces limits on greenhouse gas emissions per unit of energy and imposes penalties on ships that exceed these limits.

Under this framework, ships using fossil fuels face penalties regardless of the amount of fuel consumed, with the penalty increasing as fuel consumption rises. The target for alternative fuel use begins at 2% in 2025 and increases every five years, reaching up to 80% by 2050. The objective of FuelEU Maritime is to increase the use of alternative fuels by making fossil fuels more expensive. To facilitate compliance, pooling mechanisms involving multiple ships are supported, allowing ships using alternative fuels to sell their surplus compliance advantages to other ships, thereby enabling indirect incentives.

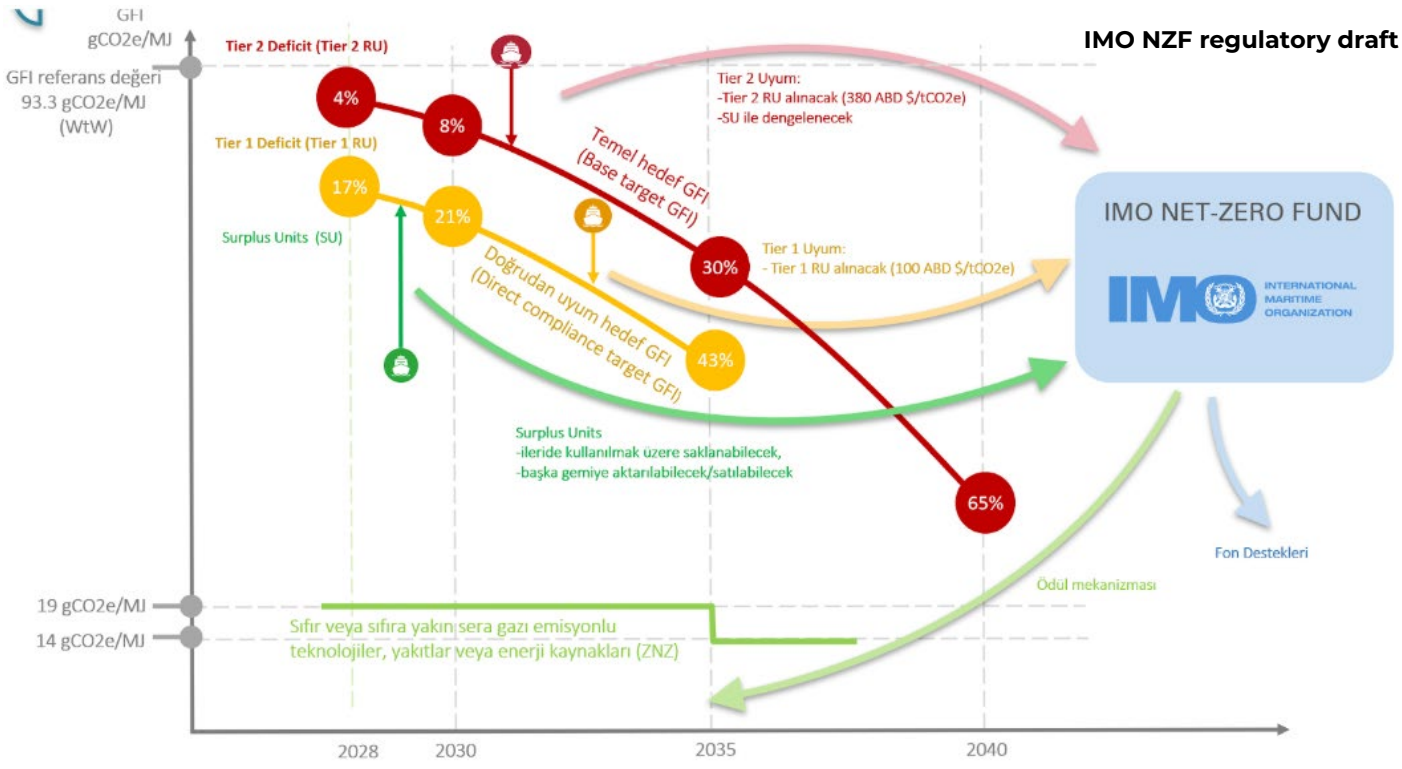


FuelEU Maritime greenhouse gas intensity definition and annual reduction targets

By introducing regional regulations ahead of a global maritime emissions pricing mechanism, the European Union has demonstrated leadership while also generating resources that could reach €9–10 billion annually through the EU ETS and FuelEU Maritime pricing mechanisms. Since these funds are collected from global shipping stakeholders and allocated to the decarbonization of the EU maritime sector, they create a financial competitive advantage for EU shipping.

IMO Net Zero Framework

Discussions on establishing a global greenhouse gas pricing mechanism resumed at the IMO during the 2020s, and the Net Zero Framework (NZF) was adopted at the MEPC 83 meeting held in May 2025. The IMO NZF is fundamentally similar to FuelEU Maritime, defining a base target and a direct compliance target based on greenhouse gas intensity. Emissions above the base target are priced at a higher level, while emissions between the base target and the direct compliance target are priced at a lower level.
Due to its global scope, the IMO aims for the collected funds to be used primarily to support least developed and developing countries and to reward ships using zero- or near-zero-emission fuels.



At the extraordinary MEPC meeting in October 2025, decision-making processes reached a deadlock, leading to a one-year suspension of negotiations. Opposing parties have put forward three main arguments. Some IMO member states, led by the United States, claim that international taxation violates international law. Oil-exporting countries argue that the proposal is not sufficiently mature and imposes disproportionate financial burdens on ships using fossil fuels. Other IMO members contend that implementing this regulation would result in double taxation due to overlapping regional regulations similar to those of the EU.

Expectations for 2026

Although discussions on the IMO Net Zero Framework continue, the debate has expanded far beyond the regulation itself. Several alternative scenarios are emerging for the IMO:

a) While the current proposal could potentially be adopted if put to a vote in October 2026, its global implementation would remain problematic. It is unlikely that countries opposing the proposal would change their positions, even if supporting members provide clearer explanations or address deficiencies.

b) The financial components of the IMO NZF could be removed, allowing it to be implemented purely as a technical measure. However, in this case, incentivizing the increased use of alternative fuels would become extremely difficult due to their cost.

c) Rejection of the proposal could further weaken the IMO's position and accelerate the spread of regional greenhouse gas emission pricing mechanisms.

Within this context, the unforeseen consequences outlined below are expected to be assessed during 2026.

IMO Governance Capacity

A regulatory proposal causing such deep divisions has not been seen before at the International Maritime Organization. Traditionally adopting regulations through consensus and unanimity, the IMO has, for the first time, triggered intense debates, with member states split almost evenly. In the coming period, the IMO's role as a global rule-maker is increasingly being questioned.

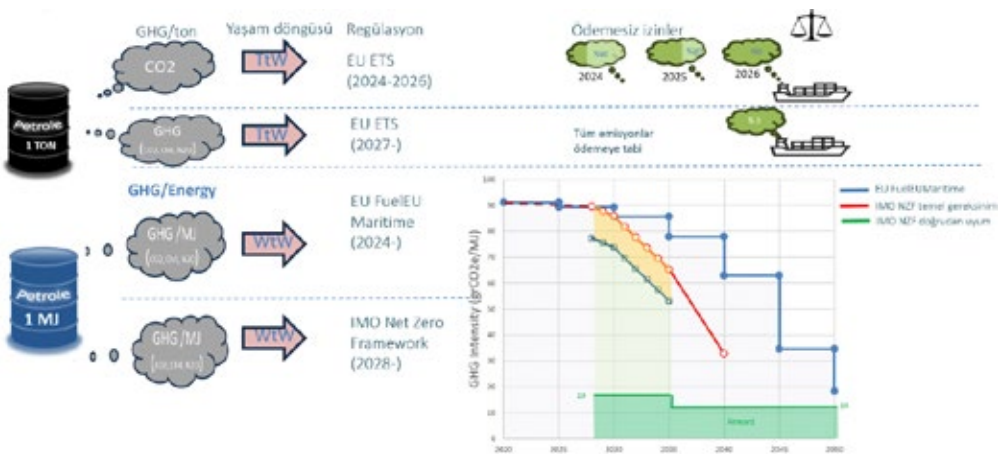
Regional Greenhouse Gas Reduction Measures

Although the European Union committed during IMO discussions to initiating a review process for the EU ETS and FuelEU Maritime regulations, it has not committed to rolling back either regulation. Formally, since FuelEU Maritime resembles the NZF, it is expected that the EU could repeal FuelEU Maritime if the NZF is adopted in its current form. However, the EU ETS is structurally different from the IMO NZF, as it prices all maritime emissions, whereas the IMO NZF does not. Even in its first year of implementation, 83% of emissions under the direct compliance target are exempt from payment. Equivalence would only be achieved if the direct compliance target were reduced to 0 g CO_2e/MJ, which is not currently envisaged. Therefore, the continuation of the EU ETS is highly likely. This situation places countries with shipping fleets trading with the EU at a disadvantage. For example, Turkish-owned shipping fleets would be required to pay approximately €250–300 million annually to EU countries. Since these funds will be used for the decarbonization of EU shipping, national and regional ETS or fuel taxation systems are expected to be established—starting with countries engaged in maritime trade with the EU—to prevent unfair competition.

The United Kingdom has already announced that it will introduce an ETS system for cabotage routes and UK ports in July 2026 and has issued a call for information regarding international shipping. If the IMO NZF is not adopted, international shipping is also expected to be integrated into the UK ETS.

Alternative Fuel Use

As a result of the IMO NZF discussions, negative perceptions regarding methanol, ammonia, and hydrogen as alternative fuels have increased. In addition to safety concerns, projections for future availability have declined rapidly, leading to reduced interest in these fuels. Consequently, interest in biofuels and LNG is expected to increase further. ■



Comparison of Global and Regional Maritime Greenhouse Gas Emission Pricing Mechanisms

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Sectoral Opinion and Assessment

Sustainability in Maritime Transport and the Contribution of Shipbrokers

Sustainability-oriented regulations affect not only operational processes but also commercial and legal frameworks within the maritime industry. By acting as a bridge between the market and the contracting parties, shipbrokers play a significant role in supporting the sector's adaptation to this new era.

Nevzat Sonay ÜLER

Board Member
Shipbrokers' Association

Considering that approximately 90% of global trade is carried out by sea, the maritime industry stands as one of the cornerstones of the global economy. However, due to its reliance on fossil fuels, the sector generates substantial greenhouse gas emissions, and its environmental impact is increasingly under scrutiny.

Emission reduction targets set by the International Maritime Organization (IMO) for 2050, together with regional regulations such as the European Union Emissions Trading System (EU ETS), are making a structural transformation within the industry inevitable. In this transition process, shipbrokers emerge as key stakeholders due to the roles they play in market intelligence, contract management, and interparty communication. Acting as a bridge between the market and shipowners/charterers, they occupy a critical position.

Market Valuation, Contracts, and Environmental Compliance Processes

As is well known, shipbrokers closely monitor market dynamics. Within the scope of the green transition, owner's brokers in particular also assume an advisory role by providing guidance on IMO regulations, carbon emission targets, and new environmental standards. In doing so, they enable shipowners and charterers to manage environmental risks and compliance costs more effectively.

Vessels with high fuel efficiency, low emissions, or the capability to operate on alternative fuels are gaining a competitive advantage in the market. By taking vessels' fuel consumption figures into account, brokers contribute to more realistic valuations in sale and purchase as well as chartering processes.

Shipbrokers also play an active role in explaining, revising, and incorporating clauses related to environmental obligations within charter party agreements. At a time when environmental regulations and market expectations are evolving rapidly, brokers' ability to adapt to the green transition is of critical importance both for the sustainability of the sector and for their own future.

As the Shipbrokers Association, while attaching great importance to the green transition, we organize seminars on this subject, strive to support incoming requests and collaborations, and continue to promote knowledge sharing within our industry.

Yours sincerely,

The green transition in maritime is not merely a technical compliance process; it represents a paradigm shift that is reshaping market behavior and commercial decision-making. In this new balance, rapid access to accurate information and sound guidance have become more critical than ever.

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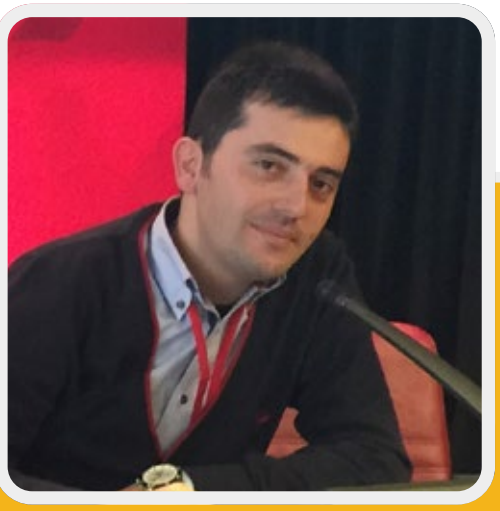
Energy Efficiency Management

From Regulation to Strategic Advantage

In a maritime industry where global regulations are tightening rapidly, Medlog Shipping approaches energy efficiency through a strategic management model—bringing emissions under control, reducing financial burdens, and charting a clear roadmap for sustainable growth.



Kenan ŞENGÜN
Energy Efficiency Inspector

Energy Efficiency and Sustainability: Past, Present, and Future

In the maritime industry, the reduction of greenhouse gas emissions, energy efficiency management, and sustainability concepts have been shaped over time by increasingly concrete and binding regulations. A chronological review of this process shows that:

The Energy Efficiency Design Index (EEDI), which entered into force in 2013, applied only to newbuild vessels. As a result, its impact on the operation of existing ships remained limited.

In 2018, with the introduction of the EU MRV (Monitoring, Reporting and Verification) regulation applicable to vessels operating in European Union waters, a systematic framework for annual reporting and verification of voyage data was established.

This was followed in 2019 by the IMO DCS, which mandated data collection and verification for all ship voyages worldwide. Until 2023, existing regulations continued with minor amendments. During this period, reporting and verification processes at many shipping companies were either assigned as additional duties to in-house inspectors, DPAs, or similar roles, or were entirely outsourced to third-party service providers.

Post-2023: From Additional Duty to Core Responsibility

As of 2023, newly enacted regulations have transformed energy efficiency and emissions management from a secondary concern into a core area of responsibility. In line with this foresight, Medlog Shipping established—under the leadership of the Technical Director—an Energy Efficiency Department responsible for monitoring, implementing, reporting, and verifying compliance with all applicable regulations.

The key regulations introduced within this framework include:

- EEXI (Energy Efficiency Existing Ship Index), which entered into force in 2023, making main engine power limitation mandatory for existing vessels.
- CII (Carbon Intensity Indicator), also implemented in 2023, which requires efficient vessel operation and introduced corrective measures and sanctions for underperforming ships.
- As of 2024, under the EU ETS (Emissions Trading System), vessels operating in EU waters became subject to significant financial obligations linked to carbon dioxide, methane, and nitrous oxide emissions. While the system does not restrict trade, it has substantial financial implications.
- The FuelEU Maritime regulation, which entered into force in 2025, calculates compliance based on greenhouse gas emissions per unit of energy. With gradually increasing penalties, it directs ships and companies toward alternative fuels.

Scope of Work of Medlog Shipping's Energy Efficiency Department

To ensure full compliance with all regulations summarized above, the Energy Efficiency Department of Medlog Shipping:

- Conducts detailed analyses of all applicable regulations and implements necessary actions to achieve full compliance.
- Develops preparation plans for the increasing penalties foreseen in future years.

Illustration: Digital / AI Generated

- Carries out preliminary studies and preparations for regulations not yet in force.
- Performs EEXI calculations for all vessels and prepares technical files; shaft power or mechanical engine power limitations are applied where required.
- Records, verifies, and reports voyage data on a daily basis under EU MRV and IMO DCS, completing certification processes through accredited verifiers at year-end.
- Monitors daily and year-to-date (YTD) CII ratings, implements measures defined in SEEMP Part III, and rapidly deploys corrective actions following analysis of unexpected deviations.
- Plans additional measures through year-end simulations and reports them to all stakeholders.
- Calculates financial liabilities under EU ETS and FuelEU Maritime on a daily and YTD basis, sharing results internally and with the charterer MSC to achieve reconciliation.
- Advances sustainability goals through applications and projects aimed at increasing energy efficiency, reducing greenhouse gas emissions, and minimizing financial burdens.

Efficiency-Enhancing Operational Measures

Key operational improvements implemented across the Medlog Shipping fleet include:

- Voyage, route, and trim optimization to minimize port and waiting times
- Monitoring main engine, diesel generator, and boiler performance to ensure optimal power–consumption balance
- Preference for equipment with higher energy efficiency ratings
- Prevention of unnecessary energy generation and operation of all consumers strictly on a needs basis
- Stopping exhaust gas boiler circulation pumps during port stays
- Keeping boiler dump condensers closed while in port
- Switching off heating in unnecessary tanks and areas
- Efficient use of port pumps or throttling main seawater pump outlet valves
- Active use of shaft generators in safe navigation areas on equipped vessels
- Operating diesel generators within the 60%–85% load range
- Strict monitoring of fuel leaks
- Control of separator condition and sludge quantities
- Use of fuel efficiency–enhancing additives

Efficiency-Enhancing Projects and Investments

In addition to operational measures, the main ongoing and planned projects include:

- Propeller optimization projects, including a propeller replacement scheduled for January 2026 on one vessel, and planned replacements on other vessels during the 2026–2027 period

» Postponement of Carbon Capture and Storage (CCS) projects for two vessels following benefit–cost analyses
» Completion of a Shore Power Connection Supply project on one vessel, with installation processes continuing on others
» Development of frequency converter–based speed control systems for LT and SW pumps on one vessel
» Suspension of Micro Boiler projects on six vessels and E-Power Pack projects on four vessels following analysis
» Reduction of friction losses through silicone hull coating applications during dry-dock periods
» Analysis of hull fouling and cleaning where necessary
» Close monitoring of green and digital transformation projects
» Review of financing and incentive models provided by European banks
» Comprehensive benefit–cost analyses for alternative fuel technologies

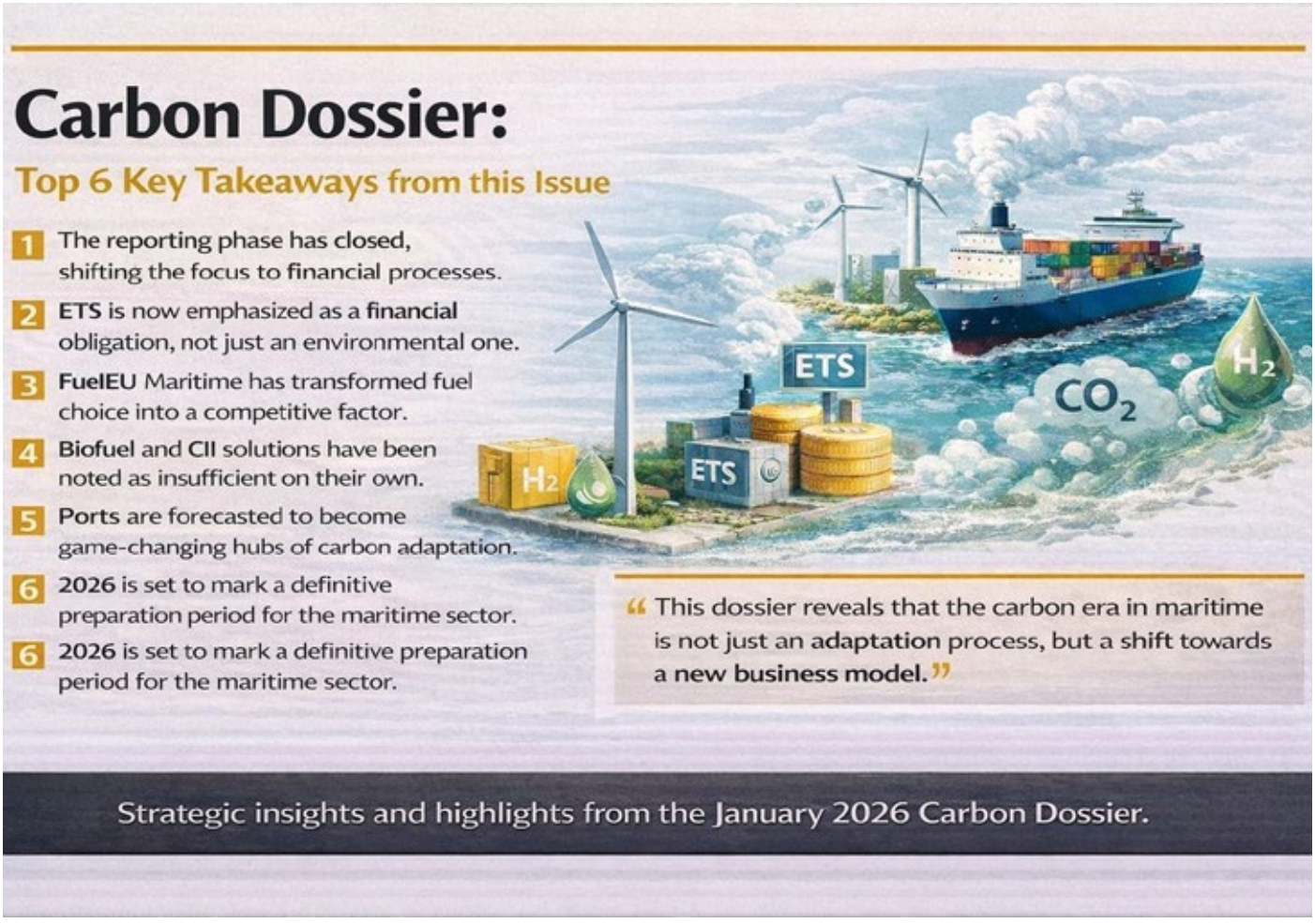
2025 and Beyond: Managing Compliance Through Centralized Planning

To ensure effective management of the EU ETS and FuelEU Maritime Banking, Borrowing, and Pooling mechanisms, which entered into force in 2025, a Geneva-based team was established, consisting of representatives from MSC group companies in Türkiye, Italy, the Netherlands, and Southern Cyprus.

This team assumed responsibility for monitoring and planning 675 vessels calling at European ports throughout the year. From the beginning of 2025, LNG and BioLNG usage was planned for approximately 70 vessels, reducing the FuelEU GHG Intensity Indicator to the targeted level of 89.34. As a result, extremely high FuelEU penalty liabilities were successfully avoided.

Conclusion

This picture clearly demonstrates that transformation and regulatory compliance in maritime shipping require sound planning, a strong organizational structure, and a disciplined management model. When managed correctly, these processes enable companies to allocate resources—otherwise reserved for penalties—toward their own transformation and a sustainable future.



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The Net Zero Journey
Which Fuel?

The net-zero targets are the same, but the pathways differ... In this contest ranging from LNG to green methanol, from ammonia to hydrogen, the winner will be determined not only by technology but also by regulations.

Dr. Fırat BOLAT

**Assistant Professor,
ITU Maritime Faculty Director,
ITU Turkish Straits Maritime
Application and Research Center**

Alternative Marine Fuels and Current International Regulations

The maritime sector, which carries a significant share of global trade, is responsible for approximately 3% of worldwide greenhouse gas (GHG) emissions (Ölçer et al., 2018). This figure underscores the necessity for the sector to reduce its environmental footprint. Stringent emission reduction targets set by the International Maritime Organization (IMO) and regional authorities are making the transition from conventional fossil fuels to alternative marine fuels inevitable. This study analyzes the impact of current international maritime regulations on the adoption of alternative fuels and examines the position of these fuels within the existing regulatory framework.

Introduction

The decarbonization roadmap of the maritime sector is largely shaped by the targets set by the IMO. With its revised GHG Strategy adopted in 2023, the IMO embraced the goal of reducing greenhouse gas emissions from international shipping to net zero by 2050 (IMO, 2023). This strategy includes two main technical and operational measures to be implemented in the short term:

1. Carbon Intensity Indicator (CII): A system that annually measures the operational efficiency of ships and rates them from A to E. Ships rated D or E are required to submit corrective action plans.
2. Energy Efficiency Existing Ship Index (EEXI): A measure that assesses the technical design efficiency of ships and requires improvement actions for vessels that fall below a specified standard.

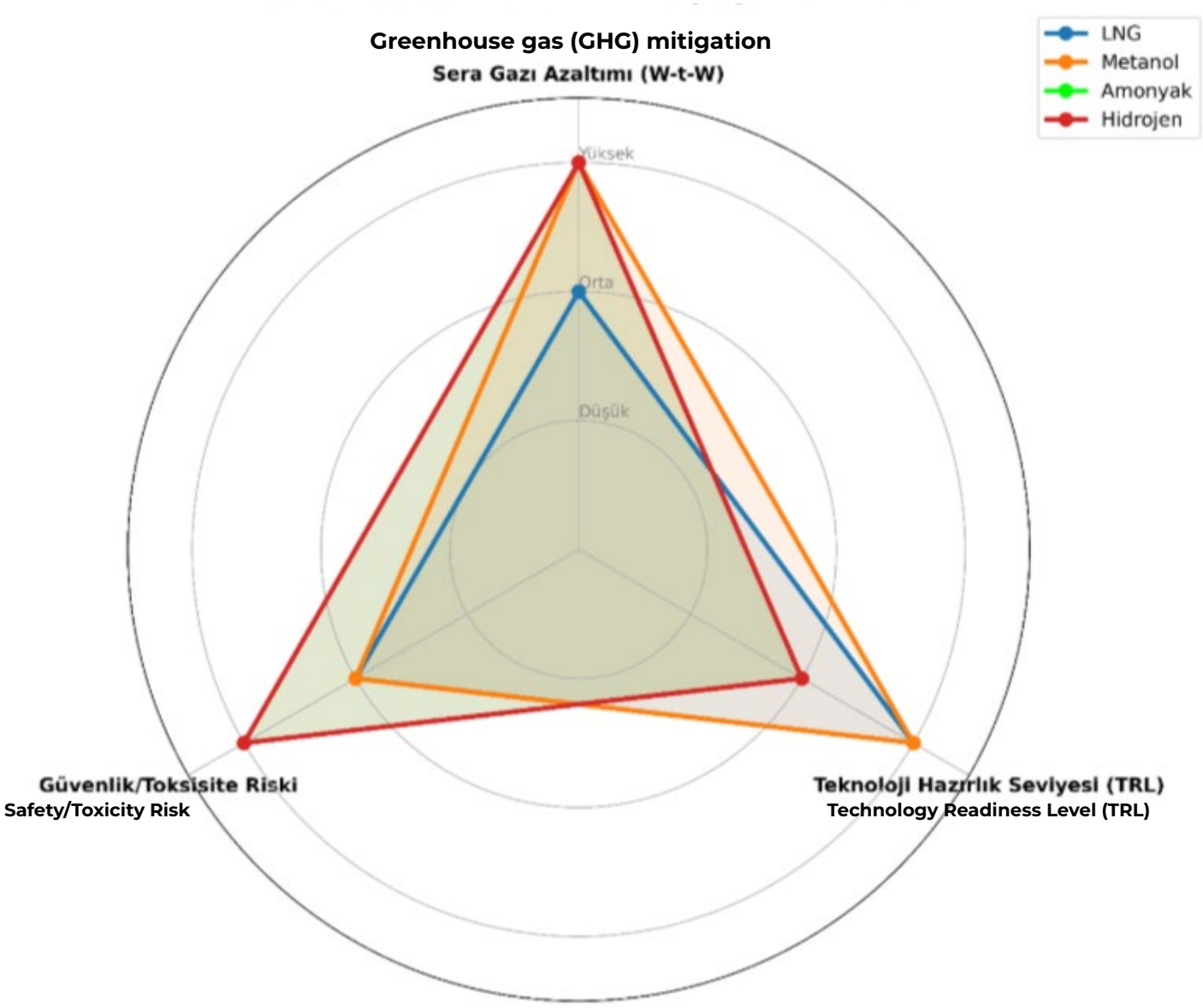
In addition to the IMO's global efforts, regional authorities such as the European Union (EU) are accelerating the process. The FuelEU Maritime regulation sets upper limits on the greenhouse gas intensity of marine fuels, thereby encouraging shipowners to use low-carbon fuels (EU, 2023). These rules require the sector to consider not only fuel consumption but also the fuel's life-cycle emissions, referred to as Well-to-Wake (W-t-W) emissions.

The IMO's efforts to reduce the GHG intensity of marine fuels and to introduce emission pricing mechanisms also failed to reach a final decision at the critical Marine Environment Protection Committee (MEPC) meeting held in October 2025. Despite ongoing negotiations since the MEPC 82 meeting in October 2024, member states have been unable to agree on the details of a global fuel standard and an economic mechanism. As a result, the final adoption decision, previously targeted for 2025, has been postponed to autumn 2026. Consequently, the entry into force of global regulations now appears definitively delayed until 2028.

This delay in the decision-making process prolongs uncertainty over which altewrnative marine fuels shipowners should invest in and poses a risk of slowing down green transition investments across the sector.

Comparative Analysis of Alternative Fuels

Alternative fuels differ in terms of emission reduction potential, technological maturity, and safety risks. The main alternative fuels include Liquefied Natural Gas (LNG), Methanol, Ammonia, and Hydrogen. The chart below presents a comparative analysis of these fuels based on key performance criteria.
The chart demonstrates that there is no single "best" alternative fuel; each option has its own advantages and disadvantages.
LNG: LNG has the highest Technology Readiness Level (TRL) and has become widespread as a transition fuel within the existing fleet. However, its greenhouse gas reduction potential is lower than that of other



zero-carbon fuels, particularly due to the issue of methane slip. This indicates that LNG may be insufficient for achieving long-term net-zero targets.

Methanol: Although its TRL is not as high as that of LNG, methanol is gaining attention due to its relatively easy adaptability to existing marine engines and its ability to be stored in liquid form. Green methanol offers high GHG reduction potential and poses a lower safety (toxicity) risk compared to ammonia.

Ammonia and Hydrogen: Both fuels are considered zero-carbon options with the highest potential for greenhouse gas reduction. However, their TRL levels remain low, and there is a lack of supporting infrastructure. In particular, ammonia's high safety/toxicity risks and hydrogen's storage challenges represent the most significant barriers to widespread adoption (IBIA, 2025).

Current maritime regulations directly influence the adoption of alternative fuels. The table below illustrates the interaction between international maritime regulations and alternative fuels.

Regulation	Interaction Mechanism	Promoted Fuel Type
IMO CII	Aims to reduce fuel consumption by improving operational efficiency. Ships using low-carbon fuels receive better CII ratings.	All fuels with low W-t-W (Well-to-Wake) emissions (Green Methanol, Ammonia).
IMO EEXI	Technical efficiency requirement; forces newly built ships to be designed with alternative fuel-compatible (dual fuel) engines.	Proven solutions with high TRL (Technology Readiness Level) (LNG, Methanol, etc.).
FuelEU Maritime	Sets a cap on greenhouse gas intensity per energy content of the fuel. Based on life-cycle emissions (W-t-W).	Biofuels, Synthetic Fuels, Green Hydrogen/Ammonia.

These regulations compel shipowners not only to change fuel consumption patterns but also to transform ship design and operational processes. In particular, regulations such as FuelEU Maritime that account for life-cycle emissions make fuels derived from renewable sources—such as biofuels and synthetic fuels (green ammonia, e-methanol)—more attractive (McCartney, 2024).

Conclusion

The transition to alternative marine fuels is regarded as a key pathway to achieving the stringent emission reduction targets set by international regulations. The IMO's global strategy and the EU's regional regulations are accelerating this transformation; however, the transition process faces significant challenges, including technological maturity, safety risks, and the development of global fuel supply infrastructure. In the short term, fuels such as LNG and methanol will facilitate the transition, while in the long term, investment in zero-carbon solutions such as ammonia and hydrogen is inevitable to meet net-zero targets. Success in this field will depend on regulatory clarity, technological innovation, and the coordinated efforts of all stakeholders, including shipowners, fuel suppliers, and ports.

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General Manager

The Green Reality in Shipping: The Strategic Role of Biofuels

The shipping industry is moving beyond centuries-old habits and standing at the threshold of a historic transformation. The environmental agenda long debated on international platforms has now, as we approach 2030, become a concrete reality that directly determines our operations, investment priorities and cost structures.

The climate reality: IMO data show that approximately 3% of global greenhouse gas emissions originate from shipping. “Green” is no longer a voluntary concept, but a measurable criterion for performance and competitiveness.

The global fleet: According to UNCTAD’s Review of Maritime Transport 2025, the world merchant fleet has reached 112,500 vessels with a total capacity of 2.44 billion DWT. A structure of this scale cannot realistically undergo a rapid, fleet-wide technological transformation or comprehensive retrofitting in the short term. Therefore, “solutions that can be implemented today” are of strategic importance.

Türkiye’s 2024 Snapshot: Obligation and Opportunity Combined

With 2,154 vessels and a capacity of 52.9 million DWT, the Turkish-owned fleet ranks 11th globally, while its average age has reached 23 years. Heavy traffic through the Turkish Straits (41,363 transits in Istanbul and 45,849 in Çanakkale) places Türkiye in the global showcase of maritime trade, making environmental performance a decisive factor for both reputational standing and cost structures. In a reality where rapid renewal of the commercial fleet is not feasible in the short term, solutions that enable swift compliance with environmental regulations are critical.
At this point, biofuels stand out as a strategic response: applicable to almost any vessel without additional investment costs, ISCC-EU certified, traceable, delivering physical emission reductions and strengthening commercial competitiveness.

Why Biofuels?

In today’s realities, biofuels that are applicable now and aligned with tomorrow’s standards are the fastest way to enhance environmental performance, manage carbon costs and increase commercial competitiveness—without waiting for the end of a fleet’s economic life.

» Investment efficiency – “Drop-in, no additional CAPEX.” Biofuels can be used in existing engines without extra capital expenditure and can be deployed across the fleet simultaneously, accelerating the transition.
» Operational performance – “Improves CII.” They reduce actual operational emissions, improve CII ratings, and support a vessel’s commercial lifetime and charter attractiveness.
» Carbon cost management – “Directly reduces the cost.” Thanks to physical emission reductions, payments arising from carbon pricing mechanisms (EUAs, FuelEU penalties, etc.) decrease directly. Pooling may limit penalties; it does not reduce costs. Biofuels do.
» Target alignment – “Well-to-wake perspective.” With low WTW carbon intensity, biofuels naturally align with corporate targets and customers’ Scope 3 emission expectations, delivering measurable and verifiable emission reductions.

» Fund your own performance – “Keep the value on your vessel.” While pooling risks indirectly financing others’ “green” investments, biofuel use adds value directly to your vessel’s metrics and enhances the technical team’s know-how.
» “Green cargo” tenders – “Preferred through physical reduction.” By providing the physical emission reductions and traceable documentation required by major cargo owners, you gain a competitive edge in prestigious, high-freight contracts.
» Future readiness – “Capacity today, compliance tomorrow.” Biofuels prepare you for stricter expectations from 2026 onward through operational experience, fuel management and supply-chain discipline.

Biofuels: The Fastest and Smartest Path to Compliance Before the End of Economic Life

The average age of the Turkish commercial fleet is 23 years. Rolling out new fuel technologies across all vessels overnight is neither technically nor financially realistic. The way to ensure rapid regulatory compliance without disrupting operations and while maintaining financial discipline is the adoption of biofuels.

Why today—and why biofuels?

» Low carbon intensity, high compliance capability: Delivers measurable emission reductions in the existing fleet and balances compliance costs.

» Drop-in use, rapid deployment: Operates with minimal changes to existing engines and fuel systems, reducing operational risk and maintenance burden.

» Accessible and reliable supply in Türkiye: ISCC-EU certified, traceable supply chains aligned with the EU Renewable Energy Directive ensure both quality assurance and logistical efficiency.

» Joint R&D and collaborations: Enable access to sustainability targets through vessel-specific fuel solutions and accurate emission calculations.

Arkas Bunker’s Approach: Practical Solutions, Sustainable Supplies

We are not merely a fuel supplier; we act as your strategic environmental performance partner in shipping. As Arkas Bunker—the initiator of Türkiye’s ISCC-EU-certified, traceable biofuel ecosystem—we contribute to the circular economy through a domestic value chain while providing reliable supply to both Turkish and international shipowners.

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» Bio30F – Designed for operations targeting higher emission reductions

» UCOME Biodiesel – 100% renewable, delivering maximum carbon reduction

As we approach 2026, success will belong to those who can deploy applicable and scalable solutions today. Biofuels represent the fastest route to enhancing the environmental and commercial performance of the Turkish fleet before the end of its economic life. With proven bunkering capability and strict certification discipline, Arkas Bunker is delivering this transformation today.
The future is not far away—and we are bunkering it today.

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Cumhur YAŞAR
Co-Founder

The global maritime and energy industries are undergoing a rapid transformation driven by tightening environmental regulations, carbon emission reduction targets, and increasing demands for energy efficiency. This transformation requires not only the development of new technologies, but also the presence of interdisciplinary companies capable of transferring these technologies into real-world applications through sound engineering practices. Responding to this need, Planeta operates with a business model that places sustainability at its core.

Planeta was established to provide engineering-driven solutions, advanced technology and equipment representation services, and technical consultancy for the maritime and energy sectors. The company's scope of activities covers a wide range of fields, including marine and power generation engines, heat transfer and cooling systems, exhaust and emission reduction solutions, carbon capture technologies, renewable energy applications, and power plant engineering. Rather than approaching projects as single-product sales, Planeta adopts a system-oriented perspective focused on integrated solutions and long-term operational efficiency.

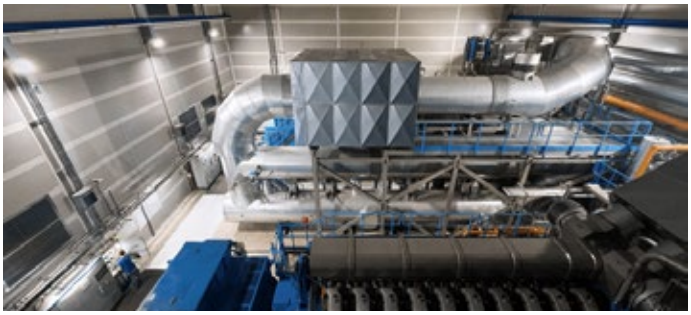
One of Planeta's founding partners, Cumhur Yaşar, brings decades of experience in maritime, energy, and industrial applications into the company's vision. This vision aims to balance technical accuracy, sustainability, and engineering discipline with strong commercial insight.

Strategic Partnerships and Energy Management in Maritime

A key pillar of Planeta's sustainability-focused strategy lies in its strategic partnerships within the maritime sector. In this context, the company collaborates with Netherlands-based Carbotreat on carbon capture technologies, while working closely with Oddy Ship on adaptation and marketing processes for marine applications.

The partnership with Oddy Ship goes beyond conventional product representation, evolving into an integrated structure that encompasses energy management, engineering support, and carbon reduction solutions for the maritime industry. Improving energy efficiency in vessel operations, reducing emissions, and preparing for future environmental regulations are among the core objectives of this collaboration.

Carbotreat's carbon capture solutions offer significant potential, particularly in reducing vessel-related carbon emissions. Through the cooperation between Planeta and Oddy Ship, these technologies are evaluated in line with the technical and operational realities of the maritime sector, with a focus on application scenarios, engineering calculations, and system integration. As a result, sustainability is transformed from an abstract goal into a practical engineering discipline.



Guascor Engines and Fuel Diversity

One of the key brands represented by Planeta is Guascor, which offers a broad engine portfolio serving multiple sectors. Guascor develops diesel engines for marine applications, natural gas and biogas engines for power generation, and increasingly emphasizes LNG-fueled marine engine solutions in line with sustainability objectives.

Planeta evaluates Guascor engines not only based on their technical specifications, but also in terms of fuel type, emission performance, operating costs, and long-term environmental impact. LNG-fueled marine engines, in particular, are considered a viable alternative for projects targeting a lower carbon footprint in the maritime sector. This approach demonstrates that Planeta views alternative fuels not as a temporary trend, but as a strategic tool for long-term transformation.

Planeta's Supply and Engineering-Focused Areas of Operation

Planeta's activities extend across a wide geographic and sectoral landscape. From Central Asia to North Africa, from Europe to island states, the company provides engineering solutions for power plants, industrial facilities, logistics infrastructure, and marine applications.

Within this scope, Planeta delivers services across multiple disciplines, including heating, cooling, and boiler systems for power plants; dry cooler applications; plate heat exchanger maintenance and optimization; renewable energy projects; and technical consultancy. In addition, the company offers cooling system design, performance improvement services, and engineering consultancy for large-scale energy companies.

Planeta's project portfolio ranges from power plant equipment supply across different countries to EPC-based solar power plants; from engineering studies aimed at improving the performance of existing facilities to equipment and system selection for new investments. This diversity highlights the company's ability to operate with a globally oriented yet locally responsive approach.

Looking Ahead

Through its represented brands, engineering activities, and strategic partnerships, Planeta aims to play an active role in the sustainable transformation of the maritime and energy sectors. With a strong commitment to environmental responsibility, technical expertise, and long-term solution-oriented thinking, Planeta continues its journey toward becoming a reliable solution partner for the energy and maritime projects of the future. ■

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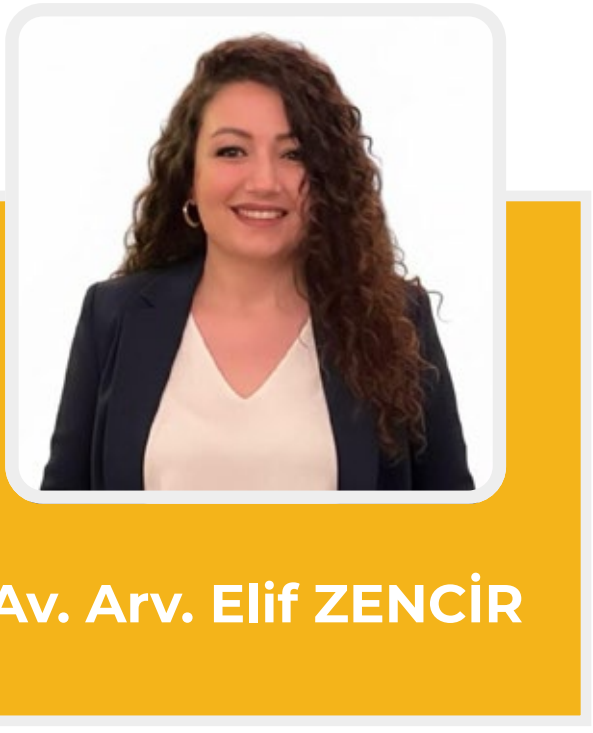
The Carbon Era in Shipping

The Approaching Legal Storm of the Green Transition

CII, ETS and FuelEU represent not only an environmental transformation; they are also creating a new field of legal risk extending from vessel values to charterparty structures, from sale and purchase transactions to pooling mechanisms.

Selçuk & Zencir
Hukuk Bürosu



Av. Arv. Elif ZENCİR

The first major steps of the Green Transition began in 2018, when the IMO put into force its Global Climate Strategy aiming to reduce greenhouse gas emissions from shipping by 2050.
The IMO's Greenhouse Gas Reduction Strategy and the EU's "Fit for 55" package are fundamentally reshaping the core dynamics of ship ownership and operation. A vessel's commercial success is no longer determined solely by freight markets and bunker prices, but also by its CII rating and the costs arising from the EU ETS and FuelEU.

From Technical Compliance to a Legal Risk Landscape

The Green Transition is no longer merely a technical issue; it is the harbinger of an unpredictable legal storm threatening existing time charter agreements, bareboat charters, spot trades, and in particular pooling structures under FuelEU. This storm will confront not only chartering relationships but also sale and purchase agreements with even greater force.

A vessel's CII rating and, in particular, its compliance with EEXI have now become a new form of technical defect or certification deficiency that directly affects market value. Potential buyers will demand vessels rated D or E at a lower price due to future operational restrictions and retrofit costs. This increases the risk of vessels becoming stranded assets for sellers and leads to tough negotiations in pricing and risk allocation processes.

Carbon-Driven Conflicts of Interest in Charterparties

In addition, a low CII rating (D or E) reduces a vessel's commercial value and charterability and, in some cases, leads to "off-hire–like" consequences imposed by major charterers. At this point, the conflict of interest between the charterer—who gives instructions on "commercial speed," "route selection," and "fuel choice"—and the shipowner, who bears the regulatory consequences, can give rise to serious disputes unless clearly regulated in the contract.

The EU Emissions Trading System (ETS) has, for the first time, introduced a direct monetary regulatory burden into shipping contracts. Within the scope of ETS, the question of who bears the cost of CO_2 allowances has created a grey area, particularly in existing time charter agreements. Traditional clauses such as "bunkers at charterer's expense" are insufficient to cover carbon costs, leading to legal debates over whether ETS costs constitute bunkers, taxes, or operational expenses.

Although the industry has begun to adopt BIMCO's new ETS clauses, the retroactive applicability of these clauses and the scope of the owner's lien rights in the event of charterer default will be central topics of future legal proceedings.

FuelEU and Pooling: Next-Generation Contractual Uncertainties

The FuelEU Maritime regulation takes the dispute potential one step further. FuelEU has made not only the vessel, but also energy choice and the carbon intensity of fuel, a contractual matter. Pooling, banking, and borrowing mechanisms, in particular, create significant legal uncertainty across charter chains and vessel sale transactions. Whether a vessel's negative compliance balance from previous

reporting periods will be transferred to the buyer or a new charterer after delivery is no longer a purely technical question, but one that directly affects price reductions or compensation claims.

In vessel sale and purchase transactions, these regulations effectively weaken the traditional "as is, where is" approach. Even if a vessel is technically sound at delivery, a vessel with a low CII rating, exposure to penalties under FuelEU, or incomplete EU ETS compliance may still become subject to legal debates over defective goods.
As a natural consequence of these developments, environmental undertakings, regulatory compliance representations, and price adjustment clauses are rapidly becoming widespread in sale and purchase agreements.

Liability and Recourse Issues in the Tripartite Structure

Another particularly notable area of dispute arises within the tripartite structure between the ISM Company, the registered owner, and the commercial operator. Although most regulations define obligations directly with reference to the "vessel," actual non-compliance often stems from commercial operations (such as speed instructions, route selection, and fuel choice). Nevertheless, administrative sanctions and commercial consequences are typically directed at the shipowner, making recourse claims and contractual indemnity provisions unavoidable. In the coming period, even the question of whether carbon-related disputes fall within the scope of P&I insurance will become a matter of serious debate.

One of the issues most likely to give rise to disputes is pooling under FuelEU. Since pooling applies only to the relevant reporting period, each vessel may participate in only one pool per period, and the pool's total compliance balance must be positive. Unless clearly regulated in contracts, serious legal disputes may arise regarding whether negative compliance balances from past or ongoing reporting periods are passed on to buyers or new charterers, which party bears penalty risks arising from the pool, and who has the authority to decide on pooling. In particular, the failure to clearly allocate pooling authority, financial consequences, and recourse rights in sale and purchase agreements and time charter contracts will inevitably lead to price reductions, compensation claims, and allegations of breach of contract.

"AB Emisyon Ticaret Sistemi, denizcilik sözleşmelerinde ilk kez doğrudan parasal bir regülasyon yükünü gündeme getirmiştir.

Mevcut time charter sözleşmelerinde karbon maliyetinin kim tarafından karşılanacağı hususu, taraflar açısından ciddi bir gri alan yaratmıştır."

In conclusion, the IMO DCS, CII, EU ETS, and FuelEU regulations represent not only an environmental transformation in the shipping sector, but also a fundamental change in contract law, risk allocation between parties, and commercial balance. In this new era, it is no longer a matter of choice but a legal necessity for parties to go beyond standard BIMCO forms and operate under vessel-specific contracts that clearly and explicitly allocate carbon-related risks. Otherwise, the true cost of the green transition will be paid in courtrooms and arbitration halls.
Anticipating, managing, and contractually structuring the legal risks that will arise throughout these processes, and providing effective and holistic legal support to our clients based on practical, field-oriented experience, is our foremost mission.

From Regulations to Education Strategy

Why Has Alternative Fuel Education in Maritime Become Critical?

Net-zero targets, the EU ETS, and FuelEU Maritime have moved alternative fuels from theory into operations. This transformation is not sustainable without qualified engineering education.

Doç. Dr. Burak ZİNCİR
Head of the Department of Marine Engineering Operations
ITU Faculty of Maritime Studies

Transformation in the Maritime Sector and the Need for Human Capital

While maritime transport continues to serve as the backbone of global trade, it is also facing increasing pressure due to greenhouse gas emissions and air pollution. The International Maritime Organization's (IMO) Greenhouse Gas Reduction Strategy, updated in 2023, explicitly sets the target of achieving net-zero emissions in shipping by 2050. Meanwhile, the European Union has placed maritime transport directly at the center of its climate policies through the EU ETS, FuelEU Maritime, and the Fit for 55 package.

These regulations fundamentally transform not only ship design and fuel selection, but also the knowledge base, competencies, and decision-making capacity of the human capital operating ships. At this point, university-level courses focused on alternative fuel technologies play a critical role in shaping the future of the sector.

Sectoral Relevance of the Alternative Fuel Technologies Course

The "Alternative Fuel Technologies" course offered within the Marine Engineering program at the ITU Faculty of Maritime Studies is one of the few comprehensive courses that directly addresses this transformation in shipping. The course provides a holistic framework, starting from the mechanisms of ship-based emission formation and extending to international conventions, the IGF Code, classification society guidelines, and onboard applications of alternative fuels.

The weekly syllabus covers in detail the physical and chemical properties of liquid and gaseous alternative fuels (such as LNG, methanol, ammonia, hydrogen, etc.), their production methods, storage and fuel system designs, combustion concepts, and fuel operations. This approach establishes a strong structure that directly links theoretical knowledge with practical ship operation.

Direct Alignment with IMO and EU Emission Policies

One of the most significant strengths of the course is its direct alignment with international regulations. Air pollution control measures under IMO MARPOL Annex VI, along with technical and operational regulations such as EEXI and CII, are addressed in the early weeks of the course together with emission formation reactions. As a result, students perceive regulations not as abstract texts, but as technical requirements directly connected to combustion processes in the engine room.

The inclusion of maritime transport within the scope of the EU ETS and the limitation of fuel carbon intensity through FuelEU Maritime have transformed alternative fuels from a "future option" into an operational necessity of today. The topic of "future alternative fuel and renewable energy combinations," covered in the final weeks of the course, directly supports this policy framework.

Strategic Value for the ITU Faculty of Maritime Studies

As one of Türkiye's reference institutions in maritime education, the ITU Faculty of Maritime Studies should not merely follow sectoral transformation, but actively shape it. The Alternative Fuel Technologies course stands as a concrete example of this strategic role.

Through this course, the faculty strengthens its capacity to educate graduates who:

- are not limited to conventional fuel knowledge,
- can interpret and critically assess new regulations,
- can contribute to the safe and efficient operation of alternative-fuelled vessels.

This, in turn, enhances the faculty's visibility and reputation within both the national and international maritime ecosystem.

Student Outcomes and Employment Dimension

From the perspective of shipowners, technical managers, and classification societies, the risk awareness, fuel-specific expertise, and operational knowledge of engineers serving on alternative-fuelled vessels have become critically important. This course not only provides students with technical knowledge, but also instills confidence to work on next-generation ships.

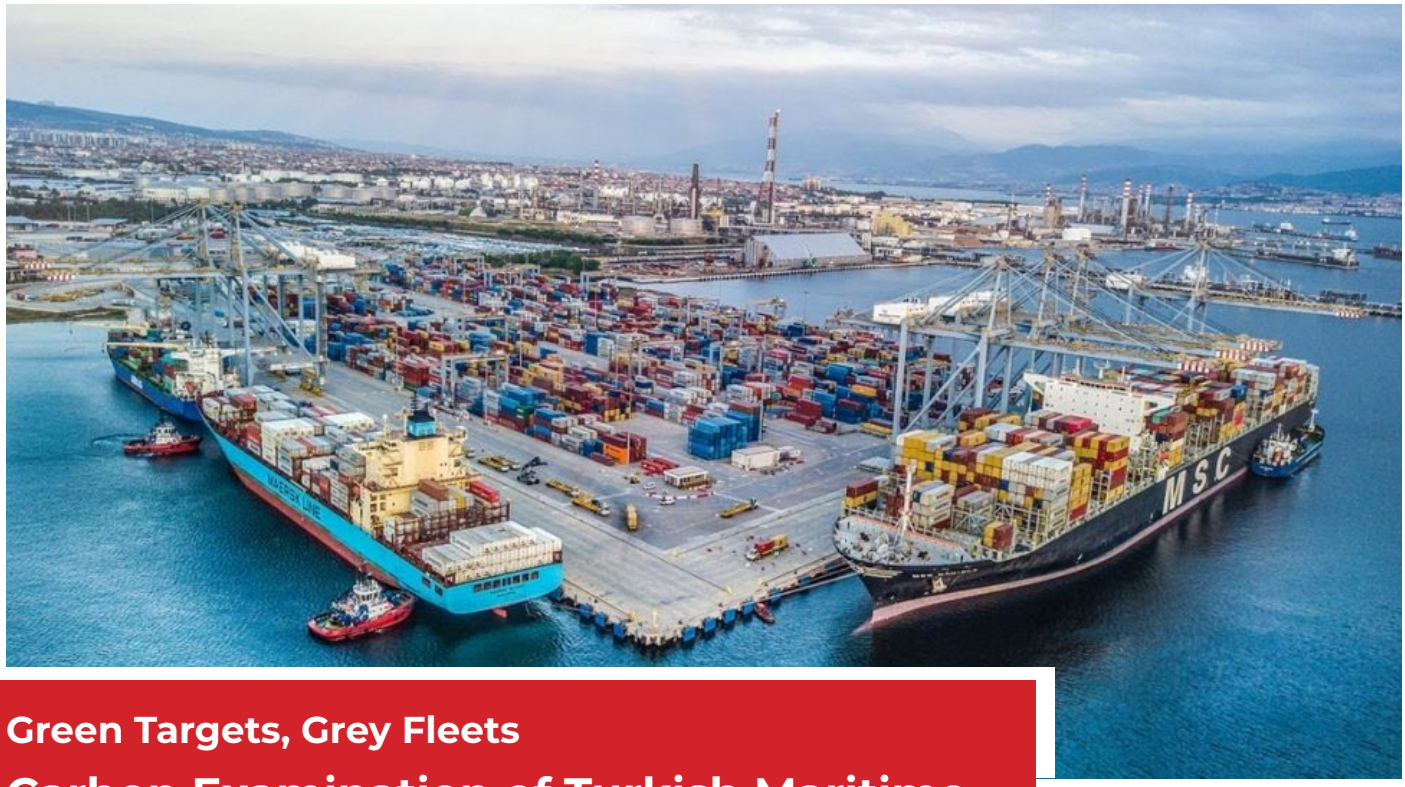
After graduation, students enter the sector as professionals capable of serving on alternative-fuelled vessels, actively participating in emission compliance processes, and making technical contributions to corporate carbon strategies. This significantly increases graduates' employability and career diversity.

Long-Term Contribution to the Maritime Transport Sector

Alternative fuel technologies are not merely an environmental obligation, but also a matter of competitiveness, cost management, and operational sustainability. For this transformation to be successfully implemented, the sector requires human capital capable of understanding regulations and applying them effectively in practice.

This course offered at the ITU Faculty of Maritime Studies strengthens the knowledge bridge between academia and industry, enhancing the capacity of Turkish shipping to adapt to the global transition. In this respect, the Alternative Fuel Technologies course is not merely an elective, but a strategic investment in the future of maritime transport.

Illustration: Digital / AI Generated



Green Targets, Grey Fleets

Carbon Examination of Turkish Maritime

The FuelEU Maritime regulation and the European Union Emissions Trading System (ETS), which will come into force as of 2026, confront the Turkish maritime sector not only with an environmental challenge but also with a direct economic test. For Turkish shipowners engaged in intensive trade with European ports, competitiveness is no longer defined solely by freight rates and operational efficiency; carbon footprint has become a decisive factor of the new era. However, it is evident that many companies in the sector are not sufficiently prepared for fuel transition, emissions reporting, and carbon cost management.

While maritime transport has been included in the EU ETS as of 2024, the obligation ratios are increasing gradually. In 2025, payments will be required for 40% of emissions, rising to 100% by 2027. In parallel, the FuelEU Maritime regulation aims to reduce the carbon intensity of marine fuels and to make the use of shore-side electricity in ports mandatory from 2030 onwards. This makes a comprehensive transformation inevitable, both in vessel operations and port infrastructure.

Although Türkiye ranks among the world's top 11 largest fleets, the high average age of the fleet makes compliance with energy efficiency criteria such as EEXI and CII more challenging. On the port side, the high-capacity shore power system commissioned by Tekirdağ Asyaport stands out as an important step; however, such investments need to be expanded nationwide. On the fuel front, apart from LNG, there is still no mature supply chain for next-generation fuels such as methanol and ammonia. On the other hand, Türkiye possesses a strong engineering infrastructure in shipbuilding and retrofit technologies. Zero-emission and hybrid vessel projects developed by domestic shipyards for Europe are concrete indicators of this potential. According to experts, integrating these technologies into the Turkish fleet is critical for offsetting rising carbon costs.

Otherwise, increasing carbon credit prices will create significant cost pressure, especially for vessels operating on EU routes. The 2025–2027 period is seen as a critical threshold that will determine where Turkish shipping will be positioned in the carbon era.

"As carbon regulations usher in a new era for maritime transport, the Turkish fleet stands at a critical crossroads. ETS and FuelEU place vessel age, fuel choices, and operational models directly under scrutiny. The next few years will clearly separate those who transform from those who fall behind. "

Global Education Drive for Green Shipping in SIDS and LDC Countries

International efforts aimed at the decarbonization of the maritime sector in Small Island Developing States (SIDS) and Least Developed Countries (LDCs) have entered a new phase with the completion of the 2025 training cycle of the GHG-SMART programme. By focusing on the development of expert human resources capable of translating low-carbon maritime policies into practice, the programme highlights the critical role of skilled personnel in climate-driven transformation.

During the intensive one-year training programme, 23 maritime professionals from 13 different countries completed a comprehensive curriculum consisting of online and in-person sessions, hands-on exercises, and interactive seminars. The training covered a wide range of topics, including regulatory approaches to emissions reduction, policy design, clean technologies, financing mechanisms, and implementation strategies, providing participants with a multidimensional perspective.

The final phase of the programme was concluded in November with a practical training session held in Busan, South Korea. Through workshops and site visits, participants were able to apply their theoretical knowledge to real-world operations. Experts from the IMO, the World Bank, the Green Climate Fund, and academic institutions shared their experiences on climate finance, energy efficiency in ports, and the transition to alternative fuels.

Aligned with the 2023 IMO GHG Strategy, GHG-SMART aims to support countries in developing solutions tailored to their national circumstances. To date, the programme has reached more than 80 participants from 47 SIDS and LDC countries, while successful candidates are offered master's degree scholarships at the World Maritime University, strengthening long-term expertise and institutional capacity. Experts agree that this approach presents a strategic model for reducing global inequalities in the green transition of the maritime sector.

Decarbonization in shipping is not only about technology, but also about the human capital required to manage this transformation. By training experts who can translate green policies into practical action in SIDS and LDC countries, the GHG-SMART programme strengthens a less visible yet critical pillar of the global transition. This educational initiative offers a new model for reducing inequality in the maritime sector.

BYD and Shenzhen Port Launch Marine Green

New Energy Innovation Laboratory

The Marine Green New Energy Innovation Laboratory, established through a partnership between BYD—one of China's leading companies in new energy and electric mobility—and Shenzhen Port, has commenced operations in line with carbon peak and carbon neutrality targets. Positioning electricity as its primary driving force, the laboratory adopts a full-chain innovation model encompassing research and development, application, and industrial processes, with the aim of simultaneously advancing battery technologies and maritime applications.

In the coming period, the partners will focus on four strategic areas: electric vessels, green port practices, zero-carbon logistics systems, and marine renewable energy solutions. By accelerating core technological breakthroughs, implementing pilot projects, and building sustainable production capacities, the initiative seeks to establish a benchmark platform that integrates technological and industrial innovation.

Meanwhile, Shenzhen Port has provided BYD with dedicated storage areas, priority berth allocation, and expedited customs channels to support the company's growing automobile exports. With increased capacity on Ro-Ro and container routes to key markets—particularly Southeast Asia—the collaboration aims to enable China-based electric vehicle exports to reach global markets faster and with a lower carbon footprint.

The Marine Green New Energy Innovation Laboratory, established through the partnership between BYD and Shenzhen Port, has begun operations with the goal of achieving carbon neutrality in maritime transport. Pilot projects will be developed across four strategic areas, ranging from electric vessels to green ports. The cooperation also aims to accelerate China's electric vehicle exports with a reduced carbon footprint.

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Field-Driven Experience

Alfa Diving and Its Red Lines

Risk analysis, a disciplined team structure, and environmental responsibility... Alfa Diving and Underwater Services treats sustainability not as a marketing slogan, but as an operational standard in underwater services.

Efe ÖZKUYUMCU
Co-Founder

What is the core expertise behind Alfa Diving? What sets you apart in the field?

When founding Alfa Diving and Underwater Services, my core approach was to deliver underwater services not from behind a desk, but entirely through hands-on field experience. I actively worked for many years in different countries and on various types of vessels. This process showed me that the success of an operation depends first and foremost not on technical knowledge alone, but on proper planning, risk analysis, and disciplined execution. What differentiates us in the field today is our ability to provide solutions that prioritize safety, fully comply with class rules, and have minimal impact on vessel schedules.

Which service areas is Alfa Diving most frequently preferred for?

The services for which we receive the highest demand include underwater class surveys, hull cleaning, propeller polishing, anode replacement, and underwater welding and repair operations. We have particularly strong experience in performing underwater operations on commercial vessels with strict time constraints, without disrupting their voyages. How do you manage time pressure and operational risks? Before every operation, a detailed risk analysis is conducted, and no diver is permitted to enter the water until team roles and responsibilities are clearly defined. Speed is an important criterion for us, but it never takes precedence over safety. Speed is not sustainable without the right equipment, a sufficient number of divers, and strong surface support.

How is occupational safety positioned at Alfa Diving? Do you have non-negotiable rules?

In underwater operations, there is no such thing as a "minor mistake." At Alfa Diving, our non-negotiable red lines are:

- No diving without approval and proper planning
- No entry into the water without a recording and logging system
- Operations are postponed if weather, current, or visibility conditions are unsuitable

The primary reason all of our operations to date have been completed safely is our strict adherence to this set of rules.

How does environmental responsibility reflect in your operations?

Environmental awareness is not a marketing element for us; it is an operational standard. We ensure full compliance with class and port authorities in matters such as oil leak detection, controlled cleaning methods, and waste management. Especially in situations carrying environmental risk, we adopt an approach based on early detection and rapid intervention.

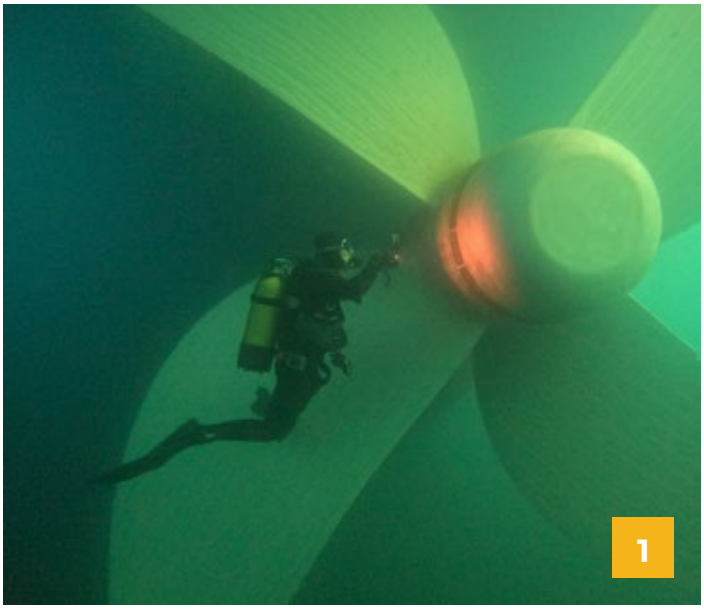
How do you assess the current state and future of the underwater services sector in Türkiye?

The sector is evolving toward a more professional structure each year. Shipowners now prioritize not only price, but also safety, reporting quality, and compliance with class requirements. I believe that over the next 5–10 years, it will become increasingly difficult for undisciplined and unregistered companies to remain in the sector.

Co-Founders of “Alfa Dalgıçlık”
Efe ÖZKUYUMCU (Left), Ömür TANKA (Right)

How are team structure and operational coordination ensured at Alfa Diving?

Teams assigned to operations are planned specifically according to the scope of work, vessel type, and environmental conditions. There is a clear division of responsibilities among divers, surface support personnel, and operation supervisors. Thanks to this structure, decision-making processes in the field progress quickly and in a controlled manner.



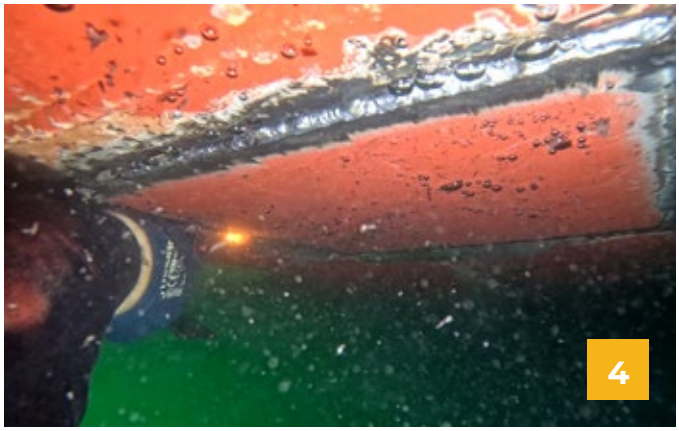
During the underwater inspection conducted by a Certified Alpha Diver, the general and detailed condition of the ship’s propeller is examined.(Figure 1)

Throughout the underwater survey, a breach in the hull and an active water leak were identified. At the point of detection, the diver performed emergency repairs and sealing using specialized underwater welding equipment.(Figures 2 and 3)

Following the underwater welding operation, the weld beads of the repaired area were reinforced, and a final leak test was conducted to ensure integrity.(Figure 4)

What is Alfa Diving’s international positioning and long-term global vision?

We view international growth not as rapid volume expansion, but as a controlled process built on technical competence and operational reliability. In the short to medium term, we aim to position ourselves as a reliable solution partner for time-critical underwater operations in regions with dense commercial shipping traffic such as the Mediterranean, the Black Sea, and the Middle East. Operationally, we are standardizing our internal procedures in line with class-approved practices, strengthening our technical reporting structure, and increasing direct collaborations with ship managers, operators, and classification societies rather than intermediary entities. In the long term, our goal is to transform Alfa Diving into a trusted technical partner capable of serving international fleets with consistent quality, safety discipline, and transparent communication.



Future Healthcare Models

Healthcare Managed Through Global Networks

Digital solutions, remote consultations, and international healthcare networks are making healthcare services in the maritime sector more integrated and sustainable.

ANGE assistance

Gökçe ŞENGEZER
Founder

The healthcare sector has a dynamic and multi-dimensional structure that cannot be confined within national borders alone. With the impact of globalization, healthcare services are shaped through knowledge, technology, human resources, and trust-based relationships, making international cooperation a strategic necessity.
Especially in fields with high levels of international mobility, such as the maritime sector, effective management of healthcare services is only possible through strong and sustainable collaborations. Health needs that may arise on vessels with multinational crews and diverse passenger profiles require rapid decision-making, accurate guidance, and simultaneous coordination with different healthcare systems.

A Healthcare Need Beyond Borders

A healthcare process that begins on board often continues ashore. In this process, vessel routes, port changes, flight planning, and cross-border healthcare regulations come into play. International healthcare cooperation ensures that this complex structure is managed safely and effectively. Directing patients to the most appropriate healthcare facilities based on their location is of critical importance for continuity of treatment and patient safety.
The multinational nature of the maritime sector also brings with it the need for a common language and standards in healthcare services. Through international cooperation, medical protocols, ethical approaches, and patient rights are addressed within a universal framework. This strengthens the sense of trust for both patients and employers, while contributing to the sustainability of service quality.

From Operational Continuity to Global Healthcare Networks

Time management is a decisive factor when it comes to patients on board and maritime employees. Accurate and rapid guidance in emergencies is crucial not only for the patient's health but also for the uninterrupted continuation of vessel operations. International healthcare collaborations enable many stages—from port procedures to hospital admissions and insurance approvals—to progress simultaneously and in a coordinated manner.

Healthcare management in the maritime sector should be considered not merely as an individual service, but as an integral part of operational continuity. Effective management of crew health plays a strategic role in preventing workforce loss, reducing operational risks, and ensuring corporate sustainability. International collaborations are one of the fundamental building blocks of this process.

Looking to the future, more integrated, cooperation-based models are coming to the forefront in healthcare services. Digital health solutions, remote consultation systems, and global healthcare networks are among the key elements of this transformation. International cooperation lies at the heart of this structure, contributing to the delivery of healthcare services that are more accessible, secure, and of higher quality.
In conclusion, international cooperation in healthcare is not merely an operational requirement; it is the expression of a trust-based and sustainable approach that places human life at its core. Especially in the maritime sector, these collaborations stand out as a strategic element that ensures the effective management of healthcare services for ship patients and employees.

Illustration: Digital / AI Generated

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The Regulatory Reality of Yacht Sales
Flag Fixed, Risk Variable

Increased scrutiny of transfers exceeding TRY 200,000 is directly impacting foreign-flagged yacht sales. A single incorrect description can cost far more than the sale itself...

MARINE GROUP YACHTING
ENJOY LIFE

Şahan DEMİRCAN
Chairman of the Board

As of 2026, inspections related to money transfers and transaction descriptions have become far more systematic and in-depth. In particular, for transfers of TRY 200,000 and above, the mandatory requirement to clearly state the purpose of the transaction—along with additional verification steps imposed by banks—significantly increases the visibility of high-value transactions such as yacht sales.

In recent foreign-flagged yacht sales, the most common mistake has been initiating the flow of funds before the legal and financial structure of the sale is fully completed. In practice, the risk most often arises not from the yacht's flag, but from the source and destination of the funds, the wording of transfer descriptions, document compliance, and how the transaction is linked to Türkiye.

The 2026 Critical Threshold: TRY 200,000

In the new period, the expectation of disclosure and declaration in transfers of TRY 200,000 and above makes it mandatory to ensure that the language used in yacht sale transactions, bank transfer descriptions, contractual clauses, and payment channels are flawless and fully aligned with one another.

This threshold does not, in itself, mean a "penalty." However, it does not change the following reality: A poorly structured payment is one of the most difficult elements to correct after the fact.

Where Do the Most Costly Mistakes Begin in Foreign-Flagged Sales?

In such transactions, the main mistakes—often made in good faith but later leading to serious consequences—include:

- Collecting the sale proceeds in a way that directly links the transaction to Türkiye, or rapidly transferring funds into the Turkish banking system
- Drafting bank transfer descriptions carelessly and leaving them inconsistent with supporting documents
- Allowing inconsistencies between the Bill of Sale, the sale agreement, and the payment schedule
- Creating the appearance that the transaction is a "personal sale" or a "commercial activity" (continuity, repeated buying and selling, etc.)

At this point, the issue is not about "avoiding taxes." The real issue is proceeding in compliance with regulations and never entering into unnecessary tax, penalty, or audit risks in the first place.

The Right Structure—Before It's Too Late

In yacht sales, it is essential to structure the process correctly from the very beginning, rather than trying to defend it afterward. Once money transfers, bank descriptions, and contractual language enter the system, the entire process is retrospectively reviewed based on documents and records.

For this reason, in foreign-flagged yacht sales, the following must be professionally structured from the very first step:

- Selection of the payment channel
- Contract language and documentation set
- Bank transfer description standards
- Proper management of the transaction's connection to Türkiye

Marine Group Yachting International

As Marine Group Yachting International, we structure foreign-flagged yacht sales from start to finish in a way that minimizes legal and financial risks, managing the documentation set and payment flow in accordance with the nature of the transaction. Our goal is not merely to complete the sale, but to safeguard our clients' trade and prevent financial risks that are difficult to remedy before they even arise.

Recently, we have received serious complaints from numerous yacht owners and investors who have faced high tax penalties in relation to foreign-flagged yacht sales. An examination of these cases shows

that almost all involved incorrectly structured sale processes, insufficient understanding of legal and tax dimensions, and transactions carried out without the involvement of a professional broker company.

The penalties encountered in practice are not coincidental. On the contrary, in foreign-flagged yacht sales, acting without knowledge of the legal, tax, and banking dimensions of the process has made punitive outcomes virtually inevitable. Transactions conducted with individuals who present themselves as brokers but lack official registration, professional competence, and international sales experience expose yacht owners to tax audits, retroactive assessments, and severe administrative sanctions.

The key point to emphasize here is this:

The problem is not the yacht's flag—it is how the sale is conducted. Incorrect bank usage, flawed contractual language, incomplete or inconsistent documentation, and managing the process in violation of regulations can transform even a foreign-flagged yacht sale into a transaction with serious tax consequences in Türkiye.
For this reason, the safest course for yacht owners and investors is to work with broker companies that are officially registered, professional, corporate, and equipped with strong legal and tax expertise. Otherwise, transactions that may appear "easy" in the short term can lead to far heavier costs in the medium and long term.
In foreign-flagged yacht sales, mistakes cannot be remedied afterward; a sound structure can only be established through professional broker management at the very beginning of the process.
Let us remember: secure trade is only possible with the right knowledge and the right structure...

Illustration: Digital / AI Generated

Marina Management and Marine Operational Processes

From Berthing to a Management Model: The Anatomy of a Marina

Modern marina management is not merely about areas where boats are berthed; it represents multidisciplinary management structures in which marine and landside operations are planned and managed in an integrated manner. Extending from safety and infrastructure to customer satisfaction and financial processes, this structure determines a marina's sustainable success.

Uğur DÜZGÜN
Marina Manager, Viaport (Tuzla)

Marina management is a multidisciplinary field aimed at ensuring that maritime activities are carried out safely, orderly, and sustainably. Modern marina operations go beyond the simple berthing of vessels; they reflect a holistic approach encompassing the integrated management of marine and landside operations, the continuity of technical infrastructure, safety, and customer satisfaction.

Service Structure and Value Chain in Marina Management

The core activity of marinas is service provision. These services can be classified as basic services (in-water berthing, haul-out and launch operations, dry storage), facilitating services (electricity, water, fuel, maintenance, and repair), and supporting services (social areas, cafés and restaurants, and commercial units). This structure transforms marinas from purely technical berthing facilities into living spaces with high social and economic value.

Organizational Structure and the Operational Role of Departments

Although there is no single standardized organizational structure in marina operations, the organizational setup is shaped by the marina's capacity, service diversity, and operational intensity. In general, marina management consists of executive management, front office, mooring/deckhand teams, boatyard and haul-out teams, the technical department, security, accounting and finance, and commercial sales and marketing units. Each department plays a critical role in ensuring that operations are carried out safely, systematically, and without interruption.

Planning and Management of Marine Operational Processes

At the center of this structure, the Marine Operations Process represents one of the most critical core processes in marina management. The process begins with reservation and registration procedures and continues with the safe maneuvering and berthing of vessels, haul-out and launch operations, dry storage activities, technician access control, billing, shift planning, and field inspections. All operations are managed through both daily or short-term and annual or seasonal (long-term) planning approaches.

Time, Cost, and Quality Advantage

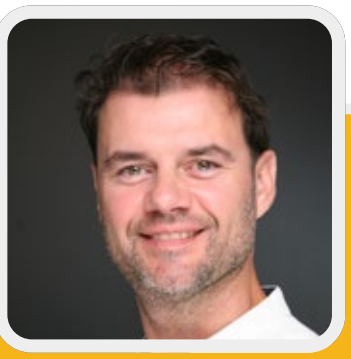
The disciplined, predictable, and coordinated execution of marine operations provides significant time, cost, and quality advantages for both vessel owners and technical teams. Mooring teams are responsible for safe berthing and maneuvering; haul-out teams for lifting and launching vessels; the technical department for infrastructure, energy, environmental, and waste management; and security units for ensuring the 24/7 safety of the marina and boatyard areas. While the accounting and finance department manages billing, collections, and budgeting processes, commercial sales and marketing units oversee customer relations and the management of commercial areas.

In conclusion, marina management is a complex structure based on planning, coordination, control, and continuous improvement, where multiple processes are managed simultaneously and in an integrated manner. Strong marina management and effective marine operations ensure long-term success and sustainability by delivering operational efficiency and customer satisfaction together.

The Unseen Side of Yacht Ownership

The Final Check Before Pleasure: Yacht Survey

Yacht ownership carries significant risk as well as prestige. A professional pre-purchase yacht survey is the most critical safeguard that prevents a dream of enjoying the sea from turning into an expensive nightmare.



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A yacht is the most enjoyable and prestigious investment a person can make with their money, yet it is also one that can generate the most problems and secondary expenses. The often-quoted phrase in the international yachting world —"the two happiest days of a yacht owner's life are the day they buy the yacht and the day they sell it"— is in fact a concise and almost charming summary of the issue. In the process of purchasing a yacht, many factors such as the vessel's suitability for its intended purpose, its flag, financial and legal background, accident and damage history, and current physical condition have the potential to become major concerns for the new owner. Addressing all these issues meticulously and ensuring that the yacht provides its buyer with nothing but "pleasure" is a team effort. The technical aspect of this process—namely determining the vessel's current physical condition—is the field of expertise of the author of this article: Yacht Survey.

What a Yacht Survey Is (and Is Not)

Yacht survey is a process that can be divided into various subcategories depending on legal obligations or requirements. Within the scope of this article, we will focus solely on the context of yacht purchase and sale, specifically the pre-purchase survey.

Within the narrowed framework of a purchase transaction, a yacht survey is a consultancy service obtained by a buyer who does not wish to rely solely on their own knowledge and experience when conducting a detailed inspection of the product they intend to purchase, and instead seeks the expertise of a professional who has carried out more comprehensive studies and gained experience in this field.

A basic pre-purchase yacht survey does not provide any guarantee regarding the yacht's suitability for a specific purpose or sea area, its compliance with the flag regulations of any state, its buoyancy or stability, or its conformity with any particular standard; it merely presents the yacht's current technical condition within the limits of the surveyor's professional competence. In this respect, the surveyor's past experience, education, and especially their membership in international surveying organizations should be taken into consideration. For this reason, the perspective on surveying and the resulting product (the report) differ significantly between a surveyor who is well-trained, continuously developing, and follows international regulations, and a person who is merely "generally knowledgeable."

How Is a Yacht Survey Conducted?

Once a decision has been made to purchase a yacht, a surveyor is appointed by the buyer (ideally through a contract). Conducting this process under a contract allows the buyer to specify "which particular issues they want answers to," while also giving the surveyor the freedom to set additional fees for additional requests. The inspection process is coordinated with the seller by the buyer or, on their behalf, by the surveyor, within the framework defined in the contract. This process includes the yacht's inspection ashore, hauling the vessel out for this purpose, sea trials and operational tests.

The yacht surveyor inspects the hull; hull fittings (rudder, shaft, propeller, sea inlets/discharges, exhaust); deck; deck fittings (cleats, stanchions, pulpits/pushpits, mooring lines, etc.); living spaces (saloon, cabins, galley, WC/bathroom); sails and masts; as well as the vessel's documentation. The operation of the engine(s), electrical, water, and fuel systems, along with electrical/electronic equipment, is also checked. Depending on the size of the vessel, inspections may take between 1 and 7 days. After the inspections are completed, the yacht surveyor holds a meeting with the buyer and the seller to communicate the main findings. The surveyor's primary product—the report—is prepared following this stage, typically requiring 1–2 business days of work. The report must include the yacht's principal dimensional data, the Hull Identification Number ((the vessel's unique identification number), and the serial numbers of the engine(s) and generator(s). Beyond this, a high-quality yacht survey also contains critical information regarding the vessel's history, potential future risk areas, and recommended solutions.

How Do We Find a Yacht Surveyor?

International surveying organizations to which yacht surveyors are affiliated are the most important resources in this regard. Organizations such as the International Institute of Marine Surveying (IIMS), the Society of Consulting Marine Engineers and Ship Surveyors (SCMS), and the American Boat and Yacht Council (ABYC) rigorously assess and carefully select candidates who wish to become members. As a result, surveyors listed by these organizations can reasonably be expected to be "reliable professionals who perform their work properly." The author of these lines is a member of both IIMS and SCMS and holds a Yacht Survey Diploma from IIMS. Representing the British school, IIMS and SCMS, and representing the American school, ABYC, publish lists of member surveyors on their websites, through which pricing and availability information can be requested.

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