



Charting Sustainable Seas Ecochlor's Eco-Friendly Solutions and Maritime Innovation

Responses from Andrew Marshall, Ecochlor CEO



To begin with, could you give us a brief overview of Ecochlor and its mission within the marine industry?

Certainly! Ecochlor has been protecting the marine environment for over two decades, initially by introducing a superior ballast water treatment technology and more recently by delving into other “green” maritime solutions. At its core, our mission is based on a commitment to preserve the world’s waterways through innovative and effective energy-efficient technologies.

Collaboration is key to our vision. By partnering with like-minded technology providers, we’re able to optimize maritime operations for shipowners in an eco-friendly manner. This shared effort goes beyond just adhering to industry regulations—it’s about actively contributing to the industry’s shift towards decarbonization.

To what end you might ask? By bundling energy-efficient technologies, we’re supporting shipowners in their pursuit of decarbonization objectives, contributing both to the wellbeing of marine environments and the viability of the maritime industry.

In your opinion, what constitutes a state-of-the-art ballast

water management system today?

To me, what defines a true, state-of-the-art BWMS is its technological efficacy, ease of operation and adaptability to environmental variables that are all supported by unwavering reliability. Additionally, energy efficiency is an indispensable feature in today’s market. It is very important that BWMSs operate within a minimal carbon footprint to align with the new decarbonization goals.

I also believe that the investment of a high-quality system is justified not only by the operational benefits but in the peace of mind it offers. Although cost considerations are inevitable, the value of reliability and compliance both now and with any future regulations cannot be underestimated.

How does Ecochlor differentiate its ballast water management solutions from competitors in the market?

We set ourselves apart from other Makers as the only one to use chlorine dioxide (ClO₂) for treating ballast water — a method used in the purification of drinking water for over 80 years. This approach differs fundamentally from the UV treatment or Electrochlorination alternatives offered by most BWMS companies.

Not only is the ClO₂ treatment method highly effective against aquatic invasive species, but its efficacy remains consistent across a wide range of water conditions, i.e. salinity turbidity and temperature. It does not need retreatment or neutralization upon discharge. As a result, it allows for gravity ballast and gravity deballast operations — something not often seen in other technologies.

A key element of Ecochlor’s system is its very low power consumption, making it an ideal choice for shipowners prioritizing energy efficiency alongside the new MARPOL VI compliance goals.

Beyond mere compliance, Ecochlor delivers a system that is extremely easy for crews to operate and is supported by an extensive global service network.

From your perspective, what are some of the biggest misconceptions about ballast water management and decarbonization in the shipping sector?

First off, one big misconception about ballast water management and decarbonization is that they run on separate tracks. The reality is that these issues are both intertwined; a solution for one can influence the other in a significant way and have a positive impact on the other. For example, utilizing an energy-efficient BWMS can reduce a ship’s carbon emissions.

Cost is another area hidden of misconception. The initial expense for decarbonizing ships or retrofitting a BWMS does pose a significant investment. However, this fails to appreciate the long-term savings



or efficiencies gained that, over a vessel's lifetime, can often outweigh the initial expenses.

Some people in the industry also believe that taking small actions toward lowering emissions are too minor to make a real difference. This could not be further from the truth! With the pressing climate challenges any steps — like route or weather optimization, slow steaming, or investing in an energy efficient BWMS or new technology — when combined as one can have a very large impact on a vessel's operation and meet or even exceed the IMO's 2030 emission reduction goals.

What is the most significant challenge today in ballast water management, and how is Ecochlor addressing these challenges?

I think that one of the biggest challenges right now facing shipowners is the realization that their initial choice for a BWMS was not the best one for their vessel. There are many reasons for that, the system might not be performing adequately or the BWMS manufacturer has ceased operations and are not providing necessary equipment servicing. Additionally, owners are finding out that many systems are just too complex for the crew to operate correctly and, therefore, hold a very real risk of non-compliance.

Whilst some shipowners have chosen to endure these less-than-ideal circumstances, this mindset can introduce long-term complications with their BWMS compliance. This is especially true in the United States where there is no Experience Building Phase and we are already starting to see a significant rise in financial penalties that failed PSC inspection.

Instead, shipowners should be looking at this problem proactively. Reassessment and investment in an upgraded, energy-efficient BWMS, such as our EcoOne® filterless system, allows shipowners to not only comply with environmental regulations but to simplify operations for crew members and at the same time improve the overall energy efficiency of their ship, thus, lowering their carbon footprint.

Could you share a case study that highlights a recent BWMS replacement with Ecochlor's technologies?

We recently completed a project on an ATB that required the replacement retrofit of an installed UV BWMS. Its frequent operations in shallow and muddy water conditions presented technical challenges for their existing system.

We addressed these challenges by installing our EcoOne® hybrid BWMS, which offers the option of automatically disengaging the filter when its use is not required, or reengaging the filter when the water condition changes. This feature ensured that the system could adapt to the ship's trade route with varying water types without compromising performance.

Additionally, given the crew's large number of responsibilities at port, along with limited expertise in the operation of heavy equipment, it was important that the system was easy to use along with reduced demands in running it.

Would you mind explaining the significance of MARPOL VI and the new CII ratings for our audience? How Ecochlor is helping shipping companies comply with its regulations?

The IMO MARPOL VI objectives, together with the newly introduced Carbon Intensity Indicator (CII) ratings, indicate a significant shift in the maritime industry toward more stringent environmental regulations, propelling shipping companies to employ cleaner operating practices. Whilst aiming to reduce carbon emissions from ships, these regulatory measures will require an investment in greener technologies, such as operational adjustments for energy efficiency and the potential of redesign. Shipping companies must adapt to these standards or face penalties, increased operational costs and competitive disadvantages.

Ecochlor is playing an instrumental role in assisting owners to meet these challenges through its portfolio of energy-efficient technologies. Our trio of products have the potential to cut emissions by over 40%, "future-proofing" our client's ships for their decarbonization targets set for 2030.

By incorporating cutting-edge solutions like our EcoOne® filterless BWMS, coupled with Armada Technologies' passive air lubrication system (PALS) and Sinotech's carbon capture and storage system (CCS) it will have the dual effect of helping shipowners reduce their environmental footprint while concurrently enhancing their ship's operational efficiency.

What are the biggest challenges your clients face in achieving compliance with decarbonization targets?

Our clients face many obstacles when it comes to meeting their emission reduction objectives. Unfortunately, the root of the problem lies in the fact that most alternative fuels aren't as readily available as one would hope. This is a key concern because without a diverse supply of these cleaner fuels, meeting regulatory benchmarks will be all that more challenging.

On the other hand, there's quite a lot of buzz around many of the emerging energy-efficient technologies. Solutions, such as our 2nd generation PALS and the latest Sinotech CCS installations, are showing immense potential to owners. As representatives of these technologies, we are well-versed in how these solutions can help shipowners strike that ever important balance between fulfilling their environmental responsibilities in a way that won't compromise their business success.

Finally, can you tell us about any upcoming projects or partnerships that Ecochlor is excited about in the context of sustainable maritime solutions?

I'm really excited about what the future looks like for Ecochlor! We're currently in the middle of finalizing what promises to be a game-changing enterprise that will increase our focus on bringing sustainable maritime solutions even further. Whilst I can't share all the details just yet, you can expect an alliance that brings together Ecochlor's innovative green technology with a true leader in the environmental maritime industry. ■