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"Gaming" Ballast Water Treatment Markets

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During September, 2010 two London-based meetings will address ways to resolve global ballast water (BW) problems. One, a well-publicized industry conference, will focus on emerging global markets for ballast water treatment (BWT) systems.[1] The other, a less publicized meeting at the International Maritime Organization (IMO), will focus on intergovernmental strategies for implementing and enforcing IMO ballast water regulations.[2] Although different in focus, the two meetings could hardly be more interrelated. The emergence of markets for BWT systems will depend on when and how BW regulations are implemented and enforced. Conversely, the willingness and ability of IMO member countries to implement and enforce BW regulations will, out of necessity, depend on whether BWT markets evolve with enough supply capacity to allow widespread compliance.

The topics of the two meetings are also intertwined because in regulation-driven markets buyers are only as quality-conscious as regulators require them to be. Whether the IMO sets weak or strict standards for determining compliance, in other words, will have an enormous effect on supply and demand and on who wins and loses in BWT markets. If complying with BW regulations merely requires having a "certified" BWT system on board, for example, the lowest cost "certified" BWT system will dominate the market, perhaps to the exclusion of higher cost and more effective and reliable systems. If compliance requires installing and properly maintaining and using a certified BWT system with the capacity to treat BW during all of a ship's ballasting operations, and if BW discharge standards are enforced using direct or indirect treatment performance measures, on the other hand, providers of higher quality, more reliable, and more appropriately engineered BWT systems and global maintenance and support services will have markets and be able to survive.

Of course, the cost of any BWT system will always need to compete fairly directly with the cost of not complying, which depends on the likelihood of violations being detected and prosecuted and whether penalties for violations are

[1] http://www.rivieramm.com/events/Ballast-Water-Treatment-Technology-Conference-29/Event-Home-395

[2] http://www.imo.org/includes/blastDataOnly.asp/data_id%3D28894/1.pdf

certain and meaningful. This means the emergence of BWT markets will be affected by IMO and member-nation decisions about enforcing BW regulations and dealing with detected violators.

However, other less obvious forces are just taking shape that will strongly influence the future of both BW regulations and BWT markets. These forces involve the "gaming" strategies that various interest groups can be expected to use to influence the implementation of BW regulations and, perhaps more importantly, the effectiveness of countervailing strategies that regulators will use to prevent gaming behavior from weakening BW regulations and/or subverting BWT markets in ways that will make it impossible for BW regulations to succeed.

A great deal of economic research, including some that won Nobel awards in several recent years, shows how regulated industries routinely attempt to influence regulatory processes in order to avoid, delay, or reduce compliance costs. This is now expected industry behavior whenever new regulations are being considered. In the case of BW regulations the incentives and opportunities for significant “gaming” over the next few years are enormous because economic costs to global shipping interests are clear and present, while environmental gains are vague and distant. BWT technologies, even "certified" ones, can be branded as being experimental, global supply chains to manufacture, install, maintain and support on-board BWT systems barely exist, and so on. These conditions not only make gaming behavior highly likely, they will also make it difficult for BW regulators to distinguish between genuine and valid industry concerns about the practicability, enforceability, and costs of proposed BW regulations and industry gaming strategies aimed at avoiding, reducing, or delaying compliance costs.

Over the past few months, for example, some shipping industry representatives have recommended that implementation of BW regulations should be delayed until BW discharge standards that are 1000 times more stringent than proposed IMO standards are achievable. Is this a serious suggestion or a delaying tactic? Other shipping interests have installed “certified” BWT systems on ships that do not even come close to having the capacity to treat the volume of BW typically discharged by those ships. Are these "early adopters" merely attempting to test these new technologies or improve their "green credentials," or are they attempting to establish low quality standards for compliance or challenge the BWT certification system? BW regulators, many of whom have not yet been hired, will need to track many of these kinds of actions and respond effectively if BW regulations and BWT markets are to succeed.

My research team at the Maritime Environmental Resource Center estimated the cost of purchasing and installing BWT systems for various types and sizes of ships in the relevant global fleet. Based on that analysis, we estimated the market for BWT systems, both equipment and installation, between 2010 and 2016 to be approximately US $43 billion to $64 billion. This is consistent with recent estimates by shipping industry consultants that the

global markets for BWT equipment alone, over the next ten years, will be worth about $34 billion.[3] Our estimate is that the market through 2012 will be small and driven predominantly by new builds; and will then increase and spike during 2012-2016 as existing ships are retrofitted to meet the IMO compliance schedule before dropping off significantly once the existing fleet is in compliance and the annual market involves only new builds. However, there are three important caveats to our predictions about the size and timing of BWT markets. They assume that BWT markets will evolve over the next year with the supply capacity to allow widespread compliance; there will be market demand based on full compliance; and the IMO Convention will be ratified soon with no significant extensions in implementation that will delay widespread compliance and inhibit the development of BWT markets.

Gaming behavior always makes the evolution of regulation-driven markets slower, more erratic, and less predictable than conventional demand-driven market analysis can forecast. As a result, it should probably be assumed that the assumptions listed above will turn out to be wrong. In fact, since we are just entering the phase in the evolution of BW regulations where they may actually impose costs on industry, we are also just entering the period where gaming behavior is likely to be most prevalent. This means that our current market predictions based on assumptions of on-time implementation, adequate equipment and installation capacity, and full compliance may be wildly inaccurate.

Predicting the future of BWT markets over the coming months and years will be difficult and will require watching three sets of leading indicators that will affect both supply and demand: indicators of gaming behavior; indicators that BW regulators, many of whom have not been hired yet, understand their critical roles in preventing gaming behavior from threatening the success of BW regulations and the effectiveness of BWT markets; and, most importantly, indicators that these regulators have the political support to play their roles effectively.

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[3] http://www.waterworld.com/index/display/article-display/2962768158/articles/water-wastewater-international/volume-25/issue-1/regulars/creative-finance/Ballast-Water-Treatment-Market-Remains-Buoyant.html