

An Assessment of the Current Status of North American Industry's Commitment to Green Shipping

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Abstract: The Greenship movement has been underway for several years and is still gaining momentum in Scandinavia, Europe and Asia, yet it is just beginning to take hold in North America. There have been efforts to encourage industry participation in promoting greener shipping which have focused primarily on shipowners, seaways, terminals and ports. To this end, Green Marine Management Corp. was formed to promote and facilitate environmentally friendly shipping activities and policies in Canada and the United States. The objective of this paper is to detail environmentally friendly shipping policies and programs instituted by the Green Marine participants in Canada and the United States.

This paper will first give a short history of Green-Marine, focusing first on its goals and objectives and then on the membership of the program and membership growth. Green Marine uses a series of performance indicators developed from the goals and objectives which are used by the participant companies in a self-evaluation. These self-evaluations with respect to the Green Marine objectives are externally audited on a bi-annual basis. The results of these self-evaluations are compiled and analyzed and each of the 51 industry participants in North America are then interviewed. The interview questions are designed to discern the impact on the respective industries of following the Green Marine philosophy, and to discern what programs are currently in place or planned to be implemented to improve their self-evaluation scores. A synopsis of these interviews is presented.

Keyword: Green Shipping, Industry, North America, Green Marine

1. INTRODUCTION

Green Marine is a joint Canada-United States initiative in which voluntary participants strive to improve their environmental performance beyond the level of minimum regulatory compliance. The overall goal of the initiative is to implement a marine industry environmental program throughout North America.

1.1 Program Background

Green Marine was officially founded in 2008 by the major industry associations in both Canada and the US. Although the program's original focus was on the Great Lakes and St. Lawrence corridor, in the short time span since its inception it has evolved into a bi-national program[1] covering North America in its entirety.

The program started with a minimal staff mandated to coordinate and facilitate environmentally friendly practices in the marine industry. The concept was that Green Marine would be an umbrella organization which would bring together environmentally conscious industry partners so that they could participate in and demonstrate environmentally responsible practices in the marine sector. Green Marine's goals are to:

- Strengthen environmental performance through a process of continuous improvement;
- Build strong relations with marine waterway stakeholders; and
- Heighten understanding of the industry's activities and environmental benefits.

The author has reviewed public self-assessment results from the member participants of Green Marine and also interviewed several members of Green Marine in an effort to gauge their level of commitment and to be able to cite some examples of what these members do to strive beyond the limits of simple regulatory compliance. This paper will present some results of the Green-Marine group and will also present some of the information obtained from the interviews conducted with individual marine industry members. Green Marine was established to focus on six original priorities:

- Aquatic Invasive Species;
- Pollutant Air Emission;
- Green-house Gases;
- Cargo Residues;
- Oily Water; and
- Conflicts of Use in Ports and Terminals

In order for members to be able to demonstrate responsible practices in these priority areas, Green Marine established a set of criteria that could be used to determine a participants level of performance in each of the applicable categories. Performance indicators are reassessed annually to ensure that the latest government regulations are taken into consideration and to also ensure that new technologies can also be incorporated into higher performance levels. The environmental performance level as well as the applicable criteria are given in Table 1.

Table 1. Green Marine Performance Levels and Criteria

Green Marine Environmental Performance Levels	
Level	Criteria
1	Compliance with applicable regulations and adherence to Green Marine guiding principles
2	Systematic use of a specific number of best practices
3	Integration of best practices into an adopted management plan and specific understanding of the issue's impact
4	Introduction of new technologies
5	Excellence and leadership

In 2009 there were 45 industry participants in the program including ship owners and operators, ports, terminal, seaway authorities, stevedores and other enterprises from both Canada and the United States. Participants in Green Marine perform an annual self-assessment, evaluating their respective practices in each of the applicable priority areas using the above criteria. At that time, the average rating was a level two based on the above criteria. The average rating of industry participants hadn't changed from the launch of Green Marine to 2009, but that is attested to an ambitious set of criteria. The average rating did increase from 2.0 to 2.3 in 2010, however. How an industry participant rates based on performance level criteria is measured based on a review of verifiable documentation within the company.

By 2010 all of the Green Marine participants had released individual results of their environmental performance evaluations and the ship-owners had their results verified by an independent auditor. Port and terminal operations were planning to have their evaluations audited externally over the next year. By 2010, the total number of members reached 100, including all participants, partners and supporters.

2. SELF EVALUATION PROCEDURE

There are two sets of self evaluation guidelines being used by Green Marine participants to rate their participation level in the program. The first set of guidelines is specific to ship-owners [2] and describes in detail how a company can address the following priority environmental issues:

- Aquatic Invasive Species (AIS)
- Pollutant Air Emissions: Air Emissions (SO_x), Air Emissions (NO_x)
- Greenhouse Gases (GHG)
- Cargo Residues (CR) (Ship-owners Operating In The Great Lakes And The St Lawrence Only)
- Oily Waters (OW) (Ship-owners Only)
- Conflicts Of Use (CU) (Ports And Terminals Only)

The second set of guidelines is designed for use by Ports and Terminals [3] and is structured to tangibly and measurably strengthen their environmental performance with respect to the priority environmental issues of:

- Greenhouse Gases (GHG)
- Dry Bulk Handling And Storage (CR) (Dry Bulk Terminals Only)
- Conflicts Of Use (CU) (Ports And Terminals Only)
- Environmental Leadership (EL) (Port Authorities And St. Lawrence Seaway Only)

In both cases the program is structured to permit participants to self-evaluate their environmental performance. The process was structured to be as transparent and motivational as possible:

"Each year, participants evaluate their environmental performance with the help of a self-evaluation guide. During the first year, companies receive a logo indicating that their certification is "in progress." Starting in their second year, performance results must be verified by an independent third party, and receive a "certified" logo. The results of the environmental performance of all companies involved are published in Green Marine's

annual progress report, enabling the participants to publicize their involvement in the Green Marine initiative." [4]

The evaluation is performed by identifying written documentation that can objectively and verifiably prove the level of performance by each participant for each of the objectives. In this way, the process was initially structured to support an external auditing process to lend additional credence to the process.

It was determined that auditing of the members self-assessment results would occur biannually, and the process was officially started in 2010 with auditing of ship-owners 2009 self-assessment reports taking place. Ship-owner results were verified by an independent assessor from Lloyd's Register Quality Assurance (LRQA). Members of Green Marine who are listed as Ports and Terminals will have their 2010 performance results assessed in 2011. Future audits for all participants will take place every second year. [5]

2.1 Self Evaluation Results

Self evaluations are made public by the Green Marine organization to promote transparency of the assessment procedure as well as to let members gauge how their assessments compare to those of their peers. Recall that each of the groups have a distinct set of evaluation criteria that they gauge themselves against. A good indicator of the success of the overall program is the measure of average levels attained over all of the self-assessment criteria.

The results in Figure 1 below clearly indicate an improvement in the self assessment results from 2008 to 2009. This table shows the average overall score for each of the shipowner and ports and terminal groups as well as a global average score for all groups. A rationalization for this result becomes evident from the interview results presented in section 3. Note that the scores for self assessment are from one as a minimum to a maximum value of five.

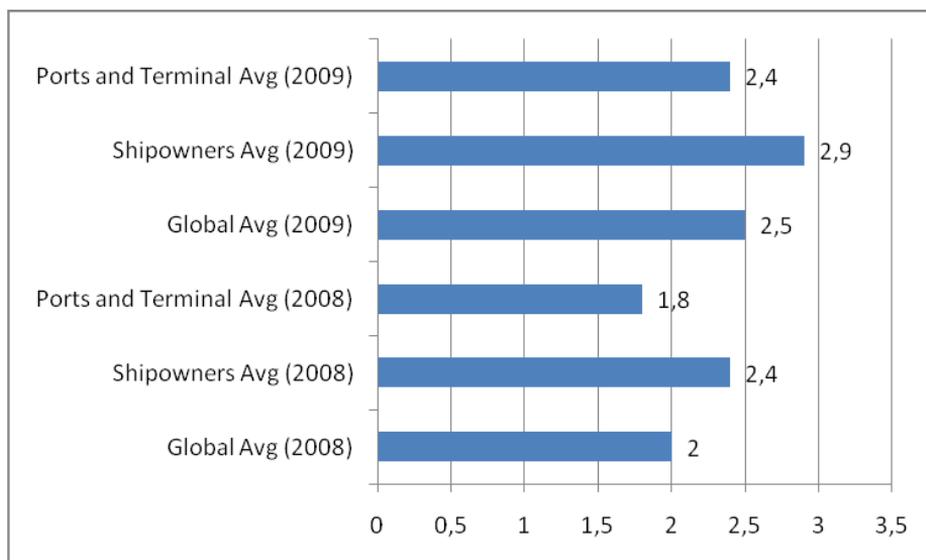


Figure 1. Average Levels Attained by All Green Marine Participants for 2008-2009

A strong indicator of how performance of each of the industry groups of Green Marine can also be inferred. Specific results of average levels attained (in each of the assessment categories) by ship-owners from 2008 to 2009 indicate an overall improvement in all self-assessment areas:

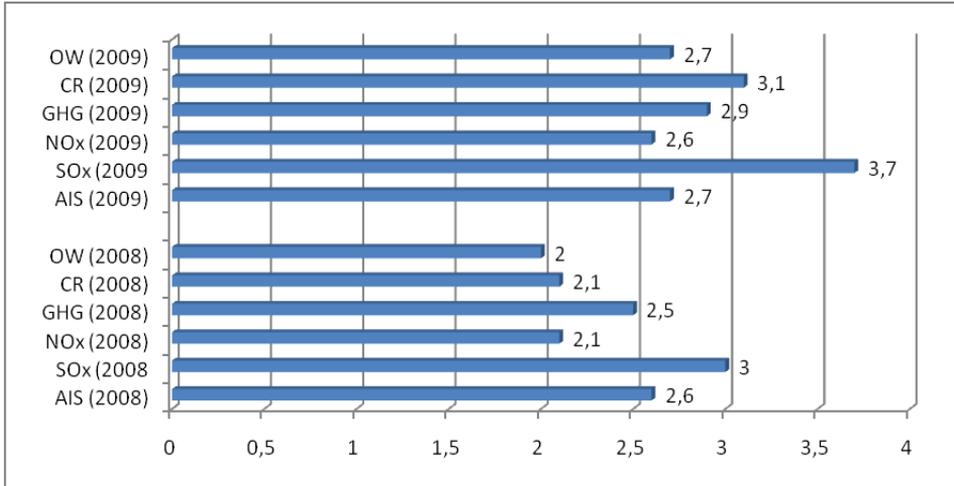


Figure 2. Average Levels Attained by Ship-owners Participating in the Green Marine Environmental Program for 2008-2009

Similar results can be observed for the Ports and Terminal industry participants, where improvements in self-assessment scores were observed in every area that was assessed in each of the two years:

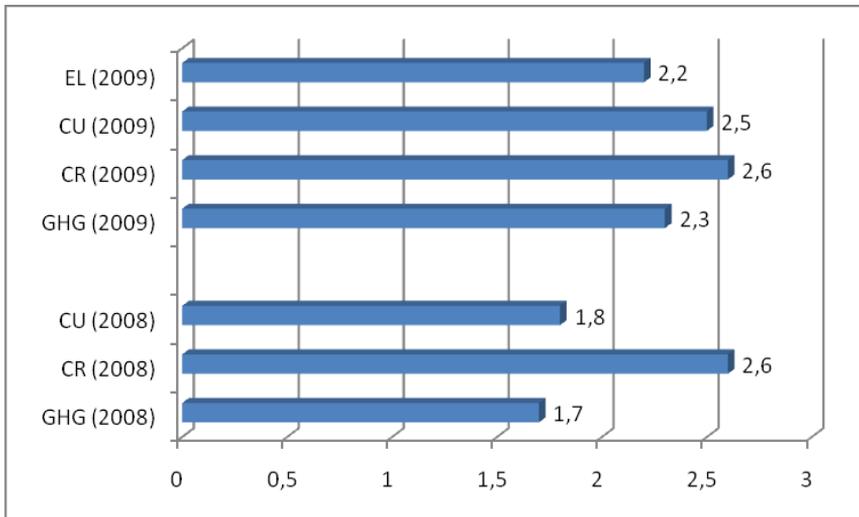


Figure 3. Average Levels Attained by Ports and Terminals Participating in the Green Marine Environmental Program for 2008-2009

Note that Environmental Leadership was only assessed in 2009.

3. DISCUSSIONS WITH INDIVIDUAL PARTICIPANTS

Individual participants in Green Marine were contacted to discuss their personal involvement and commitment to the program. As a guideline, the following questions were asked in order:

- When did you enter the Green Marine program?
- Why did your company enter the Green Marine program?
- What is the effect of the Green Marine program on your company?
- Is there a cost associated with participation in the GM program?
- Do you feel motivated to excel in your self evaluation? Why?
- Do you feel a sense of community within the Green Marine organization?

In addition, the participants being interviewed were encouraged to provide any other anecdotal information which might demonstrate their organizations commitment environmentally friendly shipping and the precepts of the Green Marine philosophy.

3.1 *Fednav*

The first industry participant to be interviewed was Fednav Group. Fednav Limited is a privately owned company and is Canada's largest ocean-going, dry-bulk ship owning and chartering group. [6] The interview was conducted with Mr. Marc Gagnon.

When asked when Fednav entered the Green Marine program, Mr. Gagnon informed the author that they (Fednav) were one of the founding participants of the program, and his manager is the current co-chair of the program. Mr. Gagnon has been with Fednav for 3 years, and prior to that, he was involved in managing Green Marine. In that regard, Mr. Gagnon and Fednav were involved with the initial development of the Green Marine program.

Initially, the Green Marine program was very regional. Mr. Pathy (Fednav's CEO) first met with other CEOs and it was agreed that this kind of effort had to be made. It was collectively agreed that they wanted to show the public, environmental groups and industry that they are committed to working to help the environment.

This also answered the second question as to why their company entered the Green Marine program.

When asked how their efforts in the Green Marine list of priorities now compares to what they were doing prior to joining Green Marine, Mr. Gagnon stated that the Green Marine Program is having a significant influence on how Fednav does its business.

Mr. Gagnon stated that at the end of 2008, they were the first marine entity in Canada to make their environmental policy available online. They now have an environmental policy that is public knowledge. This is not only due to their membership in Green Marine. Green Marine encouraged them to do this work in house, but they were also driven internally to establish these policies. The policy simply stated what Fednav was already doing.

A good example of this is exchanging ballast water everywhere they sail in the world...and they are telling everyone that they are doing that. The policy states the actions they are already doing. Mr. Gagnon stated that if they commit to new actions then they will establish new standards to which they will hold themselves.[6]

As to the effect of Green Marine on their company, Fednav believes that there is a very good relationship between participants and the Green Marine organization. He stated that they meet often and that the companies have the technical knowledge which they feed into Green Marine, and Green Marine is a mechanism for sharing this knowledge with

the other participants. The members have a say in how Green Marine operates and Fednav believes that this ensures that Green Marine will continue to deal with what they feel are the important issues.

One of the biggest impacts of Green Marine on Fednav is the inventory of exhaust emissions. Prior to Green Marine, there was no inventory taken of exhaust emissions, but now it is taken regularly. This effort is a lot of work for participant members but they now know the volume of greenhouse gasses emitted on every voyage. Mr. Gagnon strongly believes that to control your environmental footprint, you need to know what your emissions are.

As to the costs of participation, Mr. Gagnon has observed two direct monetary costs. The first is the cost of participation, which now includes an audit cost, and the second is the cost of hiring staff and dedicating existing staff to maintaining the program. When asked how this compared to the benefits of the program, Mr. Gagnon simply stated that environmental impact is very much more important than the monetary cost.

When asked if Fednav feels motivation to excel in their self evaluation, Mr. Gagnon stated that there is no ego in a company, but there is satisfaction in what they do to protect the environment and they wish to maintain their reputation in this regard. Fednav wants to be the best and most environmentally responsible marine company, so they are driven to excel.

Mr. Gagnon is a believer in self regulation. He feels that when the industry is doing this themselves, the motivation is far stronger than if the regulation were externally imposed.

Mr. Gagnon stated:

"We are doing this because we feel it is the right thing to do...so the will to do it is strong."

When asked if Fednav feels a sense of community within the Green Marine organization, Mr. Gagnon said that this is a difficult question to answer on behalf of the company. Personally, Mr. Gagnon feels that the sense of community among participating executives is very strong. He stated that he has made contacts and even friends that meet regularly and it is extraordinary to see the (unexpected) strong feeling in other organizations that this (the Green Marine program) is the right thing to do.

3.2 Montreal Gateway Terminal Partnership

Mr. Wayne Smith of Montreal Gateway Terminal (MGT) Partnership was also contacted by the author and interviewed. As a prelude to the questions, Mr. Smith cited the fact that as of July 20, 2009, MGT was Certified ISO14001 (certification number EMS538384). To the present day MGT has gone through internal audits for maintenance by BSI as the companies certification body.

The first discussions and interest shown by Montreal Gateway Terminals Partnership in the Green Marine program was on October 9th, 2007 when they were introduced to the Environmental Policy of Green Marine. At that time they were in the starting phase of ISO14001 Certification so working with the voluntary initiative of Green Marine was subsequently a good working tool for their future ISO certification with BSI.

As to why their company entered the Green Marine program, Mr. Smith stated that a very positive exchange of information applicable to Green Marine had taken place in the months between October of 2007 and January of 2008 when they received access to use the Green Marine logo as a participant. They used this logo (non-certified logo) in most of their environmental communiqués. It was on January 8th, 2008 when they received the Green Marine logo instructions. In January of 2008, MGT opened their Green Marine

account for all related costs and expenses. This was a true sign of their commitment to Green Marine.

When asked how their efforts in the Green Marine list of priorities has changed since joining the program, Mr. Smith stated that MGT was already in the process of the aspect stages of ISO14001, so the transition was quite transparent although the requirements in Green Marine further enhanced an already densely populated list of aspects and impacts.

Mr. Smith stated that MGT's belief in the Green Marine initiative was so strong that they made it a part of the objectives for ISO14001 which in turn meant being audited by an external body (BSI) that had to review their commitment and accomplishments to Green Marine.

As to the effect of the Green Marine program on their company, Mr. Smith stated that Green Marine associates MGT with commercially viable companies willing to share procedures and policies in place that might create a better working environment (Environmental Sustainability) which bodes well with the Board, stakeholders and neighbours also associated with Green Marine.

When asked to comment on the cost compared to the benefit of participation, Mr. Smith stated that he had used the words in the previous response; Environmental Sustainability, which if used as a stand alone sentence says it all.

When asked about MGT's motivation to excel in their self-evaluation, Mr. Smith stated that he believes the record and participation on the part of MGT speaks for itself. He stated that they are always looking for ways to assist when it comes to technical committee meetings. In addition, the sharing process works two ways, so all parties benefit.

4. CONCLUSIONS

The Green Marine program is a powerful and worthwhile effort in North America which is spearheading the promotion of environmentally friendly shipping practices. Members provide full disclosure as to their environmentally friendly practices and policies and are encouraged to excel in those practices by virtue of their disclosure.

In addition, Green Marine is an opportunity for industry to share what they are doing to make their marine enterprises more environmentally friendly as well as the technology that may be applicable to other partners in the Green Marine organization.

Furthermore, Green Marine is fostering a culture among marine industries which is supportive and collectively caring for the environment and each other.

Discussions with participants in the Green Marine program as well as discussions with the executive director of the program, David Bolduc, have clearly demonstrated the strength of commitment of the administrators as well as the participant members of Green Marine. All participants consulted spoke of the strength of their commitment and their willingness to commit to the Green Marine program. Participants are proud of their efforts and are glad to have a forum to demonstrate what they are doing to be environmentally responsible, and they are prepared to help others in the group by sharing their protocols and technologies in an open way. Their commitment is further demonstrated by their willingness to be audited by an external auditing agency and to have the results of their self assessments made public.

Green Marine is an effort to step beyond government regulation and permit the industry to establish even more demanding self-regulation standards. These standards

are established because they are the right thing to do, and this is the right time to do it. The membership of Green Marine has swelled to over 100 shipping companies and ports and terminal agencies as well as other types of organizations including suppliers, shippers, government agencies, environmental groups, municipalities, and others.. David Bolduc has stated that many of the new entrants into the program have policies and standards in place which already exceed minimal requirements for entry, as these organizations participate in the self-evaluation and audit process, it will be interesting to see how standards and self regulation are influenced. At the top of their website the banner says it all...Green Marine is a Wave Worth Riding.

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