

Green Marine Environmental Program

2019



Performance
Indicators for
Terminals &
Shipyards

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1. GREENHOUSE GASES AND AIR POLLUTANTS

OBJECTIVE: Reduce greenhouse gas (GHG) and air pollutant emissions.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>2.1. Implement policies and communications that discourage idling of vehicles powered by Internal Combustion Engines. Include, at minimum, participant's own road, off-road, and unlicensed vehicles.</p> <p>2.2. Promote sustainable transportation practices by employees. <u>Examples:</u> Incentives for public transport and carpooling, reorganization of business travel, installation of bicycle racks, etc.</p> <p>2.3. Implement measures to reduce truck congestion and idling.</p>
LEVEL 3
<p>3.1. Complete an annual report on GHG emissions. <u>Note:</u> The report only refers to GHG emissions resulting directly from the participant's activities. <u>Note:</u> See Annex 1-A.</p>
LEVEL 4
<p>4.1. Complete a detailed inventory of GHGs and air pollutants emitted on the participant's entire area of jurisdiction within the last 5 years. Inventory should include key GHGs: CO₂, CH₄, and N₂O and criteria air pollutants, such as NO_x, SO_x, VOC, and PM. <u>Note:</u> Participants that are in nonattainment areas or that have potential "hotspots" should place a priority on an inventory of their relevant criteria air pollutants. Criteria air pollutants refer to those that are reported in Environment Canada's National Pollutant Release Inventory (NPRI) or U.S. EPA's National Emissions Inventory (NEI).</p> <p>4.2. Adopt a GHG performance plan for air emissions resulting directly from the participant's activities. In the plan, define reduction measures and establish reduction targets. <u>Note:</u> See Annex 1-B.</p>
LEVEL 5
<p>5.1. Publically disclose GHG and air pollutants reduction targets and timeframe. Demonstrate continual reduction of the participant's direct GHG emissions (in intensity), achieved by implementing the measures described in the performance plan for air emissions. <u>Note:</u> Each participant defines its own baselines for measuring continual improvement.</p>

2. SPILL PREVENTION

OBJECTIVE: Minimize spills and leakages of pollutants into the environment (water, land).

NOTE: The term 'location', as referred to for several criteria, may have a different meaning depending on land use and the type of operations taking place (e.g. terminal, dock, activity zone, risk area, etc.). Each participant uses the definition that corresponds to its site.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p><u>Implementation of at least 60% of the applicable criteria</u></p> <p>2.1. Perform vehicle and machinery fueling, lubrication and maintenance at a minimum distance of 30 m (100 ft) from the water and at a minimum distance of 15 m (50 ft) from a tributary (catch basin, ditch, etc.). Note: If these requirements cannot be met, alternative pollution prevention measures must be taken (watertight lids, rubber rugs, retention pans, etc.).</p> <p>2.2. Use retention pans under stationary devices and equipment that can potentially leak or which needs to be resupplied periodically (generating sets, compressors, etc.).</p> <p>2.3. Implement inspection and maintenance procedures for all devices and equipment that could potentially leak (tanks, generating sets, compressors, etc.).</p> <p>2.4. Regularly inspect near shore water and property to identify and immediately stop leaks from any source.</p> <p>2.5. Should there be any doubt about the environmental quality of runoff water collected in an observation shaft or excavation pit (colour, odour), such water is to be intercepted for sampling purposes or proper treatment.</p> <p>2.6. Have available at least one emergency spill kit on site for dealing with minor spills. Note: A minor spill is a spill that poses no or little threat to people and/or the environment and that can be cleaned up by using an emergency response kit.</p> <p>2.7. Train employees to respond to minor spills.</p> <p>2.8. As needed, clean ground surfaces to collect contaminants before they are washed away by storm water.</p> <p>2.9. Minimize discharge of wash water into the environment when washing vehicles and equipment.</p>
LEVEL 3
<p>3.1. Implement all applicable best practices of level 2.</p> <p>3.2. For each site participating in Green Marine, adopt a Water and Land Pollution Prevention plan. Note: A model is provided in Annex 2-A.</p> <p>3.3. Keep a record of all spills and accidental discharges of pollutants into the environment that occur on port property, and have a reporting procedure communicated to the port authority, if applicable.</p>
LEVEL 4
<p><u>For the majority of the company's participating terminals or locations:</u></p> <p>4.1. Implement a documented Preventive Inspection and Maintenance program for vehicles and equipment, pipes, containers and tanks which might release discharges into the environment (fuel, lubricants, etc.). Note: This program only applies to vehicles and equipment that are used exclusively for the participant's direct activities. Note: See Annex 2-B.</p> <p><u>Participants must also fulfill either criterion 4.2 or the following 4.3 to 4.6 criteria</u></p> <p>4.2. Develop and adopt a Storm Water Management plan. Note: Guidelines to be developed.</p> <p>OR</p> <p><u>In one or more of the company's participating terminals or locations:</u></p> <p>4.3. Collect and treat storm water via an appropriate storm water treatment device, process or procedure.</p> <p>4.4. Inspect and maintain installed or used devices, process or procedures on a regular basis.</p> <p>4.5. Sample and analyze treated storm water routinely to ensure proper functioning of treatment equipment and infrastructure.</p> <p>4.6. Use low toxicity/biodegradable lubricants for fixed hydraulic equipment located near the shore. Note: Refer to the U.S. Environmental Protection Agency (EPA)'s definition of Environmentally Acceptable Lubricants: biodegradable, minimally toxic and not bio-accumulative (p. 143 of Appendix A of the Vessel General Permit (VGP) for discharges incidental to the normal operation of vessels).</p>

LEVEL 5

In all of the company's participating terminals or locations:

5.1. Implement a documented Preventive Inspection and Maintenance program for vehicles and equipment, pipes, containers and tanks which might produce spills or discharges into the environment (fuel, lubricants, etc.).

Note: This program only applies to vehicles and equipment that are used exclusively for the participant's direct activities.

Note: See Annex 2-B.

In the majority of the company's participating terminals or locations:

5.2. Collect and treat storm water via an appropriate storm water treatment device, process or procedure.

5.3. Inspect and maintain installed or used devices, process or procedures on a regular basis.

5.4. Sample and analyze treated storm water routinely to ensure proper functioning of treatment equipment and infrastructure.

5.5. Use low toxicity/biodegradable lubricants for fixed hydraulic equipment located near the shore.

Note: Refer to the U.S. Environmental Protection Agency (EPA)'s definition of Environmentally Acceptable Lubricants: biodegradable, minimally toxic and not bio-accumulative (p. 143 of Appendix A of the Vessel General Permit (VGP) for discharges incidental to the normal operation of vessels).

5.6. Have secondary containment in place for all fixed and portable outdoor above ground storage tanks and containers (permanent and in transit) that are located within a distance of 30 m (100 ft) from the water and 15 m (50 ft) from any ditch, sewer system, underground stream, etc. This requirement applies to all hazardous products.

Note: Secondary containment includes any measure preventing a spill or a discharge from a primary storage tank or container from entering the environment. The chosen measure(s) and its/their capacity for secondary containment must be able to address a discharge resulting from the most typical failure mode. Acceptable measures include:

- Impervious dikes, berms or retaining walls;
- Curbing;
- Drainage system;
- Weirs, booms, floating barriers;
- Spill diversion or retention ponds;
- Drip pans or retention pans;
- Sumps or collection systems,
- Double-walled tanks;
- Sorbent material in sufficient quantity;
- Any other equipment, material and/or resources allowing to contain the spill or discharge.

5.7. Perform a spill response exercise on a regular basis (at least annually in case of a tabletop exercise, at least every two years for a simulated site specific drill, including the post-mortem of a spill incident).

3. DRY BULK HANDLING AND STORAGE

OBJECTIVE: Reduce cargo losses and dust generated during handling, transportation and storage of dry bulk.

NOTE: Only applicable to dry bulk terminals.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>2.1. Collect cargo residues on the ground as soon as possible using methods that minimize dust generation (e.g. water spraying, vacuum sweeping, etc.).</p> <p>2.2. Ensure that collected cargo residues are properly stored, recovered and/or disposed of.</p> <p>2.3. Take measures to prevent water contamination during loading and unloading operations (e.g. use canvas between ships and docks when unloading).</p> <p>2.4. For outdoor operations, reduce dust dispersion by using one or more of the following methods, but not limited to: spraying a light mist; using screens, air or water curtains and/or drapes; reducing conveyor belt height and speed; keeping outdoor dry bulk piles covered or protected by wind shields as much as possible when they are likely to blow away by the wind or to leach out on to the ground.</p> <p>2.5. Fit storm drains with screens, baskets, geo-textiles or other devices in order to filter suspended solids found in storm water runoff, and ensure that such devices are cleaned on a regular basis.</p> <p>2.6. Install different means to recover cargo losses under the conveyors.</p> <p>2.7. Regularly wash vehicles in dedicated areas to avoid dust dispersal on and off site.</p>
LEVEL 3
<p>3.1. Adopt a Water and Land Pollution Prevention plan at all of the company's participating terminals. <u>Note:</u> A model is provided in Annex 2-A.</p> <p>3.2. Produce an incident report and maintain records for each incident of abnormal dust or discharge accompanied by a detailed analysis of the causes and corrective measures implemented.</p>
LEVEL 4
<p><u>In the majority of the company's participating terminals:</u></p> <p>4.1. Implement a documented Inspection and Preventive Maintenance program targeting dry cargo handling equipment and dust suppression technologies. <u>Note:</u> See Annex 2-B.</p> <p>4.2. Adopt a procedure framing the management of loading and unloading operations in cases of abnormal dust emissions due to wind. <u>Note:</u> The participant must have in place a procedure or a policy that defines, for each type of cargo, the adverse weather conditions that affect loading and unloading operations, and preventive measures to be taken. Procedures must also include a record of incidents and must be communicated to and systematically applied by concerned staff.</p> <p>4.3. Conduct a detailed analysis of the loading, unloading and handling process to identify critical stages, situations or areas causing dust dispersal and establish a protocol for preventative measures.</p>

LEVEL 5

In all of the company's participating terminals:

5.1. Implement a documented Preventative Maintenance program targeting dry cargo handling equipment and dust suppression technologies.

Note: See Annex 2-B.

5.2. Adopt a procedure framing the management of loading and unloading operations in cases of abnormal dust emissions due to wind.

Note: The participant must have in place a procedure or a policy that defines, for each type of cargo, the adverse weather conditions that affect loading and unloading operations, and preventive measures to be taken.

5.3. Conduct a detailed analysis of the loading, unloading and handling process to identify critical stages, situations or areas causing dust dispersal and establish a protocol for preventative measures.

5.4. Use enclosed conveyors or chutes and telescoping arm loaders, operate in a closed circuit, or other similar equipment to limit dust generation and releases into the environment.

5.5. Use dust suppression, baghouse, screw conveyors, vacuum collecting equipment or other similar equipment in the handling of fine, granular or powdery material.

4. COMMUNITY IMPACTS

OBJECTIVE: Reduce the amount of noise, dust, odour and light to which people residing close to the participant's facilities are exposed.

NOTE:

- This indicator applies to all participants unless they provide reasonable arguments to be exempt (e.g. location in a very isolated place, no nearby community). However, the absence of complaints alone does not constitute a sufficient motive to be exempt of the application of the indicator.
- A criterion applies only if the participant's operations cause the nuisance to which the criterion is related. A nuisance is any factor that has a negative impact on the health or well-being of the people residing close to facilities.
- The activities covered by the community impacts indicator are limited to those related to commercial shipping and cruise only.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>Implementation of the majority of applicable criteria:</p> <p><u>External communications:</u></p> <p>2.1. Make available/post a telephone number of, or redirect calls to, the authority in charge of receiving complaints related to the participant's activities.</p> <p>2.2. Once a complaint has been made to the company, move swiftly in dispatching a responsible individual to the site and, to the extent possible, ensuring that corrective measures are taken.</p> <p><u>Noise:</u></p> <p>2.3. Impose speed limits on vehicles in sensitive zones.</p> <p>2.4. Adopt operational procedures or take measures limiting the use, or reducing the impact of warning signals, without compromising safety (e.g. use strobe light during night time operations, use lynx alarm, adapt the height or direction of the device, adjust the frequency of the signal, etc.)</p> <p>2.5. Take measures to reduce the noise emanating from rail operations at the terminal or the shipyard (such as rail lubrication, etc.).</p> <p>2.6. If technically possible, limit idling of vehicle, equipment and locomotives.</p> <p>2.7. Have a documented process (e.g. purchase policy) for selecting less noisy equipment when buying new equipment.</p> <p><u>Dust:</u></p> <p>2.8. Adopt measures to hold back dust on roads (e.g. watering of roads, wet brushing, paving, maintenance of pavement, etc.).</p> <p>2.9. Apply measures to improve the management of bulk cargo storage (e.g. covering cargo that is stored in piles, reducing the height of such piles, moving piles to areas that are less exposed to wind, etc.).</p> <p><u>Housekeeping:</u></p> <p>2.10. Implement cleaning procedures for wharfs, driveways and loading and unloading areas.</p> <p>2.11. Place marked trash and recycling containers at locations convenient to employees, visitors and truck operators.</p> <p>2.12. Cover trash collection areas and containers to avoid dispersion by wind and storm water.</p> <p><u>Traffic/congestion:</u></p> <p>2.13. Have a procedure on bus, truck or railway traffic management to avoid local congestion (e.g. signboard, traffic coordinator or checker).</p> <p><u>Light:</u></p> <p>2.14. Direct lights so they only illuminate the necessary zone.</p> <p>2.15. Switch off bothersome lighting at a specific time if there are no operations underway.</p>

LEVEL 3

3.1. Adopt a plan for managing community issues, which formally incorporates all applicable the best practices, set out in level 2. Such a plan is to include a procedure for handling complaints.

Note: See Annex 3-A.

3.2. Have a documented procedure for handling complaints.

3.3. Have in place a procedure to verify sound levels of operations on a regular basis (at least annually).

3.4. Have a procedure for evaluating environmental and social aspects of new projects, activities or types of operations including handling of new products, if there is uncertainty around the potential for environmental and social effects and where mitigation measures are not known to be effective and established.

Note: Not applicable to projects that are subject to an environmental assessment under existing regulation.

Note: See Annex 3-B.

3.5. Establish and implement a nuisance mitigation plan during works and/or operations.

LEVEL 4

Implementation of the **majority** of applicable criteria:

Noise:

4.1. Continuously sample noise and/or air emissions (dust and/or odours) in the problem areas (e.g. areas located close to residences, subject to frequent complaints or particularly exposed to wind, etc.) and have a data monitoring process in place.

4.2. Create screens against sound with the help of sound-reducing trees or walls if appropriate.

4.3. Install silencer (muffler), catalyts, timer or other device to reduce noise from noisy equipment or cover with sound insulating material.

Dust:

4.4. Implement mitigation measures (e.g. canvas, tarpaulins, curtains or other equivalent control barriers) during spray painting and blasting operations to prevent dispersal of dust and aerosol particles by the wind.

4.5. Collect and confine spent abrasives and debris (after blasting to dock-bottom/yard grounds) to avoid dispersion by wind and storm water (e.g. cover piles or use covered containers).

Light pollution:

4.6. Install fixtures that optimize lighting and reduce light pollution when replacing fixtures or during new projects.

4.7. Evaluate existing lighting plans and take effective measures to optimize lighting and reduce impacts.

Nuisance mitigation:

4.8. Install green corridors (e.g. dune system), vegetated or recreational areas (e.g. tree alley, parks) between operating site and residential area if appropriate.

4.9. Have a procedure or system in place that optimizes truck movements to manage congestion and mitigate other associated issues.

Community relations:

4.10. Be actively involved in local community organizations (e.g. watershed committee, local NGOs, etc.).

Note: Payment of a membership to a local organization is not sufficient to fulfill this requirement. The company must prove that it is actively involved (e.g. be a Board member, participate in committees on a regular basis, etc.).

4.11. Implement permanent communication channels (e.g. website, distribution of pamphlets, etc.) to inform the community, on a regular basis, on major projects and construction work, their impacts and mitigation measures taken.

4.12. Have a documented and communicated procedure to consult the community (e.g. public information session) before implementing new projects that can have an impact on the environment and/or the community.

Note: If new projects have been implemented, the participant must prove that the procedure has been followed.

LEVEL 5

5.1. Implement all applicable criteria listed in level 4.

Canadian liquid bulk terminals only:

5.2. Implement a system for collecting vapors arising from tanker loading operations.

5. ENVIRONMENTAL LEADERSHIP

OBJECTIVE: Encourage and recognize the implementation of original and exemplary environmental initiatives by private marine companies.

LEVEL 1

1.1. Reach level 2 for at least **one** other performance indicator of the program.

LEVEL 2

2.1. Reach level 2 for at least **2** other performance indicators of the program.

AND fulfill one of the following 2 criteria:

2.2. Write and publicly communicate an environmental policy.

OR

2.3. Develop and update annually a section on the company's public website presenting an overview of the Green Marine program and the participant's latest performance results.

Note: Green Marine offers assistance to participants in developing the content.

LEVEL 3

3.1. **At least 2** of the participant's eligible terminals or operating sites (stevedoring companies) or shipyards are Green Marine participants.

Note: Not applicable if the company operates only one eligible terminal or site.

3.2. Implement an internal or external system for verifying the environmental compliance of all operations.

Note: Internal audits must be performed by a qualified professional, such as a person who has the knowledge and skills to do audits by following standard audit principles, protocols and techniques.

3.3. Actively participate in social and/or environmental community activities every year (e.g. shoreline clean-up operations, tree-planting campaigns, scholarships, educational activities, open-house, port days, etc.).

Note: Active participation is defined as the provision of support by the participant, whether through financial means, human resources and/or material/equipment.

LEVEL 4

4.1. 50 % of the participant's eligible terminals, operating sites (stevedoring companies) or shipyards are Green Marine participants.
Note: Not applicable if the company operates only one or two eligible terminals or sites.

4.2. Attain **an average** that is equivalent to level 3 with respect to the program's performance indicators.

AND fulfill at least 2 of the following criteria:

4.3. Complete a detailed inventory of air pollutants emitted by the company's activities.

4.4. Implement an environmental management system (EMS). Example: ISO 14000.

Note: At level 4, certification is not mandatory if the participant can demonstrate that all the elements of an environmental management system are in place. At level 5, certification is mandatory. If the company is not certified, it must implement four other measures among 4.3. to 4.9. to achieve level 5.

4.5. Publish an annual report providing details of the participant's environmental performance.

Note: The report must follow a recognized standard, such as the Global Reporting Initiative's Reporting Guidelines.

4.6. Have a replacement policy for converting the fleet of road vehicles and/or non-road vehicles for more environmentally friendly technologies or models (high-renewable-content fuels, hybrids, electrical, higher tier engines, etc.) and have started to convert the fleet or to test new technologies or models.

Note: For a detailed definition of high-renewable content fuel, refer to the Renewable Fuels Regulations (Canada) or to the Renewable Fuels Standard (U.S.). More information can be found on the document "Renewable Fuels Regulations" in the Members section of the Green Marine website.

4.7. Introduce innovative or exemplary technologies or projects, within the last five (5) years, aimed at reducing significantly the environmental footprint of the participant's activities.

4.8. Any other comparable measure accepted by the Green Marine Secretariat.

Note: The project must have been started (e.g. installation of equipment, final investment decision, etc.) during the last three (3) years.

Note: See Annex 4-A.

4.9. Finance or make annual donations to environmental and/or social projects.

Note: For operating revenues < \$1,000,000, donations must reach at least \$50,000 annually. See table:

Operating Revenue (\$k)	Donations (\$k)
< 1,000	≥ 50
< 200,000	≥ 100
≥ 200,000	≥ 200

Note for the verifier: Refer to the annual membership fee the participant has paid to Green Marine to determine the participant's range of revenue established in the membership fee schedule (posted online).

LEVEL 5

5.1. All of the company's eligible terminals, operating sites (stevedoring companies) or shipyards are Green Marine participants. Note: Not applicable for participants that operate only one or two eligible terminals or sites.

5.2. Fulfill at least two additional criteria listed in level 4 (4.3 -4.9).

5.3. Attain **an average** that is equivalent to level 4 with respect to the program's performance indicators.

6. WASTE MANAGEMENT

OBJECTIVE: Increase waste diversion and reduce at source the waste arising from administrative activities and site operations.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>Implementation of the majority of applicable criteria:</p> <p>2.1. Equip offices, workspaces and facilities with recycling bins, including for used batteries, cartridges and fluorescent light bulbs and make sure they are strategically located and appropriately labeled.</p> <p>2.2. Install clear signage for waste disposal on terminal or shipyard property.</p> <p>2.3. Provide training and/or educate staff on established garbage management procedures and hierarchy (Reduce, Reuse, Recycle, Reduce, Reuse, Recycle, Valorize – as in to add value), including on procedures for handling and disposing of hazardous waste.</p> <p>2.4. Encourage the use of 1) reusable, 2) recyclable and 3) compostable supplies (e.g. reusable dishes, etc.).</p> <p>2.5. Encourage staff to adopt sustainable paper use practices (e.g. reduce overall printing and copy paper consumption, double-sided printing, use post-consumer recycled paper, reuse and recycle paper, etc.).</p> <p>2.6. Promote and encourage users, contractors, and/or clients to minimize waste and to recycle.</p> <p>2.7. Gather information from the local service provider/waste hauler in order to have a better understanding of the relative costs and the environmental benefits related to the disposal of waste, recycling, and organics.</p> <p>2.8. Eliminate or limit the use of plastic straws, plastic bottles, single-use coffee cups, and any other similar items in administrative office.</p> <p><u>Dry bulk terminals (2.9, 2.10, 2.11):</u></p> <p>2.9. Adopt procedures to minimize the amount of cargo residues left on board the ships.</p> <p>2.10. Facilitate the discharge of solid bulk cargo residues ashore, including hold sweepings.</p> <p>2.11. Recover as much as possible off specification products (i.e.: Products captured in storm water sumps and effluent treatment works) or reintroduce them into the handling process.</p> <p><u>Note:</u> Not applicable in terminals that handle multiple dry bulk products because of cross contamination risks.</p>
LEVEL 3
<p>3.1. Implement all applicable best practices listed at level 2.</p> <p>AND, fulfill one of the following 2 criteria:</p> <p>3.2. Produce an annual inventory of all waste being generated during the participant’s direct activities (administrative and/or site operations).</p> <p>OR</p> <p>3.3. Conduct a waste audit every five (5) years to identify the types and amount of waste being generated during the participant’s direct activities (administrative and/or site operations).</p> <p><u>Note:</u> The inventory or audit does not include waste generated from demolition or construction projects.</p> <p><u>Note:</u> See Annex 5-A.</p>

LEVEL 4

4.1. Adopt an environmentally preferable purchasing policy that encourages sustainable purchasing practices (e.g. products that produce less waste (less packaging, reusable/ recyclable/compostable products, products with postconsumer recycled content, etc.).

4.2. Conduct a waste audit every five (5) years to identify the types and amount of waste being generated during the participant's direct activities (administrative and/or site operations).

Note: The waste audit does not include waste generated from demolition or construction projects.

Note: See Annex 5-A.

4.3. Based on the results from the waste audit, adopt and implement a Waste Management and Reduction plan that describes the participant's waste management practices and procedures, including all applicable best practices of levels 2 and 3. The plan must also define measurable waste reduction, recycling, and/or diversion rates and identify practices and strategies to achieve these rates.

Note: Each participant defines its own "normalizer" to take into account fluctuations in activities (e.g. per capita, per ton, per vessel, etc.).

Note: See Annex 5-B.

4.4. Adopt and implement formal procedures for reducing, reusing, recycling, and valorizing and/or properly disposing waste generated during construction, excavation and demolition work (e.g. cement, concrete, bricks, gypsum, wool, asphalt, wood, steel, and other metals, etc.). These procedures must be included in all construction, demolition, and excavation projects.

LEVEL 5

5.1. Demonstrate continual achievement in waste diversion and reduction at source in line with the objectives established in the Waste Management and Reduction plan.