



# CARNIVAL CORPORATION & PLC

## Environmental Management Report

### Fiscal Year 2005



# Executive Summary

This is the first Carnival Corporation & plc (“Carnival”) Environmental Management Report. It covers fiscal year 2005 (December 2004 through November 2005). The purpose of this report is to illustrate and explain the combined efforts of Carnival and its subsidiary operating lines to monitor and manage environmental performance. This report will:

- Provide the means to communicate externally about the management of Carnival’s environmental performance;
- Help Carnival to comply with emerging environmental reporting requirements in the European Union;
- Demonstrate Carnival’s commitment to respond to the growing number of disclosure requests by key stakeholders (including regulators, investors and industry groups) who are requesting up-to-date and verifiable environmental performance information;
- Assist in identifying opportunities for improved resource efficiency and cost reductions;
- Play a role in providing assurance of full compliance with legal and statutory obligations and stimulating internal accountability; and
- Support performance benchmarking programs that will help Carnival to identify best practices.

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## **A Statement from the CEO**

*“Our corporate culture fosters a deep commitment to preserving the marine environment and in particular the pristine condition of the waters upon which our vessels sail. We are committed to pollution prevention and continuous improvement of our environmental management. We recently announced our goal to become certified in accordance with the internationally recognized standard ISO 14001, which provides a framework for environmental management and the measurement of environmental improvement”.*

- Micky Arison, Chairman and CEO (February 23, 2005)

## **Environmental Policy**

Carnival’s Vice Chairman and Chief Operating Officer has formally defined Carnival’s overall intentions and direction relative to environmental performance in the following Corporate Environmental Policy statement.

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**CARNIVAL**  
CORPORATION & plc

## **Environmental Policy**

Carnival Corporation & plc is an international company providing cruise vacations worldwide. Our core values include preserving the marine environment and in particular the pristine condition of the waters upon which our vessels sail. We are committed to pollution prevention, regulatory compliance and continuous improvement of our environmental management. Our goal is to be the industry leader for environmental excellence. We will achieve this goal by continuously improving our processes to minimize environmental impact and waste. Carnival Corporation & plc will realize its objectives and commitment to environmentally conscious practices by:

- a) fostering a corporate culture of environmental compliance that extends to all shoreside and shipboard personnel;
- b) requiring its operating lines and employees not to impose budgetary constraints when the expenditure of funds is necessary to ensure environmental compliance;
- c) requiring its operating lines to implement procedures and install equipment that assists in ensuring environmental compliance;
- d) developing an environmental compliance system that ensures compliance with applicable environmental laws and regulations;
- e) implementing processes to ensure awareness of and compliance with changing environmental regulations;
- f) implementing processes to improve onboard equipment, operating procedures and training; and
- g) improving mechanisms for detecting, correcting and preventing noncompliance.

**Howard S. Frank**  
Vice Chairman and Chief Operating Officer

Date: 18 August 2005

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## **Who We Are**

Carnival Corporation & plc, or simply “Carnival”, is a global cruise company and one of the largest vacation companies in the world. Headquartered in Miami, Florida, U.S.A., Carnival has 71,000 employees worldwide.

Carnival’s portfolio includes 12 distinct brands comprised of the leading cruise operators in North America, Europe and Australia. These brands include:

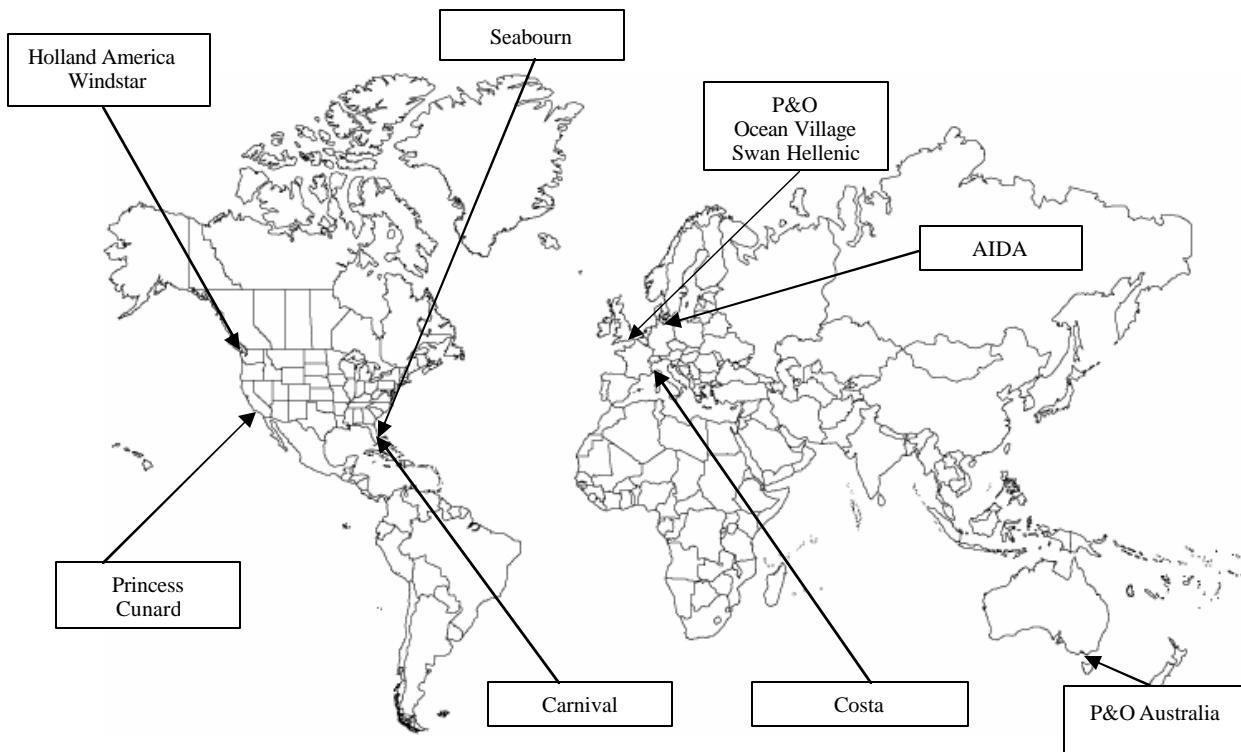
AIDA Cruises	P&O Cruises
Carnival Cruise Lines	P&O Cruises Australia
Costa Cruises	Princess Cruises
Cunard Line	Seabourn Cruise Line
Holland America Line	Swan Hellenic
Ocean Village	Windstar Cruises

Together, these brands operate 79 ships totaling 137,000 lower berths with 16 new ships scheduled to enter service between 2006 and 2009.

Carnival also operates the leading tour companies in Alaska and the Canadian Yukon, Holland America Tours and Princess Tours.

Traded on both the New York and London Stock Exchanges, Carnival Corporation & plc is the only entity in the world to be included in both the S&P 500 and the FTSE 100 indices.

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AIDA Cruises - AIDA is the best-known cruise brand in the rapidly growing German cruise industry. With its four club ships, AIDA offers cruises to the Mediterranean, the Baltic, the Norwegian Fjords, Canary Islands, and the Caribbean.

Carnival Cruise Lines - The leader in the contemporary cruise sector, Carnival operates 21 ships, cruising to destinations in the Bahamas, Canada, the Caribbean, the Mexican Riviera, New England, the Panama Canal, Alaska, Hawaii, and the Mediterranean, with most cruises ranging from 3 to 7 days.

Costa Cruises - Costa Cruises is Europe's leading cruise line. Headquartered in Italy, Costa offers guests on its ten ships a multi-ethnic, multi-cultural and multi-lingual ambiance. Costa ships sail to destinations in Europe, South America, and the Caribbean.

Cunard Line - Cunard Line offers the only regular transatlantic crossing service aboard the world famous ocean liner, Queen Mary 2. Her equally famous sister, Queen Elizabeth 2, sails on unique itineraries worldwide serving both U.S. and UK guests.

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Holland America Line - Holland America Line, a leader in the premium cruise sector, operates a fleet of 12 ships. Holland America Line visits 280 ports in its primary destinations of Alaska, the Caribbean, the Panama Canal, Mexico, South America, Hawaii, Canada, New England and Europe.

Ocean Village - Ocean Village, a UK brand, was established to provide informal, contemporary, and affordable holidays at sea for younger people. Its cruise product emphasizes informality, health, and well-being. Ocean Village cruises in the Mediterranean in the summer and the Caribbean in the winter.

P&O Cruises - P & O Cruises is the largest cruise operator and the best-known cruise brand in the UK. The five ship fleet offers cruises to the Mediterranean, the Baltic, the Norwegian Fjords, the Caribbean, the Atlantic Islands, and around the world.

P&O Cruises Australia - P & O Cruises Australia caters to Australians. Its 3 ships offer 7 to 14 day cruises to New Caledonia, Vanuatu and Fiji from the home ports of Sydney, Brisbane and Auckland.

Princess Cruises - Princess Cruises operates a fleet of 14 ships deployed around the globe, calling at more than 200 ports worldwide, and offering a resort-like experience with flexible dining and entertainment options. Most cruises range from 7 to 14 days in length, with some up to 30 days. Destinations include Alaska, the Caribbean, Europe, the Panama Canal, the Mexican Riviera, the South Pacific, South America, Hawaii, Asia, and Canada/New England.

Seabourn Cruise Line - Seabourn Cruise Line epitomizes luxury cruising aboard each of its three intimate, all-suite ships. The Yachts of Seabourn are lavishly appointed with virtually one staff member for every guest, sailing to destinations around the world.

Swan Hellenic - Swan Hellenic operates a program of discovery cruises, targeted particularly to the UK. Itineraries include the Mediterranean, North America, South America, the Caribbean, the Indian Ocean and the Far East.

Windstar Cruises - Windstar Cruises' three sleek sailing yachts offer its 148-308 guests all ocean view staterooms, an eclectic selection of cuisine and a water sports program. Windstar Cruises sails to exotic destinations including Europe, the Caribbean, Central America and the South Pacific.



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## **The Maritime Legal Environment**

Carnival's operations are distinctly different from those of typical shore-based companies and present unique challenges. The laws, regulations and other legal requirements applicable to our operations do not remain static based on a fixed geographic location. These requirements change regularly, sometimes on a daily basis, depending on the itineraries of our ships and the ports and countries visited. Carnival's ships typically visit more than 100 countries and more than 300 ports in a year, and these locations change with itineraries from year to year.

Carnival ensures that all such legal and other requirements are taken into account when establishing, implementing and maintaining its environmental management systems. These requirements include a broad range of international, national, state, regional, and local requirements in the form of statutes, regulations, ordinances, and permits.

A selection of the principal laws and regulations regarding environmental performance with which Carnival must comply on a daily basis is listed below:

- 1) **The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78).** MARPOL is the primary international convention covering prevention of pollution of the marine environment by ships from routine operational or accidental causes. MARPOL currently includes six technical Annexes, four of which apply to Carnival's operations:
  - a) Annex I, Regulations for the Prevention of Pollution by Oil;
  - b) Annex IV, Regulations for the Prevention of Pollution by Sewage from Ships;
  - c) Annex V, Regulations for the Prevention of Pollution by Garbage from Ships
  - d) Annex VI, Regulations for the Prevention of Air Pollution from Ships.
  
- 2) **The International Management Code for the Safe Operation of Ships and for Pollution Prevention (the ISM Code):**
  - a) The ISM Code is an international standard for the safe management and operation of ships and for pollution prevention and requires the development, implementation and certification of a Safety Management System that includes environmental protection.
  - b) The Safety Management System of each of Carnival's Operating Lines and of each individual ship is certified in accordance with the ISM Code.

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- 3) **Flag State Marine Environmental Rules and Regulations** of the countries where Carnival's ships are registered ("Flag States") including those of:
  - a) The United Kingdom;
  - b) The Netherlands;
  - c) Italy;
  - d) The Bahamas;
  - e) Bermuda; and
  - f) Panama.
  
- 4) **Port State Marine Environmental Rules and Regulations** of the countries and other geographic areas where Carnival's ships operate ("Port States").
  
- 5) **Directive 2000/59/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues**, which defines requirements intended to reduce the discharges of ship-generated waste and cargo residues into the sea, especially illegal discharges, from ships using ports in the European Community, by improving the availability and use of port reception facilities for ship-generated waste and cargo residues, thereby enhancing the protection of the marine environment:
  - a) Specific National regulations implement this directive in all 25 member countries of the EC, many of which are visited by Carnival's ships;
  - b) These regulations define requirements for the management of all forms of ship-generated waste.
  
- 6) **The U. S. Act to Prevent Pollution from Ships** ("APPS"), as amended, 1980 (33 U.S.C. §§ 1901-1911), and its implementing regulations.
  
- 7) **The U.S. Clean Water Act (CWA)** (40 CFR Parts 50-99), the U. S. regulations which set the standards for effluent discharges to bodies of water to protect drinking water sources.
  
- 8) **The U.S. Resource Conservation & Recovery Act (RCRA)** (40 CFR Parts 240 - 299), the U. S. hazardous waste management regulations.
  
- 9) **Clean Air Act** The U.S. Clean Air Act (CAA), initially issued in 1970 to require development and enforcement of regulations to protect the general public from exposure to airborne contaminants hazardous to human health, supplemented in 1990 by additional legislation to reduce the generation of smog and other forms of atmospheric pollution.

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- 10) **Alaska Cruise Ship Legislation** including:
- a) U.S. federal law “Title XIV—Certain Alaskan Cruise Ship Operations” which sets effluent standards for blackwater only and allows continuous discharge if secondary treatment standards are met and compliance is demonstrated through semi-monthly sampling.
  - b) Alaskan State Law AS 46.03.460 – 46.03.490 which sets effluent limits for both graywater and blackwater, addresses the offloading and/or disposal of nonhazardous solid wastes (besides sewage) and hazardous wastes in Alaska, and requires vessel owners/ operators to annually submit a description of the nonhazardous and hazardous waste handling procedures used on their vessels.
- 11) **Memoranda of Understanding** with various U.S. States including Florida and Washington.
- 12) **Hawaii Cruise Ship Legislation** Hawaiian State law HB422 revised §342D which sets effluent limits for blackwater, addresses the offloading and/or disposal of nonhazardous solid wastes (besides sewage) and hazardous wastes in Hawaii, and requires vessel owners/ operators to annually submit a description of the nonhazardous and hazardous waste handling procedures used on their vessels
- 13) **Maine Cruise Ship Legislation** Maine State law revised Statutes, Title 38, section 423-D, subsection 4, paragraph A, which sets effluent limits for the discharge of graywater or a mixture of graywater and blackwater to coastal waters, recordkeeping, sampling and reporting requirements pursuant to the authorization to discharge graywater or a mixture of graywater and blackwater in Alaska according to the federal Consolidated Appropriations Act of 2001.
- 14) **Ballast Water Management regulations** and guidelines are designed to reduce the threat to the world's oceans and resultant environmental, economic and public health impacts from invasive aquatic species by addressing the transfer of harmful aquatic organisms and pathogens in ships' ballast water. Such regulations and guidelines are issued by, among others:
- a) The International Maritime Organization (IMO)
  - b) The U.S. Coast Guard (USCG)
  - c) Individual U.S. States, e.g., California
- 15) **The Montreal Protocol** on Substances That Deplete the Ozone Layer is an international treaty designed to protect the ozone layer by phasing out the production and use of a number of substances believed to be responsible for ozone depletion.

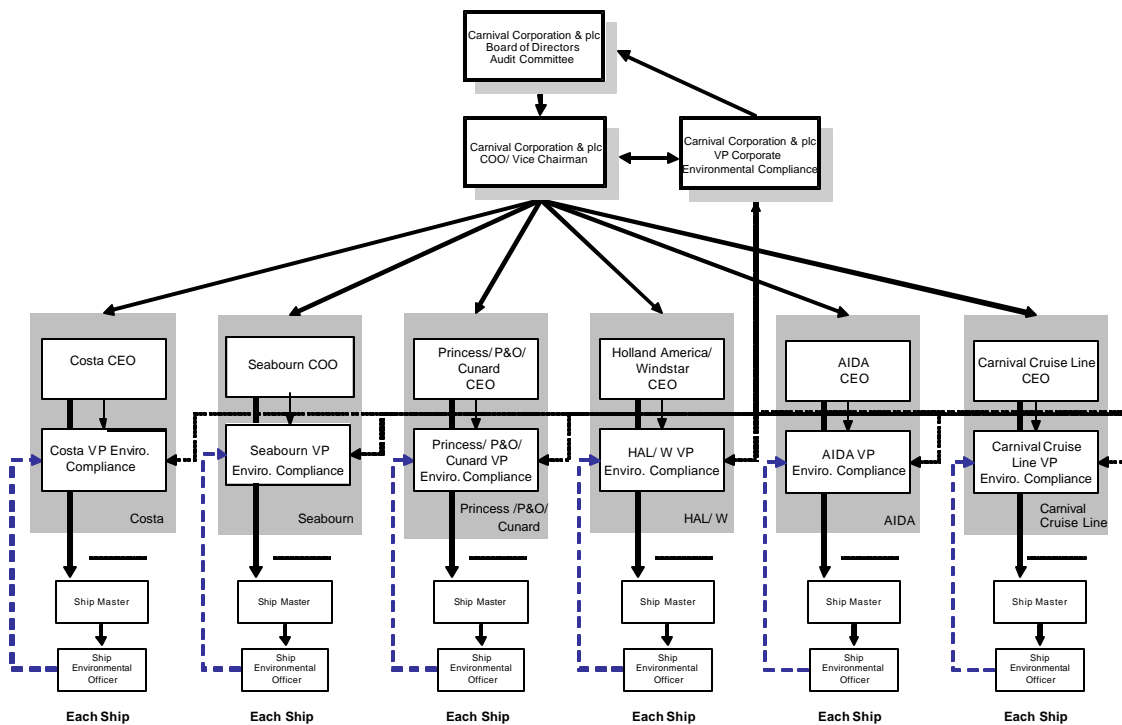
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## Where We Are

### Corporate Environmental Governance

The current structure for governing Carnival's environmental performance was initially developed in April 2002 to oversee implementation of Carnival's Corporate Environmental Compliance Plan (ECP) as part of a settlement with the United States government.

As indicated below, accountability for environmental performance in Carnival extends from the ships, through the Operating Lines and Senior Corporate Management to the Board of Directors.



### Corporate:

**Board of Directors** - The Audit Committee of the Board of Directors, comprised of five independent directors, oversees compliance with the Corporation's environmental policies. The VP - Corporate Environmental Compliance makes quarterly reports to the Audit Committee concerning Carnival's environmental performance. On a quarterly basis, the Audit Committee reports to the full Board

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of Directors on environmental issues raised by these quarterly reports and the annual reports issued by the Independent Consultant (ENSR).

**Vice President - Corporate Environmental Compliance** – Carnival's Corporate Environmental Compliance Department (CEC) is responsible for coordinating and monitoring requirements relative to environmental management within Carnival Corporation and its Operating Lines. CEC is headed by a Vice President (VP - CEC), with a full-time professional and administrative staff. CEC's role was expanded in 2005 to include oversight and support of the Corporation's Environmental Management Systems (EMS; ISO 14001) initiatives and activities.

## **Operating Lines – Shoreside:**

**Chief Executive Officer – Operating Lines** – The CEO of each Operating Line is responsible for the day to day management of the operating line, compliance with the Corporation's environmental policies within the Operating Line, and ensuring prompt resolution of environmental performance issues.

**Vice President - Operating Line Compliance** – Each Operating Line VP – Operating Line Compliance has responsibility and authority for ensuring implementation of the Operating Line's Environmental Management Systems, including monitoring compliance with the Corporation's environmental policies. The VP – Operating Line Compliance reports directly to the CEO of the Operating Line, has a dotted line reporting relationship to the VP - CEC, and is supported by professional and administrative staff commensurate with the needs of the Operating Line.

**Senior Vice President-Operating Line Operations** - Each Operating Line's Senior VP - Operating Line Operations supervise the shoreside management and support of shipboard operations. The Operating Line's CEO, Senior VP–Operating Line Operations, and VP–Operating Line Compliance cooperate to ensure that environmental issues receive prompt and appropriate resolution, including the implementation of environmental policies and procedures.

**Shoreside Technical and Marine Superintendents** - Each Operating Line employs shore-based Superintendents to provide Technical and Marine support of ship operations. These Superintendents typically supervise several ships and are part of the reporting line from shipboard to shoreside. In that capacity they often manage situations which may impact the environment and coordinate with the VP-Operating Line Compliance and the shipboard Masters and EOs to resolve environmental issues promptly and effectively.

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**Operating Lines – Shipboard:**

**Ships' Master** - The Master of each Carnival ship is responsible for the safety and care of all persons on board the ship, the ship's seaworthiness, navigation and overall operations, and for pollution prevention. The Master is assisted by three senior officers: the Staff Captain, the Chief Engineer, and the Hotel Manager who manage the Deck, Engine/ Technical and Hotel Departments, respectively.

**Environmental Officers** – On each Carnival ship a fourth officer reports to the Master, the Environmental Officer (EO). The EO's sole function is to oversee environmental management on board each vessel, including verification of shipboard environmental compliance. The EO has a direct line of communication to the VP – Operating Line Compliance.

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**Voluntary Carnival and Cruise Industry Initiatives**

To achieve its goal to be the industry leader for environmental excellence, Carnival has dedicated significant resources to the following environmental initiatives that go considerably beyond the requirements of current laws and regulations:

**Advanced Waste Water Purification Systems (AWWPS)** - Carnival is conducting an intensive multi-phase investigative study of the various AWWPS's currently available in the marketplace. The systems studied include purification plants currently installed on some Carnival's ships, as well as other systems that could meet the strict design specifications set forth by the study group.

The most recent phase of the study is evaluating the environmental impact of wastewater discharges on ocean areas in which Carnival's vessels operate in conjunction with the International Council of Cruise Lines (ICCL) partnership with Conservation International (CI). This phase is intended to assist in identifying vessels and regions of operation that would most benefit from future installation of AWWPS's.

**Vessel Shore Power Installations** - Carnival has constructed two shore power installations, in Juneau, Alaska and in Seattle, Washington, that permit certain ships that visit these ports to operate on power which is produced and provided by land-based power plants. This enables certain Carnival ships to shut down their engines and reduce air emissions while moored in these ports. These land-based power plants use environmental technologies not yet available to ships that enable them to produce power with less environmental impact and take advantage of sustainable resources, such as hydroelectric power.

**Plasma Incinerator Waste Disposal** - Carnival has installed and operates the only shipboard plasma incinerator in the cruise industry. The installed system began as a prototype and has successfully performed in the disposal of a wide range of dry shipboard waste products. Carnival is evaluating the use of the plasma incinerator for disposal of other shipboard wastes. Plasma technology allows the ship to burn waste very efficiently and produces significantly reduced air emissions and ash byproducts of incineration. Carnival is investigating installation of similar systems onboard additional ships.

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**Water Lubricated Shaft Bearing Systems** – Several Carnival ships are equipped with water lubricated propeller shaft bearing systems. Traditional systems use oil as a lubricating and cooling medium; these systems use seawater. This technology benefits the environment in the event that a ship experiences a shaft bearing leak. Instead of potentially leaking oil to the marine environment, such leaks from ships with water lubricated systems would only result in seawater reentering the marine environment. Carnival plans to install water lubricated shaft bearing systems on several new ships.

**Refrigeration Engineer Training** – At least one Refrigeration Engineer on each Carnival ship that visits US ports is trained and certified in accordance with Section 608 of the US Clean Air Act. While this Act does not apply on board Carnival's ships, it is being implemented as a voluntary good environmental practice.

**Refrigeration Recovery Units** - All Carnival ships, whether they visit US ports or not, perform refrigerant recovery operations using CFC recovery units that are certified in accordance with Section 608 of the US Clean Air Act. While this Act does not apply on board Carnival's ships, it is being implemented as a voluntary good environmental practice. Each Carnival Operating Line provides notice of such certification to the US EPA.

**Treated Blackwater Discharge** – All blackwater (sewage) from Carnival's ships is processed through a Marine Sanitation Device (MSD), certified in accordance with US or international regulations, prior to discharge. Discharges take place only when the ship is at a distance of more than 12 nautical miles from the nearest land and only when the ship is travelling at a speed of not less than 6 knots. This policy does not apply to black water processed through Advanced Waste Water Purification Systems (AWWPS).

**Bilge Water Processing System "White Box"** - All Carnival ships ensure that all bilge water destined for overboard discharge, including that stored in clean bilge water holding tanks, is routed through a "White Box". The "White Box" is a proprietary system considered to be a tamper resistant fail-safe for overboard discharge of processed bilge water. Its design incorporates an oil content meter (OCM) and return water functions in a central locked location that also includes a regulating valve, flow switches, solenoid valves, a three-way valve, a flow meter, a control box and a recorder. The "White Box" serves as the final monitoring and control device through which bilge water passes prior to reaching the environment.



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**International Council of Cruise Lines (ICCL) Environmental Standards** – As a member of the ICCL, Carnival has adopted and implements the ICCL Environmental Standards on all of Carnival's ships. These standards are based on principles that include: designing and constructing cruise ships to be as environmentally friendly as possible, embracing new technology, complying fully with international and U.S. environmental laws, minimizing waste production, and maintaining cooperative relationships with the regulatory community.

The ICCL Environmental Standards include requirements related to environmentally responsible handling and disposal of:

- Photo Processing Waste, Including X-Ray Development Fluid;
- Dry-Cleaning Waste Fluids and Contaminated Materials;
- Print Shop Waste Fluids;
- Photo Copying and Laser Printer Cartridges;
- Unused and Outdated Pharmaceuticals;
- Fluorescent and Mercury Vapor Lamp Bulbs;
- Batteries;
- Bilge and Oily Water Residues;
- Glass, Cardboard, Aluminum and Steel Cans;
- Incinerator Ash;
- Graywater; and
- Blackwater.

These ICCL Environmental Standards are incorporated into the Environmental Management Systems of Carnival's Operating Lines.

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**Training and Communications**

Carnival and its Operating Lines have developed comprehensive environmental management training programs. A training catalog has been developed to facilitate the adoption, implementation and enforcement of these programs.

Carnival's environmental management training programs are designed to ensure that all affected shipboard and shoreside personnel have the knowledge and skills necessary to comply with applicable environmental requirements and implement the Environmental Management System (EMS). These programs educate these personnel on the environmental impact of operations and the procedures and policies that form the basis of the EMS.

The goal of these training programs is to ensure that employees:

- Understand Carnival's environmental management policies; and
- Are able to integrate environmental management objectives with all applicable environmental procedures in the performance of their jobs.

To support the training program goal, the VP – Corporate Environmental Compliance has developed minimum training standards and ensures that each Operating Line develops and maintains effective training programs.

Carnival's environmental training programs include four tiers of training for shipboard personnel and three tiers for affected shoreside personnel. Training provided to shipboard personnel will include one or more of the following, based on job duties of the individuals being trained:

- Familiarization Training (Tier 1)
- Basic Environmental Training (Tier 2)
- Advanced Environmental Training (Tier 3)
- Environmental Officer Training (Tier 4)

Training provided to shoreside personnel may include one or more of the following, also depending on job duties of the individuals being trained:

- Familiarization Training (Tier 1)
- Basic Environmental Training (Tier 2)
- Advanced Environmental Training (Tier 3)

Personnel are required to complete the appropriate tiers of training specified for their job duties. The tiers of training may be completed in separate, single-tier courses or in aggregate, multi-tier courses that satisfy the content requirements of multiple tiers simultaneously.

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To promote effective training, the learning objectives of each training course are clearly explained at the beginning of the course and included in handouts as appropriate. In addition, learning objectives for each separate session within multi-session courses are clearly stated at the beginning of that session. The learning objectives typically state what the participants should know or be able to do at the end of each session.

Carnival's training programs include mechanisms for measuring proficiency gained as a result of the training, based on stated learning objectives.

In addition to the training structure outlined above, certain personnel are subject to continuing education requirements.

Carnival and its Operating Lines each have and maintain processes for communicating environmental information both internally and externally of the organization in conjunction with their respective public relations functions. This includes an environmental compliance telephone "Hotline" and a website ([www.carnivalcompliance.com](http://www.carnivalcompliance.com)).

Procedures are maintained for:

- Internal communication between the various levels and functions of the organization; and
- Receiving, documenting and responding to relevant communication from external interested parties, especially in regards to significant environmental aspects.

Carnival Operating Line Environmental Compliance Departments regularly communicate with external parties such as governmental agencies, community stakeholders, tenants, contractors, and other organizations. These communications include all subjects associated with the management of significant environmental aspects and are governed by regulatory requirements and the professional judgment of the staff of the Environmental Compliance Departments.

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## **Monitoring and Environmental Compliance**

Carnival's Vice President Corporate Environmental Compliance (VP - CEC) ensures implementation of the Corporate and Operating Lines' Environmental Management Systems (EMS) and compliance with applicable laws and regulations through systematic monitoring, auditing and compliance assessment activities.

Internal audits of the Corporate and Operating Line EMS's are planned on an annual cycle that results in EMS audits of 100% of the ships in Carnival Corporation's fleet and in each Operating Line's shoreside offices.

The VP – CEC:

- Ensures that internal audits of the Corporate and Operating Line Environmental Management Systems (EMS) are planned, established, implemented and maintained, taking into consideration the relative importance of the operation(s) concerned and the results of previous audits.
- Ensures that information on the results of audits is provided to appropriate Corporate and Operating Line management.
- Reviews and ensures that appropriate action is taken on all EMS audit reports.
- Provides a quarterly report to the Vice-Chairman and to the Audit Committee of the Board of Directors.
- Conducts annual overall reviews of each Operating Line's EMS and "focused" reviews of key environmental performance areas across all operating lines to promote the adoption of best practices. Copies of the results of "focused" reviews are included in reports to the Vice-Chairman and to the Audit Committee of the Board of Directors.

The VP – Operating Line Compliance (VP –OLC) in each of Carnival's Operating Lines:

- Ensures that internal audits of the Operating Line Environmental Management Systems (EMS) are planned, established, implemented and maintained, taking into consideration the relative importance of the operation(s) concerned and the results of previous audits.
- Ensures that shipboard Environmental Self-Assessments are performed by the Environmental Officers and other shipboard personnel.
- Ensures that information on the results of audits and shipboard Environmental Self-Assessments is provided to appropriate Corporate and Operating Line management.
- Reviews and ensures that appropriate action is taken on the results of audits and shipboard Environmental Self-Assessments.

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In addition to the above environmental auditing and self-assessment activities, Carnival and Operating Line Environmental Management Systems also require the systematic reporting, follow-up, and (as appropriate) tracking of resultant actions for, among others:

- Environmental incidents and noncompliance;
- Releases and spills;
- Notifications to authorities of environmental incidents / nonconformities;
- Unavailability of certain shipboard environmental equipment / systems;
- Results of periodic sampling and analyses of waste streams;
- Shoreside approval for modifications to certain shipboard environmental equipment / systems;
- Calibration of shipboard environmental monitoring equipment (e.g., Oil Content Meters);
- Shoreside disposal of hazardous waste;
- Environmental performance data (see following section on Environmental Performance).

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## **Where We Are Going**

### **ISO 14001 Environmental Management Systems**

On 1 February 2005, Mr. Howard Frank, Carnival Corporation Vice Chairman and Chief Operating Officer, announced the decision to develop environmental management systems and to obtain corporate wide ISO 14001 certification by August 2006. In his announcement Mr. Frank stated:

*“We believe for a corporation of our size and standing this is a necessary and appropriate step in today’s business environment...meeting internationally recognized standards.”*

*“ISO 14001 certification will require an investment of resources both financial and human. Micky (Arison) and I are committed to this investment and to achieve certification.”*

*“Our environmental policy states our goal to be the industry leader for environmental excellence by continuously improving our processes to minimize environmental impact and waste. Implementing ISO 14001 is clearly a process improvement that will go far in achieving this goal.”*

ISO 14001 is one of the series of ISO 14000 environmental management standards that were developed to help organizations manage their processes, products and services to minimize environmental impact.

ISO 14001 focuses on the processes - the comprehensive outcome - of how services are delivered and products are produced, rather than on the actual service or product itself. ISO 14001 also presents a structured approach to setting environmental objectives and targets and provides a framework for any organization to apply these broad conceptual tools to their own processes.

Carnival is developing and implementing Environmental Management Systems based on ISO 14001 in each of its Operating Lines with the aim of achieving the Corporate goal of ISO 14001 Certification by August 2006. Costa Cruises successfully achieved the ISO 14001 certification as well as three other management system certifications (ISO 9001, OHSAS 18001 and SA 8000) in 2004.

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**Significant Environmental Aspects**

Carnival maintains processes within each of its Operating Lines for identifying and prioritizing the environmental aspects of its activities, products and services that it can control, or over which it can expect to have an influence.

Carnival has identified those operations and activities that are associated with the identified significant environmental aspects and plans these activities to ensure that they are carried out under controlled conditions.

The following are typical of the significant environmental aspects of Carnival's activities, products and services:

<b>Significant Environmental Aspect</b>	<b>Potential Environmental Impact</b>
Invasive species - marine	Induction during ballasting, release to environment
Invasive species - pests (vermin & insects)	Infestation of ship, release to land
ODCs (ozone depleting compounds) - CFCs / HCFCs / Halon	Release to environment, ozone depletion
Paint - hull paints (TBT)	Release of components to sea
Pathogens	Sick guests/ Crew
Reef (striking by grounding; voyage interruption)	Ship damage to reef
Waste - biohazardous / medical / sharps / pharmaceuticals	Sharps, disease exposure
Waste sludge - hydrocarbon	Inappropriate release or disposal
Wastewater - bilge	Inappropriate release or discharge
Wastewater - black	Inappropriate release or discharge
Wastewater - gray	Inappropriate release or discharge
Wastewater - pool	Inappropriate release or discharge
Wastewater - soot laden (boiler washdown)	Inappropriate release or disposal (this is landed as Haz Waste)
Combustion emissions - CO, CO <sub>2</sub> , CH <sub>4</sub> , NO <sub>x</sub> , SO <sub>x</sub> , PM (considering normal emissions and opacity)	Release above acceptable limits; Air quality
Lubricants & hydraulic oil	Inadvertent release or spill during loading
Marine mammals & birds	Marine mammal / bird strike
Packaging	Natural resource use, Inadvertent release to sea
Sediment placed on a reef	Reef damage
Waste - food waste	Inappropriate release or disposal

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<b>Significant Environmental Aspect</b>	<b>Potential Environmental Impact</b>
Waste - hazardous	Inappropriate release or disposal
Waste - regulated (oily waste, chemicals, sewage, solid trash, incinerator ash)	Inappropriate release or disposal
Waste - solid	Inappropriate release or disposal
Waste - universal (batteries, fluorescent bulbs, electronics)	Inappropriate release or disposal
Fuel	Natural resource use, spill during bunkering
Paint	Natural resource use, Inadvertent release to sea
Food	Natural resource use, spill during loading. Chosen as significant due to control and influence over sources.
Water	Natural resource use, energy consumption, lack of Chosen as significant due to control and influence over sources.

Each of Carnival's Operating Lines is setting their own objectives and targets for improvement of their environmental performance. However, the Lines are following similar paths, sharing improvement objectives such as:

- Reduction of fuel consumption
- Reduction of on-board water consumption
- Minimization of hazardous and solid waste generation

Carnival Corporate will track performance against these objective and targets over time.



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**Environmental Performance**

Beginning in December 2004, for Carnival's Fiscal Year 2005, Carnival began to measure and record key parameters regarding resource consumption and waste disposal in a standardized format across all of Carnival's Operating Lines and ships. These data are reported below and will provide the basis for establishing year to year environmental performance targets. In future reports, these data will be used to demonstrate trends and to provide a means of visualizing performance improvements.

This performance data is primarily focused on ship operations. The five main aspects of potential environmental impact evaluated are:

1. Air emissions (greenhouse gas emissions and ozone depletors)
2. Water emissions
3. Waste emissions (solid and hazardous waste)
4. Energy consumption
5. Water consumption

PARAMETER	MEASUREMENT (see Notes)	COMMENTS
<b>AIR EMISSIONS</b>		
CO <sub>2</sub>	1139.56 kg CO <sub>2</sub> /mile	This parameter measures kilograms of CO <sub>2</sub> normalized by miles traveled and by achieved passenger berth days (PBD). Greenhouse gas emissions are a very serious concern to the Global Community. The Global Reporting Initiative (GRI – see Notes) Environmental Performance Indicator EN8 refers to Greenhouse gas emissions. Greenhouse gases are thought to “amplify” the greenhouse effect. Carnival ships emit Carbon Dioxide (CO <sub>2</sub> ) which is one of the chemical byproducts of an internal combustion engine or boiler. The equations of chemistry enable the direct conversion of fuel oil consumed to equivalent kilograms of CO <sub>2</sub> . The primary combustion products are CO <sub>2</sub> and water vapor (H <sub>2</sub> O).
	172.03 kg CO <sub>2</sub> /PBD	
Ozone Depletors	7.86 x 10 <sup>-5</sup> kg/PBD	The GRI Environmental Performance Indicator EN9 refers to the use and emissions of ozone-depleting substances. Carnival ships use a variety of refrigerants most of which are marginally or without ozone depleting potential. Quantities of refrigerants used have been converted to equivalent quantities of CFC-11 which has the highest ozone depletion potential.

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PARAMETER	MEASUREMENT (see Notes)	COMMENTS
<b>WATER EMISSIONS</b>		
Waste Water Emission	0.005 tonnes/ PBD (untreated black water)	This parameter measures black water discharge normalized by PBD. Carnival ships consume water and also discharge it to the sea. The significant sea emissions are black water (sewage), grey water (showers, sinks, galleys, pool water) and ballast water (used for the stability of the vessel). There are no international regulations for the discharge of grey water although Carnival ships do have company procedures for its disposal. Black water is treated and discharged in accordance with MARPOL Annex IV and ICCL and Corporate Policy.
	.06 tonnes/PBD (treated black water)	
	0.25 tonnes/ PBD (grey water)	
Ballast Water Discharged	0.23 tonnes/ mile	This parameter is normalized by miles traveled. The concern for Ballast water is the inadvertent transport of non-indigenous species. International, Federal and State regulations require the detailed reporting of ballast water management.
<b>WASTE EMISSIONS</b>		
Solid and Hazardous Waste	0.008 tonnes/ PBD (to shore)	This parameter measures solid & hazardous waste disposal normalized by PBD. Hazardous Waste disposal is normally less than 1 % of total waste disposal. There are two main categories of Solid and Hazardous Waste Disposal. They are shore disposal and "at sea" or incinerated waste. All hazardous waste is disposed of ashore. The at sea or incinerated waste is in accordance with MARPOL and applicable laws and regulations. Incinerated waste includes dry garbage, food waste, and sludge. Plastic is never disposed of at sea.
	0.008 tonnes/ PBD (to sea and incinerated)	
Recyclables	4.81 x 10 <sup>-4</sup> cubic meters/ PBD	The amounts shown include waste that is landed ashore for recycling (e.g.: aluminum, glass, scrap metal). The GRI Environmental Performance Indicator EN11 also includes waste that is reused, recycled or recovered.
<b>ENERGY CONSUMPTION</b>		
Oil Consumption	0.34994 tonnes/ mile	This parameter measures Heavy Fuel Oil (HFO) normalized by total nautical miles traveled. Studies have shown that as much as 55% of the fuel consumed on board is for hotel operations including inport (vessel stopped) operations. The primary fuel used onboard Carnival ships is HFO which typically has an average sulphur content of 2.4%. The ships also use Marine Diesel Oil (MDO) and Marine Gas Oil (MGO). MDO is less than 1% of HFO use and MGO is approximately 5% of HFO use.

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PARAMETER	MEASUREMENT (see Notes)	COMMENTS
<b>WATER CONSUMPTION</b>		
Water Consumption	0.37 tonnes/ PBD	This parameter measures potable water consumption normalized by achieved passenger berth days. Potable water is a very precious commodity to most of the Earth's inhabitants. Although Carnival vessels consume significant amounts of potable water, a large portion is actually produced from seawater by equipment on board the vessels. The remaining water requirements are met by onloading or "bunkering" from various ports of call. The GRI Environmental Performance Indicator EN5 refers to total water use.
<b>OTHER ENVIRONMENTAL PERFORMANCE METRICS</b>		
Number of Significant Oil or Chemical Spills	42	The GRI Environmental Performance Indicator EN13 is for the reporting of significant spills of chemicals, oils, and fuels in terms of total number and total volume. Carnival Corporation has defined "significant" as in excess of 0.5 liter (500 ml). The typical spill described below refers to the accidental discharge of fuel oil or hydraulic oil.
Volume of Significant Oil or Chemical Spills	4352 liters	The primary contributor to this amount is a 3000 liter fuel oil spill which occurred while a vessel was in drydock at the Grand Bahamas. The next largest involved a sludge barge which overflowed 500 liters while attending to a vessel in St. Petersburg, Russia. All others were in a range of 1 – 150 liters.
Fines and Liabilities	US\$365,100	GRI Environmental Performance Indicator EN16 is for the reporting of Annual Fines & Liabilities for Non Compliance.
Expenditures	US\$59,580,736	GRI Environmental Performance Indicator EN35 is for reporting Environmental Compliance Expenditures; Budget, Capital, and Operating.

**NOTES:**

- **1 tonne** = 1 metric ton = 2204.62 lbs.
- **1 PBD** = 1 Passenger Berth Day (used to normalize data by ship size/ capacity.)
- **GRI:** see <http://www.globalreporting.org/guidelines/2002/c48.asp>.

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## **Partners**

Carnival recognizes that achieving progress in improving environmental management and performance results from the combined efforts of Carnival and Operating Line personnel, and other members of the business community with which Carnival has relationships. In particular, Carnival recognizes and thanks:

### **ENSR International**

ENSR International ([www.ensr.com](http://www.ensr.com)) provides comprehensive environmental consulting, engineering, and remediation services to the world's leading companies and government agencies. ENSR serves clients from 70 worldwide offices, with 1600 professionals in 60 technical disciplines.

ENSR International conducts environmental compliance and management system audits for the Carnival Corporation & plc worldwide fleet of cruise ships. Each year ENSR's professional environmental auditors examine 75% of Carnival's ships in waters around the world, especially in the Caribbean, the Mexican Riviera, the Mediterranean, the Baltic, the South Pacific, and the Inside Passage. ENSR has been performing these multimedia environmental audits pursuant to a Consent Agreement reached by Carnival Corporation and the United States. This audit engagement is in its fourth year.

ENSR's environmental auditors conduct examinations of the ships in the regulatory jurisdictions where they operate. While special emphasis is given to U.S. federal and state regulations, audits also frequently investigate compliance with regulations of foreign jurisdictions, including applicable legal requirements for ships operating in regulated waters of the Caribbean, Mediterranean, Baltic, and the South Pacific. According to Bob Gilbertsen, ENSR's Environmental Audit Program Manager who is leading the project, "We developed special maritime auditing and information management tools and techniques to perform these audits in as comprehensive manner as possible—wherever we are around the world and without disrupting any operations. Our maritime audit protocols allow us to adjust the regulatory audit criteria based on where the auditors meet the ship and on where the ship has sailed since the previous audit."

For these environmental compliance audits, each ENSR team consists of at least one Certified Professional Environmental Auditor (CPEA) paired with senior-level retired officers of the U.S. Navy or U.S. Coast Guard. As a result, each team has specialized auditing and maritime expertise to diagnose the full range of cruise ship environmental practices and to document the team's findings in required reports.

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## **Camp, Dresser, and McKee**

Camp, Dresser, and McKee (CDM) is a consulting, engineering, construction, and operations firm delivering exceptional service to public and private clients worldwide.

In 2002, Carnival Corporation & plc (Carnival) retained CDM to help implement sweeping environmental compliance assurance measures and establish a culture of compliance throughout its fleet.

CDM's work supporting Carnival's environmental compliance assurance measures is ongoing and to date has included several activities.

CDM prepared a corporate training catalogue to establish uniform standards for development, delivery and tracking of environmental compliance training throughout the operating lines.

All employees throughout the Carnival organization are required to view a video that was produced to familiarize employees with a basic understanding of environmental compliance issues that affect the cruise industry.

To make delivery of training of ship-board employees more flexible, CDM developed computer-based training programs that cover a wide variety of subject matter including environmental compliance matters ranging from introductory concepts to specialized concerns such as hazardous waste management, proper record keeping in the Oil Record Book, and operation and maintenance of shipboard environmental equipment. Equipment training modules include simulations that help reinforce the correct operating procedures for bilge water, gray water and black water systems, as well as processing and incineration systems for food waste and garbage.

Once a year, CDM facilitates a full-day training conference in Miami for senior management personnel from Carnival Corporation and each of the operating lines. This full day of training has included presentations by professionals with subject matter expertise in legal, regulatory and environmental technical matters relevant to the cruise industry. At the 2004 conference, Mr. Richard Fox, CDM President, offered the following comment in his keynote address focused on achieving environmental excellence: "Your performance has just been stellar." This year, world-renown marine biologist and National Geographic explorer Dr. Sylvia Earle related some of her adventures studying and exploring the world's oceans.

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## **Five Winds International**

Five Winds International is a management consulting firm that helps organizations to improve the sustainable value and performance of their activities, products and services by integrating environmental and social considerations into their core decision making processes. Five Winds' diverse expertise ranges from business strategy, management systems, project evaluation and analysis, climate impact strategy, corporate social responsibility, industrial design, engineering and material science, environmental science, resource economics and government policy. The firm provides an international perspective through its offices throughout the United States, Canada, Germany and the Netherlands.

Five Winds is recognized as a world leader in implementing health, safety, environmental and/or sustainability management systems across complex, international business organizations. Five Winds is working with Carnival Cruise Line, Holland America Line, Aida Cruises, Princess Cruises, Seabourn Cruise Line, and Carnival Corporate Environmental Compliance to implement environmental management practices that conform to the ISO 14001 international standard for environmental management systems (EMS). The initial effort is targeted to culminate with ISO 14001 certification of the Operating Lines in 2006. Beyond certification, Five Winds will be helping Carnival to utilize their environmental management systems to not only maintain and exceed compliance, but also to drive business value via improved environmental decision making throughout their organization."

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## **Global Environmental Management Initiative**

Global Environmental Management Initiative (GEMI) is a 501(c)3 nonprofit organization comprised of 42 leading companies, representing more than 22 business sectors, dedicated to fostering global environmental, health and safety (EHS) excellence through the sharing of tools and information to help business achieve EHS excellence ([www.gemi.org](http://www.gemi.org)). Through the collaborative efforts of its members, GEMI also promotes a worldwide business ethic for EHS management and sustainable development through example and leadership. GEMI is unique in that it provides a way for companies in a wide range of industrial sectors to work together in a cost effective manner. Members address strategic and tactical issues impacting progressive corporate environmental, health and safety activities in their companies around the world.

Since 1990, the Global Environmental Management Initiative (GEMI) has created tools and provided strategies to help business foster global environmental, health and safety excellence and economic success. GEMI provides a forum for corporate environmental leaders throughout the world to work together, learn from each other through the activities of work groups, benchmark with peers and create tools that can be used by GEMI members and others.

GEMI's vision is to be globally recognized as a leader in providing strategies for businesses to achieve EHS excellence, economic success and corporate citizenship.

Carnival Corporation has been a member and active participant of GEMI for two years.

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**For More Information**

For answers to questions about this report, or for more information regarding Carnival's environmental performance, please contact:

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