COMMITMENT

• Risk Management • Safety • Health • Security
• Environmental Management • Energy & Emissions
• Water Management • Waste Management • Biodiversity
Risk management is ingrained in our corporate culture. Effective risk management strategies allow us to identify impacts, risks and opportunities, thereby helping us to mitigate risks while executing our business strategies.

**2020 GOAL & UPDATE**

**Business Partner Code of Conduct and Ethics**
Further develop and implement vendor assurance procedures ensuring compliance with Carnival Corporation & plc’s Business Partner Code of Conduct and Ethics.

We comply with regulatory requirements and follow best management practices addressing human rights, ethics, and environmental protection throughout our operations and expect our business partners to adopt and incorporate these into their own organization.

**CYBERSECURITY**
Maritime Cyber Risk Management has been incorporated by the International Maritime Organization (IMO) into a global standard for the safe management and operations of ships. Carnival is expanding and implementing additional cyber security related processes and procedures for inclusion into our shipboard Safety Management System. A Maritime Cyber Security team has been formed and will continue to assess our ships and measure the operational impact and overall effectiveness of our procedures. Several additional processes and technical systems and equipment have been introduced onboard our ships and are expected to significantly reduce cyber risks.

**MODERN SLAVERY ACT**
Our Code of Business Conduct & Ethics explicitly condemns all forms of child exploitation and forced labor and states our intent to comply with and support laws and regulations relevant to slavery and human trafficking. For more information please see the Statement Pursuant to Modern Slavery Act 2015 in the Appendix.
ANIMAL WELFARE

• Farm Animals:
  • We continue to work on expanding our sourcing of cage free eggs. Our goal is to be 100% cage free by 2025.
  • We continue to align welfare standards for broiler chicken, ensuring that 100% of chicken sourced will be certified by the Global Animal Partnership by 2024.

• Tour Operators:
  • We continue our partnership with the Association of British Travel Agents (ABTA) to help us ensure we are responsibly managing excursions involving animals.
  • We started to audit the dolphin in captivity tour encounters used by our cruise brands in 2018 and our goal is to complete the process in 2019.

FY2018 RISK MANAGEMENT PERFORMANCE

FLEET CAPTAIN AND FLEET ENGINEER PROGRAM
We continue our Fleet Captain and Fleet Chief Engineer program, which provides regular training and mentoring for our shipboard staff, provided by our top shipboard officer performers who rotate through the program.

FLEET OPERATIONS CENTER
In 2018, we opened our third state-of-the-art Fleet Operations Center (FOC) in Miami, U.S. The first FOC was opened in Hamburg, Germany in 2015 and the second was opened in Seattle, U.S. in 2016. Our three FOCs are equipped with the most advanced ship to shore communications technologies available. These centers are designed to assist our captains, chief engineers, and deck and engineering officers with all aspects of operations, including digital support, planning, routing and any other nautical and/or technical operational need. The centers are staffed 24 hours a day, allowing for continuous communications between the ship and shore, and providing real-time support to our ships in order to minimize risk and improve operational efficiency.

AUDIT AND INVESTIGATIONS
Our ships are regulated by various international, national, state and local laws, regulations and treaties enforced in the jurisdictions in which they operate. Compliance with these laws and regulations is verified through inspections, surveys and audits. Independent third-party regulatory compliance is performed periodically through inspections, surveys and audits conducted by representatives from each ship’s country of registry, Port State and Classification Societies.

Internal regulatory and/or compliance audits Health, Environment, Safety and Security (HESS) are conducted annually of each brand’s head offices, 100% of our fleet, our ports, hotels and land transport assets. All incident investigation recommendations, audit observations, findings and non-conformities are reported to the brands and to relevant corporate groups for review and resolution. Additionally, internal focus reviews are performed based on identified root causes from incident investigations, audits, and management risk assessments.

Quarterly, the Board of Directors HESS Committees are briefed on the status and progress of plans for HESS and sustainability-related matters, as well as on HESS audit and investigation results. HESS audit and investigation results are used to determine compliance, improve effectiveness and efficiency, analyze trends, support newbuild and retrofit decisions, and promote best management practices.

DATA AGGREGATION AND ANALYSIS PLATFORM - NEPTUNE
In 2018, we continued the implementation of a state-of-the-art data aggregation and analysis platform called Neptune that enables real-time information transfer and sharing between our ships and shoreside teams supporting fleet operations. Our proprietary system significantly improves communication from ship to shore, providing new capabilities for enhancing the safe passage of ships at sea while improving operational efficiencies and supporting overall environmental, safety and security initiatives. The platform provides visual representations of ships routing, real-time navigational notifications, integrated weather data and traffic information and major equipment performance data, all which support operational efficiencies and minimize risk.
In 2018, the system expanded its aggregation and analysis in three areas:

- **Engine**: Enhancements are planned to start monitoring Liquefied Natural Gas (LNG) ships starting in 2019. The live dashboard will be modified to monitor engines’ technical parameters behavior when ships use LNG fuel.
- **Advanced Air Quality Systems (AAQS)**: Additional special geographical areas have been added to Neptune with the aim to align the analysis according to international/local environmental restrictions.
- **Energy Efficiency**: Analytics for basic energy usage data are now available for 95 ships in the fleet. Remaining ships are scheduled for completion in 2019.

**ARISON MARITIME CENTER**
We continue to train our officers in our world-class facility equipped with the latest maritime simulation technology and equipment. The Center provides rigorous safety training for bridge, engineering and environmental officers responsible for the navigation, operation and environmental compliance of the world’s largest fleet of cruise ships. Participants receive a maritime training experience that fosters critical thinking, problem solving, ethical decision making and skill development. For more information please visit [www.csmartalmere.com](http://www.csmartalmere.com).

**ENVIRONMENTAL OFFICER TRAINING**
In 2018, the Environmental Officer (EO) training program was expanded to include a second course for continuous professional development.

**TRAVELSEACURE**
We continued our global travel risk management program, named travelSEACURE. This program aims to support all employees, both shoreside and onboard, with security, health and unforeseen event assistance while on business travel. In 2018, travelSEACURE captured travel data for over 60,000 employees traveling on nearly 200,000 flights around the globe. This data was used to analyze travel risk patterns in order to keep our employees safe and secure.

**VISIBLE BODY WORN CAMERAS**
In 2018, three additional brands implemented the use of Body Worn Cameras by their security teams to record their interactions with passengers and gather video evidence of developing security situations. The use of cameras is clearly marked on the security officer’s uniforms. These cameras have proven to be very useful in capturing interactions between guests and crew members and in preventing confrontations by defusing tense situations.

**PORT VULNERABILITY AND THREAT ASSESSMENTS**
We regularly conduct port vulnerability and threat assessments to ensure the safety and well-being of our passengers and crew. These assessments document a port’s physical security, vulnerabilities, and any threats specific to the location. The assessments dictate the risk mitigation actions that must be taken by ships calling on the port. In 2018, Carnival Corporation formalized and implemented a destination vulnerability and threat assessment tool as a supplement to our port assessment program to ensure the safety and well-being of our passengers and crew while away from the port and participating in shore excursions. These assessments summarize the port/destination’s physical security, identify threats specific to the location, and allow Carnival’s security procedures to address vulnerabilities.

**PSYCHOMETRIC EVALUATION PROGRAM**
Carnival Corporation implemented a Psychometric Evaluation Program for its Deck and Technical Officers in January 2017. The program is utilized across all brands for the selection and promotion of Deck and Technical officers through the evaluation of specific psychological attributes at certain career stages. To ensure that all Officers possess the attributes required for each of their roles, a variety of psychometric evaluations, both online and in person with psychologists are used. The program includes a series of online and proctored evaluations as part of the new hire process, a comprehensive day-long, in-person evaluation as part of the senior officer promotion process and ongoing “check in” evaluations of our senior officers. In 2018, a new program designed to evaluate new hire Environmental Officer candidates was implemented.
OUR COMMITMENT

Like companies in any industry, we face a number of challenges and opportunities related to our performance, including the regulatory environment, global political and socioeconomic landscape and the advancement of science and technology. We take an active approach to identifying risks and opportunities and use a variety of strategies to manage and take advantage of them. We work to identify the best approaches to managing these issues, while simultaneously focusing on our sustainability performance and addressing the interests of our stakeholders.

OUR STRATEGY

Risk management is embedded throughout our organization. Our strategy to manage our risks and seek out opportunities consists of a system of internal controls comprised of our management systems, organizational structures, audit processes, investigations, standards, and our Code of Business Conduct and Ethics. Risks are managed at every level of the organization and discussed openly with leadership in order to minimize the impact of foreseen and unforeseen events. Upper management and the Boards of Directors are regularly advised on corporate risk management issues and on the status of compliance with our health, environment, safety, security and sustainability policies and procedures.

Our key impacts, risks and opportunities are addressed throughout this report. The following is a partial list of our impacts, risks and opportunities:

- Protecting the health and safety of our guests and crew.
- Ensuring the security of our guests, crew and ships.
- Building and maintaining trust and integrity in our supply chain.
- Preserving the natural environment.
- Remaining transparent in our sustainability performance accountability and reporting.
- Recruiting, training and retaining qualified employees.
- Operating in a changing geopolitical climate.
- Improving our performance through technological solutions and initiatives.
- Conserving fuel and minimizing engine emissions.
- Climate change - reducing greenhouse gas (GHG) emissions.
- Operating in an evolving regulatory landscape.
- Improving natural resource management.
- Strengthening stakeholder engagement.
- Partnering with communities/ports-of-call.

Our health, environment, safety, security and sustainability principles focus on detection, prevention, implementation, feedback and improvement. We plan and establish objectives and processes necessary to achieve the required and expected results. We then implement the plan and processes. Studying the actual results of implementation and comparing against the expected results, we then take action on significant differences between actual and planned results. Finally, we analyze these differences to determine their root causes and then determine where to apply changes that will improve the process or results.

Identification and mitigation of risks is a management responsibility. To facilitate this process, the Risk Advisory and Assurance Services department (RAAS) provides the enterprise with a holistic risk framework and methodology for quantifying risk and assessing management’s capabilities for improving risk management. RAAS also provides services via their internal audit program that can provide assurance that risk mitigations are designed and operating effectively.

Pursuant to this program, the RAAS department works closely with management to perform annual assessments, identify risks and evaluate controls to ensure compliance with company policies and procedures, as well as laws and regulations. Management reviews the assessments and updates with the Audit Committees.
Carnival Corporation & plc is the world's largest leisure travel company and among the most profitable and financially strong in the cruise and vacation industries, with a portfolio of 10 dynamic brands that include nine of the world's leading cruise lines. Together, the corporation's cruise lines operate 103 ships with cruises in all of the world's most popular vacation destinations.

Safety is paramount to our business’ success, and we focus on delivering safe operations fleet-wide every day. We are fully committed to the safety of our guests, employees and all others working on our behalf. We take this responsibility seriously and continuously evaluate ways to further improve and build a culture where safety is always intrinsic in everything we do.

### 2020 Goal & Update

**Guest and Crewmember Health, Safety & Security**

Striving to be free of injuries, we continue to build on our commitment to protect the health, safety and security of our guests, employees and all others working on our behalf.

Across our cruise brands we have implemented a series of initiatives to prevent guest and crew injuries. **Some examples include:**

- Improved cabin illumination.
- Updated carpet color scheme on stairs.
- Adjusted door dampers.
- Implemented programs to further support safety culture.
- Implemented knife safety program for food and beverage departments.

### FY2018 Safety Performance

**SEAEVENT**

In 2018, we developed and began implementing a fleetwide health, environment, safety and security (HESS) event reporting platform. This platform will standardize HESS event reporting and analysis capabilities across our entire fleet.
MONITORING
Management monitors safety performance through a weekly company-wide safety performance dashboard and monthly meetings designed to evaluate trends and assess performance. We actively look for ways to learn from our experiences. We also take part in cross-industry working groups which also include shipbuilders and Classification Societies to ensure best practices from throughout the sector are considered for adoption.

EMERGENCY RESPONSE EFFICIENCY – ELECTRONIC MUSTERING SYSTEM
Electronic mustering systems improve the speed with which we can account for personnel in emergency situations. By the end of 2018, 90% of the fleet was outfitted with these systems, which are designed to deliver a faster, more efficient mustering process and provide accurate, real-time measurement of assembly and evacuation, if ever needed.

AUDIT AND INVESTIGATIONS
• Internal Health, Environment, Safety and Security (HESS) compliance audits are conducted annually of each of our brands’ head offices, 100% of our fleet, our ports, hotels and land transport assets. HESS investigations are also carried out as needed to determine the root cause of incidents and to identify corrective and preventative actions that will reduce the risk of future occurrences. All incident investigation recommendations, audit observations, findings and non-conformities are reported to the brands and to relevant corporate groups for review and resolution. Additionally, internal focus reviews are performed based on identified root causes from incident investigations, audits, and management risk assessments.
• Our ships are regulated by various international, national, state and local laws, regulations and treaties enforced in the jurisdictions in which they operate. Compliance with these laws and regulations is verified through regular third-party inspections, surveys and audits.

EMERGENCY POWER & VULNERABILITY MITIGATION
To further reduce the risks of fire onboard, we completed an in-depth assessment of electricity generation under emergency conditions and committed to additional investments in this area as follows:
• Our ships are outfitted with an additional Emergency Diesel Generator for added redundancy and additional power generation if needed during an emergency.
• We have added protective, fire-resistant coating on vulnerable electric cables, have rerouted some electrical cables away from potential fire sources, and have added fire insulation near vulnerable electrical switchboards.

FIRE PREVENTION
The majority of our fleet has been upgraded with the latest engine room fire prevention, detection and suppression technologies. In 2016, we completed phase I of the program. In 2017, we completed approximately 80% of phase II and in 2018 we completed an additional 10%. Phase II includes:
• Engine control room audio & video recording.
• The installation of machinery space hydrocarbon gas/oil leak detection technologies and CCTV oil mist, smoke and fire analytics equipment.
• Double wall fuel hoses for our main engines.

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In 2018, we continued the implementation of a state-of-the-art data aggregation and analysis platform called Neptune that enables real-time information transfer and sharing between our ships and shoreside teams supporting fleet operations. The proprietary system significantly improves communication from ship to shore, providing new capabilities for enhancing the safe passage of ships at sea while improving operational efficiencies and supporting overall environmental initiatives. The platform provides visual representations of ships routing, real-time navigational notifications, integrated weather data and traffic information and major equipment performance data, all which support operational efficiencies and minimize risk.
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**Port and Destination Vulnerability and Threat Assessments**
We regularly conduct port vulnerability and threat assessments to ensure the safety and well-being of our passengers and crew. These assessments document a port’s physical security, vulnerabilities, and any threats specific to the location. The assessments dictate the risk mitigation actions that must be taken by ships calling on the port. In 2018, Carnival Corporation formalized and implemented a destination vulnerability and threat assessment tool as a supplement to our port assessment program to ensure the safety and well-being of our passengers and crew while away from the port and participating in shore excursions. These assessments summarize the port/destination’s physical security, identify threats specific to the location, and allow Carnival’s security procedures to address vulnerabilities.
OUR COMMITMENT

A core part of our company vision is to deliver safe and memorable vacations for our guests while ensuring the safety of our crew who work and live onboard our ships. We have developed and implemented best-practice safety policies and procedures that go beyond compliance with the International Maritime Organization’s Safety of Life at Sea (SOLAS) requirements. Our occupational health and safety management system is based on and incorporates the principles and practices delineated in OHSAS 18001:2007, the world’s most recognized occupational health and safety management system standard. In fact, several of our brands have obtained voluntary third-party certification in accordance with the OHSAS 18001 standard. We continually update our safety standards and practices by leveraging the expertise across our brand teams to introduce improved training procedures, incorporate new knowledge and learnings, identify and implement best management practices and evaluate new technologies.

Our maritime classification societies establish and maintain rules and regulations for the construction and maintenance of our ships. Our vessels and safety equipment are regularly inspected by each ship’s classification society, flag administration, port state control inspectors and internal auditors to verify that safety standards are met. Our ships are equipped with automated fire detection and suppression systems in all staterooms, galleys, machinery spaces, control rooms and public areas. Water mist and CO₂ systems on our ships are designed to contain, suppress and extinguish fires. We continue to invest in our fire safety systems, leveraging proven technologies that help us to ensure that fires are prevented whenever possible, and promptly detected and extinguished if they do occur. We also continuously evaluate new, innovative technology and often trial them onboard our ships.

OUR STRATEGY

CREW

Because our crew work and live onboard our ships, we maintain a 24/7 responsibility for the safety of our sea-going employees. Our Safety Management Systems (SMS), workplace safety committees and focused shipboard and shoreside training programs are in place to ensure the safest possible working environment for our crew.

The vast majority of our workforce is represented through formal joint management and worker health and safety committees. During regularly scheduled meetings, shipboard safety committees review and address specific workplace safety topics. These committees play a key role in reducing shipboard accidents through hazard assessments, accident reviews and inspections. These sessions also serve as a forum for promoting safety awareness and for raising, discussing and identifying solutions for shipboard safety issues. Safety representatives in brand shoreside departments communicate and share experiences and best practices throughout their respective fleets and across fleets through cross-brand safety working groups.

GUESTS

We do not underestimate the importance of ensuring the safety of our 12 million guests annually. International, national, flag state administration, and most importantly, our own regulations via our Safety Management System require us to provide a safe physical environment onboard for our guests and ensure they are informed about what to do in an emergency situation.

Our safety strategy is based on injury and accident prevention through the implementation of related procedures and processes, performance measurement, and continuous improvement activities. Our SMS establishes accountability for safety throughout the organization and incorporates both regulatory and company management safety requirements that go beyond compliance.

Our safety practices comply with or exceed international ship safety standards, employ state-of-the-art technologies in ship design and operations, require rigorous staff safety training and proficiency drills, utilize a variety of guest communication tools, administer ongoing ship audit and inspection programs and ensure all safety equipment is maintained. We examine new technologies that have the potential to positively influence the safety environment of our guests.
Health, environment, safety and security (HESS) is paramount to our business and our Fleet Operations Centers (FOC) are an essential component of our HESS strategy. A first in the cruise industry, our FOCs are designed to assist our captains, chief engineers, and deck and engineering officers with support, control and planning of ship nautical and technical operations. We have three regional FOCs in operation. The first FOC was opened in Hamburg, Germany in 2015, the second was opened in Seattle, U.S. in 2016 and the third was opened in Miami, U.S. in 2018. These centers provide real-time support for our fleet of ships.

The Miami FOC, opened in May of 2018, is the largest and most technologically advanced in the cruise industry. The 35,000-square-foot facility was custom-designed, and it is anchored by a 74-foot-long video wall composed of 57 LED screens. The high-definition wall displays the status of all ships, including weather, itinerary updates, safety, engine and environmental updates. Additionally, the status of ports, ships logistics, guest operations and a host of other functions are monitored. The FOC supports the work of cross-functional teams, including technical, nautical, port and guest operations, environmental operations and compliance, occupational safety, technical services, and other key areas.

Carnival Corporation’s FOCs are staffed 24 hours a day, allowing for communications between the ship and shore whenever needed, and providing immediate and continuous support to our ships. The FOCs feature custom-built tools such as the proprietary software application Neptune. This state-of-the-art tracking and data analysis platform was created for Carnival Corporation & plc to support its fleet of ships. Neptune helps make cruising more safe, efficient and sustainable. It specifically provides real-time information sharing between ships and shoreside teams who are trained to support fleet operations.
The system provides new capabilities for enhancing the safe passage of ships at sea while improving operational efficiencies and supporting overall environmental initiatives. The system also manages risks by providing the company with visual representations of ship movements and voyage plans, real-time navigational notifications, integrated weather data and traffic as well as port information.

Neptune continuously captures thousands of data points and provides real-time analytics of distinct parameters supporting ship-level navigational safety and focuses on the following strategic areas to optimize safety, environmental operations and overall fleet performance:

**NAUTICAL SAFETY**
- Neptune constantly monitors the ships and tracks their position, speed and direction. The platform also provides visual routing and information on the traffic and weather at the ships’ location.
- As Neptune sends real-time notifications in case a vessel deviates from defined standards, the Fleet Operations Center can provide immediate support.

**ENVIRONMENT**
- Neptune monitors the Advanced Air Quality Systems and their emissions, as well as the system usage in controlled areas. Neptune reports any deviation from targeted values.

**ENERGY MANAGEMENT**
- For each ship, Neptune collects and downloads almost two million data points daily. The data is used for immediate and subsequent analyses to identify trends and optimize forecast models. It supports operations to improve fleet engine performance and optimizes resources.

Carnival Corporation’s commitment to raising the bar on HESS has already generated several major enhancements, including its world-class CSMART Academy training facility where its deck and technical officers receive the industry’s most progressive training using state-of-the-art simulators. Carnival Corporation is taking its commitment to the next level with its Neptune support system and cutting-edge FOCs that enable the company to support HESS using real-time data in ways that have never been done in the cruising and commercial maritime industries. Together, its HESS training programs and innovative technological capabilities like Neptune add even more strength to its comprehensive approach to operational excellence as the number one priority for Carnival Corporation.
We strive to deliver exceptional vacation experiences wherever we travel. Our crew embodies this as the face and spirit of our brands. Integral to achieving this is the health and well-being of our guests, crew and port employees.

2020 GOAL & UPDATE

Guest and Crewmember Health, Safety & Security

Striving to be free of injuries, we continue to build on our commitment to protect the health, safety and security of our guests, employees and all others working on our behalf.

• We continue to enhance our health and safety procedures for our ships. In 2018, we further improved our procedures regarding food safety and the management of medical emergencies.

FY2018 HEALTH PERFORMANCE

PUBLIC HEALTH TRAINING

New, interactive food safety training modules were developed and launched on all of our ships in 2018. In 2019, we will further enhance the program with the development of additional modules covering outbreak management, potable water and recreational water facility management.

PUBLIC HEALTH INSPECTIONS

14 of our ships received a perfect score of 100 from voluntary Centers of Disease Control (CDC) Vessel Sanitation inspections. Three of our ships received failing scores and initiatives were launched to further enhance public health standards and avoid such instances in the future.

SEACARE

The implementation of a single, standard electronic health record (EHR) platform was completed across our fleet. This program, known as SeaCare, is enhancing many aspects of our medical operations and services. Initial training of medical staff to support SeaCare was completed.
ZIKA VIRUS
Our response to the worldwide Zika virus outbreak continued with the implementation of a range of prevention measures including:
• Provision of specific health advice to passengers, crew, medical staff and port employees.
• Provision of appropriate insect repellents onboard and during shore excursions.
• Application of mosquito prevention strategies both onboard and in our ports.

In 2018, no significant health impacts were reported on our ships or at the ports we own. At the end of the year, we returned to our routine mosquito prevention.

OFFICER WELLNESS PROGRAM
A pilot executive health assessment program was launched at the clinic and medical wellness facility at the Arison Maritime Center (known as CSMART), for Deck and Technical Officers. We anticipate that these regular health assessments, together with access to better personal health information and expert advice, will lead to longer term health improvements among our officers over time.

GUEST AND CREW CARETEAMS
Our CareTeams continue to provide compassionate care in the event of an emergency while onboard. CareTeam employees receive specialized training on how to sensitively and appropriately support guests, crew and their families during an emergency. They are available 24 hours a day, seven days a week and respond to a variety of guest and crew emergencies, primarily medical-related situations, and are dispatched to locations throughout our cruising regions to provide personalized support and assistance as needed to all of our brands.

MARITIME PUBLIC HEALTH PROCEDURE DEVELOPMENT
Throughout the year, we contribute to the review of a number of international health procedures and guidance developed by various organizations including:
• The updated CDC Vessel Sanitation Program Operations Manual and Construction Guidelines which were issued in summer 2018.
• The American College of Emergency Physicians Healthcare Guidelines for Cruise Ship Medical Facilities.
• The new Healthy Gateways European Union (EU) Joint Action, which addresses health preparedness at all points of entry (ground crossings, airports and seaports) in Europe. This builds on work previously completed as part of the EU SHIPSAN Joint Action. In 2018, a standard grading system for ship health inspections was developed and is currently being piloted.

INDUSTRY COMMUNICATION AND BEST PRACTICE SHARING
As members of the Cruise Lines International Association (CLIA), we regularly discuss health matters and communicate with all member lines to share best practices. In 2018, we participated in several CLIA health programs and initiatives, such as:
• Consultation on a revised directive for the quality of water intended for human consumption in Europe (98/83 EC), working with the Directorate General for the Environment (DG ENV) and other organizations.
• The development of Healthy Gateways and SHIPSAN health initiatives.

PORT HEALTH INITIATIVES
We continue to develop and implement comprehensive health standards and procedures at the ports we own and operate. These ports include Puerta Maya, Cozumel, Mexico; Grand Turk Cruise Center, Turks & Caicos Islands; Amber Cove Cruise Center, Puerto Plata, Dominican Republic; and Mahogany Bay Cruise Center, Roatán, Honduras.
Our Commitment

We have established comprehensive health standards that go beyond regulatory requirements to help protect the health of our guests, crew and port employees. These standards are implemented and enforced by each of our brands on all of our ships and within the port facilities that we own and operate. As part of our commitment, we also lead and participate in health-related cruise industry task forces and working groups.

We have taken a proactive role in addressing the quality of shipboard medical care. All of our medical personnel are expected to meet the qualification standards outlined in our medical and public health procedures. Our onboard facilities are designed to be able to provide emergency medical care for guests and crew, stabilize patients and initiate reasonable diagnostic and therapeutic intervention and facilitate the evacuation of seriously ill or injured patients when deemed necessary.

Our Strategy

Our public health programs have been developed from worldwide health and sanitation regulations, best practices and ship operating experience. Our programs are audited both internally by public health specialists and externally by officers from health authorities worldwide. We coordinate internal cross-brand and external cross-company Medical and Public Health Working Groups, which help to drive our ongoing health strategies and focus on continuous improvement. Through these forums, we are able to leverage the extensive health expertise and experience that exists both within our individual brands and across the cruise industry. In the U.S., we collaborate with the Centers for Disease Control and Prevention (CDC), an agency of the U.S. Department of Health and Human Services, which oversees health and sanitary conditions on all passenger vessels visiting U.S. ports. The CDC provides guidelines, reviews plans and conducts unannounced ship inspections. We continue to work with the CDC throughout a ship’s life to maintain safe standards through regular inspections, crew training and guest education.

One of our priorities remains promoting the prevention of gastrointestinal illness onboard our ships and the port facilities we own and operate. Our fleetwide Outbreak Prevention and Response Plan guides our actions to prevent and respond to outbreaks of illness onboard our ships. The strategy detailed in the plan addresses health screening and surveillance measures, the communication and provision of health advice, isolation of ill guests and crew, medical treatment, reporting to health authorities and the use of proven sanitation and infection control measures.

Additionally, we collect relevant data on all cases of gastrointestinal illness and report this information to international health agencies. This information helps with identification of types of infection, potential sources, and the likely methods of transmission, thereby allowing us to implement even more effective risk mitigation strategies.
WE HAVE ESTABLISHED COMPREHENSIVE HEALTH STANDARDS THAT GO BEYOND REGULATORY REQUIREMENTS TO HELP PROTECT THE HEALTH OF OUR GUESTS, CREW AND PORT EMPLOYEES.
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Criminal activities are always a potential threat to our business given our global footprint and reach. Therefore, we are focused on maintaining a high level of security for our guests, crew and assets. We take every possible action to foresee and guard against such risks. These efforts start long before any passenger boards our vessels or any voyage sails.

**2020 GOAL & UPDATE**

**Guest and Crewmember Health, Safety & Security**

Striving to be free of injuries, we continue to build on our commitment to protect the health, safety and security of our guests, employees and all others working on our behalf.

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**FY2018 SECURITY PERFORMANCE**

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FY2018 Security Performance Continued...

**Insider Threat Program**
Carnival is implementing an Insider Threat Program across all ships to mitigate risks related to shipboard employees who may seek to use their position to harm the safety and welfare of our passengers or other employees, or to damage vital company interests. A part of the program includes additional security screening of potential new employees. In 2018, the Corporation conducted over 17,000 security screenings on new employees.

**Active Assailant Program**
Carnival is implementing an Active Assailant Program with the objective of reducing risk and protecting guests and crew members from bodily harm on our ships. In 2018, we introduced fleetwide emergency response protocols in the case of any active assailant incident occurring onboard our ships.

**Asia Pacific Summit**
In 2018, three Carnival Corporation ships were chartered by the Asia-Pacific Economic Cooperation (APEC) Committee to serve as hotels and a conference center for the annual APEC Chief Executive Officer Summit hosted in Port Moresby, Papua New Guinea. Approximately 1,400 guests and visitors participated in sessions or were accommodated onboard the three ships, including 19 heads of state and/or senior governmental representatives. We worked closely with multiple national governments to implement and manage numerous security measures for the duration of the conference.

**Sea Event**
In 2018, we developed and began implementing a fleetwide health, environment, safety and security (HES) event reporting platform. This platform will standardize HES event reporting and analysis capabilities across our entire fleet.

**Visible Body Worn Cameras**
In 2018, three additional cruise brands implemented the use of Body Worn Cameras by their security teams to record their interactions with passengers and gather video evidence of developing security situations. The use of cameras is clearly marked on the security officer’s uniform. These cameras have proven to be very useful in capturing interactions between guests and crew members and in preventing confrontations by defusing tense situations.

**Dual-View X-ray Systems**
In an ongoing effort to strengthen security and improve the passenger experience, our brands continue to evaluate and implement new security screening technologies, including the use of Dual-View X-ray Systems. In 2018, our cruise brands invested in cutting-edge screening equipment and technology that utilizes sophisticated algorithms to help detect concealed items and possible threats while equipping screeners with high-resolution images to enhance the screening process while reducing the need to re-scan items. Additionally, these systems enhanced the passenger experience by improving throughput, thereby helping to expedite security checks.

**Psychometric Evaluation Program**
Carnival Corporation implemented a Psychometric Evaluation Program for its Deck and Technical Officers in January 2017. The program is utilized across all brands for the selection and promotion of Deck and Technical Officers through the evaluation of specific psychological attributes at certain career stages. To ensure that all officers possess the attributes required for each of their roles, a variety of psychometric evaluations, both online and in person with psychologists, are used. The program includes a series of online and proctored evaluations as part of the new hire process, a comprehensive day-long in person evaluation as part of the senior officer promotion process and ongoing “check in” evaluations of our senior officers. In 2018, a new program designed to evaluate new hire Environmental Officer candidates was implemented.
FY2018 SECURITY PERFORMANCE CONTINUED...

SECURITY OFFICER TRAINING PROGRAM (SOTP)
Carnival Corporation’s SOTP is based in the Philippines and provides a comprehensive two-week curriculum that prepares our new hire security team members for duty onboard any of our ships as a security officer. In 2018, we trained over 300 ship security personnel at the facility, 38% of whom were females. The curriculum is regularly reviewed and updated by brand security experts so that the training reflects the company’s latest procedures, requirements and best practices.

ADVANCED KEY CONTROL TECHNOLOGY
In 2018, additional cruise brands have implemented an enhanced key control security system. This state-of-the-art system provides several security benefits including the prevention of unauthorized access and mitigating risks associated with lost keys.

PORT AND DESTINATION VULNERABILITY AND THREAT ASSESSMENTS
We regularly conduct port vulnerability and threat assessments to ensure the safety and well-being of our passengers and crew. These assessments document a port’s physical security, vulnerabilities, and any threats specific to the location. The assessments dictate the risk mitigation actions that must be taken by ships calling on the port. In 2018, Carnival Corporation formalized and implemented a destination vulnerability and threat assessment tool as a supplement to our port assessment program to ensure the safety and well-being of our passengers and crew while away from the port and participating in shore excursions. These assessments summarize the port/destination’s physical security, identify threats specific to the location, and allow Carnival’s security procedures to address vulnerabilities.

MAN OVERBOARD DETECTION SYSTEMS
We continue to research, test and pilot man overboard detection systems and associated technologies. These systems are intended to support shipboard personnel by identifying an incident involving a person falling or jumping overboard as it occurs. Because these technologies are immature and tend to have an unacceptably high rate of false alarms, we have been strongly supporting the development of an international design and performance standard against which we will require these systems to be certified. We expect the international standard to be finalized in 2019. The standard will require a high detection rate with a low false alarm rate (to avoid unnecessary distractions to the Bridge team navigating the ship) under a variety of maritime conditions. We continue to engage with manufacturers as we await the finalization of the international design and performance standard.

TRAVELSEACURE
We continued our global travel risk management program, named travelSEACURE. This program aims to support all employees, both shore-side and onboard, with security, health and unforeseen event assistance while on business travel. In 2018, travelSEACURE captured travel data for over 60,000 employees traveling on nearly 200,000 flights around the globe. This data was used to analyze travel risk patterns in order to keep our employees safe and secure.

DATA AGGREGATION AND ANALYSIS PLATFORM - NEPTUNE
In 2018, we continued the implementation of our state-of-the-art data aggregation and analysis platform called Neptune that enables real-time information transfer and sharing between our ships and shoreside teams supporting fleet operations. Our proprietary system significantly improves communication from ship to shore, providing new capabilities for enhancing the safe passage of ships at sea while improving operational efficiencies and supporting overall environmental, safety and security initiatives. The platform provides visual representations of ships routing, real-time navigational notifications, integrated weather data and traffic information and major equipment performance data, all which support operational efficiencies and minimize risk.

FLEET OPERATIONS CENTER
In 2018, we opened our third state-of-the-art Fleet Operations Center (FOC) in Miami, U.S. The first FOC was opened in Hamburg, Germany in 2015 and the second was opened in Seattle, U.S. in 2016. Our three FOCs are equipped with the most advanced ship to shore communications technologies available. These centers are designed to assist our captains, chief engineers, and deck and engineering officers with all aspects of operations, including digital support, planning, routing and any other nautical and/or technical operational need. The centers are staffed 24 hours a day, allowing for continuous communications between the ship and shore, and providing real-time support to our ships in order to minimize risk and improve operational efficiency.
OUR COMMITMENT

The security of our guests and crew is of paramount importance. Our ships are subject to the International Ship and Port Facility Security (ISPS) Code, a set of regulations and guidelines created and approved by the International Maritime Organization (IMO). All of our ships and their daily operations meet or exceed the requirements of the ISPS Code. The code defines security standards, requirements, arrangements and procedures for ships, ports, and governments. It also prescribes the responsibilities for governments, shipping companies, shipboard personnel, and port/facility personnel, among others, to develop security plans, detect security threats and take preventative measures against potential security incidents affecting ships or port facilities. Compliance is verified by inspections and surveys conducted by the Flag State, or by its delegated representative (usually a classification society), and certificates are issued that confirm compliance. Cruise ships are also subject to domestic security regulations in the countries they visit. Our ships meet or exceed the requirements of the U.S. Maritime Transportation Safety Act (MTSA) and domestic regulations in the other countries we visit. We have developed and issued a comprehensive set of security procedures that go beyond regulatory requirements to further ensure the security of our guests, crew and ships.

OUR STRATEGY

Our security professionals, most of whom come from a military or law enforcement background, maintain close working relationships with law enforcement, coast guards, naval authorities and governmental agencies around the world. They participate in and many times lead government/private sector and industry maritime security working groups. Some of these relationships include the U.S. Department of Defense, U.S. State Department, Federal Bureau of Investigation (FBI), UK Foreign & Commonwealth Office (FCO) and International Criminal Police Organization (INTERPOL). Specifically, our security leaders serve in various roles/capacities on the following organizations: The U.S. Department of State’s Overseas Security Advisory Council’s Maritime Security Working Group, the FBI’s Domestic Security Alliance Council’s (DSAC) Intelligence and Threats Committee and the DSAC’s Leadership Council.

These relationships result in information-sharing arrangements and collaborative efforts that are essential to our proactive security program. Further, our security professionals monitor numerous information and intelligence platforms to detect issues before they impact our passengers, crew, or vessels. Many of the ports that our vessels call on are assessed by our security professionals on a scheduled basis beyond any requirements set forth by applicable laws, rules, or code.

Our security processes are designed to minimize security-related risks while allowing for the smooth but controlled flow of guests, crew and supplies. Guests and crew will notice a visible security presence while embarking the ship and throughout each cruise. Security personnel maintain strict access control to our ships. We employ a variety of technologies to assist security personnel. These include surveillance technologies such as closed-circuit television and screening technologies such as metal detectors, x-ray machines and explosives detection equipment. We also are constantly assessing and evaluating new technologies for future projects and security enhancements.

Our security processes guard against criminal activity threats. Each ship in our fleet must report alleged criminal activity. Depending on jurisdictional considerations and the severity of alleged offenses, we coordinate investigative efforts with appropriate law enforcement authorities.
Across our nine brands, we host 12.4 million guests a year and visit over 700 ports of call around the world. The health and vitality of the oceans, seas, and communities through which we travel is absolutely essential to our business. That makes protecting the environment and biodiversity one of our most critical areas of focus. Our employees not only take great pride in making sure our guests’ vacation exceeds their expectations, but are also deeply committed to protecting the oceans and seas.

2020 GOAL & UPDATE:
We achieved our carbon footprint goal ahead of schedule and continue to make progress on our environmental 2020 sustainability goals. These goals include:

- Reducing Emissions – we made more progress on our goal and achieved a 27.6% reduction relative to our 2005 baseline.
- Installing Advanced Air Quality Systems (AAQS).
- Increasing cold ironing capacity.
- Increasing advanced waste water purification system (AWWPS) capacity.
- Increasing water efficiency and reducing waste.

Detailed progress for each environmental goal can be found on pages 12-13.

FY 2018 ENVIRONMENTAL MANAGEMENT PERFORMANCE

ISO 14001: 2015 CORPORATE CERTIFICATION
To further support our environmental strategies in 2018, our Environmental Management System was certified at the corporate level vs. at the individual brand level for the first time, confirming our commitment to consistent, best-practice environment management practices across our brands.

OPERATION OCEANS ALIVE
In 2018, Carnival launched Operation Oceans Alive. The goal of this initiative is to instill in all employees a sense of personal commitment to protect and care for the marine environment as our business is dependent on healthy oceans.
CARNIVAL CORPORATION ENVIRONMENTAL EXCELLENCE AWARD
In 2018, Carnival started the Environmental Excellence Award to honor the ships within the Carnival fleet with the best environmental performance. One ship from each cruise brand is selected and from those one ship is recognized as the best from the fleet.

WORLD OCEANS DAY
In 2018, Carnival’s cruise brands celebrated World Oceans Day both onboard and shoreside with events, activities and communications to promote ocean education and conservation.

REMOVING SINGLE-USE PLASTICS
In 2018, we started an initiative to evaluate our collective use of single-use plastic items and alternative options available in the market. As part of this initiative, we have identified items we can replace with reusable non-plastic alternatives or biodegradable options available for straws, take away cups and other items. Our goal is to remove single-use plastics within our operations whenever feasible.

PARTNERSHIPS
We are leading the way to cleaner emissions from cruise ships with the support of and collaboration with key partners:
- We started a new partnership with the Bellona Foundation in an advisor capacity to support our climate change initiatives.
- We continue our partnership with Wärtsilä designed to improve the energy efficiency of our fleet of over 400 Wärtsilä engines.
- We continue our partnership with EcoSpray to develop and install the most advanced air quality systems at sea.

ENVIRONMENTAL COMPLIANCE
In 2013, an environmental crime was reported by an engineer on one of our ships. Following an investigation by the Department of Justice, we learned that the misconduct involved multiple ships over several years. We took responsibility and signed a plea agreement in 2016. Our probation includes a five-year Environmental Compliance Plan (ECP) that began on April 19, 2017. The ECP requires independent audits as well as oversight by a Court Appointed Monitor. In 2019, the company agreed to revised terms of probation to resolve a petition for revocation of probation. For further details please visit: click here.

ENVIRONMENTAL OFFICER TRAINING
In 2018, the Environmental Officers (EO) training program was expanded to include a second course for continuous professional development.

IMO AND CLIMATE CHANGE
We remain active and interested in the worldwide strategies and frameworks being designed and developed to address climate change and air emissions. Specific to the maritime industry, the International Maritime Organization (IMO) is the specialized agency of the United Nations responsible for regulating shipping. We participate in IMO meetings and working groups through our trade association, the Cruise Lines International Association (CLIA). In 2018, the IMO established an initial greenhouse gas (GHG) emissions from ships reduction strategy in line with the COP21 (Paris Agreement). The strategy includes likely implementation of further phases of the Energy Efficiency Design Index (EEDI) for new ships, reducing international shipping’s average unit CO₂ emissions by at least 40% by 2030 and by 70% by 2050 (relative to 2008), and reducing absolute international shipping GHG emissions by at least 50% by 2050 compared to 2008 and pursuing efforts to phase them out.
Our commitment to protecting the environment. Through our Business Partner Code of Business Conduct and Ethics we communicate our expectations that our business partners will join us in following the same standards. Our impacts include our use of fuel, electricity, water and food; discharge of wastewater; generation and disposal of solid wastes; emissions from combustion and refrigeration equipment; and our diverse supply chain (see illustration on page 59 for more details). In this report we discuss the following aspects of our environmental footprint with respect to our commitment to protect the environment:

- Energy and Emissions
- Water Management
- Waste Management
- Biodiversity

Our strategy

Our environmental management strategy is based on the values and objectives set forth in our Health, Environment, Safety and Security (HESS) Policy and our 2020 sustainability goals. We carefully manage environmental activities and address environmental stewardship at every level of our organization.

In 2015, we reached a significant milestone in our sustainability journey by announcing 2020 sustainability goals to further drive, improve and support our strategies. Six of our ten sustainability goals focus on our environmental performance.

There are multiple elements of our strategy, including addressing climate change, investing in port communities, complying with a changing regulatory landscape, evaluating new technologies, addressing stakeholder needs, and expanding partnerships, all of which are designed to protect the environment while supporting our objective to exceed expectations.

We evaluate environmental risks, develop standards and procedures and put high emphasis on our associated environmental leadership and performance.

We have consolidated our brand’s best environmental practices and procedures into a single corporate wide HESS management system to ensure a consistent approach across all our brands.

Our management teams identify and manage environmental aspects and impacts, supervise the environmental performance of our ships and ensure compliance with environmental statutory requirements, best management practices and company environmental procedures. Most importantly, our dedicated ships’ officers and crew carry out our policies and procedures onboard, every day.

To further support our environmental strategies, our Environmental Management System (EMS) is certified in accordance with the ISO 14001:2015 Environmental Management System standard. An independent, third-party organization audits and certifies our EMS in accordance with ISO 14001. We have also developed a greenhouse gas inventory management plan (GHG IMP) in accordance with the requirements of the ISO 14064-1:2006 and The Greenhouse Gas Protocol, which enables our third-party GHG verifier to certify our GHG emissions inventory to that standard.
Each ship in our fleet has a full-time Environmental Officer (EO), who oversees environmental compliance and implementation of environmental procedures (for more details see the EO section in the Appendix).

We have invested in a number of environmental initiatives based on our impacts. We are also actively involved in research and development projects for our existing ships and for new ships under development. We have dedicated departments that evaluate technologies and new systems for installation throughout our fleet. These departments evaluate technical, regulatory, safety, environmental and operational aspects associated with maritime environmental systems/technologies. Among the challenges typically encountered when adapting shore-based technologies to maritime use are adjustments for space, weight and access limitations, material standards, operating environment and regulatory approvals. All of these factors increase the complexity of projects to improve environmental technologies in the maritime domain. In order to efficiently evaluate these opportunities, ships within the fleet are regularly selected to test systems/technologies and run pilot programs.

We partner with a variety of environmentally-focused organizations. The goals of these partnerships vary depending on the type of organization. Learn more about our partnerships in the Appendix.
In 2018, we launched Operation Oceans Alive, a new environmental compliance and stewardship program.

Operation Oceans Alive is a call to action for all employees to care about and protect our oceans, seas, and waterways from environmental harm, ensuring their ecosystems, plant life and aquatic animals thrive both now and in the future.

This past year, as part of that commitment, we continued to install the most advanced technology for cleaning our exhaust system emissions and completed fitting equipment that meets the latest standards for treating bilge water. We’ve accelerated our environmental training efforts, as we aspire to create a culture of compliance.

Together, we celebrated World Oceans Day at sea with our guests and crew and ashore at our brands’ headquarters. World Oceans Day is an international day of ocean celebration and collaboration. We presented Environmental Excellence Awards to honor the ships within the Carnival fleet with the best environmental performance. One ship from each cruise brand was selected and from those, one ship was recognized as the best from the entire fleet. We also rolled out a new health, environmental, safety and security (HESS) employee of the month program. In 2018, we continued to work closely with environmentally-focused organizations to help preserve the beautiful world we live in.

We have accomplished a tremendous amount together over the last year, through better communication, coordination and collaboration.

We are committed to protecting and preserving the beauty and majesty of the oceans, seas and land environments that we visit. And we are committed to continuously improving our operations and heightening our environmental focus.

That’s what Operation Oceans Alive is all about. In 2019, we will continue our efforts to be proactive stewards, ambassadors and guardians of our environment.

After all, these waters are our home. Our future.
We have initiatives underway across each of our brands to reduce our carbon footprint. We actively participate in the process on an industry level to improve our technology, systems, and operations.

2020 GOAL & UPDATE

Carbon Footprint
Reduce the intensity of CO₂e (equivalent carbon dioxide) emissions from our operations by 25% by 2020 relative to our 2005 baseline, measured in grams of CO₂e per ALB-km.

Reducing Emissions - we made more progress on our goal and achieved a 27.6% reduction relative to our 2005 baseline.

Continuing our efforts to reduce our carbon footprint we:
• Delivered the first cruise ship in the world (the AIDAnova) powered at sea and in port by liquefied natural gas (LNG).
• Continued our partnership with Wärtsilä to drive further gains in engine efficiency.
• Started a partnership with the Bellona Foundation.
**2020 GOAL & UPDATE**

**Advanced Air Quality Systems**
Continue to improve the quality of our emissions into the air by developing, deploying and operating Advanced Air Quality Systems across the fleet capable of reducing sulfur compounds and particulate matter from our ship’s engine exhaust.

We continue to improve the quality of our emissions into the air by installing and Advanced Air Quality Systems across the fleet. These systems significantly reduce sulfur compounds and particulate matter, including black carbon, from our ship’s engine exhaust.

- 74% of our fleet is equipped with Advanced Air Quality Systems.

**2020 GOAL & UPDATE**

**Cold Ironing Capacity**
Increase cold ironing coverage of our fleetwide capacity in relation to future port capabilities.

We continue to improve the quality of our emissions into the air by further increasing the cold ironing coverage of our fleetwide capacity.

- 46% of our fleet is equipped with cold ironing capabilities.

**FY 2018 ENERGY & EMISSIONS PERFORMANCE**

**LNG**

**LIQUEFIED NATURAL GAS (LNG)**
As part of our commitment to reducing our air emissions and improving air quality in the environments we visit, we are pioneering the use of LNG, the world’s cleanest fossil fuel. In 2018 we:

- Delivered the first cruise ship in the world (the AIDAnova) powered at sea and in port by Liquefied Natural Gas (LNG).
- Began construction of additional LNG ships.

**OPERATIONAL EFFICIENCY**

We continued our 12-year agreement with Wärtsilä to maintain the highest possible levels for cruise ship diesel engine safety and reliability. In 2018, we achieved a 0.6% fuel reduction.

**INTERNATIONAL MARITIME ORGANIZATION (IMO) AND CLIMATE CHANGE**

We remain active and interested in the worldwide strategies and frameworks being designed and developed to address climate change and air emissions. Specific to the maritime industry, the International Maritime Organization (IMO) is the specialized agency of the United Nations responsible for regulating shipping. We participate in IMO meetings and working groups through our trade association, the Cruise Lines International Association (CLIA). In 2018, the IMO established an initial greenhouse gas (GHG) emissions from ships reduction strategy in line with the COP21 (Paris Agreement). The strategy includes likely implementation of further phases of the Energy Efficiency Design Index (EEDI) for new ships, reducing international shipping’s average unit CO₂ emissions by at least 40% by 2030 and by 70% by 2050 (relative to 2008), and reducing absolute international shipping GHG emissions by at least 50% by 2050 compared to 2008 and pursuing efforts to phase them out.

**GHG MONITORING, REPORTING AND VERIFICATION**

In 2018, we started to report our carbon emissions on all voyages to, from and between European Union ports. This program began on January 1, 2018 and requires any ship calling on or departing from a European Union or European Economic Area port to measure and report fuel consumption on the associated leg.
FY 2018 ENERGY & EMISSIONS PERFORMANCE CONTINUED...

2018 EUROPEAN UNION OUR OCEANS CONFERENCE – BALI
Carnival Corporation provided progress on our efforts to pioneer Liquefied Natural Gas in the cruise industry. This is part of Carnival’s approach to reduce greenhouse gas emissions. The Our Oceans conference seeks public commitments to actions that will reduce marine pollution, manage aquatic resources sustainably, mitigate climate change and establish marine sanctuaries.

DIRECT & INDIRECT EMISSIONS
We quantify, report and verify our greenhouse gas (GHG) emissions, including our direct (Scope 1) and indirect (Scope 2) emissions. Our direct GHG emissions were 99.5 percent of our total emissions, and the emissions generated from our ships’ fuel consumption represented the vast majority of our GHG emissions (97.4 percent). Our indirect GHG emissions represent only 0.5 percent of our total emissions, the bulk of which are attributed to electricity purchased to power our shore-based buildings. The graphic on page 70 depicts our energy use and related emissions.

DATA AGGREGATION AND ANALYSIS PLATFORM - NEPTUNE
In 2018, we continued the implementation of a state-of-the-art data aggregation and analysis platform called Neptune that enables real-time information transfer and sharing between our ships and shoreside teams supporting fleet operations. Our proprietary system significantly improves communication from ship to shore, providing new capabilities for enhancing the safe passage of ships at sea while improving operational efficiencies and supporting overall environmental, safety and security initiatives. The platform provides visual representations of ships routing, real-time navigational notifications, integrated weather data and traffic information and major equipment performance data, all which support operational efficiencies and minimize risk.

SCOPE 3 EMISSIONS
We have reported our Scope 3 emissions in the CDP (formerly known as the Carbon Disclosure Project) since 2009. Scope 3 emissions are derived from the energy used in other upstream and downstream indirect emissions like business travel, passenger transportation to and from our ships, fuel transport, waste disposal and deliveries of supplies. See Climate Change CDP Report for more information.

OUR COMMITMENT
We believe in communicating transparently about climate change. We actively participate in the process of determining our company and industry’s role in addressing climate change. We have publicly disclosed our carbon footprint since 2006 and are taking specific and proactive steps to reduce this footprint. Energy is vital to our business so that guests can enjoy our facilities and amenities on our ships while at sea and in port. Fuel is the primary source of energy consumed for the propulsion of our fleet and our onboard hotel power requirements.

Our shipboard fuel consumption contributes to more than 97% of our direct (Scope 1) carbon emissions and is therefore the most significant contributor to our carbon footprint and the number one focus of our carbon reduction efforts. See the graphic on page 70 for further details.

OUR STRATEGY
We have implemented multiple energy-savings initiatives to manage our emissions footprint. See Energy-Saving Initiatives in the Appendix for further details.

We have established a Corporate Energy Conservation group charged with reducing our overall energy consumption. The goal of this group is to identify both immediate and long-term opportunities for saving fuel.

We are actively involved in new shipbuilding research and development for emission abatement technologies and new equipment to further improve energy efficiency. We are pioneering the use of liquefied natural gas (LNG) for the cruise industry. LNG is the world’s cleanest fossil fuel and in December 2018 we took delivery of our first ship to be
powered by LNG – both in port and at sea. We have ten additional new LNG ships on order. We also continue to work on practical feasible energy reduction and conservation initiatives to help us reach our targets. Reducing fuel use and driving energy efficiency takes multi-million-dollar investments and a multi-pronged, multi-year strategy.

These include abatement technologies and equipment to further reduce engine emissions such as:

- Advanced Air Quality Systems (AAQS) that use proprietary technology to remove sulfur oxides and particulate matter from engine exhaust.
- Cold ironing capabilities that allow us to plug into a port’s electrical grid while in port if the shoreside infrastructure is available.
- Air Lubrication Systems using air bubbles to reduce friction between ship’s hull and the water.
- A performance-based maintenance and engine efficiency monitoring agreement with Wärtsilä, our largest main engine manufacturer.

We quantify, monitor, report and verify our GHG emissions. We developed a GHG Inventory Management Plan (GHG IMP) in 2010 in accordance with the requirements of ISO 14064-1:2006 and The Greenhouse Gas Protocol. Our GHG emissions are independently verified by a third-party. Lloyd’s Register Quality Assurance Inc. (LRQA) certified our scope 1 and scope 2 GHG emissions inventory. For more information on our third-party verification visit our Assurance Statement in the Appendix.

We continue to train and certify employees responsible for main engine, refrigeration and air-conditioning plants. We use recovery units certified to meet refrigerant recycling and recovery requirements and we implement programs to reduce Ozone Depleting Substance (ODS) releases.
In 2013, we announced our plans to install advanced air quality systems (AAQS), generically known as exhaust gas cleaning systems (EGCS) or scrubbers, on our ships. These systems remove sulfur compounds and particulate matter from our ships’ engine exhaust at any operating state of a ship – at sea, during maneuvering and in port. Due to the initial limited availability of ship-ready AAQS for marine applications, Carnival Corporation led the way in developing the technology to successfully function in the restricted spaces available on cruise ships. Making the necessary investments, -- totaling approximately $500 million of installations to date -- has led to a significant development in shipboard environmental technology.

As of FY2018, 74% of our fleet is equipped with AAQS and we plan to develop and deploy the systems on more than 85 ships across our global fleet by 2020 – significantly improving the quality of air emissions from our ships and reinforcing our environmental commitment.

Through extensive independent testing, the systems have proven capable of outperforming low-sulfur fuel alternatives such as marine gas oil (MGO) in terms of overall cleaner air emissions and no negative environmental impact to oceans and seas, all as originally intended by the International Maritime Organization (IMO). Ships using AAQS to scrub heavy fuel oil (HFO) are also effective in reducing particulate matter and typically have lower sulfur oxide (SO₂) emission levels than MGO, as well as lower NOx and fewer polycyclic aromatic hydrocarbons (PAHs).

**OPEN LOOP SYSTEM**

Carnival Corporation’s AAQS are open loop systems that use a sea water spray for removing sulfur from engine exhaust, converting it to sulfates (which are abundant in the sea) before returning the seawater to the ocean. The seawater is monitored by pH, PAH and Turbidity sensors through this process to ensure that it meets or exceeds the IMO required standards before returning to the ocean. A further filtration process while in port ensures a seawater quality meeting other applicable environmental standards for operations.

**CARNIVAL’S OPEN LOOP ADVANCED AIR QUALITY SYSTEM**
INDEPENDENT TWO-YEAR SCIENTIFIC WASH WATER STUDY

In March 2019 we released the Carnival/DNVGL 2018 Wash Water Assessment, a four-year scientific wash water study that collected 281 wash water samples from 53 Carnival ships, conducted lab analyses on each sample for 54 different parameters including PAHs and metals, and partnered with DNVGL to evaluate and compare the results to major national and international water quality standards. To provide further understanding and perspective on the quality of the discharged wash water, the study demonstrated that the AAQS wash water samples were well below the limits set by several major national and international land-based water quality standards up to and including the World Health Organization (WHO) standards for drinking water.

Specific to IMO wash water requirements, the study confirmed results from previous studies showing the quality of the water used in the AAQS process was always far below the IMO monitoring limits for PAHs and the annual limits for nitrates. In fact, when measured against IMO standards, the average wash water test results in this study were over 90 percent lower than maximum allowable levels. In many cases, the materials were completely undetectable in the laboratory testing process.

Other standards the results were compared against include, German Waste Water Ordinance, which as a “point source discharge” standard was the most directly applicable, and also the EU Industrial Emissions Standards and the Surface Water Standards of the EU’s Water Framework Directive, both “water quality” standards. The AAQS test results compared favorably with all of these major benchmark standards, demonstrating that the composition of the water was not only consistently below, but in most cases, significantly below the most stringent limits. The full study briefing can be found at: http://media.corporate-ir.net/media_files/IROL/14/140690/Carnival-DNVGL_Washwater_Analysis_2018.pdf

EMISSIONS PROFILE

To further enhance our emissions profile, we have also started to install a catalytic reactor on the engine exhaust to reduce particulate matter (PM) even before the exhaust reaches the AAQS tower, which also is effective in reducing PM. Our standard AAQS removes 99% of sulfur (in the form of SO₂) and up to 75% of the particulate matter, including elemental and organic and black carbon, as well as PAHs. The combined effect of the AAQS, catalytic reactor and other systems is a further reduction of the particulate matter, including the very fine PM 10 and 2.5 particles. The use of AAQS with HFO fuel and other systems creates a reduction of between 5-15% compared to MGO fuel use.

All AAQS comply with international regulations and are certified by a classification society. In addition, all systems are equipped with continuous monitoring equipment to automatically record required parameters – specifically SO₂ in the exhaust gas and pH, PAH and Turbidity in the wash water.

In 2018, Carnival Corporation was a founding member of Clean Shipping Alliance 2020, a new industry association consisting of 39 leading shipping and maritime companies, and providing education and information on the benefits of AAQS, as well as a public voice. Collectively, these companies represent over 3,000 ships across the sectors of commercial shipping and cruising.
Reflecting on our commitment to sustainability, we are continuing to pioneer the use of liquefied natural gas (LNG), the world’s cleanest fossil fuel, and are expanding our LNG investment.

We began the implementation of our LNG vision by using LNG in port. In 2015, AIDAsol was the first cruise ship in the world to be supplied with power by an LNG Hybrid barge while in Hamburg, Germany. The LNG Hybrid Barge, a unique pilot project with Becker Marine Systems, was designed, constructed and commissioned in three years. Since then, we have expanded our LNG capabilities to supply LNG directly to two ships, each with a dual-fuel powered engine (AIDAprima and AIDAperla). These ships use LNG while in port drawing fuel directly from trucks alongside the ship.

In 2018, we made history with the launch of AIDAnova, the first cruise ship in the world powered by LNG both at sea and in port. Leading the cruise industry’s use of LNG to power cruise ships, we have a further 10 sister vessels due for delivery between 2019 and 2025 for Costa Cruises, AIDA Cruises, P&O Cruises UK, Carnival Cruise Line and Princess Cruises.

**FIRST CRUISE SHIP POWERED BY LNG AT SEA AND IN PORT**

We began construction on AIDAnova in 2016 and the history-making ship joined the fleet in late 2018. The largest cruise ship ever built at a German shipyard, AIDAnova also marks an exciting new generation of “green” cruise ships that will be powered at sea and in port by LNG. In December 2018, AIDAnova made its maiden call in the Canary Islands at the Santa Cruz de Tenerife Terminal, a concession operated by Carnival Corporation that can accommodate next-generation “green” cruise ships powered by LNG. The first LNG supply for AIDAnova at the port took place upon its arrival and was made possible through our partnership with Shell.

**SWITCHING FROM MARINE DIESEL TO LNG**

- **0%** Sulfur Dioxide Emissions
- **95-100%** Reduction in Particulate Matter
- **85%** Reduction in Nitrogen Oxides
- **Up to 20%** Reduction in Carbon Emissions
STRENGTHENING OUR LNG SUPPLY CHAIN

In 2017, we expanded our partnership with Shell to fuel North America’s first next-generation LNG-powered cruise ships - the first of which, the Mardi Gras, will arrive in October 2020. As part of the agreement, the two ships, built with a next-generation “green cruising” ship design, will be fueled through Shell’s Partner Quality LNG transport (Q-LNG) Bunker Barge (LBB) - a project that is part of Shell’s strategic plan to develop a global LNG bunkering network. The ocean-going LBB, which is designed to support growing cruise line demand for LNG as a marine fuel, will be the first of its kind in the U.S. and will allow these ships to refuel with LNG at ports along the southern U.S. East Coast.

We are proud to be on the forefront of advancing LNG as a fuel source for the cruise industry. One of the keys to establishing LNG as a standard for powering cruise ships is building out an extensive, safe and reliable infrastructure across the globe for this clean burning fossil fuel. We are looking forward to working closely with Shell as they help to bring LNG to North America in what we hope will be the first step in building a strong foundation for the future of LNG fuel supply for cruise ships in the region.

EXPANDING OUR LNG SHIP ORDERS TO 2025

Looking to 2019, we have 10 next-generation cruise ships on order that will be the first in the industry to be powered by LNG at sea and in port. We began construction on Costa Smeralda in 2017. The new Costa Cruises ship will be the brand’s first ship powered by LNG and is expected to join the fleet in late 2019. Costa Smeralda will be the world’s first LNG- powered ship to be broadly marketed to consumers from multiple countries, including Italy, France, Spain, Germany and Switzerland. A second Costa LNG ship is scheduled for delivery in 2021. P&amp;O Cruises UK will launch Iona in 2020 as the brand’s first LNG ship. Iona will also debut as the largest cruise ship ever built for the British market. P&amp;O’s second LNG ship is scheduled for delivery in 2022. Carnival Cruise Line’s Mardi Gras will debut in 2020 as the first cruise ship in North America powered by LNG and will be the largest Carnival Cruise Line ship ever constructed. The brand’s second LNG ship is scheduled for delivery in 2022. Our Princess Cruises brand also has two LNG ships on order with expected delivery dates in 2023 and 2025. In addition to the new AIDAnova, our AIDA Cruises brand has two additional LNG ships on order due in 2021 and 2023.
ENERGY & GREENHOUSE GAS EMISSIONS

99.5% (SCOPE 1) DIRECT GHG EMISSIONS

- 97.4% Ship Fuel GHG Emissions
- 1.8% Ship Refrigerant GHG Emissions
- 0.3% Shore Direct GHG Emissions

0.5% (SCOPE 2) INDIRECT GHG EMISSIONS

- 0.4% Location and Market-Based Shore Indirect GHG Emissions
- 0.1% Location and Market-Based Ship Indirect GHG Emissions

SHIP FUEL DIRECT GHG EMISSIONS
Fuel to propel the ships and run the ships' generators to provide electricity.

SHIP REFRIGERANT DIRECT GHG EMISSIONS
Refrigerants to cool appliances such as refrigerators and AC units on the ships.

SHORE INDIRECT GHG EMISSIONS
Electricity purchased and used to power the corporate and brand headquarters buildings and the land-based hotels.

SHORE DIRECT GHG EMISSIONS
Fuel for company cars and building generators.

SHIP INDIRECT GHG EMISSIONS
Electricity purchased at the port of call for power while docked. (Cold Ironing)
Carnival Corporation & plc is the world’s largest leisure travel company and among the most profitable and financially strong in the cruise and vacation industries, with a portfolio of 10 dynamic brands that include nine of the world’s leading cruise lines. Together, the corporation’s cruise lines operate 103 ships with cruises in all of the world’s most popular vacation destinations.

Water is essential to our operations as it is part of the guest experience. We are committed to finding innovative ways to improve our water use efficiency and decreasing our demand for water at the communities we visit without affecting the guest experience.

**2020 Goal & Update**

**Water Efficiency**
Continue to improve water use efficiency of our shipboard operations by 5% by 2020 relative to our 2010 baseline, as measured by liters per person per day.

- Achieved a 4.8% improvement in water use efficiency of shipboard operations relative to our 2010 baseline.

**FY2018 Water Management Performance**

**Water Bunkered**
We purchase approximately 21% of our water from the ports or the water suppliers in the ports we visit.

**Water Produced**
We produce approximately 79% of the water we use onboard our ships from sea water.

**Water Efficiency**
- Our water use rate is 59.6 gallons per person per day vs. the U.S. National average of 90 gallons per person per day. This represents a 0.5 gallon per person reduction achieved from our FY2017 performance.
- We continue to implement measures to improve our water use efficiency.
OUR COMMITMENT

The oceans are not only the means by which we take our guests to see the world, they are also our main water source. We produce approximately 79% of the water we use onboard our ships from sea water and the remaining 21% is purchased from the ports or the water suppliers in the ports we visit. Before our ships visit a port, we determine whether potable water is available and abundant there. In ports or regions experiencing water scarcity or restrictions, our water sourcing patterns are modified in order to only bunker water from ports where water is abundant, of high quality and cost effective to purchase. Due to our ships’ holding capacities and equipment, we adapt our water sourcing patterns in order to avoid impacting local water supplies in times of water shortages. Consequently, our ship operations pose minimal water sourcing impacts to the port communities where we purchase water.

OUR STRATEGY

Improving water use efficiency is essential for us to remain economically sustainable, as it is more cost effective to use less water than to continuously purchase or desalinate and treat water (and it helps us to reduce our carbon footprint). Over time, we have increased the percentage of water we produce onboard relative to the total water bunkered, which helps us to reduce the risk associated with disruption of water supplies in the ports of call where we bunker water.

We encourage our guests to assist us in our water use efficiency efforts by making them aware of options available onboard to conserve water such as reusing towels and sheets. Our crew is trained on water efficiency practices as part of our environmental training program.

We are continuously replacing systems that are highly dependent on water with more water efficient management options. Examples include efficient laundry machines and dishwashers, among others. In addition, to improve our water use efficiency, we have installed sink aerators and low-flow shower heads in cabins and public areas. Our water procurement at the ports we visit is determined based on water quality, availability, reliable and abundant supply and cost. If there is a water scarcity risk issue, such as droughts, we will change our water procurement so as to not purchase water in those communities, thereby eliminating any potential impact from our operations.

Water quality is an essential component of our water management plan. Water quality is managed and monitored onboard the ships based on the U.S. Center of Disease Control Vessel Sanitation Program (VSP) guidelines. For the ports we own and operate (i.e. Puerta Maya, Cozumel, Mexico; Grand Turk Cruise Center, Turks & Caicos Islands; Amber Cove Cruise Center, Puerto Plata, Dominican Republic and Mahogany Bay Cruise Center, Roatán, Honduras), water quality is managed and monitored in accordance with local health requirements and port specific procedures developed based on VSP and World Health Organization (WHO) guidelines. In addition, water treatment systems and water quality laboratories have been installed in all of our ports.

We continually monitor new regulations that are being proposed and engage with regulators and interested stakeholders either directly or through industry trade organizations like Cruise Line International Association (CLIA) to address their concerns and to discuss feasible solutions whenever such regulatory issues arise.

Each ship in our fleet has a full-time Environmental Officer (EO), who oversees environmental compliance and implementation of environmental procedures (for more details see the EO section in the Appendix).

We also disclose our water management practices through the water CDP (formerly known as the Carbon Disclosure Project) and we have been disclosing since 2010.
As a global company serving more than 12.4 million guests around the world, we generate waste every day. We are committed to reducing, reusing, recycling as well as to properly dispose of the waste we generate.

2020 GOAL & UPDATE
Waste Reduction
Continue to reduce waste generated by our shipboard operations by 5% by 2020 relative to our 2016 baseline, as measured by kilograms of non-recycled waste per person per day.

As part of our initiatives to continue to reduce waste generated by our shipboard operations, we continue to work closely with waste vendors and ports to identify new opportunities to reduce waste.

- Achieved 3.8% reduction in waste rate.

AWWPS Technology
Increase Advanced Waste Water Purification System (AWWPS) coverage of our fleetwide capacity by 10 percentage points by 2020 relative to our 2014 baseline.

We increased fleetwide capacity coverage of Advanced Waste Water Purification Systems (AWWPS) by 8.6 percentage points compared to our 2014 baseline.

FY2018 WASTE MANAGEMENT PERFORMANCE
REMOVING SINGLE USE PLASTICS
In 2018, we started an initiative to evaluate our collective use of single-use plastic items and alternative options available in the market. As part of this initiative, we have identified items we can replace with reusable non-plastic alternatives or biodegradable options available for straws, take away cups and other items. Our goal is to remove single-use plastics within our operations whenever feasible.
FOOD DISCHARGE AT SEA
We continually evaluate technologies and operations to minimize the volumes of food discharges at sea.
• In 2018, one of our brands continued to optimize a pilot program that uses equipment to digest food waste prior to discharge at sea. Based on the positive results of the pilot program the equipment will be installed in additional ships starting in 2019.
• In 2017, one of our brands completed an assessment to promote a more sustainable shipboard food procurement, preparation, consumption and disposal method. In 2018, the food surplus component of the program was expanded and eight ports received food donations. This program reduces the volume of food waste generated.

REUSING
We continually seek new opportunities by reusing materials and equipment onboard. If we do no longer have a use for items that are still in good conditions we are passing them on to others in the communities we visit.

RECYCLING
We strive to recycle as many items as possible. Recycling containers are placed throughout the ships to allow items to be segregated for recycling at the source. In addition, designated crew sorts trash to ensure recyclable items are not commingled with other waste streams. After sorting, recyclable materials are crushed, baled and readied for offload ashore. We strive to maximize the offload of recyclable items in ports of call where facilities exist with the infrastructure. However, there are locations where the infrastructure is not in place, which means that some recyclable items may not be recycled.

DISPOSAL ASHORE
We manage the amount of waste material generated onboard and work with disposal companies to promote a circular economy.

INCINERATION ONBOARD
Shipboard incineration reduces the volume of waste onboard and waste landed ashore.
OUR COMMITMENT

Waste generated by our operations and activities of our guests and crew mirrors the waste generated by hotels and resort complexes worldwide. Our shipboard waste is disposed of in strict accordance with our environmental procedures that are designed to meet or exceed internal, international, national, regional and local environmental regulatory requirements and industry standards. We are committed to minimizing our waste generation and are continuously looking for ways to reduce our waste footprint.

OUR STRATEGY

All of our ships operate under a waste management plan that specifies how we manage each type of waste onboard. Our waste management strategy consists of a multi-level approach that includes eliminating and minimizing waste, disposing waste ashore, incinerating waste onboard and discharging liquid waste and food waste. All of these activities are performed in accordance with regulatory requirements and in many instances exceeding regulations. As part of our strategy, we also seek for new opportunities to reuse materials and equipment onboard or find others who can use items that are in good condition that we no longer need. We also work to reduce the volume of non-eco friendly waste.

Our strategy to minimize our waste streams consists of working with our supply chain to minimize packaging as well as increasing the volume and types of recycled materials landed ashore. A challenge that limits the volume of recycling material is the lack of recycling infrastructure available at certain ports we visit worldwide. Our approach is to hold the recycling materials onboard when possible until a port that offers recycling services is reached within the itinerary. As part of our strategy, we also encourage our guests to assist us in our waste management efforts by making them aware of options available onboard to segregate waste for recycling ashore. Our crew is trained on waste management practices as part of their environmental training program. In addition, comprehensive training is provided to all personnel directly involved in waste management operations.

We are committed to increase our fleetwide capacity coverage of Advanced Waste Water Purification Systems (AWWPS) for the treatment of black and gray water. These systems utilize technologies designed to produce a higher treated sewage quality that can meet or surpass standards for secondary and tertiary effluent and reclaimed water. In addition, all the ports we own and operate (i.e. Puerta Maya, Cozumel, Mexico; Grand Turk Cruise Center, Turks & Caicos Islands; Amber Cove Cruise Center, Puerto Plata, Dominican Republic and Mahogany Bay Cruise Center, Roatán, Honduras) are equipped with AWWPS to treat the sewage generated at each of the port facilities.

We also continually monitor new regulations that are being proposed at a national and international level and engage with regulators and interested stakeholders either directly or through industry trade organizations like the Cruise Lines International Association (CLIA) to address their concerns and to discuss feasible solutions whenever such regulatory issues arise.

Each ship in our fleet has a full-time Environmental Officer (EO), who oversees environmental compliance and implementation of environmental procedures. For more details see the EO section in the Appendix.
Our lives depend on the Earth's biodiversity. We are honored to take you onboard our ships to see and explore the biodiversity of the oceans and the communities we travel to.

2020 GOAL & UPDATE

Carbon Footprint
Reduce the intensity of CO$_2$e (equivalent carbon dioxide) emissions from our operations by 25% by 2020 relative to our 2005 baseline, measured in grams of CO$_2$e per ALB-km.

Reducing Emissions: we made more progress on our goal and achieved a 27.6% reduction relative to our 2005 baseline.

AWWPS Technology
Increase Advanced Waste Water Purification System (AWWPS) coverage of our fleetwide capacity by 10 percentage points by 2020 relative to our 2014 baseline.

We increased fleetwide capacity coverage of Advanced Waste Water Purification Systems (AWWPS) by 8.6 percentage points compared to our 2014 baseline.

FY2018 BIODIVERSITY PERFORMANCE

OPERATION OCEANS ALIVE
In 2018, Carnival Corporation launched Operation Oceans Alive. The goal of this initiative is to instill in all employees a sense of personal commitment to protect and care for the marine environment as our business is dependent on healthy oceans.
FY2018 BIODIVERSITY PERFORMANCE CONTINUED...

CARNIVAL CORPORATION ENVIRONMENTAL EXCELLENCE AWARD
In 2018 Carnival established the Environmental Excellence Award to honor the ships within the Carnival fleet with the best environmental performance. One ship from each cruise brand is selected and from those one ship is recognized as the best from the fleet.

WORLD OCEANS DAY
In 2018, Carnival’s cruise brands celebrated World Oceans Day both onboard and shoreside with events, activities and communications to promote ocean education and conservation.

ANIMAL WELFARE
• Farm Animals:
  • We continue to expand our sourcing of cage free eggs. Our goal is to be 100% cage free by 2025.
  • We continue to align welfare standards for broiler chicken, ensuring that 100% of chicken sourced will be certified by the Global Animal Partnership by 2024.

• Tour Operators:
  • We continue our partnership with the Association of British Travel Agents (ABTA) to help us ensure we are responsibly managing excursions involving interactions with animals. We started to audit the dolphin in captivity tour encounters used by our cruise brands in 2018 and our goal is to complete the process in 2019.

CORAL REEFS
In 2018, we sponsored the Coral Restoration Foundation by donating a 7-day cruise.

The Coral Restoration Foundation supports coral reef restoration.
For details visit: https://www.coralrestoration.org/about.

REMOVING SINGLE-USE PLASTICS
In 2018, we started an initiative to evaluate our collective use of single-use plastic items and alternative options available in the market. As part of this initiative, we have identified items we can replace with reusable non-plastic alternatives or biodegradable options available for straws, take away cups and other items. Our goal is to remove single-use plastics within our operations whenever feasible.

2018 EUROPEAN UNION OUR OCEANS CONFERENCE – BALI
Carnival Corporation provided progress on our efforts to pioneer Liquefied Natural Gas in the cruise industry. This is part of Carnival’s approach to reduce greenhouse gas emissions. The Our Oceans conference seeks public commitments to actions that will reduce marine pollution, manage aquatic resources sustainably, mitigate climate change and establish marine sanctuaries.

PORT BIODIVERSITY
We continue to support conservation programs at the ports we own and operate. These ports include Puerta Maya, Cozumel, Mexico; Grand Turk Cruise Center, Turks & Caicos Islands; Amber Cove Cruise Center, Puerto Plata, Dominican Republic; and Mahogany Bay Cruise Center, Roatán, Honduras.

The following is a summary of our main port conservation accomplishments in 2018:

• Mangrove Reforestation Project: Mahogany Bay Cruise Center planted 65 mangrove trees (25 within the port facilities and 40 in a school area close to the port).

• Reforestation Project: Mahogany Bay Cruise Center planted a total of 45 mahogany trees within the port facilities.
**FY2018 BIODIVERSITY PERFORMANCE CONTINUED...**

- **Coastal Clean-up Project:** Mahogany Bay Cruise Center, local NGOs and volunteer crew members from some of our cruise ships have collected approximately 1,491 bags containing waste and debris. Amber Cove Cruise Center and community volunteers collected approximately 800 bags of waste during a beach clean-up. Grand Turk Cruise Center tenants and staff collected approximately 167 bags of waste during a coastal clean-up.

- **Composting Project:** Mahogany Bay Cruise terminal continues to use waste generated from gardening maintenance to create compost heaps. The compost material is then reused as fertilizer and soil in the different gardens found in the port facility. In 2018, approximately eight metric tonnes of compost material was generated.

- **Rainwater Collection Program:** Continued program as part of the port’s water efficiency initiative. This program incorporates collected and treated rainwater into the port’s water system to minimize the demand on the local water supply. This program is fully implemented in Amber Cove Cruise Center, Puerta Maya and Mahogany Bay Cruise Center. Amber Cove and Puerta Maya use the treated rainwater for toilet flushing. Mahogany Bay uses the treated rainwater to supplement their potable water needs. All rainwater is collected and treated on the port premises using port water treatment systems.

- **Animal Welfare:** Mahogany Bay Cruise Terminal continued to support a spaying and neutering program for community stray cats and dogs.

**OUR COMMITMENT**

The health of our oceans is paramount to the sustainability of our business. As such, we have a deep commitment to ensuring the oceans remain healthy. To minimize our impact on biodiversity, we work diligently to manage our waste responsibly, protect marine life and collaborate with our supply chain to ensure ethical and environmentally safe practices. We also implement systems and new technologies to minimize waste water discharges and improve the quality of our air emissions. Furthermore, we partner with conservation and protection organizations in order to support programs and initiatives related to our operation.

**OUR STRATEGY**

Our strategy includes a number of elements that collectively help to manage and lessen our impact on biodiversity. Within our supply chain, we work with suppliers on sustainable food sourcing and with our tour operators on sustainable animal welfare practices. We have included a sustainability section within our Business Partner Code of Conduct and Ethics and Tour Operator manual that focuses on environmental protection. In addition, every year we organize coastal clean-ups with some of the communities at various ports of call we visit. These clean-ups remove waste and debris from marine ecosystems.

Because of our direct dependency on the health of the oceans, we have developed and implemented marine mammal protection programs and training. In particular, we have developed a comprehensive whale strike prevention training program and follow reporting requirements prior to entering the Right whale sensitive and protected areas for North Atlantic and North Pacific Right whales. These species are listed in the IUCN’s Red List, which is the Global Reporting Initiative’s designated list for threatened species.

In 2018, Carnival Corporation launched Operation Oceans Alive. The goal of this initiative is to instill in all employees a sense of personal commitment to protect and care for the marine environment as our business is dependent on healthy oceans. We comply with or exceed international, national and local environmental laws and regulations everywhere our ships sail. As part of our strategy, we partner with organizations that are critical for marine conservation and research.