# Environmental and Social Review Summary (ESRS)
# Barbados Port Inc. – BARBADOS

**Original language of the document:** English
**Issue date:** October 2020

## 1. General Information of the Project and Overview of Scope of IDB Invest's Review

The Port of Bridgetown Barbados ("BPI", the "Port" or the "Company") is a combined facility which operates two functions through one port of entry: cruise tourism and cargo operations. BPI, a state-owned entity, is planning to build a waste-to-energy ("WTE") system consisting of an incinerator and an organic or Steam Rankine Cycle turbine to manage waste produced from cruise ships and port operations and to produce energy through the conversion of thermal to electrical energy. The Company is also planning to install an additional 500 kW of rooftop solar photovoltaic ("PV") system to double the generation capacity of its existing 500 kW system. These proposed activities are all known as the "Project".

The scope of IDB Invest's environmental and social ("E&S") review included online meetings and phone calls with: i) BPI's team (BPI's management and technical specialists); ii) a service provider (garbage disposal company); and iii) Hatch Ltd. ("Hatch"), a third-party technical engineering firm hired by IDB Invest to support BPI in identifying feasible WTE technologies.[1] The review focused on: i) BPI's corporate, environmental, social, and occupational health and safety management procedures and policies; and ii) a feasibility study for WTE and solar PV facilities developed by Hatch.

The environmental and social due diligence ("ESDD") process took place in July 2020 and was conducted in a virtual form due to the COVID-19 pandemic's traveling restrictions.

## 2. Environmental and Social Categorization and Rationale

Based on the available information, the Project has been classified as a Category B (Medium-Risk) operation according to IDB Invest´s Environmental and Social Sustainability Policy ("ESSP"), since its potential environmental and social impacts and risks are generally limited to project site, largely reversible and can be managed via measures that are readily available and feasible to implement in the context of the operation. The most important E&S impacts that the Project could generate during its construction phase are, among others, the following: i) generation of noise, dust and emissions from equipment; ii) generation of solid (hazardous and non-hazardous) waste; iii) wastewater generation, iv) impacts to workers' health and safety; and v) possible impacts to community health and safety related to an increase in vehicular traffic. Key project impacts during its operation phase relate to: i) air quality, by the emissions of combustion gases and particles into the atmosphere, ii) generation of solid waste (mainly incinerator's ash) and probably hazardous waste (depending on feedstock waste streams); iii) workers' health and safety related to fire hazards and air emissions; and iv) community health and safety (air emissions and traffic).

[1] Other options assessed by Hatch were: For gasification integrated gasification combined cycle, gas turbine, and internal combustion energy. And for Pyrolysis/Incineration were: Organic Rankine Cycle and Steam Rankine Cycle.

In addition to the Project's construction and operations and maintenance ("O&M") stages, there is also a pre-construction phase that includes activities such as: decommissioning the current incinerator structure; cleaning and housekeeping activities; repair of roofs and walls and mechanical testing of roof top-structures.

Natural disasters (notably hurricanes, tsunamis, and storm surges) and physical climate-related risks (such as sea-level rise) pose a low risk, both in terms of potential damage of the physical infrastructure and workers' health and safety.

The Project is expected to trigger the following Performance Standards ("PS") of the International Finance Corporation (IFC): PS1: Assessment and Management of Environmental and Social Risks and Impacts; PS2: Labor and Working Conditions; PS3: Resource Efficiency and Pollution Prevention; and PS4: Community Health, Safety, and Security.

## 3. Environmental and Social Context

The Port is in a man-made isthmus situated on the north-western end of Carlisle Bay, Barbados, in an approximately 40-hectares plot. It is bordered by the Atlantic Ocean with an enclosed cruise ship harbor to the west and a shallow draught harbor to the north and north-east. The Port is land-connected with nearby commercial and residential areas, including Westbury Housing Avenue, New Orleans, Brandon Beach, Pile Bay, Trevor's Way and Carlisle Bay. Some of the facilities within the Port are: a cruise terminal operated by Barbados Cruise Terminal Inc. ("BCTI"), a separate company of which BPI owns 40%; customs; an incinerator; four molasses storage tanks (for rum production); a flour mill; a cement company; Bico Ltd. cold storage (food and ice cream company), the Barbados Investment & Development Corporation ("BIDC") headquarters, a government agency in charge of fostering trade; a sugar storage area, and two 1 MW substations, among others. It is expected in the next couple of years for the Barbados National Petroleum Company ("NPC") to lease Port area to install a Liquified Natural Gas ("LNG") plant near where the flourmill and cement companies are located.

Cruise ship season takes place from October to April. During this period, cargo ships dock at the Port at night while cruise ships utilize the berths during the day. Throughout the rest of the year, the Port services cargo ships during the day. Cargo operations account for approximately 80% of the revenue generated at BPI. Approximately 75% of cruise vessels are call-in vessels (arrive in the morning and leave at night) and 25% are home-portal vessels (these stay at the Port for two-days and at the end of the journey, the ships are cleaned and then new passengers embark).

The Port currently operates a batch-mode incinerator (installed in 1991) to process waste (around 2,500 $m^3$/month during low season and 4,500 $m^3$/month during peak[2] season), mainly from incoming vessels and from everyday operations, but it also accepts waste from private sector companies, government agencies, schools, hotels and restaurants on the island. The incinerator area is fenced approximately within a 2,500 $m^2$ compound. Of this, the yard area is around 2000 $m^2$, the incinerator is 200 $m^2$, a substation with a diesel storage unit is 150 $m^2$ and an administrative area completes 150 $m^2$ of space. The new WTE system will be in the same location.

[2] From October to April.

As an alternative source of fuel when there is insufficient waste feedstock, the current incinerator uses natural gas through underground pipes from the NPC network. The new incinerator is likely to use the same source of fuel. Currently, waste is manually ignited, and exhaust gases are treated in a top chamber in which natural gas burners burn effluent flue gas. Feedstock waste is typically unloaded from the ships into 6 $m^3$ steel skips (the Port has 25 such skips) and is moved to the waste yard by tractors and eventually transferred to the incinerator via a hydraulic system. The skips are covered with a net, but mostly leaving the waste open to the elements and accessible to vermin. No pre-processing of waste (sorting, drying, and shredding) is currently implemented prior to incineration due to the Port's agreements with its workers, as described in Section 4.2, which restrict employees from handling waste.

The current incinerator, located upwind from local communities, releases black smoke during operations, particularly on start-up, which restricts operations to periods of Port inactivity (typically at night), due to pollution concerns and an agreement between the Port and its workers.

The new WTE system, which will reduce energy costs and improve air emissions controls, will have the following features: i) continuous efficient operation in both low and peak seasons, ii) no waste feed pre-treatment requirement, including sorting, iii) no production of effluent smoke or other undesirable emissions, and iv) generation of more energy than the system consumes. Depending on waste streams, the system is estimated to produce an annual electrical generation of 2 MWh (779,760 kWh/month during low season and 1,243,512 kWh/month during peak season). The new WTE operations will entail: i) reception of incoming waste, ii) storage of raw waste, iii) waste loading into the process, iv) thermal treatment of the waste, v) energy recovery and conversion, vi) flue gas handling, vii) emissions monitoring and control, viii) waste water handling, ix) ash handling, and x) solid residue discharge and disposal.

The Port has 495 kW of roof-top solar generation panels in service. The additional 500 kW of solar capacity (including more than 4000 panels) will be installed in areas such as the mechanical workshop (1,920 $m^2$), garage area (5,000 $m^2$), the shallow draft shed (1,350 $m^2$) and a new administration building that is currently being completed.

The main national regulations applicable to the Company are the Marine Pollution Control Act (Cap 392A), the National Conservation Commission Act (Cap. 393), the Coastal Zone Management Act. (Cap 394), the Health Services Act (Cap 394, Cap 44), and the Quarantine Act (Cap 53), Employment Rights Act (2012-9), Safety and Health at Work Act (Cap 2005-12), Accidents and Occupational Disease (Notification) Act (Cap 338). The main international regulation is the International Convention for the Prevention of Pollution from Ships (MARPOL) by the International Maritime Organization (IMO) and the main applicable resolutions MEPC.83(44), MEPC.199(62).

BPI has a permit for the construction and operation of the current incinerator plant granted in 1993 by the Town and Country Development Planning Office. No further land use permits are required for the construction of the WTE system since it will be built on the existing, fenced-in site. However, BPI will need to acquire a permit from the Ministry of Energy to connect the proposed new PV facility to the national grid during operation.

## 4. Environmental Risks and Impacts and Proposed Mitigation and Compensation Measures

### 4.1 Assessment and Management of Environmental and Social Risks

#### 4.1.a E&S Assessment and Management System

BPI has already initiated the process of ISO 9001:2015 certification. It is expected that such certification will be acquired by the second semester of 2021.

IDB-Invest has hired an independent consultant[3] to support BPI in developing an Environmental and Social Management System ("ESMS") not only for the Project, but for the whole Port. Such a system will include: i) an E&S policy; ii) procedures to identify, assess and manage possible E&S and OHS risks and impacts associated with each Port activity (including the WTE system), and for workers engaged by third parties (contractors and subcontractors); iii) a proposal of an organizational structure to manage the ESMS, including the definition of roles and allocation of responsibilities for its implementation; iv) emergency preparedness and response protocols; v) key stakeholder engagement methods or planning procedures; vi) external communications and grievance mechanism; vii) protocols for the disclosure of information, decision making and training to communities; viii) protocols for the evaluation and continuous improvement of the ESMS; and ix) regular audits and inspections of applicable E&S and OHS requirements under applicable Barbados laws.

In parallel, Hatch is preparing the technical specifications of the WTE generation facility, along with supporting air emissions control equipment, that are compliant with the technical requirements established in the General EHS Guidelines outlined by the IFC.

#### 4.1.b Policy

BPI has not yet adopted an E&S policy. However, its environmental and social commitment has been declared through its webpage[4], where the Company aims at being by 2030 the "most innovative, green maritime hub in the world".

#### 4.1.c Identification of Risks and Impacts

Hatch's feasibility study identifies some preliminary risks and impacts of the new WTE system that are related to air emissions, wastewater management and solid waste management. The study also identifies some mitigation measures. Some additional risks associated with the current operations are identified in the Company's Incinerator Plant Safety Operating Procedures and in its Emergency Response Plan ("ERP"). Notwithstanding, a more detailed process of risk and impacts identification is needed to fulfill the requirements of this Performance Standard (PS 1).

[3] JGP Consultoria e Paticipacoes Ltda

[4] https://www.barbadosport.com/about-us

### 4.1.d Management Programs

BPI has the following management programs, all of them applicable to the Port, which include the following: i) Waste Management Plan; ii) Corporate Communications Plan (which includes an executed action plan); iii) Emergency Response Plan; iv) Memorandum of Agreement (with the local labor union); and v) Sexual Harassment Policy.

As part of its certification process under the ISO 9001:2015 quality system, BPI is developing multiple procedures regarding aspects on engineering, finance, human resources, marine services, information systems, security and terminal operations. For the current incinerator plant, BPI has a Stakeholder Engagement Framework ("SEF") and Safety Operating Procedures.

The Port's ESMS, currently under design, will update the Port's management programs. In addition, BPI will develop an Environmental Management and Adequacy Program ("EMAP") that will include: i) an Impact Management Program for the physical, biological and visual environment; ii) an Impact Management Program for the socioeconomic environment; iii) an Environmental Monitoring and Vigilance Program, especially for pollutant gas emissions from the incinerator; iv) a Solid and Liquid Waste Management Program; and (v) a Workplace Health and Safety Program. Each will have their corresponding management measures.

### 4.1.e Organizational Capacity and Competency

The Port's EHS and social performance responsibility is distributed among different divisions and these are the: Operations (health & safety), Human Resources and Industrial Relations (health & safety, employee training, union relations, and risk management) and Corporate Development (social-stakeholder engagement and external communications) Divisions. Security concerns are directly under the CEO's supervision. There is no specific division or subdivision to address environmental matters nor a dedicated E&S officer or team to develop, implement or monitor environmental compliance. BPI will appoint a person responsible for overseeing the E&S performance of the Port and the Project, including the Engineering, Procurement and Construction ("EPC") and any works (or contractors) necessary during Operations and Maintenance (O&M).

### 4.1.f Emergency Preparedness and Response

BPI has an Emergency Response Plan ("ERP"), developed in November 2019 (last update in June 2020) for the Port, which provides comprehensive, practical, and structured guidance for responding to emergencies. The ERP involves other agencies operating within the Bridgetown Port (Coast Guard, Defense Force, Police, Fire, Bridgetown Port Security Services) and contemplates the following emergency scenarios: fire, bomb threat, hurricane, earthquake, tsunami, accidents, hazardous materials spill of exposure, oil spill, man overboard, persons in the water, vessel grounding or collision, evacuation, infectious diseases on vessels and shutdown of information systems.

Notwithstanding, the ERP needs to be updated, specifically in relation to: i) including communities in the emergency response protocol; ii) clear and specific designation of an Emergency Response Team ("ERT") with names and contact information; iii) training for members of the ERT, and iv) specificity of annual drills.

### 4.1.g Monitoring and Review

Monitoring and review are mainly managed by BPI's highly experienced and committed team and management staff; which has not yet implemented a management system addressing their procedures. However, formalization of some of these practices is being captured by the ISO 9001:2015 certification.

BPI will establish procedures to monitor and measure the effectiveness of management programs and will develop a compliance matrix for legal and contractual obligations, including a set of key performance indicators to measure the effectiveness of Environmental, Social and Health and Safety procedures. Where appropriate, BPI will consider involving representatives of stakeholder groups (including communities) to participate in monitoring activities.

### 4.1.h Stakeholder Engagement

BPI developed a Stakeholder Engagement Framework ("SEF") in Q1 2020 that was specific to the WTE system component of the Project. Five stakeholder groups were identified: i) communities; ii) customers (commercial companies and individuals); iii) government and regulatory agencies; iv) industry partners (social partners, BCTI, shipping lines, cruise lines, Port Agencies -customs, transport intermediaries – cruise/cargo); and v) internal stakeholders (Board of Directors, management, employees). In March 2020, BPI organized a townhall meeting with these stakeholder groups (excluding communities) to present the Port's Master Plan, including plans for logistics improvements. As part of this meeting, the Project (WTE system and the PV installation) was briefly introduced. The SEF includes three components: i) early disclosure and ongoing outreach to key stakeholders to provide information on the project; ii) meaningful consultation with relevant parties and iii) a grievance mechanism process to address issues and complaints.

BPI will enhance its SEF to convert it into a Stakeholder Engagement Plan ("SEP") which will include i) requisites and regulations (local requirements, international standards), ii) description of risk and impacts, summary of any previous engagement activities, iii) priority of stakeholders focusing on those directly affected by the Project and identifying any vulnerable individuals or groups, iv) an engagement program, including indication of how interactions should be formalized (acknowledgement of receipt of information) and v) a list of time-bound activities (timetable and periodicity).

BPI is frequently and proactively engaging some of these stakeholder groups to keep them informed about the Company's operations and future projects.

### 4.1.i External Communication and Grievance Mechanisms

BPI applies a variety of engagement methods to build relationships, gather information, consult and disseminate Project information, such as: formal letter reports (focus on government agencies), email, telephone, social media, traditional media (TV, radio, print), formal meetings, townhall meetings, site visits, and surveys.

As part of the SEF, BPI has adopted a grievance mechanism that allows any person or organization to send comments or complaints in person, by phone, by email or by regular post. The grievance is recorded and

acknowledged within five working days and responded to within 20 working days. Notwithstanding, the mechanism needs to be socialized in a more aggressive way and adjusted to make it more functional.

BPI has a webpage and presence in social media enabling external communications via email, phone or social media comments or messages. The Company publishes an annual report and an annual handbook including externally audited financial statements and a description of its operations and future projects. All of this information is available on BPI's webpage.[5]

The Port has also developed a Corporate Communication Plan (2018-2019) with key performance indicators, as a corporate branding exercise to accentuate BPI's position as a pillar of economic activity, enhance its credibility, improve its customer service delivery, and publicize its employer of choice status. The Plan, whose main purpose is to increase BPI's visibility by encouraging a proactive program of advertising, media announcements via press conferences, interviews and press releases in line with key messages, including success stories and events; involves the participation of schools and other educational institutions as target groups, but does not include communities.

#### 4.1.j Ongoing Reporting to Affected Communities

BPI's engagement with the Port's surrounding communities is still very modest. According to BPI's Corporate Communications Management team, many dwellers from the surrounding areas may not be aware of the presence of the current incinerator at the Port, and probably do not know the plans to replace it. Therefore, BPI will conduct a townhall meeting (might be in a virtual format) with the five stakeholder groups identified in the SEF, including representatives from all surrounding communities, to follow an engagement and consultation process aligned with PS 1. BPI will prepare a non-technical explanation of the Project and share it with surrounding communities and all additional stakeholder groups.

### 4.2 Labor and Working Conditions

#### 4.2.a Working Conditions and Management of Worker Relationships

BPI employs about 490 people, of which approximately 146 are female. 27 persons hold management positions and about half of those are women. Around 10 people in total are distributed in three shifts to work in the current incinerator plant. Approximately, 50% of all BPI's staff belong to communities surrounding the Port (Westbury Housing Avenue and New Orleans). The Company does not employ migrant workers.

The Company has a detailed Memorandum of Agreement ("MOA") with the Barbados Worker's Union ("BWU") and The Barbados Employers' Confederation (dated 2008-2011) which, according to BPI, is still valid. The MOA outlines workers' rights related to hours of work, wages, overtime, compensation, personal protection equipment provisions, and benefits upon beginning the working relationship and when any material changes occur. The MOA also includes criterion for hiring, dismissals, performance evaluation, and a formal grievance procedure for workers. Therefore, the MOA contains several components like a Human Resources Policy and related procedures.

[5] https://www.barbadosport.com/annual-reports

BPI also has a Sexual Harassment Policy that applies to all members of staff at the Company and provides a framework for a complaints mechanism, reporting and resolution of any sexual harassment cases. The Company is also currently drafting policies for recruitment such as hiring, discipline and grievance processes as part of its ISO 9001:2015 certification. To strengthen the work being done on its ISO certification, BPI will include a transparent process to allow for anonymous complaints to be raised and addressed by employees as part of its recruitment policies.

Approximately 80% of the labor force pay fees to the BWU and the Company meets with leaders of the BWU monthly. Every worker (unionized and non-unionized) is provided with his or her contract, the MOA, a copy of the Sexual Harassment Policy, a job description and a password to access the Company's online systems.

### 4.2.b Protecting the Workforce

The minimum age limit required to work at BPI is 18 years old and a retirement age at 65 years is applied to general staff as per the Company's pension plans. There is a maximum age limit of 45 years for staff employed in docker, operator and heavy-duty operator positions.

BPI will formalize the minimum age required to work at the Company in its recruitment and onboarding policies, including its commitment to not employing forced (non-voluntary) labor.

### 4.2.c Occupational Health and Safety

BPI follows the country's Safety and Health at Work Act (2005) which provides national guidelines for a safe and healthy work environment. BPI's MOA with BWU is in alignment with these guidelines and it specifies protocols for those employees who work directly with the incinerator. The MOA's section on incinerator operations includes general hours of work (a shift system), administrative responsibilities, incineration times, safety operating procedures, equipment maintenance guidelines and protocols to follow when working with the incinerator. The document also outlines procedures for handling accidents, injuries, and illnesses on the job.

BPI's Emergency Response Plan ("ERP") outlines training opportunities to be provided to staff (including general evacuation, fire, first aid, bomb threats, hurricane alerts, hazardous materials ("HAZMAT") and oil spill response). The ERP also outlines investigation and reporting procedures for occupational accidents, diseases and incidents at the Port that compliments its guidelines on emergency prevention, preparedness, and response arrangements.

The Company applies safety training to its staff using the United Kingdom ("UK")-based NVQ Occupational Safety and Health Certification Level 2 Standard. Basic fire safety is a component of this training that is applied to BPI's Assist Emergency Personnel unit. Employees at the Company have been trained, assessed, and certified annually since 2017. Additionally, fire-fighting training and HAZMAT fire training (levels 1 & 2) are provided to staff through the Barbados Fire Service and the Barbados Technical Educational Vocation and Training ("TVET") Council. BPI has in place security fire points (fire extinguishers, fire-safety exits and smoke detectors) at its administration building.

The current incinerator has a safety operation procedure that details the safeguards for transporting waste, as well as for the loading, burning, cleaning, and maintenance activities. No accidents in the incinerator area have been reported in 2019. However, in that year, the Port experienced 116 accidents mainly related to cuts, bruises, and lacerations in the terminal operation area. Work accidents are reported on an annual basis and are disaggregated by month, department, and type of accident. To enhance its existing system, BPI will monitor and report Lost Time Injury Frequency Rate ("LTIFR") annually and provide root cause analysis and recommendations.

In Port operations, pedestrian traffic is separated from vehicles. This separation and signaling has been reinforced and updated after a fatality of a visitor in 2019 by a Port vehicle. The route of incinerator's skips is the route with less traffic that currently avoids pedestrian traffic and other commercial traffic.

The decommissioning of the old incinerator and the construction and operation of the new WTE system, will: i) identify potential hazards to workers, particularly those that may be life-threatening; and ii) provide preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances.

The feasibility of solar panel installation at the Port has already been assessed. However, BPI will assess its compliance with international Fire Safety Standards for solar PV locations and, if needed, an adequacy plan will be developed.

Each employee receives a routine medical examination, sponsored by the Company. General workers in the Maintenance and Cleaning Department and incinerator workers receive two medical examinations annually. The most common health issues experienced among employees are asthma and respiratory issues (not related to the incinerator operation), diabetes, and hypertension.

BPI provides a Group Medical Plan (insurance) for assistance with medical, dental and vision care for employees, retired employees, and their immediate families. Membership in the Medical Plan is compulsory for eligible employees during employment. The cost of maintaining the Plan is shared equally between each employee and BPI.

The Company implemented COVID-19 health and safety procedures at the Port which include sanitization activities (114 stations for hand washing and sanitization), local hour extensions for Port staff, shift arrangements, remote work, paid leave and staff rotations. BPI also provided gloves, masks and tissues to staff and placed informative signage on its compound. A return to work policy was instituted in May 2020 and physical barriers were included in offices. COVID-19 protocols were developed for the Port's operations including its cargo handling and cruise ship activities.

### 4.2.d Workers Engaged by Third Parties

BPI uses a number of outside contractors to perform various tasks at the Port. For the incinerator in use, an outside, private contractor collects incinerator ash and municipal office waste and transport these materials to the local St. Thomas landfill. The Company requests that contractors provide their own HSE officer or supervisor on site. Outside contractors are also briefed on BPI's HSE policies and procedures and the Company's HSE officer conducts routine project inspections. Contractors are also covered by MOA and they follow the same terms and conditions applied to Port employees.

#### 4.2.e Supply Chain

No member of the surrounding communities are suppliers of products to the Company. The Company has a procurement policy.

### 4.3 Resource Efficiency and Pollution Prevention

#### 4.3.a Resource Efficiency

The Port has a peak demand of close to 2 MW and has two main substations to which diesel generators supplied by 4000-liter, above-ground, fuel storage tanks are connected to provide backup generation. BPI acquires its electricity from the Barbados national grid supplied by Barbados Light and Power ("BL&P") at both substations (no.1 and no.2). At substation no.2, two PV systems totaling 495 kW have been installed; these are grid-tied systems with a buy-all sell-all agreement in place with BL&P.

In addition, BPI has an underground 8000-liter storage tank and a 20,000-liter tank at a workshop area, mainly as a backup energy system. The Company is in the process of switching all diesel equipment to the use of low sulfur gasoil. It also has medium-term plans to switch all cargo and container handling equipment to electric powered energy rather than diesel. BPI is also seeking to reduce emissions from ships and improve its services by implementing a Shore-to-Ship Power System (cold-ironing) for a minimum of five cruise ship connections (a proposal was developed in January 2020).

All potable water provided to BPI is from the municipal supply grid. Sanitary or municipal sewage waste is treated at a public wastewater treatment facility. Pumping stations are located within and on the outskirts of the Port to assist in the movement of sewage into the treatment plant located approximately one mile from the Port. In addition, plans are in place to reuse some of the treated effluent from the Barbados Water Authority ("BWA") Bridgetown Sewage Treatment Plant for flushing sewer lines.

BPI collects rainwater from some of the Port's roofs and this is currently used for cooling systems for cargo and containers. The Port will use rainwater to clean the solar PV systems. Sea water is being used to cool the current incinerator.

#### 4.3.b Pollution Prevention

The current incinerator accepts only dry waste (mainly plastic, paper, cans, dry food waste and glass), which releases a residual black smoke during operation. On some occasions, waste generated exceeds the incinerator's capacity and BPI is forced to do open burning. The smoke from this process has triggered complaints from employees unpacking containers in the Container Area, downwind from the incinerator's stack.

Although not required by local legislation, as a means to improve its environmental performance, in 2015, BPI hired an external consultancy to assess the health effects of the smoke on employees,[6] which was followed in 2019 by an assessment of the indoor air quality at the administration building. As a result, restrictions to the incinerator's operations and burning of flue gas were maintained, respiratory protective gear was provided to employees in the container area, and employees with health concerns were reassigned, among other measures. Regarding indoor air quality, some of the remediation measures included removing ceiling tiles, mist sanitizing selected areas, restoring insulation, etc. BPI will continue to perform both indoor and outdoor air quality and emissions controls.

The new incinerator will use state-of-the-art technology that will comply with local regulations and the General Environmental, Health and Safety ("EHS") Guidelines of the IFC. Notwithstanding, it will generate two types of airborne emissions: i) gaseous pollutants: dioxins/furans, hydrogen chloride (HCl), mainly from the combustion of PVC; sulfur dioxide ($SO_2$) from the combustion of sulfurous compounds; hydrogen fluoride (HF) from the combustion of fluorine compounds; and nitrogen oxides ($NO_x$) from part of the nitrogen in the waste and $N_2$ in the air; and ii) particulate pollutants which include fly ash and heavy metals such as: antimony (Sb), arsenic (As), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), thallium (Tl), and vanadium (V).

The design of the new incinerator includes a particulate matter removal system, $NO_x$ treatment, limestone and activated carbon treatments, electrostatic precipitation systems and stack height adjustments. The specific characteristics of the new WTE system being purchased as part of the Project are still being evaluated by BPI in consultation with Hatch. The environmental control systems (for air, wastewater and solid emissions) necessary to comply with IFC's EHS Guidelines will depend on the properties of the waste feedstock, and the flue gas treatment systems will depend on the concentration of pollutants in it.

In 2018, BPI developed a Solid Waste Management Protocol ("WMP") applicable to operational waste as well as waste from cruise ships. The WMP includes guidelines for handling, storing, transporting, and disposing waste. It also establishes that all ships must notify BPI, through their agents, as to the types and amount of waste they intend to dispose of at the Port at least 24 hours before arrival. Such notification is complemented via a pre arrival waste declaration form that must be filed with the shipping agent. Once the vessel is cleared for entry by the Port Health and Immigration Department as well as the Customs and Excise Department, the waste declaration form is sent to BPI to ensure compliance.

During peak season, 2-3 ships can dock simultaneously and discharge 30 $m^3$ to 60 $m^3$ of waste each. Incoming waste is placed in 6 $m^3$ skips covered with a net and transported from the ships to the incinerator yard where the waste can sit for up to 4 days before it is incinerated. Since surface water runoffs are collected and discharged via storm drains into the sea without previous treatment, this situation generates potential soil contamination and sea pollution because of waste leakages being carried by the runoff water. Given the latter, BPI will develop an Effluent Management Program that includes the evaluation, treatment, control, and monitoring of such effluents before their final disposal.

[6] The assessment focused on the concentrations volatile organic compounds (VOC- toluene, ethanol, m-xylene, p-xylene), carbon monoxide and dioxide, temperature, humidity, hydrogen sulfide, and polycyclic aromatic hydrocarbons, $NO_2$, $SO_2$, particles (0.5, 2.5), insect, fibers, pollen and spores.

The incinerator in service usually burns nonhazardous waste composed mainly of paper, plastic wrap, dry food waste, plastic bottles, aluminum cans, plastic food containers and glass, as well as additional waste from private sector companies, government agencies, schools, hotels, and restaurants. Therefore, to align its operations with the International Convention for the Prevention of Pollution from Ships ("MARPOL"), the Port is updating its processing initiative to accept the various ship pollution streams denoted in the regulation (oil and oily waste, noxious liquid substances in bulk, sewage, and ozone-depleting substances) and will update its Waste Management Plan to be aligned with IFC's EHS Guidelines.

All ash from the incinerator is currently treated as non-hazardous waste and is transported into the local St. Thomas landfill for its final disposal.

In June 2020, BPI developed a plan for the decommissioning of the existing incinerator (the "Decommissioning Plan"). The Decommissioning Plan provides for the final disposal of the incinerator parts at either the St. Thomas landfill or via the sale of the parts as metallic scrap. BPI will update the Decommissioning Plan to be consistent with IFC's General EHS Guidelines for Construction and Decommissioning.

## 4.4 Community Health, Safety and Security

### 4.4.a Community Health and Safety

The Westbury Housing Avenue and New Orleans communities, located upwind from the Port and with an aggregate population of about 3500 inhabitants, are the communities nearest to the Port. The Port has not received any complaints regarding its incinerator operations from the surrounding communities.

The Company's Waste Management Plan includes operational and maintenance guidelines for general cleanliness as well as a directive to minimize the vermin population at the Port. Cargo pallets are treated for pests and inspected by the Plant Quarantine Team from the Ministry of Agriculture. Skips are cleaned on a weekly basis and when full, are covered and stored overnight. Incinerator employees spray the skips to control vermin.

BPI handles oil-based products that are imported and exported through the Port and supplies bunker fuel to vessels. To manage oil spills, the Company has an Oil Spill Contingency Plan and Response and follows the National Oil Spill Contingency Plan ("NOSCP"). These emergency response procedures are outlined in the Company's ERP.

The Company has diesel fuel storage tanks (both above and below ground) on its premises to operate stand-by generators. Liquified Natural Gas ("LNG") supplied by NPC via an underground pipeline is used to power the current incinerator when waste feedstock is insufficient. BPI will update its ERP to include safety procedures in case of explosions and fires at fuel storage areas.

### 4.4.b Security Personnel

BPI has a security department and uses an unarmed in-house security force. All security personnel are covered in BPI's MOA and follow the same terms and conditions applied to Port employees. For all new

security employees, the Company issues truth verification testing, conducts a background check and requires a police certificate of character and a medical evaluation.

### 4.5 Land Acquisition and Involuntary Resettlement

The land for the construction of the incinerator and the PV facility is state-owned and under the custody of BPI. Therefore, no land acquisition was required for the Project and hence, there is no involuntary resettlement.

### 4.6 Biodiversity Conservation and Natural Habitats

The Project is placed within an existing Port, in land classified as an industrial area that does not include any internationally or nationally designated protected area.

### 4.7 Indigenous Peoples

No indigenous peoples were identified in the area of the Project or the Port.

### 4.8 Cultural Heritage

The jurisdiction of the Port has no recorded history of archeological artifacts since it began its development in the 1600s.

## 5. Local Access of Project Documentation

The documentation relating to the Project can be accessed at the following link:

BPI Annual Reports: https://www.barbadosport.com/annual-reports
BPI Handbook: https://www.barbadosport.com/barbados-port-handbook