Foreword

Sustainability scored two huge global wins last year. First, it was the successful renewal of commitments towards sustainable global growth through the Sustainable Development Goals. Second was the Paris Agreement where governments finally came to an agreement and brokered a deal that is accepted by all nations, to recognise and combat the real threats of climate change. On both wins, the business community played a pivotal role in enabling the negotiations through the sharing of their technology, economic case and community influence in countries they operate in.

In Singapore, the two international efforts also led to significant milestones with sustainability as the national agenda. At the governmental level, we saw the revised version of the Sustainable Singapore Blueprint and the launch of Singapore’s Climate Action Plan by our President. In the private sector, we witnessed the implementation of the “Comply or Explain” sustainability-reporting requirement by the Singapore Exchange, the regulatory body of Singapore listed companies.

With the global and local sustainability agenda taking centre stage, early business adopters are already benefitting from this shift complementing the increasing demand by the informed consumers to vote with their dollars for sustainable businesses. As this trend is set to grow, the businesses community will have to adapt or risk being eliminated. Companies must look into sustainability beyond just ticking the box, but truly integrate it into their business modus operandi.

However, the road to achieving sustainability is not a simple or straightforward one. It differs from company to company depending on the nature of their business. Therefore, this annual book of case studies becomes increasingly important for businesses, both big and small, to find out more what has been done and adapt it for themselves as part of their sustainability journey.

We would like to express our sincere thanks to the Nanyang Business School, Nanyang Technological University for its continual support for the Case Studies Handbook project. We are grateful to them for the time and effort put into documenting these sustainability best practices, in hope that other businesses can be both inspired and learn from our winner’s respective stories.

At the same time, we would like to acknowledge the winners of Singapore Business Federation’s Singapore Sustainability Awards 2015 that have kindly contributed their stories to this publication. Their willingness to share their experience with the business community will greatly benefit the readers and for that, we would like to express our sincere and heartfelt gratitude towards them.

As we enter into a new decade of the sustainability movement in Singapore, Global Compact Network Singapore (GCNS) is committed to serve the business community in Singapore towards achieving sustainability. The integration of SBF’s Sustainable Development Business Group and GCNS will provide the resources needed to better serve companies by equipping them the necessary competitive advantage needed in the face of the new global agenda.

Mr Wilson Ang
Executive Director
Global Compact Network Singapore
Foreword

By The Dean, Nanyang Business School, Nanyang Technological University (NTU).

The Nanyang Business School is delighted to partner with the Global Compact Network Singapore (GCNS) to jointly publish this handbook featuring case studies of business organizations that won the Singapore Sustainability Awards in 2015.

Sustainable Earth is one of the peaks of excellence and key research areas at NTU. Since 2005, NTU has secured grants to the tune of $1.3 billion for research related to sustainability. Two of our flagship research centres are the Energy Research Institute @ NTU (ERI@N) and the Nanyang Environment & Water Research Institute (NEWRI). ERI@N focuses on research related to renewable energies and sustainable urban mobility solutions. NEWRI focuses on research related to sustainable water technologies both for developed and developing countries. NTU organizes the Singapore Sustainability Symposium annually which focuses on thought leadership and policies for Sustainable Cities. NTU also has many corporate laboratories setup in collaboration with global corporations, that focuses on research related to sustainability. For example, the corporate lab setup with BMW focuses on e-mobility.

At the Nanyang Business School, we host the Centre for Business Sustainability. This centre is a platform for exchange of interdisciplinary research ideas. The centre hosts interdisciplinary research seminars that focus on business sustainability by leading global scholars and academics, as well as industry leaders. The centre also initiates interdisciplinary research focused on business aspects of sustainability with the Engineering Schools and research centres within NTU.

We are pleased to see a varied line up of award winners from both Sustainable Business and Green Technology category that include multinational corporations, an SME as well as a government statutory board. These organizations displayed great enthusiasm throughout the process of award evaluation, selection and case writing, where they eagerly shared their sustainability stories with our research team about their practices and efforts.

The case studies featured in this handbook look at specific sustainability topics that are unique to each company and/or industry. The cases will appeal to a wide audience – both sustainability practitioners and academics. Here are some of the highlights of the case studies:

- Ardentec is a leader in providing chip and wafer testing services for integrated manufacturing devices (IMDs) and showcases its cutting-edge technology to provide top solutions for their customers.
- Buckman Laboratories has developed innovative chemical solutions for their target markets that help customers with resource optimization and environmental impact reduction.
- Maritime and Port Authority of Singapore (MPA) has used sustainability as an industry growth strategy and leadership culture to promote green shipping practices to the maritime business community.
- Canon Singapore: This case focuses on Canon’s advanced green technology products that are unique in providing the least environmental impact with durable energy-efficient office network machines.
- Elmich Pte Ltd is a case that demonstrates how the green building industry has the potential to be a game-changer in reducing emissions and heat from buildings by using products from natural sources and recycled plastics.

We hope that you will find this Case Study handbook, produced jointly by GCNS and Nanyang Business School, with its varied sustainability themes, both enlightening as well as inspiring and help start (or further continue) your own sustainability journeys.

Dr. Neo Boon Siong
Canon Professor of Business and Dean
Nanyang Business School
Nanyang Technological University
For long-range transport of cargo and goods, shipping is preferred over other modes due to its cost efficiency.\(^3\) Shipping is also the mode with the least environmental footprint in terms of CO\(_2\) emissions per ton-kilometer (see Table 1). While shipping represents the largest segment of the maritime industry, there are complimentary segments which play an important role. The industry can be broadly categorized into the following segments:

Shipping - Major segment of the industry and includes ship owners and operators, shipping lines and agencies, ship broking/chartering/management services.

Port terminal operations, private wharves and services - They provide services to vessels from loading and unloading of cargo/crew/passengers, bunkering of fuel and berthing services to various types of vessels.

Support and ancillary services - Includes the logistics of cargo after unloading from vessels and also covers freight forwarding, technical services, legal and insurance services, and financial services.

Offshore and marine engineering services - Building and repairing of offshore structures such as oil rigs, jack-ups, semi-submersibles and structures related to oil and natural gas extraction. It also includes work boats that provide these services.

Table 1: CO\(_2\) emissions of different transportation modes

<table>
<thead>
<tr>
<th>Mode of transport</th>
<th>CO(_2) emissions (Gm per ton-km)</th>
<th>CO(_2) emissions (as ratio to the emission per ton-km for ocean freight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocean</td>
<td>8.4</td>
<td>1</td>
</tr>
<tr>
<td>Rail</td>
<td>22</td>
<td>2.6</td>
</tr>
<tr>
<td>Truck</td>
<td>62</td>
<td>7.4</td>
</tr>
<tr>
<td>Air (short haul)</td>
<td>1580</td>
<td>188</td>
</tr>
<tr>
<td>Air (long haul)</td>
<td>570</td>
<td>68</td>
</tr>
</tbody>
</table>

(Source: Cefic, 2011).\(^4\)
The shipping industry accounts for roughly three percent of global CO2 emissions. Though maritime transport as a mode generates the least carbon footprint per ton-kilometer, the CO2 emissions from the shipping industry is predicted to increase between 50% and 250% by 2050. Shipping also contributes to marine pollution in events of oil spills which are extremely toxic to marine biodiversity, as the world witnessed in the Exxon Valdez oil spill in Alaska in 1989. Hence, there is substantial pressure from various stakeholders to adopt green and sustainable practices in shipping.

MARITIME SECTOR OF SINGAPORE
For Singapore, the maritime sector has been an essential driver of growth. The island’s location at the tip of the Malacca Straits has contributed to its success as a regional trading hub and port. Ports in Singapore were a bustling trading centre from as early as the 18th century.

Singapore’s innovation in port management and trade facilitation has enabled it to be one of the largest container ports in the world for over 20 years. Singapore is one of the world’s busiest ports. In 2015, it handled 31 million Twenty-foot Equivalent Units (TEUs) containers, second only to Shanghai port which handled 36.5 million TEUs. Additionally, it is considered a world leader in offshore and marine engineering services and also the world’s largest bunkering hub.

Singapore’s maritime industry contributes seven percent to the nation’s gross domestic product (GDP) and employs about 170,000. At any given time, there are over 1,000 ships in Singapore waters and it is one of the very few ports that can handle the world’s largest ship, which can carry a mammoth 18,000 TEUs. The country is also renowned for ship repair, building of marine vessels, offshore structures, vessel design and engineering, and marine equipment and services, making her a strategic centre for maritime business.

MARITIME AND PORT AUTHORITY OF SINGAPORE (MPA)
The Maritime and Port Authority of Singapore (MPA) is a government statutory board under the Ministry of Transport. Formed in 1996 through the merger of the Marine Department, National Maritime Board and the Port of Singapore Authority (PSA), the MPA is a single entity governing Singapore’s maritime industry and acts as the main driving force behind the country’s maritime development. MPA puts strong emphasis on collaborative partnership between industry players, private organizations, interest groups, government agencies and other stakeholders, to develop and protect Singapore’s maritime interests.

MPA also controls the Singapore Registry of Ships (SRS) for managing registration of ships sailing under the Singapore Flag. Originating in 1966, the SRS is presently ranked among the world’s top five largest ship registries, with a fleet of more than 4,500 vessels totaling over 85 million gross tons (GT). Banks and finance organizations consider the SRS as a quality ship registry as it safeguards their interests over the ships they finance.

MPA’s Functions
MPA’s operations are comprehensive as it functions at multiple levels to establish greater synergy in policy formulation and implementation, making its ports a one-stop centre for maritime trade. With over 5,000 maritime establishments in the industry, MPA’s mission is to develop and promote the Singapore port as a leading regional and global hub port and an International Maritime Centre (IMC). It achieves this through close partnerships with industry players and other stakeholders to spearhead safety, security and environmental protection in the Singapore waters. The five main functions of MPA are:

1) Port Authority - MPA ensures safe navigation in port waters, pursues highest standards of maritime safety and security and maintains rigorous standards of Port and Flag State control measures. It covers vessel traffic, navigational safety and security, and cargo handling.

2) Port Regulator - MPA formulates policies, regulates and manages port operations, marine services, marine and port facilities and other activities within the Singapore waters.

3) Port Planner - MPA plans for future capacity of our Ports and for future demands to ensure sufficient capacity.

4) IMC Champion - MPA works with other government agencies and maritime industry partners to make Singapore remain a leading global hub port and an international maritime centre (IMC). Its aim
is to attract a core group of ship owners and operators to Singapore, to broaden the depth of maritime ancillary services and to improve the business environment for the industry.

5) National Maritime Representative - MPA safeguards Singapore's maritime and port interests in the international arena. It extends as the government's advisor on matters relating to transport, safety and security.

**COMMITMENT TO SUSTAINABILITY**

MPA leads to shape the economic, social and environmental sustainability aspects of the maritime industry in Singapore. It has been committed to sustainability for over 10 years. Between 1996 and 2003, the idea of sustainability resulted in the transfer of the promotional division of Maritime from International Enterprise (IE) Singapore to MPA to allow expansion of the maritime ecosystem beyond the hub port. Its three key sustainability goals were 1) maintaining a quality ship registry, 2) ensuring a vibrant workforce and 3) promoting an expanding suite of maritime services in Singapore.

In 2010, the Corporate Social Responsibility (CSR) framework was launched by MPA to recognize the voluntary social outreach which was gaining popularity amongst a small group of employees. To galvanize their efforts, MPA formed the MPA Care Team to champion a bottom up active volunteerism approach.

It was in 2014 that the commitment to sustainability was elevated by MPA by forming a dedicated Sustainability Office to manage sustainability efforts both externally and internally led by Senior Management. Its target was to lead in promoting sustainability practices in four sustainability excellence strategic trusts; environment, economic, social and financial.

**Sustainability Office**

The Sustainability Office functions as the key driver of sustainability efforts and initiatives and reports directly to the Chief Executive. In 2014, MPA formed this dedicated team with expertise on environmental and social sustainability matters to develop its sustainability practices. It set up this team consisting of personnel from different departments to bring together diverse knowledge when planning sustainability objectives. The team fosters good corporate governance, sound resource management and conscious environmental and social practices to spread MPA's focus on sustainability.

**Compliance with International Regulations and Conventions**

MPA is a signatory to the International Convention for the Prevention of Pollution from Ships (MARPOL). The MARPOL is considered a landmark convention that covers a broad scope of marine and environmental protection issues that result from shipping activities. It requires signatory countries to abide by laws and regulations that protect the marine environment. MPA has formed the Maritime Safety Committee (MSC) and the Marine Environment Protection Committee (MEPC) that consults its stakeholders to promote green and safe shipping practices. Complying with MARPOL reflect MPA's sustainability foresight as it has enacted domestic legislations to enforce the convention's requirements which covers waste management, clean energy use and emissions reduction.

MPA's operations are certified for ISO 9001 Quality Management System. It has obtained the ECO-OFFICE certification, along with the 4-Star Happy Toilet Certification by Restroom Association for all 10 toilets of the 5 floors for its office building.

**Implementation of Energy Conservation Act (ECA)**

As the sectoral regulator to implement the Energy Conservation Act (ECA) for maritime establishments, MPA has facilitated the registration and report submission process for energy use and energy efficiency plans for two private companies (namely PSAC and JPPL). In addition, MPA collaborated with industry partners to provide ECA-compliant fuel to customers to prepare for reduced sulphur limits in marine fuels which came into force in 2015.

**Impact assessment of marine dumping sites**

MPA commenced an Environmental Impact Assessment (EIA) study to ascertain the suitability of three existing marine dumping sites located at Semakau, St John's Island and Bedok. These sites are slated to be used for dumping of marine waste from ships and other sources. The detailed EIA report is expected to be complete by end of 2016.

**Preserving biodiversity**

MPA values marine life and biodiversity. Prior to the development of the first phase of Tuas terminal in 2012,
a detailed environmental impact assessment was conducted to manage the relocation of delicate corals at Sultan Shoal. As construction and reclamation activities would pose harm to the natural environment, the Coral Relocation Plan assessed the most optimal relocation sites and moved the corals to nearby Sister’s Island and St John’s Island. MPA partnered with the National University of Singapore to transplant and nurture the coral nurseries setup in these islands. The programme helped to assess the survivability, adaptability and evolution of the remaining corals, enhancing the coral ecosystem in Singapore’s green ports.

**Protecting Singapore waters from contaminants and pollutants**

As signatory to MARPOL, MPA has implemented the Prevention of Pollution of the Sea Act (PPSA) with measures to prevent, reduce and control pollution from ships in Singapore waters. The Act also covers dumping of waste from ships on land and enables MPA to take preventive measures to tackle pollution, including denying entry or detaining ships.

**THE MARITIME SINGAPORE GREEN INITIATIVE**

Complying with the International Maritime Organization’s (IMO) regulations, MPA has reduced the global sulphur cap on marine fuels from 4.5% to 3.5% in January 2012. Furthermore, MPA targets to gradually reduce the sulphur content to 0.5% in marine fuels by January 2020.

MPA launched this initiative in April 2011 to support clean and green shipping practices in the local maritime industry. It is aimed to achieve a dual objective: to reduce the environmental impact of shipping and related activities, and promote sustainability practices in shipping.

MPA pledged to invest up to S$100 million over a five-year period for the initiative which includes the Green Ship Programme, the Green Port Programme, and the Green Technology Programme (see Figure 1). The programmes are designed to recognize and provide incentives to maritime establishments who adopt clean and green shipping practices that go beyond the requirements set by IMO.

To support the initiative and get industry players on board, MPA organized the inaugural Green Pledge signing ceremony at the Singapore International Maritime Awards in 2011. A total of 12 key organizations across the maritime sector came together and pledged their commitment to support the initiative.

**Green ship programme**

For ships bearing the Singapore flag, this programme provides financial incentives to shipping companies who adopt energy efficient ship designs that reduce fuel consumption and CO₂ emissions. Ships that go beyond the requirements of IMO’s Energy Efficiency Design Index (EEDI) will enjoy a 50% discount in Initial Registration Fees (IRF) and a 20% rebate on Annual Tonnage Tax (ATT).

**Green port programme**

This programme encourages ocean-going ships calling at Singapore ports to reduce emissions of pollutants like sulphur and nitrogen oxides. Ships that use approved abatement or scrubber technology above MARPOL requirements and burn fuels with less than 1% sulphur content within the port can enjoy a 15% discount on port tariff.
Green technology programme
The green technology programme is aimed at encouraging local maritime companies to develop and adopt green technologies that help to reduce emissions and resource consumption. Eligible projects receive co-funding of up to half of qualifying costs to develop green technological solutions and systems. These grants are capped at S$2 million per project with an increased cap of S$3 million if projects can achieve more than 10% reduction in emission reductions.

Table 2 displays the initiative’s success in different programmes

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Pledge</td>
<td>To date, 100 maritime establishments have signed and pledged their support for the initiative.</td>
</tr>
<tr>
<td>Green Ship Programme</td>
<td>A total of 203 ships have been conferred with Green Ship Status with a total of S$1.7 million worth of green initiatives disbursed.</td>
</tr>
<tr>
<td>Green Port Programme</td>
<td>To date, more than 3000 vessel calls have enjoyed concessions and rebates on port dues.</td>
</tr>
<tr>
<td>Green Technology Programme</td>
<td>In 2014, six projects were approved and received a total funding of S$6.7 million. Till date, a total of 21 project applications have been approved worth S$20.4 million. One particular emissions reduction project by a shipping line reduced emissions by 23%, better than the initially estimated 20.5%.</td>
</tr>
</tbody>
</table>

INTERNAL SUSTAINABILITY ACCOMPLISHMENTS
MPA has adopted initiatives within its organization to monitor, track and reduce emissions, energy and water consumption, and promote recycling efforts as part of its compliance to the Public Service Taking the Lead in Environmental Sustainability (PSTLES) initiative and also the Eco-Office certification.

Emissions and energy consumption monitoring
In terms of electricity and water consumption for its operations and activities, MPA has been able to reduce both energy and water consumption in 2014 by 19% and 3% as compared to 2013 levels, as shown in Figure 2. This resulted in reduction of CO₂ emissions by roughly 3% in 2014 in comparison with 2013 levels.

Waste and recyclables collection
MPA has implemented the 3R (Reduce, Reuse, and Recycle) programme to better manage office and paper waste for the last 15 years. Since 2002, it has been recycling waste paper, printer toners and cartridges, and aluminium cans regularly in its offices. Figure 3 shows the increase in recycling in 2014 by roughly 4% from 2013 levels. In addition, MPA provides complimentary waste collection for ships berthing at its ports to operate a clean and efficient port. The waste products are sent to waste-to-energy plants for final disposal.

Use of excavated materials for land reclamation
During the development of the Tuas Port, a large amount of earth materials was required for land reclamation. MPA along with the Land Transport Authority (LTA) devised an innovative, environmental friendly and cost-effective solution that proved to be a win-win outcome for both parties. The LTA generated a large amount of excavated earth materials from various underground rail and road construction projects which required proper disposal. The agencies studied the feasibility of the excavated materials to be used for the port
development site. A detailed EIA was conducted and the site was found to be suitable. Through this collaboration, LTA saved on costs of proper disposal of such a large amount of earth materials and MPA saved on sand procurement costs. The LTA saved around S$32 million of disposal cost while MPA saved around S$90 million worth of land materials cost for the port reclamation work.

**ENGAGING STAKEHOLDERS**

**Integrated reporting**

MPA has achieved a first in the maritime industry and public sector in Singapore by publishing its sustainability and integrated report in 2014. Titled “Towards a Future Ready Maritime Singapore”, the report was in accordance with the Global Reporting Initiative’s (GRI) G4 Comprehensive Guidelines as well as the International Integrated Reporting Council’s (IIRC) <IR> framework.

Adopting an integrated approach highlights MPA’s roles and responsibilities towards promoting sustainability across the industry to create a positive impact on its community, economy and environment. MPA considers itself an early adopter of Sustainability/Integrated reporting and hopes to encourage companies in the industry to follow suit. It published its second sustainability and integrated report in 2015 titled “Building a Future Ready Maritime Singapore”.

**Materiality analysis**

MPA conducted a materiality analysis to identify critical economic, environmental and social issues which may impact its business performance or influence the decisions of its stakeholders. To better understand sustainability risks, it has adopted the international standard of Accountability Principles Standard for Materiality Assessment AA1000APS. Implementing the accountability standards helped to prioritize materiality issues and also enhanced business confidence among stakeholders.

The organization’s commitment towards advancing sustainability is reflected with the involvement of the Chief Executive in the materiality assessment process, which was facilitated by an independent sustainability expert. MPA integrated sustainability risks into the organization’s strategy by aligning material risks with the business model wherever possible. The exercise enabled MPA to better understand and manage its business risks.

**Understanding stakeholder needs**

MPA puts strong emphasis on building and fostering collaboration with all of its stakeholders. As part of business excellence, it employs a systematic approach to engage with relevant stakeholders via different communication channels (see Table 3). However, to develop partnerships with stakeholders, consideration is given to their interest and commitment towards sustainability and environmental practices. As such, MPA looks at

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Types</th>
<th>Communication Platforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime Enterprise Customers</td>
<td>Port terminal and shipyard operators</td>
<td>Briefing sessions, Port marine and shipping circulars, Informal events such as sports and recreational activities</td>
</tr>
<tr>
<td>Shipping lines, ship agencies, ship management companies</td>
<td>Seafarers, Pleasure / harbor craft owners and license holders</td>
<td>Navigational safety dialogues, Singapore Maritime Week, Sustainable Marine Transportation Conference, ERM Forum, CEO Roundtable, Offshore marine forum, Tax seminar</td>
</tr>
<tr>
<td>Non-Enterprise Customers</td>
<td>Government agencies, Institutes of higher learning, Unions and private organizations, Members of the public</td>
<td>Open house, Career fairs, Scholarship fairs, MPA Global Internship Award, Young Mariner’s Networking Event, MaritimeONE Open House, Singapore Maritime Heritage Festival and Trails</td>
</tr>
<tr>
<td>Business Partners / Vendors</td>
<td>Contractors and suppliers</td>
<td>Meetings / Briefings / Calls</td>
</tr>
<tr>
<td>Internal</td>
<td>Employees</td>
<td>Townhall sessions, Employee engagement surveys, Employee Magazine, Operational Excellence workshops</td>
</tr>
</tbody>
</table>
the following criteria to identify stakeholders with whom it can promote clean and green shipping practices:

- Stakeholder’s interest in sustainability
- The potential influence MPA can have on the stakeholder, and
- Extent to which MPA can make an impact

COMMUNITY ENGAGEMENT

MPA engages with the local community to spread awareness about the maritime industry. Partnering with NGOs and interest groups has proved fruitful in communicating MPA’s environmental sustainability objectives. As maritime industry has potential to provide learning and awareness opportunities for the youth to consider for future employment, MPA collaborates with various types of community organizations, institutes of higher learning, voluntary organizations and private entities to promote maritime prospects.

Public outreach programmes

MPA CARE Team - the team leads community engagement activities and supports the Tanjong Pagar Family Service Centre, Redhill Moral Senior Activity Centre and Asian Women’s Welfare Association’s Senior Activity Centre and organizes activities to raise funds for MPA’s outreach programs.

The CARE Team volunteers also help the elderly and less privileged with spring cleaning, house painting and giving haircuts during routine house visits. In 2014, MPA partnered with the Salvation Army – Kids in Play and Lighthouse School to help the visually handicapped in their daily routine activities.

A CLEANER FUTURE FOR MARITIME SHIPPING IN SINGAPORE

MPA has launched the Next Generation Port 2030 Initiative (NGP2030) spearheaded by its sustainability office. The initiative plans to utilize a new generation of technologies to increase efficiency and productivity, intensify land-use in the port, improve safety and security, raise the level of sustainability and also make the port more community-oriented and accessible to the public.

A major component of the NGP2030 comprises the Tuas Terminal, slated to be developed in four phases. It already boasts of innovative solutions in its land reclamation project and with a projected handling capacity of 65 million TEUs, Tuas Terminal will deploy automated-guided vehicles, automated yard and quay cranes, and automated operational systems by leveraging on industry partnerships and R&D capabilities.

MPA plans to implement real-time information sharing between security agencies to facilitate a smoother operational lookout. It aims to take a leading role in promoting the use of clean fuels
especially Liquefied Natural Gas (LNG) for ships. Developing an LNG infrastructure will be a key component of the MPA’s future sustainability goals as it will provide shipping lines and subsidiary companies to test, adopt and improve sustainable technologies for better performance and reduce emissions.

MPA is well-positioned to safeguard the country’s maritime interests and promote sustainability across industry players. Financial rebates and incentives have proved to be successful to encourage companies towards adopting environmental practices. In the long run, the industry stands to gain as MPA implement the NGP2030 to have a functioning green port of the future.

**SUMMARY**

Singapore has always been very innovative in the management of port operations and crafting of its maritime policies. However, the competitors have also learned from Singapore’s innovations. To stay relevant in the international market, MPA needs to continue to innovate and generate new ideas to stay true to its mission of being a Safe, Efficient and Sustainable global hub port, a vibrant IMC and to have an eye on a forward looking Strategic Maritime Interest.

MPA has been committed to sustainability since 1996. They formed the sustainability office in 2014 to specifically strategize and initiate sustainability programmes. MPA has put in place policies and strategies that ensure compliance with international regulations and conventions as well as national requirements in line with the country’s Sustainability Blueprint. MPA has been actively promoting environmental sustainability through the Maritime Singapore Green Initiative, which has been successful. In addition, policies are in place to preserve biodiversity and to protect Singapore waters from contaminants and pollutants. MPA has also engaged various stakeholders as well as the maritime community. The framework, processes and strategies they have put in place should help MPA ensure a greener future for maritime shipping in Singapore.

**MPA pledged to invest up to S$100 million over a five-year period for the initiative which includes the Green Ship Programme, the Green Port Programme, and the Green Technology Programme.** The programmes are designed to recognize and provide incentives to maritime establishments who adopt clean and green shipping practices that go beyond the requirements set by IMO.

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*Sustainability Case Study on Maritime and Port Authority of Singapore (MPA) continued*

*All data and information about the company has been obtained from 1) publicly available resources, 2) company websites and reports, and 3) company representatives.*

Acknowledgements

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CANON SINGAPORE PTE LTD
ELMICH PTE LTD
MARITIME AND PORT AUTHORITY OF SINGAPORE

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