CORPORATE SUSTAINABILITY CASE STUDIES 2016
Featuring: Singapore Sustainability Awards 2015 Winners
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
Buckman is a specialty chemicals manufacturer headquartered in Memphis, Tennessee, USA. Apart from its manufacturing facility at the headquarters in Memphis, the company has international manufacturing sites located in Canada, Mexico, Brazil, Belgium, South Africa, Singapore and China. Buckman’s reach is truly global as it conducts business in over 90 countries. What started in 1945 with only four employees and a 55-gallon reactor has now grown manifold into a leading specialty chemicals manufacturer providing advanced chemical solutions to its customers.

The company was founded by Dr. Stanley Buckman, a microbiologist and biochemist by training to help alleviate microbial problems facing the pulp and paper industry in the 1940s. The very first Buckman facility was built on the site of an old lumberyard in Memphis. Over the years, Buckman expanded its reach with multiple product lines in different locations. In the 1960s, the company ventured into water treatment and started producing ionene polymers that are used in swimming pools, water cooling systems and freshwater supplies.¹

According to the World Bank, the global chemical manufacturing industry contributes close to two percent of global gross domestic product (GDP).² Chemicals are required to produce a wide array of goods as they are essential to various industry sectors such as agriculture, manufacturing, textiles, construction, hospitality and healthcare. The chemical industry itself roughly consumes about a quarter of its output through sectors such as petroleum refining, aluminum and metals, pulp and paper and water treatment.³ In 2014, the world chemical market was estimated to be valued at US$2.6 trillion and is projected to grow to US$5.6 trillion by 2035.⁴

The chemicals market can be categorized into a) basic chemicals, b) specialty chemicals, and c) consumer chemicals. Buckman’s business focuses on specialty chemicals that are used to enhance process performance in industries such as pulp and paper, textile and leather, and water treatment. The company prides in providing complete solutions to its customers along with technical support provided by highly experienced staff. Research into advanced chemistry and technological developments has helped Buckman to develop new applications and products to reduce its environmental footprint, as well as that of its customers, thus enabling the company to thrive and grow over its 70 years of existence.

BUCKMAN ASIA – OPERATIONS IN SINGAPORE

Singapore is a leading regional hub for the chemical industry. The chemicals and chemical products sector contributed S$38 billion of manufacturing output in 2010.⁵ To address climate change challenges and to encourage sustainable development, Singapore promotes energy efficiency and emissions management. The city state is also a hub of high-tech manufacturing and research and development that is supported by advanced facilities and skilled manpower.
In 2010, Buckman offices worldwide achieved a 15% reduction in energy, water and fuel consumption through various measures.

Buckman Asia was registered as Buckman Laboratories (Asia) Pte Ltd in Singapore in September 1991. It caters to 27 countries in the Asia Pacific region. Besides a manufacturing facility, Buckman Asia’s operations in Singapore offer sales, marketing and technical support for the Asia Pacific market. In addition, it serves as a logistics hub for Asian customers. The Singapore office also provides support services such as research and development, human resources, community service and continuous improvement projects for the company.

Buckman Asia’s facilities are certified for ISO 9001 Quality Management System since 1998, ISO 14001 Environmental Management System since 2000, and OHSAS 18001 Occupational Health and Safety System since 2003. Buckman Asia is the only specialty chemical company to receive the Singapore Quality Class (SQC) award from SPRING Singapore in 1999. The SQC award serves to accord recognition to companies that have attained a commendable level of performance towards business excellence.

Alongside the company’s primary target markets of pulp and paper, leather and textile, and water treatment, the company manufactures performance chemicals for secondary markets such as the agriculture, biofuels, coatings and plastics, rubber and wood, and oil and gas sectors. Its primary products are microbicides, scale inhibitors, polymers, dispersants and defoamers.

PROTECTING THE ENVIRONMENT
Chemical manufacturing is energy intensive by nature. Furthermore, the uses of flammable substances make working conditions in such facilities prone to various hazards. Thus, environmental protection has always been at the heart of Buckman’s business operations and principles. A strict focus on quality, environment, health and safety, commonly known as QEHS was maintained as Buckman expanded to multiple international locations. Buckman’s operations in South Africa became the company’s first manufacturing facility to obtain the then ISO 9002 certification (presently known as ISO 9001 Quality Management System) in 1988.

With an established framework in place, all Buckman manufacturing sites worldwide achieved the ISO 9001 certification for Quality Management System and ISO 14001 certification for Environmental Management System by 1994 and 2004 respectively. In 2004, the company also received the U.S. Environmental Protection Agency’s (EPA) Presidential Green Chemistry Challenge Award for their Optimize technology in the pulp and paper industry for processing recycled papers. It received the award a second time in 2012 for their Maximize enzymatic technology in fiber refining.

SHAPING THE APPROACH FOR CORPORATE SUSTAINABILITY
Buckman believes in the philosophy that health and well-being of the employees, financial prosperity of the company and the wholesomeness of the environment are the company’s main sources of growth. The company showcases a strong commitment towards sustainability, reflected in what is known as the Buckman Fundamentals:
• Code of Ethics
• Mission Statement
• Sustainability
• Quality
• Safety
• Community
• Environment
• Goal – Zero Negative

Environmental Impact
Buckman however believes that being passionate about sustainability alone is not enough. In the spirit of the triple bottom line approach, the company incorporates financial and social aspects in corporate sustainability. Hence, Buckman sets and assesses its sustainability in the following six areas:
• Economic
• Environment
• Labor
• Human rights
• Society
• Product responsibility
Promoting sustainability practices through products, processes and people is never an easy task for companies with a global business reach. Individual operating facilities encounter obstacles and challenges in their local context. Therefore, the top management at Buckman has developed a company-wide approach to adopt environmental practices that can be tailored according to an individual operating facility’s requirements. Buckman has developed three such strategic thrusts designed to advance the company’s sustainability efforts across all of its facilities.

**Strategic Thrust 1: Buy-in from senior management at all locations**

At Buckman Asia, the General Manager and senior management executives are actively involved in setting sustainability objectives as part of corporate strategy. These are discussed with respective department leads in monthly management meetings. The suggestions given during these meetings are taken into consideration and the sustainability objectives are adjusted accordingly if necessary. The strong support from top management to sustainability reflects a healthy work culture in the organization.

The Global Leadership Workgroup (GLW), and a smaller subgroup known as the Strategic Plan Review, set direction and offer leadership and support across business functions. The GLW primarily comprises General Managers and Vice Presidents, and under its guidance comes the drive for sustainability and to bring innovation in products. Sustainability targets like energy and emissions reduction are drawn up according to the needs of individual operating sites. Individual operating facilities such as Buckman Asia align their objectives with company goals and implement these through their local committees.

**Strategic Thrust 2: Products and solutions**

To ensure long-term sustainability of its products and markets, Buckman believes in establishing life-long partnerships with its customer and supplier networks. The company’s products can achieve significant environmental benefits through optimized usage techniques in the customer’s manufacturing processes. In addition to manufacturing specialty chemicals, Buckman offers a package solution to its customers. For example, the Green Toolbox which is an in-house developed tool, aids customers in the water treatment sector in reducing energy use, emissions, and waste generation by using biodegradable, non-toxic and naturally derived raw materials.

The specialty chemicals that Buckman produces can be customized according to the user’s requirements. Apart from selling the chemicals, Buckman ensures that its customers are able to achieve environmental benefits to the fullest potential by assisting with accessories such as the Green Toolbox.

**Strategic Thrust 3: Performance indicators for sustainability**

Buckman believes in going beyond the laws and regulations in terms of achieving environmental sustainability. With this in mind, the company periodically reviews its environmental performance indicators to assess its process and operations. Specifically, it has put in place tracking and monitoring programmes to measure its environmental impact from products and processes.

The monitoring areas mentioned below are part of the larger Quality, Environmental, Health and Safety (QEHS) framework that evaluates its achievement in terms of the company’s environmental footprint:

A) Energy, water and fuel consumption monitoring in process operations – Promote 3R’s reduce, reuse and recycle.
B) Waste disposal per kilogram of production.
C) Monitoring of product batches - to identify areas for water consumption reduction.
D) Transport emissions – monitoring and mapping of logistics.

Through the use of its products, Buckman has successfully lowered operation costs and reduced energy consumption in paper processing plants, food processing plants, steel plants, ethanol processing plants, water treatment and cooling system plants of its customers.
SUSTAINABILITY EFFORTS AT BUCKMAN ASIA

Buckman Asia implements a range of sustainability initiatives both internally and externally. It follows the headquarters’ corporate direction in terms of promoting sustainability to its employees, suppliers and immediate community. Key initiatives undertaken at Buckman Asia include:

The QEHS Framework
The QEHS framework is an extensive performance objective and measurement system that focuses on quality, environment, health and safety aspects of Buckman Asia’s operations and products. It is also a policy that governs Buckman Asia’s business practices which aim to bring continual, measurable and cost-effective improvements to its operations and customers. Figure 1 highlights the different focus areas of the QEHS framework.

Execution of its operations using the QEHS framework has ensured that there is no major non-conformity in quality, environment, health and safety issues in certification, re-certification and independent inspection audits in the past 9 years.

The Green Toolbox
Buckman offers an industry-leading modelling program for its customers called the Green Toolbox. It is a unique and sophisticated program that helps customers to analyze alternative scenarios when using chemicals, and quantifies their potential impacts on energy, water and carbon footprints. The toolbox assists customers to effectively prioritize tasks in terms of financial and environmental impact.

The toolbox collects raw data, determines current water and energy usage trends and evaluates alternative scenarios through software simulations. It also identifies opportunities for improving sustainability performance and provides a Return on Environment (ROE) calculation. Buckman promotes the use of ROE to customers as it can show how much energy and water savings they can attain with specific usage techniques. The toolbox comprises an onsite monitoring and reporting system, as displayed in Figure 2 which provides comprehensive information to customers based on their specific needs.

![Figure 1: Buckman Asia's QEHS Framework.](image-url)
Impact of sustainability efforts
In 2010, Buckman offices worldwide achieved a 15% reduction in energy, water and fuel consumption through various measures. The company sets reduction targets in line with its corporate objectives and makes voluntary disclosures to stakeholders.

Buckman operating facilities worldwide have a tracking and monitoring system for both direct and indirect energy consumption. With a constant push for continuous improvement and adherence to the environmental management system, energy consumption has decreased across all Buckman facilities gradually. By 2014, Buckman has been able to achieve reductions in both direct and indirect energy consumption. See Figure 3.

The company has been successful in reducing its water consumption by more than its target from 2010 levels as shown in Figure 4.

Through the use of its products, Buckman has successfully lowered operation costs and reduced energy consumption in paper processing plants, food processing plants, steel plants, ethanol processing plants, water treatment and cooling system plants of its customers. The company has conducted detailed studies in these plants to ascertain the effectiveness of its solutions.

Three success stories from Buckman’s primary target markets where customized solutions have resulted in savings of both financial investment and resource conservation are highlighted in Tables 1, 2, and 3.11
**TABLE 1: SUCCESS STORY IN THE PAPER INDUSTRY**

**PAPER INDUSTRY: REDUCING THE COST OF PULP**

**The Challenge**
A mill producing softwood kraft bleached grade pulp suffered from high washing aid usage and cost and poor flow through the evaporators, causing a production bottleneck.

**The Solution**
Buckman applied a new washing aid program that reduced shower flow by 240 gallons per ton and raised the level of evaporator solids.

**Return on Investment (ROI)**
- Reduced energy use by US$2 per ton for a savings of US$840,000 per year because less water was needed per ton.
- Eliminated the bottleneck at the evaporators, allowing the mill to make more tons per day.

**Return on Environment (ROE)**
- Saved up to 240,000 U.S. gallons of water per day.
- Required less water, and therefore significantly less energy was required for evaporation, reducing the operation’s carbon footprint.

**TABLE 2: SUCCESS STORY IN THE LEATHER INDUSTRY**

**LEATHER INDUSTRY: OPTIMIZING THE BEAMHOUSE**

**The Challenge**
A bovine tannery wanted to minimize the environmental impact of unhairing and liming while optimizing cleanliness, openness and chrome penetration. An increase in area yield would be a bonus.

**The Solution**
Buckman replaced conventional chemicals with advanced Buzyme® enzymatic solutions, which reduced sodium sulfide and eliminated the use of a number of auxiliary chemicals. Careful measurement indicated significant improved wetblue area yield.

**Return on Investment (ROI)**
- Generated a gain in area yield conservatively estimated at an ROI of more than US$800,000 per year.
- Gained a better quality wetblue for the market.

**Return on Environment (ROE)**
- Avoided the use of approximately 480 tons of sulfur-based chemicals per year.
- Reduced sodium sulfide by 40-50%.

**TABLE 3: SUCCESS STORY IN THE WATER TREATMENT INDUSTRY**

**WATER INDUSTRY: ORGANIC LOADING**

**The Challenge**
A large power generation facility was plagued by high organic content in its high-pressure boiler feedwater, resulting in higher organic loading in the pretreatment system and shortened resin run lengths and resin life.

**The Solution**
Buckman implemented a program to remove suspended solids and reduce total organic content, elevating the plant’s total organic content (TOC) removal efficiency from 25% to as high as 62%.

**Return on Investment (ROI)**
- Reduced regeneration frequency and chemical usage saved about US$290,000 per year.
- Reduced blowdown levels on the boiler saved US$2,000 per year.

**Return on Environment (ROE)**
- Reduced effluent chemical loading by 251 tons per year.
- Reduced regeneration frequency, conserving natural river resources.
NURTURING LOCAL COMMUNITIES

BuckmanCares

BuckmanCares is the company’s community outreach initiative where employees participate in volunteering efforts in their localities with primary schools, children centers, blood donation centers and other community projects. Under this initiative, employees partner with charity organizations to contribute their time and effort in making a difference to the society. In 2011, Buckman Asia celebrated its inaugural BuckmanCares Day where both employees and their families took part in social activities at HCA Hospice Daycare Centre, Children's Cancer Foundation and local primary schools.

In 2014, more than 88,300 people were positively impacted by the BuckmanCares Initiative as its employees volunteered 8,932 hours across the world to support communities in which they operate. The company’s contribution to these programmes was valued at 1.8% of its net profit.16

Buckman recognizes employees’ volunteering contribution (cash and non-cash) and matches donations to charities that the operating facility is involved with. Senior management has noted a positive trend in employee participation in recent years as it enables them to develop a meaningful relationship with members of the community, and inspires a culture of giving back to society.

Local Community Relation Council (LCRC)

Buckman’s Charitable Giving and Volunteer Policy is the over-arching principle that guides its various social responsibility projects. To nurture and sustain the communities in which Buckman operates, each operating facility has formed a LCRC which promotes activities in education, health and human service, and environment with an aim to improve the lives of its volunteers and community members.

Each LCRC is driven by the facility’s General Manager / General Manager Operations and includes members from departments such as sales, marketing, corporate communications and general office. Buckman Asia’s LCRC comprises seven members and aims to be a responsible corporate citizen by uplifting communities in which it operates.

Buckman Asia’s LCRC was formed in 2010 and is the main driving force behind the company’s involvement in volunteering and community related activities in Singapore. It employs a bottom up approach where team members suggest community engagement projects to the committee, which are assessed based on the requirements of the Charitable Giving and Volunteer Policy. The three key elements of this policy are:

a) Projects are to be partnered with non-profit and charity based organizations.
b) Projects need to be in either of the three focus areas, and within the applicable laws and regulations of the local environment.
c) Projects should have a positive impact on local community in the company’s area of operations.

Charity organizations where family members of Buckman employees are involved and organizations with religious affiliations are not excluded from partnership programs. Thus, contributing to volunteering efforts becomes a natural practice for the employees. The LCRC recognizes employees’ commitment and awards them with prizes and gifts that include commendation certificates from local management, an article about their volunteering efforts, company branded gifts, time off work on a Friday afternoon and a lunch with the General Manager; aimed to promote bonding between employees and management.

Figure 5 highlights Buckman Asia’s employee volunteer participation across the past 4 years. In FY2014, 38 employees (76% of total workforce) participated in various volunteering activities and contributed volunteering hours to multiple charity organizations.

<table>
<thead>
<tr>
<th>Year</th>
<th>Repeat Volunteers</th>
<th>New Volunteers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>12 18</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>23 12</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>13 25</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5: Employee volunteer participation in Buckman Asia.
**SUSTAINABLE TALENT MANAGEMENT**

Developing, managing and retaining local talent in the company’s workforce is another key feature of Buckman Asia’s sustainability efforts. As it is crucial for business growth, the company has put in place a training framework that enables employees to develop core competencies to foster leadership qualities. The Ability, Skills and Knowledge (ASK) framework requires Buckman employees to participate in minimum mandatory hours of training per year. Table 4 illustrates a steady growth for Buckman Asia’s quantum of ASK activities, team building activities and training hours for 2012 to 2014.

**Buckman Green School**

Buckman headquarters launched its flagship training program, the Buckman Green School in 2011. It is aimed to train all of its water treatment employees in global offices with sustainability initiatives and techniques that help to make their customers’ operations energy and resource efficient. The company believes that empowering employees with technical skills and environmental awareness will enable it to further differentiate its products and services from its competitors.

**COMMUNICATING SUSTAINABILITY TO STAKEHOLDERS**

With increasing global awareness of sustainability, stock exchanges and policy makers are encouraging companies to report their sustainability and corporate social responsibility (CSR) efforts. As a privately held company, Buckman is not required to produce such reports. However, the company is already at the forefront of sustainability reporting and publishes a group-wide sustainability report every two years showcasing its sustainability, corporate responsibility and community efforts.

Buckman reports its sustainability efforts in accordance with the internationally accepted Global Reporting Initiative (GRI) standards as well as the AA1000SES Stakeholder Standard developed by AccountAbility Institute for Social and Ethical Sustainability. The company also makes a full voluntary disclosure report of its energy consumption and emissions to the Carbon Disclosure Project (CDP), Sedex and Ecovadis on an annual basis.

**SUMMARY AND THE ROAD AHEAD**

Buckman has showcased its commitment to maintaining quality, environment, health and safety standards by obtaining certifications for ISO 9001, ISO 14001 and OHSAS 18001 respectively. The company consistently measures and monitors its environmental footprint in its own processes and is dedicated towards sustainability reporting according to the guidelines of GRI, CDP, Sedex and AA1000 frameworks. It also ensures that sustainability of the community in which it operates through the efforts of the Local Community Relation Council (LCRC), under the BuckmanCares.

Buckman’s main contribution to sustainability is through its specialty chemical products that help its customers reduce the environmental footprint of their manufacturing processes. It also helps its water treatment customers to analyze and
improve their Return on Environment (ROE) savings through the Green Toolbox. The Green Toolbox factors in the financial aspect as Buckman products are able to give its customers savings on Return on Investment (ROI) as well.

Moving forward, Buckman Asia’s sustainability challenges will see it tackling increasing customer demands and product costs. The company plans to address this by implementing a life cycle assessment (LCA) based approach for its products to further measure and quantify the impact on the environment. Buckman hopes to utilize the LCA methodology to add value to its product line which will aid customers to make environmentally conscious decisions.

The company has set its target for the next three years to achieve a further 15% reduction from present levels in the following areas:
1. Fuel consumption per kilogram of output.
2. Water consumption per kilogram of output.

In addition, Buckman Asia plans to focus on innovation in its research and development activities, while maintaining zero negative environmental impact and accidents/incidents. It aims to obtain the BizSAFE Star Level certification to further bolster its business operations. The company plans to continue to champion sustainability through its products, programs and practices, ensuring that its employees, customers, society and the earth are well taken care of.
Acknowledgements

Global Compact Network Singapore and Nanyang Business School, Nanyang Technological University wish to thank the following organisations and individuals for their invaluable support towards the production of this publication.

THE WINNERS OF SINGAPORE SUSTAINABILITY AWARDS 2015
ARDENTEC SINGAPORE PTE LTD
BUCKMAN LABORATORIES (ASIA) PTE LTD
CANON SINGAPORE PTE LTD
ELMICH PTE LTD
MARITIME AND PORT AUTHORITY OF SINGAPORE

THE AUTHORS FROM NANYANG TECHNOLOGICAL UNIVERSITY

DR. S. VISWANATHAN
Professor and Associate Dean (Research), Nanyang Business School

MR. TAYEF QUADER
Research Associate at the Centre for Business Sustainability, Nanyang Business School

HEARTFELT THANKS TO OUR SPONSORS

Green Technology Awards Sponsor
AUTODESK ASIA PTE LTD

Sustainable Business Awards Sponsor
CITY DEVELOPMENTS LIMITED