## RISK AND SUSTAINABILITY

The Group deploys the Enterprise Risk Management Framework to identify the most important risks that will act as barriers to achieving its business goals in the short, medium and long term. Besides business risks, risks arising from changes in the environment, social issues as well as governance are also identified. The Group believes in managing these risks well for its long-term sustainability.

The Risk and Sustainability Committee oversees management in the identification of risks as well as the implementation of risk management policies and strategies.

The Group's significant risks are set out below and a detailed description of the risks is provided in our website.

To help manage our long-term performance and achieve our long-term goals, a range of key performance indicators (KPIs), both operational and financial, are established and measured. These KPIs are linked to the significant risks of the Group and are also linked to the variable components of compensation of all executives.

ST Engineering's remuneration framework, comprising the following components, is aimed at fulfilling two objectives:

- 1. To attract and retain talents critical to achieving our business objectives; and
- To align the employees' compensation to shareholders' wealth creation, through the following:
  - A. A base salary, which reflects the market worth of a position, and benchmarked regularly to relevant industries to ensure competitiveness.

- B. A short term incentive, which rewards employees for achieving financial targets and operational objectives in both the short term and the medium term. This incentive is paid based on individual performance and contribution and consists of a Target Bonus and an EVA-Based-Incentive. The payment of the EVA-Based-Incentive is deferred over a time horizon, and may be
- clawed back in the event of a negative EVA.
- C. A long-term incentive, which rewards employees for achieving long-term growth and shareholders' wealth creation through share ownership. This incentive is a key mechanism to retain talent and to align employees' compensation to shareholders' wealth creation.

	OUR RISKS
GROWTH & COMPETITION	Product and technology obsolescence Merger and acquisition
ETHICS & GOVERNANCE	Cyber risk Bribery and corruption Regulatory compliance
OPERATIONS	Contract compliance Business disruption Product liability and safety
HUMAN CAPITAL	Talent management and succession planning Occupational health and safety
FINANCIAL	Credit Foreign exchange

#### ANTI-CORRUPTION TRAINING ACROSS GLOBAL OPERATIONS

NUMBER OF EMPLOYEES TRAINED	2014	2015	2016
Singapore	1,885	5,198	3,512
US	_	182	170
Europe	_	34	-
China	_	37	279
Total	1,885	5,451	3,961

## CODE OF BUSINESS CONDUCT AND ETHICS TRAINING IN SINGAPORE

	2014	2015	2016
Number of employees trained	3,043	11,891	13,961
Percentage of employees trained	21%	79%	93%

## SUSTAINABILITY PERFORMANCE

#### **TARGETS**

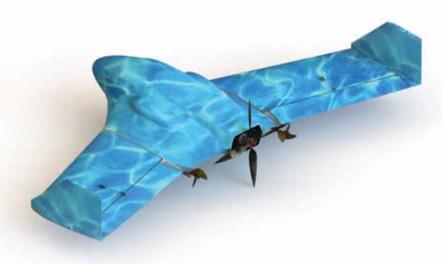
TARGETS				
	2015 PERFORMANCE	WHAT WE SAID WE WOULD DO IN 2016	WHAT WE DID IN 2016	WHAT WE WILL DO IN 2017
INNOVATION	Met target spending on R&D	Review the existing R&D model with the aim of renewing and refreshing our approach where necessary	Concluded the review of the existing R&D practices with various initiatives identified for action	Create new innovation platforms to harness existing inter-group capabilities
PEOPLE EXCELLENCE	Conducted the Employee Opinion Survey 2015 with updated questions  Organised Team Excellence Convention 2015  Organised Business Excellence Seminar 2015	Implement action plans to address issues raised in the Employee Opinion Survey 2015  Organise the Team Excellence Convention 2016	Reviewed compensation & benefits structure against industry best practice, and conducted performance management training in response to feedback from the Employee Opinion Survey 2015  Organised a successful Team Excellence Convention 2016 with 15 participating teams  Reviewed the talent management framework to build up bench strength for the Group	Review and refresh the methodology and process for Employee Opinion Survey  Review leadership competency framework to develop leaders of the future, with focus on global mindset, collaboration and innovative thinking
ENVIRONMENT	Implemented various initiatives to reduce Greenhouse Gas (GHG) emission  All Singapore operations achieved ISO50001 certification  All significant business entities in Singapore developed and submitted their respective Water Efficiency Management Plans to local regulators  No significant fines or sanctions for non-compliance with environmental laws and regulations	Installation of solar Photovoltaic (PV) system  Validation of GHG emission via ISO14064-1  Implement ISO14001:2015  Benchmark Pollution Control and Waste Management practices  Continue journey to reduce GHG intensity by 16% on a business as usual basis for Singapore operations by 2025 with 2010 as the base year	Installed the solar PV System  Singapore operations achieved verification in ISO14064-1  Singapore operations commenced implementation of ISO14001:2015  Reviewed our pollution control and waste management practices  Achieved reduction in GHG intensity by 23% (unaudited) with 2010 as the base year	Continue implementation and sharing of best practices for ISO14001:2015  Conduct visits to learn about new initiatives in environmental sustainability, and study their feasibility for implementation  Explore new initiatives for improving water efficiency

# SUSTAINABILITY PERFORMANCE (cont'd)

TARGETS (cont'd)

	2015 PERFORMANCE	WHAT WE SAID WE WOULD DO IN 2016	WHAT WE DID IN 2016	WHAT WE WILL DO IN 2017
OCCUPATIONAL HEALTH & SAFETY	Reviewed and improved crane safety procedures, as well as those relating to heights, and preventing slips, trips and falls  Reviewed and updated practices relating to ergonomics, back injury, and the prevention of musculoskeletal disorders  No significant fines or sanctions for noncompliance with safety laws and regulations  Achieved Accident Frequency Rate (AFR) and Accident Severity Rate (ASR) below national benchmarks	Review existing practices against Total Workplace Safety and Health (WSH) Guidelines and identify areas for improvement  Organise campaigns and activities to promote health and safety  Benchmark best practices through cross audits  Improve on both the AFR and ASR	Reviewed existing Safety Operating Procedures against the National Total WSH Guidelines. Gaps identified were corrected for implementation.  Organised campaigns and activities to promote health and safety  Conducted cross audits to benchmark best practices  Mixed results for AFR and ASR, with room for improvement	Work towards achieving a Vision Zero target of no fatalities and improve on both the AFR and ASR  Benchmark best practices through cross audits  Share WSH best practices & resources  Drive WSH excellence by monitoring the leading indicators and organising awareness initiatives and programmes
SUSTAINABLE PROCUREMENT	Established the statement of commitment to sustainable procurement, and reported on the subject	Develop a work plan to implement sustainable procurement	Established a central procurement organisation headed by a Chief Procurement Officer	Strengthen central procurement organisation structure, resource and partnerships  Invest in technology solutions to drive efficiencies, streamline processes and enable visibility for better supply chain management
COMMUNITY	Continued reporting based on LBG guidelines, but with more focus on community benefits and their impact  Focused community efforts to benefit the persons with disabilities	Develop other strategic areas that would leverage ST Engineering's unique expertise	Embarked on developing a device to assist caregivers and wheelchair users to mount small flight of steps into and out of their homes  Successfully launched the ST Engineering Volunteer Week, with major activities across all business areas	Review and develop a sustainable model for CSR investments, initiatives and activities  Achieve 50 Good Deeds
GLOBAL OPERATIONS – UNITED STATES	Reported qualitatively on US sustainability efforts	To report targets and performance of the US sustainability efforts	Improved disclosures from US operations relating to people, environment and the community  Established group-wide goals for US business units for energy management, GHG emissions, waste management, and sustainable procurement	Work towards a 15% reduction in GHG intensity by 2020 from the base year of 2015  Progressively report other targets and performance of US sustainability efforts

## INNOVATION & PRODUCTIVITY



We engage our employees collectively through various internal annual competitions to promote innovation and productivity.

The ThinkerSparks Competition is an annual event for employees to present their ideas for innovative products, services, new businesses and environmentally-friendly solutions. Winning ideas are nurtured by the relevant business units.

The annual InnoChamps Competition celebrates ideas that have become developed products and services well received by our customers, and rewards these outstanding employees for their innovations.

The ThinkOut is our biennial event to bring together entrepreneurial and creative problem solvers from across the business sectors and functions. The event is structured to leverage the confluence of diverse expertise and experiences to generate new perspectives to overcome challenges facing our customers. Good ideas and solutions developed are followed up by business sponsors.

In 2016, we embarked on an extensive study to review our R&D setup with the

aim of critically evaluating our existing R&D practices. While we have invested well to achieve many innovations and awards, we must continue to harness inter-group capabilities and domain knowledge to serve our customers better by creating new platforms to innovate better. We will sharpen our ability to identify new and disruptive technologies and create space to nurture disruption.

Innovation also helps to drive our productivity efforts.

The following are two innovative ideas that helped drive productivity improvements during the year:

Inno-grinder, invented by ST Aerospace, not only helped to automate the grinding process, it also reduced the processing time drastically without compromising quality.

In ST Electronics, the switch from conventional soldering to the use of laser soldering resulted in a manpower reduction of up to 80%, reduced the probability of damage to printed circuit board and components and helped speed up the assembly process.

## WHAT WE SAID WE WOULD DO IN 2016

 Review the existing R&D model with the aim of renewing and refreshing our approach where necessary

#### WHAT WE DID IN 2016

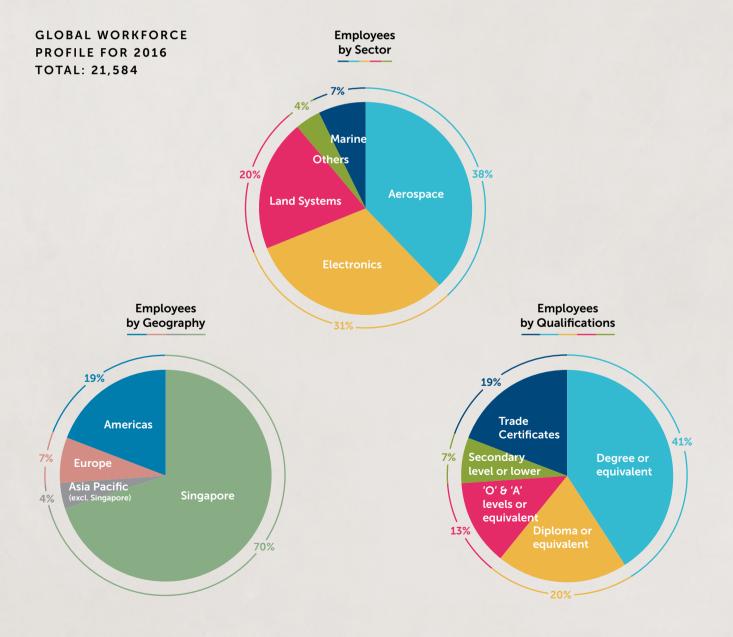
 Concluded the review of existing R&D practices with various initiatives identified for action

#### WHAT WE WILL DO IN 2017

 Create new innovation platforms to harness existing inter-group capabilities

## PEOPLE EXCELLENCE

As an organisation with global presence, we have a diverse employee population with different cultures. We provide equal employment opportunity to all. Our recruitment, employment and development of people are based on qualifications, skills and competency to do the job.



.67/

#### Workforce Profile for Singapore Operations



79%

21%



1-1-

**Employees** 

Female



Male

95%

5%



**Supervised Workers\*** 

**Female** 

\* Supervised workers refer to workers we hire through local contractors. They are on short-term contracts, work in our facilities and are supervised by ST Engineering.

#### Turnover Rate



Male Employees



Female Employees

6.9%

7.3%

## Average Training Hours per Employee





38.7 hrs

There were no reported incidences of discrimination by employees in 2016.

In 2016, 31% of employees were covered under collective bargaining agreements.

## WHAT WE SAID WE WOULD DO IN 2016

- Implement action plans to address issues raised in the Employee Opinion Survey 2015
- Organise the Team Excellence Convention 2016

#### WHAT WE DID IN 2016

- Reviewed compensation & benefits structure against industry best practice, and conducted performance management training in response to feedback from the Employee Opinion Survey 2015
- Organised a successful Team Excellence Convention 2016 with 15 participating teams
- Reviewed the talent management framework to build up bench strength for the Group

- Review and refresh the methodology and process for Employee Opinion Survey
- Review leadership competency framework to develop leaders of the future, with focus on global mindset, collaboration and innovative thinking

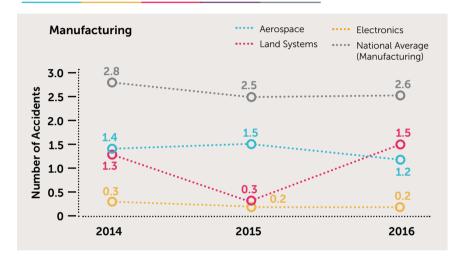
### OCCUPATIONAL HEALTH & SAFETY

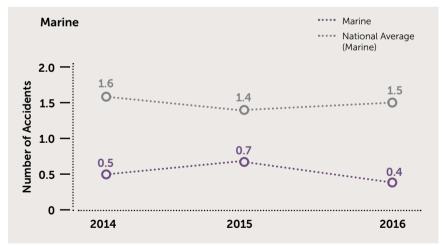
We are committed to 'Safety Before Profit'. The health and safety of our employees and contractors working on our products and delivering our services are very important to us.

Our workplace safety management is underpinned by legislative requirements and industry safety standards. A workplace safety culture is promulgated through the deployment of safety programmes and the measurement of key performance indicators in the operational areas. Our operations have implemented a safety management system based on the occupational safety guidelines under the OHSAS 18001 standard or equivalent.

In 2016, we saw an increase in accident frequency rate and accident severity rate in some sectors. It is with our deep regret that we report a fatality from the Marine sector, and an increase in man-days lost from a few higher severity cases in the Aerospace and Land Systems sectors. Additional safety measures to prevent recurrence were taken by the business units after the investigations of each case, and lessons learnt were shared across the Group during the Environment, Health & Safety Committee meetings.

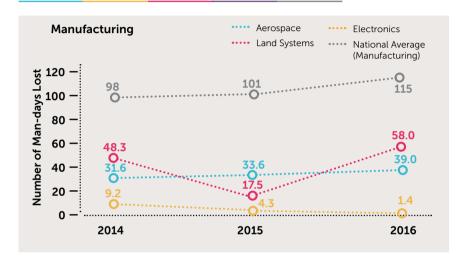
## Accident Frequency Rate (Number of accidents per million man-hours worked)

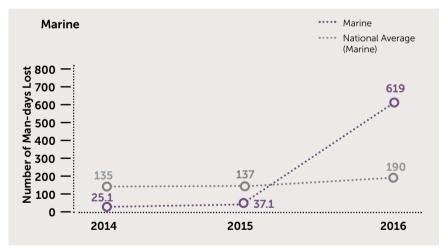




OTHER OCCUPATIONAL HEALTH & SAFETY PERFORMANCE INDICATORS (2016)	AEROSPACE	ELECTRONICS	LAND SYSTEMS	MARINE
No. of Occupational Health Activities Organised	24	18	24	12
Audiometric Examination (% of at-risk staff who attended)	100	100	100	100
Respiratory Protection Training (% of at-risk staff who attended)	100	100	100	100
Number of Occupational Disease Cases (excluding Noise Induced Deafness (NID) cases)	0	0	0	0
Number of Advanced NID Cases	2	0	0	0

## Accident Severity Rate (Number of man-days lost per million man-hours worked)





## WHAT WE SAID WE WOULD DO IN 2016

- Review existing practices against Total WSH Guidelines and identify areas for improvement
- Organise campaigns and activities to promote health and safety
- Benchmark best practices through cross audits
- Improve on both the AFR

#### WHAT WE DID IN 2016

- Reviewed existing Safety
   Operating Procedures
   against the National Total
   WSH Guidelines. Gaps
   identified were corrected for implementation
- Organised campaigns and activities to promote health and safety.
- Conducted cross audits to benchmark best practices
- Mixed results for AFR and ASR, with room for improvement

- Work towards achieving a Vision Zero target of no fatalities, and improve on both the AFR and ASR
- Benchmark best practices through cross audits
- Share WSH best practices & resources
- Drive WSH excellence by monitoring the leading indicators and organising awareness initiatives and programmes

### **ENVIRONMENT**

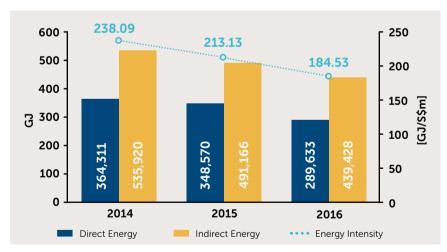
ST Engineering is continuously exploring energy efficient initiatives. One of the areas we are exploring is alternative clean energy.

nstalling a solar photovoltaic (PV) system is one of ST Engineering's initiatives to provide our Singapore operations with a clean alternative energy source. The system uses rooftop solar panels to absorb and convert sunlight into electrical energy without generating any greenhouse gas emissions. The energy generated will then be used for our operations. We conducted a pilot

project in 2014 to understand and learn more about the system's technology and its impact on our operations. In 2016, we expanded the PV system to cover more areas and we will continue to do this over the next several years. By the end of 2018, we estimate that the clean solar energy from the PV system will replace 6.5% of our existing electricity source of energy, thereby reducing our overall GHG by 3,700 tonnes of Carbon Dioxide Equivalent (tCO,e) annually.

In 2016, our investments in innovation resulted in energy reductions from our products and services, with an estimated savings of 118.47 terajoules.

#### **Energy Consumption & Intensity\***



STAGE OF DEVELOPMENT	NUMBER OF PROJECTS TO REDUCE ENERGY CONSUMPTION	TOTAL ESTIMATED ANNUAL CO <sub>2</sub> SAVINGS (tCO <sub>2</sub> e)
TO BE IMPLEMENTED	11	4,189
IMPLEMENTATION COMMENCED	1	751
IMPLEMENTED	4	209

## WHAT WE SAID WE WOULD DO IN 2016

- Installation of solar PV system
- Validation of GHG via ISO14064-1
- Implement ISO14001:2015
- Benchmark Pollution Contro and Waste Management practices
- Continue journey to reduce GHG intensity by 16% on a business as usual basis for Singapore operations by 2025 with 2010 as the base year

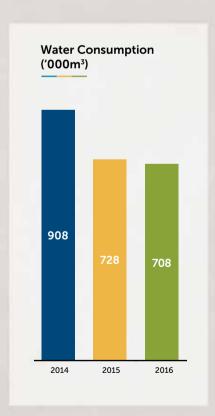
#### WHAT WE DID IN 2016

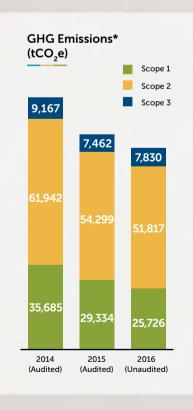
- Installed the solar PV System
- Singapore operations achieved verification in ISO14064-1
- Singapore operations commenced implementation of ISO14001:2015
- Reviewed our pollution contro and waste management practices
- Achieved a reduction in GHG intensity by 23% (unaudited)

- Continue implementation and sharing of best practices for ISO14001:2015
- Conduct visits to learn about new initiatives in environmental sustainability, and study their feasibility for implementation
- Explore new initiatives for improving water efficiency

#### GHG Intensity\* (tCO<sub>2</sub>e/\$m)







#### \* Notes:

Energy consumption and GHG emission figures for 2015 were adjusted as a result of audit, and restated accordingly.

GHG intensity figures are computed based on Scope 1 and 2 emissions normalised using revenue from Asia, where Singapore is a significant contributor.

Scope 1: Direct GHG emissions from sources owned or controlled by Singapore entities

Scope 2: Indirect GHG emissions from generation of purchased electricity consumed by Singapore entities

Scope 3: Indirect GHG emissions from business travels by air carried out by Singapore entities

## PRODUCT QUALITY & SAFETY

Product Quality encompasses all faculties of engineering including system safety and product reliability. All operations in Singapore implement quality management systems (QMS) that provide a set of policies and procedures to meet the stringent requirements of authorities and customers. The QMS is third-party certified to ISO9001 standards and it addresses all the management processes, key processes and support processes that are relevant in our operations.

we implement system safety in our products, where we manage the safety implications of our products throughout the entire product life cycle, assessing and managing safety from the start at the design stage.

We constantly benchmark our practices to international standards, and we share our practices with our fellow engineers at the international level. In 2016, two papers – "Hazard Analysis for Facilities and Process Safety" and "Systematic Approach to Perform Safety Assessment on Vessel Platforms" – were selected for sharing at the 34th International System Safety Conference held in the US in August.

We achieved full compliance with product safety requirements in 2016.



## SUSTAINABLE PROCUREMENT

Total Purchase Value (\$m)

2016

2,097

2015

2,245

2014

2,479

The Group undertook a study to evaluate the feasibility of creating a central procurement organisation. The principal aim of this central organisation is to ensure sustainable and robust supply chain management across the Group. The new procurement organisation, headed by a Chief Procurement Officer, will leverage leading practices and integrated technology to deliver procurement value with greater efficiency and effectiveness. The Chief Procurement Officer will spearhead efforts in sustainable procurement.

## WHAT WE SAID WE WOULD DO IN 2016

 Develop a work plan to implement sustainable procurement

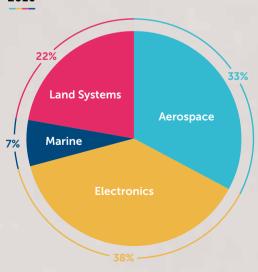
#### WHAT WE DID IN 2016

 Established a central procurement organisation headed by a Chief Procurement Officer

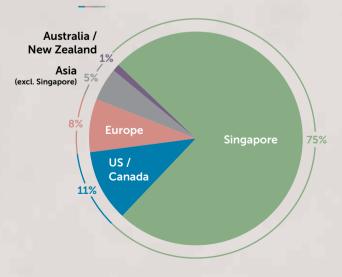
#### WHAT WE WILL DO IN 2017

- Strengthen central procurement organisation structure, resource and partnerships
- Invest in technology solutions to drive efficiencies, streamline processes and enable visibility for better supply chain management

### Percentage of Purchase Value by Sector 2016



## Percentage of Suppliers by Location 2016



### **COMMUNITY**

As a responsible corporate citizen, ST Engineering supports and engages the communities that we operate in. These community programmes take various forms, from corporate sponsorships for youth development to employee-led activities for the less fortunate. As an organisation steeped in engineering and technical know-how, the Group also focuses on using our expertise to benefit society at large.

o aggregate the efforts of our employees, ST Engineering launched our inaugural Volunteer Week in 2016. Held from 6 to 9 September, our employees from business sectors in Singapore and the US held charitable activities during the week. Our employees volunteered their time, taking beneficiaries from homes for outings, doing landscaping work for homes, holding blood donation drives as well as distributing food to needy families. Volunteer Week was a success, not just in reaching out to the local communities, but also in bringing employees together for a good cause.

Our partnership with Assumption Pathway School (APS) continues. APS is a Singapore-based educational institution that provides alternative



Volunteers interacting with residents of Thye Hua Kwan Moral Welfare Home.



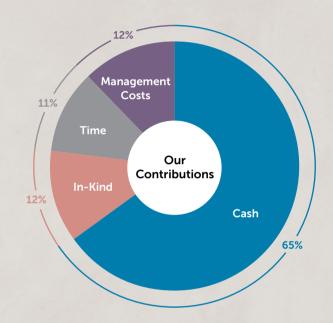
Volunteers who supported the event at the Thye Hua Kwan Moral Welfare Home.

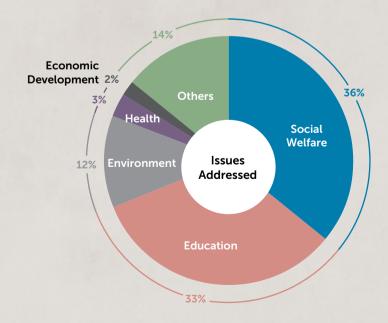


pathways for students unable to complete mainstream education. Since 2013, we have provided industrial attachments, financial assistance and cash awards to its students.

Partnering one of Singapore's most popular attractions, Gardens by the Bay, ST Engineering continues to sponsor two permanent audio-visual exhibits titled Earth Checks and plus-5 Degrees, aimed at educating the public on the impact of climate change. We hope that through the displays, more people will become aware of the urgency of making changes to mitigate the effect of climate change.

Volunteers at the SWAMI Home Mooncake Festival Celebrations.





**Community Contributions for 2016** 

Total:

\$1,743,622

## WHAT WE SAID WE WOULD DO IN 2016

 Develop other strategic areas that would leverage ST Engineering's unique expertise

#### WHAT WE DID IN 2016

- Embarked on developing a device to assist caregivers and wheelchair users to mount small flight of steps into and out of their homes
- Successfully launched the ST Engineering Volunteer Week, with major activities across all business areas

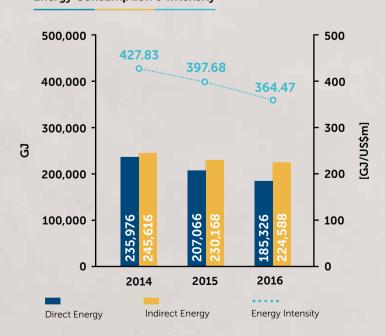
- Review and develop a sustainable model for CSR investments, initiatives and activities
- Achieve 50 Good Deeds

## GLOBAL OPERATIONS UNITED STATES

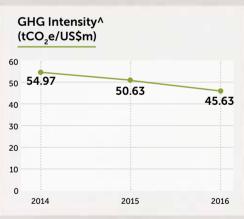
sustainability programmes were developed with due consideration to the legal and environmental legislation in the US and with a view of improving operational performance. Since the inception of this journey in 2013, individual business units of VT Systems have set their respective reduction targets for energy, GHG emissions and waste. In 2016, group-wide goals were developed for the business units to collectively strive towards achievement by the year 2020.

Giving back to the community requires time and commitment from all employees. Employees are encouraged to take time to support charitable organisations that are meaningful to them. Additionally, VT Systems seeks to implement programmes that provide matching financial contributions for qualifying charities, as well as target health causes which potentially have high impact on the local communities. In 2016, VT Systems and its subsidiaries contributed an equivalent of US\$442,308 to the community.

#### **Energy Consumption & Intensity**







#### ^ Notes:

GHG intensity figures are computed based on Scope 1 and 2 emissions normalised using revenue from US operations.

Scope 1: Direct GHG emissions from sources owned or controlled by US entities

Scope 2: Indirect GHG emissions from generation of purchased electricity consumed by US entities

Scope 3: Indirect GHG emissions from business travels by air carried out by US entities

#### **Workforce Profile**



\* Supervised workers refer to workers we hire through local contractors. They are on short term contracts, work in VT Systems facilities and are supervised by our employees.

Turnover



Rate

Male Employees

13%

Female Employees

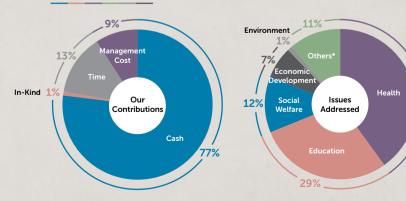
14%

#### Average Training Hours per Employee



42.4 hrs

## Community Contributions 2016 Total: US\$442,308



\* Others include Art & Culture and Emergency Relief



#### WHAT WE SAID WE WOULD DO IN 2016

 Report targets and performance of the US sustainability efforts

#### WHAT WE DID IN 2016

- Improved disclosures from US operations relating to people, environment and the community
- Established group-wide goals for US business units for energy management, GHG emissions, waste management, and sustainable procurement

### WHAT WE WILL DO IN 2017

40%

- Work towards a 15% reduction in GHG intensity by 2020 from the base year of 2015
- Progressively report other targets and performance of US sustainability efforts